

Defined contribution investment strategies and the role of non-listed real estate **2017**

Research | Academic Paper

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Executive summary

Defined contribution (DC) investment strategies are better when non-listed real estate is added

- > DC pensions constitute a large and fast growing pool of capital
- > The case for non-listed real estate in DC is clear, though obstacles exist
- > DC product innovation is evident in Europe, the US and Australia

Occupational pensions in general, whether defined benefit (DB) or DC, are growing. DC assets are worth €17 trillion and represent 48% of the world's pension assets. However, DC is growing faster than DB therefore in time it will dominate occupational pension provision across the globe. The shift from DB is not happening at the same speed in every market: for example, Australia is already close to 90% DC while continental Europe remains dominated by DB and hybrids. While the pace of change is not entirely predictable, the direction of travel (away from DB) is set.

There are three main obstacles facing non-listed real estate in a DC world: liquidity, high cost (actual or perceived) and product availability. All three obstacles can be and have been overcome, often by blending non-listed real estate with other asset classes. In the US, the preferred real estate solution is the daily priced fund of funds. In the UK, there is no consensus yet but the NEST approach (70% domestic core with 30% passive global REITs) has clear attractions. Australia relies on high net cash flows and an in-depth understanding of both plan cash flows and market illiquidity.

The benefits of investing in non-listed real estate (low correlation, high and stable income, low volatility, inflation related returns, high total returns and efficiency) are as relevant to DC plans as they are to other investors. For DC, specific benefits are needed at different points in the DC member's life:

- Younger members of DC plans need high total returns
- Older members of DC plans need low volatility
- Retired members need income and inflation related returns¹

DC investment strategy is closely tied to the member's age. This explains why a lifecycle approach is usually adopted for the DC default investment strategy, which accounts for the vast bulk of DC assets. Lifecycle means that a plan member's savings are invested aggressively when the member is younger and retirement is far away, then the strategy becomes progressively more conservative as the member nears retirement.

Non-listed real estate is a very diverse asset class, offering a variety of investment strategies that can fit well with the needs of DC plan members. For example, diversified core strategies that invest in selected European markets may offer low volatility; other strategies may offer high income. For DC, what matters most is the “fit” between the real estate portfolio and the member's needs.

‘For DC, what matters most is the “fit” between the real estate portfolio and the member's needs.’

¹ FT Guide to Saving and Investing for Retirement suggests inflation plus 2%.

Introduction

The objective of this study is two-fold: first, to explain the importance of DC and the nature of DC investment strategies; second, to explore the role of non-listed real estate in DC strategies (including the identification of suitable fund types).

Structure of the study

This report is structured as follows: Sections 2 to 4 analyse DC investment strategy, with the emphasis on default strategies, while Sections 5 and 6 focus on non-listed real estate within DC.

To be more specific, Section 2 sets out the DC market landscape, Section 3 asks what DC plan members need from their investments and Section 4 is about default strategies. The study then turns to real estate. Section 5 illustrates the benefits of non-listed real estate for DC members and examines the obstacles that can prevent its inclusion in DC investment strategies. Section 6 examines how those obstacles have been addressed in different markets.

Section 7 draws conclusions from the foregoing sections and suggests topics in this area that might merit further research.

INREV would like to thank the project focus group for their support and guidance on this paper:

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2. Market landscape

This section begins by examining why DC is important. It then draws a distinction between pure DC and various forms of hybrid, including collective DC. The section concludes by noting the differences between national markets.

Why is DC important?

Pensions constitute the largest single source of capital for the non-listed real estate industry². The second largest source of capital is insurance companies³, and some of these are also active as suppliers of DC solutions.

The pension world is evolving and defined benefit (DB) schemes, traditionally dominant, are slowly but surely being overtaken by defined contribution (DC). This is because defined benefit arrangements alone are now rarely considered to represent an acceptable financial risk for most companies⁴. At present, an estimated 48% of the world's private pension assets (which are worth approximately \$38 trillion⁵) are held in DC arrangements.

DB schemes continue to grow, but more slowly than DC schemes. DB is therefore destined to become the smaller, though still significant, pool of assets and DC will become the dominant model for retirement savings globally⁶.

² INREV Capital Raising Survey 2017 shows that pensions accounted for 45.7% of global capital raised in 2016. The corresponding figures are 46.4% and 45.0% in 2015 and 2014.

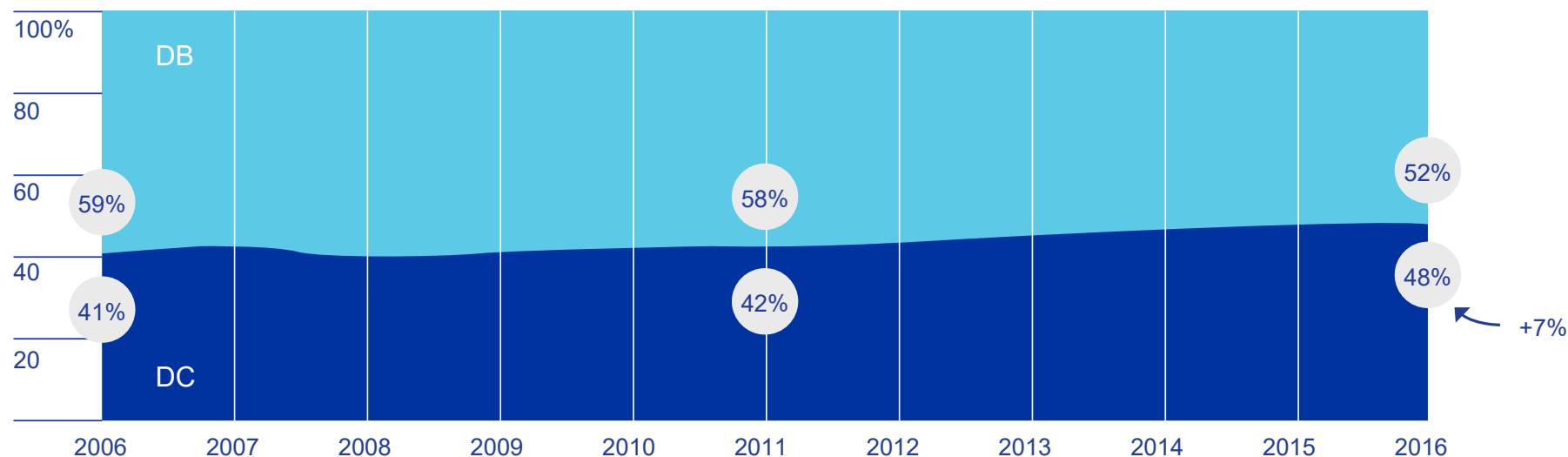
³ Accounting for 16.8% of total capital raised globally (INREV Capital Raising Survey 2017). The corresponding figures are 14.6% and 13.7% in 2015 and 2014.

⁴ Pension Design Principles applied to modern Defined Contribution solutions, Pensions Europe 2015

⁵ Pension Markets in Focus 2016 by the OECD

⁶ Asset Management 2020 - A Brave New World, by PwC (2014)

Figure 1: How global pensions are moving from DB to DC



Note: Switzerland is excluded from the analysis above.
Source: Global Pension Assets Study 2017, Willis Towers Watson and secondary sources. The material presented is based on information considered reliable.

The growing of importance of DC is reflected in the growing number of trade bodies dedicated to it.

- The Defined Contribution Real Estate Council (DCREC) in the US promotes investment in real estate to help provide workers a financially secure retirement.

- The Defined Contribution Investment Forum (DCIF) in the UK aims to exchange ideas and develop initiatives to promote investment excellence in Defined Contribution (DC) pensions.
- The Defined Contribution Institutional Investment Association (DCIIA) in the US fosters a dialogue among the leaders of the defined contribution community in the US.

All three of the bodies listed have assisted INREV with this study.

This study examines only occupational pensions, which are sometimes called Pillar 2 (Pillar 1 being the State pension and Pillar 3 being individual pension accounts).

These are thought-provoking observations. If DC is on track to dominate pensions at a global level, and pensions continue to dominate capital raising, non-listed real estate represents a valuable opportunity. Another possibility is that DC in Europe may access real estate through the listed market only. Listed real estate is an easier fit in DC, given its liquidity and its availability via low cost passive funds (though its volatility is an issue for older and retired plan members).

Figure 2: Spectrum of occupational DB and DC plans

Different forms of DC

There are many different versions of defined contribution pension. “Pure DC” means that the member takes all investment risk, with no guarantees and no risk sharing. “Hybrid” means that some extra DB-type element is added, which can be a guarantee of no negative returns or some form of risk sharing. Examples of hybrids are “collective DC” and “cash balance”. Hybrids can be described as DC+ or DB-.

For example, in Germany a hybrid scheme has individual accounts (just like pure DC) and account balances increase based on the chosen investment option, subject to a guaranteed minimum investment return. Definitions of the various forms of hybrid can be found in the glossary of terms in Appendix 2.

This study concentrates on the issues posed by pure DC. The investment strategies of hybrid forms have much in common with insurance and defined benefit, and the role of non-listed real estate in these areas is already well researched⁷.

⁷ For example, see A Global Perspective on Pension Fund Investments in Real Estate by Andonov, Kok and Eichholtz (2013).

National markets are very different to each other

While it seems inevitable that DC will overtake DB in global terms, the trend is not consistent across every country. To begin with, occupational pensions are not uniformly important in every country – in some countries the state pension provides the bulk of total retirement income and the occupational pension is a modest supplementary pension⁸. Japan, Canada and many continental European markets may retain DB as the dominant form of occupational pension for years to come, and in the middle ground between DB and DC non-listed real estate may retain its “DB” role. At present one quarter of pension assets in Europe are DC⁹.

So the situation is more nuanced than it may seem at first glance. DC will dominate in the long run, but not everywhere; and “DC in” does not have to mean “real estate out”.

For buyers (DC plans and their members), the key point is that members’ portfolios would benefit from the inclusion of non-listed real estate. This is true for members of all ages:

- Younger members, who will most likely be working for the next 30-40 years, are well positioned to reap the illiquidity premium¹⁰.
- Older members would benefit from better diversification of their more sizeable retirement pots.
- Retired members could enjoy the high and stable income that core real estate can generate.

Where DB and DC plans exist alongside each other (for example, many sponsors may have both), and the DB portfolio contains non-listed real estate, there may be economies of scale to consider.

For suppliers (real estate fund and investment managers) there is a clear commercial imperative to tap this €17 trillion pool of capital. While DB continues to grow, it is getting older, and the investment strategy of a mature DB pension may require less non-listed real estate than that of a younger DB plan.

Cross-border capital flows could bring DC money to European fund managers whose own domestic pension system is still DB-dominated. For example, large DC plans in the US and Australia may seek to invest in Europe.

⁸ Pension Design Principles applied to modern Defined Contribution solutions, Pensions Europe 2015

⁹ Pensions Europe’s Pension Fund Statistics 2015

¹⁰ Forthcoming INREV study on real estate illiquidity premiums

3. What do DC plans and members need from their investments?

This section considers the nature of DC investing. It analyses the type of investment strategies that are needed in a DC context, from the member's perspective. The section concludes by identifying the key investment risks and when they occur.

The nature of DC plans

In very broad terms, DC plans work like this:

1. A DC plan is both a collection of individual accounts and a single pool of assets. The pool of assets is a long term, patient investor; the individual account may not be.
2. DC can be boiled down to a simple equation: contributions + returns = benefits. Investment risk is borne by the member alone, and investment returns accrue to the member alone. (This is unlike DB, where the employer is exposed.) In a DC world, disappointing returns lead to disappointing benefits. In crude terms, therefore: DC = savings but DB = insurance.
3. DC has two phases, which are (i) accumulation (saving) while at work, and (ii) decumulation (spending) while retired. Accumulation is further divided into two phases, sometimes called Growth (early years) and Consolidation (years closer to retirement). At some point during the accumulation phase, the member's account reaches a size where investment returns become more important than contributions. At this point, risk changes.
4. Decumulation takes several forms: annuity¹¹, cash lump sum, systematic withdrawals¹². A member may decumulate within the DC plan or outside it.
5. Within any DC plan, investments are either self-selected (chosen by members) or invested in the default strategy (chosen by trustees, the sponsor or someone else). Most of the assets in DC are in the default strategy. Default strategies are often based on the lifecycle approach: that is, the portfolio gradually and automatically becomes less risky as the member nears retirement. The definition of less risky depends on whether the member will receive an annuity, a cash lump sum or systematic withdrawals in retirement.
6. Sequencing risk is critically important in DC. For example, a stockmarket crash that happens during the decade before a member retires will do more damage than a crash that occurred in the member's twenties, because (i) the member's pot is bigger and (ii) there is less time to recover.
7. DC members need high growth in the early and middle years of accumulation, followed by stable growth and low volatility

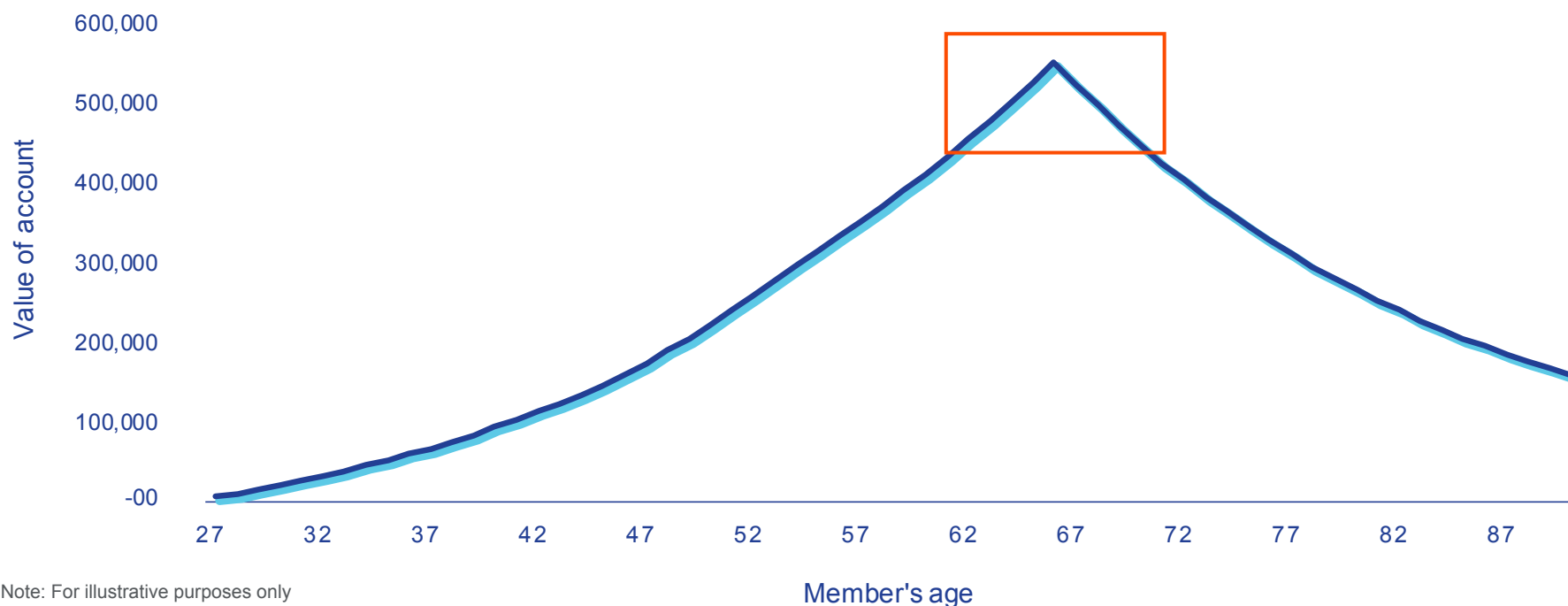
as retirement approaches. For those members who choose to decumulate by means of regular drawdowns, the focus after retirement is on inflation protection and low volatility.

'The question isn't at what age I want to retire, it's at what income' – George Foreman

¹¹ Annuities are common in Europe but not in the US or Australia. A lifetime annuity is an insurance policy that guarantees an income for life in return for a premium.

¹² Also known as programmed withdrawals or drawdown.

Figure 3: How the DC nest egg evolves over time



Note: For illustrative purposes only

Figure 3 shows how a sample DC nest egg grows during the working life and then slowly declines in retirement as the representative member makes systematic withdrawals. In this example the member contributes 9% of salary from age 27, retires forty years later and then withdraws 7% of the nest egg per year until age 90, at which point the member dies and the remaining nest egg is passed on to the member's heirs.

The area in the red box represents “peak savings”. Significant losses during “peak savings” are much more problematic than at earlier stages; at the same time, every 1% gain at this stage adds much more value than at earlier stages.

Figure 4: A typical DC investment strategy

Pre-retirement (accumulation) phase of DC		
Default strategy	Self-select options	
Multi-asset with automatic derisking	Multi-asset with risk profile	Building blocks
Pre-mixed by manager	Pre-mixed by manager	Chosen by member
Examples: Target date fund Lifestyle strategy	Examples: Balanced fund Conservative fund	Examples: Passive global equities Domestic real estate

A typical DC investment strategy

As noted above, the typical DC investment strategy has two sections: the default strategy (described in more detail later) and self-select funds, which the members can choose for themselves. Within this self-select section there may be some pre-mixed multi-asset funds, often with risk profiles such as “conservative” or “high risk”, and some building block funds which the more confident members can use to blend their own portfolios.

Table 1: Investment risks evolve as the member ages

	Accumulation		Decumulation	
	Young saver (20 - 45)	Mid-life saver (45 - 67)	New retiree (67 - 80)	Senior retiree (80+)
Member savings profile	Modest nest egg	Substantial nest egg	Highest nest egg	Depletion of savings
Investment objectives	Maximise growth Diversify to reduce risk without sacrificing return	Seek strong growth Reduce volatility over time	Well-diversified growth Avoid sharp market declines	Preserve purchasing power Minimise risk of loss
Traditional asset class solutions	Equities	REITs High income bonds	Core bonds Inflation-linked bonds	Short bonds Cash
Key risks facing member	Insufficient growth	Insufficient growth Volatility	Volatility Inflation risk	Inflation risk Volatility

The principal risks facing DC members

The main investment risks are listed below:

1. Volatility (the risk of significant falls in the value of a member's account due to the ups and downs of investment markets)
2. Insufficient growth (the risk of net investment returns being less than required to build up the expected retirement "pot")
3. Inflation (the risk of price increases diminishing the real value of a member's pot or member's retirement income)
4. Illiquidity (the risk that member's will be unable to subscribe, redeem or encash their holdings at fair value and quickly)

5. Annuity conversion risk if member seeks an annuity (the risk that changes in interest rates lead to a change in the cost of annuities that is not reflected in the change in the value of the member's retirement fund)

6. Manager risk (the risk that the fund managers do not meet their investment objectives, or deviate from their intended risk profile)

The relative importance of the various risks evolves over the member's lifetime. The European Insurance and Occupational Pensions Authority (EIOPA) carried out stress tests for occupational pensions to "identify potential vulnerabilities of defined contribution (DC) schemes". Its 2016 report states that "the impact on the pensions' level strongly depends

on the time which plan members have before retirement. Eldest plan members have the highest pension wealth and the least time to recover from price falls of assets. Youngest plan members are most heavily impacted by long-term low return on assets"¹³.

To be useful in a DC context, any non-listed real estate component should fit into this lifecycle framework¹⁴.

¹³ <https://eiopa.europa.eu/Pages/News/Results-of-the-first-EU-stress-test-for-occupational-pensions.aspx>

¹⁴ See Designing the Future of Target Date Funds (2017), AllianceBernstein

4. DC default strategies

This section examines the all-important default strategies. Lifecycle strategies, the default strategy recommended by the OECD, are explained. Lifecycle strategies come in two forms - lifestyle strategies and target date funds (TDFs) – and the difference between the two is examined. The section concludes by examining asset allocation in lifecycle strategies and glide path design.

Different types of default strategy

DC plans usually have default investment strategies: that is, an investment strategy that is applied to a member's account unless that member indicates otherwise. Default strategies have varied over time and between markets but they can generally be grouped as follows:

- Those seeking capital protection: Strategies that focus on return of contributions as minimum expectation, leading to reliance on cash, capital guaranteed funds or conservative portfolios.

- Those seeking real growth: Strategies that focus on growing the after-inflation value of member's contributions without excessive volatility, leading to reliance on balanced portfolios.
- Lifecycle¹⁵: Strategies that adjust in line with the member's age and time left to retirement, leading to higher equity exposure in the early and middle years, followed by a consolidation phase in which the equity exposure gets reduced as the member nears retirement.

Lifecycle strategies are recommended by the OECD: "Consider establishing default life-cycle investment strategies as a default option to protect people close to retirement against extreme negative outcomes. Life-cycle investment strategies reduce the impact of market risk on the account balance as the member ages. Such a design is consistent with economic rationale and risk attitudes and is therefore well-suited for default strategies."¹⁶

**'Saving is a very fine thing, especially when your parents have done it for you'
- Winston Churchill**

¹⁵ Lifecycle: when a person stops working their human capital (ability to earn) needs to be replaced by financial capital (savings).

¹⁶ The OECD Roadmap for the Good Design of Defined Contribution Pension Plans (2012)

Lifecycle strategies - the default option favoured in Europe and the US

The lifecycle approach can be implemented in two ways.

1. The first, popular in Europe, is the lifestyle strategy, in which the member's individual account is de-risked by means of periodic adjustments in the years leading to retirement.
2. The second approach, popular in the US, is the target date fund. Members who expect to retire at around the same date (the "target date") are grouped together into a fund that reflects their shared time horizon. The fund becomes less risky over time.

Lifestyle strategies and target date funds achieve the same goal - they both follow a lifecycle approach, de-risking as the member gets closer to retirement. However, they achieve their goal in different ways: one makes asset allocation changes at the member account level, the other makes asset allocation changes within a fund, a target date fund¹⁷.

Lifestyle strategies are operated by administrators; target date funds are operated by fund managers. In terms of dealing with illiquidity, target date funds can be more flexible, which means they can accommodate non-listed real estate more readily.

To retirement or through retirement lifecycle strategies

A lifecycle strategy can have a "to retirement" or a "through retirement" approach. A "to retirement" approach reduces the risk profile over time to its most conservative point at the target date (for example, when the member is 67 and about to retire). A "through retirement" approach reduces the risk profile through the target date so it does not reach its most conservative point until years later (for example, when the member is ten years retired). In practice, all through retirement lifecycle strategies are target date funds).

For the fund managers who service DC plans, the ability for retired members to stay

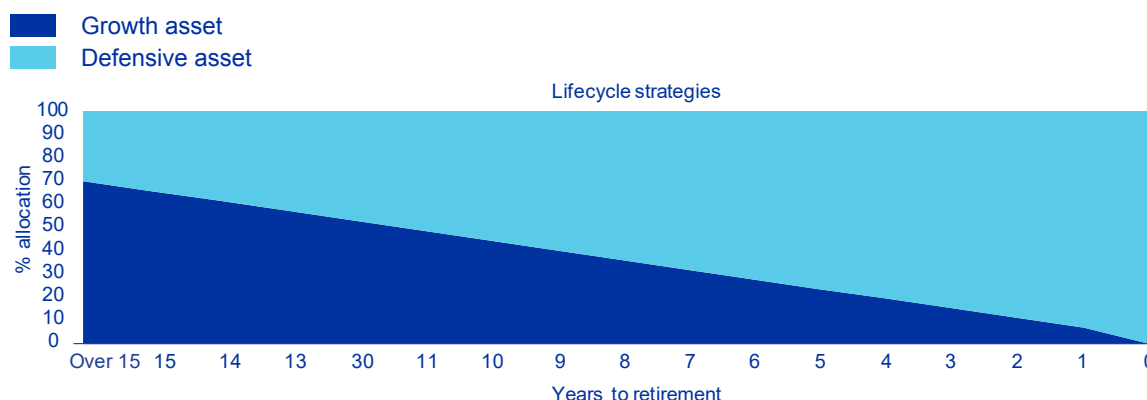
"in-plan" is important. Assets are retained and fees are earned during the member's decumulation phase, rather than terminating. Some commentators believe that in the very long term the decumulation phase of DC is a major strategy opportunity for fund managers¹⁸.

The size of the post-retirement opportunity will depend on how members decumulate. For example, in markets where annuitisation is compulsory for retiring DC members, the opportunity is quite limited. (The life assurance companies that provide annuities may have a small allocation to real estate in their annuity-backing portfolios, at best). Where drawdown is permitted and taken up by members, the opportunity is much greater.

¹⁷ See Appendix 3 for more detail

¹⁸ EY, The Decumulation Agenda (2013)

Figure 5: How a lifecycle strategy works – simplified example



Note: for illustrative purposes only

General principles of asset allocation in lifecycle strategies

Lifecycle strategies aim for high growth when the member is younger, followed by consolidation and de-risking as the member gets closer to retirement age. The first phase is linked to the second phase through a mechanism called the glide path, which is the series of asset allocation switches that transforms a growth-oriented portfolio into a more defensive retirement portfolio.

- The growth phase may be a highly-diversified portfolio featuring many asset classes, each with its own function
- There could be a mix of active and passive styles, reflecting (a) how difficult it is to outperform in very efficient markets such as US large cap equity (b) the need to keep costs down
- Some of these asset classes are alternative asset classes
- The strategy could involve a multi-manager or open architecture approach, rather than one single manager
- Dynamic asset allocation may be a feature
- The “retirement portfolio” (end-point) may be more than just cash. For example, it may be a mixture of long-dated bonds and cash, if the member is likely to opt for an annuity and a lump sum as retirement benefits
- The glide path could:
 - Be short and steep (European) or long and shallow (US) or somewhere in-between
 - Be non-linear: the de-risking may not happen evenly, and some asset classes could have “humped” allocations, which means an allocation that increases and then decreases during the course of the glide path
 - Involve “safety assets” – these are diversifying assets, which are not suited to either the growth or retirement portfolio, but nevertheless are useful during the transition phase
 - Feature a “glide within a glide” for some asset classes. To take one theoretical example, the weighting to non-listed real estate could glide over time and the nature of the non-listed real estate could also evolve, moving from (say) value added to core over time.

Asset allocation from growth through retirement to decumulation

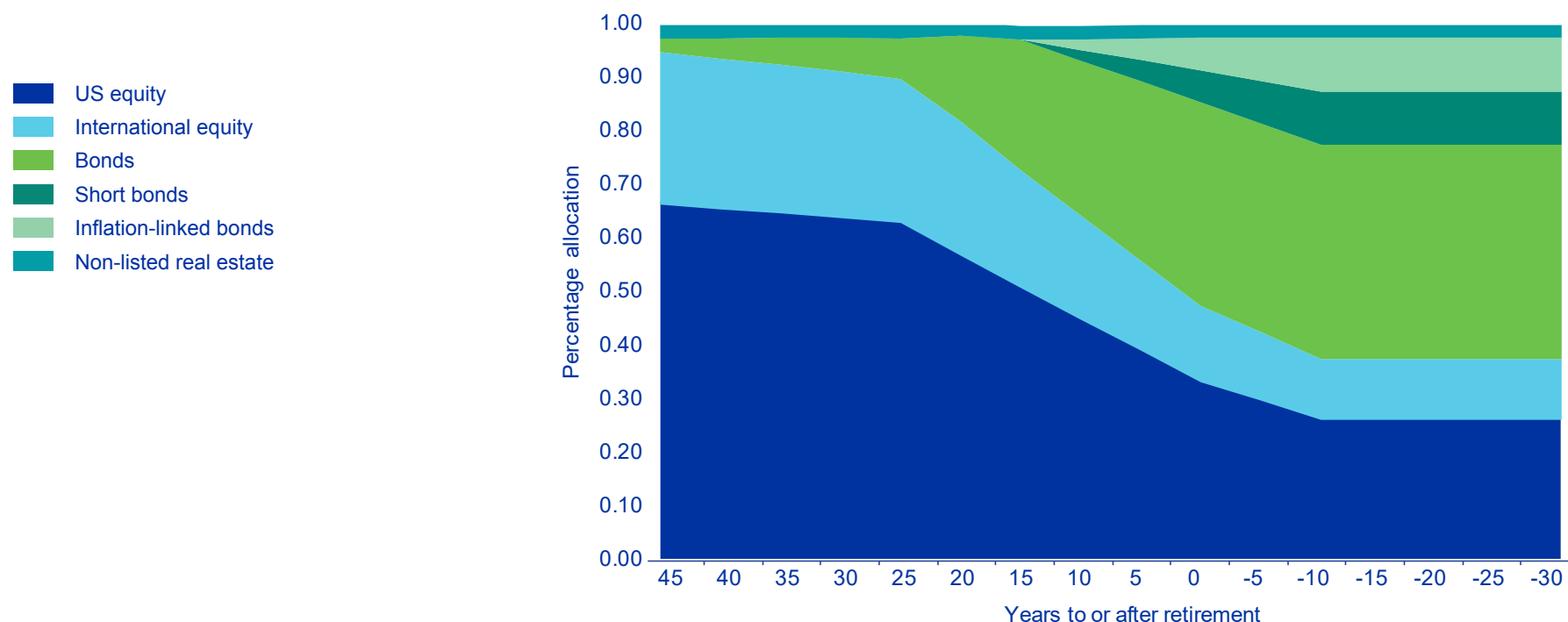
Most lifecycle strategies start with a growth-oriented and often equity-dominated asset allocation. The aim is to grow the real value of the member's pot and volatility is tolerated on the basis that the member has a long investment horizon. Risk is gradually reduced as the member moves closer to retirement, and in the final phase the asset allocation attempts to minimise risk.

In this last phase, asset allocation will reflect the nature of the member's likely retirement benefits, which can take the form of an annuity, a cash lump sum or systematic withdrawals. Note that in countries where DC members can choose between these three, lifecycle strategies can split in different directions. That is, within a single DC plan there may be one asset allocation path for annuity-seekers, another for lump sum-seekers and a third one for members who are likely to seek drawdown. Ireland and the UK fall into this category.

Figure 5 illustrates the journey from aggressive growth in the very early years (with equity weightings of over 90%), through a less risky stable growth phase before settling down ten years after retirement to the final, static allocation that is dominated by bonds (which have a 60% weighting). Note how the allocation to real estate is fixed at 2.5%.

Further examples of glide paths can be found in Appendix 4.

Figure 6: Asset allocation of a sample lifecycle strategy



Source: Large US fund manager

5. The benefits of non-listed real estate for DC members

This section analyses how non-listed real estate as an asset class can benefit DC members. It then looks at some of the obstacles facing non-listed real estate in the DC market. The section concludes by illustrating where non-listed real estate fits within the overall DC strategy (default strategy, self-select options or both).

Theoretical benefits of adding core real estate

The benefits of non-listed real estate in any portfolio can be listed as follows:

1. Diversification (low correlation)
2. High and stable income
3. Low volatility
4. Inflation related returns
5. High total returns relative to other asset classes
6. High risk-adjusted performance compared with other asset classes

Table 1 in Section 2 showed how investment risks evolve as the DC member ages. Part of

this table is reproduced below, to illustrate the link between the DC member's investment risks and the benefits of investing in non-listed real estate. By putting the two together, it becomes evident that real estate could add value during the different phases of DC, and its role evolves over time as the members' account evolves.

For example, young savers run the risk of insufficient growth. They would benefit from the high total return that real estate can deliver. To take another example: new retirees are exposed to volatility risk. They would benefit from the diversifying benefits that real estate can deliver.

	Accumulation		Decumulation	
	Young saver (20 - 45)	Mid-life saver (45 - 67)	New retiree (67 - 80)	Senior retiree (80+)
Key risks facing member	Insufficient growth	Insufficient growth Volatility	Volatility Inflation risk	Inflation risk Volatility
	↓	↓	↓	
Core real estate offers	#5 High total returns	#1 Diversification #3 Low volatility #5 High total returns	#1 Diversification #2 High and stable income ¹⁹ #3 Low volatility #4 Inflation related return	

¹⁹ Income returns from core property are much less volatile than capital gains/losses

Figure 7: Where non-listed real estate fits in DC strategies

Pre-retirement (accumulation) phase of DC		
Default strategy	Self-select options	
Multi-asset with automatic derisking	Multi-asset with risk profile	Building blocks
Examples: Target date fund Lifestyle strategy	Examples: Balanced fund Conservative fund	Examples: Passive global equities Long-dated bonds
Within a multi-asset default strategy, non-listed real estate offers: <ul style="list-style-type: none"> • High growth in early and middle years • Diversification • Low volatility 	Within multi-asset risk profile funds, non-listed real estate can add value to all but the most conservative (bond and cash) profiles	<ol style="list-style-type: none"> 1. Non-listed real estate such as a domestic core fund 2. Could also form part of a wider building block fund such as: <ul style="list-style-type: none"> • Real assets • Private markets • REITs + non-listed

Where non-listed real estate fits

The role of non-listed real estate across the entire DC investment strategy is summarised in Figure 7. As noted in Section 3, DC investment strategies tend to have two elements: a default strategy and some self-select options. The default strategy is the fund designated by the plan sponsor to receive the contributions of members who do not make an individual investment choice. The self-select options are there for members who wish to make their own investment choices.

The self-select options are often arranged in two categories: pre-mixed multi-asset strategies (for example, a balanced managed option containing equities, bonds and other asset classes) and building block strategies (such as global equities, cash or domestic bonds). Any one of the pre-mixed strategies could make a suitable portfolio for 100% of the member's contributions, whereas the building block strategies may be combined in different ways by the member (for example, 50% global equity and 50% cash).

Non-listed real estate could be part of the multi-asset default strategy, of most pre-mixed self-select options or a building block fund. As a building block fund, it could be a standalone option (pure non-listed real estate) or combined with other asset classes (for example, infrastructure, REITs, private equity, commodities or inflation-linked bonds) to form a more widely defined building block fund such as a real assets fund.

Obstacles to adding non-listed real estate to DC default strategies

There are three main obstacles: liquidity, high cost (actual or perceived) and product availability.

1. Liquidity: For a DC plan, liquidity is seen as a key risk, as shown in this extract from a UK Statement of Investment Principles²⁰:

“The Trustee considers the following sources of risk:

[Number 7 in this list is...] Risk of lack of liquidity for financial transactions. This is the risk that core financial transactions, such as investing members’ contributions, are not processed promptly due to lack of liquidity in the investments. The Trustee manages this risk by only using pooled funds with daily dealing within the default strategy and diversifying the strategy across different types of investment.”

The paragraph contains many useful insights. First, it specifies that core transactions such as investing members’ contributions need to be processed promptly. The distinction between core (routine) transactions and other transactions is a key one. Second, it indicates that one way to tackle liquidity risk is to use only pooled funds with daily liquidity. Note that daily liquidity is not a legal requirement for UK plans, but it has become a matter of best practice for many trustees and sponsors of DC plans. In addition, where DC plans access investment funds via an open architecture fund platform, daily liquidity is likely to be a requirement of the platform.

2. Cost: Another obstacle is high cost, or in some cases the perception of high cost. In some markets, such as the UK, there may be a cap on charges²¹. This obstacle is not insurmountable – for example, combining non-listed with passive listed will reduce the overall total expense ratio (TER).

3. Availability: A third obstacle is easy availability, and this applies to both buyers (DC plans) and sellers (fund managers). DC plans do not necessarily want relationships with multiple managers, and if their existing manager or roster of managers does not have a DC-appropriate real estate fund the asset class may be excluded. Equally, a fund manager building

a standard “off the shelf” DC offering such as a target date fund may not reach outside their in-house asset allocation toolbox. If there happens to be a non-listed real estate fund within reach, all well and good; if not, the manager may choose to omit the asset class.

²⁰ Associated British Ports UK

²¹ In the UK, the Financial Conduct Authority (FCA) requires charges on auto-enrolment default funds to be capped at 0.75% a year

Figure 8: Obstacles and possible solutions

Obstacles	Solutions
Liquidity	<ul style="list-style-type: none"> US-style daily priced fund of funds Borrow liquidity from other asset classes within single fund
High cost	<ul style="list-style-type: none"> Core real estate is not necessarily expensive compared to other actively managed options (education needed) Combine with passively managed REITs to reduce TER
Availability	<ul style="list-style-type: none"> Open architecture platforms Product development

6. Non-listed real estate in different DC markets

Section 6 examines how the obstacles mentioned in Section 5 have been addressed in different markets. DC markets across the globe are at different stages of development. Australia and the US are the most advanced and sizeable DC markets²², so the analysis starts there, before moving to the less developed though nevertheless instructive European markets.

The two most mature markets have taken different approaches:

1. In Australia, the super funds are comfortable investing in non-listed real estate funds that are not specifically designed for DC and which do not offer daily liquidity.
2. In the US, on the other hand, the solution has been to build DC-specific daily priced funds which can be added to the most popular default strategy, multi-asset Target Date Funds (TDFs).

We come from a land down under

Australia is the world's 4th largest pension market²³, and the one where DC is most prominent, accounting for nearly 90% of total pension assets. Members in Australian DC plans generally opt for a cash lump sum or drawdown at retirement – annuities are very rare. Default strategies in Australia have traditionally been balanced funds, rather than the OECD-recommended lifecycle approach²⁴.

Figure 9: Example of Australian default strategy

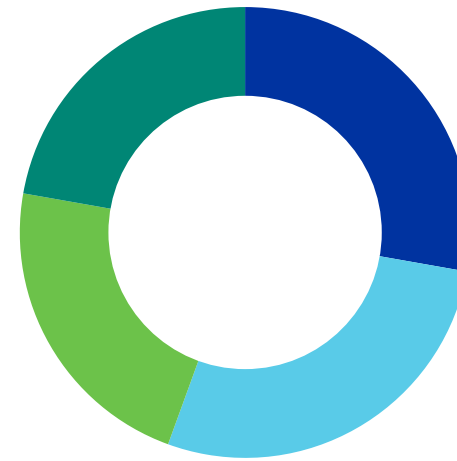
A: Strategic asset allocation

36.0%	Australian equities
30.0%	Cash and bonds
20.0%	International equities
9.0%	Real estate
5.0%	Infrastructure and private equity



B: Real estate strategy

2.5%	Directly owned assets in Australia
2.5%	Non-listed domestic real estate funds
2.0%	Global REITs
2.0%	Australian REITs



Source: large Australian industry super fund

²² Worth \$1.4 trillion and \$7 trillion respectively. Source: Willis Towers Watson; Investment Company Institute

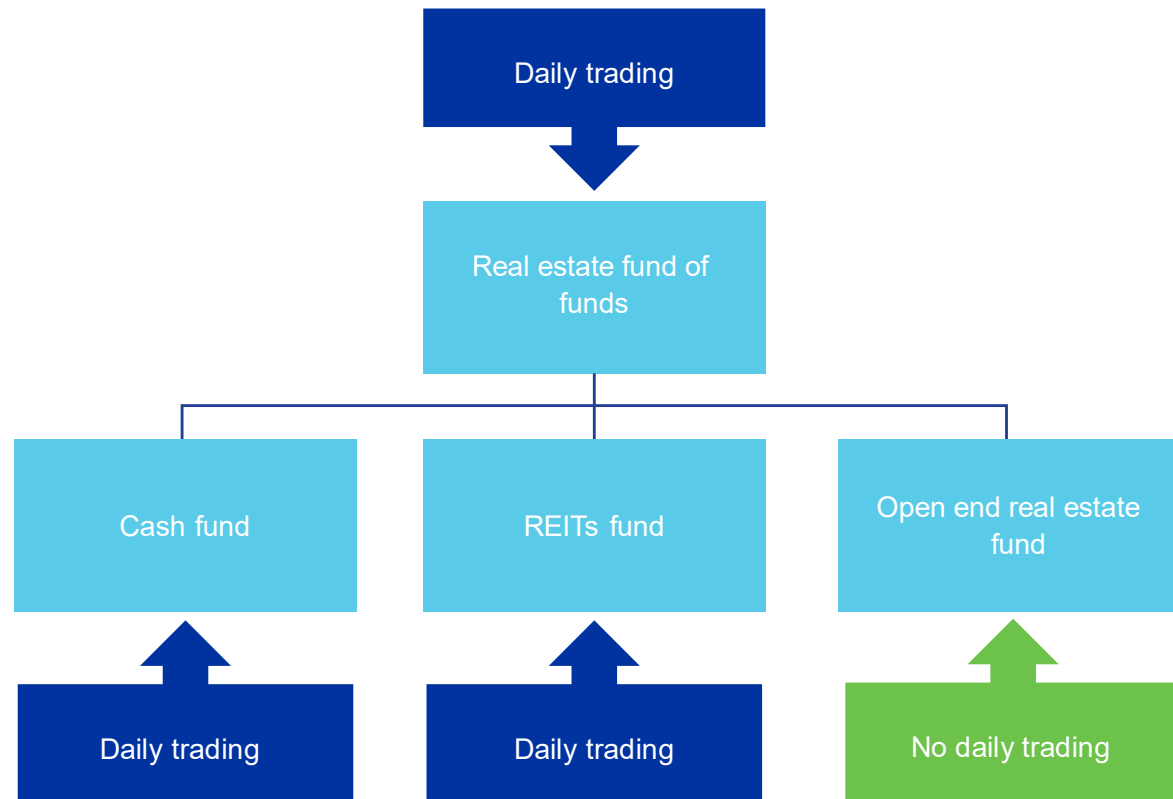
²³ Willis Towers Watson, Global Pensions Assets Study 2017

²⁴ The reasons are beyond the scope of this report but have a look at <http://moneymag.com.au/life-cycle-super-product/> for the background. Some Australian "supers" have adopted lifecycle strategies

Figure 9 shows the asset allocation of the default strategy of a large (€39 billion) Australian super fund²⁵. There is a 9% allocation to real estate. While this is higher than the average in Australia (7%), it is not unusual to see double digit allocations to real estate in Australian super plans. The plan owns some individual assets (office and retail buildings located in Australia) and holds units in several non-listed real estate funds. Apart from its global REITs allocation, this Australian super does not invest in foreign property, but some others do (most often in the US and the UK).

In terms of liquidity, Australian default strategies cope with any illiquidity issues that arise in their non-listed allocation by being temporarily under-weight or over-weight other asset classes, especially listed real estate. In other words, liquidity is “borrowed” from other asset classes and then “repaid” when the non-listed allocation can be traded. Australian supers are comfortable with this approach. One of the major Australian consultants notes that supers expect to wait six to eighteen months for liquidity. On the sell-side, Australian fund managers explain liquidity risk very clearly to investors and potential investors in their fund documentation.

Figure 10: Structure of a US-style daily priced fund of funds



²⁵ UniSuper, industry fund for the higher education and research sectors

The US DC market has embraced daily priced funds

The US is the world's largest pension market²⁶, and DC accounts for 60% of total pension assets. Members in American DC plans generally opt for drawdown during retirement rather than annuities or a cash lump sum. Target date funds (TDFs) are the most popular default strategy and they can be off-the-shelf (that is, standardised for all clients and structured as mutual funds) or customised (designed for a specific plan sponsor). About three-quarters of large 401(k) plans offer TDFs²⁷ and approximately \$900 billion was invested in target date mutual funds²⁸, which are off the shelf products.

The Defined Contribution Real Estate Council (DCREC) estimates that there is over \$25 billion invested in private real estate assets across more than 100 DC plans. The plans use either off-the-shelf TDFs or custom TDFs with allocations to non-listed real or where non-listed real estate is embedded within real asset bundles²⁹. According to one industry survey, 6 out of 64 off the shelf target date funds invest in non-listed real estate³⁰.

In the US, liquidity is also borrowed from other asset classes and then repaid (as in Australia), but this operation is done within a product³¹ rather than at DC plan level. Daily liquidity is achieved by adding listed real estate and possibly cash to the product's portfolio, and by managing the portfolio to reflect the routine cash flows from DC plans. There is no guarantee of unlimited liquidity – the product supports routine liquidity only, and routine can be defined as (for example) up to 10% or 15% of the investor's NAV per quarter.

These funds generally form part of a multi-asset default strategy or sometimes of a multi-asset self-select strategy, but they are not available to plan members as standalone options.

Daily priced products blend non-listed real estate (typically a domestic, open end core fund) with listed real estate, often in the shape of a passively managed REITs fund. Using a passive listed fund keeps the overall management fee down. Daily liquidity is achieved by structuring the real estate solution as a fund of funds and deploying the other "sleeves" (such as REITs and cash) as buffers.

This means that routine liquidity requirements are satisfied by first buying or selling units in the REITs and cash funds within the overall solution. The fund of funds may be temporarily under-weight or over-weight real estate as a result, but this is rectified at the next dealing day of the real estate "sleeve" .. For DC plans, the requirement for routine liquidity (for example, investing the members' monthly contributions³²) is reasonably predictable. The requirement for non-routine liquidity (for example, a merger of two DC plans) is less predictable; however, these fundamental changes are generally signalled well in advance. Understanding the pattern of routine cash flows in DC client plans allows the fund manager to set an appropriate allocation to liquid assets within the overall product.

One major provider³³ offers a choice of two daily priced products: the first has a 15% allocation to liquid assets and the second has a 25% allocation to liquid assets. These

products have found an audience with both custom target date funds and off-the-shelf target date funds.

There are now at least eight daily priced non-listed real estate funds in the US, and they all serve the DC industry. They have their own NCREIF index³⁴. Combining non-listed real estate with more liquid asset classes should, in theory, lead to lower returns because the illiquidity premium is diluted. Data from the US indicates that the dilution or "drag" has been around 1% per annum³⁵.

²⁶ Willis Towers Watson, Global Pensions Assets Study 2017

²⁷ <http://www.interest.com/401k/news/5-things-you-should-know-about-target-date-funds/>

²⁸ <https://www.ici.org/trdf>

²⁹ 2017 DC Survey by Callan notes that 92.9% of plans offer TDFs and of those 22.2% offer custom target date plans

³⁰ Source: Callan Associates

³¹ Often structured as a fund of funds

³² Routine liquidity would also cover other recurring events such as member retirements, death in service, individual transfers, early withdrawals and rebalancing of any lifestyle strategies. In addition, DC plans from time to time extraordinary liquidity to cope with changes such as bulk switches (possibly caused by a strategic changes), plan mergers, plan closures, redundancy programmes and other more fundamental changes

³³ PGIM

³⁴ <https://www.ncreif.org/data-products/daily-price/>

³⁵ Gap between NCREIF OE and DP indices, measured over five years to the end of 2016. This data is publicly available on the NCREIF website

Figure 11: Key principles for daily valuations

- External valuations at least annually (in practice quarterly is common)
- Independent oversight of the valuation process
- Timely recognition of all material events, whether at asset or market level
- Daily accrual of net income
- Intra-quarter adjustments to property valuations
- Daily valuation process is clearly documented and reviewed at least annually
- Technology-based data management system is best practice
- Clear internal roles and accountability

A closer look at daily valuations

In a daily priced product, the non-listed real estate “sleeve” does not need to trade daily (as explained above) but it does need to be valued daily, to allow the product to strike its daily NAV. How daily valuation is achieved is summarised in Figure 11 (from DCREC)³⁶.

Overall, it seems to be accepted that the US market has evolved to the point where daily values are typically robust and daily pricing provides a fair representation of the underlying real estate value³⁷.

³⁶ In the US, the Defined Contribution Real Estate Council (www.dcrec.org) has published useful research and guidelines in this area.

³⁷ Private Market Real Estate Investment Options for Defined Contribution Plans: New and Improved Solutions. Polleys and Venter, 2015.

Closer to home

The European DC market is, in overall terms, smaller and less well developed than either the US or Australia. Nevertheless, examples of instructive DC solutions abound and a selection of these (two from the UK and one each from Ireland and Denmark) are presented in this section. The section concludes with a summary of key lessons from these three regions: the US, Australia and Europe.

1. NEST in the UK

The National Employment Savings Trust (NEST) is a UK national DC pension fund, with assets of £1.8 billion. Structured as a 'master trust', NEST was launched in 2011 by the UK government to help all employers fulfill their auto-enrolment obligations (auto-enrolment requires all UK employers - large or small - to provide an occupational pension scheme). NEST can offer certain advantages over other 'master trusts' offering DC pension schemes in the market place, including a high-quality investment strategy designed and overseen by in-house experts and competitive fees. It has an annual management charge of just 0.3% on the total value of the member's fund and a 1.8% charge on each new contribution into a member's pot. The contribution charge is to cover NEST's set up costs and in the long term will fall away. This 'combination charge' equates to an AMC of around 0.5% for members who contribute to the scheme over the longer term (15 years plus).

NEST offers a lifecycle default strategy, with a foundation, growth and consolidation phase, implemented using target date funds, with

a target allocation to real estate of between 10% and 20% in the growth phase.

NEST sees a lot of potential in real asset classes, with real estate being a particularly good fit for NEST's young membership and strong positive cash flows. The bulk of NEST's assets are in the growth phase funds, targeting annual investment returns equivalent to inflation plus 3%, after all charges.

The key reasons for NEST's significant 10-20% allocation to real estate are:

- To improve overall diversification in the portfolio;
- To provide a partial inflation hedge, which suits NEST's inflation-plus return objectives;
- To take advantage of the illiquidity premium in direct real estate at a time when markets are potentially too sensitive to this issue, in the full knowledge that NEST will be cash flow positive for the foreseeable future.

NEST operates a funds of funds structure which allows for efficient netting of transactions across its fund range, so that any redemptions from maturing funds, for example, are easily offset against new contributions to younger members' funds. This feature, combined with having listed real estate in the portfolio, means NEST can avoid being a forced seller of its real estate positions.

The real estate allocation is implemented through a 70% weighting to the UK direct commercial real estate market (via a non-listed core fund) and a 30% weighting to the global listed real estate sector, which is passively managed. This element tracks the FTSE EPRA/NAREIT Global Developed Real Estate Index. When opting for the 70/30 ratio, NEST considered several factors including return enhancement, liquidity, costs, risk-adjusted returns, tracking error, currency impact and weight of real estate in the overall portfolio. The non-listed and listed elements are run by the same manager. Besides being in the default strategy, the 70/30 real estate fund also forms part one of the self-select options: namely, the Higher Risk fund (18.4%), while the direct carve out of the fund is used in the Ethical fund (15.5%). The fund is not available on a standalone basis.

In the long term, NEST expects to invest its real estate allocation globally or at least regionally. It is an excellent example of a DC plan using its size, master trust structure, competitive fees and in house expertise to take advantage of real estate market inefficiencies.

Key lessons:

- NEST harnesses strong positive cash flows to maintain a high weighting in non-listed real estate.
- Adding passive REITs to the mix brings greater flexibility around liquidity and lower cost

2. IRIS target date fund in Ireland

The world's first target date fund was created in Ireland (and not the US, as is widely thought). Called Individual Retirement Investment Service or IRIS, it was launched by New Ireland Assurance in 1992 and is a popular choice of default strategy for DC plans. The glide path for this target date fund is shown in Figure 12.

The real estate weighting is held at 5% for most of the member's working lifetime, then starts to reduce by 1% per year when the member is four years from retirement so that at the point of retirement the weighting is zero. The real estate component is an internationally diversified commercial property fund with approximately €1 billion in assets.

This is a rare example of a DC default strategy using internationally diversified non-listed real estate – it is more usual to see a domestic fund in the mix.

Key lesson:

- The non-listed component of a DC lifecycle strategy can be international or domestic

Figure 12: IRIS glide path

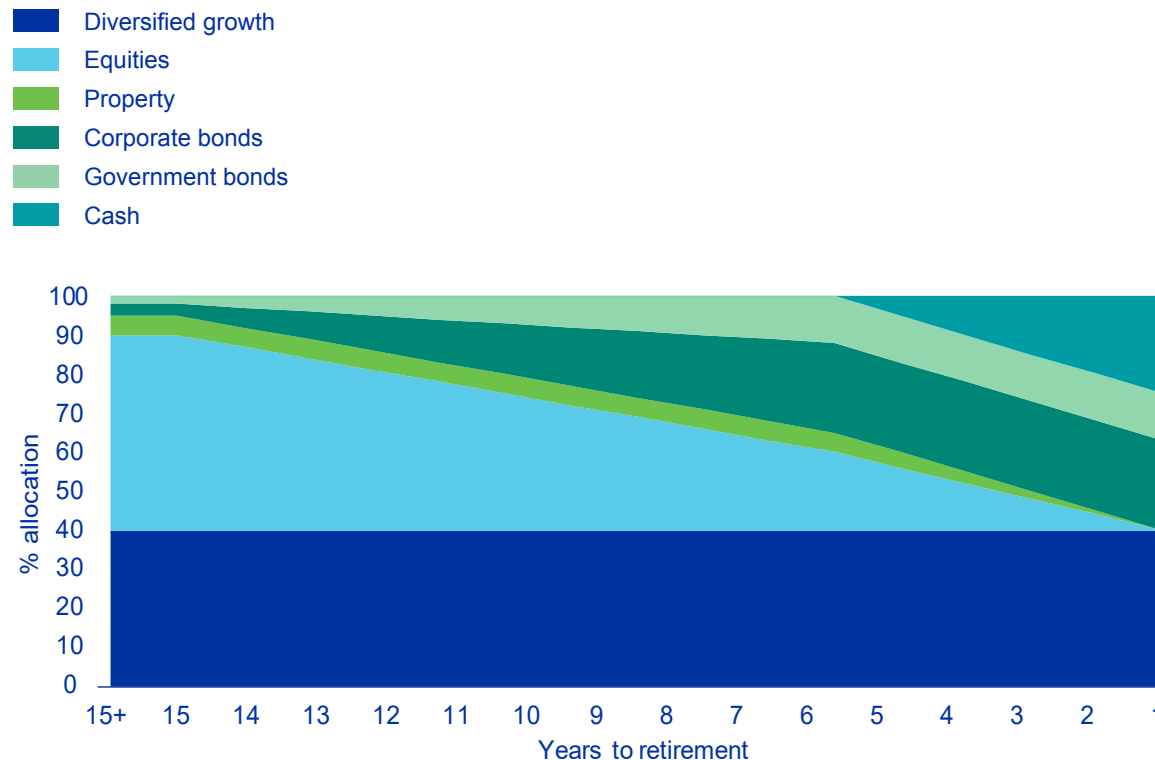


Figure 13: Asset allocation of real estate component in IRIS



3. PFA Property from Denmark

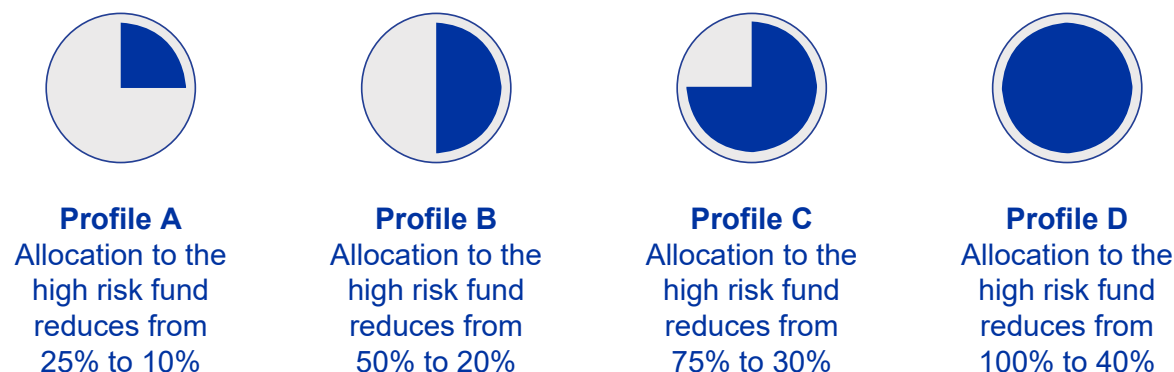
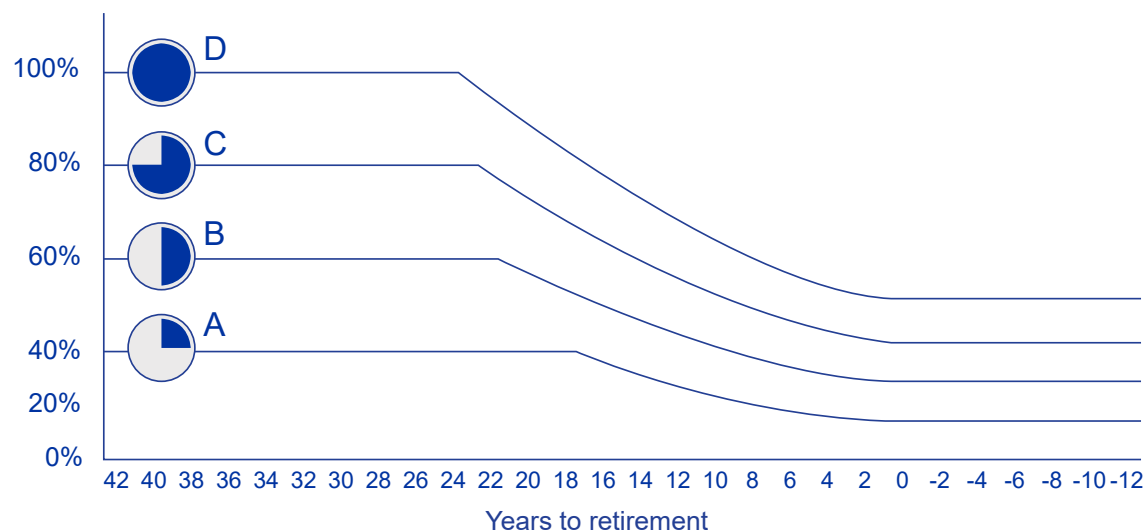
PFA Pension is a large Danish life insurance company and a major provider of group pension products, including one called PFA Plus. One of the investment options within PFA Plus is a daily priced real estate fund called PFA Ejendomme³⁸, or PFA Property in English. This real estate fund is also part of the four de-risking strategies (called Profile A, B, C and D) that are offered. PFA's recommended default strategy is Profile C, which starts off with a 25% weighting in defensive assets and a 75% weighting in growth assets. No matter what investment profile policy holders have chosen (A, B, C, or D), they have the option to select additional real estate exposure through an allocation to the fund "PFA Ejendomme".

It is worth noting that real estate is considered a defensive asset by this provider, whereas others group real estate with growth assets.

Key lessons:

- Daily liquid funds need not be structured as US-style fund of funds – simpler structures are possible.
- Non-listed real estate can be a deployed as a growth asset or a defensive asset in a DC context.

Figure 14: Danish lifestyle strategies



³⁸ This fund represents only part of PFA's direct Danish portfolio and does therefore not provide exposure to all PFA's real estate investments. PFA is active in the DC and DB markets.

4. Private markets fund for UK DC plans

In 2016 a large global fund manager* launched a private markets fund aimed specifically at the DC market in the UK. The fund is daily priced and invests in a non-listed real estate and other alternative asset classes (private equity, infrastructure and private debt), along with liquid private market strategies such as listed infrastructure. This type of fund could be an addition to a multi-asset default strategy or multi-asset self-select option. It could also be positioned as self-select building block fund.

Key lesson:

- Non-listed real estate can be mixed with other asset classes to form interesting DC-friendly combinations such as a real assets fund or a private markets fund.

* That cannot be named

Key lessons from all markets

Table 2: Key lessons learnt

Liquidity	<ul style="list-style-type: none"> • Obstacles can be overcome but no single “silver bullet” • A daily priced fund is one option • Harnessing strong positive cash flows is another
Cost	<ul style="list-style-type: none"> • Open end core domestic funds, alone or with passive listed
Availability of suitable product	<ul style="list-style-type: none"> • New products can be built from scratch • Existing products can be recast in DC-friendly structure • Open architecture fund platform broadens choice
Example of DC-appropriate real estate fund	<ul style="list-style-type: none"> • Core open end blended with passive REITs fund and/or cash <ul style="list-style-type: none"> • Allocation to non-listed: 70% - 85% • Allocation to REITs/cash: 15% - 30% • Passive REITs can be global or regional • Structured as single fund or fund of funds
Position within overall DC strategy	<ul style="list-style-type: none"> • In multi-asset default strategy • In multi-asset self-select options • With other asset classes in a building block fund
Nature of non-listed	<ul style="list-style-type: none"> • Open end rather than closed end • Domestic core is most popular but international also works • Debt (if liquid) could work within broader solution
Lifecycle strategies	<ul style="list-style-type: none"> • Target date funds can be more flexible than lifestyle strategies • Used as growth or defensive asset class
Other lessons	<ul style="list-style-type: none"> • Industry-wide initiatives such as a DC-specific index help

7. Conclusions and future research

Non-listed real estate works best for DC when embedded in a multi-asset strategy, whether that is the plan's default strategy or a self-select "pre-mixed" strategy. The multi-asset setting makes liquidity management easier. It also leads to lower overall total expense ratios, if some of the other assets are managed on a low-cost passive basis.

Lifecycle strategies are a suitable place to house non-listed real estate. Within the broad category of lifecycle strategies, target date funds are more flexible than lifestyle strategies. Open end core funds, with either a domestic or international strategy, are a good fit here.

DC plans need liquidity but there is a clear difference between the routine liquidity associated with regular tasks (such as investment of monthly contributions) and the extraordinary liquidity associated with ad hoc events (such as manager terminations, strategy changes and plan mergers). Routine liquidity is

largely predictable in terms of volume while extraordinary liquidity is unpredictable but tends to be signalled well in advance.

In the US, the preferred real estate solution is the daily priced fund of funds. In the UK, there is no consensus yet but the NEST approach (70% domestic core with 30% passive global REITs) has clear attractions. Australia relies on high net cash flows and an in-depth understanding of both plan cash flows and market illiquidity. Australian real estate funds provide very clear explanations of liquidity risk and the Australian regulator requires liquidity stress testing.

Many continental European markets are relative newcomers to DC, and it is not yet clear how occupational pensions in those markets will evolve. For example, Germany has no pure DC at present (though this could change quite soon). For real estate fund managers domiciled in continental Europe, DC may be more about cross-border flows rather than domestic demand.

In conclusion, there is a case for non-listed real estate to refine and reinforce its role in DC, as this would be a win-win situation for plan members and managers alike. Product innovation is necessary, and some useful product blueprints are already available. US experience indicates that product innovation is most likely to succeed when there is full engagement between all the key DC players (plan sponsors, fund managers, consultants, regulators, DC administrators and fund platforms).

Key areas for future research:

- Likely demand from DC plans outside Europe for European non-listed real estate
- Steps required to make US-style daily priced funds and daily valuations work in Europe
- How real estate can best be combined with other asset classes to suit DC
- European non-listed real estate within a DC decumulation strategy
- A closer look at why DC is adopted more quickly in some European countries than others

'The multi-asset nature of DC default strategies makes liquidity management easier'

Appendix 1: references

1. Global pension assets study (2017) Willis Towers Watson.

The study, covering 22 countries with combined pension assets of \$36.4 trillion, indicates that the DC's share of total pension assets has grown from 41.1% in 2006 to 48.4% in 2016. The study also indicates that "since 1997, bonds, equities and cash allocations have been reduced to varying degrees while allocations to other assets (real estate and other alternatives) have increased from 4% to 24%".

2. Returning to the core – rediscovering a role for real estate in DC pension schemes (2013) Pensions Institute.

In this comprehensive UK study the authors note that "default funds will be used by 90-97% of members, which means that if this trend is adopted across the market real estate AUM in these funds might be worth £170bn by 2030. They also note that NEST's decision to embrace real estate "demonstrates that the perceived barriers (i.e., DC conventions rather than regulatory requirements) to real estate in DC - daily pricing, liquidity and cost - can be overcome within an overall cost constraint that achieves a member charge of 0.5% p.a. over the long-term".

3. Report on investment options for occupational DC scheme members (2015) EIOPA

The report points out that "in occupational DC pension schemes, the most important

entity in developing the investment strategy is the IORP. However, in most cases the employer is also involved in the determination of the default investment option".

4. The Decumulation Agenda (2013) EY

The authors note that "decumulation markets represent a major strategic opportunity for individual firms and the asset management industry as a whole"

5. Pension funds: get big or die trying (2013) The Economist

Regarding the key issue of scale, The Economist commented that "if occupational pensions are to be provided in future, they may have to be delivered by industry-wide schemes that can achieve the scale to control costs and manage risks. Indeed, that has been the trend in the Netherlands and Australia. It is a historical oddity that pensions have been delivered by individual businesses, which are otherwise devoted to serving customers and making widgets. Pension provision needs to be left to the specialists".

6. Global DC Plans: Similar Destinations, Distinctly Different Paths (2014) PIMCO

In comparing the investment strategies of DC plans in Australia, the US and the UK, the authors conclude that "what is remarkable about the financing of

retirement income in these three countries is that although retirees in each country rely heavily on DC plans, plan design and investment management differ dramatically. There is no obvious rationale for these differences, given the basic similarities in the institutions of retirement income finance."

7. Default Fund Design and Governance in DC Pensions (2013), PLSA in UK

The report recommends 15 default fund design features, number 9 of which is: "Consider illiquid investment options." Under this point one comment was: "There is definitely a place for illiquid assets in a large default fund. Surely your default investment money is the longest-term money that there is, so the fact you don't have daily liquidity is neither here nor there."

8. Insight Issue 4 of 2016 Liquidity stress testing in superannuation – key observations (2016) APRA (the Australian Prudential Regulation Authority)

The Australian regulator notes that "An enhanced understanding of a fund's liquidity profile, and the likely impacts of an adverse liquidity environment, better enables a fund to determine the extent to which they are able to invest in illiquid assets on an ongoing basis". "More advanced funds obtained a range of relevant asset and member data

in the context of their own fund. This includes consideration of their specific asset holdings (rather than just asset class level data), member data including demographic details as well as sources of membership (e.g. default, direct, advisor), as well as their own historical experience across these aspects. Sources used could include their own records, their custodian, investment managers and administrators as well as market relevant data”.

9. 2017 DC Survey by Callan

This US survey notes that 92.9% of plans offer TDFs and more than 88% used a TDF as the default option in 2016, up from 75% in 2012. 20.6% of plans have custom target date funds.

10. Assessing Investment Default Strategies in DC Pension Plans (2010), OECD

This OECD paper points out that “the relative performance of investment strategies depends on the type of benefits during the pay-out phase”.

11. Private Market Real Estate Investment Options for Defined Contribution Plans (2014) Hewitt Ennis Knupp

The note points out that “Early generations of daily-valued private real estate funds were predominantly participant-directed, making them

susceptible to market swings and increased trading activity...the new generation of daily-valued private real estate vehicles seeks inclusion in multi-asset funds only. This limitation adds an additional layer of liquidity control; therefore, we believe the current generation of daily-valued private real estate funds can offer significant benefits when utilized within multi-asset funds. Today’s daily-valued real estate funds are focused on providing investors exposure to predominantly private core real estate. To help facilitate liquidity, most these funds also maintain a liquidity sleeve of cash and REITs. The current generation of daily-valued private real estate vehicles is largely structured as fund-of-funds and is generally limited only to investment through multi-asset funds”

12. Target Date Retirement Funds - Tips for ERISA Plan Fiduciaries (2013), US Department of Labor

This US guidance note points out that “non-proprietary TDFs could also offer advantages by including component funds that are managed by fund managers other than the TDF provider itself, thus diversifying participants’ exposure to one investment provider. There are some costs and administrative tasks involved in creating a custom or non-proprietary TDF, and they may not be right for every plan, but you should ask your investment provider whether it offers them.”

13. In the Eye of the Storm: Transformation in the UK Retirement Market (2015) McKinsey

The authors of this strategic study state that “The defined contribution (DC) pensions space alone represents over £630 billion of assets, £1 billion of profit pool and is a uniquely bright spot in the asset management landscape. The UK is the largest DC market in Europe, and is forecasted to grow by 10 percent CAGR in the next five years.”

14. Is It Time to Diversify DC Risk with Alternative Investments? (2013), DCIIA (the Defined Contribution Institutional Investment Association)

The US association notes that “An important consideration for DC plan sponsors is where alternatives should reside within the plan’s investment offerings. One option is to incorporate them into target-date funds or other multi-asset class pre-mixed investments; this gives plan sponsors greater control over how they make alternatives available to plan participants. In some respects, embedding alternatives within multi-asset class strategy funds simplifies their incorporation, allowing DC plan sponsors to effectively take advantage of the benefits. Another option is to incorporate alternatives on a standalone or index basis so that DC participants can allocate from the plan menu. In this second case, it may be most effective to bundle multiple alternative strategies into one offering on the menu”.

15.Private Equity's Place in Defined Contribution Schemes (2016), British Private Equity and Venture Capital Association

The authors point out that “as a generation emerges to whom DB schemes are unavailable, it is important that the investment opportunities that are available to DB funds are not closed to those who can invest only into DC schemes... The defaults have many of the characteristics of a DB fund in that they are managed by professionals and invested across a range of asset classes over the long-term, with specific targets in mind”.

eggs; it is rather that of explaining how real estate's risk and return characteristics fit into investors' existing objectives”.

16.Pensions Outlook 2016, OECD

The OECD report notes that “Data on assets and members in DB and DC plans from 2000 to 2015 confirm the increasing prominence of DC plans in many OECD countries...This increasing importance of DC oriented pension arrangements follows different paths depending on the country. For instance, DB pension arrangements can sometimes be closed to all members and assets in DB plans can stop accruing; or they can just be closed to new members.”

17.Private real estate: From asset class to asset (2013) IPD, Greg Mansell

The author believes that “making the case for real estate is no longer about trying to be the extra basket for an investor's

Appendix 2: glossary of Terms

Annuity:

In the DC market, a lifetime annuity is an insurance policy that guarantees an income for life in return for the DC pension fund (the 'premium'). The annuity 'rate' is the annual or monthly income the insurance company guarantees to pay, sometimes expressed as a 'per €1,000 of fund' rate. The purchaser is described as an annuitant.

Auto-enrolment:

The new system of pension scheme provision for private sector employees in the UK, which is being phased in by all employers between October 2012 and 2018.

Bundled service:

Administration, investment and possibly other services (such as member communication) offered as one package. The opposite is "investment only" or DCIO.

Cash balance:

Cash balance plans are those where hypothetical account balances are maintained, based on a pre-defined "interest" rate. The actual investment return may or may not match this rate³⁹ and the employer bears the investment risk.

Collective DC (CDC):

Instead of accumulating a pot of their own personal funds, a CDC member accrues a target benefit of (say) 1 per cent of career average earnings for each year of membership. The benefits are not promised, just targeted, and the employer has no liability. If there is a funding surplus or shortfall it is shared by the members collectively.

Contract-based DC:

DC schemes can be established under contract or trust law in the UK. In a contract-based scheme, the contract is between the member and the provider, for example, a life assurance company.

Decumulation:

In DC, this refers to the process whereby the fund built up during the accumulation stage is converted into a lifetime income in retirement. This may involve the purchase of an annuity, but the member might also draw directly from the fund (called systematic withdrawal or drawdown), and the third alternative is to take a cash lump sum.

Defined ambition (DA):

Another term for CDC.

Defined benefit (DB):

Members' pensions are linked to salary (for example, final salary or earnings averaged over the period of membership). The sponsoring employer is ultimately responsible for meeting the liability if the scheme is underfunded.

DB with conditional indexation:

Benefits are calculated as in traditional DB plans except that indexation of pensions in payments and in some cases accrued benefits is conditional on the plan's funded status. The higher the funding ratio, the greater the extent of indexation.

Defined contribution (DC):

In DC, the member's pension is based on the contributions invested, the investment

returns earned and the charges deducted.

The accumulated fund is used at retirement to generate retirement benefits; therefore, the investment and longevity risks fall on the individual members.

Defined contribution investment only (DCIO):

Investment offerings that are not combined with DC record-keeping or other services. The opposite of "investment only" is "bundled".

DC with guarantees:

The guarantees could relate to the annual return (not lower than zero) or to return of the nominal value of the employee's contributions. The investment risk lies with the product provider (usually a life assurance company) rather than the employer.

Default fund:

The fund designated to receive the contributions of members who do not make an individual investment choice.

Glide path:

Series of asset allocation switches that transforms a growth-oriented portfolio into a more defensive retirement portfolio.

³⁹ See Introduction to Benefit Plans around the World – A Guide for Multinational Employers (2015), Mercer

Group personal pension (GPP):

A contract-based workplace pension scheme. In effect a grouping of individual personal pension plans.

Income drawdown:

At retirement, instead of purchasing an annuity, members draw a regular income directly from their accumulated pot. The pot may remain within the DC plan (“in plan”) or may be transferred to a separate drawdown product bought by the member.

Interval fund:

US term denoting a mutual fund that offers daily subscriptions but redemptions that are limited to specific intervals (usually quarterly).

IORPs:

The EU term “institutions for occupational retirement provision (IORP)” means pension plans.

Lifestyle/lifecycle:

The key feature of this approach is that risk exposure declines as the individual plan member ages because investment risk is linked to the number of years to retirement.

Liquidity:

The ease with which an asset can be sold (liquidated) for cash without sacrificing value or waiting a long time to do so.

Master trust:

A trust-based DC workplace pension scheme that can accommodate multiple employers. Popular in Australia and the UK.

PERCO:

The French term Plan d’Épargne pour la Retraite Collectif (PERCO) denotes a group retirement saving plan.

Property authorized investment fund (PAIF):

This is a UK term for a collective or pooled fund that is designed to be readily accommodated in a DC default fund and on a life office platform. Over the past few years’ asset managers have converted existing funds, e.g. exempt property unit trusts (EPUTs), into PAIFs to make them tax- friendly for DC by moving the taxation incidence from the fund to the investor.

OTP:

The Norwegian term “obligatorisk tjenestepensjon (OTP)” refers to mandatory occupational pensions which were introduced in Norway in 2006.

Participant:

US term meaning member.

Real assets:

Assets whose values and returns broadly move in line with the general price level.

Self-select funds:

The term used to describe the range of funds in which members of a DC scheme can invest if they want to make their own decisions, as opposed to using the default fund.

Target date fund (TDF):

An investment strategy often used for DC default funds, whereby the scheme

establishes a range of TDFs, each with its own glide path. This might involve a TDF for each possible retirement date, or there might be a single TDF for members who plan or are expected to retire within a given five-year window. For example, a 40-year-old joining in 2017 might be put into the 2044 TDF on the basis that he or she will retire in 2044 at age 67. Target date funds dominate the US DC industry, but are less well established elsewhere.

Trust-based DC:

Schemes set up under trust law where the trustees are the legal owners of the assets on behalf of members and have a fiduciary duty to act in members’ best interests.

Appendix 3: difference between lifestyle strategies and target date funds

Lifestyle strategies and target date funds are two forms of lifecycle strategy.

Lifestyle strategies are implemented by plan administrators, who follow a prescribed de-risking procedure. This lifestyle “stepping down” process is documented and carefully scheduled to fit in with the other processes of a DC pension, such as investing monthly contributions, generating annual member statements, implementing member switches and so forth. The de-risking process is achieved by selling units in the “growth portfolio” and buying units in the “retirement portfolio”. The growth portfolio can comprise one or several funds (for example, an equity fund and a diversified growth fund). The retirement portfolio can also comprise one or more funds (for example, a cash fund and a bond fund). If any of these funds is illiquid, the whole strategy is jeopardised. This is a major inconvenience for the administrator and a potentially serious governance problem for the plan trustees and sponsors.

The member’s account holds units in several different funds.

Target date funds are implemented by a fund manager. The intended glide path is described in the fund’s documentation, but there is flexibility built-in and the manager has discretion, within the bounds of the fund’s mandate. For example, the fund may

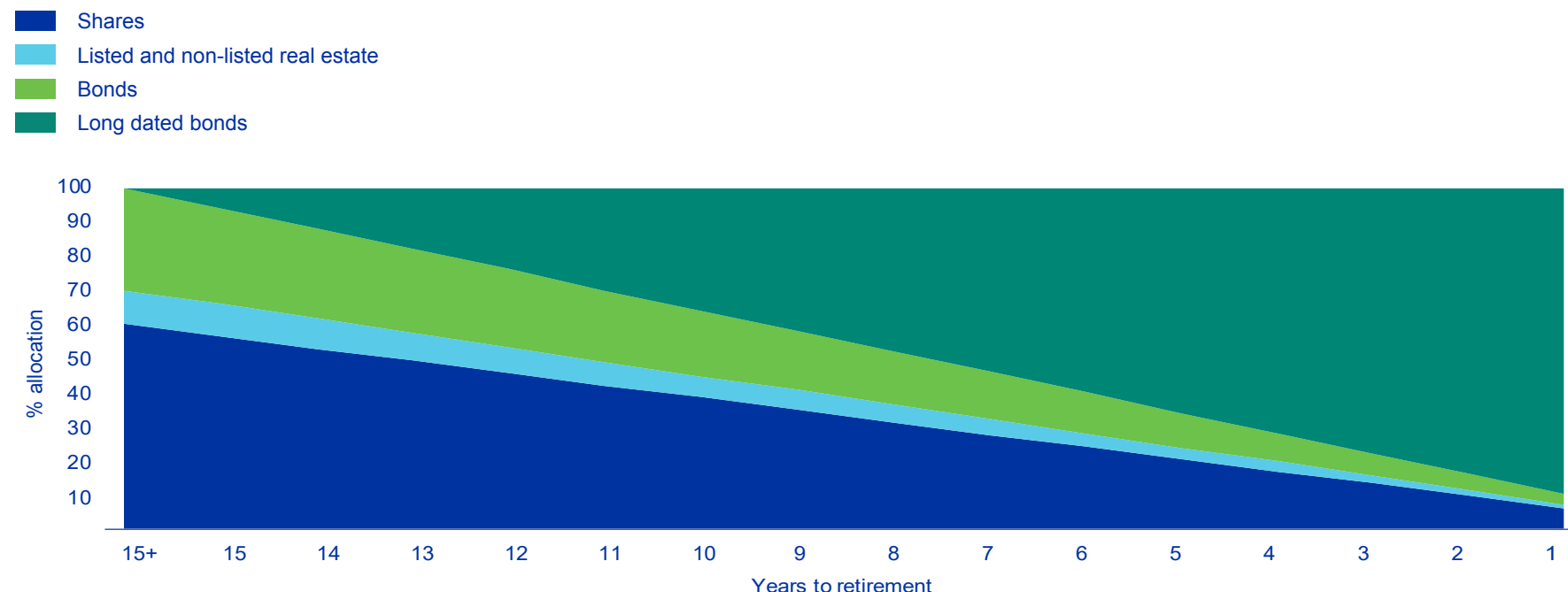
aim to have a cash weighting of 50% when the member is six years from retirement, but this weighting could legitimately be anywhere in the 45% to 55% range. If one of the components within the target date fund suffers temporary illiquidity, the fund manager can cope by under-weighting the other asset classes while waiting for liquidity to be restored⁴⁰. The de-risking process can continue.

The member’s account holds units in just one fund.

⁴⁰ For example, if a non-listed real estate holding of 5% cannot be reduced to its strategic weight of 4.5% in any given year, then the other asset classes are in aggregate 0.5% underweight for that year. If the illiquidity continues for a second year, and the non-listed real estate remains at 5% instead of its new target of 4%, then the other asset classes are in aggregate 1% underweight.

Appendix 4: glide paths and target date funds

Figure 15: Example of a glide path from the Netherlands



Examples of glide paths used in lifecycle strategies

Recall that the glide path is the series of asset allocation switches that transforms a growth-oriented portfolio for younger members into a more defensive retirement portfolio for older members. Moving a portfolio from point A (growth) to point B (retirement) might seem straightforward but in fact there is considerable complexity involved. DC practitioners put lots of thought into glide path design, and for that reason two very distinctive glide paths are illustrated below.

The member's nest egg is at "peak wealth" in the approach to retirement and therefore the stakes are higher than at any other point.

This is a linear glide path with a steady, even progression from the growth portfolio to the retirement portfolio. The same four asset classes make up the growth portfolio and the retirement portfolio – only the proportions change. Note how the allocation to real estate glides from 10% to 1% in annual decrements of 0.6%. In this example, the manager has discretion to adjust the mix within the real

estate component – that is, between listed and non-listed – but the overall real estate weight at each point in time is determined by the glide path.

This glide path moves towards a retirement portfolio dominated by long-dated bonds because the member is likely to buy an annuity at retirement and the long-dated bonds are expected to hedge the interest rate risk in annuities.

Figure 16: Example of a glide path from the US



This is a “to retirement” glide path that joins a highly diversified growth portfolio to a drawdown-oriented retirement portfolio. There are no fewer than 13 asset classes in the mix. Most of the asset classes are in the starting line-up and stay there throughout; however, three asset classes (cash, TIPS and commodities) do not appear until the 2030 fund. There are no long-dated bonds because the member will not want an annuity. Non-listed real estate glides from an allocation of 5.8% to 4.1%, where it remains from year 2030.

