What is CDC and how might it work in the UK?

Pensions Policy Institute

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Sponsors Forewords

Royal Mail is delighted to have sponsored such a thorough piece of research on CDC pension schemes and I commend PPI on their work. This will be a valuable resource for policymakers as Government proceeds with its consultation and legislation.

It has been clear throughout the debate on CDCs that there are a lot of lessons to learn from other countries' experience. As the report makes clear, the UK experience of CDCs won't be the same as in other countries, with our own legal, cultural and industrial context.

We and our union, CWU, agreed that CDC is the right option for our 141,000 employees. One of the key elements in developing our scheme has been to ensure decisions are made in the interests of all scheme members without bias to any particular group. Critical to this is transparency and communication – rightly, major themes in this project.

I thank the PPI for this report which will help ensure that the debate is well-informed as we progress.

Jon Millidge, Chief Risk and Governance Officer, Royal Mail

When the members of the DC Investment Forum first started thinking about commissioning a report on collective defined contribution (CDC) schemes, a few issues were at the top of our minds.

A report to clarify what exactly is meant by 'CDC' was much needed. Different countries have introduced different types of CDC, as the Pensions Policy Institute (PPI) explains in this report. We are delighted that the PPI have demystified some of the complexities surrounding CDC, as well as giving some background and history to the recent conversations about its introduction in the UK.

The report aligns with the DC Investment Forum's remit to contribute to the education of DC decision-makers and prompt further debate. As such, the paper also highlights the lack of a definitive blueprint for CDC, which will pose challenges for policymakers and employers alike when introducing it in the UK.

For that reason, we welcome the Department for Work and Pensions' CDC consultation, which presents a clearer legislative path for UK companies that are considering introducing CDC, most notably this report's co-sponsors, Royal Mail, which has laid out plans in this area.

Today's DC schemes require savers to assume all the investment risk for their money, and in many cases, offer contribution rates which will not be sufficient to provide people with comfortable retirements. We applaud Royal Mail's determination to advance the evolution of DC in this country.

CDC offers employers who are not content with the DC status quo but cannot afford to continue to fund defined benefit (DB) schemes, a potential middle ground. Further, CDC could create better retirement outcomes for members. Modelling suggests that a mature and stable CDC scheme could produce better replacement rates for members (see p11), as well as more predictable outcomes (see p14).

The CDC structure might also solve some investment challenges that are often encountered in DC. Without the pressure to provide daily pricing, schemes would be free to hold assets for longer, making investing in illiquid asset classes – often bemoaned as a problem in DC today – a reality.

That said, CDC will not be the right solution for everyone. In particular, the structure of CDC may not prove compatible with modern working lives. Today, people move jobs much more regularly than they did in the past and self-employment is on the rise. Unless multi-employer CDC schemes are established, it is difficult to envisage how CDC will be compatible with the needs of the modern workforce.

In recent decades, employers have closed their DB schemes and embraced DC, thanks in part to auto-enrolment; they may be unwilling to make further changes, costing them still more time and money. An already disengaged population of savers would have yet another type of scheme to contend with when assessing their pension arrangements.

Are we creating a new system for the sake of it? Large-scale DC has many of the same benefits as CDC. For instance, large-scale Australian superannuation funds have allocated significant proportions to illiquid, alternative asset classes. As DC schemes achieve scale in the UK and contribution rates increase, this could improve investment propositions and lead to better retirement outcomes.

CDC has raised important questions about intergenerational fairness, especially in the Netherlands. It is all too easy to create a system which carries unintended consequences, or to change the rules later in a way that benefits one cohort over another. In the UK, where intergenerational inequity is already a very real issue, government and scheme decision-makers will need to tread with caution.

As the PPI points out, what we can take from the international example is the importance of creating clear parameters from the outset. These parameters should be revisited regularly. For that reason, some continuity of governance would be beneficial. The fact that CDC does not guarantee a particular level of retirement income should also be communicated clearly to members. This is a huge challenge, given low levels of engagement.

We are grateful to the PPI for writing this report and for Royal Mail's involvement. We hope it will prove illuminating and prompt further debate about the role of CDC in the UK.

Louise Farrand, Executive Director, DCIF and
Vivek Roy, Vice Chair, DCIF

Executive Summary

Collective Defined Contribution (CDC) schemes could offer a middle ground between Defined Contribution (DC) and Defined Benefit (DB), providing members with greater certainty about the retirement outcomes they will achieve than would be possible in a DC scheme, while providing greater certainty about costs for employers than a DB scheme.

CDC schemes have two defining features:

- Collective: Risks are shared collectively between the scheme's members rather than individually.
- Defined Contribution: Contribution rates (employer and employee) are defined in advance, with no ongoing liability to pay more in the future to cover benefits.

CDC offers potential benefits, but there are also complexities around how these schemes could be designed to work most effectively

Potential benefits of CDC:

- Potential for higher retirement income (compared to individual DC).
- Potential for more predictable retirement income (compared to individual DC).
- For employers - greater certainty about costs and liabilities than DB, and potentially more efficient way to offer employees a generous benefit than individual DC.

Potential issues for CDC:

- Intergenerational fairness - ensuring that no group benefits disproportionately at the cost of another.
- Coherence with existing pensions landscape, especially pension freedoms.
- Governance - maintaining a certain level of continuity and long-term perspective, with targets being set and revisited regularly.
- Communication: the need to clearly communicate to members the targeted nature of benefits.

Modelling suggests that CDC schemes may be able to provide improved and less volatile retirement incomes compared to individual DC schemes

PPI modelling suggests that a mature and stable CDC scheme can produce a replacement rate (retirement income compared to working life income) between 27% and 30%, compared to a replacement rate[1] between 12% and 21% in an individual DC scheme (with a 10% contribution rate). These improved and less volatile outcomes may be attributed to:

- Economies of scale resulting in reduced investment and administrative costs – although the rise of master trusts as a result of automatic enrolment means that economies of scale are also accessible in traditional DC.
- Longer investment horizons, with no need to de-risk as members approach retirement.
- A more diversified investment strategy, with the ability to invest in more illiquid asset classes.
- Assets drawn down during retirement are replaced by contributions of younger cohorts so the core asset amount upon which returns can be earned does not reduce as it would in an individual DC scheme.
- Smoothing[2] of investment performance between generations.

CDC schemes are likely to be more able to deliver improved retirement incomes if they achieve economies of scale

CDC schemes work more effectively with large memberships, so that costs and risks can be shared across more people. This means that CDC schemes may function best if they are:

- Associated with a large single employer, as in the case of Royal Mail;
- Industry-wide plans, as observed in the Netherlands; or
- Master trust arrangements, which have increased in prevalence in individual DC as a result of automatic enrolment.

Increased scale and longer investment horizons could allow for greater asset diversification and, as a result, the potential for lower levels of volatility without necessarily foregoing higher returns

CDC schemes may be able to implement a more sophisticated investment strategy which includes diversification into alternative asset classes which are not highly correlated with conventional indices and so offer characteristics that cannot be found in traditional asset classes such as listed equities and bonds. These structured and less economically sensitive asset classes, such as infrastructure and commodities, can achieve a more predictable cash-flow than equities, while potentially providing higher returns than bonds.[3]

However, scale is not a feature which is inherent or unique to CDC schemes. It is possible that large individual DC schemes would also be able to access these benefits of scale. With the rise of master trusts since automatic enrolment, there are already large DC schemes accessing some of these benefits of scale.

Ensuring the fair distribution of risks between generations is a hurdle CDC scheme design will have to overcome

Cross-subsidisation between generations in order to smooth investment performance could lead to controversy and even a refusal by younger members to join the scheme (discontinuity risk) if not done fairly and transparently. To mitigate this risk, CDC schemes would need to be designed in such a way that they prevent any group from benefitting disproportionately at the cost of others. Although some cohorts of members will do better than others in practice, the scheme design should not include any features which encourage this.

1. The ratio of retirement income compared to working life income. See Glossary for more information.
2. See Glossary
3. PWC (2016)

Rules around transfers will also be important considerations within CDC scheme design

While in the Netherlands and Denmark CDC participation is mandatory, in the UK there would need to be clear rules about when and how members would be allowed to transfer out of the scheme. There would also need to be transparent rules for calculating transfer values. Rules on transfers would determine the extent to which CDC could be compatible with pension freedoms. Schemes would need to incorporate demand for transfers out into their approach to their investment strategy.

Communicating these rules to members will be a significant challenge of running a CDC scheme

Because CDC can involve cuts to both indexation and nominal benefits, members need to understand the fundamental nature of benefits (that they do not constitute a guarantee) and how they might change from the outset. Communicating a clear and transparent set of rules regarding scheme valuation and benefit adjustments will help in this objective. With CDC being perceived as falling somewhere on the spectrum between DB and DC (although in the UK CDC schemes would be considered entirely DC), it needs to be clearly communicated to members which elements of each their scheme has adopted.

Establishing strong and transparent governance structures will be key to the success of CDC schemes

Good governance can be the linchpin for driving better value for money and, where it is absent, this could lead to significantly poorer outcomes for members. Good governance can:

- Set the right investment strategy for membership (considering for example, appropriate levels of risk, return and volatility), monitor it, and then take timely and appropriate action to change it if necessary;
- Ensure transparency around areas such as charges, as well as smoothing and valuation policies;
- Ensure effective administration;
- Ensure member communications are set at the right level of understanding, frequency and form (in terms of content and channel – e.g. letters, online, telephone).

In November 2018, DWP published a consultation on Delivering Collective Defined Contribution Pension Schemes

The consultation identifies a number of key issues to be considered in relation to CDC, including:

- Uncertainty around benefit levels, ensuring appropriate communication to members
- Risk-sharing and intergenerational issues
- Use of capital buffers in CDC schemes
- Trustee duties and requirements
- Tax treatment of CDC schemes
- Automatic enrolment requirements
- Scheme valuation and revaluation of benefits
- Sustainability and management of CDC schemes in the long term
- Authorisation and regulatory regime
- Issues relating to scale, i.e. is there a minimum scale that a scheme would need to achieve in order to operate efficiently[4]

The consultation will be followed by both primary and secondary legislation to enable the operation of CDC schemes in the UK under an appropriately rigorous regulatory framework.

Demand for CDC among employers is currently low but may increase as a regulatory framework for CDC is established

There are varying opinions about the likely level of demand for CDC among employers. Nearly half (47%) of pension professionals think there is no demand among employers. However, around a quarter (23%) think there is demand for CDC in addition to current scheme types, while almost a third (30%) think there is appetite for CDC as a long-term replacement for other scheme designs.[5] There is clearly some demand for CDC among employers, as has been seen with Royal Mail (who directly employ more than 140,000 people), and it is possible that more employers will register interest as CDC legislation is established, so while CDC may

4. DWP (2018)
5. Pensions Management Institute (2018)

not be adopted by a large number of employers, particularly to begin with, it has the potential to impact thousands of savers.

CDC schemes may open the door for greater innovation and improved outcomes in retirement provision

In its 2018 CDC report, the Work and Pensions Select Committee stated that establishing CDC schemes opens the possibility of 'more diverse and ambitious provision of collective pensions across industries and professions, and to self-employed and gig economy workers.'[6] If CDC schemes are able to be designed in such a way that the potential issues are mitigated, they could potentially improve retirement incomes for some pension savers, including those who may currently be disengaged from saving.

While the Government intends for initial CDC legislation to be based around the Royal Mail and CWU's proposed CDC scheme, in future legislation may be updated to allow for multi-employer and potentially decumulation-only CDC schemes.

6. Work and Pensions Select Committee (2018)

Introduction

In 2018, Royal Mail and the Communication Workers Union (CWU) agreed to pursue a Collective Defined Contribution (CDC) scheme as a replacement for Royal Mail's Defined Benefit (DB) pension scheme which closed to future accruals in its previous form in March of that year. This move has attracted renewed attention to CDC in the UK, and has prompted a further Department for Work and Pensions (DWP) consultation, *Delivering Collective Defined Contribution Pension Schemes*.

Despite the fact that CDC has been discussed several times in recent years as a possibility for the UK, there is still confusion about exactly how it would work in practice. Collective schemes have been introduced in a variety of ways in different countries, and for that reason there is little clarity within the UK pensions industry about what CDC actually entails and what it might look like in practice in the UK context. This report seeks to demystify CDC and its implementation, drawing on existing literature and overseas experience.

Chapter one outlines the definition of CDC and the way the discussion has evolved so far in the UK, including a high-level overview of previous consultations on CDC.

Chapter two looks at the potential investment opportunities which may be offered by CDC, in particular the potential for improved and more predictable returns, achieved through economies of scale, diversified investment strategies and smoothing of returns across a broad member base.

Chapter three explores the potential hurdles in designing and implementing a CDC scheme, especially intergenerational issues, coherence with pension freedoms, communication and governance.

Chapter four looks at the legislative changes which may be required to enable CDC to be established, and the ways in which the UK pensions landscape differs from other countries which have already established CDC schemes.

Chapter five looks to the future, with an exploration of the potential demand for CDC among employers, the scope for multi-employer CDC schemes and the potential for CDC as a decumulation only product.

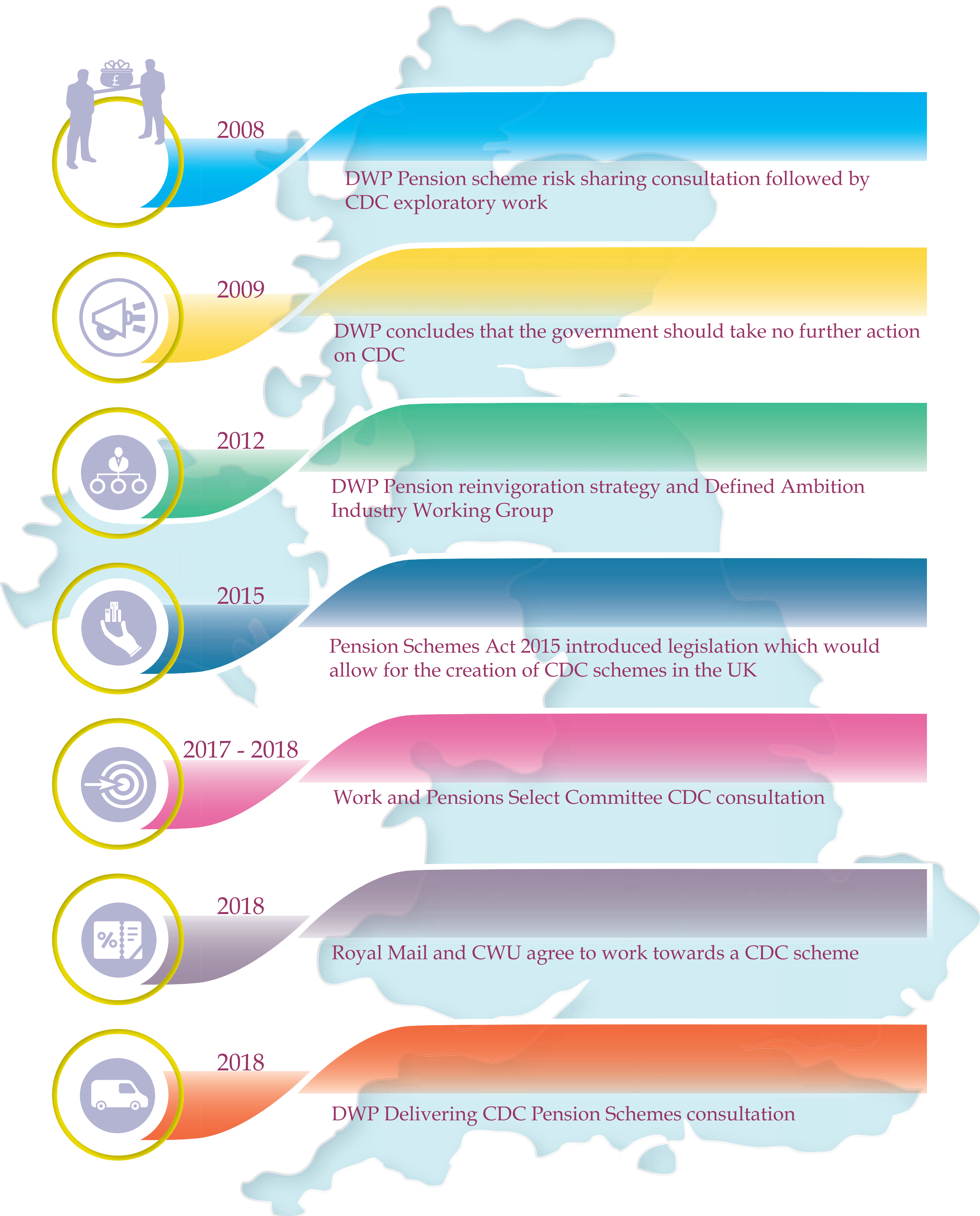
Chapter one: What is CDC and how has it developed in the UK?

Just as there can be variation of scheme design within Defined Benefit (DB) and Defined Contribution (DC) schemes, Collective Defined Contribution (CDC) schemes can take a number of forms. As such, there is some confusion around the concept of CDC and what it might look like in practice in the UK pensions landscape.

This chapter explores the questions:

- What is CDC?
- How has CDC evolved in the UK?

Key developments in the UK CDC timeline so far



What is CDC?

CDC schemes have two defining features:

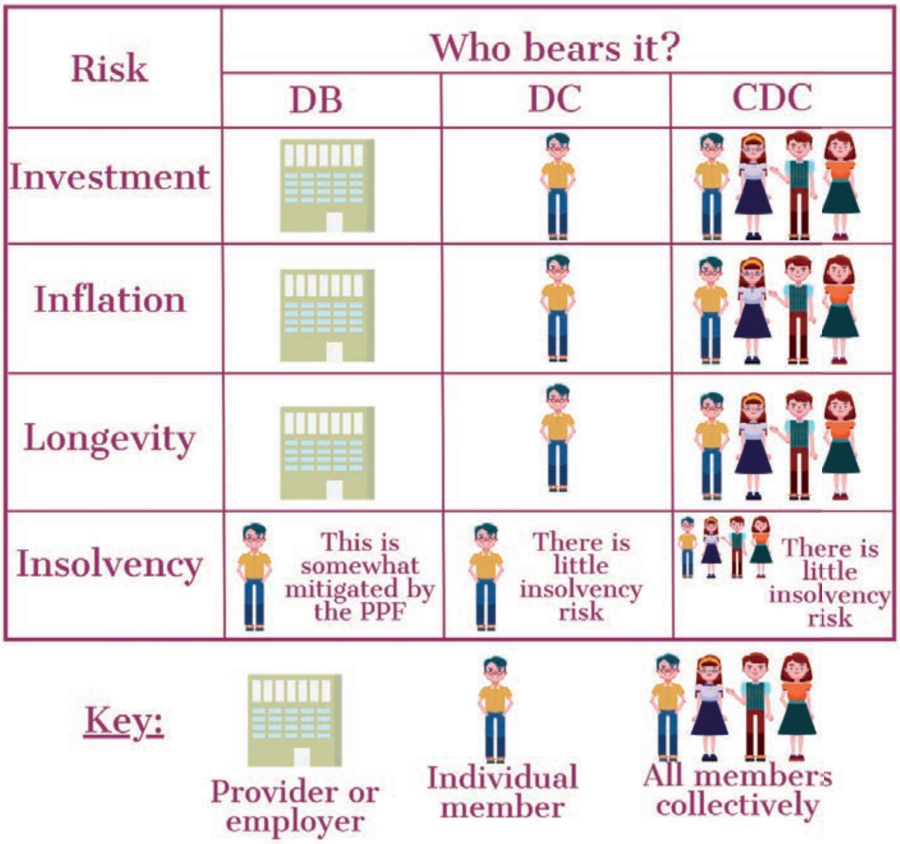
- Collective: Risks are shared collectively between the scheme's members rather than individually.
- Defined Contribution: Contribution rates (employer and employee) are defined in advance, with no ongoing liability to pay more in the future to cover benefits.

All forms of pensions involve risks. These include:

- Inflation risk: the risk that one's income may lose value relative to the price of goods and services.
- Investment risk: the risk that market fluctuations or poor investment strategies will deplete a fund's capital.
- Longevity risk: the risk that individuals could run out of money before their death.
- Insolvency risk: the risk that the pension provider becomes insolvent.

These risks are borne by different stakeholders, depending on the type of pension scheme (Box 1).

Box 1: The division of risk in DB, DC and CDC pension schemes



CDC schemes could provide a middle ground between DC and DB, providing members with greater certainty about the retirement outcomes they will achieve than would be possible in an individual DC scheme, while providing greater cost and liability certainty for employers than a DB scheme.

CDC schemes could provide a middle ground between DC and DB, providing members with greater certainty about the retirement outcomes they will achieve than would be possible in an individual DC scheme, while providing greater cost and liability certainty for employers than a DB scheme.

Because CDC involves fixed contributions, funding shortfalls as a result of lower than expected returns can be resolved by adjustments to benefits

A reduction in asset value will lead to a corresponding reduction in liabilities (the amount of income members will be paid), in the same way that poorer than anticipated investment returns will lead to a reduction in pot size under an individual DC scheme. However, because CDC members share risks collectively, this reduction in liabilities can be 'smoothed' both across members at different stages of accumulation and retirement, and across a number of years with the aim of ensuring that 'shocks' (lower than expected investment returns) are experienced less severely. In this way, CDC offers a potential solution to the 'retirement lottery' which means that a DC saver who retires in a good year for investment markets can be significantly better off in retirement than an otherwise identical DC saver who retires in a bad year.[7] Increases in longevity would also likely lead to benefit adjustments.

DWP definition of CDC valuation[8]

A member's retirement income would be calculated by:

- Estimating how much money is needed to provide the target level of benefits to each member.
- Adding up the values for each member to determine the total assets available to provide target benefits to all members.
- Making corresponding adjustments to both the current payment of benefits to each pensioner member and the prospective benefits payable to active and deferred members if the assets available are higher or lower than the estimated money required to meet target benefits.
- Adjusting the future target level of benefits so that the total value of benefits is equal to the total value of assets.

CDC scheme design can vary in two important ways:

- Length of recovery period: Whether funding shocks are absorbed by changes to pension benefits over a short or long period. For instance, pension rights may be immediately adjusted as shocks occur (no recovery period) or adjusted gradually over a number of years.
- Contributions: Whether contribution rates are entirely fixed (as in an individual DC scheme) or whether they may be adjusted, within a specified range (e.g. +/- 5%), during the recovery period.[9] However, because UK CDC schemes will be considered entirely DC (and not as some form of DB/DC hybrid), contribution rates will be fixed.

The length of recovery period may vary considerably depending on regulations. It may range from a relatively short period of 10 years, as in Dutch CDC plans, to as long as 75 to 100 years, as is the case for the Canadian Pension Plan (CPP). The longer the recovery period, the larger the absorption capacity of a scheme, resulting in relatively small benefit

7. TUC (2018)
8. DWP (2018)
9. Boelaars, Cox, Lever & Mehlkopf (2015)

adjustments, but a larger variation in funding ratio.[10] However, using a longer recovery period would potentially make the scheme more dependent on obtaining a steady stream of new entrants.

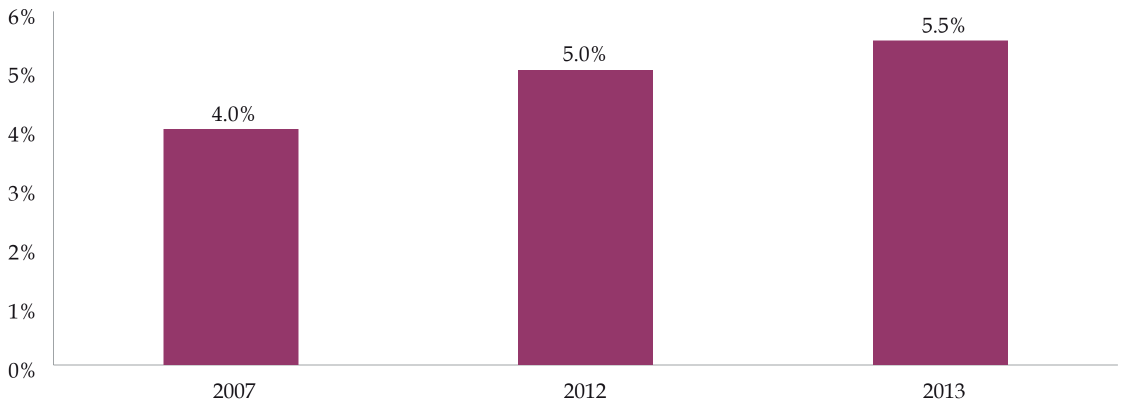
Dutch pension contribution increases following the Global financial crisis raised concerns about schemes' abilities to pay targeted benefits to pensioner members. At the onset of the financial crisis in 2007, contributions were slightly over 4% of GDP. In response to the crisis they increased to over 5% in 2012 and nearly 5.5% in 2013 (Chart 1). However, increased contribution rates were not sufficient to restore the financial health of the pension funds for two reasons:

- The decrease in interest rates also increased the cost of new accruals, which meant that only part of the increased contributions was going towards improving schemes' funding positions.
- Contributions are small in relation to the total amount of assets in the fund, for example in 2014 total contributions represented around 3% of total pension fund assets.[11]

Chart 1[12]

Contributions to Dutch CDC schemes have increased in response to financial shocks

Pension contributions as a proportion of GDP



In the UK, CDC schemes will be entirely DC, which means contribution adjustments will not be used to reduce the need for benefit adjustments. However, the observed contribution adjustments required in the Netherlands alongside benefit adjustments suggests there is a risk of even more substantial benefits adjustments being necessary without these contribution adjustments.

UK CDC schemes do not necessarily have to be designed in the same way as overseas CDC schemes, but they could learn from international experience. The proposed Royal Mail scheme is anticipated to differ from those observed overseas in most ways other than essential characteristics (i.e. collective and defined contribution). Any further CDC schemes that are subsequently set up in the UK are likely to use the Royal Mail scheme as a template rather than looking at international scheme design, particularly as UK CDC legislation will be structured around enabling the Royal Mail scheme in the first instance.

UK CDC schemes do not necessarily have to be designed in the same way as overseas CDC schemes, but they could learn from international experience.

10. Bonenkamp, Meijdam, Ponds & Westerhout (2017)
11. Beetsma, Constandse, Cordewener, Romp & Vos (2015)
12. Beetsma, Constandse, Cordewener, Romp & Vos (2015)

How has CDC evolved in the UK?

Discussion of the potential for CDC schemes in the UK began in 2008 with the DWP pension scheme risk sharing consultation followed by CDC exploratory work

The DWP consultation recognised the advantages of CDC schemes in removing risk and uncertainty from employers' balance sheets, while at the same time being expected to produce member outcomes better than those provided by an individual DC scheme. It also recognised the benefits of longevity risk pooling and investment risk smoothing. However, the consultation highlighted that CDC involved potential drawbacks, in particular:

- Less certainty for members than Defined Benefit (DB) schemes
- Employer contribution rates still likely to be considerable in order to target a reasonable level of benefits
- Communication with members needs to be extensive due to the targeted nature of benefit structure
- There may be insufficient demand from scheme sponsors
- There is disparity with the current regulatory framework[13]

The DWP consultation proposed a number of principles that might provide a framework for the regulation of CDC schemes:

- Prudence in the financial assumptions used to value liabilities, consistent with the risks/rewards of the chosen investment strategy
- Efficiency in risk-allocation processes, investment management and the administration of benefits and contributions
- Fair treatment in benefit design covering age, gender, access and early leavers
- Flexibility to combine collective targeted DB design with individual savings account design

13. DWP (2008)

- Accountability with clear allocation of powers over benefits and contributions appropriate for the chosen risk sharing formulae
- Governance covering the separation of pension assets from the sponsor, trusteeship and appropriate regulatory oversight
- Transparency of benefit design and how risks are shared
- Disclosure to members of benefits and how different risks will impact them[14]

As a result of the risk-sharing consultation, the Government decided to undertake further work on the detail of how CDC schemes might operate in the UK. However, in 2009, the DWP concluded that the Government should take no further action on CDC schemes. While the modelling used in the DWP assessment supported claims that CDC schemes could potentially provide better and less volatile outcomes, this was seen to be outweighed by doubt surrounding the ability of CDC schemes to manage risk successfully in a way which is fair to different generations of scheme members, as well as whether the stability of CDC schemes would be too dependent on a continuing stream of member contributions. The legal implications of operating CDC schemes under the EU IORP directive and the likely limited demand from employers were also cited as issues.[15]

The potential of CDC schemes was again raised in 2012 as part of DWP's pension reinvigoration strategy and Defined Ambition Industry Working Group

In 2012, as one of its five objectives for reinvigorating occupational pensions, DWP identified the need to enable industry innovation and development of new products, including those which will give people more certainty about their pensions and encourage more risk-sharing.[16]

It was suggested that Defined Ambition (DA) schemes, which could be modelled on CDC schemes observed in other countries, would have the potential to resolve several challenges, including:

- Structural challenges: DA schemes would allow for sharing of risks between stakeholders, where they would under the current system fall entirely on the employer sponsor in the case of DB schemes or the individual in the case of DC.
- Regulatory challenges: DA schemes could potentially reduce regulatory burden on employer sponsors, where some argue it is too strenuous within DB.
- Supply/demand: DA schemes could fulfil demand from employers and employees for something between DB and DC by providing greater certainty regarding both costs and retirement outcomes.
- Member-driven product design: If uncertainty about retirement outcomes within a DC scheme acts as a disincentive to save, DA schemes could potentially increase pension saving by increasing certainty.[17]

DWP identified six fundamental principles for the development of DA pensions:

1. Consumer focused: A DA scheme should address consumer needs, both of members and employers.
2. Sustainability: A DA scheme should be affordable to stakeholders (employers, pension providers and members) over the long-term.
3. Intergenerationally fair: A DA scheme should not be biased to pensioners, but also take on board needs of future pensioners.
4. Risk-sharing: A DA pension scheme should incorporate genuine risk-sharing between stakeholders.
5. Proportionate regulation: the regulatory structure needs to be permissive to enable innovation in risk-sharing, while protecting member interests.
6. Transparency: any DA solution would need to be transparent and have high governance standards.[18]

14. DWP (2008)
15. DWP (2009)
16. DWP (2012)
17. DWP (2013)
18. DWP (2012)

The Pension Schemes Act 2015 introduced legislation which would allow for the creation of CDC schemes in the UK

In 2015, the Government introduced legislation to facilitate the development of shared risk schemes and collective benefits. This legislation was introduced to Parliament in June 2014, following extensive joint-working with the industry, discussion with consumer representatives and the consultations already discussed in this chapter. In 2014 DWP commissioned work by the PPI modelling the outcomes of CDC schemes compared to individual DC schemes. This is discussed further in chapter two.

The Act defined three categories of pension scheme based on the type of promise, i.e. the certainty, offered to members during the accumulation phase about the level or amount of their pension benefits when they come to access them. This was intended to promote greater innovation in pension provision, including encouraging risk-sharing.[19]

While there was enthusiasm for the Act among employers who were interested in transitioning to a CDC scheme, it was considered a 'niche interest', and therefore not a policy which would impact a large proportion of savers, unlike automatic enrolment and freedom and choice which would have more immediate implications for millions of people. Because of this, the Work and Pensions Committee recommended that DWP ensured that resources were not diverted towards the development of risk-sharing schemes until automatic enrolment was fully rolled out and the pension freedoms properly established.[20]

In 2018 Royal Mail and CWU agreed to work together to pursue a CDC scheme

In March 2018 Royal Mail's Career Average DB pension scheme was closed to future accrual due to the rising cost of providing it. Royal Mail stated that if no changes were made, contributions to the plan would have had to grow from around £400 million a year to over £1.2 billion in order to remain solvent.

The employer (Royal Mail) contribution to the scheme was 17.1% of salaries when the scheme was closed, but if accrual had continued, contributions would have had to rise to over 50% of salary from April 2018.[21]

Having engaged in detailed discussions with the Communication Workers Union (CWU) about future pension arrangements, it was agreed that a CDC scheme could best meet objectives going forward by providing better outcomes for employees and employers. A transitional DB cash balance scheme (in which the defined benefit promised to members is not an income but a lump sum, from which the member can take up to 25% tax free and is then required to purchase an annuity with the remainder) has been put in place while Royal Mail and CWU work together with Government to introduce the necessary legislation to enable CDC.

Royal Mail and CWU identified the following benefits of moving to CDC:

- They can take a less conservative investment strategy in members' later years, allowing higher potential returns.
- Unlike individual DC schemes, CDC scheme members do not need to purchase an annuity if they wish to secure an income for life (although the level of income is not guaranteed and could be adjusted up or down depending on scheme funding position).
- CDC schemes benefit from an overall reduction in costs through economies of scale.
- CDC schemes can be simpler for members, who are not faced with making decisions about investments or what to do with their benefits at retirement.

CDC schemes therefore potentially provide a more efficient design for members but with no guarantee to be underwritten by the employer.

One of the greatest challenges going forward will be communicating clearly with members about the target benefit aspect of a CDC scheme to ensure that they have fully understood that benefits could be adjusted up or down.[22]

19. Work and Pensions Select Committee (2018)
20. Work and Pensions Committee (2015)
21. Royal Mail (2018)
22. Royal Mail (2018)

One of the greatest challenges going forward will be communicating clearly with members about the target benefit aspect of a CDC scheme to ensure that they have fully understood that benefits could be adjusted up or down.

The Royal Mail and CWU agreement presents an opportunity for innovation

The Work and Pensions Select Committee suggested that the Royal Mail and CWU agreement opens the door for CDC to move from an abstract idea to a practical reality in the UK.[23] The Government has indicated that it will seek to enable CDC for Royal Mail in a way which will allow other companies to follow suit.[24]

Royal Mail's description of their proposed scheme:

"Royal Mail's proposed scheme is different to CDC schemes in other countries in a number of critical ways – for example, we do not propose to use buffers. We have also learned from others' experiences, with strict, mechanistic rules around awarding increases (or in extreme years, reductions) across all members equally.

Royal Mail's Collective Pension Plan comprises a DB Lump Sum section, accruing at 3/80 of pensionable pay, plus increases and a CDC section, accruing at 1/80th pensionable pay plus increases. The contribution rates are 13.6% for the employer and 6% for the employee.

Average increases are expected to be CPI plus one per cent (but not guaranteed). In order to address concerns over the potential for intergenerational unfairness within CDC schemes, there are a number of key elements to the process, which has been designed to be very mechanistic:

- We will ensure there is peer review of our initial assessment and full public disclosure of subsequent years' assumptions and calculations.
- We will work on a best estimates basis (i.e. no buffers or prudential margin built up at the start).
- Each year's calculation will be to determine the "sustainable" level of increases funded by the assets.
- There will be a uniform rate of increase (or, in extreme years, reduction) across all members whether in accumulation, deferred or in payment.
- The funding level will be rebalanced to 100% at each annual valuation, so that the liabilities (i.e. members' benefits) match the assets."

In its 2018 report on CDC, the Work and Pensions Select Committee recommended that the Government consult on the technical regulations necessary to create a CDC system 'to a swift timetable'. The consultation should cover:

- Benefit adjustment and risk-sharing policies, including how to achieve intergenerational fairness within CDC schemes.
- The regime for transfers out of CDC, including whether they should be permitted once pensions are in payment and whether members transferring out should have to take financial advice.
- Whether CDC scheme trustees should be required to have a specific qualification.[25]

23. Work and Pensions Select Committee (2018)
24. Work and Pensions Select Committee (2018)
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In November 2018 DWP published a consultation on Delivering Collective Defined Contribution Pension Schemes

The consultation identifies a number of key issues to be considered in relation to CDC, including:

- Uncertainty around benefit levels, ensuring appropriate communication to members
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- Trustee duties and requirements
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- Automatic enrolment requirements
- Scheme valuation and revaluation of benefits
- Sustainability and management of CDC schemes in the long term
- Authorisation and regulatory regime
- Issues relating to scale, i.e. is there a minimum scale that a scheme would need to achieve in order to operate efficiently[26]

Pensions Minister, Guy Opperman, on CDC[27]

It is important to be clear that CDC schemes are not a catch all solution. Such schemes must be based on realistic targets and robust assumptions, and members will need to understand how their benefits work and that their monthly pension will fluctuate in value and can decrease. I recognise that this is a new concept for British pension savers, and one which will pose some communication challenges for schemes, employers and Government. But this challenge is surmountable.

The consultation will be followed by both primary and secondary legislation to enable the operation of CDC schemes in the UK under an appropriately rigorous regulatory framework.

26. DWP (2018)
27. DWP (2018)

Chapter two: What investment opportunities may be offered by CDC?

One of the key arguments made in favour of Collective Defined Contribution (CDC) schemes centres upon their potential to provide improved retirement outcomes for members.

This chapter explores the extent to which CDC may be able to provide better and less volatile returns, and the means by which these may be achieved.

The investment argument for CDC[28]

CDC may allow the trustees to adopt an investment allocation which is tilted towards a higher proportion of higher return assets over the member's lifetime than may be usual in an individual Defined Contribution scheme, although the emergence of the drawdown market may see trends in the individual space follow a similar path over time.

Modelling suggests that CDC schemes may be able to provide improved returns compared to individual DC schemes

In 2014 the PPI were commissioned by DWP to construct a model to attempt to replicate previous work by Aon Hewitt,[29] to help aid understanding of the potential benefits of CDC schemes. The model compared the outcomes from a variety of different CDC schemes against various DC alternatives featuring either the purchase of an annuity (level or CPI-linked), or the use of income drawdown after retirement.

28. DWP (2018)
29. Aon Hewitt (2013b)

How does the CDC scheme PPI modelled in 2014 differ from 2018 consultation proposals?

The PPI modelled CDC scheme uses 'funding gates' to determine when adjustments would need to be adjusted. Funding gates are essentially the funding ratio within which scheme funding is allowed to vary before adjustments to benefits must be made. These are unlikely to be relevant to CDC schemes in the UK under 2018 proposals as they are likely to adjust benefits annually rather than when scheme funding varies beyond a specified 'gate'. Similarly, buffers, which are capital reserves used to smooth outcomes during times of lower than expected investment returns are not expected to feature in UK CDC schemes.

The modelling suggested that:

- In the long-term, once the modelled scheme is mature and the scheme population is stable, CDC produces better outcomes (a replacement rate of between 27% and 30%) than DC (a replacement rate between 12% and 21% assuming a 10% contribution rate).[30] The PPI modelled CDC scheme also requires a relatively low contribution rate (compared to the cost of DB provision) to maintain these outcomes.
- In the short-term, with no initial pre-funding (which is likely to be the case for a new scheme), the benefits of the modelled CDC scheme may need to be revised down. The replacement rate outcomes from an unfunded scheme are still better than a CPI-linked annuity and similar to the outcomes of aggressive drawdown. However, the CDC scheme is less likely to run out of money during retirement so it can be considered to be more secure than an individual DC scheme.

With drawdown, there are no future contributions after retirement and the amount left to earn investment returns decreases. By contrast, in the modelled CDC scheme, returns can be earned on the whole asset pool aggregated across individuals.

There are several design factors identified which can contribute to the modelled CDC scheme achieving better outcomes than individual DC:

- With drawdown, there are no future contributions after retirement and the amount left to earn investment returns decreases. By contrast, in the modelled CDC scheme, returns can be earned on the whole asset pool aggregated across individuals.
- Post-retirement the modelled CDC schemes remain invested in 60% equities and continue to benefit from high returns, while in DC drawdown schemes, funds are de-risked to reduce the equity exposure.
- In the modelled CDC scheme, assets taken by the retired cohort are being replaced by new entrants. In drawdown, the core asset amount is reducing, thus the return on this amount is also reducing.
- The size of the modelled CDC schemes are large, with a mature population. This means there can be cross-subsidisation as the younger cohort fund the retired and continuous new entrants ensure the funding level is sufficient. While there are some concerns about the sustainability of this approach, CDC schemes can be designed in a way such that they are not so dependent on a steady stream of new entrants and contributions.

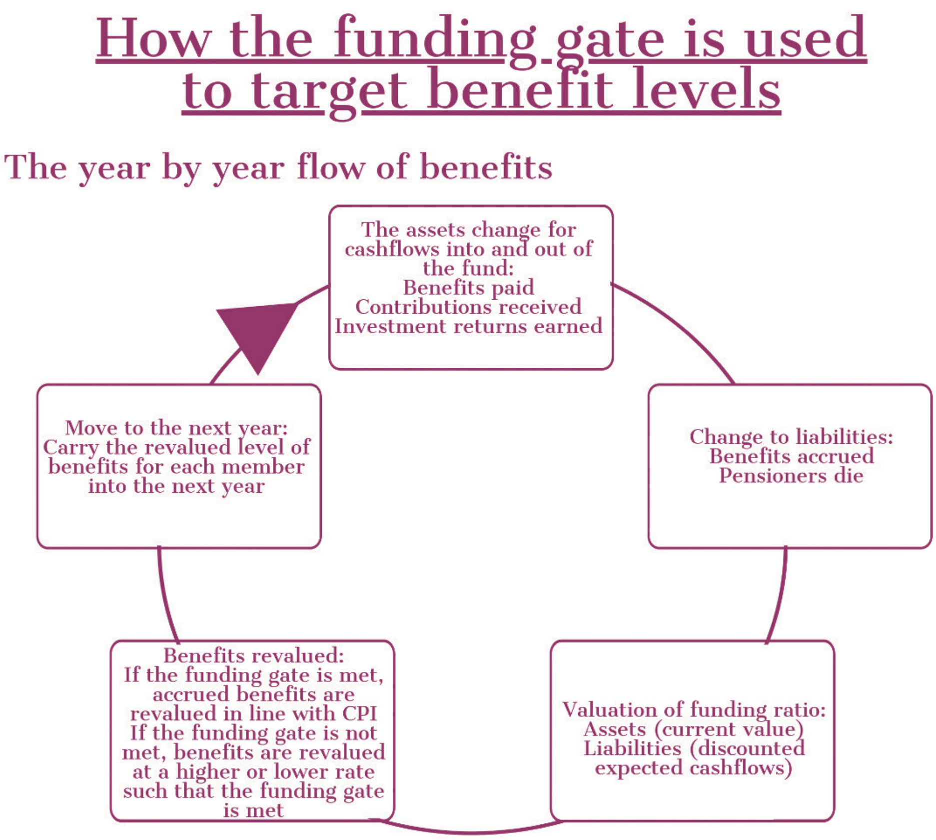
The precise design of CDC schemes is important in determining the variation in outcomes that different members might experience. For example, allowing funding levels to vary more widely before intervening through changes in contributions or benefits can narrow the distribution of outcomes. This is caused by the extra smoothing that can

30. Excludes State Pension income

occur as lower than expected returns can be spread out over a longer period as recovery plans do not need to be carried out so quickly. However, in schemes that use this approach rather than a revaluation of benefits on annual basis, this means the funding levels can move significantly below 100% and relies much more on subsidisation by the younger cohort and depends on future returns being positive enough to fill this gap.

> Allowing funding levels to vary more widely before intervening through changes in contributions or benefits can narrow the distribution of outcomes.

Box 2



Royal Mail's proposed scheme: funding levels will be rebalanced to 100% at each annual valuation, so that liabilities (i.e. member benefits) match the assets.

The modelling compares outcomes achieved under a CDC scheme to those achieved through an individual DC scheme. The fully funded assumption may be more valid where, for example, significant assets are transferred from existing DB/DC schemes into CDC, or where an initial capital injection is provided.

A hybrid collective scheme which allows for adjustments to both contributions and retirement income in order to resolve deficits may be able to deliver even more positive outcomes.[31] In the Netherlands, contribution rates can be revised but are fixed for at least five years.[32] However, because of fluctuations in

31. Cui, de Jong & Ponds (2009); Chen, Beetsma, Ponds & Romp (2016)
32. Kemna, Ponds & Steenbeek (2011)

the ratio of retired members to active members, conditional indexation is likely to be a more effective instrument than revised contribution rates for maintaining the solvency of CDC funds as pension liabilities are growing comparative to wages.[33] Furthermore, introducing too great a level of uncertainty around contribution rates (i.e. by having no minimum amount of time between contribution rate adjustments) may lead to a scheme being perceived as too close to DB and its associated sponsorship risks, making it a less attractive option for employers.

CDC schemes also have the potential to deliver more predictable outcomes, reducing uncertainty for members compared to an individual DC scheme

The retirement outcomes that individuals achieve as a member of a CDC scheme may also be less volatile than those achieved in an individual DC scheme. For example, with the same median replacement rate, a CDC scheme could deliver outcomes in a range that is around 26% smaller than outcomes achieved in an individual DC scheme.[34]

While this suggests that CDC scheme members would benefit from less upside potential,[35] it also suggests that members would be protected from the worst downside risk[36] and achieve more consistent results, compared to an individual DC scheme. Furthermore, as this example looks at CDC and DC schemes with the same median replacement rate, if CDC schemes are able to achieve higher median returns on average they are likely to produce consistently better retirement outcomes despite reduced upside potential. Increased certainty about retirement outcomes during the accumulation phase could help to reduce the risk of needing to work beyond expected retirement age in order to save more.[37]

CDC schemes are likely to be more able to deliver improved returns if they achieve economies of scale

CDC schemes work more effectively with large memberships, so that costs and risks can be shared across more people. This means that CDC schemes may function best if they are:

- Associated with a single large employer;
- Industry wide plans; or
- Master trust arrangements.

Among large single employers, establishment of a CDC scheme is likely to be more stable if the preceding DB scheme is closed to future accruals as well as new members. An employer seeking to offer CDC only to new employees may hinder the scheme in attaining an adequate scale from the outset.[38]

CDC schemes, particularly those with substantial scale and/or compulsory participation, may be able to achieve lower transaction and administrative costs. The various services that make up the pension product are provided on a wholesale basis rather than at retail level, which tends to reduce transaction costs for individual members, who, in general, lack sufficient expertise to do this for themselves in the most efficient way. Collective schemes can strengthen the buying power of individuals by exploiting benefits of scale and giving them access to complex financial products which may not be available to individual investors.[39] Comparing CDC schemes in the Netherlands, benefits paid are less on average for smaller schemes.[40]

Mandation reduces costs further, as operating costs are lowest for large compulsory industry-wide Dutch funds.[41] This is in part because they do not spend much, if anything, on marketing and distribution costs.[42]

33. Bovenberg & Nijman (2009)
34. Lever & Michielsen (2016)
35. See Glossary
36. See Glossary
37. Work and Pensions Select Committee (2018)
38. RSA (2012)
39. Bovenberg & Gradus (2015)
40. Bikker (2017)
41. Bikker & Dreu (2009)
42. Laros & Lundberg (2012)

While costs will continue to decline proportionately as scale increases, the effect of increased bargaining power might diminish if a scheme achieves very large scale as it may be harder to find sizeable counterparties. Schemes with large amounts of assets under management may also find it harder to respond quickly to changes in the market, particularly when markets are stressed, and therefore face market impact costs when buying and selling.[43]

Achieving very large scale is not necessarily an inherent feature of CDC schemes. Although very large schemes are observed internationally, where it is common for CDC schemes to be sector or industry-wide, it is possible for CDC to be established by an individual employer, as we are now seeing in the UK with Royal Mail. Royal Mail is one of the UK's largest employers, directly employing more than 140,000 people. However, smaller employers interested in CDC may need to look to shared arrangements in order to access sufficient scale.

Achieving very large scale is not necessarily an inherent feature of CDC schemes.

A CDC scheme without sufficient scale may be less able to make the most of the benefits of CDC, for instance longevity pooling is likely to be more effective in a larger scheme. The UK pension market is more fragmented than, for example, the market in the Netherlands or Denmark. This fragmentation may inhibit achievement of scale for UK CDC schemes, or on the other hand potentially encourage further consolidation, even to an industry-wide level in particularly unionised industries.

Scale is not exclusive to CDC schemes and large individual DC schemes may be able to achieve the same reduction in administrative costs

In practice, the administrative costs of an individual DC scheme with considerable scale could potentially be lower than those of a similarly sized CDC scheme, for example due to the costs related to calculating and implementing the risk-sharing on a regular basis.[44] Although there is no need to maintain individual accounts, which may reduce administrative costs, benefits will need to be revalued, most likely on an annual basis, which may drive up costs.

Increased scale could allow for greater asset diversification and, as a result, the potential for lower levels of volatility without necessarily foregoing higher returns

CDC schemes may have the ability to invest in a wider range of illiquid long-term investments, such as infrastructure, to obtain an illiquidity premium (expected higher returns as a result of investing in an asset which cannot be traded frequently).[45] Larger funds may be able to achieve improved returns by implementing a more sophisticated investment strategy and diversifying their portfolio in order to access alternative asset classes that are not highly correlated with conventional indices and so offer characteristics that cannot be found in traditional asset classes such as listed equities and bonds.

While a bond/equity split will in theory deliver growth with a secure base over time, this type of investment is vulnerable to 'shocks' such as market downturns. Bonds and equities are also being seen as less secure than they used to be because recent economic and political changes (such as the recession and quantitative easing) have affected the return from these assets.[46]

43. Bikker (2017)
44. Cardano (2018b)
45. Blake (2016)
46. UBS (2016)

Increased scale gives larger schemes greater capacity to invest in alternative asset classes, including capital-intensive assets such as infrastructure, which can provide greater diversification opportunities. Although investment in alternatives may not offer returns as high as those potentially available by investing in equities, these structured and less economically sensitive asset classes, such as infrastructure and commodities, can achieve a more predictable cash-flow than equities, while potentially providing higher returns than bonds.[47] Funds may also choose to invest in alternative asset classes because of the diversification opportunities provided by exposure to specific underlying return factors which are not necessarily available in liquid markets.[48]

Investment in alternatives, however, can potentially lead to an increase in investment charges because for some alternative asset classes, transaction costs can be high in comparison to transaction costs for listed bonds and equities. The illiquidity of some alternative investments is one reason for these higher transaction costs, but investments of this sort may be justified on the expectation that their higher cost will be rewarded by higher returns.[49]

Although smaller schemes can access these types of investments through pooled investment vehicles, larger schemes are more able to manage their investments internally which can enable them to invest in alternatives at a lower cost as they do not have to pay external management fees. Some larger schemes may still choose to invest in these alternative asset classes through external vehicles, but they could still achieve cost savings as a result of scale because they have a stronger negotiating position when setting external investment management fees. Larger schemes may also be able to achieve more positive outcomes through investment in alternative asset classes if they develop greater internal expertise and so may be better able to identify which particular alternative assets have characteristics that will best help them meet their long-term objectives.[50]

As with other benefits of scale, increased diversification and investment in alternative assets could be delivered within a large DC scheme, not just a CDC scheme. For example, in Australia, as the DC superannuation system has grown and consolidated, asset allocation strategies have changed considerably. Allocation to domestic equities almost halved from 38% in 2001 to 21% in 2016, and this reduction has not resulted in a corresponding increase in the allocation to international equities, which has stayed relatively constant (25% in 2001 vs. 24% in 2016). Allocation to alternatives increased fivefold over the same period, from 2% to 10%.[51] Larger funds generally have a higher allocation to alternative asset classes than smaller funds.[52] The largest superannuation fund, AustralianSuper, has an allocation of more than 20% to property and alternatives.[53]

Use of daily pricing has constrained individual DC schemes from greater investment in illiquids

The use of daily pricing in DC schemes may be discouraging increased allocation to more illiquid asset classes. There is no regulatory requirement for schemes to use daily pricing, as opposed to a less frequent valuation method, however schemes may be hesitant to be the first in the UK to move away from the status quo. In Australia, some funds use weekly pricing, and where there is investment to alternative asset classes which are valued less frequently than listed assets, superfunds use the previous value for the asset until an updated pricing is available.[54]

47. PWC (2016)
48. Markwat & Molenaar (2015)
49. Markwat & Molenaar (2015)
50. EDHECinfra (2017)
51. UBS (2016)
52. Inderst & Della Croce (2013)
53. Reddy (2016)
54. SuperGuide (2017)

Daily pricing is primarily used in order to allow members to view accurate and up to date information of their pension savings, as well as to allow members to transfer in and out of funds at any time. However, the benefits of diversification that schemes may be foregoing as a result have the potential to affect member outcomes in a positive way. If the regulator wishes to encourage increased diversification among DC schemes, more may need to be done to precipitate a shift away from daily pricing to enable this. While daily pricing continues to be treated as a necessity by UK DC schemes, a significant allocation to alternatives is likely to be difficult.

The Pensions Regulator on daily pricing:

Most members will not have a need for immediate liquidity of their investments, and it may not always be beneficial for dealing to be carried out daily. You should think about the level of liquidity that your members need, e.g. in relation to likely transfers from the fund, and in that context, consider the liquidity constraints on certain fund structures. You should seek to balance the liquidity of assets against the investment objectives. Holding too high a proportion of liquid assets may impact the level of investment return, and limit opportunity for diversifying your portfolio.[55]

CDC schemes which revalue benefits on an annual basis may find it easier to invest in illiquids as there will be less perceived need for daily pricing. However, whether CDC schemes would in practice invest in more illiquid assets than a large DC scheme remains to be seen. In its response to the Work and Pensions Select Committee's CDC consultation, National Employment Savings Trust (NEST) stated that 'in practice we have observed a certain degree of cautiousness in allocation strategy among pure CDC schemes'.[56]

CDC schemes which revalue benefits on an annual basis may find it easier to invest in illiquids as there will be less perceived need for daily pricing.

The Budget 2018 announced several pieces of work which may impact on the use of daily pricing and investment in illiquid assets more generally, including:

- The FCA will publish a discussion paper by the end of 2018 to explore how effectively the UK's existing regime enables investment in illiquid assets. This will accompany the ongoing work of HM Treasury's Asset Management Taskforce to explore the feasibility of a new long-term asset fund.
- The DWP will consult in 2019 on the function of the pensions charge cap to ensure that it does not unduly restrict the use of performance fees within default pension schemes, while maintaining member protections.
- The FCA will consult by the end of 2018 on updating the permitted links framework to allow unit-linked pension funds to invest in an appropriate range of illiquid assets.

The pooled nature of CDC schemes across the accumulation and decumulation phases may also be a source of improved returns

Because investment risk is pooled between active and retired members, CDC schemes facilitate a longer-term investment perspective than would be appropriate for individual scheme members, particularly those in retirement. This means that CDC schemes may be able to invest in riskier assets as there is no need to de-risk for individual members.

The improved returns that could potentially be delivered by CDC schemes may be largely attributed to implementing an asset allocation not used by individual DC schemes. This would

55. TPR (2016)
56. NEST (2017)

suggest that similarly improved returns could be achieved by a large individual DC scheme implementing the same investment strategy. However, when members of an individual DC scheme reach retirement they are no longer be able to achieve the same level of return on their savings as a member of a CDC scheme without exposing themselves to longevity risk. Since the introduction of pension freedoms in 2015, members of individual DC schemes can either choose to invest in return-seeking assets beyond retirement age through income drawdown or insure themselves against longevity risk by purchasing an annuity.[57] They could also choose to invest a portion of their savings while annuitising the rest. However, there does not currently exist a product by which they can both invest for return and insure against longevity risk on the entirety of their savings. In a CDC scheme, savings could achieve returns during decumulation while not increasing the risk of running out of money during retirement.[58] Members could also potentially achieve returns without longevity risk by purchasing a with-profits annuity, though this may not deliver the same level of outcome as a CDC scheme which benefits from stronger buying power and economies of scale.

As retirement vehicles that span across accumulation and decumulation, CDC schemes provide retirement outcomes which are less sensitive to members' retirement dates

CDC schemes circumnavigate the risks associated with purchasing retail annuities by paying members' retirement income directly from the fund. This means that members do not face the risk that interest rates and by extension annuity rates will be low at the time they retire. Although, in a post-pension freedoms world, individual DC scheme members may also be able to avoid this to some extent by entering into drawdown and waiting for rates to improve before purchasing an annuity.

However, CDC schemes may be perceived to shift risk and uncertainty from the accumulation phase (as in individual DC) to the decumulation phase, in which members who are already retired may see their purchasing power decline unexpectedly if payments are cut. Smoothing mechanisms can be used to protect retired members from experiencing particularly poor outcomes.

Past experiences of risk-sharing investments in the UK illustrate issues with making current payments on the expectation of future returns

Past experience of with-profits investing in the UK may offer lessons for CDC. A critical difficulty of investing collectively is that it involves complex calculations to determine pay outs from the shared assets in the present based on an expectation of something that will happen in the future. These expectations are uncertain, and if they turn out to be overly conservative then people in the future may receive more than people in the present, whereas if they are not conservative enough, retirees will have received too much and there will not be enough to offer similar levels of payment for retirees in the future. This highlights the importance of ensuring that the future risks that are being shared between individuals are able to be priced with some level of accuracy.[59] However, this is difficult in practice and can give rise to intergenerational issues, which will be discussed further in the next chapter.

57. Individuals are also able to withdraw their pension savings entirely in one go or gradually in several lump sums using Uncrystallised Fund Pension Lump Sums (UFPLS)

58. Aon Hewitt (2015)

59. Smart (2012)

Chapter three: What hurdles is a CDC scheme likely to face?

While CDC may potentially offer improved member outcomes, there are also hurdles which will need to be overcome or mitigated in order for a CDC scheme to be designed and operated successfully.

This chapter explores the potential hurdles related designing and running a CDC scheme. These include:

- Issues of intergenerational fairness
- Transfers
- Communication
- Governance

While this chapter uses international examples of CDC as a means of identifying some of the hurdles which may face UK CDC schemes, the extent to which these will be relevant depends on the specific scheme design which will be adopted. There is no reason why UK CDC schemes should follow scheme designs seen overseas, so long as they maintain the essential features of a CDC scheme (collective risk-sharing and defined contributions). It is anticipated that the Royal Mail scheme will differ considerably from such schemes and so may avoid or mitigate some of these challenges.

Different aspects of CDC will appeal more to different stakeholders

Employers are likely to be attracted to CDC for its perceived affordability and certainty of cost compared to DB provision, although it is also more likely to appeal to employers who value the provision of positive retirement outcomes for their employees, whether directly or as part of offering an appealing benefits package for recruitment purposes. Improved and more predictable outcomes are likely to be the biggest appeal for members. Concerns around the design and implementation of CDC schemes are also likely to vary between stakeholders. For employers, the biggest concern is likely to be the potential for future legislative changes which could convert CDC benefits into DB promises, whereas for members principles of fairness and risk-sharing are likely to be the highest priority (although these will also be important for employers).

The main attractions and concerns with the CDC design, and the proportion of pension professionals who identified these top four factors[60]

Attractions		Concerns	
Employers get fixed rates: it's a DC plan not a DB plan	75%	Changes by a future government that could make it a DB plan	76%
Greater predictability of outcomes for members	71%	Presenting "soft" member guarantees (target benefits not promised benefits)	73%
Members don't need to be involved with investment decisions	46%	The possibility of cutting benefits	38%
Greater investment efficiency and economies of scale (e.g. no need to purchase annuities on retirement)	44%	Cross subsidies between generations	35%

A successful CDC scheme may need to consider the following principles for effective risk-sharing in its design:

- Avoid winner/loser outcomes: to mitigate discontinuity risk, CDC scheme design should prevent any one group of participants from benefitting at the cost of another group.
- Only diversifiable risks should be shared: sharing diversifiable risks among scheme members can improve outcomes by reducing individual risk; for instance, pooling longevity risk reduces issues around uncertainty about individual life expectancy as average life expectancy of a cohort can be more accurately predicted.
- Individuals must bear some risks: pooling risks that cannot be diversified or hedged in the market inevitably leads to transfers between groups in the collective pool and could lead to issues of distrust in pensions.[61]

Ensuring the fair distribution of risks between generations is a hurdle CDC scheme design will have to overcome

'Smoothing' essentially transfers subsidies from the generations who experience financial markets which generate better returns.[62] CDC schemes 'smooth' returns in order to absorb financial shocks so that no generation is 'unlucky' in the financial markets. This smoothing is often proposed as a benefit of CDC schemes, as it protects members from experiencing particularly poor outcomes, however it can give rise to issues of intergenerational unfairness.

Intergenerational fairness involves the fair distribution of risk and cost across different generations, ensuring that no generation benefits unfairly at the expense of another.

There is likely to be a trade-off between low risk-sharing which would be beneficial for current workers, and high risk-sharing which would be more beneficial for current retirees and cohorts close to retirement.[63] Among Dutch DB and CDC employer sponsors, 84% believe that the current pension system is beneficial for older employees, compared to 22% who believe it is beneficial for young employees.[64] However, this could create a false division between generations and ignores the argument that CDC could potentially be better for everyone. While there are still high levels of support for pensions based on collectivism and risk-sharing in the Netherlands, given ongoing disputes around issues of intergenerational fairness, it has been suggested that age-differentiation, for example through generational accounts, may be considered as a possible next step.[65]

60. 241 pension professionals – 2013 Aon Hewitt Global Pension Risk Survey: presented in Aon Hewitt (2013b)
61. Galen, Kocken & Lundbergh (2014)
62. Laros & Lundbergh (2012)
63. Bams, Schotman & Tyagi (2016)
64. Willis Towers Watson (2017)
65. Broeders & Pond (2012)

The collective buffer mechanism used in many CDC schemes could lead to cross-subsidisation between generations. If good investment returns on previous generations have built up a large buffer, benefits accrued could exceed contributions. However, if bad historical returns have depleted collective buffers, future generations could pay implicit taxes on their pension contributions in order to replenish buffers. This could lead to discontinuity risk: that future generations may be less willing to participate in CDC schemes if they perceive that they have to pay an implicit tax on their contributions in order to replenish buffers.[66]

DWP on buffers[67]

Buffers, or 'margins for prudence', reduce the chance of the scheme having to cut pensioner incomes in the future, but can impede the payment of increases once economic conditions improve if the capital buffer needs to be returned to a required level.

In its extreme, discontinuity risk could lead to the closure of a CDC scheme if it fails to attract new members. In this event, risks that were intended to be shared between generations would fall entirely upon the last generation within the scheme, unless their pension rights are transferred into another scheme.[68] DWP modelling suggests that in the case of a scheme with no new entrants, just under 40% of all scenarios result in a scheme failing at some stage over a 100 year projection period. Although it should be noted that this modelling uses an extreme scenario in which there are no new entrants to the scheme from year two onwards.[69]

If a CDC scheme is designed to use buffers to smooth retirement outcomes during periods of lower return and there is no initial reserve upon establishment of the scheme (for example provided by the sponsoring employer), there could also be issues of fairness regarding the scheme's first cohort of members. These members' savings would have to be used to build up the buffer section of the fund. This means they would receive a lower level of retirement income than is justified by the fund's investment performance.[70] However, members may see this as an acceptable cost for the protection against risk provided by entering into the scheme.

If the ownership of collective buffers is not transparent and clearly understood by members, this could cause further problems. For example, in the Netherlands it is unclear what happens if the buffers rise above the level that is necessary to provide fully indexed pension benefits.[71]

Specific design features or regulation of CDC schemes in the UK in relation to buffers could mitigate this risk. For example, regulation that limits the possibilities for risk-sharing between non-overlapping generations.[72] Furthermore, reserve buffers are not inherent to CDC scheme design and a scheme could be run without this mechanism. While a CDC scheme with buffers may offer more predictability of outcome for members, it may be more expensive to operate than one without and carries a higher risk of being misunderstood by members as being guaranteed. A scheme without buffers is likely to face lesser issues around intergenerational fairness and transparency.[73]

While a CDC scheme with buffers may offer more predictability of outcome for members, it may be more expensive to operate than one without and carries a higher risk of being misunderstood by members as being guaranteed.

66. Bovenberg, Koijen, Nijman & Teulings (2007); Westerhout (2011)
67. DWP (2018)
68. Alserda, Steenbeek & Lecq (2017)
69. DWP (2009)
70. Independent Review of Retirement Income (2016)
71. Bovenberg, Nijman & Maurer (2012)
72. Boelaars, Cox, Lever & Mehlkopf (2015)
73. DWP (2018)

Royal Mail's proposed scheme: will work on best estimates basis (i.e. not buffers or prudential margin built up at the start).

Intergenerational fairness is not only an issue which must be considered in CDC, but also in DB and DC

It is worth noting that other types of pension scheme do not necessarily avoid issues of cross-subsidy between members and generations. For example, in DB current employees' remuneration may be impacted if the employer needs to make substantial deficit recovery contributions, even if those current employers are not part of the DB scheme if it has been closed. Even individual DC is not entirely uncollective, as percentage fund charges may mean those with higher levels of savings are subsidising those with lower levels of savings. In terms of intergenerational subsidisation in DC, members of recently established master trusts are currently paying of loans which future generations of savers will benefit from. Intergenerational issues are not the sole concern of CDC, but because of distribution of risk across generations and uncertainty about benefits, it may be a risk that is more prominent in CDC members' minds.

Intergenerational issues are not the sole concern of CDC, but because of distribution of risk across generations and uncertainty about benefits, it may be a risk that is more prominent in CDC members' minds.

Royal Mail's proposed scheme: there will be a uniform rate of increase (or, in extreme years, reduction) across all members whether in accumulation, deferred or in payment.

Rules around transfers will also be important considerations within CDC scheme design

Issues of intergenerational fairness are related to issues around transfers and commutation, i.e. if and when members would be permitted to transfer out of the scheme. In the Netherlands, Canada and Denmark, participation in CDC schemes is mandatory, and it has been suggested that mandation may be necessary to reap the benefits of intergenerational risk sharing.[74] However, because risk-sharing between cohorts could mean that future cohorts are being exposed to investment risks before they have even entered the labour market, mandatory participation may be problematic going forward.[75] This could be mitigated by setting a maximum legal length of recovery period, which would set a limit on the amount of intergenerational risk-sharing.[76] For example, in a scheme with a ten year recovery period, which is in line with Dutch solvency rules, future members bear around 4% of the scheme's risk, while the remaining 96% is borne by the generations that currently participate in the scheme.[77]

While there is no mandation in the UK, automatic enrolment acts as a strong nudge towards saving. Although if members were being enrolled into a CDC scheme currently cutting benefits, they may be more likely to opt out.

Members of younger cohorts working in the private sector are unlikely to have access to the generous benefits of a DB scheme. If CDC schemes have the potential to provide younger cohorts with better retirement outcomes than they would be able to achieve using an (individual) DC scheme, these trade-offs may be considered acceptable, and as previously noted issues of intergenerational fairness are not unique to CDC.[78]

74. For example, Beetsma, Romp & Vos (2012)
75. Bao, Ponds & Schumacher (2016)
76. Boelaars (2016)
77. Boelaars, Cox, Lever & Mehlkopf (2015)
78. Cui, de Jong & Ponds (2009)

There may also be issues of socio-economic inequality involved in CDC, because lower earners die earlier on average than higher earners. This means that lower earners may in effect subsidise the pensions of higher earners in their CDC scheme who are likely to receive pension payments for a longer period. For similar percentages of salary, the assets in the scheme may end up being used more than proportionately to pay pensions to higher income members. However, this is true of any longevity pooling mechanism, be it DB or an annuity purchased through an insurance provider (although impaired life annuities can mitigate this).

Increasing dependency ratios within CDC schemes and the labour market in general could impact the sustainability of intergenerational risk-sharing, with younger workers covering a larger proportion of the risk per person than older generations and the cost of provision potentially increasing over time.[79] This could be somewhat mitigated by people working longer and raising the age at which people are able to claim their pension, although this is controversial in practice, as has been seen with the State Pension age increases.

Increasing dependency ratios within CDC schemes and the labour market in general could impact the sustainability of intergenerational risk-sharing.

Mandation in CDC schemes can also be problematic for existing members, for example if the scheme is underperforming and benefits cut, members may be dissatisfied with being forced to remain in a scheme which they did not explicitly choose to join in the first place. This has been observed in the Netherlands, where levels of trust in CDC pension schemes have decreased and social support for intergenerational risk-sharing is not as strong as it used to be, following cuts to benefits.[80]

Freedom to transfer out of CDC schemes may give rise to selection risks. For example, people who are likely to have a shorter life expectancy may be less likely to participate. It has been suggested that automatic enrolment may address this issue if opt-out rates remain low. However, if a CDC scheme is perceived to be unfair or underperforming, this is unlikely to be the case.

In the UK there is a statutory prohibition on compulsory membership of a pension scheme.[81] In the Netherlands, it is permissible for an employer participating in a pension fund to require all employees be active members of that fund. Similarly, industry-wide CDC schemes in the Netherlands are mandatory.[82]

The scheme would also need to have clear rules for calculating transfer values. Transfer values could be calculated either by the member's own contributions to the scheme with interest added or the value of the member's accrued benefit rights multiplied by the funding ratio of the scheme at that time. Some CDC schemes are designed so that the higher of these two values is offered to the member. For example, 'termination values' in CDC schemes in Canada are calculated in this way.[83]

CDC schemes may also need to have clear rules in place for potential transfers in and the way in which DC pot sizes would be actuarially converted into benefit entitlement in these circumstances.

Intergenerational issues may be dealt with by maintaining generational accounts but this would reduce the scheme's ability to smooth returns

The alternative to intergenerational risk-sharing in CDC would be a system of generational accounts. This would involve all contributions paid by one generation being paid into that generation's account, its investments separately administered (so that each generation's property rights on the return to investments would be clearly defined), and all retirement income for that generation paid from that account.[84] This has also been suggested as

79. Schroders (2013)
80. Kurtbegu (2018)
81. Pension Schemes Act 1993
82. The Act on Compulsory Membership of a Sectoral Pension Fund 2000 (also known as Bpf 2000)
83. Steele, Mazerolle & Bartlett (2014)
84. Teulings & De Vries (2006)

an alternative in the UK in responses to the Work and Pensions Select Committee's CDC consultation.[85] However, this would inhibit the extent to which retirement outcomes could be smoothed in the face of unpredictable economic events. It is also unclear how individuals could be allocated to generational accounts without segregating based on arbitrary age divides.

Rules on transfers would determine the extent to which CDC could be compatible with pension freedoms

Without flexibility to transfer out of the scheme, members would be unable to make use of the pension freedoms introduced in 2015. However, if people are given flexibility to transfer out this would add complexity and could result in scheme funding issues. In its response to the Work and Pensions Select Committee's consultation on CDC, the Association of British Insurers (ABI) suggested that CDC may be viewed as a 'backward step' by 'savers who value the flexibility of DC and are coming round to the idea of owning their own pension'.[86] The flexibility introduced by the pension freedoms is valuable in as much as it allows people to access their savings in a way that better suits their varied retirement income needs. CDC could not offer this flexibility within the scheme, meaning members would have to transfer out to access it, although this is also how pension freedoms work alongside DB.

Schemes would have to incorporate demand for transfers out into their approach to their funding and investment strategy. For example, they would need to hold sufficient liquid assets to accommodate possible transfers out. Schemes could possibly offer set times at which members could transfer out of the scheme, although research suggests that this may actually drive up opt out rates. However, with the right scheme design and investment approach CDC schemes should be able to run in such as a way that they are compatible with pension freedoms, just as DB schemes currently do.

In its 2018 consultation, Delivering Collective Defined Contribution Pension Schemes, DWP highlighted the argument offered by advocates of CDC that it can provide a savings and income in retirement option within one package that is potentially attractive to those people uncomfortable making complex financial decisions at the point of retirement.[87]

Communicating the targeted nature of benefits to members will be a vital part of running any CDC scheme

Because CDC schemes are perceived as falling somewhere on the spectrum between DB and DC (although in the UK they will be entirely DC legally speaking), there may be confusion among members about which elements of each their scheme has adopted. CDC schemes provide members with more certainty about the level of retirement income they may achieve than in an individual DC scheme. However, communications must ensure that members understand that there is still not as much certainty of retirement income as in a DB scheme.

DWP on the CDC communication challenge[88]

The uncertainty around benefit levels in CDC schemes makes the quality of communication with members before entry, during accumulation and when drawing benefits a significant factor in the successful operation of such schemes. Members will need to be aware of and accept the risk involved, so clarity around when benefits may be subject to reductions, and how this will be managed should be a key part of any communications strategy in such schemes.

Schemes will need to establish trust, transparency and intergenerational fairness between different groups of workers in a landscape where workplace pension participation is not compulsory, unlike the countries in which collective plans have already been introduced.

The experience of the Netherlands highlights the need for contractual agreements and members' expectations to be fully aligned from the outset in order to avoid negative reactions. There also needs to be explicit communications about the potential risks to members' future indexation

85. Nest (2017)
86. ABI (2018)
87. DWP (2018)
88. DWP (2018)

and benefits and the measures that will be taken by trustees (or by other decision makers) to address any changes in the funding position.

The need to reduce or stop indexation and cut nominal benefits will always come as a disappointment to scheme members. However, it appears in the Dutch model that there was a failure from the outset to align members' expectations with the possibility that conditional indexation may not be paid out in all future years and that, under certain circumstances, benefits may even be cut. It therefore came as a shock in 2012 when nominal cuts were made for the first time. This is now being partly addressed in the revised Financial Assessment Framework, in particular through the feasibility tests and revised member communications that will be more explicit about downside risks.

Members need to have a prior understanding that benefits could be adjusted up or down. This should be done through well-communicated pre-set rules, such that all members know beforehand what will happen in each scenario and how it will affect their contributions and benefits.[89] As such there need to be pre-agreed rules on how these calculations will work and this needs to be clearly communicated to scheme members. "Complete" contracts in which trustees' responsibilities and actions when in a position of under and over funding are agreed and communicated in advance (as in the New Brunswick Shared Risk Plans in Canada – Box 3) – can help to manage expectations but will inevitably still involve some degree of judgement or discretion, for example around the selection of actuarial assumptions or the extent to which different adjustments are used.

Box 3

An example of a Canadian CDC scheme design: The New Brunswick Hospitals' plan funding and benefit adjustment[90]

If the scheme's funding ratio falls below 100% for two years in a row or the plan fails to meet the risk management goals of its Shared Risk plan, the scheme can:

- Increase contributions by up to 1% of earnings, split evenly between employee and employer.
- Change the rule for calculating early retirement benefits, to a full actuarial reduction.
- Reduce 'base benefit' accrual rates for future service up to 5%.
- Reduce base benefits for all members, including benefits based on past and future service, in equal proportion until the plan meets the risk management goals.

If the funded ratio rises above 105%, a proportion of the surplus can be used as follows, if the plan can still meet the risk management goals:

- Reverse previous deficit recovery measures in the following order:
    1. Reverse any increase in contributions.
    2. Reverse any reduction in base benefits.
    3. Reverse any reduction in early retirement benefits.
- Index pensions and base benefit accruals up to full CPI.
- Increase individual benefits, as needed, so that all retirees receive a benefit based on final five-year average salary, indexed to CPI.
- Provide lump sum payments to offset past shortfalls relative to a benefit based on final five-year average salary, indexed to CPI.

In its 2018 consultation, DWP suggests that adjustment of benefits should be based on a mechanism set out in scheme rules, rather than trustee discretion, which should help to ensure that benefit adjustments operate in an impartial way. It is envisaged that CDC schemes will be subject to the same disclosure requirements as existing schemes in regards to providing basic information to members. CDC schemes will be required to publish key information on a publicly accessible website so that it is available to all.[91]

89. Kortleve (2013)
90. Munnell & Sass (2013)
91. DWP (2018)

In its 2018 consultation, DWP suggests that adjustment of benefits should be based on a mechanism set out in scheme rules, rather than trustee discretion, which should help to ensure that benefit adjustments operate in an impartial way.

Setting reasonable target benefits can contribute to members' trust and satisfaction levels

Research has shown that people experience twice as much pain from a loss as pleasure from a gain of equal size, which may mean that pension funds would seek to avoid delivering outcomes below people's expectations.[92] In terms of scheme design, in practice, this may entail offering members a minimum level of pension income that, in practice will likely be exceeded.[93]

In Denmark's ATP scheme contributions which are approximately 8% of salary (with one third paid by the employee and two-thirds paid by the employer) are divided into two parts:

- 80% is designated a 'guaranteed contribution' which is the basis for the guaranteed nominal pension the member will receive.
- 20% is used as a 'bonus contribution' which goes into a collective reserve used to provide future indexation of both pensions in payment and accrued pension entitlements on a conditional basis if the funding ratio exceeds 120%.

DWP on target benefits[94]

Target benefits should be realistic. Given this, we favour placing a requirement on schemes looking to provide CDC benefits to undertake a peer review of their underlying actuarial assumptions prior to seeking authorisation by The Pensions Regulator. The peer review would be undertaken by actuaries independent of the scheme actuary. This will allow these assumptions and the scheme's design to undergo wider scrutiny before the formal scheme authorisation process commences.

One positive aspect of CDC communications is that CDC arrangements offer a natural framework for expressing members' benefits in terms of retirement income rather than pot size, which can better help members to understand their saving decisions and projected retirement outcomes.[95]

While CDC member communications are a challenge which must be overcome, the same can be said of individual DC communications. Individual DC communications are particularly important as members will be required to make complex decisions about how to access their savings in retirement, whereas a CDC member would not have to make these sorts of decisions unless they chose to transfer out of the scheme.

Establishing trust will be an important component of CDC, although this is a challenge for any type of pension scheme

If the members of the scheme do not feel they can trust those running the scheme, any feeling of solidarity is likely to be overcome by the feeling that they are being let down by someone who has done a bad job. In order for collective schemes to be successful, they would need to continually demonstrate that the governance of the scheme is beyond reproach, so that the necessary elements of risk sharing between individuals can be understood by members, rather than viewed as a management failure.[96]

92. Tversky & Kahneman (1992)
93. Galen, Kocken & Lundbergh (2014)
94. DWP (2018)
95. Aon Hewitt (2015)
96. Smart (2012)

Overseas, for example in the Netherlands, CDC schemes are run by not-for-profit organisations that are largely trusted by all generations of scheme members. CDC members may be less likely to trust a scheme run by a for-profit organisation, particularly if it were awarding dividend payments to its shareholders at the same time as cutting indexation of pensions in payment. This trust issue could be mitigated by establishing CDC schemes as stand-alone legal entities run by a board of trustees and separate to the sponsoring employer, as is the case in the Netherlands.[97]

DWP on CDC trustees[98]

There has been some discussion of whether such schemes warrant more stringent requirements in respect of trustee knowledge and understanding (TKU), to ensure that their trustees are fit and proper to oversee the challenges pooled schemes might present. However, we take the view that the current TKU requirements in respect of trustees of occupational pension schemes, alongside general trust law, should be sufficient. Current TKU requirements, in effect, are expressed as being sufficient for the particular scheme of which the person is a trustee, so these should be flexible enough to incorporate CDC requirements. However, given the potential significance of the trustee role in relation to CDC schemes, we are minded that as part of the authorisation process. The Pensions Regulator will consider the collective expertise and experience of persons acting together in the capacity of trustees in such schemes.

General trust in the pensions industry is relatively low for all types of pension scheme, so this is not an issue which is unique to CDC. However, given the uncertain nature of benefits and the potential for members to misunderstand their benefits as being guaranteed, trust will be especially important in CDC.

Royal Mail's proposed scheme: Ensure there is peer review of initial assessment and full public disclosure of subsequent years' assumptions and calculations.

Establishing strong and transparent governance structures will be key to the success of CDC schemes

The governance of CDC schemes would likely be a key component of differentiating them from historical 'with-profit' policies and as such enhancing member trust.[99] CDC schemes would need to have a certain level of continuity and long-term perspective in relation to governance, with targets being set and revisited regularly, as well as being communicated to members on a regular basis.

Good governance can be the linchpin for driving better value for money and, where it is absent, this could lead to significantly poorer outcomes for members.

Good governance can:

- Set the right investment strategy for membership (considering for example, appropriate levels of risk, return and volatility), monitor it, and then take timely and appropriate action to change it if necessary;
- Ensure transparency around areas such as charges and, in the case of CDC, smoothing and valuation policies;
- Ensure effective administration;
- Ensure member communications are set at the right level of understanding, frequency and form, and that they increase member engagement and drive good member decisions;
- Challenge, negotiate and possibly lower charges.

Where the absence of effective governance leads to the mismanagement of investments or the absence of internal controls, this can lead to significantly lower value of pension assets and less positive outcomes for members.

97. Independent Review of Retirement Income (2016)
98. DWP (2018)
99. RSA (2018)

Small DC schemes in the UK have been found to underperform larger schemes in terms of governance and operational standards

Among trust-based schemes, all master trusts and large schemes are aware of The Pensions Regulator's DC principles, with awareness falling to 96% among micro schemes. However, only 63% of medium schemes, 25% of small schemes and 21% of micro schemes identify as knowing 'a lot/quite a lot' about governance standards, compared to 88% and 100% of large schemes and master trusts respectively.[100]

Compliance with governance standards is also correlated with scheme size. Master trusts and larger schemes are either 'very confident' or 'fairly confident' that they are able to meet the standards laid out in the code, compared with 60% of small and micro schemes.[101]

Scale is not the only factor that determines governance quality. There are examples of small schemes with good governance and large schemes with poor governance. However, the benefits of scale may mean that larger schemes are able to achieve better results through quality governance.

100. TPR (2017)

101. TPR (2017)

Chapter four: How might the legislative and cultural environment of the UK impact CDC?

This chapter looks at the legislative changes that may need to take place in order to enable CDC and the ways in which the UK differs from overseas examples of countries which use CDC schemes which may potentially present cultural barriers.

UK CDC schemes do not necessarily have to be designed in the same way as overseas CDC schemes, but they could learn from international experience.

What legislative changes would be needed?

The Government has indicated that it will seek to enable CDC for Royal Mail in a way which will allow other companies to follow suit, a move which was welcomed by the Work and Pensions Select Committee. The Committee also recommended that the regulations governing CDC should accommodate mutual, multi-employer and standalone schemes, which would open the possibility of 'more diverse and ambitious provision of collective pensions, across industries and professions and to self-employed and gig economy workers.'[102]

While Royal Mail is currently designing their CDC scheme arrangements, there is broad agreement that any legislation should not be prescriptive of specific features of a CDC scheme so as to allow for further innovation among schemes which may wish to transition to a CDC arrangement in the future. That being said, legislation would likely need to include a regime of authorisation or rigid scrutiny in order to protect members' interests.[103] The way in which such a framework could be designed in practice is complex.

102. Work and Pensions Select Committee (2018)

103. RSA (2018)

In its 2018 consultation, Delivering Collective Defined Contribution Pension Schemes, DWP stated that it was not ruling out the possibility that the regulatory regime for CDC might be modified in future should other employers come forward with different proposals around scheme design. However, for the time being legislation will be formulated to enable the Royal Mail scheme to move forward. The extent to which other employers may seek to develop CDC schemes of their own will likely be determined by observing the legislation and Royal Mail scheme in practice.

Regulation around what constitutes DB and DC may need to be clarified with specific reference to a collective model, to enable schemes to give members an idea of what they could expect to receive from the scheme without this later being converted into a promise as in a DB scheme.[104] The possibility that later changes in regulation could convert ambitions into DB promises is considered the biggest concern by pension professionals.[105] This was a more substantial issue in relation to previously considered Defined Ambition (DA) schemes, which are broader than CDC. It may still be a concern for employers interested in CDC, but legislation will clarify this.

Since being approached by Royal Mail and CWU, the Government has considered the extent to which their proposed CDC scheme fits within existing legislation, ultimately concluding that existing legislation does not contain suitable definitions or set out an appropriate framework.[106]

DWP on the Pensions Act 2015[107]

Our analysis of the most appropriate way of providing for CDC benefits has moved on since 2015. This means that some of the provisions in the 2015 Act – for example, those around managing benefits based on the probability of delivering a benefit being within a specific range – do not sit easily with current proposals in respect of scheme design, and would make it more difficult for such schemes to operate.

The Government has concluded that new primary and secondary legislation will be needed to enable CDC schemes

The Government has concluded that new primary and secondary legislation is needed to deliver an appropriate legislative and regulatory framework for CDC schemes. The legislation will clarify that CDC benefits are defined contribution (money purchase), as well as providing for the necessary supporting regulatory framework. Where appropriate, detailed provisions related to valuation, adjustment of benefits, transfers, wind-up, disclosure and other technical requirements will be provided through secondary legislation.[108]

The consultation sets out a number of areas where new or amended legislation will be needed in order to enable CDC schemes:[109]

- Authorisation
- Mechanisms and rules for adjusting benefits in respect of all members so that scheme assets and liabilities match at each valuation
- Valuations and requirements around testing underlying assumptions in relation to expected benefit levels and their expected volatility
- Disclosure, transparency and information issues
- Member-borne charges
- Levies and scheme administration costs
- Requirements around transfers into and out of a pooled scheme
- Winding up triggers and exit strategies
- The Pensions Regulator's powers

It is envisaged that The Pensions Regulator's authorisation regime for CDC will cover some of the same areas as currently covered in the master trust authorisation process:[110]

- Fit and proper: Whether the individuals who have a significant role in running the scheme can demonstrate that they meet a standard of honesty, integrity and knowledge appropriate to their role.

104. Smart (2012)
105. Aon Hewitt (2013a)
106. DWP (2018)
107. DWP (2018)
108. DWP (2018)
109. DWP (2018)
110. DWP (2018)

- Systems and processes: Does the scheme have sufficient IT systems and processes to enable it to run properly and are there robust processes in place to administer and govern the scheme.
- Continuity strategy: Is there a plan in place to protect members if something happened that may threaten the existence of the scheme, including how the scheme would wind-up if necessary?
- Financial stability: Does the scheme have a business plan and enough financial resources to cover set up, running costs and also the cost of winding-up the scheme if it fails, without materially impacting member benefits?

Because CDC schemes may face unique challenges which aren't experienced in the same way by existing types of schemes, the authorisation process may also need to consider:[111]

- Communications: Do communications explain to members what to expect from the scheme under all potential circumstances, including inflation and nominal benefit adjustments and transfer values. Do they also explain how benefits are accrued by members of different ages and how the value of member benefits is calculated?
- Investment/funding/increase arrangements: What is the basis on which contribution rates are expected to be adequate to provide the target benefit levels with the scheme's investment strategy (including certification by the scheme actuary); What is the relationship between contributions and benefits; how are adjustments and valuations carried out and are these adjustments made on a universal basis across all members (active and retired)?
- Member options: When is the member allowed to transfer and how does the actuary determine individual transfer values?
- Further winding-up provisions: How pensioner members will be treated – for example, whether a pension in payment could be converted into a drawdown fund or be used to secure an annuity.

Following the shift to DC, existing UK pension provision differs from the Netherlands prior to its implementation of CDC

CDC schemes in the Netherlands are generally considered as closer to DB than DC, although they share features with DC, most importantly that contribution rates are effectively fixed (they can adjusted only every 5 years) and while benefits are considered 'promises' to some extent, they are not hard guarantees. Because of Dutch regulation, DB schemes in the Netherlands are de facto CDC as pension rights can be adjusted if funding ratios decrease.[112] This was a key part of the communication problem in the Netherlands, that employers thought they had entirely fixed costs, while members thought they had a guaranteed level of income, neither of which was the case in reality. The longer a CDC scheme functions without having to make cuts to inflation or nominal benefits, the more likely that members will perceive target benefits as promises and the greater the communication challenge for the scheme.

It may be more difficult to transition from DC schemes, which now dominate the UK pensions market, to CDC than it was in the Netherlands, where private sector DB schemes remain dominant. DB scheme sponsors may welcome the transition as it would shift risks to members while maintaining the provision of an income for life. However, some DC scheme sponsors may also view CDC positively as it could enable them to offer a better employee package without substantially increasing responsibility.[113]

While in the UK CDC may be viewed as a middle ground between DB and DC, in the Netherlands, where all DB schemes are essentially CDC, there are proposals to introduce new pension schemes that are a middle ground between CDC and DC. These schemes are known as Personal Pensions with Risk-sharing and Collective Benefits (PPR-CB). These would involve individual accounts, as in DC, but also risk-sharing in the form of longevity pooling and collective buffers which

111. DWP (2018)
112. Balter, Kallestrup-Lamb & Rangvid (2018)
113. Schouten & Robinson (2012)

would allow investment risk-sharing between generations.[114] In the UK, this sort of collective scheme which retains individual accounts is referred to in theory as Collective Individual Defined Contribution (CIDC).

The way that CDC is perceived, whether as 'DB minus' or 'DC plus', will also differ between the UK and the Netherlands. In the UK, CDC schemes will be entirely DC, with no future liability on the employer sponsor to pay increased contributions in future to improve scheme funding. Similarly, unlike the Netherlands, CDC schemes in the UK will not be allowed to convert existing DB entitlements into CDC.

Lower levels of unionisation in the UK could impact the establishment of CDC schemes

The mandatory participation in occupational or 'second-tier' pensions in the Netherlands, along with a highly unionised collective bargaining environment, create some important distinctions between the private pensions landscape in the Netherlands and the UK. The Dutch pension system has been built on principles of collectivism and solidarity. The institutional set-up of labour relationships and the pension system in the Netherlands, gives unions a strong position, even though they organise only around a quarter of the workforce.[115] Shared-risk pension funds in Canada have also been established with union support.[116]

These experiences may affect the attitudes to benefit security and appetites for risk across the two countries, with the Dutch system developed from DB plans with a history of high benefit security compared to the DC plans that are now more prevalent in the UK. Furthermore, cultural norms of solidarity and collectivism may be less embedded in the UK.[117]

In its response to the Work and Pensions Select Committee's CDC consultation, the Association of Consulting Actuaries (ACA) highlighted that while there is no tradition of risk-sharing between pension scheme members in the UK, there is a history of collective pensions in the form of DB.[118]

Pension funds in the Netherlands are independent financial institutions with their own governance and administrative structure separate from that of employers. The legal status as a separate trust gives pension funds a significant degree of operational autonomy, although trust-based schemes in the UK also have a substantial level of autonomy. In the Netherlands, employers and unions are represented equally on Dutch pension fund boards. This means that employers are less able to dominate and direct pension fund management and policy, and therefore must compromise more with unions.[119]

The two systems may move closer together in the future, with the debate in the Netherlands increasingly focusing on the issues of freedom and choice.[120] In order for this to work, Dutch CDC schemes would need to find a balance between allowing greater freedom and choice in order to better meet individual needs and preferences, and the need to restrict freedom and choice to some extent in order to avoid selection risks.[121]

The governance issue that may potentially arise within CDC schemes in a non-unionised environment, may be addressed by legislation, for instance requiring a certain number or percentage of employee and/or retiree representatives to participate in the board of trustees.[122] Independent trustees and perhaps the requirement for specific qualifications could also help to ensure that CDC scheme governance is high, although for the time being the government is proposing that CDC trustees will not be subject to increased qualification requirements.

114. Bovenberg & Nijman (2018)
115. Bovenberg & Nijman (2009)
116. Munnell & Sass (2013)
117. Cooper (2013)
118. ACA (2018)
119. Kemna, Ponds & Steenbeek (2011)
120. Dellaert & Ponds (2014)
121. Lever, Ponds, Cox & Huitron (2015)
122. Steele, Mazerolle & Bartlett (2014)

Attitudes towards pension provision also differ between the UK and the Netherlands

Until the prolonged periods of non-indexation and nominal cuts, the attitude among Dutch savers was largely that pension was synonymous with security.[123] Whereas trust in pensions in the UK has been in decline for some time.

There may be appetite among UK savers for greater risk-sharing in pensions. A study around Defined Ambition schemes found that savers preferred CDC schemes to other proposed forms. This was in part, but not solely, because of the expectation of higher returns. However, respondees also felt that CDC has the potential to rectify issues of unfairness in which individuals who have contributed similar amounts experience substantially different retirement outcomes as a result of experiencing different market returns and retiring at a different point in time.[124]

CDC in the UK does not necessarily have to follow the model observed overseas

While international examples of CDC may offer lessons for the UK, design of UK CDC schemes does not need to start from any of these models. UK CDC schemes may be designed in a different way to international examples, while still coming under the CDC umbrella so long as they involve defined contributions and the sharing of risks between members.

123. Goudswaard, Beetsma, Nijman & Schnabel (2010)

124. Institute for Public Policy Research (2013)

Chapter five: How might CDC develop in the future?

This chapter explores what the future might look like for CDC in the UK, in terms of:

- The level of demand from employers
- The scope for multi-employer CDC schemes
- The potential for CDC as a decumulation product

Observed demand for CDC among employers is currently low but may increase as a regulatory framework for CDC is established

In 2013 nearly half (48%) of employers said they were not interested in offering an alternative type of pension where the risk is shared between employer and employee, compared to 28% who said they were interested and a quarter (25%) who said they were not sure or needed further information. However, when asked how likely they would be to set up a new pension scheme similar to a DC scheme in which the employer pays fixed contributions but bears no additional funding responsibility and in which there is more certainty for the employee (as in CDC), over half (52%) of employers said they were very likely (13%) or quite likely (39%) to offer such a scheme.[125]

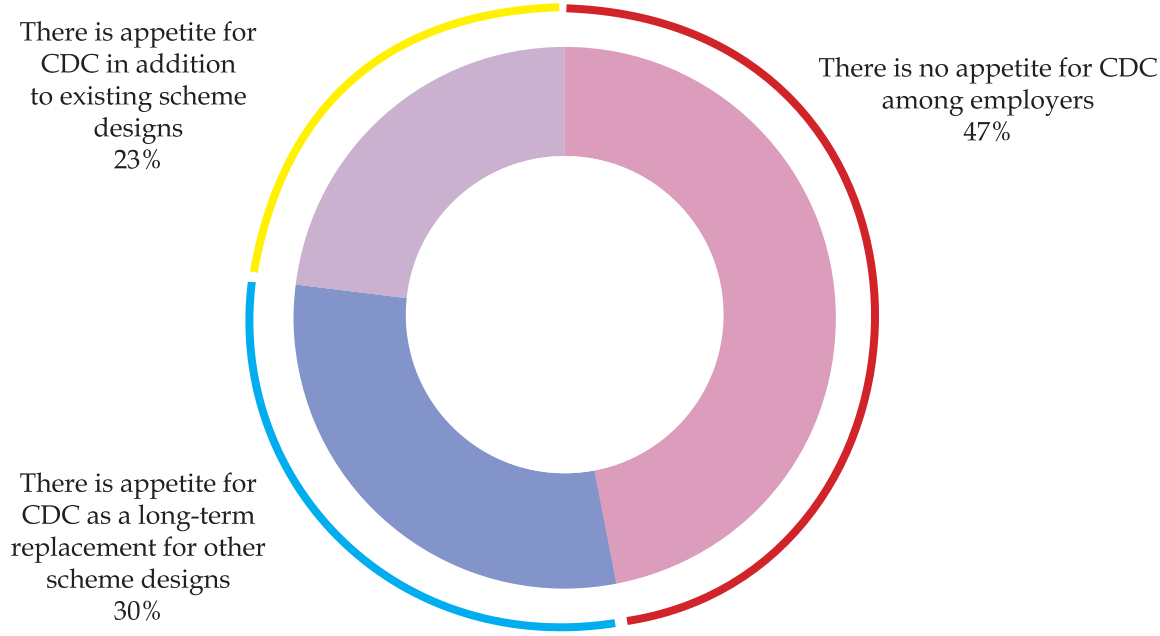
There are varying opinions about what the level of demand for CDC may be among employers. Nearly half (47%) of pension professionals think there is no demand for CDC among employers. Around a quarter (23%) think there is demand for CDC in addition to current scheme types, while almost a third (30%) think there is appetite for CDC as a long-term replacement for other scheme designs.[126]

125. DWP (2014)

126. Pensions Management Institute (2018)

Opinion about the level of demand for CDC among employers is split

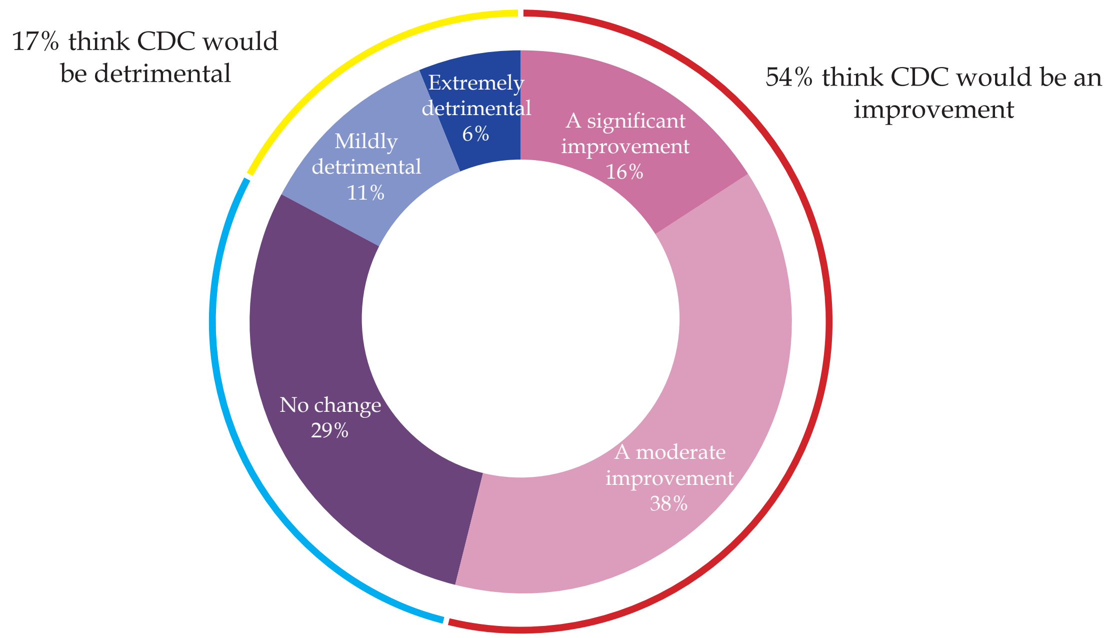
Survey of 98 PMI members, asked 'Do you believe there would be a desire amongst employers to see the introduction of CDC schemes in the UK?'[127]



However, in general the introduction of CDC is viewed more as potentially beneficial than detrimental, with 54% of pension professionals saying it could provide a significant or moderate improvement, 29% saying there would be no change, and 17% saying it could be mildly or extremely detrimental.

Pensions professionals generally think the introduction of CDC would be more beneficial than detrimental[128]

Survey of 98 PMI members, asked 'To what extent would the introduction of CDC schemes improve the standard workplace pension provision?'



127. Pensions Management Institute (2018)
128. Pensions Management Institute (2018)

There may be challenges in persuading employers to set up shared-risk or collective benefit arrangements given issues around communicating the changes to existing members who are likely to be moving from a DB arrangement.

'Policy overload' may discourage some employers from making the move to CDC, with substantial pensions policy changes having been implemented in recent years, in particular automatic enrolment and pension freedoms.

In 2009, DWP suggested that demand for CDC among employers would likely remain low as:

- Sponsors with open DB schemes considering closure and employers that had already moved to a DC scheme would not consider switching to a CDC scheme as they did not think that the additional costs of a CDC scheme compared to an individual DC scheme were justifiable.
- Employers with trust-based DC schemes would be reluctant to add to the duties of trustees as trustee recruitment could become more difficult.
- Employers with contract-based DC schemes who would like to deliver a better pension to their employees might consider CDC schemes, especially if CDC schemes were to become the expected norm in their industry.[129]

It is possible that some employers may be waiting for CDC legislation to be established before expressing interest in order to see what the regulatory framework may entail before making any commitments.[130]

DWP on employer demand for CDC[131]

The Government acknowledges that interest in pooled pension provision amongst employers has been limited to date, with many preferring to remain with established methods of pension provision, whilst others have been waiting until the Government's position on pooled provision in the UK is clearer.

There is clearly some demand for CDC among employers, as has been seen with Royal Mail, who directly employ more than 140,000 people, so while CDC may not appeal to a large number of employers, it has the potential to impact thousands of savers.

> So far only Royal Mail has publicly expressed the intention to establish a CDC scheme in the UK, it employs more than 140,000 people so CDC has the potential to impact thousands of savers' retirement outcomes.

CDC schemes may open the door for greater innovation and improved outcomes in retirement provision

In its 2018 CDC report, the Work and Pensions Select Committee stated that while the impetus for CDC in the UK has come from a large employer (Royal Mail) and a major trade union (CWU) seeking an alternative pension model to better meet employee and employer needs, establishing CDC schemes opens the possibility of 'more diverse and ambitious provision of collective pensions across industries and professions, and to self-employed and gig economy workers.'[132]

There is the potential for shared-risk or collective benefit arrangements to extend to relatively small employers and pension plans if the significant overhead costs can be shared, for example through a multi-employer arrangement. The Select Committee recommended that regulations governing CDC should accommodate mutual, multi-employer and standalone schemes. While the Government is looking to bring in regulation to enable Royal Mail to move forward with its CDC plans

129. DWP (2009)
130. RSA (2018)
131. DWP (2018)
132. Work and Pensions Select Committee (2018)

as a priority, it has said that any regulatory framework should be flexible to enable further innovation in the future.

While the Government is looking to bring in regulation to enable Royal Mail to move forward with its CDC plans as a priority, it has said that any regulatory framework should be flexible to enable further innovation in the future.

Multi-employer schemes are the norm for CDC and target benefit schemes overseas. In the Netherlands, many CDC schemes are industry wide. Similarly, multi-employer pension plans (MEPPs) in Canada involve a number of participating employers and are union-negotiated, collectively bargained schemes with targeted benefits, contingent on the plan's financial position, and with members bearing 100% of the risk on a collective basis (as in a CDC scheme). Canadian risk-sharing schemes allow considerable flexibility in the design of the scheme and, in particular, the level of target benefits and associated contributions. This could lend itself to a multi-employer CDC arrangement with overarching governance where different sections of the scheme offer a different design structures for different groups of employers.

The average person will move jobs around 11 times over the course of their working life.[133] Multi-employer, or even industry-wide CDC schemes as seen in the Netherlands, could help to prevent people from accumulating many small pots over the course of their working life, as if they remain within the same industry their pension scheme would remain the same regardless of employer. Although, this could be also be enabled by an industry wide DC or DB scheme.

DWP on multi-employer CDC schemes[134]

The initial framework is intended to facilitate provision by single or associated private sector employers who wish to consider alternative pension provision options following appropriate consultation with their workforce and trade unions where relevant. The legislation will therefore initially restrict CDC benefit provision to such schemes. However, it is intended to provide sufficient flexibility in regulation making powers to allow us to adapt the way in which CDC schemes are defined to accommodate alternative models and providers – i.e. multiple-unconnected employers or commercial provision – if a clear need arises in the future and such models can be justified.

While CDC has traditionally been a product which spans accumulation and decumulation phases, it is now being explored as a possible decumulation only option in Australia

In its 2018 consultation, DWP state that CDC will not be appropriate for accrual-only vehicles, as feedback suggests that it is the combination of smoothed investment and pooled longevity risk which is likely to generate interest in CDC schemes. At this stage the Government does not intend to permit decumulation-only CDC schemes either, although this may be something that is considered in the future.[135]

As discussed in chapter three, the desire for 'freedom and choice' from both employers and employees, with private sector employers likely to be attracted to different levels of contributions and benefits for their workers, and with employees likely to want to retain pension freedoms which would allow them to flexibly access their pension savings from age 55. Offering CDC as a decumulation only option, into which savers could transfer their pension savings at retirement, would circumnavigate the issue of coherence between an accumulation

133. DWP (2010)
134. DWP (2018)
135. DWP (2018)

and decumulation CDC scheme and pension freedoms (although CDC can be coherent with pension freedoms so long as transfer out is permitted prior to beginning to take an income from the scheme).

In Australia, CDC or Defined Ambition schemes have previously been considered as a potential replacement for DB, or a means of rejuvenating the DB market.[136] However, the vast majority of the Australian pensions market is now covered by DC. Having introduced mandatory superannuation (pension contribution) in the early 90s, with schemes chosen by employer, Australia might seem like a good fit for an accumulation and decumulation CDC vehicle because discontinuity risk would not be significant. However, it is likely this wasn't considered at the time for similar reasons to the UK, when CDC was put aside to focus on the implementation of automatic enrolment in order to avoid policy overload. CDC is now being proposed as a possible decumulation vehicle to fill the gap created by the virtually non-existent Australian annuity market.

The Australian pensions industry is currently developing a Comprehensive Income Product for Retirement (CIPR) framework, which is intended to:

- Enable individuals to increase their standard of living in retirement through increased availability and take-up of products that more efficiently manage longevity risk, and in doing so increase the efficiency of the superannuation system and better align the system with its objective; and
- Enable trustees to provide individuals with an easier transition into retirement through the offering of a standardised retirement income product.[137]

It has been suggested that the CIPR framework may inhibit innovation around CDC schemes as it reinforces segregation between accumulation and decumulation phases where CDC extends across both accumulation and decumulation.[138] However, a decumulation only CDC scheme would fulfil the CIPR objectives.

Decumulation only CDC in Germany

Decumulation only CDC is being introduced in Germany, in the form of DC plans which must result in a variable life annuity adjusted according to scheme funding position. Schemes will be required to adjust benefits if funding ratio moves outside of 100% to 125%.

In its response to the Work and Pensions Select Committee's CDC consultation, NEST suggested that pooling longevity risk among members who have reached a certain age could be a way to harness the benefits of CDC without having to overcome the hurdles faced by a CDC scheme spanning both accumulation and decumulation.[139]

While developing a decumulation only CDC scheme in the UK would reduce potential incoherence with pension freedoms, it would also reduce the scheme's ability to smooth returns effectively. This would in turn reduce issues of intergenerational unfairness, as risk would be shared only between retirees. However, this would inhibit the scheme's ability to access the main benefits of CDC:

- Improved outcomes: a decumulation only CDC scheme would be less able to invest in higher risk and more illiquid assets and is therefore likely to achieve similar returns to a well invested drawdown account.
- More predictable outcomes: a decumulation only CDC scheme would not be able to spread lower than expected returns across a broad member base and so retirees would be more likely to experience reduced indexation and potentially nominal cuts to pensions in payment as risk is shared amongst a smaller group.

A decumulation only CDC scheme would still protect members from longevity risk as it would be shared among members, and may be preferable to an annuity as it would not have the same regulatory requirements and should therefore be able to invest in return seeking assets throughout the retirement period to a greater degree.

136. Davies (2014)
137. Australian Government the Treasury (2018)
138. Aon Hewitt (2017)
139. Nest (2017)

Appendix One: CDC overseas

The Dutch pension system is characterised by three pillars

The first pillar is the state pension, known as the "AOW", which provides a flat-rate basic retirement income, linked to statutory minimum wage (€18,940 in 2018):

- Single pensioners with full entitlement receive 70% of minimum wage, while couples each receive 50%.
- Those living or working in the Netherlands build up entitlement to 2% of the state pension benefit each year, so between the ages of 15 to 65 they can build up full entitlement.
- As in the UK, the Dutch state pension is funded on a pay-as-you-go basis with those of working age funding the benefits of current pensioners.
- The state pension age is being gradually increased to 66 in 2019 and 67 in 2023. From 2024 onwards, the AOW pension age will be linked to life expectancy.

The second pillar consists of occupational pension schemes. These are strictly separate from the employer and are either administered by a pension fund or an insurance company. Pension funds are broadly divided into three groups:

- Industry-wide pension funds for a whole sector (73 funds in total, with 5.04m active members, according to DNB statistics) – for example, ABP for the civil service, PMT for metal workers and mechanical engineers, and PFZW for the healthcare sector.
- Corporate pension funds for a single company but arranged through a corporation or insurer (274 funds in total, with 630k active members) – for example, the pension funds run by Akzo Nobel, ING, Phillips and Shell.
- Pension funds for independent professionals (11 funds in total, with 50k active members) – for example, SPH, the fund for General Practitioners, and SPT, the fund for Dentists.
- The second pillar is funded, and is comprised of a mix of DB, CDC (typically career average) and DC pension arrangements.

The third pillar is comprised of individually arranged private pension products, primarily used by the self-employed and employees in sectors where there is not an industry-wide arrangement. It may also be used by those with second pillar pensions to top up their retirement savings and maximise their available tax-favoured benefits.

The second pillar of the Dutch pensions system plays a significant role in the pensions landscape, driven by the principles of intergenerational solidarity and mandation within the occupational sector and high levels of contributions

In the Netherlands, if an industry-wide pension scheme is set up by the social partners, it then becomes mandatory for the entire sector or profession. Upon request from the social partners, the Minister of Social Affairs can make participation in a pension fund mandatory for all employers in a sector or profession. Employers may be exempted from participation in a fund if one of the following conditions is met:

- The employer already provided a pension plan for at least six months before it became obliged to join the fund;
- The employer has another collective agreement with the social partners;
- The sectoral pension fund has been underperforming for at least the past five years.

There can also be mandation on a smaller scale, in which participation in the pension arrangement provided by their employer is mandatory for employees. Employers for whom there is not a mandatory industry-wide scheme in place can choose to either set up their own corporate pension fund or offer a pension scheme managed by an insurance company.

The Canadian pension system is also characterised by three pillars

The first pillar includes the OAS pension which is financed by general taxes on a pay-as-you-go basis, as well as the GIS which is a means-tested supplementary benefit.

The second pillar includes the CPP/QPP – a compulsory public DB scheme in which contributions and benefits are capped.

The third pillar includes occupational pension schemes, which are offered voluntarily by employers but compulsory for employees when offered. It also includes voluntary personal pension accounts.

Denmark

The first pillar of the Danish pension system is comprised of the State Funded Basic Pension (SFBP) and the ATP:

- The SFBP is a basic benefit financed by general taxes on a pay-as-you-go basis. There is also a supplementary means-tested benefit.
- The ATP is a compulsory funded CDC scheme based on flat rate contributions.

The second pillar covers occupational pensions which, like the ATP, are compulsory CDC schemes. These schemes are set up by collective agreement. Contribution rates vary between 12% for low income workers and 18% for some high income groups.

The third pillar is comprised of individual pension accounts set up under personal arrangements.

Australia

The first tier of the Australian pension system is the ‘Age Pension’ (State Pension):

- This is means-tested, taking into account both income (from second-tier superannuation savings and/or annuities, investments and paid work) and assets.
- The Australian State Pension age is currently 65 years and 6 months for those born 1 July 1952 onwards, but is set to increase in stages to 67 over the next five years.
- The maximum basic rate is currently $808.30 for individuals and $609.30 each for couples (per fortnight). An additional pension supplement may also be provided up to $65.90 for individuals or $49.70 for each member of a couple (per fortnight).

In Australia it is mandatory that all employers contribute to a superannuation scheme for all eligible employees:

- Eligible employees include those between the ages of 17 and 70 earning more than AUS$450 (£254) per month.
- Employee contributions are combined with employer contributions of 9.5% (2018, set to gradually increase to 12% after 2021) up to an annual cap of AUS$50,000 (£28,244).
- In addition, employee contributions are matched by a factor of 1.5 additional up to AUS$1,000 (£565) per year by the Governments.
- While the Superannuation Guarantee does not apply to the self-employed, around 30% of self-employed Australians make contributions, in part because of the available tax concessions.

Appendix Two: Glossary

Accumulation: Period before retirement in which individuals save into a pension.

Alternative asset classes: Assets that are not part of conventional investment types such as equities, bonds and cash. Alternative asset classes include private equity, hedge funds, property, commodities and infrastructure.

Annuity: Retirement product which provides the individual with a guaranteed income either for life or for a fixed term. Annuities can be flat-rate or index linked.

Benefit adjustment: The extent to which CDC scheme members' benefits are uprated or cut depending on the scheme's financial position.

Bonds: A fixed income investment that works similarly to a loan, with the investor 'loaning' money, usually to a large corporation or government, and receiving regular interest payments until the bond matures and the issuer repays the principal investment to the investor.

Buffer: A collective reserve of money held within some CDC schemes, built up during periods of better investment returns, which is used to smooth outcomes during periods of lower returns.

Career average: DB accrual rate which offers income in retirement based on a proportion of a member's average earnings, adjusted for inflation, during the whole period of membership.

CDC: Collective Defined Contribution. A type of pension scheme in which risks are shared collectively between scheme members rather than individually, and contribution rates are defined in advance, with no ongoing liability for employers to pay more in the future to cover potential deficits.

DA: Defined Ambition. A type of pension which aims to provide more certainty about outcomes for members and more certainty about costs for employers. CDC may be considered one form of DA scheme.

DB: Defined Benefit. A type of pension scheme which provides members with an income for life based on a specified accrual rate (i.e. a proportion of either final or career average salary for each year of service) irrespective of investment returns on contributions.

DB cash balance: A type of pension scheme in which the 'defined benefit' promised to members is not an income but a lump sum, from which the member can take up to 25% tax free and is then required to purchase an annuity with the remainder.

DC: Defined Contribution. A type of pension scheme in which the amount of money available at retirement is dependent upon contributions and investment returns.

Decumulation: Retirement period in which individuals draw income from their pension savings.

Discontinuity risk: The risk that future generations may be less willing to participate in CDC schemes if they perceive that they have to pay an implicit tax on their contributions in order to replenish buffers or smooth returns for existing (especially retiree) members.

Diversification: Investing in a broad range of asset classes with the aim of reducing overall investment risk if there is a downturn in a particular type of asset.

Downside risk: The potential decline in value that a fund may experience as a result of changes in market conditions.

Drawdown: A product in which pension savings remain invested during retirement and can be drawn upon flexibly for income.

Equities: A stock or any other security representing an ownership interest. For example, in the case of private equity, this represents a proportion of ownership in a private company.

Final salary: DB accrual rate which offers income in retirement based on a proportion of a member's earnings at time of retirement or deferral.

Funding gate: The range within which a pension scheme's funding ratio is allowed to vary before recovery measures must be taken, i.e. in a CDC scheme benefits adjusted or a DB scheme additional contributions made.

Funding ratio: A scheme's assets divided by its liabilities. An indication of a scheme's ability to pay future liabilities.

Illiquid assets: Assets which cannot be traded frequently, meaning that investment capital is locked in for an extended period of time.

Illiquidity premium: Higher levels of return provided by illiquid assets in exchange for reduced ability to trade frequently.

Indexation: The level at which pension benefits are uprated, usually on an annual basis. Often linked to price or earnings inflation.

Inflation risk: The risk that one's income may lose value relative to the price of goods and services.

Insolvency risk: The risk that the pension provider becomes insolvent.

Intergenerational fairness: The fair distribution of risk and cost across different generations, ensuring that no generation benefits unfairly at the expense of another.

Investment horizon: The length of time over which money can be invested. Illiquid investments require a longer investment horizon, while assets which can be traded more easily may be better suited to those with a shorter investment horizon.

Investment risk: The risk that market fluctuations or poor investment strategies will deplete a fund's capital.

Liabilities: The future payments a pension scheme will have to make to cover member benefits in retirement.

Longevity pooling: Aims to reduce the risk of running out of money during retirement by pooling member assets so that members who live for a shorter time than expected subsidise those who exceed life expectancy.

Longevity risk: The risk that individuals could run out of money before their death.

Master trust: A type of multi-employer pension scheme which may provide benefits of scale compared to single employer schemes.

Nominal benefits: The actual monetary value of pension benefits. Cuts to nominal benefits would see members' income reduced in nominal terms, rather than just not uprated at the same speed as inflation as with cuts to indexation.

Pension freedoms: Freedom and choice. Since 2015 individuals have greater flexibility in how they can access their retirement savings. While previously most people were required to purchase an annuity, they now have the option to fully withdraw their savings (subject to tax), transfer them into a drawdown fund or take uncrystallised fund pension lump sums (UFPLS).

Pooled investment vehicles: Large funds which investors (including pension schemes) may invest in order to access benefits of scale and alternative asset classes.

Recovery period: The period of time in which a pension scheme must bring its funding ratio back within an acceptable range (funding gate).

Replacement rate: The ratio of retirement income compared to working life income. The Pensions Commission outlined target replacement rates between 50% and 80% depending on level working life income. Target replacement rates are always less than 100% because, on average, pensioners have fewer income needs than working-age people.

Selection risk: The risk that the effectiveness of pooling will be reduced if those with certain characteristics, for example shorter life expectancy, do not participate.

Smoothing: Reducing the impact of lower than expected returns through subsidisation from times when better returns are achieved.

Upside potential: The difference between the current price of an asset and the level to which it is likely to rise to over the investment horizon.

Valuation: Appraisal of a pension scheme's funding position as determined by assets and liabilities.

Volatility: The level of variance in returns over time.

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