5 Policy lessons for the design, introduction and implementation of non-guaranteed lifetime retirement income arrangements

This chapter presents policy lessons for each stage of development of non-guaranteed lifetime retirement income arrangements, from their design and introduction, through to their implementation and continued operation, given experiences in different OECD member countries. Examples of these types of arrangements include Collective Defined Contribution schemes, Target Benefit schemes, and tontines, among others.

There is increasing interest in non-guaranteed lifetime retirement income arrangements as a means to address several of the challenges that pension systems currently face. Increasing life expectancy, ageing populations and low interest rates have led to concerns around the sustainability of traditional defined benefit (DB) pension models. The low interest rate environment has also led to challenges to achieving adequate levels of retirement income, particularly for arrangements offering guarantees. The shift to individual defined contribution arrangements has pushed the responsibilities to make financial decisions and the risks of financing retirement onto individuals, who are often not capable of managing these by themselves.

Non-guaranteed lifetime retirement income arrangements have the potential to overcome these challenges. They can offer a sustainable retirement income solution, as benefits can adjust to match the level of assets available to finance them. Because the arrangements do not provide a guarantee, assets can be invested to earn higher expected returns, increasing the expected retirement income that they can provide to participants. These arrangements can also manage investment decisions collectively, reducing or eliminating the need for participants to make any financial decisions and mitigating some of the behavioural biases that can lead to poor outcomes. These arrangements pool longevity among all participants, allowing individuals to protect themselves from the idiosyncratic longevity risk of outliving their savings, and optimising the level of retirement income they can take over their lifetime.

Nevertheless, there is a lot of confusion about what non-guaranteed lifetime retirement income arrangements are and how they work. This is in part because they go by many different names, including collective defined contribution (CDC) schemes, target benefit schemes, group self-annuitisation schemes, as well as tontines, to name only a few of the terms commonly employed. In addition, these arrangements can also present a wide range of different structures and designs. However, they all share three common features: no guarantees from the provider or any further obligation for them to increase contributions; benefits that can be adjusted up or down in light of investment and longevity experience; and retirement income for life achieved through the pooling of longevity risk of participants. They are therefore all 'non-guaranteed lifetime retirement income arrangements'. This term intends to capture the primary purpose and features of these types of schemes while being inclusive of the many variations in design that exist. Aside from their similarities, their differences in design highlight the wide range of possibilities for these types of arrangements to adapt to different contexts and retirement income objectives.

The successful introduction and implementation of non-guaranteed lifetime retirement income arrangements is challenging, and important considerations need to be addressed at each stage of their development, from their design and introduction, through to their implementation and continued operation. This chapter discusses the practical considerations for the introduction and implementation of these types of arrangements given the experience in OECD countries.[1] It is organised in five sections. Section 5.1 describes how the design of non-guaranteed lifetime retirement income arrangements can align with different policy objectives for retirement income. Section 5.2 discusses issues that policy makers may need to address to create the conditions for these types of schemes to be introduced in practice. Section 5.3 explores some of the practical challenges for the implementation of these arrangements. Section 5.4 highlights elements that are needed for their continued successful operation. Section 5.5 concludes with the policy lessons learned from the examples discussed, and recommendations for jurisdictions considering the introduction of non-guaranteed lifetime retirement income arrangements. Annex 5.A provides country-specific details of examples from OECD countries.

5.1. Design of non-guaranteed lifetime retirement income arrangements

The design of non-guaranteed lifetime retirement income arrangements should align with the policy objectives for the retirement income to be paid by these arrangements, as different designs can further different objectives. While the principle of these types of arrangements seems straightforward, there is a

myriad of ways to structure them, rendering their design rather complex. Indeed, among the examples that exist across OECD countries, no two schemes are designed exactly alike (see Annex 5.A). They can incorporate the savings and accumulation phases of retirement planning in addition to the payment of retirement income, or can solely be a solution to receive retirement income benefits. They can have ownership rights defined on a collective or individual basis. They can have different benefit formulas, either defining retirement income in reference to the member's salary, calculating it using an expected return on contributions, or establishing it in reference to individual pension rights or assets accumulated. Benefit adjustments can also vary with respect to the measurement of the adjustment, the form that the adjustment takes, and to which benefits the adjustment applies. Some arrangements also incorporate a smoothing mechanism to reduce expected income volatility. Additionally, schemes can offer some optionality for members to better personalise the way that they will finance their retirement or to give them some flexibility around their participation in the scheme.

Non-guaranteed lifetime retirement income arrangements can incorporate a variety of combinations of these design features to achieve different policy objectives, although some design choices regarding one component may determine the range of choices available for another. Table 5.1 summarises the different design features that are possible and the corresponding policy objectives with which they are compatible. The remainder of this section discusses these features and their advantages and disadvantages in more detail.

Table 5.1. Design features of non-guaranteed lifetime retirement income arrangements and their compatible policy objectives

	Period	Rights		Reference to define benefits			Basis to adjust benefits		Smoothing mechanism			Optionality		
Objective	**Accumulation**	**Collective**	**Individual**	**Salary**	**Return**	**Assets**	**Funding ratio**	**Profit source**	**Buffer**	**Corridor**	**Recovery period**	**Investment**	**Withdrawal**	**Survivor/death benefits**
Maximize retirement income	X	X		X	X		X			X				
Limit benefit volatility	X	X		X	X		X		X	X	X			
Limit inter-cohort transfers ('equity')			X		X	X		X		X				
Transparency			X		X	X		X						
Simplicity	X		X		X	X	X							
Limit members' decision making	X	X	X	X	X	X	X	X	X	X	X			
Individual flexibility			X			X		X				X	X	X

5.1.1. Role in accumulation of retirement benefits

Non-guaranteed lifetime retirement income arrangements can incorporate the savings and accumulation phases of retirement planning in addition to the payment of retirement income, or can solely be a solution to receive retirement income benefits.

Designing a scheme to cover both the accumulation and payment of retirement income benefits allows for a more integrated approach to financing retirement. The investment strategy can be better aligned with the benefit drawdown strategy, allowing the scheme to optimise investment returns across members over their lifetime and achieve higher expected returns on average. As such, it also offers larger potential to share risks, particularly investment risks, across a broader range of cohorts and generations. Having an integrated scheme can also reduce the need for individual decision making, as the provider can manage both the investment and drawdown strategies for members collectively, without the need for members to choose among options. It can also allow members to have a clearer view regarding the link between their contributions and the amount of retirement income they can expect to receive. Finally, having a larger contribution base may make it easier for the scheme to more quickly gain scale to be more effective at reducing costs and mitigating risk for members.

However, schemes covering both phases can face larger challenges with respect to flexibility and implementation. Having an integrated scheme may impede members' flexibility regarding both portability of rights and risk appetite. It can also be more challenging to ensure that all members – both those contributing and those receiving benefit payments – are treated fairly and that certain groups are not unduly subsidizing others.

In contrast, it is easy to integrate schemes offering a solution only for the payment of retirement income benefits as an additional option for members to take their retirement benefits, particularly in the context of individual defined contribution (DC) plans. In this way, they offer more flexibility as to the settings in which they can be employed. Several jurisdictions have introduced such schemes for the payment of retirement income from individual DC plans. In the United States, TIAA was one of the first providers offering a variable lifetime annuity option for its individual retirement savings plan. Some superannuation providers in Australia have recently introduced lifetime pension options as an alternative to regular withdrawals. A few providers in Canada are also offering lifetime retirement income options.

5.1.2. Ownership rights

Non-guaranteed lifetime retirement income arrangements can have ownership rights defined on a collective or individual basis. The definition of ownership rights can also determine some of the other design features that are available to the scheme, such as the definition and adjustment of benefits.

Having collective rights better allows schemes to take full advantage of the potential benefits that collective management and risk sharing across members can have. Schemes can better optimise the investment strategy for the entire group, taking into account demographics and expected income profiles. It also facilitates sharing investment risk across cohorts, as schemes can use collectively owned assets to smooth benefits over time. Collective plans also tend to limit the need for individual decision making, as investment and benefit payments are the same for all members in the scheme. As benefits are normally communicated in terms of expected retirement income, they also maintain the focus of the scheme on its purpose to provide an income in retirement. However, the way that the schemes share and distribute risks among members is usually not very transparent, and limiting risk sharing across cohorts is more difficult.

In contrast, transparent risk sharing is easier to achieve for schemes having individually defined rights, and it is easier to limit inter-cohort transfers when that is an objective. Individual accounts also allow participants to have a clearer view of how investment and longevity risks impact their benefits to the extent that the gains and losses from these risks are directly credited to their accounts. In addition, it is easier for schemes

with individual ownership rights to offer more optionality, such as investment strategies or withdrawals from the scheme, which often require some valuation of individual rights.

5.1.3. Benefit formula

Non-guaranteed lifetime retirement income arrangements need to establish an initial expected level of retirement income for their participants. Schemes vary in the way that they do this. They can define benefits in reference to the member's salary, calculate them using an expected return on contributions, or establish them in reference to individual pension rights or assets accumulated.

Some schemes choose to define benefits as accumulating a certain percentage of the member's salary per year of contribution. This salary-based formula is normally used within traditional Defined Benefit (DB) pension arrangements. This choice is convenient in a context where the scheme is replacing or being converted from an existing DB arrangement, as it limits the immediate change to expected benefits for members. This has been the approach in in Canada, the Netherlands and the United Kingdom. Another benefit of the salary-based formula is that it maintains the focus of the arrangement on the expected retirement income, reinforcing the objective of the scheme to provide an income, not only to accumulate assets.

Nevertheless, this type of design is practical only when the scheme covers the accumulation phase and when members' rights are defined on a collective basis rather than an individual basis. It also raises concerns of inequity between younger and older generations, as both groups earn the same relative level of expected benefit per contribution made. Because contributions from younger generations have a longer time to accumulate, the younger generations often subsidise the benefits being accrued by the older generations. While this may not be an issue in labour markets where individuals are expected to contribute to the same arrangement over their entire working life, it may create inequity in the case of high labour mobility where younger members may not benefit from the subsidy in the future. Indeed, the Netherlands initially moved from traditional guaranteed defined benefit plans to non-guaranteed plans with the same benefit formula, but now is moving towards plans with individual rights and age-based accrual rates to define benefits. This shift has been in part due to increasing public sentiment that the former design embedded unfair intergenerational transfers, as well as a lack of transparency in benefit adjustments and the operation of the schemes that has led to decreased trust in the system.

An alternative option for arrangements that include the accumulation phase is to define retirement income benefits as a function of the expected return on contributions. This approach is more actuarially neutral than defining benefits as a percentage of salary, and in principle involves no redistribution between younger and older cohorts. Nearly all occupational pension schemes in Iceland have moved from salary-based to age-based accrual formulas using expected returns, first in the non-guaranteed occupational schemes for private sector employees, and more recently in transforming the defined benefit A-scheme for public sector employees to a non-guaranteed arrangement. This approach allows for two possibilities to frame benefits to members. The first way is as a target retirement income resulting from the expected investment return, which can retain the focus on the objective of providing an income in retirement, and is the approach taken in Iceland. The second way is to present benefits as the sum of the accumulated contributions for each individual. This is a more practical approach for schemes aiming to limit any investment risk sharing across cohorts or generations because deviations from the expected investment return could be immediately recognised in the account value for each member, rather than defined as a change to the expected retirement income and spread over time across members. This may, however, put the focus on the amount of capital accumulated rather than on the level of retirement income received.

A final option – and the approach taken for schemes covering only the pay-out phase – is to calculate the initial retirement income in reference to the amount of capital accumulated at retirement. This is calculated by dividing the level of capital by an age-appropriate annuity factor.[2] This approach is actuarially neutral across ages and can also allow for members to adapt their desired income profile by choosing the assumed

interest rate (AIR) to calculate the annuity factor used to calculate the initial income level. Low rates can result in an increasing income profile, while payments calculated using high rates can decrease over time. Going forward, any changes to the retirement income could either reference the level of retirement income or, when rights are defined individually, reference the accumulated capital adjusted to each period.

5.1.4. Benefit adjustment

Perhaps the most complex aspect in the design of non-guaranteed lifetime retirement income arrangements is defining how to adjust benefits. If investment or longevity experience deviates from initial expectations, benefits will have to adjust to restore the arrangement's financial balance. The rules of the scheme must therefore establish how to measure any financial imbalance and then how to distribute any mismatch to members. Some schemes may also opt to implement smoothing mechanisms to reduce the volatility of benefit payments and share some of the investment risk among members. This essentially changes the timing of the distribution of profits or losses to members, rather than realising them immediately in full. Whether rights within the scheme are defined collectively or individually can constrain the options available to adjust benefits, as does how the financial imbalance of the scheme is measured. Table 5.2 summarises the different approaches.

Table 5.2. Approaches to adjust benefits

Definition of rights	**What** is the financial imbalance of the scheme?	**How** are participants' benefits adjusted?	**Which** benefits are adjusted?	**When** are benefits adjusted?
Collective or individual	*Funding Ratios*: Measure the difference between assets and expected liabilities	*Proportionally*: Individual benefits or rights are adjusted by the percentage of funding mismatch	1) pensions in payment; 2) past accrued rights; 3) the rate of future accrual	1) regularly, or 2) delayed via smoothing mechanisms: a) collective buffers; b) funding corridors; c) recovery periods
Individual	*Profit* Source: Measure the actual investment and longevity experience compared to assumptions	*Individually*: Adjust individual rights according to investment and longevity experience	1) account value and/or 2) payout factor via an adjustment to the return and/or mortality assumptions assumed	

What: measuring the financial imbalance of the scheme

The measurement of the financial position of the scheme is necessary to determine whether there is a funding mismatch and if benefit adjustments are necessary. This measurement can take a collective view based on overall funding levels, or a more granular view based on the exact sources of gains and losses.

Funding ratios can indicate the financial position of a scheme when measuring the funding position on a collective basis. The calculation of this metric is simply the assets accumulated in the scheme divided by its expected liabilities, with the latter calculated on the basis that the expected retirement income benefits of members will be paid over their lifetimes.

An alternative to measuring the financial position of the scheme by calculating a funding ratio is to measure its performance against the assumptions used to calculate the expected benefit liabilities, namely the investment return (discount rate) and longevity experience (mortality assumptions). Taking this approach allows for the decomposition of gains and losses by their source and on an individual basis rather than only on an aggregate basis.

How: formula to adjust participants' benefits

The scheme must determine how to distribute the calculated financial gains and losses to the participants. The options available depend on the methodology used to assess any financial imbalance. If based on a

comparison of actual and expected experience, adjustments can vary by profit source, which may include individual risk profiles. If based on funding ratios, the benefit adjustment is proportional.

When adjusting benefits by profit source, gains and losses can be distributed in a way that minimises risk transfers across cohorts by allowing adjustments to vary by demographic profile. This is technically fairer, particularly in the case of longevity risk, because longevity risk exposure varies across demographic characteristics such as age and gender that have different mortality risk profiles. Passing longevity gains and losses equally to all members in a proportional manner means that younger members would benefit more because they have lower mortality and can expect to be in the scheme for longer. To minimise any value transfer across cohorts, the distribution of longevity gains could instead be a function of the individual member's probability of dying during the period (Fullmer, 2019[1]). The Premium Pension in Sweden takes this approach, adjusting participants' accounts directly with mortality gains that depend on the participants' age. The more granular the mortality rates used, the less the scheme transfers longevity risk across members. For example, mortality rates could also depend on income, which would increase the relative mortality gains that lower socio-economic groups receive. Conversely, unisex mortality assumptions could be used to eliminate relative differences in payments across genders.

However, proportional benefit adjustments based on funding ratios may be preferred to technical fairness in order to make the scheme more practical to implement and easier for participants to understand. Making the same proportional adjustments for all participants is easier to administer. In addition, participants cannot be expected to understand the formulas behind a differentiated distribution of longevity gains, and are likely to perceive a proportional adjustment that is equal for all participants as fair because everyone is treated the same.

Which: type of benefit adjusted

Collectively defined arrangements can adjust three types of benefits: pensions in payment, past accrued rights, and the rate of future accruals. Pensions in payment can further distinguish between base benefits – or the initial benefit received – and ancillary benefits, or additional increases to benefits such as indexation. Adjusting all types of benefits simultaneously will result in smaller overall adjustments, as the funding risk is then spread across all members, and results in more equitable treatment of all. However, schemes could also take the view that ancillary benefits should be reduced before other types of benefits are adjusted, as is the current approach in the Netherlands, for example.

For individually defined arrangements, benefit adjustments can take a retrospective or prospective approach. Retrospective approaches will adjust benefit payments or credit the account value directly in light of actual experience (e.g. as described in Price and Ingles (2021[2]) and Fuentes et al. (2022[3])). Prospective approaches will adjust the assumptions used to calculate the benefit payment, which is most commonly an annuity factor calculated based on assumptions for expected future investment returns and mortality experience.

The approach to prospective adjustments is normally separate from retrospective adjustments. For example, the Premium Pension in Sweden disaggregates retrospective adjustments between investment and longevity experience and credits them to individual accounts, but any prospective adjustment to the pay-out factor is the same for all participants, even though individuals may invest in funds with very different risk profiles. In Denmark, providers do not always make retrospective adjustments for longevity experience, but rather only adjust benefits prospectively through any changes to the assumption used to calculate the annuity factor used to calculate payments.

When: timing of benefit adjustment

The timing of benefit adjustments is closely related to the potential volatility of retirement income payments within a non-guaranteed lifetime retirement income arrangement. The timing of adjustments can relate to

their frequency as well as to the extent to which profits and losses are fully distributed to participants at the time they occur.

For the sake of practicality, adjustments are normally administered with the same frequency and timing for all participants, and are not necessarily done for every payment period. This may result in technical inequalities in some cases, for example for individuals joining the scheme just before a benefit adjustment occurs. Lags in adjustments could also result in delays to benefit adjustments that could reduce value for older cohorts in particular. Indeed, the Premium Pension in Sweden is considering increasing the frequency of mortality credits to individuals' accounts in order to allow participants to realise gains sooner, as the current lag can have a particularly significant impact on the pension level for very old participants.

To shield members from frequent or large benefit reductions and reduce the volatility of retirement income payments over time, the arrangement may also incorporate a smoothing mechanism that effectively delays the distribution of gains and losses further in order to smooth some of the investment and longevity risk over time and across cohorts. Arrangements implementing smoothing mechanisms normally define at least a portion of the rights on a collective basis, as the assets held to smooth losses cannot be owned individually. Such mechanisms include collective buffers or reserves, funding corridors, and recovery periods.

Collective buffers or reserves are one of the more common mechanisms implemented to protect participants from benefit cuts. They are effectively reserves that require the scheme to have more assets than needed to pay expected benefits. This prevents it from fully distributing financial gains in order to smooth the release of profits or avoid a reduction in benefit levels following a period of limited financial losses. Collective buffers can shift some value to future cohorts, who may be able to benefit from the buffer at the expense of current beneficiaries who must build up or maintain a positive buffer.

Funding corridors allow for some deviation from 100% funding in both directions to avoid having to frequently change benefit levels. The design could combine duration constraints with the thresholds for acceptable deviation to make sure any funding mismatch does not become more permanent. For example, schemes in Iceland must adjust benefits if the funding ratio deviates by more than 10% from full funding, or when it deviates by more than 5% over five consecutive years. Because deviations are limited and can go in both directions, funding corridors do not normally result in significant value transfers across cohorts.

Recovery periods allow for prolonged periods of underfunding provided that the scheme can realistically achieve full funding within a given timeframe. Recovery plans often require the approval of the regulatory body or supervisor. This can delay any benefit cuts or spread necessary cuts over time. However, these types of measures tend to shift value to current beneficiaries, as future beneficiaries then face a larger risk of benefit reductions.

While designing arrangements with a smoothing mechanism can help to reduce the short-term volatility of the retirement income that participants will receive, it will generally increase the inter-cohort or intergenerational risk sharing within the arrangement. Furthermore, delaying benefit adjustments in the short-term may lead to a higher risk of larger benefit cuts down the road to restore funding levels.

As such, the decision to incorporate a smoothing mechanism to limit benefit volatility is closely linked to considerations around fairness. For example, the Royal Mail scheme in the United Kingdom has maintained a flat benefit formula based on salary replacement, but it has opted to not incorporate a collective buffer to smooth benefits in part to limit the intergenerational risk sharing in the scheme.

Nevertheless, there may be a policy objective for non-guaranteed lifetime retirement income arrangements to offer more benefit stability, particularly in a context where there is a strong preference for guarantees. In many jurisdictions having a history of guaranteed occupational arrangements, there is a cultural preference to retain a certain level of security even when moving to a non-guaranteed arrangement. In its initial transition to non-guaranteed collective defined contributions schemes, the Netherlands required providers to maintain a risk-based capital buffer to protect benefit levels. Even in its transition to a more

individualised system, they have retained an option to incorporate a collective reserve to smooth benefits. In Quebec, the Provision for Adverse Deviation (PfAD) required for defined benefit plans is also required for target benefit arrangements. While German legislation allows for a range of different designs, the schemes currently being introduced incorporate a capital reserve. In Japan, risk sharing arrangements were introduced in part as a way to counter the investment risk aversion of individuals. Plan design therefore provides for more benefit security through a risk-based collective buffer to appease this risk aversion while allowing for less conservative investment strategies to earn higher returns.

In other jurisdictions with a longer history of individual defined contribution plans, the potential volatility of retirement income poses less of a problem, so smoothing mechanisms may not be as desirable. In Australia, many individuals withdraw the minimum required amount from their superannuation accounts, which can already lead to volatile retirement income. Compared to this solution, non-guaranteed lifetime retirement income arrangements can allow individuals to withdraw higher amounts with potentially lower downside, without the risk of outliving their savings.

The extent to which public pension benefits are means tested may also increase the potential appetite for volatility, as these benefits could at least partially offset any reduction in retirement income from a non-guaranteed arrangement. This is the case in Iceland, which incorporates a funding corridor into its design but does not impose an additional buffer. This is also the case in Australia and Denmark, which could help increase the acceptance of volatility of retirement income from these types of arrangements and reduce the need to incorporate any additional smoothing mechanism.

5.1.5. Optionality

Non-guaranteed lifetime retirement income arrangements can offer some optionality for members to better personalise the way that they will finance their retirement or to offer them some flexibility around their participation in the arrangement. Nevertheless, because the nature of these arrangements is to pool risks among members, the optionality that they offer is normally quite limited so they can still benefit from risk sharing and ensure that the scheme remains equitable.

Some schemes may offer members the ability to select their investment strategy to better align with their risk appetite and preferences. This is primarily an option during the accumulation phase due to the complexity of equitably adjusting benefits across different investment strategies, and there is usually a limited number of fund options for the members to choose from. However, the Premium Pension in Sweden also provides the option to select the investment strategy during pay-out.

Schemes may also allow members to withdraw their funds, but this option must remain limited during the pay-out phase when the returns from longevity pooling are the highest. Otherwise, non-guaranteed lifetime retirement income arrangements will not be able to offer retirement incomes that are much better than what members could achieve investing on their own in individual accounts. When offered, withdrawals are usually only allowed up to a maximum age, or a limited time following retirement. Schemes can also allow for withdrawals of limited amounts to provide members with a certain level of liquidity. Offering this type of option for members to withdraw their funds can be an effective way to help them overcome any hesitancy to relinquish control of their assets during their retirement. Once they experience the benefits of receiving a regular retirement income, they should be less likely to want to opt out of the scheme. Liquidity options can also give them the assurance that they will be able to meet unexpected expenses if they arise.

Schemes may additionally allow members to ensure that their survivors will receive some benefit if they die before expected. One type of benefit is a joint lifetime retirement income, so the member's spouse can continue to receive a retirement income benefit even if the member passes away. This option will reduce the level of the initial income, but the benefits of longevity pooling remain. Another option can be a lump-sum benefit upon death. The amount of this option should be limited, as this can significantly reduce the benefits of longevity pooling. One way to structure a lump-sum death benefit is as a return of premium

guarantee, so the beneficiary receives the difference between the premium paid and the sum of the retirement income benefits already paid out. The Lifetime Pension offered by Australian Retirement Trust offers a return-of-premium guarantee option.[3] This structure still allows for the pooling of longevity risk at the oldest ages when the benefits are most significant. Offering death and survivor benefits can help to overcome demand-side obstacles, particularly for arrangements covering only the pay-out phase, as it helps to mitigate the loss aversion that members may have when facing the risk of losing all of their assets if they die earlier than expected.

5.2. Necessary conditions for the introduction of non-guaranteed lifetime retirement income arrangements

The introduction of non-guaranteed lifetime retirement income arrangements requires policy makers to ensure that adequate frameworks are in place that establish the legal boundaries and rules relating to their operation as well as to encourage take-up. Their introduction may require new legislation, and policy makers need to consider how existing regulations may apply to the arrangements. Additional measures may also be needed to incentivise the establishment of or the participation in the arrangements.

5.2.1. Legislative and regulatory framework

The legislative and/or regulatory framework may require changes or adjustments in order to accommodate the introduction of non-guaranteed lifetime retirement income arrangements. There first needs to be a strong reason or policy objective to initiate such changes. Several jurisdictions have decided to introduce new legislation to allow for the introduction of non-guaranteed arrangements. The extent of the changes required depends on the legislative framework in place. Regulators have also had to consider the application of existing rules to the new arrangements, even when no new legislation has been needed. Generally, jurisdictions have varied widely in their approach to legislation and the level of detail prescribed.

Sustainability concerns are often the main driver of legislative change to introduce non-guaranteed lifetime retirement income arrangements. New Brunswick introduced the legislation for Shared Risk Pension Plans following increasing financial pressures on defined benefit plans coming from the challenging financial environment, increasing longevity, and maturing demographics. Similarly, target benefit plans in the paper and pulp sector in Quebec were introduced in response to the financial challenges of the industry following the general move away from paper, and the result of union efforts to convince employers and lawmakers to allow them. Recent legislation in Quebec allowed target benefit plans more broadly, following the expansion of a law requiring equal compensation for equivalent employees to include pension benefits. This would have likely led more employers to abandon their defined benefit plans completely in favour of individual defined contribution given sustainability concerns, and allowing target benefit plans instead was an acceptable compromise for both employers and unions. The need for a sustainable compromise also drove the introduction of new legislation in the United Kingdom. Royal Mail was struggling to finance its defined benefit scheme, which it had already closed to new members. When it considered closing the scheme also to future accruals for existing members, the unions approached them to find an alternative solution. The employer and unions together pushed the government for the needed legislative change, which then had bipartisan support as it represented the interests of both parties.

Additional policy objectives have driven the introduction of non-guaranteed schemes in some jurisdictions. In Germany, the government introduced new legislation to introduce the social partner plans in part to try to increase the coverage of occupational pensions. Smaller employers and blue-collar employers in Germany are less likely to offer a pension plan to their employees, and the new social partner schemes offer an alternative to guaranteed schemes that may be easier for these employers to manage. In Iceland, a main objective for the conversion of the public sector defined benefit scheme was to harmonise the schemes across the public and private sectors, and thereby increase flexibility in the labour market to move

between the two sectors. In the Netherlands, the proposed legislative change to move to a system based on individual accounts aims to make the system more fair and transparent in the context of increased mobility of the labour market, to improve trust in the system, and to make the system more resilient to financial shocks.

Nevertheless, even when there is broad agreement that changes are needed, agreeing upon what those changes should be can be a lengthy process. In Quebec, employer and employee representatives discussed for two years before agreeing on a legal proposal. In the Netherlands, it took ten years before the social partners, government, and pension industry representatives could agree on the design of the new system, for which they are currently developing legislation. Lengthy discussions with social partners also took place in Germany before the introduction of legislation, which provided the boundaries of the new plans' design. Subsequent negotiations to agree on the introduction of the new type of plan and the specific details of the plans in collective agreements have also taken a long time. The first plans were implemented in 2022, four years after the legislation passed.

To allow for the introduction of non-guaranteed lifetime retirement income arrangements, several jurisdictions have had to modify or introduce new legislation to allow occupational arrangements to be able to reduce retirement income benefits. Most of the existing pension legislation in Canada prohibited any modification to accrued benefits (Deraspe and McGlashan, 2016[4]). To overcome this limit, New Brunswick established a regulatory framework for Shared Risk Pension Plans in 2012 under the existing Pension Benefits Act that allowed for benefit adjustments. Quebec initially introduced legislation allowing target benefit schemes only for the paper and pulp sector, but in 2020 allowed these plans to be introduced more widely by modifying the existing legislation for occupational defined benefit plans (National Assembly of Quebec, 2020[5]). Japan introduced risk sharing pension plans under the existing legislation for defined benefit plans, but introduced new funding requirements specifically for those types of plans. In the United Kingdom, existing legislation only allowed benefit reductions with member consent, effectively requiring the employer to go bankrupt before they could reduce benefits. They therefore modified the legislation in 2021 to allow for the introduction of "Collective Money Purchase" (CMP) schemes that regularly adjust benefits to align with the assets available in the scheme. Germany introduced new legislation in 2018 to allow employers to establish Social Partner "Pure DC" schemes, as existing legislation required occupational plans to provide guarantees. Iceland passed a new bill to convert the public sector guaranteed defined benefit A-schemes to a collective defined contribution scheme with age-dependent accrual rates in line with the private sector schemes.

Other types of legislative or regulatory provisions may be needed to allow for the offer of non-guaranteed lifetime retirement income arrangements outside of the purview of occupational pensions. In Ontario, the Securities Commission has granted exemptive relief for one scheme introduced as a mutual fund so that it can redeem the remaining units of deceased participants at less than their value to allow for longevity pooling. However, the legislative provision requiring that the unit price and distribution value must be the same for all members has led the scheme to group participants by cohorts to ensure fair pricing. This reduces the size of the longevity pools, making them less effective as a lifetime retirement income solution (MacDonald et al., 2021[6]). In the United States, the SECURE Act passed in 2019 could facilitate further development of non-guaranteed arrangements because it doesn't require that a lifetime retirement income be provided with insurance (Hadass et al., 2021[7]).

A few jurisdictions have not required any legislative change to allow the introduction of non-guaranteed schemes. Regulators in Saskatchewan determined that the existing legislative framework was adequate for the introduction of target benefit plans (Deraspe and McGlashan, 2016[4]). Denmark has not required any new legislation either, and has allowed providers significant flexibility in designing non-guaranteed products offered as occupational plans. They have taken an approach more focused on supervision to ensure that the plans are suitable and fair to participants and that members understand the inherent risks in participating.

Even where no legislative change is needed, regulators and supervisors still need to consider how the existing rules should apply to the new arrangements. For example, regulation may require prudence in setting the assumptions used for valuations. However, overly conservative assumptions to establish retirement income levels are not necessarily beneficial for members in the context of non-guaranteed lifetime retirement income arrangements, as this could reduce the retirement income that they are able to take and shift some value to future cohorts at the expense of current pensioners. Profit sharing rules may also need further consideration, as in this context profits from beneficial investment and longevity experience in principle belong to the participants. Limited solvency capital requirements could also potentially apply to such schemes, even if no guarantees are provided. These could be linked to operational risk, for example, or limited insurance risk to the extent that benefit adjustments do not fully reflect realised longevity experience.[4]

Regulators and supervisors may also consider the rules around the wind-up of the scheme in the case that the provider becomes insolvent or needs to close the scheme. In principle, these types of plans will not be eligible for coverage by any pension protection scheme in place, as there are no guarantees. The assets remaining in the plan, however, belong to the participants. They could therefore be divided among the surviving members in a proportional manner for collective schemes, or for individual schemes members could simply receive their remaining account value. Nevertheless, this is not an ideal solution given that the primary objective of these arrangements is to provide a retirement income for life. As such, where possible in more developed markets, regulators may want to consider having a mechanism in place for closing schemes to be absorbed into other similar schemes in operation.

Where relevant, the application of competition regulation may present a particular challenge, since there may be an incentive for providers to artificially inflate the initial retirement income paid using aggressive assumptions in order to attract business. This approach would eventually require a reduction in future retirement income payments to ensure the financial balance of the scheme, which may not be initially transparent to participants. Rather than competing on the assumptions used for valuation and the calculation of the retirement income, competition between providers should centre on product design and services provided. Clear rules around a scheme's governance and assumption setting can help to address this concern.

Another challenge in introducing a new regulatory framework is balancing the timing of the development of regulations with the development of the market. While Quebec has introduced needed legislation to allow providers to offer target benefit plans, they have taken a slower approach to the development of regulations. They prefer to develop the regulatory framework once providers have shown more interest in developing schemes and have concrete proposals for their implementation. However, this has contributed to some uncertainty with respect to the boundaries of the obligations of employers, for example, which has led to some reluctance to move forward. In contrast, regulation developed in the United Kingdom is quite detailed, with the goal to be adapted to a more developed market. Nevertheless, this approach could hinder further development of the market if the rules are not flexible enough to adapt to the different contexts in which these schemes could be initially introduced.

More generally, the level of detail prescribed in the legislation and regulation varies widely across jurisdictions. Quebec has adapted the legislation applicable to DB plans to accommodate target benefit plans, and the solvency rules requiring plans to have a risk-based provision for adverse deviation (PfAD) and rules around the distribution of any surplus still apply. Japan has also adapted its DB legislation to incorporate risk sharing pension plans, but new regulations detail the specific funding requirements for the new plans and how benefits should be adjusted. Similarly focused on risk-based buffers, the legislation in New Brunswick is very detailed with respect to the risk management of the plans, and defines stochastic risk limits that the plan must meet. In Iceland, legislation and regulation lay out the parameters that schemes must use for setting contributions and valuation, namely the minimum target replacement rate and the discount rate, as well as the thresholds for benefit adjustment. Legislation for the Premium Pension in Sweden and the proposed legislation for the new occupational contracts in the Netherlands both outline

the general design of the arrangements and funding rules. However, the formula and assumptions used to distribute gains and losses to members is left up to the scheme. German legislation for the Social Partner DC schemes provides the general boundaries of plan design and limits to funding, but leaves many of the details open for negotiations among social partners in collective agreements. Legislation in the United Kingdom focuses on the processes that schemes need to follow, and covers topics such as governance, IT capabilities, the role of the actuary, and communication to members.

Legislation sometimes requires plan design and benefit adjustments to treat all members fairly, though without defining precisely what is meant by fairness. New Brunswick stipulates that no cohort should unduly subsidise another, and Quebec requires equitable treatment of members to avoid disputes between active and non-active members. The Netherlands requires the board to weigh members' interests in a balanced manner. Such clauses aim to avoid situations where certain groups are favoured at the expense of others, such as maintaining the benefits of current pensioners at the cost of an increased risk of cuts for future pensioners. Nevertheless, different groups can interpret the concept of fairness in a variety of ways, and enforcing such provisions would likely be difficult. Indeed, benefit adjustment decisions in the Netherlands have lacked transparency and have not always affected active members and pensioners equally. In addition, plans in both Canada and the Netherlands incorporate the use of collective buffers, which themselves have implications for intergenerational transfers that may or may not be viewed as fair.

5.2.2. Incentives to establish and participate in the arrangements

There need to be adequate incentives for providers to introduce non-guaranteed lifetime retirement income arrangements and for individuals to participate in the arrangements, otherwise the market will struggle to develop. Some jurisdictions have approached this with mandates for participation. In others, concerns around the sustainability of defined benefit plans have led to the joint support of both employers and the unions. While the legal or regulatory framework intends to encourage the arrangements in several jurisdictions, there is often still a lack of incentives for providers, or potentially even disincentives for them to establish an arrangement. Individuals may also need incentives to participate in the arrangements where individual participation is voluntary. Jurisdictions have done this through financial incentives and, for retail products, with design features that address some of participants' behavioural biases.

The easiest way to promote the offer and development of non-guaranteed lifetime retirement income arrangements is by mandating participation. In Sweden, all employees must contribute to the Premium Pension, for which one of the two pay-out options is a non-guaranteed lifetime income. In Iceland, all employees must contribute to their multi-employer's scheme. In the Netherlands, employees must participate in the available plans agreed in collective agreements based on the plan design defined in legislation. When offered by the employer, the participation of employees is also required in Denmark, though employers generally have more choice available in the design of the plan they offer.

Some jurisdictions have managed to shift towards non-guaranteed lifetime retirement income arrangements as a result of negotiations between employers and unions driven by concerns around the sustainability of specific defined benefit schemes. However, because negotiations tend to be focused on specific schemes, the market has not necessarily developed more broadly. This was the case for the paper and pulp sector in Quebec, and Royal Mail in the United Kingdom, where both employers were not financially viable enough to be able to continue to back the guarantees for their defined benefit plans. In contrast, the transition to a non-guaranteed lifetime retirement income arrangement for public sector schemes in Iceland was intended as a means to better align the compensation structures (both salaries and pension benefits) across public and private sectors and make the labour market more dynamic, for which there had been a consensus of public opinion. There, the majority of employers already offered non-guaranteed retirement income arrangements. In negotiations with the unions, the government succeeded in converting the A-scheme defined benefit plan into a collective defined contribution plan by offering to provide a capital injection to bring the plan to full funding.

There are also a few examples of plans that have been successfully introduced through the initiative of the employer or provider as a pay-out option for individual defined contribution plans for specific employed populations. The plan for employees at the University of British Colombia was one of the first of these types of schemes in Canada, and has been successfully running since the 1970s. In the United States, The Teachers Insurance and Annuity Association of America (TIAA) introduced a similar plan in the 1950s in response to rising inflation that eroded the value of the retirement savings of their members.

Nevertheless, incentives to set up a plan – particularly one covering the accumulation phase – are less obvious for employers who have already shifted to individual defined contribution plans or who do not currently offer a pension plan to their employees. Bearing the cost of implementation and taking on the additional administrative and organisational burden of providing a non-guaranteed lifetime retirement income arrangement is likely not an attractive solution to an employer in either situation. One motivation to do so could be the potential gains in the financial well-being of employees, as non-guaranteed schemes could help them to be better prepared for and financially protected in retirement. As such, the demand for employers to offer such schemes would have to come from the employees themselves. Another potential incentive for employers is the harmonisation of the plans offered to senior employees and recent hires, where the former are covered by guaranteed plans and the latter by individual defined contribution plans.

Jurisdictions are trying different ways to overcome the lack of incentives for providers to establish non-guaranteed lifetime retirement income arrangements. To overcome the lack of incentives and employer take-up in Quebec, one union is proposing to take care of all of the design, implementation costs and administrative burdens if employers agree to set up a scheme for their employees. Employers would only be obliged to provide contributions set at a level to finance the desired benefit levels within certain boundaries, and would not necessarily need to be involved in the management of the scheme. This approach could minimise the disincentives relating to cost and administration that employers have to offer such schemes.

In Germany, the government expects that social partners will drive the introduction of the Social Partner DC schemes. The legislation stipulates that schemes must be established through collective agreements, and that the social partners participate in their governance. Nevertheless, the negotiation process is long, and four years after the legislation passed, the first schemes were implemented only in 2022. The hope is that after these schemes are operational, they will serve as an example for others to follow, which will facilitate the process going forward.

Australia is trying to encourage the development of innovative lifetime retirement income solutions for the superannuation system. It recently passed the Retirement Income Covenant, which obliges trustees to offer a retirement income strategy to their members that helps them to balance the objectives of maximising their expected retirement income, managing the risks to the sustainability and stability of that income, and providing flexibility to access their funds. This could encourage the asset managers to develop non-guaranteed lifetime retirement income arrangements, as they can design these types of solutions to cater to each of the required objectives. In addition, the asset managers would be able to provide these types of products themselves rather than have to collaborate with a life insurer to offer a guaranteed product. Nevertheless, very few providers currently offer products with longevity protection, and providers will still be able to justify offering drawdown solutions. In addition, the development and testing of new products can be an expensive process, so making this investment can be a risky endeavour if the necessary demand for these types of plans to achieve scale is not certain. As such, further development of the market may be contingent on consumer demand.

Strict design and operational requirements imposed by legislation and regulation may also present a barrier to the development of non-guaranteed lifetime retirement income arrangements, particularly for smaller players. The cost of setting up a scheme can be substantial, and can include licensing fees, updating admin systems, costs to meet regulatory requirements, or financing any required buffers. For example, in the United Kingdom, new schemes are required to pay an application fee of GBP 77 000. There will also

be a cost for trustees to familiarise themselves with the legislation and meet the knowledge requirements, as well as other extensive procedural requirements that need to be met, which may deter some providers from establishing a plan. In Japan, sponsors have to bear the additional cost of calculating and financing the required risk buffer for the plans. The amount of the buffer can either be based on a standard formula included in the regulation, or based on a bespoke approach justified to the regulators that aims to protect employees from a benefit reduction with 95% certainty. However, the standard formula typically results in a collective buffer representing a significant proportion of the expected liabilities, and using a bespoke approach to better balance the cost of the plan and employee protection also involves additional cost to develop and justify.

Accounting treatment can be a major incentive for providers to adopt a non-guaranteed retirement income arrangement as a means to relieve financial pressure on their balance sheets. The accounting framework needs to make clear that the providers of these arrangements will be able to realise their potential financial benefits, and not risk any surprises regarding their financial obligations. Indeed, one reason why Royal Mail opted to establish a CDC scheme rather than a conditional indexation plan is the beneficial accounting treatment of the former, as for the latter they were not able to afford the full liability on their balance sheet. Accounting treatment was also one of the reasons that the Netherlands moved to CDC schemes from guaranteed Defined Benefit schemes, as employers do not have to declare CDC schemes on their balance sheet as an accounting liability.

However, not all accounting standards necessarily allow sponsors relief from recognising the accrued expected liabilities of non-guaranteed lifetime retirement income arrangements. The treatment of collective plans under US GAAP accounting standards is unclear. This has proven to be a barrier for US subsidiaries in Japan to introduce a risk-sharing plan for their employees. Similarly, in Quebec some employers have been reluctant to establish a target benefit scheme because of the lack of clarity in how they will be treated under US GAAP, though in practice the regulators and auditors have been open to accepting a DC-type accounting if the rules of the plan indicate a clear transfer of volatility risk to the employees.

In the context of voluntary retail products, some jurisdictions have had to adapt existing tax legislation and financial incentives to specifically accommodate non-guaranteed lifetime retirement income arrangements and provide at least the same incentives for these products as for other forms of retirement income. In Australia, the superannuation tax concessions applied only to regular withdrawals from a superannuation account. In 2017, the government therefore extended this tax concession to include other products that meet three criteria: regular lifetime benefits; benefits that are not unreasonably deferred; and limited withdrawals and surrender values. In 2019 they introduced an additional incentive to count only 60% of the income from products with lifetime income streams toward the means test for public pension benefits. Canada also amended its tax regulation in 2021 to allow variable payment life annuities (VLPAs) to be offered within registered individual defined contribution plans and Pooled Registered Pension Plans (PRPP). However, only a small percentage of Canadians are covered by these plans, and this amendment did not extend to other types of individual retirement savings vehicles (MacDonald et al., 2021[6]).

Nevertheless, financial incentives are not always sufficient to promote demand for retirement income products that pool longevity risk, as this requires individuals to relinquish their retirement savings to the provider. Providers of retail products have therefore typically added additional features to make them more attractive to individuals. Australian Retirement Trust's 'Lifetime Pension' comes with a return-of-premium guarantee that the initial premium will be paid back, either through income payments made or via a payment to beneficiaries of the unpaid difference upon death. In addition, it allows individuals to cancel their contract within the first six months if they decide that the product is not right for them. TIAA's variable annuity option in the United States also allows a cooling off period for participants to change their mind about the product, and the Longevity Pension Fund offered by Purpose in Canada allows participants the potential to access their funds in case of a liquidity need. These features aim to appease the loss aversion that individuals may have in handing over their savings to the provider by ensuring that they will be able to get at least some of that capital back.

5.3. Practical challenges for implementation

Institutions looking to establish a non-guaranteed lifetime retirement income arrangement must consider the feasibility and viability of doing so. These arrangements will need to be integrated within the existing institutional and administrative frameworks. Legal constraints may limit the options that are available to employers to be able to convert existing schemes, or where feasible, conversion can involve significant challenges to implement. Providers also need to consider what is feasible in light of the expected cost and scale of the new arrangement.

5.3.1. Institutional framework

Existing institutional frameworks for the provision of retirement income have often been able to accommodate the management of non-guaranteed lifetime retirement income arrangements. Indeed, most jurisdictions have been able to rely on existing institutions to organise the provision of these types of arrangements. Occupational arrangements in Demark, Germany, Japan, the Netherlands, and the United Kingdom rely on the same institutions currently providing pension schemes to employees to manage any non-guaranteed arrangements introduced. In Australia, the asset managers participating in the superannuation system during accumulation are also allowed to provide non-guaranteed retirement income arrangements, as they do not involve the provision of guarantees and are therefore not subject to insurance regulation.

The biggest challenge for existing providers, however, will likely be updating their administrative systems to align with the organisation of the non-guaranteed lifetime retirement income arrangement. This will be particularly difficult where providers who have been managing arrangements where rights are defined collectively move to providing arrangements where rights are defined individually. This is currently the case in the Netherlands, and providers will have to completely restructure their administrative systems to be able to manage the transition to the new pension contracts. In contrast, providers already managing individual retirement savings accounts would only need to add an additional administrative layer to manage the longevity pooling. Insurance companies would have the advantage of already having this type of administrative infrastructure in place.

5.3.2. Conversion of existing schemes

Legislation may limit the conversion of existing defined benefit schemes in the context of occupational pensions. In Quebec, legislation prohibits the conversion of past rights accrued in defined benefit plans. Employers can therefore only introduce target benefit schemes for future accruals. In Japan, conversion of a defined benefit plan requires the consent of two-thirds of individual employees unless the plan sponsor has financed the risk margin by at least 50%, in which case, the conversion only requires the consent of the employee representative representing the majority of employees. In the Netherlands, the conversion of the existing system to individual contracts will be contingent on collective agreements.

The design of existing schemes offered to employees may influence any preference for conversion. Conversion is relatively simple for employers moving from a defined benefit arrangement to a non-guaranteed lifetime retirement income arrangement with a similar benefit formula, as they should be able to manage the scheme in the same vehicle. This was the approach in the Netherlands when schemes converted from guaranteed defined benefit to collective defined contributions schemes. This is also commonly the approach for employers in Japan. However, if employers have both defined benefit and defined contribution plans, and they are seeking to harmonise the retirement benefits of employees, it may be preferable to freeze contributions to existing schemes and direct only future accruals to a non-guaranteed scheme. Royal Mail in the United Kingdom opted for this approach.

However, employers may have an incentive to convert existing arrangements even when implementing a different benefit structure and design for the new scheme. One motivation can be the administrative difficulty of managing multiple pension schemes. The government and the municipalities converted the public sector defined benefit A-scheme in Iceland to a non-guaranteed scheme with age-based accrual rates for all members under 60, in part to maintain a single scheme. This is also a reason to convert existing schemes in the Netherlands to the new individual contracts, as having a dual administrative system to manage both types of plans would be difficult and costly.

There are several practical challenges, however, when converting existing arrangements to non-guaranteed lifetime retirement income arrangements, particularly for collectively defined schemes. When converting guaranteed defined benefit plans, any funding deficit must be addressed to ensure the financial balance of the new scheme. This will either have to involve cuts of accrued benefits or a capital injection to bring the plan to full funding levels. Iceland took the latter approach in converting its public sector defined benefit plan to a non-guaranteed lifetime retirement income arrangement. They were exceptionally able to finance the scheme rather than cut benefits because they had funds available from the failed banks following the financial crisis.

Another challenge is ensuring that the conversion is equitable for the current participants in the scheme. This is a particular challenge for schemes converting to an age-based accrual formula from one independent of age, because younger members will have been subsidising the benefit accrual of older members, yet will no longer be able to benefit from this subsidy themselves. Iceland addressed this by ensuring that the capital injection to bring the scheme to full funding was sufficient to finance the expected benefits of members based on the former accrual method, effectively ensuring that they would not expect to have lower benefits under the new scheme. The Netherlands plans to reallocate existing assets – potentially along with additional employer contributions – to individual accounts in a way that will correct this subsidisation.[5]

The valuation of accrued rights in these conversion exercises is rather complex and subject to numerous assumptions, however. In addition, these assumptions can change in the time it takes to implement the conversion, which could change the ultimate distribution of outcomes across members. To partially address this uncertainty, the Icelandic Government established an emergency fund in addition to the capital injection whose purpose it is to offset any shortfall coming from the actuarial assumptions, and in particular the mortality assumptions. However, the calculation of the capital injection did not take into account future mortality improvement assumptions, so there was already a known actuarial shortfall in funding. This is currently being addressed, as the mortality assumptions used for the valuation of all schemes will now account for expected mortality improvements.

5.3.3. Required scale

Whether the arrangement is expected to attain sufficient scale will influence whether or not the cost for the development and introduction of these types of arrangements is warranted. As such, high introduction costs may be a barrier for smaller players to offer a non-guaranteed lifetime retirement income arrangement. They may also not be able to achieve operational efficiencies to keep fees low enough to meet regulatory requirements, for example where there is a cap on allowable fees.

Allowing for multi-employer or multi-union plans could help sponsors to achieve sufficient scale, but these come with their own challenges relating to ensuring fairness in design. In light of this, current legislation in the United Kingdom does not allow for establishing multi-employer plans. Ensuring equity is more problematic in arrangements defining benefits in terms of a salary replacement rate independent of age. In these types of arrangements, contribution levels need to take into account any differences in demographic composition to avoid subsidisations across employers. Age-dependent accrual rates, as in Iceland, can mitigate this challenge and limit cross-subsidisation.

Sufficient scale is also required from an operational perspective in order to avoid excessive volatility of benefits coming from longevity. This is a particular challenge for individual tontine-type arrangements, though these can still be viable with less than 1 000 participants. One solution to this challenge that a provider in Australia is implementing is to simply insure the longevity risk of the arrangement, which effectively outsources the longevity pooling mechanism to an insurer. While the arrangement then technically provides a guarantee, other aspects of its operation are comparable to the non-guaranteed arrangements discussed here. Indeed, this structure is very similar to the products available in Denmark, which tend to only make prospective adjustments to account for changes in longevity experience, implying implicit protection against realised deviations in longevity experience and the resulting benefit volatility.

5.4. Elements for long-term success

In order to be successful, non-guaranteed lifetime retirement income arrangements need to ensure that they have a proper governance framework and that the relevant stakeholders understand their design and operation. These aspects are especially important to instil trust in the arrangements and thereby encourage continued uptake and participation.

5.4.1. Governance

The need for a good governance framework is not unique to non-guaranteed lifetime retirement income arrangements, but it is particularly crucial for their success. Most importantly, the governance framework should ensure a balanced representation that considers the interests of participants, that the assumptions used to calculate benefit payments are appropriate, and that the arrangement is managed in a transparent and independent manner.

As the participants in non-guaranteed lifetime retirement income arrangements are the primary bearers of risk, many schemes ensure their representation in the governing body. In Japan, risk sharing schemes must have at least one employee representative, but in practice they often include more. Quebec also requires that all parties be represented in the governing body. In Iceland, representation is split between employers and employees, often equally. In the Netherlands, the representation of participants in the management of the scheme is ensured via representation within the board or an internal body to which the board justifies its decisions. In Germany, while legislation does not specify that social partners be a part of the governing body, it does say that they should participate in its implementation and governance, and therefore implicitly ensures that employee interests are represented.

While a few arrangements allow independent members to be part of the governing body, this is usually not a strict requirement. In Quebec, however, plans must have at least one independent member of the governing body. Risk sharing plans in Japan can include external members such as consultancies in plan governance, but this is not a requirement. While Iceland does not currently include independent members, there is some discussion around whether this could be beneficial to help mediate discussions between employer and employee representatives and provide an external perspective.

Some jurisdictions emphasise the competency of trustees to manage the scheme and make informed decisions in the best interests of members. For example, the Draft Code of Practice for Collective Money Purchase schemes in the United Kingdom lays out detailed fit and proper requirements, and requires members to have training and knowledge on pensions. In Iceland, members are required to pass a proficiency exam.

It is important for the governance framework of non-guaranteed lifetime retirement income arrangements to ensure the appropriateness and independence of the assumptions used for the valuation and calculation of benefits. The assumptions used determine the level of benefits and required adjustments, and can therefore have a significant impact on participants' outcomes over the long term.

The governing body is responsible for approving assumptions used in some jurisdictions. This is the case in Quebec, however only the sponsor can make amendments to the scheme, within limits. In Australia, the Australian Retirement Trust's board decides on the product features and assumptions for their Lifetime Pension product. While product managers can credit individual accounts in real time, they must have approval before changing any assumptions. In the Netherlands, the governing body has full control over how to use collective assets to smooth benefits, as long as they remain within the funding limits established in legislation.

In several jurisdictions, the governing body relies on the assumptions advised by experts to ensure their independence. For the Premium Pension in Sweden, the actuaries suggest the assumptions that the Director of the Pensions Agency must then approve. In Iceland, the actuarial association develops the mortality assumptions that schemes use for valuations. Boards can nevertheless adjust accrual tables if needed, which establish the level of expected benefit from contributions by age. In Denmark, some providers rely on assumptions developed by external expert committees for the expected risk and return of different asset classes.

Requirements can also be in place to ensure that the governing body makes decisions in the best interests of members, though this is usually a general requirement for all types of pension arrangements. Scheme managers in Quebec are subject to fiduciary obligations, as are managers of plans in the United States operating in the context of occupational pensions under ERISA's remit. Australia requires that the boards of superannuation funds regularly assess whether trustees are making decisions in the financial interest of participants. Regulation in the United Kingdom requires clear lines of accountability for each function and a regular monitoring of risk, and trustees must demonstrate the financial sustainability of the plan.

The governance framework also needs to ensure transparency in the operation of schemes in order to promote trust in the arrangements and members' willingness to participate. Transparency is particularly important regarding the rules of the arrangement and how benefits will be adjusted. To this end, legislation for the Shared Risk Pension Plans in New Brunswick requires plans to establish detailed criteria regarding when and how it will adjust different types of benefits, and these plans must be executed following a triggering event. In contrast, the Boards of schemes in the Netherlands currently have significant discretion in deciding how benefits will be adjusted and for which members those adjustments will apply. This has contributed to a decline of trust in the system.

Transparency around the assumptions used is also an important tool to manage some potential conflicts of interest. In Iceland, for example, the discount rate of 3.5% is defined in regulation and has not been updated since 1997. Neither the employers nor the employees have any real incentive to adjust this rate to the extent that it could lead to potential downward adjustments to benefit levels. Nevertheless, the validity of this assumption is regularly debated within the pension community. Transparency can also help to manage potential conflicts of interest arising from competitive pressures or a lack thereof. For example, providers may have an incentive to set assumptions resulting in higher initial retirement incomes to attract participants, then lower benefits when participants are no longer able to change providers or exit the plan.

5.4.2. Communication

Non-guaranteed lifetime retirement income arrangements can be complex and difficult to understand, so significant communication efforts are needed to ensure that stakeholders understand how they operate and their inherent benefits and risks. Communication can take an educational focus to explain generally how the arrangements work or how reforms to introduce the arrangements will impact participants. More nuanced communication may be needed explain to individuals the benefits of longevity pooling. Individual statements will need to provide more personalised communication on individuals' expected benefits and the potential for their adjustment.

In some jurisdictions that have introduced non-guaranteed lifetime retirement income arrangements in an occupational setting, communication efforts have involved educating the employers and employees about the main features of the arrangements and their role within the pension system as a whole. In Japan, some employees often do not understand how the pension system works and how the public pension and their occupational scheme complement each other, because they do not necessarily have to be actively involved in either. Some employers have therefore organised seminars to educate employees on the whole pension system as a first step to helping them to understand any non-guaranteed arrangement being introduced. It has also been necessary to educate Human Resource departments to make sure that they are able to communicate correct information to employees who reach out to them for assistance. In Denmark, communication from providers has had to educate employers on the features and design of the non-guaranteed products, as employers have to choose among a variety of products and providers available, and may not understand the differences. In Quebec, unions have put significant efforts into educating both employers and their members on the benefits and features of non-guaranteed arrangements compared to other types of plans.

Communication and educational efforts may also need to target the financial advisors who help individuals with their retirement planning. Advisors often need to comply with strict regulatory requirements to ensure the suitability of the products that they recommend to their clients (OECD, 2016[8]). As such, they will need to understand the benefits and the technical details of how the products work in order to justify any recommendation to their clients.

Where non-guaranteed lifetime retirement income arrangements have been introduced as part of a broader reform of the system, general communication is needed to explain to participants the implications of the main changes. Nevertheless, it is very difficult to convey these issues in simple messaging for a broad audience, and the general need for reform is often communicated over several years before the changes are implemented to help the population understand the reasons behind the reform. In the Netherlands, discussions around the need for reform began following two reports published in 2010 that highlighted the need for people to better understand the fact that their pensions were not guaranteed. Indeed, the public did not seem to understand that their pension schemes had changed following the conversion of most plans from defined benefit to collective defined contribution in the early 2000s, and still expected that their benefits were guaranteed. For the latest reform efforts, communication has tried to convey at a high level that the benefits can be adjusted and that the system will be more individual rather than collective.

However, it is not yet clear how effective this communication will be in helping participants understand the changes and how it will impact their benefits. One study showed that even simple, factual, messages about the new system were ineffective for individuals having prior beliefs about the current system. In addition, individuals cannot yet see concretely how the changes will impact their own benefits, so their beliefs are even harder to change (van Hekken, Hoofs and Brüggen, 2022[9]). In Iceland, the Federation of State and Municipal Employees managed the communication to their members around the conversion of the public sector scheme to a non-guaranteed arrangement. They focused on three simple messages rather than trying to explain the technical details of the conversion. The first was that members should expect to receive the same level of benefits, the second that the government was providing additional funds to ensure this, and finally that the Federation's role was to make sure that happened. Members had already broadly understood that changes would likely be needed to ensure the sustainability of the scheme and to harmonise the public and private sectors, as this had been stressed in public discourse over the previous decade. Nevertheless, communication around the changes made did not emphasise the potential for their benefits to be reduced, and the government did not clearly define in advance the specific actions needed in the event that the additional funds would not be enough to maintain benefit levels. This could pose a challenge to communicating any future change to the members.

Communication regarding the benefits of the longevity pooling that non-guaranteed lifetime retirement income arrangements provide is also difficult. Individuals tend to have an emotional aversion to the concept of sharing mortality risk. Focus groups in New Zealand have indicated that individuals do not see the logic

in sharing their mortality experience with people they do not know. In Australia, focus groups have expressed that leaving their money to the provider if they die is not fair. Individuals may also have negative associations with certain terms that are commonly used for products offering longevity pooling. In the English language, the term 'annuity' seems to be particularly unpopular, whereas the term 'pension' has more positive connotations related to protection and regular payments in retirement (MacDonald et al., 2021[6]).

As such, the framing of any discussion around the sharing of longevity risk needs to be expressed carefully. Australian Retirement Trust in Australia focuses communication on protection from the risk of running out of money, rather than explicitly referring to longevity. Positive framing with respect to the gains that individuals receive from sharing their mortality risk may also help. AMP refers to gains from mortality experience as 'bonuses', while the Premium Pension in Sweden calls them 'inheritance gains'.

In communicating personalised information about the retirement income benefits that individuals can expect to receive, most jurisdictions aim to stress the fact that benefits are not guaranteed and can be adjusted. In both Germany and the United Kingdom, legislation stipulates that benefit statements must inform individuals that benefits may increase or decrease and the rules in place for doing so. In addition, Germany requires that providers communicate to individuals receiving retirement income benefits if and when any adjustment to benefits is expected. Nevertheless, there is not a specified format to do so. One example of a benefit statement successfully tested in Canada relies on illustrations to show the difference between potential adjustments, both to past accrued benefits and to future accruals.

It is also common to communicate a range of possible benefit levels that the participant could have. The Netherlands will communicate the potential range of assets accumulated based on the 5th and the 95th percentiles of a stochastic simulation in addition to the expected level. In Denmark, providers commonly provide an expected, good and bad retirement income scenario for participants.

There is still much to be done to improve communication on non-guaranteed lifetime retirement income arrangements, however. Complexities in design and the difficulty for participants to accept reductions in benefit payments make communication especially challenging for these types of arrangements. Further testing and research is needed to improve the communication around how these types of arrangements work and the potential for benefit adjustments.

5.5. Policy lessons

While no jurisdiction has had exactly the same experience, the examples discussed in this report illustrate many of the key issues that policy makers need to address at each stage of the development of non-guaranteed lifetime retirement income arrangements in order to promote their success. First, the design of the schemes needs be in line with the policy objectives relating to their role within the pension system and member outcomes. Appropriate legal, regulatory and operational frameworks also need to be in place to allow for and encourage the development of these arrangements. Implementation needs to consider the practical challenges to getting these arrangements operational. Finally, clear and transparent governance and communication is needed to ensure their successful operation and continuity.

5.5.1. Design non-guaranteed lifetime retirement income arrangements in line with policy objectives

The design of any non-guaranteed lifetime retirement income arrangement needs to take into account the context in which it will be implemented. It also needs to align with preferences relating to benefit stability. Design should prioritise simplicity to promote trust and make the schemes easier for participants to understand.

Design needs to be compatible with the context in which the scheme will be introduced

The introduction of non-guaranteed lifetime retirement income arrangements can aim to address several challenges that pension systems currently face in different contexts. In an occupational context, they can be a solution to the sustainability challenges of existing guaranteed plans. In a context of individual defined contribution plans, they can allow for a more efficient use of retirement savings to provide a higher expected lifetime income, mitigate longevity risks, and remove some need for financial decision making from individuals.

Nevertheless, their design needs to be compatible with the context in which they will be introduced, and take into account the trade-offs between different objectives. There is often a tension between objectives that promote welfare maximisation and benefit stability through inter-cohort risk sharing, and those that promote equity, flexibility, and transparency.

Schemes defining rights collectively or imposing more inter-cohort or intergenerational risk sharing are easier to implement in an occupational setting or where participation is mandatory for employees. Collectively defined schemes that cover both the accumulation and pay-out are well-placed to meet the objective of maximising retirement income as they are able to optimise the investment strategy over the long term, and can more easily share both longevity and investment risks across members and cohorts. However, these designs can lack transparency in how risks are shared and are more inflexible for members.

In a context of individual defined contribution plans, non-guaranteed arrangements aiming to provide an efficient solution to pay income from the retirement savings accumulated are better organised around individual accounts for the sake of coherence. It is generally easier to limit inter-cohort risk transfers for schemes designed around individual accounts, and they also tend to be more transparent, facilitating trust that members are being fairly treated and thereby encouraging participation. Members can also have more options to tailor their participation to their risk appetite, desired pattern of retirement income, and benefits for their survivors, which are flexibilities that are often promoted as positive aspects of defined contribution systems.

Design needs to be in line with objectives related to benefit stability and equity

The design of non-guaranteed lifetime retirement income arrangements needs to be coherent with preferences for benefit stability and the extent to which there are cross-subsidies across members. Smoothing mechanisms can reduce the potential volatility of benefits, but introducing smoothing mechanisms will also increase the extent to which risks are shared across cohorts and generations. They also generally require that at least a portion of the rights be defined collectively, which will reduce the transparency of the arrangement and render its design more complex.

In a context where there is a strong cultural preference for guarantees, which is often the case when people are used to having guaranteed occupational pension schemes, it may be preferable to allow mechanisms that increase expected benefit stability to gain the acceptance of individuals to participate in the plan.

The overall design of the pension system can also influence preferences for incorporating a benefit smoothing mechanism. The existence of means tested public benefits can partially offset any reduction in benefits from a non-guaranteed lifetime retirement income arrangement, which could in turn may reduce the need for additional smoothing mechanisms within these arrangements.

Benefit formulas can also have implications for how risks are shared within the arrangement. Age-independent benefit accrual formulas, such as those based on a percentage of salary, can raise concerns around equity and increase the demographic risk borne by participants in the plan because they involve cross-subsidies across cohorts. This design is increasingly viewed as unfair, particularly in a context of rising labour market mobility. The examples of jurisdictions who have moved from benefit

formulas based on a percentage of salary towards age-dependent accrual formulas have demonstrated that changing the benefit formula in an equitable manner down the line is extremely complex. It is therefore important to design the scheme in line with preferences regarding fairness from inception.

Design should be as simple as possible

The design of non-guaranteed lifetime retirement income arrangements can become complex, but should aim to be as simple and transparent as possible while still achieving the other desired objectives. Participants are more likely to trust a scheme if they understand how their benefits are being adjusted, and their perceptions as to whether or not they are fairly treated in a scheme likely matter more than whether the scheme is technically fair. For example, schemes adjusting benefits in an equal proportion for all participants are likely to be perceived as fair because it is more transparent and easier to understand, even if this may technically involve more cross-subsidies across participants.

5.5.2. Ensure the necessary conditions for the introduction of non-guaranteed lifetime retirement income arrangements

Policy makers need to ensure the appropriate conditions for non-guaranteed lifetime retirement income arrangements to be introduced successfully. Existing legal and regulatory frameworks may not currently accommodate these types of arrangements. Any new rules introduced need to balance prescriptiveness with flexibility and should aim to be practical and coherent in their objectives, while the application of existing rules may need to be reconsidered. However, even when allowed, providers may not introduce these types of arrangements without additional incentives to do so.

Existing legal and regulatory frameworks need to be inclusive of non-guaranteed lifetime retirement income arrangements

The existing legal and regulatory frameworks do not always accommodate, or indeed even allow, non-guaranteed lifetime retirement income arrangements. In many jurisdictions, retirement income arrangements are required to have guarantees or are not allowed to reduce benefits. In this case, existing legislation can be modified, or alternatively new legislation introduced, to establish the framework for their design and operation. Other regulatory requirements may impede certain structures from effectively pooling longevity risk.

Accounting frameworks also need to accommodate non-guaranteed arrangements and reflect that the sponsor does not have any future obligation to pay the expected benefit levels. Some frameworks, such as US GAAP, require that schemes be designed around individual accounts in order to qualify as a defined contribution plan for accounting purposes. This treatment may deter employers from offering such schemes to their employees.

Legal and regulatory frameworks need to balance prescriptiveness and flexibility

Legal and regulatory frameworks that allow for non-guaranteed lifetime retirement income arrangements should not be overly prescriptive to allow for some flexibility in development, but should be clear enough to provide some regulatory certainty for potential providers. Overly prescriptive requirements can increase the costs to providers of introducing a non-guaranteed arrangement, acting as a deterrent for the development of new plans, particularly where there is not an established market. However, the legislative and regulatory frameworks also need to offer some certainty to providers that they will not encounter any surprise obligations.

Legislative and regulatory requirements should remain coherent with the nature of non-guaranteed arrangements

Legislative and regulatory requirements should remain coherent with the objective for non-guaranteed lifetime retirement income arrangements to provide a sustainable solution to provide a lifetime income to participants in retirement. The possibility to reduce benefits is a main feature of their design, and policies that are overly risk averse with respect to benefit reductions may undermine one of the main benefits of these types of schemes to improve the expected adequacy of retirement incomes in a sustainable manner. Large collective buffers or risk margins will translate into lower retirement incomes on average. While such protection could remain an option for schemes that wish to provide this level of stability, it should not be a requirement for all.

The application of existing rules may need to be reconsidered

There may be a need to reconsider the application of existing rules to non-guaranteed lifetime retirement income arrangements in some cases. While the underlying concepts that the rules intend to address may be relevant for these arrangements, the implications of their application may differ slightly from existing arrangements with guarantees. This is particularly true around setting assumptions, where excessive prudence could be detrimental for participants' retirement incomes. In addition, because the participants themselves bear the risk of any deviations in experience relative to assumptions, competitive incentives between providers can differ compared to arrangements that provide guarantees. The application of solvency capital requirements may also require further consideration, given that the providers in principle do not bear any solvency risk.

Sponsors and providers need incentives to develop non-guaranteed lifetime retirement income arrangements

Even where the legislative and regulatory framework aims to ensure that providers do not have a disincentive to set up a new scheme, there may still not be sufficient incentives for these schemes to develop organically.

Indeed, jurisdictions that have been most successful at achieving broad participation and scale for non-guaranteed lifetime retirement income arrangements are where individual participation in the plans is mandatory or quasi-mandatory. This overcomes both the supply-side and demand-side disincentives to development and participation.

On a voluntary basis, the biggest inherent incentive for employers to offer a non-guaranteed lifetime retirement income arrangement is to replace a defined benefit pension plan and address concerns related to sustainability and affordability. Nevertheless, the easiest and least costly option for these employers is to instead offer an individual defined contribution plan. Indeed, many employers have already made this change, and introducing a non-guaranteed lifetime retirement income would represent an additional cost and administrative burden.

As such, employee representatives have been more effective at driving the development of these types of arrangements. Where introduction has been successful, unions have often driven legislative change, come up with design proposals, and reduced cost and administrative burdens on employees.

Incentives for retail providers to offer these types of products as a payout solution for DC plans are also a challenge. Product development is costly, the commitment is long-term, and the arrangements would need to be closed if sufficient scale is not achieved. Policies will therefore also need to encourage demand and participation in these arrangements.

Individuals need incentives to participate in non-guaranteed lifetime retirement income arrangements

Non-guaranteed lifetime retirement income arrangements face the same demand-side obstacles as more traditional guaranteed annuity products that pool longevity risk. Where participation is on a voluntary basis, these types of arrangements at least need to benefit from any existing financial incentives that apply to other lifetime retirement income options to provide an incentive for individuals to participate. Additional incentives could be considered to make these solutions more attractive relative to less efficient retirement income solutions such as drawdown. Certain design features can also help to overcome individual biases that may deter their participation. For example, most retail products existing in the market offer some sort of guarantee that the individual will receive back at least the premium they put into the product in order to try to overcome individuals' loss aversion and make the arrangement more attractive to retirement savers.

5.5.3. Overcome the practical challenges for implementation

Several challenges exist for providers to be able to implement a non-guaranteed lifetime retirement income arrangement. To facilitate implementation, the introduction of new schemes should build upon existing institutional frameworks, though required adjustments to admin systems are likely to remain a challenge. Where feasible, any conversion of benefits accrued in existing schemes need to ensure that members are fairly treated. Providers also need to ensure that they will be able to achieve sufficient scale to ensure cost-efficient and stable operations.

Introduction should build upon existing institutional frameworks

To the extent possible, the introduction of non-guaranteed retirement income arrangements should rely on the existing institutional framework in place to take advantage of the infrastructure already in place. Nevertheless, significant updates to the administrative systems may still be required for institutions used to managing collectively defined schemes to manage schemes based on individual accounts. Administrative updates would normally be easier for those already managing individual accounts.

Conversion of benefits accrued in existing schemes should be fair to participants

If a sponsor of an existing pension scheme opts to convert rights accumulated in an existing scheme to a new non-guaranteed lifetime retirement income arrangement – an option which is not always legally possible – the conversion needs to ensure the fair treatment of existing participants. Where benefit formulas change, this can be a very expensive or complex undertaking, requiring significant funds to make up any deficit and re-allocating existing assets to correct for any cross-subsidisation deemed to be unfair. In addition, such calculations are very complex, and rely heavily on assumptions that could change during the time that the new plans will be implemented.

Sufficient scale is needed to achieve cost-efficiency and avoid excessive volatility

Overcoming the financial barriers to set up and operate a non-guaranteed lifetime retirement income arrangement and the need to achieve sufficient scale to avoid excessive benefit volatility may impede smaller providers from setting up an arrangement. Costs to develop and design the arrangement, meet regulatory requirements, and update admin systems can be substantial, and smaller schemes may also not be able to achieve the investment economies of scale required to charge sufficiently low fees to participants. For tontine-type products based on individual accounts, a lack of scale can also directly translate into high benefit volatility.

In an occupational setting, multi-employer or multi-union plans can be one solution to more easily achieve the scale needed for the successful operation of a scheme. However, this approach needs to be mindful

of the demographic risk, as the demographic profile of different employers could result in undesirable cross-subsidies. This can most easily be addressed through an age-dependent benefit formula based on expected returns on contributions.

5.5.4. Include elements to ensure long-term success

Robust governance frameworks and effective communication strategies are essential for the long-term success of non-guaranteed lifetime retirement income arrangements. Governance frameworks should ensure that participants are represented, that assumptions are robust and independent, and that the operation of the arrangement is transparent. Communication should aim to educate all relevant stakeholders how these types of arrangements work in a simple way that ensures that participants understand that benefits can be adjusted. The language used in communication is also important and needs to be carefully selected.

Participants should be represented in the governance of the arrangement

Those who bear the risk of non-guaranteed lifetime income arrangements – that is the participants in the arrangement – should be represented in the governance of the scheme. This is appropriate, as the decisions taken regarding the operation of the scheme and assumptions used to calculate benefits will directly impact the participants and their expected benefits. Even if they are not experts on pensions specifically, they can provide a useful alternative perspective, and training can be provided to bring their knowledge up to minimum levels. Having participant representation in the governing body will also help to promote trust in the schemes.

Assumptions should be established in a robust and independent manner

Funding and benefit calculations rely heavily on assumptions regarding investment returns, longevity, and the economy, among others, so it is important that assumptions are as accurate as possible. As such, the processes to establish assumptions need to be robust and independent from conflicted interests. Since assumptions determine any required benefit adjustments, conflicts can arise if those affected by adjustments are involved in setting assumptions. In a retail setting, sales conflicts may arise because the provider does not bear the cost of inaccurate assumptions down the road, and may therefore have an incentive to set assumptions to make initial incomes more attractive.

Assumptions and benefit adjustments need to be transparent

Transparency around assumptions used and how benefits are adjusted will help to promote trust in the schemes and the view that participants are being fairly treated. Ideally, the rules around benefit adjustment should be clearly defined in advance so that any change is easily explainable and in order to avoid subjective adjustments that may favour certain groups over others. The assumptions used and the rules for adjustment should also be publicly available so that the pension community and other stakeholders can verify that the scheme is operating in a fair and sustainable manner.

Educational initiatives should target all relevant stakeholders

Significant educational initiatives are likely needed to educate not only the would-be participants of the schemes to be introduced, but also other stakeholders such as employers who may want to offer this type of scheme to their employees or financial advisors recommending these types of products to their clients. Pensions are generally hard to understand, and non-guaranteed lifetime retirement income arrangements can be especially complex. Stakeholders will be less inclined to be involved with a scheme or product when they do not understand the basic concept of how it works.

Language used to explain longevity pooling should be carefully chosen

Individuals commonly seem to have an emotional aversion to the concept of pooling longevity risk, so the language used to try to explain this concept needs to be carefully chosen. People feel that it is unfair to leave their assets behind when they die, and having to think about the prospect of dying is uncomfortable. Explanations should rather focus on the benefits of not having to worry about running out of savings, and frame any additional payments received from a non-guaranteed lifetime retirement income arrangement in a positive manner.

Communication on reforms to introduce non-guaranteed lifetime retirement income arrangements need to make clear that benefits can be changed

Any reform aiming to introduce non-guaranteed lifetime retirement income arrangements should stress the reasons for the reform and that the benefits in these types of plans can be adjusted. Ideally, participants will be told concretely how the changes will impact them. This will help to avoid participant misunderstanding and eroded trust in the future if benefits need to be reduced. Failed communication can contribute to a decline of trust in the pension system as a whole, and the need for additional reforms down the road.

Individual benefit statements should explain how benefits could change

Individual benefit statements also need to include information on how retirement income benefits could potentially change. Some jurisdictions present a good, an expected, and a bad outcome to give people a sense of the range of possibilities. Other jurisdictions simply require that the rules of adjustment be disclosed. Some focus groups have found that simple illustrations of how benefits could be adjusted can facilitate understanding. Nevertheless, simple and successful communication is difficult to achieve for any retirement income arrangement, and ensuring that people understand how benefits could be adjusted has proven to be even more difficult. More research and testing in this area is needed to improve communication to individual participants regarding their benefits.

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Annex 5.A. Country examples

Annex Table 5.A.1 summarises the main features of the different non-guaranteed lifetime retirement income arrangements referred to in this chapter. The remainder of this annex describes the country-specific context and features of these arrangements in more detail.

Annex Table 5.A.1. Examples of non-guaranteed lifetime retirement income arrangements in OECD countries

Jurisdiction	Scheme	Accumulation	Rights	Benefit formula	Benefit adjustment	Benefit smoothing mechanism	Optionality
Australia	Lifetime pension option (Australian Retirement Trust)	No	Individual	Annuity factor applied to accumulated balance	Proportionally for all members	None	Return of premium guarantee; 6 month withdrawal period
Canada	Shared Risk Pension Plan (New Brunswick)	Yes	Collective	Reference to salary	Proportionally for all members	Risk-based collective buffer	
Canada	Target Benefit Pension Plans (Quebec)	Yes	Collective	Reference to salary	Proportionally for all members	Risk-based collective buffer (PfAD); initial 'stabilisation contribution' by sponsor	
Canada	Longevity Pension Fund (Purpose)	Possible	Individual	Annuity factor applied to accumulated balance	By cohort	None	Withdrawals; Investment
Denmark	Occupational DC	Yes	Individual	Annuity factor applied to accumulated balance	Varies	Varies	Investment
Germany	Social Partner DC (Talanx & Zurich)	Yes	Individual	Annuity factor applied to accumulated balance	Proportionally	Collective reserve; funding corridor	
Iceland	Occupational DC	Yes	Collective	Return on contribution	Proportionally for all members	Funding corridor	
Japan	Risk sharing pension plans	Yes	Collective	Varies	Proportionally	Risk-based collective buffer	
Netherlands	Collective Defined Contribution	Yes	Collective	Reference to salary	Proportionally	Risk-based collective buffer; recovery period	
Netherlands	Flexible Collective DC Scheme (new contracts)	Yes	Individual	Annuity factor applied to accumulated balance	By profit source	None	Investment

Jurisdiction	Scheme	Accumulation	Rights	Benefit formula	Benefit adjustment	Benefit smoothing mechanism	Optionality
Netherlands	Solidarity Collective DC Scheme (new contracts)	Yes	Individual	Annuity factor applied to accumulated balance	By profit source	Collective reserve	Investment
Sweden	Unit-linked Annuity for Premium Pension	Yes	Individual	Annuity factor applied to accumulated balance	By profit source	None	Investment
United Kingdom	Collective Defined Contribution (Royal Mail)	Yes	Collective	Reference to salary	Proportionally for all members	None	
United States	TIAA Variable Income Option	No	Individual	Annuity factor applied to accumulated balance	Proportionally	None	Investment; Early withdrawal period

Australia

Australia has recently introduced several measures to encourage superannuation providers to offer retirement income products providing longevity protection. The lifetime annuity market in Australia is underdeveloped, and the retirees withdrawing a regular income from their superannuation account tend to do so at the minimum withdrawal rate. This means that they have not been optimising the income they could receive from their retirement savings.

To further the goal of making lifetime income solutions attractive, in 2017 the government extended the superannuation tax concessions to innovative retirement income products purchased within the superannuation system. To qualify, products must meet certain requirements, including that regular benefits are payable for life, that benefits are not unreasonably deferred, and that there are limits on withdrawal and surrender values. Previously, these tax concessions only applied to regular withdrawals from the superannuation account.

In 2019, they introduced an additional incentive for products providing lifetime incomes. Under the new rules, only 60% of the income will count toward the means test for public pension benefits.

In February 2022, the government introduced a Retirement Income Covenant to take effect in July 2022. The Covenant obliges trustees to offer a retirement income strategy to their members that helps them to balance the objectives of maximising their expected retirement income, managing the risks to the sustainability and stability of that income, and providing flexibility to access their funds. Trustees must regularly review whether the strategy offered remains suitable and meets these objectives. They must also identify the category of beneficiaries for whom the strategy should be appropriate. The appropriateness of a given strategy can consider other sources of retirement income as well, such as how much the member can expect to receive from the state pension.

While non-guaranteed lifetime retirement income solutions are not yet widely available, a few superannuation providers offer them. One example is the Lifetime Pension offered by Australian Retirement Trust.[6] The product provides retirement income payments for life that are expected to increase and has an option for a survivor annuity. The product offers a six-month trial period, during which members may change their mind and withdraw their money from the product. It also guarantees that members will get back at least the premium they pay into the product. This guarantee is insured via an external life insurance policy. Payments are adjusted annually based on the experience of the pool that year by a

proportional adjustment to income that is the same for all members in order to equalise the asset base with the present value of future payments.

Canada

Variations of non-guaranteed lifetime retirement income arrangements have existed for several decades in Canada. The retirement plan offered by the University of British Columbia was the first of this type. Under this plan, members contribute to individual accounts over their working life. At retirement, they have the option to purchase a variable life annuity whose initial income level is calculated using a discount rate of either 4% or 7%. Payments are regularly adjusted in a proportional manner for all participants based on the relative investment and mortality performance.

However, legislation to allow these types of schemes varies across provinces in Canada. The federal government proposed a target benefit regime in 2016, but nothing came of the proposal. Alberta, New Brunswick and Quebec have passed legislation permitting target benefit plans. British Colombia and Saskatchewan allow target benefits only for multi-employer schemes. Ontario has proposed a legislative framework to allow for them, but has not yet implemented it. Most legislation requires funding levels above 100% to cushion a certain amount of adverse deviation. After public consultation, Manitoba and Nova Scotia decided not to move forward with a legislative framework to allow for target benefit plans.

The New Brunswick provincial government established a legislative framework for Shared Risk Pension Plans in 2012 following increasing financial pressures on Defined Benefit plans coming from the challenging financial environment, increasing longevity and the maturing demographics of the plans. Under these plans, target benefits are set so that the targets can be met over 20 years with 95.5% certainty, and that indexation targets can be met with 75% certainty. To assess whether targets will be met, plans must perform an annual risk assessment based on one thousand 20-year simulations. Projections of the annual funding ratio must never fall below 100% over 15 years for new plans, and for existing plans must never fall below 100% for two years in a row, and funding must be positive at the end of the 15-year projection. If these targets fail to be met, the plan must execute recovery strategies that are transparent and clearly defined in advance. While contribution increases are allowed, they are capped to a certain percentage of earnings and contributions. Legislation requires that the plan must be equitably designed with no single cohort subsidizing another.

Quebec passed exceptional legislation in 2012 to allow businesses in the paper and pulp sector to convert their defined benefit plans to target benefit plans (TBP). This sector had been struggling to fund their defined benefit obligations in the consumer shift away from paper to digital formats. In 2020 Quebec then passed an amendment to the existing legislation for DB plans to allow employers and unions more widely to establish target benefit plans for their employees.[7] As such, many of the existing requirements for DB plans also apply to TBP. Benefits should be defined based on accrual rate as a percentage of average salary, and accruals based on final salary are prohibited. Contributions to the plan should be able to achieve a target funding level that incorporates the risk-based Provision for Adverse Deviation (PfAD). Benefits must be cut if funding falls below 100% in order to return funding to 100%. All members must be treated equally, with benefit cuts applying to all. If contribution levels are no longer sufficient to finance the current accrual rates, accruals are adjusted. The employees nevertheless have the option to increase their contributions to maintain the same accrual rates. Benefits that have been previously cut can be re-instated if funding levels are half-way to the funding target. More than 20% of the surplus beyond the target funding levels cannot be dispersed to members in any given year.

Canada also modified the tax legislation in 2021 to allow variable payment life annuities (VLPAs) as a decumulation option for individual registered defined contribution plans and pooled registered pension plans (PRPPs) (MacDonald et al., 2021[6]).

Purpose Investments offers a “Longevity Pension Fund” structured as a mutual fund. It groups members by cohort, and calculates the retirement income using conservative mortality assumptions. It aims to increase income over time, and adjusts benefits according to investment and longevity experience. Members can withdraw at any time the lesser of their unpaid capital or account value.

Denmark

Employees in Denmark are required to contribute to retirement savings plans when offered by their employer. These arrangements are often established through collective agreements with social partners. Over the last decades, providers have been moving away from guaranteed arrangements in light of the low interest rate environment and increasing longevity. There are no real restrictions on how these arrangements can be designed, however, and providers can offer a wide range of options that can involve different investment options for members or smoothing mechanisms to provide benefit stability. Most of the non-guaranteed pension plans on offer do pool the longevity risk of members and pay a lifetime retirement income, though longevity pooling is usually done only during the pay-out phase.

Germany

Germany introduced legislation in 2018 to allow employers to establish “Pure DC” schemes, or better termed Social Partner DC schemes.[8] Prior to this legislation, schemes had to provide guarantees. The new types of plans cannot provide guarantees, and must be established through collective bargaining with social partners. If they are not bound by collective bargaining agreements, employers and employees can agree that relevant collective bargaining agreements (i.e. agreements applying to their industry) are to be applied.

Legislation provides the boundaries for the design of these schemes, but allows for a wide range of flexibility in their design. All aspects of design and governance are established in the collective agreements. Schemes can be based on individual accounts, or managed wholly on a collective basis. Collective buffers can mitigate volatility during the accumulation period. At retirement, the accumulated capital is converted into a lifetime income stream using an annuity factor. This annuity factor can include some conservatism to provide for an additional buffer against benefit adjustments, but this buffer cannot exceed 25% of the best estimate calculation. An additional buffer comprised of safety contributions made by the employer can be included in the collective agreement, and though expected is not mandatory. Benefits cannot be increased unless the total funding ratio exceeds 110%, and benefits must be cut if it falls below 100%. Upon changing employment, employees may continue to contribute to the plan of their former employer or transfer the capital to another scheme of the same type.

Die Deutsche Betriebsrente (DDBR), a consortium set up by Talanx and Zurich, agreed to the first of these plans in July 2021 following two years of negotiations with social partners, which became operational in 2022. Member contributions are divided between their individual account and a collective buffer. Funds are invested to achieve a target net rate of return of 3.85% and a target volatility of under 10%. Individual accounts will be credited an assigned interest rate equal to the target rate of return as long as overall funding levels remain within a defined corridor, where funding is defined as the sum of the individual accounts and the collective buffer over the total of the individual accounts. If funding levels fall outside of the corridor, the assigned interest rate is one that will return the funding position to be within the corridor. At retirement, members receive a retirement income calculated based on their individual account plus their proportion of the collective buffer. Any necessary adjustment is communicated three months in advance and can be done gradually (e.g. linearly over five years). Employers make contributions to an additional security buffer which can be used only in exceptional circumstances. This is namely when there are not sufficient assets in the collective buffer to pay retirees their additional capital, or to avoid benefit reductions (Germann, 2022[10]). The amount of this account that can be used at any given time is limited, however.

The energy company Uniper is also setting up a social partner plan, and social partners in the chemical industry have announced plans to establish one.

Iceland

Iceland has a mandatory occupational pension system to which all workers, including the self-employed, are required to contribute. The schemes for private sector employees are non-guaranteed lifetime retirement income arrangements, though they are commonly referred to as Defined Contribution (DC) unprotected plans. Historically, plans in the private sector have been DC, whereas those offered in the public sector have been DB.

Legislation requires that the accrual rates for each pension scheme aim to provide a minimum target replacement rate of 56% of average wages. Target benefits are indexed to inflation, and accrual rates are set by each scheme. Prior to 2006, some schemes used age-independent accrual rates. However, since then private sector schemes have moved to age-dependent accrual rates where individual benefits accrued are a function of the target benefit level and expected rate of return of 3.5%. Regulation requires that the expected liabilities be valued based on a real discount rate of 3.5%. This assumption has not been updated since 1997, and there is no requirement to review it.

In 2016, the government passed a bill to transform the A-schemes for civil servants from Defined Benefit schemes to DC for members below the age of 60. New members are enrolled directly into a collective DC plan with age-based accrual rates. For existing members under age 60, the government provided a capital injection to the schemes to bring the funding levels to 100% assuming the constant accrual rate so as to not make current members worse off. In addition, it set up an emergency fund that could be used to correct any future imbalance resulting from updated mortality assumptions used to value the benefits provided by the schemes. As such, in principle these members should expect to receive the same benefits as they otherwise would have, though benefits may be adjusted in light of actual investment experience.

Schemes must adjust benefits if the total funding ratio (taking account future contributions and benefit accruals) deviates by more than 10% from full funding, or when it deviates by more than 5% over five consecutive years. Adjustments are made proportionally to past benefits accrued and current benefits in payment. Occasionally, accrual rates are also adjusted. The Board decides how to adjust benefits at the time it is necessary, though they are required to consider the fair treatment of members.

Japan

Japan introduced legislation in 2017 to allow risk sharing occupational pension plans as an alternative to the traditionally offered defined benefit plans, which are often cash balance plans. While the legislation allows for flexibility in the design of the risk sharing plans, in practice they have so far typically retained the existing benefit design, and are fully financed by the employer.

At inception, the plan is required to calculate a risk margin linked to the actual underlying investment, funding, longevity, and withdrawal risk of the scheme. There are two options to calculate the risk margin. The first is with a standard formula prescribed by the regulator. The second option is to develop a customised approach, which is generally calculated to protect employees with a 95% probability. Among 21 risk sharing plans in Japan, 8 plans have taken the standard approach and 13 plans have taken the customised approach.

The risk margin is not required to be fully funded immediately, and employers can fund them over five to 20 years. The risk margin is always funded by the employer only. Employers have an incentive to finance the risk margin by at least 50% when converting from a DB plan, otherwise any changes to the plan are

not allowed without employee consent. With sufficient funding, changes only require the approval of an employee representative rather than the consent of two-thirds of individual employees.

Benefit adjustments are transparent and defined in advance. The only subjectivity lies in the assumptions used for the calculations, and these need to be approved by the pension committee. If plan resources fall below the target benefit levels, benefits will be cut. If plan resources are above the required risk margin, the excess will be distributed to employees. Only the benefits in payment are adjusted, and the adjustment is equivalent for all members. Target benefits are never adjusted.

Investment strategies commonly provide an expected investment return of around 2.5%. While this is rather conservative, cultural preferences tend to be more risk averse. Many members of defined contribution plans have large holdings of cash, for example, so providing conservative but positive investment returns will still improve expected retirement income.

At retirement, the same rules apply for these schemes as for DB schemes. Lump sums are allowed, and fixed-term annuities are more common than lifetime annuities. If lifetime income is offered, the risk margin needs to account for the longevity risk.

Schemes must have a pension committee that manages them, with at least one employee representative.

A few Japanese insurance companies are offering individual retail products providing a non-guaranteed lifetime retirement income. Nippon life launched a tontine retirement income product GranAge in 2016. Individuals can purchase the product from age 50 to 87, and can choose to receive a ten year fixed annuity or a lifetime annuity (Mainichi Japan, 2017[11]). In 2020, they had already sold over 75 000 contracts, the majority of whom are women, and who are often in their 50s when people are earnestly planning for their retirement (Hayashi, 2020[12]). Dai-Ichi has introduced a similar product named “Longevity Story”, and Taiyo Life Insurance offers a “100-Year Life Pension”.

Netherlands

The most common types of schemes in the quasi-mandatory occupational pension system in the Netherlands are non-guaranteed lifetime retirement income arrangements, commonly referred to as Collective Defined Contribution (CDC) schemes. These schemes were generally converted from Defined Benefit schemes in the early 2000s, when many employers recognised that they could not fully guarantee the level of benefits provided.

The current CDC schemes cover both the accumulation and payout phases. Benefits are accrued as a constant percentage of salary for all members. Taking a lifetime income stream from the scheme at retirement is mandatory. Target benefits are indexed to inflation, but indexation cannot be granted unless funding ratios are above 105% based on a valuation using the risk-free term structure and ultimate forward rate (UFR), and a recovery plan must be implemented over ten years. If funding falls below 90%, benefits must be cut as part of the recovery plan. Recovery plans can take the expected return on investment into account, but increasing the risk profile of the investment strategy is not allowed. There are no clearly defined rules about how benefits should be adjusted and for whom, and the board of trustees decides how to make any required adjustments.

However, the government has frequently changed the rules of the system. The funding threshold under which benefits must be cut has been gradually reduced, the latest reduction being from 100% to 90% in 2019. The funding threshold to allow for indexation was also reduced from 110% to 105% in 2022. Prior to 2007, the discount rate required for valuation was 4%. With the introduction of fair market valuation, discount rates were then based on the market risk-free term structure, and the UFR was introduced in 2012. They also reduced the recovery period allowed to avoid benefit cuts to ten years from 15, but then allowed the recovery plan to be renewed every year. These changes also reduced the time for benefit cuts

to take effect from three years to immediately, though the cuts could be applied gradually over a ten-year period.

The Netherlands is currently undergoing a pension reform that will change the existing model to one that is based on capitalised individual accounts. In 2019, the government, social partners, and pensions industry agreed to the reform in principle, and legislation is being developed since 2020. The legislation will be in place by 2023, after which the new system will be implemented by 2027. Under the planned reforms, existing schemes must convert all accrued rights – not only those that will be accrued in the future – to the new contracts. An exemption is made for pension schemes insured by private insurers that are based on age-dependent premiums. In that case, they will be allowed to continue the existing pension scheme, but for existing participants only. Pension funds having a funding ratio below 95% must submit a transition plan to achieve full funding by 2026 to avoid having to reduce benefits before the transition.

Under the proposed reforms, there will be two types of contracts. The Flexible Collective DC contracts will be individual accounts, with earned returns distributed to participants based on clearly defined rules. The Solidarity Collective DC will also have individual accounts, but will invest a portion of the contributions into a collective solidarity reserve that will be used to reduce the volatility of benefits in retirement. The reserve can be financed with up to 10% of the contributions, cannot exceed 15% of assets under management, and cannot be negative.

Sweden

Sweden established the Premium Pension in the 1990s, in part to allow individuals to feel responsible and make choices for their retirement, and to diversify retirement income sources to not only be dependent on economic growth. It operates as the funded component of the first pillar pension. Contributions from members are mandatory at 2.5% of salary, and are invested in the fund(s) of the member's choice. Individuals can choose up to five different funds in various categories of investment and risk levels. If individuals do not make a choice, their contributions go automatically to the publicly managed AP7 fund.

The Pensions Agency centralises the administration, contribution management and payment of pensions, and they also handle all of the communication to individuals.

Anytime from retirement, individuals can choose to keep their funds invested and receive a variable, unit-linked payment for life, or use the accumulated assets to purchase a traditional life insurance annuity, which is a with-profit annuity guaranteeing a minimum income for life with the potential for higher payments with good investment and/or mortality experience. The former option is provided by default if the individual does not choose. They may also use only a portion of their assets to receive a retirement income. People can transfer at any time from a unit-linked to a traditional annuity, or from a single life to two-life annuity at retirement or if marrying during retirement, but not the other way around, except in the case of divorce. Payments are not reduced after death for the joint annuity.

For the unit-linked product, retirement income is calculated by dividing the account balance by an annuity factor assuming a 1.75% real rate of return, which was recently reduced from 3%. Mortality assumptions are based on projections by Statistics Sweden, adjusted in a prudent manner to reflect expected mortality weighted by the amount of retirement income rather than individual deaths.

Individuals can choose to change investment strategies, even while receiving a retirement income. There are currently no restrictions on the type of investment strategy selected, though recent reforms will limit more the types of investment options available, and the Pensions Agency will eventually screen the allowed funds through a procurement procedure. The annuity factor does not vary depending on the strategy chosen, however. The value of individuals' accounts reflect the actual investment experience of their chosen strategy. Once per year, the total value of the accounts of those who have died over the last year are distributed to the surviving members' accounts in a way that varies by age.

United Kingdom

The Pension Scheme Act passed in 2021 provides the legislative framework for "Collective Money Purchase" (CMP) schemes in the UK, and defines what qualifies as this type of scheme and a benefit from the scheme.[9] It sets out requirements for authorisation to ensure that the individuals running the scheme are capable, the design of the scheme is sound and financially sustainable, communication is effective, the systems and process are effective, and there is an adequate continuity strategy. It requires that rules for the valuation and adjustment of benefits be defined in advance. Initially, only schemes for single-employer or for several connected employers are allowed, but eventually there is room to expand to multi-employer schemes. The legislation entered into force in August 2022.

Regulation will implement the authorisation and supervision regime under the responsibility of The Pension Regulator. The government published a draft of the regulations for consultation over July and August 2021. The Pension Regulator also released a draft Code of Practice for consultation in January 2022 that provides more detail on the processes required to meet regulatory standards.

Royal Mail is the first employer to launch a CMP plan, and indeed was the driver of the introduction of the needed legislative changes. They currently have around two-thirds of their employees in a defined benefit plan and one-third in a defined contribution plan. Accumulated rights in these plans will remain, but all future contributions will go to the new Collective Pension Plan. Retirement income rights will accumulate at 1.25% of salary per year of contribution, indexed to inflation. These rights will be adjusted each year depending on investment performance and longevity experience, for both accumulation and payout. Survivor benefits are equal to 50% of the original retirement income benefits. Survivor benefits if death occurs during accumulation are paid as a lump sum equal to four times the salary. The annual rate of increase (or decrease) to benefits assumed over the members' lifetimes is adjusted at each valuation such that the new actuarial value of benefits equals the value of assets.

United States

The Teachers Insurance and Annuities Association of America (TIAA) has offered a lifetime variable income option for its members at retirement since the 1950s. Members have a wide variety of investment options. They can also opt for a 'test drive', where they are able to withdraw from the plan during the first two years. Retirement income payments vary depending on investment and mortality performance.

The SECURE Act passed in 2019 could facilitate further development of these types of arrangements because it does not require that a lifetime retirement income be provided with insurance (Hadass et al., 2021[7]).

Notes

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[2] The original tontine design immediately distributed the account values of deceased members equally among the surviving members. However, as this approach is not conducive to providing a regular and stable income in retirement, this report does not consider this design further. Schemes must pay out a portion of the initial premium in addition to realised gains in order to optimise welfare and provide a regular and stable income to members.

[3] This product was previously offered by QSuper, which merged with Sun Super to form Australian Retirement Trust in February 2022.

[4] This could be the case, for example, for schemes based on individual accounts where adjustments to account for differences between actual and expected longevity experience are implemented prospectively via an adjustment of the payout factor rather than retrospectively via an explicit credit to each account.

[5] Any additional premiums paid will be tax exempt up to a certain level and for a maximum of 14 years.

[6] This product was previously offered by QSuper, which merged with Sun Super to form Australian Retirement Trust in February 2022.

[7] Bill 68

[8] Betriebsrentenstärkungsgesetz

[9] Pension Scheme Act 2021