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| **Pension Participation Market Research**Review of UK and Worldwide MarketsDefined Contributions Participation, Accumulation and Decumulation Working PartyWorking Party Members: Stephen Hyams (Chair), Mark Woodruff, Graham Warren, Alan Smith, John Atherton, Erik Pickett and Paul Willetts |
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**Foreword**

This paper has been prepared by the Defined Contributions Participation, Accumulation & Decumulation Working Party of the IFoA. Its purpose is to review experience from the UK and worldwide concerning increasing participation in DC pension saving in order to identify areas for potential further research by our Working Party or others. It is our second paper reviewing various aspects of DC pensions.

1. **Introduction**
	1. The pension problem facing the UK (and many other Western countries) is the combination of the following effects:
* A decline in the level of pension and other savings, exacerbated by the demise in traditional defined benefit pensions.
* Increased longevity, compounded by the current historically low interest rates, increasing the cost of pension provision.
* An aging population. In 2014/15 the cost of State pension provision in the UK was £108bn and made up 42% of the total welfare spend[[1]](#footnote-1). This annual cost is projected to rise, with less tax revenue available to finance it due to the reducing ratio of workers to retirees, thereby putting a strain on the sustainability of the State pension.
	1. If these trends continue, then some combination of the following will be required:

**Increased savings participation:** Higher levels of personal savings will be required to maintain living standards in retirement. This could be as a result of:

1. More people saving into pensions
2. People saving more into their pensions
3. People saving for longer (starting earlier or retiring later)

**Increased State spending:** Higher tax revenue will be required to pay for the increasing cost of State provision of pension and other benefits

**Decline in living standards:** Living standards for retirees will decline.

* 1. In this paper we focus on learning from around the world to encourage increased savings participation, specifically in DC pensions. The paper is structured by the three approaches set out above.
1. **More people saving**

**Wider availability**

* 1. The first step to increase the number of people saving into pensions would be to increase the availability of workplace pension savings vehicles. This has been substantially addressed in the UK with the introduction of the auto-enrolment initiative. By 2018, all employers will be required to offer a workplace pension for eligible employees[[2]](#footnote-2). Self-employed workers fall outside of the auto-enrolment requirement, although they can choose to set up a scheme, such as with the National Employment Savings Trust, a pension saving vehicle set up by the government. Therefore, the vast majority of people in the UK will have access to a workplace pension saving vehicle[[3]](#footnote-3).

**Automatic-enrolment**

* 1. One of the most successful approaches to increasing member participation in workplace pensions around the world has been auto-enrolment. The fundamental idea is to enrol employees automatically into a workplace pension where opting out is possible but requires some action; the inertia effect then predicts relatively few people will subsequently opt-out.
	2. The underlying structure of an auto-enrolment scheme can be crucial. On the one hand, people will opt out if their take home pay is reduced by too much. Higher opt-out rates could have large effects on savings at retirement and should be avoided; the PPI[[4]](#footnote-4) have shown that opting-out between age 30 and 40 and starting to save 10 years later could reduce retirement income by 32%. On the other hand, minimum contribution levels set by an authority such as a government or employer could be taken as a signal of adequacy as a savings rate. If these contribution levels are set too low, people could be saving too little, but with a false sense of security about their retirement income.
	3. Auto-enrolment has been introduced in other countries in a variety of ways. In the USA the Pensions Protection Act 2006 introduced a number of incentives to encourage companies to automatically enrol their employees into a pension scheme (schemes are granted “safe harbour” from a number of restrictive and expensive compliance regulations if they introduce auto enrolment in a certain form[[5]](#footnote-5)). Contributions are broadly equal to 3% employee, 3% employer in year one with the employee contribution increasing each year until they reach 6% in year 4. These incentives resulted in 56% of schemes in the USA operating auto-enrolment by 2011 with opt-out rates around 10%[[6]](#footnote-6).
	4. New Zealand have introduced the Kiwi Saver in 2007, which requires employers to operate auto-enrolment. This is a government sponsored pension scheme, in which all new employees must be enrolled. The minimum contributions are currently set at 3% employee, 3% employer (although members can optionally increase this to 4% employee, 4% employer)[[7]](#footnote-7). Kiwi Saver has had a significant effect on the number of active members of a pension scheme in New Zealand. One year after it was introduced 23.7% of 18-64 year olds were members, by 2015 this had increased to 76.5% with an opt-out rate of just 9.3%.
	5. In the UK we have followed the example of New Zealand in requiring employers to operate auto-enrolment. The details of the system in the UK are:
* Key features2,[[8]](#footnote-8),[[9]](#footnote-9)
	+ First introduced in 2012
	+ Phased approach to participation with largest companies required to participate first. By 2018 all employers will be required to offer a workplace pension offering at least the minimum contributions and automatically enrol eligible employees.
	+ Eligible employees are aged between 22 and State Pension Age and have a salary over a certain level (£10,000 p.a. currently).
	+ Contributions started at 1% employer, 2% total (of qualifying earnings) in 2012 and will increase to 3% employer, 8% total in 2019.
	+ Members can opt out at any time.
	+ From 2015, members have had complete freedom with how to withdraw DC funds from age 55, subject to their marginal rate of income tax on withdrawals in excess of the permitted tax-free lump sum.
* Measures
	+ Only 10% opt-out rate by 31 August 2015. The government expects no more than 15% opt-out by 20182.
	+ Auto-enrolled members: 6% in DB, 5% in Hybrid, 89% in DC2.
	+ According to the DWP, 15.1m (75% of) eligible employees were contributing to a workplace pension by 2015 compared to 10.7m (55%) in 20128. This should increase further as the rollout of auto-enrolment is completed early next year.
	+ Auto-enrolment also appears to be having a larger effect on younger and lower paid workers, groups whose coverage was lower before the introduction of auto-enrolment2,8.
	1. To date auto-enrolment in the UK has widely been viewed as a success at enroling new savers into pension schemes, although we are not yet at a point where we can fully judge the impact. Whereas a 10% opt-out rate is fairly low and consistent with similar experience in other countries, the smallest companies are still introducing the system so we could yet see a rise in the opt-out rate.
	2. There are also a number of workers who slip through the net of auto-enrolment. A lower limit of pay to be enrolled seems reasonable as employees with low earnings would receive a large replacement ratio at retirement from State benefits, but there has been some questions over whether the limit should be reduced from the current level of £10,000. Also, workers who hold a number of different jobs, whose combined salary would otherwise have made them eligible for auto-enrolment, will miss out[[10]](#footnote-10).
	3. Self-employed workers are also not covered by the scheme. Steve Webb, a former UK pensions minister, has recently suggested an extension of NI in the UK to address this problem[[11]](#footnote-11); namely to increase NI contributions for self-employed workers from 9% to 12% (to the same level as other employees) and give them the choice of this extra 3% either going to the Treasury or into a pension. Allowing people the option to opt-out of these extra contributions would be consistent with the philosophy of auto-enrolment.
	4. Another key criticism of auto-enrolment in the UK has been the level of contributions. The PLSA show[[12]](#footnote-12) that the 8% minimum contribution will be insufficient for 97% of DC savers in the UK. (They project wealth figures from the Wealth and Assets survey to retirement and assess adequacy against the Pension Commission’s targets. Based on future contributions of 8% they show that 97% of the population with DC only savings have a less than 40% chance of reaching their retirement targets). In addition, the PPI calculate (in 2015) that 11-14% contributions are needed from age 22 to achieve a 2/3rd chance of replicating working living standards in retirement, rising to as much as 27% if contributions start later4.
	5. One question that is frequently asked is whether auto-enrolment into a pension scheme is actually increasing individuals’ savings or merely diverting it from other savings vehicles. However, results measuring household wealth in Denmark suggest that for employees who are automatically enrolled into a pension scheme, 85% of the savings are new[[13]](#footnote-13).
	6. The OECD[[14]](#footnote-14) highlight that the level of success of automatic enrolment schemes depends on a number of factors: their design, the communication and education campaigns that accompany their launch and the interaction with other existing incentives. Further to this, a summary of policies shown to complement auto-enrolment are set out by the DWP[[15]](#footnote-15) (the majority of which are present in the UK system):
* The way any matched contribution from the employer or government is communicated to the employee;
* Any other associated incentives, such as the ability to withdraw funds early or the form in which they can withdraw funds;
* Making choices and the ‘default’ option as simple and straightforward as possible;
* Allowing those automatically enrolled as much freedom to procrastinate as possible. In the UK, people are allowed to withdraw at any time;
* Delaying the perceived impact of decisions (the longer the delay in realising the impacts of the default decision, the easier it should be to choose the default: for example, the effects of making a decision about increasing pension saving from future income are easier to accommodate mentally than making a decision now that impacts on current income);
* Presenting default options that are not only simple but also familiar concepts to people;
* Any prior competing claims on people’s incomes.

**Compulsory contributions**

* 1. Compulsory pension contributions could be seen as an obvious way to increase individuals’ pension savings and has considerable merit in ensuring that everyone saves for their retirement. This approach has been taken in Australia and many[[16]](#footnote-16),[[17]](#footnote-17) cite this as a good example of a country acting to address the pension problem it faces. However, there has not been complete support for this approach.
	2. Key details of the Australian system:
* Minimum employer contributions of 9.5% until 30 June 2021, then increasing by 0.5% per year until 30 June 202513.
* Freedom of how to access the pension pot at retirement, but with tax incentives to draw a regular income rather than cash[[18]](#footnote-18).
* A State pension with significant means testing exists to act as a safety net for people who do not have sufficient savings. The maximum State pension for a single person is $877.10 per fortnight (approx. £14,000 per year).
* Additional contributions termed “salary sacrifice” are allowed but have a low level of take up, with only 20% of eligible members taking advantage16.
	1. Compulsory contributions will undoubtedly increase the number of people contributing to a pension scheme. However there have been a number of criticisms of the Australian system. In [16], Agnew highlights that the means testing of the State benefits gives incentives to game the system in retirement. Scheiwe17 comments on the insufficiency of the level of contributions, the fact that the system does not cover self-employed and the sub-optimal service due to limited choice of scheme.
	2. Compulsory contributions could also lead to a lack of engagement with pensions and a reduction in individual responsibility. As an example of this phenomenon, in a survey of members16 over half of respondents did not know any details about the investment vehicle used in the majority of default funds.

**Tax Incentives**

* 1. Tax incentives have been a popular approach around the world to encourage pension saving. However, the system in the UK has often been criticised for being (or being perceived as) too complicated to really drive up participation[[19]](#footnote-19),[[20]](#footnote-20).
	2. The UK Exempt-Exempt-Taxed (or EET) model provides that pension contributions are exempt from income tax, investment returns are exempt from tax while the pension drawn is subject to income tax (although 25% of the total fund can be taken tax free). This provides the following incentives to save into a pension:
* Some people will pay a lower level of income tax when they are retired than when in work, meaning deferring income tax until retirement may reduce the amount of tax paid;
* 25% of the pot can be taken tax free, reducing the overall tax bill;
* Deferring taxation means there is a higher capital amount to invest, so investment returns will be higher as they are earned on a larger sum of money.
	1. Auto-enrolment has cast a doubt on whether these tax incentives are sufficient on their own to encourage saving from the majority: the percentage of eligible workers saving into a work place pension has increased from around 55% in 2012 to 75% in 20158. During this period there has been very little change to the tax incentives; if tax incentives had been the main driver of pension saving behaviour, we would expect little change in the percentage of people saving after the introduction of auto-enrolment. Similar results, in that auto-enrolment have had large effects when introduced despite the tax regimes remaining largely unchanged, have been seen in the USA and in New Zealand in systems with markedly different tax incentives (the KiwiSaver offers government bonuses to savings of 50% of annual contributions with a maximum of $521 and $1,000 on sign up13; both a EET and TEE systems exist in the USA via regular 401(k) and Roth 401(k) plans).
	2. Research from Denmark[[21]](#footnote-21) has shown that 85% of savers are passive decision makers who are unresponsive to tax incentives and 15% active savers who are responsive to tax incentives. They also show that active savers are likely to be wealthier and more financially sophisticated.
	3. Even if tax incentives by themselves have a low direct effect on saving behaviours, they are still a very important part of encouraging participation. In order to justify using behavioural nudges to encourage pension saving such as auto-enrolment, there needs to be some rational backing for the decisions people are being nudged towards. Without some form financial incentive it might be hard to justify auto-enrolment.
	4. In addition, auto-enrolment requires the buy-in from employers to be a success. Key decision makers on occupational pensions may well be part of the 15% of active savers who value tax incentives. They are more likely to support occupational pensions that they themselves value, so tax incentives for pension savings may encourage their support and the ultimate success of the pension system.
	5. In the UK’s 2016 consultation on pension tax relief19, the majority of responses recognised there was a clear need for some form of up front financial incentive to save, although the optimal form and level is hard to determine. One theme of the responses was that stability in the system was needed to improve trust from the public (the PPI have previously stated that people’s lack of trust in financial institutions can impede engagement2). In response, a TEE element of retirement saving has now (in 2017) been introduced *in parallel* to the current system in the form of the Lifetime ISA (with the added incentive of a government bonus of 25% on savings, subject to a maximum level and various restrictions on withdrawal). It will be interesting to see the take up of this new form of saving and whether it affects saving into the existing pension system.

**Education and guidance**

* 1. Increasing financial education and guidance for members of the public about pension savings intuitively feels like it should have a positive effect on participation. The focus is often on the need to educate people to make the optimal rational decisions with regard to their savings behaviour. The need for such education is supported by the PPI who state that 4 out of 5 people in the UK have a level of numeracy of below GCSE grade C2.
	2. There is no certainty that better informed people will make better decisions. As stated in the tax incentives section, research from Denmark20 has shown 85% of savers are passive decision makers who would be unresponsive to improvements in behaviour based on better information.
	3. However, one way that financial education could improve behaviour is by creating a better culture for savings. This was suggested by many responses to the government’s consultation on the incentive to save19 and may help address the PPI’s assertion that people’s lack of trust in financial institutions can impede engagement with advice or guidance2.
1. **People saving more**

**Auto-enrolment and compulsory contributions**

* 1. One way to increase the amount people save would be to increase the minimum level of contributions that are required under either auto-enrolment or compulsory contributions. Both the PPI and the PLSA believe that the UK’s ultimate minimum level of contributions from 2019 will not be sufficient4,11.
	2. As we do not know the impact on opt-out rates of the increase to 8% and there is no data from other countries about auto-enrolment schemes with significantly higher contribution levels, it is difficult to extrapolate the effect on opt-out rates of increasing contribution levels. Compulsory contributions would enable a minimum level to be set at whatever level was deemed appropriate without the fear of increasing opt-out rates; while this has considerable merit it does carry its own political risk.

**Auto-escalation**

* 1. Auto-enrolment addresses the problem of not enough people saving, but does not promote higher levels of savings. Automatic escalation[[22]](#footnote-22), originating in the US, aims to help in that regard, in that people sign up to increase their pension contributions at predetermined times in the future. This mechanism appeals to a number of phenomena highlighted by behavioural economics:
* The concept of non-uniform discounting[[23]](#footnote-23). People will feel that their future self will lose less utility saving more than their current self, so will be willing to sign up to higher contributions in the future, even if they don’t want to pay those contributions now.
* Inertia[[24]](#footnote-24). Once enrolled in the increasing contribution mechanism, an action must be taken to reject the higher contribution when it becomes due. The mechanism takes advantage of the fact that people rarely act to change the status quo.
* Loss aversion[[25]](#footnote-25). In the original scheme design introduced by Bernatzi and Thaler, they timed the increase in contributions to coincide with pay rises. This means that, as long as an employee’s pay rise is more than their contribution increase, their take home pay will not decrease. According to prospect theory , people should be less affected by a smaller increase in pay than by a decrease of the same level.
	1. The first company to introduce this mechanism as part of Bernatzi and Thaler’s initial research21 achieved large success in increasing members’ contributions. 78% of employees signed up to the scheme, with contributions increasing from 3.5% in year one to 13.6% slightly less than 4 years later (compared to members who acted on the advised savings rate of the advisor who were contributing 8.8%).
	2. In the US, under the Pension Protection Act 2006, firms are encouraged to introduce auto-enrolment into schemes with an auto-escalation element. Employers who adopt schemes with the features below are granted “safe harbour” from a number of restrictive and expensive compliance regulations5.
* Employees automatically enrolled with minimum contributions of 3% (but no more than 10%)
* Employee contributions increase to at least 4% in year 2, 5% in year 3 and 6% in year 4 and beyond (but no more than 10%)
* Employer contributions of either:
	+ 3%
	+ 1:1 matching up to 1% followed by 0.5:1 up to 6%
	1. These incentives have had a positive effect in the US; following the introduction of auto-escalation in 2004, by 2011 51% of employers offering a 401(k) plan had some form of automatic escalation in place5.
	2. Thaler5 stresses that a key factor in the success of a scheme with auto-escalation is the ease of which a member can sign up to the increases, highlighting that the initial success of the original auto-escalation (“Save More Tomorrow”) plan hinged on the fact that employees all met with a financial adviser who would complete all the necessary paperwork on their behalf.
	3. Automatic escalation appears to be a highly effective method for encouraging long term workers to increase their pension contributions over time. However, if there is a largely transient work force (as in many industries in the UK) employees would not benefit from their increased savings rates before moving to another position and starting again at the lowest savings rates.
	4. The other main criticism of automatic escalation is that it relies on employees receiving regular and reasonable pay rises, to prevent a fall in take home pay when pension contributions rise. Since the economic crisis, wage growth in the UK has been very low.
1. **People saving for longer**

**Automatic enrolment**

* 1. Automatic enrolment has resulted in many more people saving into a pension and the increase in participation has been the greatest amongst younger workers and lower paid workers2. However, this could be improved upon if the lower age limit for an eligible jobholder was reduced from 22 to (say) 16 or the upper limit were extended beyond State pension age.

**Encouraging workers to stay in employment**

* 1. An alternative to trying to increase member contributions would be to encourage workers to remain in employment longer. If people work for longer, they will have longer to save for retirement and less time to fund in retirement. The PPI4 state that retiring 2 years after State pension age could enhance income by to 20%, whereas retiring 2 years before that age could reduce income by 18%.
	2. The DWP[[26]](#footnote-26) have conducted extensive research into encouraging workers to stay in employment. The key findings of their research were:
* There are strong social norms for retirement at or before State pension age.
* A large number of people would consider working longer, but want changes in hours and flexibility.
* Most are passive rather than active decision makers and are not likely to engage in making rational decisions.
* There is a lack of knowledge and understanding and a lack of trust in the system.
	1. They conclude that to encourage workers to stay in employment:
* Communications should use broad statements rather than detailed analysis.
* Encouragement should be given to employers to make staying in work as easy as possible.
* Focus efforts on those working in sectors where flexibility is possible.
* Tax breaks could be used, but would need careful communication.
1. **Conclusion**
	1. The level of participation in workplace and personal pensions will have a significant effect on potentially solving the pension problem in the UK.
	2. Auto-enrolment has had a very positive effect in increasing the number of people saving into pensions and should also result in people saving for a longer period of time. Despite generally positive views of the scheme’s introduction there are a number of criticisms:
* Self-employed and multiple low earners are not covered.
* Contribution rates (even when they reach their ultimate levels in 2019) are widely believed to be insufficient; little is known about the potential rise in opt-out rates if contributions were raised significantly higher.
	1. Suggestions for opening auto-enrolment up to the self-employed have generally involved the NI or income tax system, although care is needed to ensure the ability to opt-out to maintain consistency with employees.
	2. Compulsory contributions are ultimately the only way to ensure that minimum pension contribution levels are achieved without the risk of larger opt-outs. However, this is a politicised issue and not easy to introduce. If people view these contributions as ‘just another tax’ there is the risk they could become disengaged and expect all responsibility for retirement income adequacy to be passed back to the State. Another issue is whether pension contributions are right for everyone, as opposed to alternative forms of savings such as ISAs.
	3. Tax incentives are important when used together with behavioural initiatives but are not likely to have a large effect on savings rates on their own. There is no clear optimal format for tax incentives for saving, but any changes must be considered in the context of the public’s trust in the system.
	4. Automatic escalation could help tackle low levels of contributions using behavioural techniques to reduce opt-out rates. However, for auto-escalation to be effective, you need a stable workforce who are receiving regular reasonable pay rises. This is unlikely to exist at the system level in the UK in the current climate.
	5. With everything above considered, it may be necessary for workers to stay in employment for longer periods of time than previous generations. If this is the case employers should be supported to offer encouragement.
1. **Research opportunities**
	1. Some thoughts for further research include:
* Another paper by this working party discussed the use of profiles of savers in the UK. Such profiles could be used to analyse the impact of various factors on plan participation and how this varies between segments of the population, such as
	+ Current and future proposals for auto-enrolment contribution rates
	+ Effects of varying contribution rates
	+ Effects of introducing various auto-escalation approaches
* Studying changes to auto-enrolment opt-out rates depending on different contribution levels and the reasons behind them
* What plan features are particularly helpful in encouraging savings
* To what extent the needs of those who also have defined benefit pensions differ from those with only defined contribution, and how this might impact drivers for achieving greater participation

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1. Office for National Statistics (2016) *How is the welfare budget spent?* [↑](#footnote-ref-1)
2. Pensions Policy Institute (2015), *The Future Book, unraveling workplace pensions* [↑](#footnote-ref-2)
3. NEST (2017) *Self-employed Members* [↑](#footnote-ref-3)
4. Pensions Policy Institute (2012) *Closing the gap: the choices and factors that can affect private pension
 income in retirement* [↑](#footnote-ref-4)
5. Deloitte (2007) *The Pension Protection Act of 2006: A Closer Look at ... Automatic Enrolment* [↑](#footnote-ref-5)
6. Bernatzi and Thaler (2013) *Behavioural Economics and the Retirement Savings Crisis*, Science, Vol 339, Issue
 6124, American Association for the Advancement of Science [↑](#footnote-ref-6)
7. New Zealand Institute of Economic Research (2015) *KiwiSaver and the wealth of New Zealanders* [↑](#footnote-ref-7)
8. The Pensions Regulator (2016) *Different Types of Worker* [↑](#footnote-ref-8)
9. Department for Work and Pensions (2016) *Automatic Enrolment evaluation report* [↑](#footnote-ref-9)
10. Citizens Advice (2017) *People in multiple jobs missing out on a workplace pension* [↑](#footnote-ref-10)
11. FT Adviser (2017) *Webb unveils trick to get self-employed into pensions* [↑](#footnote-ref-11)
12. Pension and Lifetime Savings Association (2016) *Retirement Income Adequacy, Generation by Generation* [↑](#footnote-ref-12)
13. Madrian and Shea (2001) *The Power Of Suggestion: Inertia In 401(k) Participation And Savings Behavior*
 Quarterly Journal of Economics, v116, Oxford University Press [↑](#footnote-ref-13)
14. Organisation for Economic Co-operation and Development (2015) *Pensions at a glance 2015: OECD and G20
 indicators* [↑](#footnote-ref-14)
15. Department of Work and Pensions (2012) *How can we incentivise pension saving? A behavioural perspective* [↑](#footnote-ref-15)
16. Summers (2013) *In Australia, Retirement Saving Done Right* Bloomberg [↑](#footnote-ref-16)
17. Agnew (2013) *Australia’s Retirement System: Strengths, Weaknesses, and Reforms* Centre for Retirement
 Research at Boston College [↑](#footnote-ref-17)
18. Scheiwe (1999) *Why Australia’s pension system is not a good international model* Bunhill Row London [↑](#footnote-ref-18)
19. Sandler (2002) *Sandler Review: Medium and Long-Term Retail Savings in the UK* [↑](#footnote-ref-19)
20. HM Treasury (2016) *Strengthening the incentive to save: summary of responses to the consultation on
 pensions tax relief* [↑](#footnote-ref-20)
21. Chetty, Friedman, Leth-Petersen, Nielsen, Olsen (2014) *Active vs Passive Decisions and Crowd-Out in
 Retirement Savings Accounts: Evidence from Denmark*, Q J Econ 129 (3): 1141-1219, Oxford University Press [↑](#footnote-ref-21)
22. Benartzi, S., Thaler, R. H. (2004) *Save More Tomorrow: Using Behavioral Economics to Increase Employee
 Saving* Journal of Political Economy, Vol 112, No. 1, pp S164-S187, USA, University of Chicago [↑](#footnote-ref-22)
23. Laibson, D. (1997*) Golden Eggs and Hyperbolic Discounting* The Quarterly Journal of Economics (1997) 112
 (2): 443-478, Oxford, Oxford University Press [↑](#footnote-ref-23)
24. Thaler, R., Sunstein, C. (2009) *Nudge: Improving Decisions About Health, Wealth and Happiness* London,
 Penguin Books [↑](#footnote-ref-24)
25. Kahneman, D., Tversy, A. (1979) *Prospect Theory: An analysis of decisions under risk* Econometrica, Vol. 47,
 No. 2. pp. 263-292, Malden USA, Wiley [↑](#footnote-ref-25)
26. Department for Work and Pensions (2012) *Extending working life: Behaviour change interventions* [↑](#footnote-ref-26)