Pension Design Principles applied to modern Defined Contribution solutions

PENSIONS EUROPE

Foreword

While the state pension is the foundation for retirement income in most European countries, occupational pensions also provide a large proportion of total retirement income in many of those. An occupational pension fund is an institution established for the purpose of providing retirement benefits, on the basis of an agreement or a contract between the employer and employees or their representatives.

Defined Contribution (DC) schemes are becoming more prevalent either in countries that are shifting from a traditional Defined Benefit (DB) system or those that have always been DC but are seeing assets and membership growing. DC schemes can provide resilient occupational retirement income solutions that are fit for purpose in the 21st century.

The design of DC pension schemes should provide the appropriate tools for the member to manage risks appropriately and monitor the plan to ascertain that the current build-up of the member's account is on track to provide a capital sum capable of being converted to an acceptable, affordable and relatively stable level of income in retirement.

The plan design should take into account the various risks to which the company and the employees are exposed and incorporate appropriate measures to mitigate these risks.

PensionsEurope aims to be the thought leader in Europe and beyond on DC issues and we are pleased to present this paper as a contribution to the evolution of DC schemes. Through our Member Associations and our Corporate and Supporter members we have access to resource and expertise that we will use to further the debate on DC schemes and help to ensure better outcomes for members.

I would like to thank all the members of the Board and Secretariat of PensionsEurope who contributed to this paper with thanks to the members of the DC Committee, and in particular to Willem Handels, Stefan Lundbergh and Thomas van Galen.

Joanne Segars
PensionsEurope Chair
4 November 2015

Executive Summary

1. The employer's and employee's perspective on retirement benefits

The last decades have seen a gradual shift from traditional DB pension schemes towards DC pension schemes in the occupational pension systems of many European countries. In many other countries pensions have always operated on a DC basis.

DC schemes offer flexibility and choice that allow members to adjust their private pensions to the flexible labour market and to their personal preferences while also ensuring the necessary control of costs.

2. Pension Design Principles

Pension design should focus on how the design itself deals with **human behaviour**, how it ensures **adequacy to pension needs at retirement** in an uncertain world and, in some countries where it is required, supports **risk sharing**.

Based on these universal principles, trade-offs reflecting the culture and historical development path of the country specific pension system can be made.

BEHAVIOURAL PRINCIPLES

Employees need to have enough freedom to choose tailored pension solutions. The following three behavioural principles help achieve the balance between offering choice and ensuring that employees are protected against undesirable outcomes.

1. **Keep it simple**
2. **Provide sensible choices**
3. **Under-promise, over-deliver**

ADEQUACY PRINCIPLES

While absolute certainty is unobtainable in any form of retirement provision, a relatively stable level of retirement income is achievable with the right tools.

1. **Ensure adaptability**
2. **Keep it objective**
3. **Prepare for extreme conditions**

RISK-SHARING PRINCIPLES

A DC scheme can offer risk sharing between members based on the risk-reducing benefits of diversification, economic efficiency and fairness.

1. **Avoid winner/loser outcomes**
2. **Only diversifiable risks should be shared**
3. **Individuals must bear some risks**

3. A straw man model

Equipped with a set of pension design principles we were able to outline a 6-steps straw man model for a DC scheme.

Identifying design criteria
Design criteria will vary between countries due to cultural and historical features along which the retirement system has evolved. Consequently, different trade-offs can be made from the ones presented in this paper.

The following design steps outlined below may differ between countries depending on the generosity and long-term sustainability of the state pension.

1. **Understand the needs of the members**
2. **Identify the basic risks that the member is exposed to**
3. **Design a default**
4. **Design a choice architecture around the default**
5. **Monitor outcomes**
6. **Implementation**

Pension Design Principles applied to modern Defined Contribution solutions

1. Introduction

The state pension is the foundation for retirement income in most European countries. In some countries the state pension provides the majority of the total retirement income and the occupational pension is a modest supplementary pension. In other countries occupational pensions provide a large proportion of total retirement income.

Therefore, the design of occupational pensions could vary depending on the coverage and level of the state pension. In this paper we focus on the design of occupational pensions in a DC context where there are no additional financial liabilities or obligations for the employer beyond paying contributions.

In the active years the employee and employer put aside a part of the employee's remuneration with a view to building up adequate resources in retirement. To achieve this goal, different solutions have emerged in European countries which all have their own specific historical roots. In those countries where DB schemes have long been the preferred solution, the introduction of DC schemes has caused many to view the goal of pension savings as 'maximising their pension pot', instead of a stream of stable income during the retirement years.

Increasingly, employees' entitlement to DB accrual is being replaced with DC accrual for ongoing service. In many larger companies, some employees are in a DB scheme and others are in the DC scheme. Pensions are not often discussed spontaneously among employees, but in the rare cases when it happens, it is often in the context of ''Are you in the good or the bad scheme?'', the perception being that the DB scheme is the better one. Even among pension experts, DC schemes can have a somewhat bad name. At a pensions conference in the UK, some years ago, someone ironically said that DB stands for ''Dead and Buried'' and DC stands for ''Don't Care''.

> *"The design of the occupational pension could vary depending on the coverage and level of the state pension"*

In recent years it has become clear that the classic final pay-related DB pension is too expensive for companies with costs being steadily increasing and too volatile. DC seems to be the only way forward for ensuring the necessary control and predictability of cost in a flexible labour market. In many large multinationals, retirement benefits are typically considered as an important component of the overall compensation package. We argue that there is no inherent obstacle to DC providing an appropriate retirement income and/or other benefits, and that good DC solutions can be developed; with time we should be able to change the meaning of DC to ''Do Care''. In countries where DB schemes dominated, there are today many different ways to construct DC solutions – from the DC insured model (TIAA-CREF and the Scandinavian mutual) via the Dutch Collective DC towards the Anglo-Saxon unit-linked DC.

There are also many countries where pensions have always worked on a DC basis. Whether it is in the transition from DB or continuing development of traditional DC, we should aim to benefit from the advantages that DC schemes offer while at the same time avoid the drawbacks that have given DC a bad name in some circles. For

instance, flexibility and choice are major advantages that allow members to adjust their private pensions in line with the flexible labour market and their personal preferences. On the other hand, attention must be given to designing the choice-architecture since members bear all of the investment risk. Therefore, the design of DC pension schemes should always provide the appropriate tools for the member to:

- manage risks appropriately; and
- monitor the plan to ascertain that the current build-up of the member's account is on track to provide a capital sum capable of being converted to an appropriate [acceptable, affordable and relatively stable] level of income in retirement.

2. The employer and employee perspective on retirement benefits

In many countries, employers offer retirement benefits in addition to salary and other employee benefits.

Whether or not to offer a retirement benefit, and which type of benefit to offer, is often a function of local market competition and the employee value proposition employers want to offer, as well as government regulations and provisions[1]. It also depends on whether tax advantages are available to employees and/or the companies.

Over the last 10 to 15 years many developments have had an impact on work related retirement provision. To mention a few:

- shifts in the labour markets and duration of employment contracts
- changes in employers' perspective towards employment relations and benefit structures
- changes in employees' perspective and attitudes in respect of career patterns
- adjustment of international accounting standards in respect of retirement benefits
- developments in longevity and consequential discussion on distribution of risks in schemes
- the 2008 credit crisis and subsequent dwindling interest rates to historically low levels
- legislation and court decisions defining the freedom and powers of the employer in respect of the occupational pension promise
- governments' tendency to enact new, ever-changing pension legislation and to make pension legislation increasingly complex
- governments' tendency to restrain or even reduce state retirement benefits for budgetary reasons
- governments considering other measures to affect national budgets – including imposing asset levies considering change in tax relief/incentives
- increased supervisory intervention and regulation

More and more employees do not spend their entire career with one employer. Many, by force or by choice, go through a series of employment contracts, sometimes punctuated by periods of self-employment or unemployment. Even more than in the past, younger generations prefer cash in the pocket rather than money locked up in pension schemes. Even if they agree with pension arrangements, they prefer to see a clear link between these 'forced' savings and 'their own' pension pot. Employers are concerned about volatility in the funding of retirement benefits and the impact of sponsorship of defined benefit pension schemes on the company balance sheet.

1 For instance, in some Member States pension provision is mandatory or quasi-mandatory.

Structurally low interest rates and increasing longevity have put a lot of strain on the liabilities of long-established DB pension schemes, despite favourable investment returns and relatively stable pension-related cash flows. From the employer's perspective, it can be said that in many EU countries employers are still committed to having a role in establishing a balance between providing current pay and providing deferred compensation in the form of retirement or savings plans as a supplement to state retirement benefits.

In most instances the employer's competitive objective is to offer pay and benefits that result in a certain market position among competitive reference groups. This enables employers to attract and retain talent levels that fit their business needs. It is important to understand whether or not to provide retirement benefits as a means to achieve that competitive objective is a business decision based on the local employee value proposition. Of course this ceases to be a driver where pension provision is mandatory and set by State legislation.

The decision regarding what to offer – if anything at all – is based on the performance, reward and benefits philosophy of a company or an entire sector. In many cases, a retirement benefits plan is an effective method to support companies' overall competitive objective in managing their workforce. Where retirement benefits are provided, the appropriate type and level of benefits very often depends on local market practice and affordability. Other potential sources of retirement income are also considered, including those coming from the government and employees themselves. The latter, of course, include sources other than pension provision.

> *"The overall objective of retirement benefits provided by companies is to deliver what is determined by the company to be an appropriate level of benefit, at the lowest cost, within an acceptable level of financial risk"*

Against the background of the above quoted developments, the idea that employees have, more than before, the responsibility to make choices between consuming their current remuneration and saving for the future, whether through company savings arrangements or otherwise, is gaining momentum. The company may provide vehicles for retirement savings and contribute towards these, but it is primarily the employee's responsibility to plan his or her post-employment needs and make informed choices.

In that respect, retirement plan design should ideally not only require the employee to save but also allow choice. Some, indeed many, individuals may not feel able or willing to make a choice. In those cases, there is great emphasis on those managing pension plans selecting 'default' arrangements that are intended to appropriately balance matters of risk and reward. The overall objective of retirement benefits provided by companies is to deliver what is determined by the company to be an appropriate level of benefit, at the lowest cost, within an acceptable level of financial risk. Therefore, retirement plan design must take into account local market practice, scale, fiscal regime and the investment environment.

Both defined benefit and defined contribution designs can be appropriate. However, defined benefit arrangements alone are now rarely considered to represent an acceptable financial risk for most companies. Where these still exist, they are often complemented by hybrid (mixed defined benefit/defined contribution) designs or by defined contribution arrangements only – at least for new hires.

Defined contribution only plans are gaining popularity in company-sponsored retirement provision in an attempt to confine the funding obligation and the volatility of pension accounting for the company to acceptable, affordable and, importantly, stable/predictable levels. This is accomplished by transferring the long-term

investment and longevity risk to the employees, but still providing support in setting up retirement income provision. Consequently, the plan design could take into account the various risks to which the company and the employees are exposed and incorporate appropriate measures to mitigate these risks. From the employees' perspective, DC plans favour labour mobility facilitating the transferability of pension rights.

Although until recently the alternative to the prevailing arrangements in final pay and/or average career DB has been strict individual DC arrangements on a large scale, e.g. UK and Ireland, there is a growing awareness that it should be possible to mitigate the investment and individual longevity risk for the employee by introducing some elements of collective risk sharing. This idea has emerged recently and the main advantage is that it improves the risk return trade-off. In the Netherlands, the political and academic worlds are making good progress in incorporating some elements of collective risk sharing into DC design. Along the same lines, a similar design is emerging in the UK, which is often referred to as collective DC. As pay-out options become more flexible, consideration is also being given in some countries to allow the accrued pension savings to be invested within plans post-retirement. This allows the possibility of a slower pace of de-risking or lifestyling as individual approach retirement age. This can also help limit the concentration of investment and interest risk at retirement date. A call for implementing these new pension design insights on risk sharing is needed. The next section presents design ideas for retirement schemes.

3. Pension Design Principles

Good pensions are built on trade-offs between design principles. Since the needs of the modern employer and employee have changed, so will the trade-offs.

Pension design should not only focus on whether a DC or DB framework is introduced, but more importantly on how the design itself deals with human behaviour, how it ensures adequacy to pension needs at retirement in an uncertain world and, in some countries where it is required, supports risk sharing. Here we outline these principles.

3.1 Behavioural Principles

In our diverse and increasingly heterogeneous society, employees need to have access to tailored pension solutions. However, since most employees and employers aren't finance experts, the range of choices and their consequences are also difficult to understand. Three behavioural principles help to achieve the balance between providing freedom of choice and ensuring that employees are protected against undesirable outcomes.

- **Keep it simple.** A complex solution can make it difficult for employees to make sound decisions and feeds future regret and disappointment if the choice made leads to undesirable outcomes. Simplicity helps to manage expectations and strengthens trust in the pension solution.
- **Provide sensible choices.** A robust default package should be provided in order to protect employees that cannot or don't make any choice. On top of this, a limited set of well-considered choices should also be provided, allowing tailor-made options.

- **Under-promise, over-deliver.** Research has shown that people experience twice as much pain from a loss as pleasure from a gain of equal size. Therefore, it is wise to avoid delivering outcomes below people's expectations. This implies that a pension system should aim to illustrate a minimum level of retirement benefits that, in practice, will likely be exceeded; thus if correct expectations are set, people will be willing to pay substantial amounts of money for it, but providing too much certainty will make the pension design unaffordable. This has to be set against the risk of offering such a low minimum that people consider that it doesn't make sense to save through a workplace pension scheme.

3.2 Adequacy Principles

While absolute certainty is unobtainable in any form of retirement provision, a relatively stable level of retirement income is achievable with the right tools.

- **Ensure adaptability.** Constantly changing external conditions require an adaptable pension system. Explicit individual ownership[2] rights ensure flexibility because they provide an objective benchmark for the value of future benefits. This makes it much easier for the system to adjust itself over time and makes pensions more mobile because there can be no ambiguity about the transfer value of the rights.
- **Keep it objective.** The health of a pension system should be measured based on objective market valuations. An objective diagnosis ensures that employees feel comfortable with how their ownership rights are dealt with. If the valuations are calculated differently from market practice, participants may feel they are better off outside the system.
- **Prepare for extreme conditions.** To assess the stability of pension benefits employers or plan providers should test whether outcomes are acceptable under a set of "extreme conditions" scenarios. Robust retirement income should target the ability of employees to handle the consequences of these extreme scenarios. Measures to address this will vary dependent on how far employees are from the age they expect to draw on these benefits.

> *"Based on these universal principles, trade-offs that reflect the culture and historical development path of the country specific pension system can be made."*

3.3 Risk-Sharing Principles

A DC scheme can also offer risk sharing between members based on the risk-reducing benefits of diversification, economic efficiency and fairness. Risk sharing in DC requires finding a delicate balance between insurance solidarity and the risk of potential redistribution of wealth between members. Sharing risks, among members, that cannot be diversified or traded at an objective market price should be avoided as much as possible. The same holds for situations where some members win while others lose.

2 When using the term 'ownership rights' we refer to the economic ownership and not the legal definition of 'ownership rights' which may differ across the different jurisdictions.

- **Avoid winner/loser outcomes.** To avoid losing support, pension system design with risk sharing should prevent any one group of participants benefitting at the cost of another group.
- **Only diversifiable risks should be shared.** Sharing risks that can be diversified creates value for all employees. For example, we have no idea how long we will live after we retire, but we can estimate the current average life expectancy of a homogeneous group reasonably well, so it makes sense for individuals to pool their individual longevity risk with a large group.
- **Individuals must bear some risks.** Risks that cannot be diversified or hedged in the market should be borne by the individual. Examples of such risks are intergenerational risk sharing and macro longevity. Pooling non-diversifiable risks leads inevitably to transfers between groups in the collective pool and will eventually erode trust in the system.

Based on these universal principles, trade-offs that reflect the culture and historical development path of the country specific pension system can be made. How this could be done in a defined contribution framework is explained further using an example. Of course, many other designs are also possible, but based on the basic building blocks outlined in the straw man model the trade-offs can be tailored to suit the specific needs of different countries and companies.

4. A straw man model

A practical example will be given here, illustrating how a basic DC design could be implemented. This design will fit the needs of the employer and employees based on the pension design principles and will build a basic scheme design which could be both individually and collectively implemented.

This design should only be seen as a basic example – a scheme designer needs to make the trade-offs that will fit the needs of the stakeholders. We will not discuss how to implement the straw man model other than mention that it is important to have a governance structure that will ensure overall legal compliance and that the members' best interests are safeguarded.

Identifying design criteria

At the outset of designing a DC system, the designer must set design criteria which are critical and will guide the design. These criteria will vary between different countries due to cultural influences and the historical path along which the retirement system has evolved. In the straw man example the criteria are applied using a somewhat paternalistic perspective. In some cultures or countries, the trade-offs would differ from those proposed here.

An occupational pension fund can be defined as an institution established for the purpose of providing retirement benefits, on the basis of an agreement or a contract between the employer and employees. The occupational pension itself can be defined as an employment benefit determined in the benefit negotiations between the employer and employees or their representatives. These notions are also supported by the Court of the European Union's view that work-based pension provision is deferred pay. In a private market setting, it is not suitable for implementing a social redistribution

> *"A key decision in developing a choice architecture is to determine what choices are made by the sponsor or pension provider and what choices are made by the members."*

of wealth between members. The state pension (first pillar) is the typical vehicle for social redistribution; comparable with the social benefits that are implemented via the tax system.

Imposing a paternalistic approach to pension choice is appropriate in some cultures. In other cultures, a paternalistic approach is considered to be inflexible since the individual best knows his/her economic situation and will act accordingly. In both cases, it is the pension designer's task to look after those members who will not make an active choice or, not even respond to any form of communication.

Some collective elements are welfare increasing, such as the pooling of individual longevity risk, but that should not result in wealth transfers between scheme members. Therefore it is necessary to provide clear ownership rights. This implies that no collective reserve should remain unallocated. This also implies that the losses that might result from, for instance, operational risks are passed on to members. The design steps outlined below may differ between countries depending on the generosity and long-term sustainability of the state pension.

Design step 1: Understanding the needs of the members

All individuals are different, but there are common needs at different stages of an individual's life. To provide some examples, we have sketched some generic needs that a typical individual will face as a young worker, old worker, young retiree and old retiree.

Age category	Basic needs
Up to 55	A young worker is mainly looking for a return above inflation, in order to preserve the purchasing power of the contributions made and earn a risk premium. To protect the family, there is a need for insurance against unlikely (but high impact) risks such as disability and mortality risk.
55 to 67	An old worker aims for a real return but with some focus on capital preservation. There is also a need to reduce the exposure towards unexpected falls in nominal interest rates or stocks exposure. Partner pension continues to be an important part of the personal risk insurance. An older worker can mitigate shocks in macro-longevity risk by working longer – provided that there are continuing employment opportunities.
67 to 80	A young retiree needs some income stability in nominal terms, but could still desire some exposure towards real assets as protection against unexpected increases in inflation. Pooling micro-longevity risk (in combination with partner pension) is welfare increasing for the retiree but it still might be more cost efficient not to hedge macro-longevity risk.
80 and onwards	An old retiree is mainly looking for nominal income stability and is less concerned with unexpected inflation shocks. The mortality gains for those alive will have more impact than asset returns. Ideally the retiree would like to have some protection against unexpected changes in macro-longevity.

Design step #2: Identify the basic risks that the member is exposed to

Risk exposures to the four primary building blocks of pension design (financial, biometric, insurance and non-traded) can be variously combined by pension designers. Technology allows pension designers to tailor a package that suits the objectives and needs of employers and employees. At different stages of the life-cycle, blocks can easily be added or taken away.

1. **Financial risk:** this building block allows pension designers to provide exposure to or protection against amongst other things: equity risk, inflation risk and interest rate risk. Harvesting the equity premium early in life is important in order to achieve an adequate pension, acceptable contribution levels and some inflation protection. After retirement, the scale tips and protection of pensions outweighs the benefits of equity exposure and inflation protection.
2. **Diversifiable life-related risk:** the most important risk in this category is micro-longevity risk. Some people live longer than average while others do not. At a 'young' age it is not expensive to provide for a survivor's pension since the probability of dying is low. For retired persons, especially at older ages, the risk of outliving ones funds becomes paramount. By pooling the individual longevity, the surviving members will experience returns from biometric risk which, in expectation, are larger than their own financial returns. Disability insurance is central to protect the employees against the severe consequences of losing earning capacity early in their career.
3. **Systemic life-related risk:** the potential unexpected increase in life-expectancy – macro-longevity risk – is a good example of a risk that cannot be efficiently traded in the market. Consequently, this risk should be borne by the members themselves. When a member is still working, he can bear this risk and compensate for a shock by working longer. However, a very old member cannot do this anymore, so ideally he/she should be able to get protection against these risks.

Design step #3: Design a default

Using an analogy from the car industry, the default could be viewed as a multi-purpose vehicle. It should cater for the basic need of the typical employee groups during their different stages in life. If a company has very distinct groups of scheme members with different needs, it could be useful to consider introducing different default solutions based on representative sets of employees. In the example below, the default choice is developed around the four age categories described in the first step and we simply allow for a smooth transition between the different categories by introducing an automatic life cycle for the member. In their younger years, the member will have exposure towards growth assets in a return-seeking portfolio. As the member grows older the risk is gradually reduced and in the pay-out phase, the member still has some exposure to growth assets and the longevity is pooled.

Age category	Default choice
Up to 55	A diversified return seeking portfolio, targeting a real return plus a risk premium. Partner and disability insurance.
55 to 67	A combination of a diversified return seeking portfolio, targeting a lower/more stable real return and an increasing portion of bonds with long duration. Partner and maybe disability insurance.
67 to 80	The income base could be a nominal income stream but with an individual 'buffer' of return seeking assets that can be used to provide additional income and risk mitigation. The micro-longevity risk is pooled.
80 and onwards	A cash flow matching nominal portfolio. Pooling for individual mortality risk and buying protection for unexpected increases in macro-longevity.

Deliberately, there is no specific asset allocation mentioned in the default choice at different ages, since the asset allocation will be driven by the investment philosophy and the conditions under which the scheme operates. It could be useful to link the different age categories using a 5 year smooth transition period, in order to avoid an abrupt shift at the 'break' points between the different age categories.

"There are limited welfare improvements only from a financial perspective in the collective model compared to an individually based model."

Design step #4: Design a choice architecture around the default

Once equipped with a robust default solution, the next question is to what extent are choices provided to members? This is a decision that the pension designer will make together with employers' and employees' representatives. An extreme paternalistic decision is to offer no choices to the members at all. A more practical view is to offer only a few, but relevant, choices to them. There are also some countries, for example Belgium and Germany, which use DC accounting but where there are pension promises based on a guaranteed return of the contributions. In those cases, offering investment choices could lead to adverse selection of risky options by the member because the employer must provide a guaranteed minimum return. For this reason, any choices offered to the employee under those special circumstances, if allowed at all, must ensure that the employer does not have to make up for a potential shortfall.

The choices could be designed depending on the type of job, income level etc. It is important to provide clear and understandable feedback to the individual member on the consequences of a specific choice. For example, choosing the degree of uncertainty in the pay-out profile could be a sensible choice to offer. But asking the member to select their own European equities fund from a long list of asset managers does not seem sensible. Although the choices will be limited there is probably a need for an up-front risk profiling similar to the requirements in the MiFID regulation. It is important that there is appropriate support for members to help them to make appropriate choices.

In some countries (US and France for instance), the default option is a life cycle strategy (LCS) option. It has been considered by many studies (see OECD work on default option) to be a good solution to catch the risk premium and to mitigate progressively the risk when approaching retirement date.

> *"The main challenge with collective solutions is to ensure fairness inside the collective approach"*

Design step #5: Monitoring outcomes

The member needs to get accessible information on whether he/she is on track for an appropriate (acceptable, affordable and relatively stable) level of income in retirement. This significantly depends on the level of pensions granted by the social security pension system. If retirement income relies mainly on the level of occupational DC schemes, the first thing that needs to be monitored is the potential gap between savings and the acceptable level of retirement income. This will help the member to plan ahead while still being active in the labour market. The affordability is a design trade-off between the quality of the retirement income and the ability to harvest a risk premium. The impact of asset management fees is often underestimated due to the compounding fee effect[3] that is difficult to estimate intuitively. Some investment strategies that charge high fees may deliver a positive net result after the fees have been paid. In practice there is a trade-off between potential upside and management fees to obtain value for money, but it is always a good idea to keep the cost and fee 'friction' low in the scheme. Larger scale DC plans have the ability to harvest economies of scale which can result in lower overall costs.

3 As an example, 0.5% in additional annual cost corresponds approximately 20% lower cumulative return over a 40 year period

Design step #6: Implementation

From an implementation perspective, there are advantages and disadvantages of both collective and individual DC approaches. A collective approach could be useful as long as the ownership rights are clear since it could keep the implementation costs low.

In the past, it was frequently claimed that there were welfare gains from intergenerational risk sharing in the Dutch Collective DC approach. It is clear from recent research[4] that the Collective DC model can be replicated using a specific individual life-cycle design. In other words, it is possible to identify an individual life-cycle path that generates the same economic outcomes as the Collective DC solution. To summarize the outcome of the Dutch discussion: there are only very limited welfare improvements from a financial perspective in the collective model compared to a model with clear individual ownership rights.

It is also important to distinguish between a trust based (non-profit) pension fund and a contract based (commercial) solution. There are advantages and disadvantages to both approaches but discussing the implementation process is not the main objective of this paper. Our experience is that the pension design discussions are often emotional since the design choices are often confused by the implementation discussions.

Lessons from the example

Although this is a stylised example, it illustrates how a pension design could be developed. Of course, other aspects like local labour market structures, fiscal law, pension law, etc. will influence the design as well. What we see is that putting ourselves in the shoes of the member over his/her full lifecycle (work life and retirement) will help when designing a DC scheme that aims to help the member to manage the different risks to which he/she is exposed. The key decision in developing a choice architecture is to determine what choices are made by the sponsor or pension provider and what choices are made by the members. If this is done sensibly, it should be possible to offer the members a set of few, but relevant, choices. The main challenge with collective solutions is to ensure fairness inside the collective approach. This requires a collective business model that is based on transparent market based valuation and clear individual ownership rights.

4 CPB (2014). What is the value of "collective" in collective DC?, by I. Boelaars, R. Cox, M.H.C. Lever and R. Mehlkopf, Discussion Paper.

5. Conclusion

In this paper we have shown that it is possible to design DC schemes that will support the demand for flexibility due to the 'modern' career paths and can deliver an acceptable, affordable and relatively stable retirement income. It is time to begin exploring the boundaries of modern DC; this will help all of us to construct resilient occupational retirement income solutions that are fit for purpose in the 21st century.

In our mind, the objective with pension savings is to build adequate pension benefits taking into account the variety of situations in the different countries. Equipped with a set of pension design principles we were able to outline a straw man model for a modern DC scheme that will deliver on this objective. By focusing on the needs of the members at the different stages in life, it is possible to create default packages that will change with the member's needs through his/her personal life cycle. It is worth highlighting that a very important, but often disregarded component, in DC design is the pooling of individual longevity. In countries where DC pensions are the main part of pensions benefits, by pooling individual longevity, the member will get a life-long retirement income which simply eliminates the risk that the member will outlive his/her own savings if reaching a higher than average age. In other countries, the pension pot will be used to complement resources from the statutory system when needed by the retiree.

The choices that are to be made at each step of the design are driven by the state pension, the culture and the history of each country. As a consequence, we do not expect that there will be one optimal pan-European design that will be accepted socially in each country[5]. By separating the design from implementation we hope to bring focus onto pension design discussions in each country. In our experience, attempts to change the implementation often lead to a very emotional and difficult discussion since some of the agents servicing the system may lose their current roles. Implementing a better design in the existing framework is not easy, but it is less complex than trying to address both design and implementation at the same time.

We hope that this paper will provide inspiration to pension design experts working on modern DC solutions and that we in the next decade will see a new breed of DC emerging which focuses on providing a life-long retirement income.

5 The underlying investments in the pension scheme could of course be invested globally.

About PensionsEurope

PensionsEurope represents national associations of pension funds and similar institutions for workplace pensions. Some members operate purely individual pension schemes.

PensionsEurope has **24 member associations** in EU Member States and other European countries with significant – in size and relevance – workplace pension systems. In addition to this, PensionsEurope's members include corporate and supporter organisations such as leading European pension funds, asset managers, banks, custodians, investment advisers, insurers, lawyers and social partners.

PensionsEurope has established a **Central & Eastern European Countries Forum (CEEC Forum)** to discuss issues common to pension systems in that region.

PensionsEurope member organisations cover the workplace pensions of **about 70 million European citizens**. Through its Member Associations PensionsEurope represents approximately **€ 3.5 trillion of assets** managed for future pension payments.

PensionsEurope Members are large institutional investors representing the **buy-side** on the financial markets.

Workplace pensions offer:

- ★ Economies of scale in governance, administration and asset management;
- ★ Risk pooling and often intergenerational risk-sharing;
- ★ Often "not-for-profit" and some/all of the costs are borne by the employer;
- ★ Members of workplace pension schemes often benefit from a contribution paid by the employer;
- ★ Wide-scale coverage due to mandatory participation, sector-wide participation based on collective agreements and soft-compulsion elements such as auto-enrolment;
- ★ Good governance and alignment of interest due to participation of the main stakeholders.

What PensionsEurope stands for:

- ★ A regulatory environment encouraging workplace pension membership
- ★ Ensure that more and more Europeans can benefit from an adequate income in retirement
- ★ Policies which will enable sufficient contributions and good returns

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