

Defined Benefit vs Defined Contribution or is there a Third Way?

Defined Ambition schemes: an alternative approach to risk sharing

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Abstract

Over the past 30 years there has been a significant decline in participation of Defined Benefit (DB) schemes. In their place, Defined Contribution (DC) schemes have offered two important things: to employers, a fixed contribution rate without an ongoing liability to cover any shortfall in funding; and to members, an identifiable “account” with investment choice. While these changes have brought certain benefits to both employers and members, they have resulted in a significant transfer of risk (viz: investment risk, inflation risk, sequencing risk and longevity risk) from employers to members who, arguably, are not best placed to manage these risks. There is however a “third way” between pure DB schemes and pure DC schemes known as Defined Ambition (DA) schemes. This approach to risk sharing is relevant for Australia as the focus shifts from accumulation to de-accumulation and the search for new ways to provide stable, certain and reliable incomes to Australians in retirement.

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[The demise of DB schemes] has created an unintentional gap in our superannuation system, which poses a key challenge for future public policy around superannuation: how do we ensure that the lump-sum benefits of superannuation are sensibly converted into an income stream or capital source that can finance an individual's needs during retirement, for the whole of their retirement?

Association of Superannuation Funds of Australia¹

The move from DB to DC and the unintentional gaps in our superannuation system

Over the past decades there has been a substantial shift in the superannuation marketplace from defined benefit (DB) schemes to defined contribution (DC) schemes. There have been many reasons suggested to explain the shift, including increased workforce mobility, demographic and industrial change as well as regulatory and accounting reform.²

ASFA's submission to Australia's 2014 Financial System Inquiry, argued that the most important reason is that employers are '*no longer willing to bear the liability to the defined benefit scheme on their balance sheet.*'³

While there are clearly a number of factors behind the shift, the causes of the shift are arguably less important than the consequences. One of the most important consequences is the "unintentional gap", contemplated above, in our retirement system. Currently, industry participants are looking at ways to fill this gap. Most of the proposals, in one way or another, look to collective risk-sharing approaches drawing on the heritage of DB schemes either directly or indirectly.

¹ Association of Superannuation Funds of Australia (ASFA), Submission to the Financial System Inquiry, March 2014, 9

² *Ibid*, ii

³ *Ibid*, 8

...the shift towards DC plans is presenting employees with many challenges that they did not face in DB plans. They continue to be exposed to inflation risk while assuming additional risks, most notable, market, longevity and market timing risk, formerly borne by the DB plan sponsor.

John Broadbent et al⁴

Risk distribution by superannuation fund type

Type of risk	Who assumes the risk	
	DB	DC
Investment	Employer	Member
Inflation	Shared	Member
Longevity	Employer	Member
Sequencing risk	Employer	Member

Adapted from Broadbent

Risk sharing: DB vs DC

Traditional analysis of DB and DC schemes compares who assumes given risks. Broadbent argues that while DB schemes and DC schemes generally face the same risks, those risks are shared differently. In a typical DB scheme, the ‘*employer bears all the investment risks related to investing DB plan assets and funding shortfalls that arise for various reasons.*’⁵ Concomitant with investment-related risks are market timing or temporal risk and sequencing risk. Ultimately, with typical DB schemes, a significant amount of the risk is borne by employers.

On the other hand, in DC schemes, virtually all of the risks are borne by employees because ‘*the retirement income that will be provided is unknown in advance...[but] will depend on the contributions made while working and the investment returns on the plan balance.*’⁶ Under DC schemes, therefore, investment, inflation, longevity and sequencing risks are borne by individual employees.

Behavioural economics and finance have increasingly recognised some of the consequences of this shift in risk from employers onto employees. Broadbent argues that individuals do not necessarily

⁴ John Broadbent et al, ‘The Shift from Defined Benefit to Defined Contribution Pension Plans – Implications for Asset Allocation and Risk Management’, Paper for a Working Group on Institutional Investors, Global Savings and Asset Allocation established by the Committee on the Global Financial System, December 2006, 5

⁵ *Ibid*, 6

⁶ *Ibid*, 7

manage these risks in the most appropriate way and that they suffer from “inertia” and “myopia”.⁷⁸ In light of these concerns, Broadbent concludes ‘*there is a role for financial intermediaries in providing simplified products that provide individuals with a guaranteed income.*’⁹

It would therefore be interesting to revisit Broadbent’s analysis in light of developments in the Netherlands (and discussions in the UK¹⁰) to see whether defined ambition (DA) pensions fill this “unintentional gap”.

⁷ Broadbent, *op cit*, iii

⁸ See also Vish Teckhandani, ‘MySuper unleashes “great divide” as funds diverge on strategy’, 30 June 2013, <http://passport.finsia.com/BlogsMain/BlogViewer/?BlogKey=771bccc1-fc3f-45f8-9ac7-e84607ed1f82> the timing where individual members are de-risked is a risk itself, particularly in volatile markets because this is a further example of sequencing risk.

⁹ *Ibid*, 48

¹⁰ Department for Work & Pensions, ‘Reshaping workplace pensions for future generations’, November 2013

By switching from the DB to the DA model, Dutch pension contracts are being made more resilient to demographic and financial shocks. At the same time, the Dutch regulatory framework is changing to facilitate this transition.

Niels Kortleve¹¹

Defined Ambition pensions in the Netherlands: the Golden Mean?

The Netherlands' retirement income system comprises a flat-rate public pension and a quasi-mandatory earnings-related occupational pension linked to industrial agreements. Most employees belong to these occupational schemes which are industry-wide defined benefit plans with the earnings measure based on lifetime average earnings.¹²

In the Netherlands a new pension agreement (*Pensioen Akkoord*) was ratified by the key social (industrial) partners. The new agreement was preceded by financial and economic shocks associated with an ageing population and increasing life expectancy. Employers agreed that their contributions into pension plans '*would be capped at present levels and would not rise any further*'.¹³ As result of the agreement to "fix" employer contributions, it was also agreed that shocks arising from longevity or lower than expected investment returns '*must be resolved in another way*'.¹⁴

The Dutch hybrid-system requires employers to contribute a fixed percentage of salaries and wages into approved pension schemes. Employers bear no additional liability if the investment of the plan performs poorly or if the metrics, such as the discount rate, used to value the liabilities changes. Under the Dutch arrangements, if a plan becomes underfunded, rather than the employer "topping up", the plan's governing body agrees on steps to address the funding position through a combination of one or all of the following:

- Reducing indexation
- Lowering future accrual rates
- Reducing accrued rights¹⁵

As a result of the changes, the investment and longevity risks have been transferred from the employer to employees; but not individually, as a group.

¹¹ Niels Kortleve, 'The "Defined Ambition" Pension Plan: A Dutch Interpretation', *Rotman International Journal of Pension Management*, Volume 6, Issue 1, Spring 2013, 10

¹² Australian Centre for Financial Studies, Melbourne Mercer Global Pension Index, October 2013, 33

¹³ Erik Schouten and Thurstan Robinson, 'Defined ambition pensions – Have the Dutch found the golden man for retirement savings?', *Pensions*, Volume 17, 4, 335

¹⁴ *Ibid*

¹⁵ *Ibid*, 337. See also footnote 14: 'the option of reducing the accrued pension rights is only available for a pension fund. An insurance company can never reduce accrued pension rights.'

My government's pension reforms will also allow for innovation in the private pensions market to give greater control to employees.

Queen's speech¹⁶

Recent developments in the UK

The UK has been closely watching the pension developments of their continental neighbours. Since 2008, the UK government has consulted widely on both risk sharing¹⁷ and the possibility of introducing DA schemes into Britain. The Department for Work & Pensions (DWP) argued that the Dutch model could have a role to play in Britain but would need to operate a large scale in order for some of the key benefits to be realised:

- Greater pool of assets will bring down investment costs
- Larger number of members increases the pool with which individuals can share risk
- Larger membership increases funds available to be invested.¹⁸

After many years of discussion, in June 2014 the Queen announced a Private Pensions Bill that would make provision for DA schemes based upon sharing risk collectively. The "Collective Defined Contribution" model under discussion is based on a fixed employer contribution and a target pension income for members. Risk is shared such that '*the event of underfunding, adjustments may be made to indexation arrangements, the target pension income or, in some cases, benefits*'.¹⁹

This approach to pensions design, according the DWP, entails '*genuine risk sharing*'.²⁰

¹⁶ Her Majesty's Most Gracious speech to Both Houses of Parliament, 4 June 2014,

¹⁷ Department of Work and Pensions, 'Risk sharing consultation', 5 June 2008

¹⁸ House of Commons Library, 'Defined Ambition pension schemes', 4 June 2014, 9

¹⁹ *Ibid*, 1

²⁰ *Ibid*, 9

The middle way is called Defined Ambition (DA)...It assumes that investment risk has to be shared between employees and employers, and the main question is how best to split the risk between them.

This is a mistake. It ignores the existence of sophisticated capital markets that allow risks to be transferred to third parties.

Antony Newberger²¹

Is employer risk vs member risk a false dichotomy?

The debate in the UK about the shift from DB to DC has been, in part, a debate about risk sharing between two parties: employers and employees. Whenever two options at polar extremes are presented, it remains a valid question to ask if this is a false dichotomy. Are there only two options (ie employer risk or member risk) – or does a third option exist?

Newberger argues that a third option would involve transferring some or all of the risk to other parties through capital markets. He argues that employers sponsoring DB plans do not have to assume investment risk because they can pay a premium to a third party insurer, leaving the risk with the insurer. Further, employees in DC plans do not need to invest in risky assets because they can invest in inflation-linked government bonds or indexed annuities to avoid the risk altogether.²²

While Newberger raises a good point, the move to outsource these arrangements would introduce counter-party risk and, in all likelihood, additional cost. Perhaps the better approach is to reconceive risk sharing – rather than it being a zero-sum game between employer and employee, risk sharing should be thought of as collective risks or individual risks.

Under this conceptual framework, traditional DB schemes remain at one end of the spectrum and DC schemes at the other. However, different types of schemes involve different amounts of risk-sharing. DA schemes, for example, could be thought of as sitting somewhere between the extremes as they involve the pooling of risk among individual members of the plan (ie collectivisation of risk) which is effectively what capital markets or third party insurers themselves would do.

Therefore, we argue that risk pooling, whether managed directly by a superannuation scheme or through a superannuation scheme outsourcing the task to capital markets or insurers can achieve the same thing: managing a large number of single risks as a pool of risk, ultimately diversifying the risk and bringing more certainty to individual plan members.

²¹ Antony Newberger, 'Defined Ambition: an illusion based on a mistake', Cass Finance Blog, 14 January 2014 <http://blogs.city.ac.uk/cassfinance/2014/01/14/defined-ambition-an-illusion-based-on-a-mistake/>

²² *Ibid*

Defined benefits facilitate the sharing of risks across different cohorts of the population. Take the 'retirement zone risk' that spans the last few years of working life and the first several years of retirement.

Hazel Bateman & Geoffrey Kingston²³

The main risks that DA schemes are better placed to address

Risk distribution by superannuation fund type

Type of risk	Who assumes the risk
	DA
Investment	Members collectively
Inflation	Members collectively
Longevity	Members collectively
Sequencing risk	Members collectively

Adapted from Broadbent

If we revisit Broadbent's analysis and update it in light of the development of DA schemes in the Netherlands, we see that the risks inherent in DC schemes are now shared collectively by members, rather than being borne by individual members.

Of the four risks in the above table, the first two could be effectively managed through a bonus-style mechanism and discretionary indexation of pensions. The last two risks require further discussion because it is these risks that DA schemes can deal with, arguably, better than either DB or DC schemes.

²³ Hazel Bateman & Geoffrey Kingston, 'Restraining a level playing field for defined benefit superannuation', JASSA; The Finsia Journal of Applied Finance, Issue 4, 2013, 37

As long as the Age Pension continues to provide a longevity insurance safety net, it is not necessary to impose a requirement that people invest in additional insurance.

Dr Ken Henry²⁴

Risk number one: Longevity risk

Longevity risk in Australia is addressed, in part, by the Age Pension – “the best annuity taxes can buy”. While this means that longevity risk is unlikely to be a significant public policy issue²⁵, it remains a significant financial issue for retirees; particularly, for those hoping to replace higher levels of income to enjoy a standard of living above that provided by the Age Pension alone.

The superannuation industry acknowledges it is time to move away from thinking of a superannuation retirement benefit as a lump-sum to be managed at retirement, and should instead start thinking about optimal retirement income products, giving rise to the question: what are the best ways to achieve this?

For DC plan members, longevity risk is the potential risk associated with increasing life expectancy. The most apparent risk is that of drawing down savings too quickly. This is a serious deficiency in the design of Australian account-based pensions which impose a minimum drawdown requirement but do not impose any maximum.

On the other hand, long term income streams, particularly those paid by DB / DA schemes, can provide a lifetime income stream and longevity protection can be built into the product.

An increasing focus on the need for collective risk sharing in product design

There has been an increased focus in the superannuation market to develop products that provide more certain retirement outcomes. Several super funds have added term deposits or annuities to their investment menu while others have added guaranteed products²⁶ and, more recently, volatility overlays.²⁷

While these new developments provide more certain retirement outcomes, the certainty is being traded off for higher growth investments, and hence, the opportunity cost can make these options relatively expensive compared to traditional, collective alternatives.

²⁴ Australian Government, ‘Australia’s future tax system: report to the Treasurer: Part one: Detailed Analysis’, December 2009, 121

²⁵ While this remains a significant political issue, the replacement of income for middle to upper income earners is an issue for the superannuation industry to address rather than government.

²⁶ AXA North, OnePath Money for Life, Macquarie Fusion

²⁷ Maritime Super

Some funds in Australia have even started using the terminology (and heritage) of collective arrangements to inform their thinking about new products. For example, one Australian fund refers to “Defined Benefit thinking in an accumulation fund” while focussing on funding a target linked to a specific retirement income²⁸. This suggests the strong, positive associations many people still have for the concepts behind DB schemes.

Longevity protection requires some form of risk pooling

We have already seen that the move away from the pooling of risks, as exists in defined benefit funds and annuities, to account-based pensions has moved more risk to individuals. One significant risk is that retirees outlive their savings. The most commonly used post-retirement product, the account-based pension, requires pensioners to bear the longevity risk. Annuities or defined-benefit pensions, on the other hand, are based on risk pooling where annuitants / pensioners are able to share the mortality and investment risks with others. However, it should be noted that there is an apparent bias against “locking up” capital in an income stream and then potentially “dying early”. This is one of the reasons that lifetime income streams are generally “sold” and not bought and good financial advice is an essential complement to such products.

Longevity risk is important, but sequencing risk is potentially even more important

Longevity risk is an important risk that is not well covered by existing DC products. While a safety net level of protection is offered through the Age Pension, it should be recognised that longevity protection is likely to be a second order issue for many members because it presupposes members have sufficient capital already established to be drawn down in an orderly fashion.

Sequencing risk is a more serious risk because it puts at risk the bulk of a member’s retirement savings at a very crucial time ie as they approach or commence retirement.

²⁸ Michael Pennisi, Presentation at the Actuaries Institute Financial Services Forum 2012

The major risk facing workers is an unfavourable sequence of returns in the years immediately prior to retirement.

Pieter Stoltz²⁹

Risk number two: Sequencing risk

Sequencing risk can be thought of as the '*worst returns in the worst order*'.³⁰ For DC plans, sequencing risks is heightened by the greater a member's portfolio balance; therefore, this risk is typically at its highest as a member approaches retirement and in the early years of retirement i.e. late accumulation and early de-accumulation. This can be thought of a '*portfolio size effect*'.³¹

Clearly it is recognised that DB schemes are generally better placed to deal with these risks. That is because the main advantage of a DB scheme is a cost effective smoothing of investment returns, achieved through the collective sharing of risk. This enables members to capture the return premium of investing in growth assets over defensive assets, with limited exposure to the potential detrimental impact of high return volatility on retirement savings.

While, in theory, an individual DC member can achieve a similar outcome by remaining invested in growth assets long enough, this does not necessarily hold true in the superannuation environment. This is because DC schemes require a balance to be built up slowly over a person's working life and then drawn down in retirement, leading to the critical 15 year window, typically between age 55 and 70, when adverse returns can significantly worsen an individual's retirement outcome.

Risk pooling is a long-established and effective way to protect members against sequencing risk and the uncertainty and volatility of their retirement outcomes associated with this risk.

²⁹ Peter Stoltz et al, 'The sequencing risk threat to retirement adequacy from increased superannuation contributions', Working Paper from the CSIRO-Monash Superannuation Research Cluster, 2014, 3

³⁰ Finsia Research Report, "Sequencing risk: A key challenge to creating sustainable retirement income", October 2012

³¹ Anup Basu & Michael Drew, 'Portfolio size effect in retirement accounts: what does it imply for lifecycle assets allocation funds', Journal of Portfolio Management, Volume 35, Number 3, 61-72

The government should remove the prescriptive rules in the Superannuation Industry (Supervision) Regulations 1994 relating to income streams that restrict product innovation. This should be done in conjunction with the recommendation to have a uniform tax on earnings on all superannuation assets.

Dr Ken Henry³²

Impediments to developing new products

Despite the significant decline in the number of DB schemes around the world, key aspects of their design remain appealing to people saving for retirement. DB schemes seamlessly manage the transition from working income to retirement income.³³ DB schemes also ‘*ease the burden on taxpayers*’, being ‘*suitable vehicles for providing retirement benefits in the form of lifetime annuities, thereby lightening the burden of providing public longevity insurance*’.³⁴

Most of the key benefits of DB schemes could be delivered by DA schemes. However, in any attempt to “bring to market” a DA superannuation scheme there will be significant impediments.

Australia has a complex web of inter-related legislation, regulation and prudential standards that restrict pension product innovation. While there are good public policy reasons for many of these regulations, it is becoming increasingly apparent that the superannuation industry needs more flexibility to develop new retirement income products that address the changing needs of retirees.

The SIS Regulations effectively “design” pension products, through restrictions on everything from the size of payments, indexation rules, access to lump-sum withdrawals to the use of any residual capital value and payments to reversionary beneficiaries.

The SIS regulations also flow onto the equally complex tax and social security rules. For example, the Social Security Act 1991 includes a definition of defined benefit income stream that is directly linked to SIS Regulation 1.06(2), albeit with a carve-out for providers established before 20 September 1998.

Along with technical solvency requirements in SIS, APRA’s *Superannuation Prudential Standard 160 – Defined Benefit matters* includes a number of requirements including the setting of shortfall limits and responses to unsatisfactory financial positions including restoration plans.

Before any DA superannuation is developed in Australia, there will need to be significant collaboration between policy makers, legislators and superannuation funds to bring about the right settings.

³² Australian Government, *op cit*, 121

³³ ASFA, *op cit*, 9

³⁴ Bateman, *op cit*, 37

The good news

While there may be tax impediments for life offices to offer deferred annuities³⁵, an alternative approach that allows deferred lifetime annuities to be purchased each year while in accumulation phase, but ultimately drawn in the retirement phase, presents fewer problems. While tax preferences are obviously desirable to promote a product, no additional tax preferences would be required for DA schemes to flourish.

The current debate about the role of annuities has the potential to misconceive the true potential of annuities. Rather than looking at annuities as a “purchase at retirement decision”, annuities should be thought of as an ideal retirement income to be “purchased” throughout a member’s working life with a pay-off date of retirement, at say, 65 years of age. If deferred annuities are acquired and held during the accumulation phase, this would remove the need for explicit tax relief and would also provide a much better way to address sequencing risk than relying on purchasing a single annuity at retirement.

³⁵ Challenger, Submission 1 to the Financial System Inquiry, March 2014, 14

[A]re there aspects of concepts such as defined ambition pensions and target income solutions that should be considered for the Australian system?

Helen Rowell, Member, Australian Prudential Regulation Agency³⁶

How a DA scheme might operate in Australia?

The challenge presented to anyone reconceptualising a DB scheme for the 21st century is how to balance the competing needs of employers and employees through an appropriate response to sharing the risks collectively.

Any new DA scheme developed in Australia is unlikely to “make a new market”; instead it is more likely to be developed to meet an existing market need. A DA scheme, therefore, is likely to be developed by existing DB providers, perhaps reopening a closed scheme to new entrants or offering up a new default product for new employees.

It is unlikely that a DA scheme will ever be a “mass market” public offer product. But it could still play a significant role in rejuvenating the DB sector by drawing on the best features of the Dutch and proposed UK systems, including:

- Investment pooling with smoothing of investment returns
- Bonus-style mechanism to manage the financial position of the scheme
- Lifetime pensions with discretionary indexation
- Pension rights built up over time, rather than “purchased” at retirement.
- Option for members to “dollar cost average” into a series of deferred annuities which would commence on specified date(s)
- Ability for employers to satisfy SG obligations / MySuper obligations through their contributions
- Flexibility to direct fixed contributions between a DA pool and a DC pool, offering a mix of income and capital on retirement.

³⁶ Helen Rowell, ‘The Future Regulatory Landscape’ (address to Association of Superannuation Funds of Australia conference, Perth, 13 November 2013)

A new form of DB scheme - the DA scheme - should be considered as part of any review of Australia's retirement income system.

DA is a “catch all” term for a number of schemes being developed around the world that draw on key aspects of DB design while promising to spread the risks, inherent in any plan design, among its participants.

While DA schemes are unlikely to rival the dominance of DC products in Australia, such collective arrangements could play an important role. They could work well for large and stable employers or for groups of employers who are linked across a particular sector (e.g. teaching, academia, government service as well as professional service firms such as the law or accountancy).³⁷

DA schemes offer many of the features of DB schemes through collective risk-pooling, providing members with better protections against many of the risks borne by members of DC schemes. The superannuation industry should, therefore, keep a close watch on developments in the UK to see how DA schemes are developed there and to see if DA schemes have a role to play in filling the “unintentional gap” in Australia's retirement income system.

³⁷ Ideally, where employees pursue careers within a relatively defined sector with monopsony employers.

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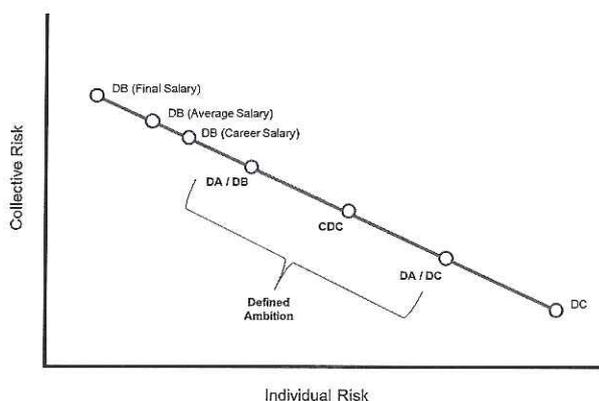
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Appendix: Risk sharing spectrum & glossary of terms used

This paper argues that the traditional approach to compare risks shared between employers and employees needs to be revisited. In its place, different superannuation / pension plan designs around the world should be considered by how they share risks between individual members or share them collectively.



Defined benefit (DB) plans are pension benefits provided by an employer or sponsor. The employer or sponsor promises a regular income benefit on retirement that is calculated using the employee’s salary, their tenure of service, and their age. DB’s are not directly related to investment returns. In the OECD, 18 countries have DB plans provided by the government and private occupational schemes are mandatory (or effectively mandatory) in the Netherlands, Switzerland and Iceland.

Defined contribution (DC) plans are those where contributions are paid into an individual account for each member. The contributions are invested and the returns on the investment – either positive or negative – are credited to the individual’s account. On retirement, the balance of the account is used to support the member in retirement, sometimes through the purchase of an annuity that then provides a regular income. DC plans are compulsory in 10 OECD countries.³⁸

Defined ambition (DA)

Within this spectrum, there are plan designs that fall outside the strict definitions of either DB or DC. In the UK, the name ‘Defined Ambition’ is meant to be short-hand to encapsulate ‘the many models that could deliver this concept. The term is intended to reflect a greater focus outcome than DC, but also to reflect a difference in the nature of the risk bearer compared to DB.’³⁹

This term includes Collective Defined Contribution (CDC) schemes.

³⁸ ASFA, *op cit*, 9

³⁹ Department for Work & Pensions, *op cit*, 2013, 10