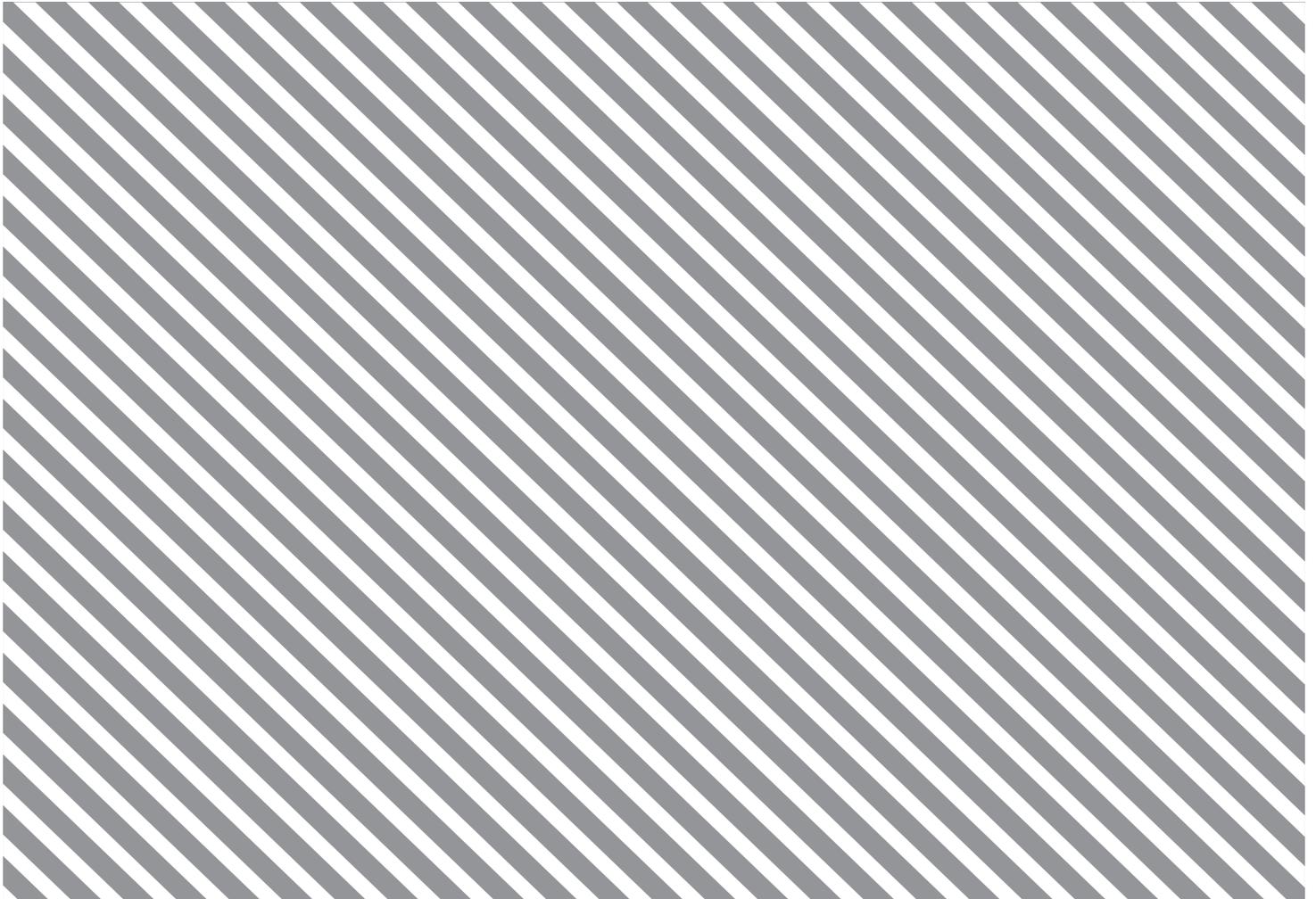


White Paper

# Investing in (and for) Our Future

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# Foreword



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The challenges we face in providing our ageing societies with a financially secure retirement are well known. Recent trends in retirement system design and changing workforce dynamics mean individuals are taking more responsibility and risk to equip themselves with adequate incomes in retirement. At the same time, many individuals do not have easy access to retirement savings tools. We must ensure our retirement systems are inclusive and sustainable, and that they provide adequate income for all. Achieving this balance is challenging, but there are lessons that can be learned from successful systems around the world.

This report has been produced as part of the World Economic Forum's Retirement Investment Systems Reform project, which has brought together pension experts to assess opportunities for reforms that can be adopted to improve the likelihood of our retirement systems adequately and sustainably supporting future generations. The issues and findings discussed are the result of numerous interviews, discussions and workshops.

We would like to thank our project partner Mercer as well as the input from our Steering Committee and Expert Committee, which has allowed us to draw on unique expertise from different communities and knowledge networks.

# Executive summary

Pension systems around the world all face a common problem – the strain put on existing promises for retirement because of increases in life expectancy. The retirement savings gap is quite large in some countries already, and on a global scale is projected to grow significantly larger<sup>1</sup> by the year 2050. In prior research we determined that in order to close the gap we need to: expand coverage of savings systems to more individuals; use technology to increase the level of savings; and employ techniques to incentivize more savings while being cognizant that individuals may have more demands on their finances than only retirement. However, in order to effectively address the growing retirement savings gap, it is also critical to optimize the investment of these savings to enable individuals to achieve good retirement outcomes with the money they have invested. A good retirement outcome provides a person with adequacy (a retiree's needs are provided for), is sustainable (the risk of outliving one's savings is low) and is flexible (allows individuals to respond to life events). In this paper, we focus on recommendations for policy-makers, sponsors of retirement plans and members of the asset management community that provide services to the retirement industry.

Given the strain on and relative decline of government or employer-based pensions (traditional defined benefit plans), retirement outcomes will increasingly depend on accruing assets in individual retirement savings accounts and then effectively managing those assets through retirement. Defined contribution (DC) plans have become the main vehicles for such savings.

In a DC plan, an individual contributes into an individual account that is then invested into a potentially wide range of different assets (cash, bonds and equity are common). This is known as the “accumulation” period. How the investments are structured depends significantly on a country's policies. In this paper, we share the expected results for common/default DC strategies in several countries. Based on these results and other research, we encourage policy-makers and plan sponsors to consider the following for accumulation parameters in DC plans:

1. *Consider risk from the perspective of an individual saving for retirement*
2. *Diversify the investment of saving accounts, by geography and asset type*

However, the diversification of savings accounts by asset type has several practical challenges that need to be addressed. Introducing alternative asset classes is often challenging due to greater complexity of the underlying investment, lower liquidity (at both the individual and plan level), a vulnerability to corporate transactions if the plan is employer-based, and potentially higher and more complex fees. Some of these issues require further innovation from the investment industry to meet the demands of the DC savings market.

The “decumulation” phase is the period in which individuals withdraw money from their savings. How this is structured can vary widely between countries, and the relative benefit levels of social security systems can make meaningful differences. Personal circumstances differ significantly at this point and tend to be more complicated in comparison to when people are younger. Public policies ought to be developed while keeping in mind the three points highlighted for a good retirement outcome – adequacy, sustainability and flexibility.

Given the range and complexity of potential options and approaches, and the difficulty most individuals have making a choice, policy-makers should consider whether *default decumulation structures* would be beneficial, similar to the default structures that exist for accumulation. This will be highly dependent on each country's retirement system. Policy-makers should also consider how to make the wide array of available information easier to understand for the individual choosing a retirement plan (including potentially numerous savings accounts, government benefits and employer-based pensions). *Dashboard reporting* or introducing *auto-consolidation* of savings accounts can help this effort.

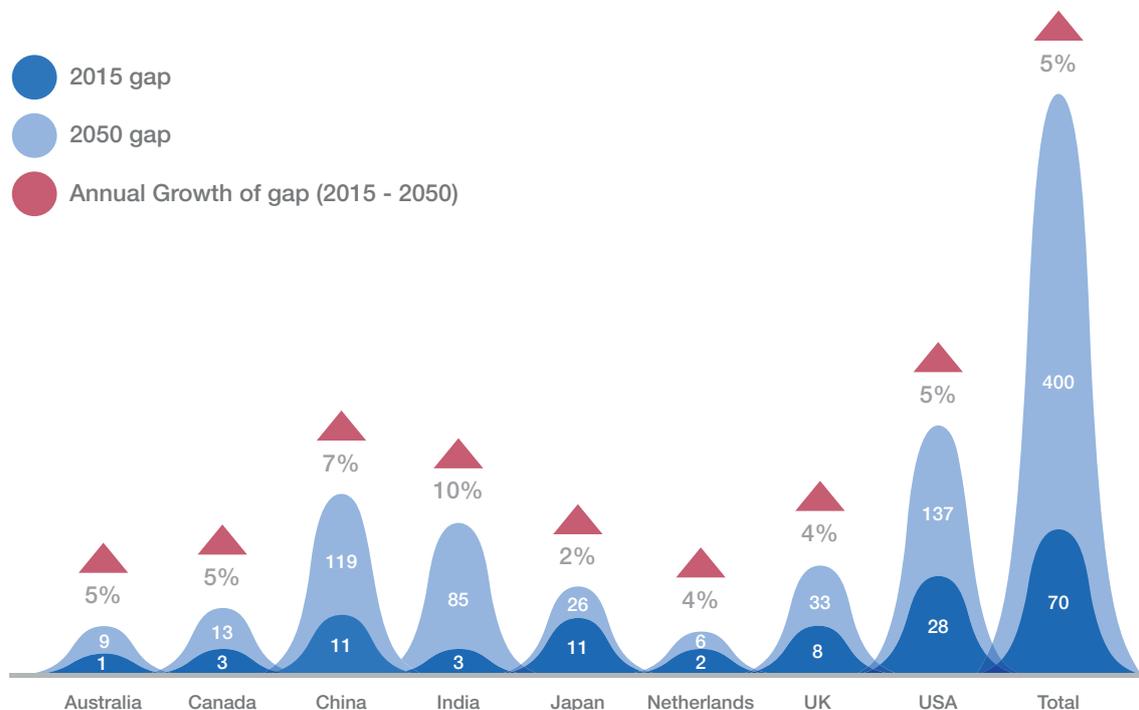
Lastly, individuals also need access to effective financial advice, if default plans are not suitable. Advice must be comprehensible, accessible, priced effectively, transparent and aligned to the best interest of the advisee. The establishment of strong *fiduciary rules* by policy-makers should be of paramount importance to help meet these criteria.

# Section 1 – Introduction

As discussed in our first report,<sup>2</sup> government social welfare systems and employer-based defined benefit (DB) pension plans are under strain around the world. For the eight countries below, which have some of the largest retirement

savings markets or are some of the most populated nations, the gap at 2015 was already at \$70 trillion. If measures are not taken to increase overall levels of savings, we project this gap to grow to \$400 trillion by 2050.

**Figure 1: Size of retirement savings gap (\$ trillions, 2015)**



Source: Mercer Analysis

With increasing responsibility placed on the individual to prepare for retirement, we have found that most are simply not saving enough. While there are numerous examples of progress being made to improve retirement systems, further reforms are required in many parts of the world to ensure systems are sustainable, inclusive and provide future generations with retirement financial security.

In our second report<sup>9</sup> we identified three principles for progressing toward financial inclusion and improved retirement security:

- A. Expand coverage to more individuals
- B. Use technology to increase levels of savings
- C. Structure pension systems to provide incentives to improve participation

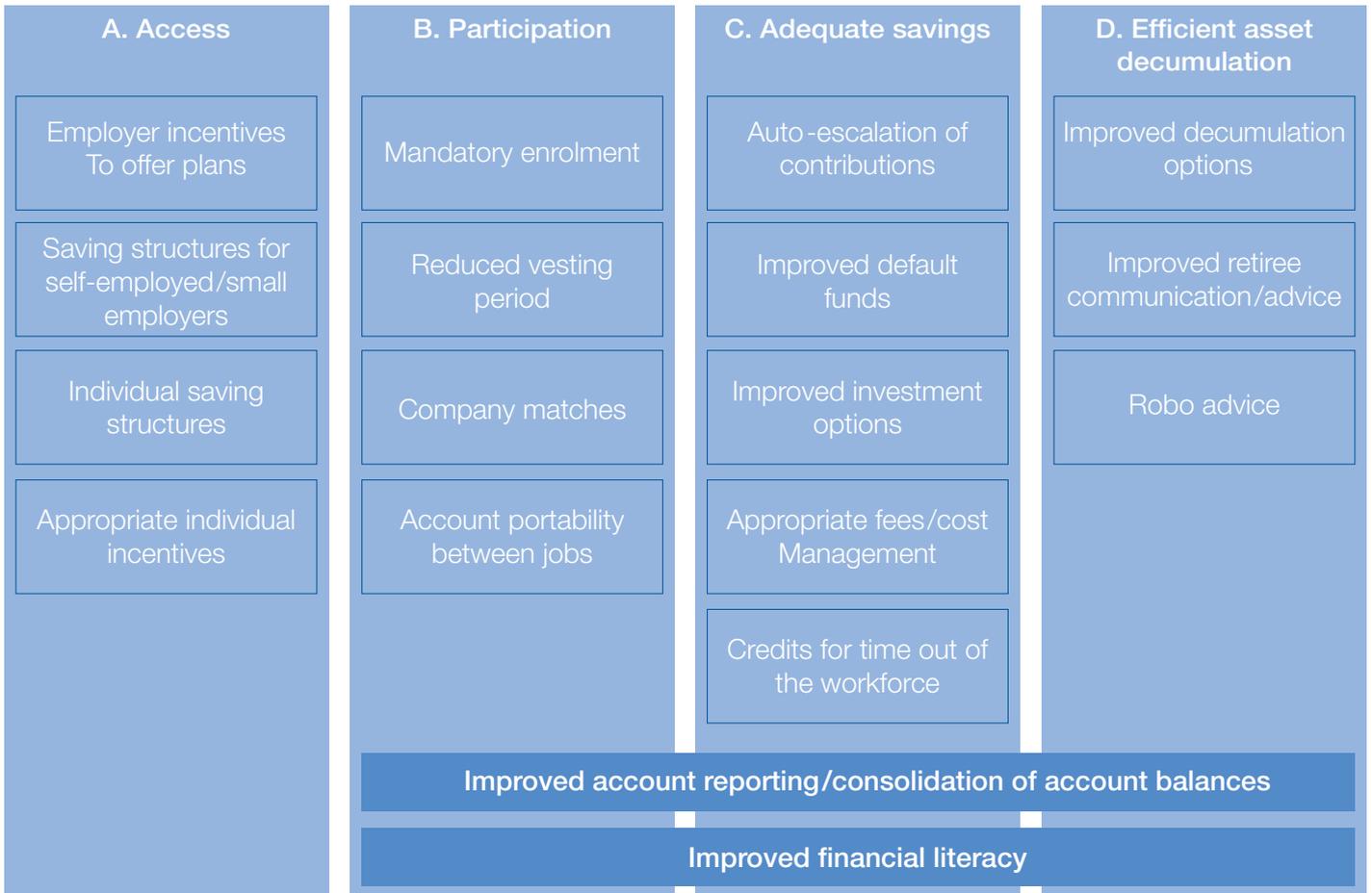
In this paper, we offer recommendations to policy-makers, plan sponsors and members of the asset management community who are involved in the retirement and savings industry, focusing on how individuals can be encouraged to secure financially sound retirement outcomes. Given the growing prevalence and importance of DC plans, our focus is mainly on this area.

In our first paper, we developed the framework below to assess DC systems (see figure 2). In our second paper, we covered ways to improve participation and saving rates. We now focus on savings design (improved default funds and investment options) and efficient asset decumulation (and the options and structures contained within).

Acknowledging that investment designs, rules and regulations are highly country-specific, and that personal circumstances differ, we believe that there are some universal principles upon which policy-makers and plan sponsors can agree.

We also urge policy-makers and DC-plan sponsors to consider the link between accumulation and decumulation when designing systems and strategies. As noted in this report, the factors that need to be considered for decumulation tend to be far more idiosyncratic for each individual than for accumulation. Individuals will need guidance to bridge the change from working and saving for retirement to actually being in retirement and spending down their savings. DC plans are well placed to provide that guidance, or to potentially offer a default path.

**Figure 2: Framework for assessing DC systems**



## Section 2 – Accumulation

### How is accumulation designed across the world?

Within many DC plans, individuals are given the choice of several different investment funds or strategies to invest their assets. While the individual has the ultimate choice on their investment fund or strategy, the savings plan provider (often the employer) decides which options are made available to the saver to choose from. Strong default options should be offered so that even without an active selection by the individual, they can be confident that their savings will be invested with an effective asset allocation.

In the US, default options permitted by the Department of Labor include target-date funds, balanced funds and managed accounts.<sup>4</sup> Target-date funds provide individuals with a diversified portfolio of return-seeking (typically equity) and defensive assets (typically bonds and cash) and generally adjust the allocation gradually from predominantly return-seeking to defensive as the individual gets closer to retirement age. The “target date” is the year that the individual is expected to retire, and the reallocation of assets is driven by that date, though may continue to change afterwards. The reallocation of assets is often predetermined and is referred to as a “glidepath”.

In other countries, the guidelines for an investment strategy are predetermined by policy-makers but implemented by licensed fund managers. In some countries, while individuals may be able to choose between fund managers, having picked a fund manager they do not then have the choice of their specific investment strategy. Finally, some European countries (for example, Germany and Belgium) have a collectively bargained guaranteed return system in which the investment strategy used is out of the control of the individual.

Whether or not individuals have choice, they ultimately bear the success or failure of the investment strategy in a DC

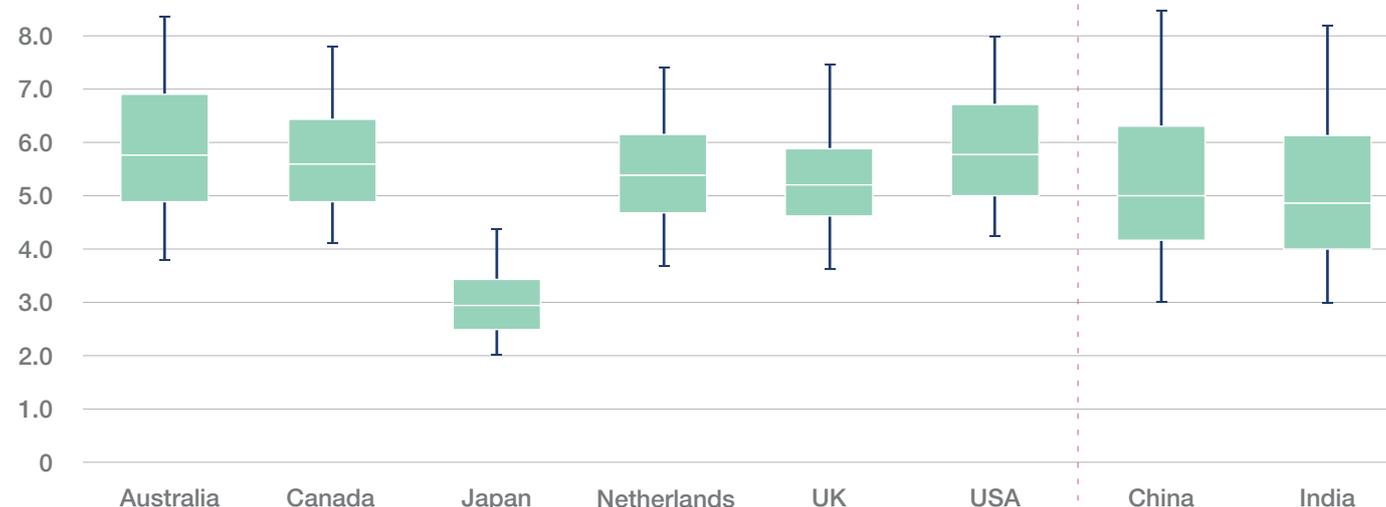
plan. If individuals are expected to make a choice, the array of options provided is extremely important, as is the design of any default options. Policy-makers must take a proactive approach to ensure that DC-plan rules enable individuals to efficiently achieve good retirement outcomes.

### A comparison of retirement systems – what leads to good outcomes?

In the following charts, we have modelled expected retirement outcomes for common default investment strategies of the DC systems within the eight countries initially profiled in this project: Australia, Canada, China, India, Japan, the Netherlands, the United Kingdom and the United States. Acknowledging that a large savings balance at the point of retirement does not necessarily lead to a “good” retirement outcome (more on that to follow), all other things being equal, a larger balance will be conducive to securing a good outcome. Therefore, in our analysis outcomes have been measured using expected, inflation-adjusted, pre-tax ending retirement balances as a multiple of expected ending salaries.<sup>5</sup> However, as will be discussed in this and the next section, accounting for risk must also be considered when setting an accumulation strategy.

The outcomes have been projected using a standardized set of demographic and economic assumptions<sup>6</sup> for the six developed markets and another set for the two emerging markets modelled. The blue bars show the interquartile (25th to 75th percentile) range of outcomes, with the middle line representing the median outcome. The lines outside of the blue bars show the range of outcomes from the 5th to 95th percentiles. For example, looking at Australia, the average expected outcome is that an individual will achieve a retirement balance of 5.8 times their ending salary, with 90% of the results being between 3.8 and 8.4 times their ending salary.

**Figure 3: Multiples of ending real salary at age 65 (assuming starting contribution of 3% of \$30k salary, increasing 1% a year to 9%, and adjusted for salary growth and inflation)**

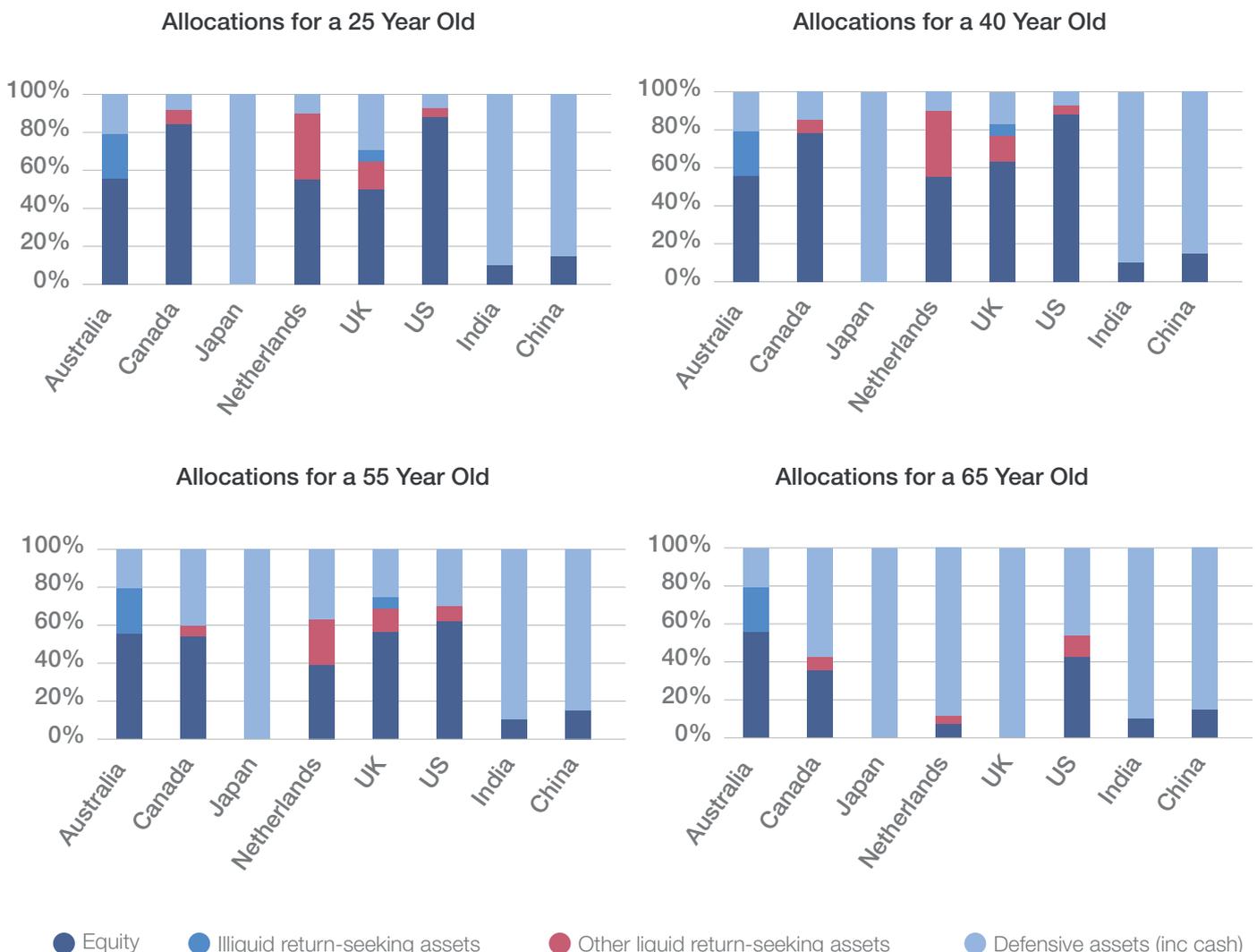


Source: Mercer Analysis. The data used for determining each country's allocations is detailed below.

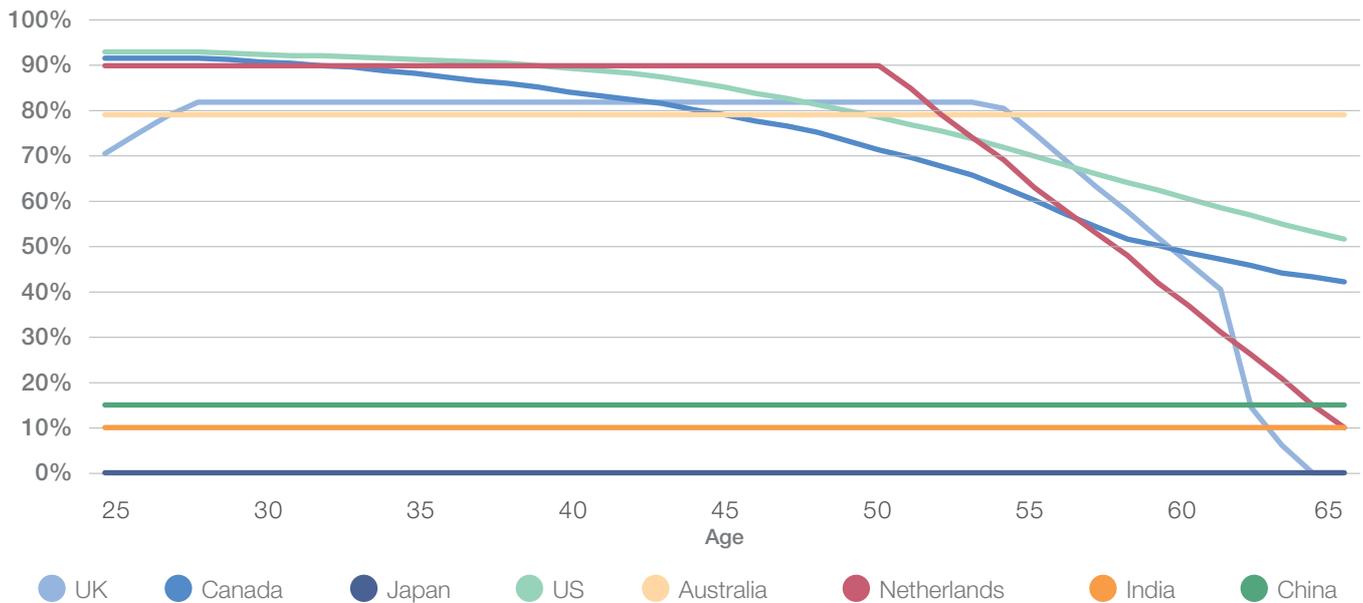
A summary of the arrangements that have been modelled for each country is below. The charts in Figure 4 show asset allocations at different age milestones for each country. More detailed information is available in the appendix.

- Australia: While the Australian DC system is increasingly adopting target-date funds, balanced funds remain a popular investment. We have used the (static) allocations for the default, balanced fund (MySuper) offered by AustralianSuper, and as of 30 June 2018.
- Canada: Target-date funds are commonly used. Mercer survey data as of 31 March 2018 has been used to determine typical allocation for the glidepath of Canadian target-date funds.
- Japan: Although DC investments in other asset classes are permitted in Japan, there remains a large dependence on term deposits, so Japan has been modelled using a constant allocation to cash.
- Netherlands: Target-date funds are commonly used. Mercer consultants developed a representative glidepath to use for the modelling.
- UK: The UK DC market is in a state of change following recent pension freedom reforms; however, target-date (or “lifecycle” funds) are common. We have used the allocations for the default, target-date funds offered by NEST,<sup>7</sup> a government-backed, not-for-profit provider of DC solutions. These are as of 30 June 2018.
- USA: Target-date funds are commonly used. Mercer survey data as of 31 March 2018 has been used to determine typical allocation for the glidepath of US target-date funds.
- China/India: DC investments in China and India are more tightly regulated, and so we have modelled static investment portfolios that are predominantly invested in bonds. Based on local knowledge and other information available, we modelled 90% in local bonds (split equally between government and corporate debt) and 10% in local equity for India, and an 85%/15% bonds/equity split for China.

**Figure 4: Asset allocations at different age milestones by country**



## Exposure to Return-Seeking Assets



**Note:** Liquid growth assets includes: real-estate investment trusts (REITs), listed infrastructure, high-yield debt and emerging-market debt. Illiquid growth assets include infrastructure and private real estate.

As would be expected, the range of outcomes for DC savers in Japan (investing in cash) are projected to be much less favourable than for the other developed countries that have a more persistent and pronounced exposure to return-seeking assets. The 5th percentile outcome at the high end for Japan is a retirement balance of 4.4x ending salary, only modestly higher than the 5th percentile at the low end for the US (3.9x), which has been modelled using target-date funds.

Comparing the range of outcomes for the four countries with target-date fund strategies, we see that the ranking of median outcomes matches the ranking for exposure to return-seeking assets at age 65. The country with the highest ending allocation to return-seeking assets has the best projected average outcome, whereas the country with the lowest ending allocation to return-seeking assets has the lowest projected average outcome.

Despite the fact that the target-date fund strategy modelled for the Netherlands starts with a broadly equal allocation to return-seeking assets as the US (approximately 90%), and that it is maintained for longer, the exposure decreases more rapidly and settles at a far lower allocation at retirement than the US. The corresponding effect on outcomes relates to the fact that, assuming a consistent savings rate, retirement balances naturally become larger over time, and the impact in monetary terms of the investment return becomes more significant. For example, the difference between a 5% return on a \$10,000 balance and a \$50,000 balance is \$2,000. Likewise, comparing the Canadian target-date fund results to the Netherlands, the exposure to return-seeking assets is higher between ages 33 to 57 for the Netherlands. However, as the exposure is higher thereafter for Canada, the expected outcomes for Canada are higher.

The consistently high return-seeking asset exposure of the Australian balanced fund suggests why the range of final outcomes is so wide. While this higher/longer return-seeking exposure provides significant upside potential, it also leads to a higher chance of poorer retirement outcomes. The Australian balanced fund modelled also has significant exposure to liquid and illiquid alternative growth assets (including listed and unlisted infrastructure and private real estate). The UK (NEST) target-date funds also have some alternatives exposure (to private real estate). As will be reviewed further on, investment in alternatives can have a relatively modest but positive impact on outcomes.

At first glance the outcomes for the relatively conservative asset-allocation profiles for India and China are surprising. There are a couple of reasons for this. Despite having high allocations to fixed income, the expectations for emerging market-based fixed income (both government- and corporate-based) are significantly higher than their developed-market counterparts and are close to the expected returns for developed-market equity. In addition, while the assumptions for inflation are higher than for developed markets, this is more than compensated for by higher wage-growth assumptions.

### What can be learned for designing accumulation portfolios?

Determining an “ideal” asset portfolio for individuals saving for retirement, either within a specific country or more broadly, is beyond the scope of this review. Putting aside various person-specific factors, each country will have different structures in place for social care (e.g. healthcare and government “pillar-one” pensions), tax treatment for savings and income will differ and each country’s

savings and capital markets may be in different stages of development. However, we do believe that policy-makers should attempt to encourage several principles for DC-plan asset accumulation, working with DC providers and other institutions as applicable.

1. *Consider risk from the perspective of an individual saving for retirement.* One of the biggest risks to a retiree is outliving their savings (once some retirement capital has been built up). While saving consistently is critical, earning a return on savings also has a substantial impact on retirement outcomes. Traditionally, risk and return from the investment perspective can be viewed simply – to earn a return, investment risk must be taken. From a retirement-savings perspective, the primary risk is not having adequate savings in retirement. Younger and middle-aged savers have relatively longer time horizons until they require their savings, which means that the risk of market volatility should be less of a consideration than the risk of not being able to achieve a good retirement outcome. Analysis conducted as part of our research shows that strategies that allocate a significant proportion of a portfolio to return-seeking assets by the time an account has grown to a significant size (in monetary terms) tend to outperform strategies with lower return-seeking allocations. Many strategies will reduce exposure to such assets as retirement draws closer, the value of an individual's earning ability tends to decline and the impact of capital losses therefore becomes more significant.
2. *Diversify the investment of saving accounts, by geography and asset type.* As noted above, exposure to return-seeking assets that have higher levels of traditional investment risk is crucial. However, it is possible to reduce overall investment risk through diversification. Many savers' portfolios will be dominated by equity, and perhaps biased to domestic markets, leading to a concentration of risk. Diversifying asset exposure can spread the sources of risk and reduce the effect of a single stock or market declining or even crashing. Furthermore, as identified in prior research, recent strong equity-market returns experienced since the global financial crisis cannot be expected to continue in perpetuity and so other return-seeking assets may help to increase returns and/or reduce risk.

Specifically, we recommend that policy-makers ensure that rules and regulations allow for the implementation of the above principles. This will need to be considered country by country, acknowledging the diversity of retirement structures. Policy-makers in DC systems with saver-directed investment choice (where individuals choose their own investments) should encourage good saving behaviours through default choices in line with the above, allowing individuals to “opt out” if they need to invest differently. However, while policies should allow individuals to take on meaningful exposure to return-seeking assets and achieve diversification, some guardrails should be in place, either by limiting certain choices or using appropriate guidelines.<sup>8</sup>

## Reconsidering risk

The previous analysis showed that there are significant benefits to retirement outcomes when investing in return-seeking assets. It is also apparent that the time at which investment occurs is critical, with there being greater potential positive impact when return-seeking exposure is maintained over time, but also greater risk of capital losses as evidenced by a wider range of outcomes in the modelling.

Investment strategies are available that adjust the level of market risk taken in accordance with the capacity to take risk. A common example of this is target-date funds, which aim to adjust the riskiness of an individual's asset allocation over time as their investment time horizon is reduced and – in many cases – as their flexibility in deploying their earning ability declines. The result is that exposure to market risk declines with age (i.e. as an individual ages, less risk is taken). While target-date funds will not be suitable for all savers and there are differences in how these can be structured,<sup>9</sup> we support the notion of taking more investment risk earlier when earning ability can be deployed more flexibly and the potential impact of market downturns can be mitigated over time. In other words, younger and middle-aged savers still have time to wait out market cycles and remain invested in a downturn, as well as adjusting their participation in the labour force, whereas older savers may be more constrained due to upcoming retirement plans.

Technology is helping reduce the cost and improve customization of delivering investment advice to people with savings accounts – for example, due to the growing prevalence of robo-advisers in several countries. This also provides an opportunity to provide well-designed investment portfolios. Like employer-based DC plans – common in most countries and overseen by policy-makers/governments, which provide an opportunity to encourage good investment behaviours for employed persons – technology-based savings platforms also provide an opportunity for individuals outside of the formal work sector to access savings plans and robust investment strategies.

We support governments taking steps to encourage savings cultures that lead to increased expected rates of return of DC accounts through asset allocation. Currently policies exist in some countries that explicitly limit the level of equity exposure allowed in DC investing (for example, in Mexico). In other countries, investment freedoms are given to individuals, but cultural norms lead to cash investments being the predominant choice of savers (e.g. in Japan). We recommend that governments reconsider policies that significantly limit exposure to return-seeking assets such as equity, and if not in place, consider introducing default investment parameters with the aim of encouraging greater investment in such assets, such as via target-date funds.

Some countries may restrict investment freedoms due to a lack of fully developed capital and savings markets. For example, countries with less-developed equity markets may provide savers with only a limited number of companies to invest in and these may be concentrated by industry sector. In such scenarios, our recommendation for increased

diversification (covered in the next section) becomes more relevant, and access to capital markets overseas should be given an even higher priority.

**How countries regulate** – *As per an OECD survey,<sup>10</sup> only eight OECD countries (Australia, Belgium, Canada, the Netherlands, New Zealand, the UK and the US) did not impose any ceiling limits to pension investment in the following (major) asset class categories: equity, real estate, public-issued bonds, private-sector bonds, retail and private investment funds, loans and bank deposits.*

*However, many OECD countries, particularly those with an Anglo-American legal tradition, apply “prudent person” standards instead of (or in addition) to quantitative restrictions. In an OECD paper,<sup>11</sup> the authors state that most prudent person standards can generally be stated in terms of the following broad principle: “A fiduciary must discharge his or her duties with the care, skill, prudence and diligence that a prudent person acting in a like capacity would use in the conduct of an enterprise of like character and aims.” The prudent person rule may apply to all of the duties and obligations that a fiduciary or trustee may have regarding a trust, pension plan or fund.*

### Mitigating risk by geography

Retirement liabilities for most people will be expressed in their local currency – for example, a retiree in Switzerland will want to have their retirement income expressed in Swiss francs. It might be argued that it may make sense to have investments only in assets priced in the local currency and avoid exchange-rate risk – a risk that is generally not expected to be compensated over time and is notoriously hard to profit from. However, we believe that diversifying investments geographically will help improve retirement outcomes. Except in the case of the US, local markets (including but not limited to equity) will represent a relatively small portion of the global market. The opportunity for diversification of assets is a means to lower overall portfolio risk without necessarily sacrificing potential returns. For example, a recession isolated to one country could also lead to significant retirement challenges if the citizens of that country are mainly invested in the domestic market. This could be particularly damaging to older workers looking to retire who would be struggling with both job security and their savings balances at a crucial time. While there may be some behavioural arguments in favour of a home-country bias and individuals may be more willing to invest in something they know, diversification should still be the top priority.

When considering emerging markets, one could counter that many have higher expected equity-market returns than the rest of the world (for example, China and India), and this was shown in our previous modelling. While this may be the case, emerging equity (and bond) markets are also expected to have much higher volatility than their developed market counterparts. In this case, diversifying into lower-yielding markets may be beneficial when considering risk-adjusted returns.

Consideration will have to be given to how to manage to currency risk. How currency movements affect investment returns may not be well understood by the average individual, nor is the potential for extreme volatility (i.e. the best-performing currency one year might perform extremely poorly the next year). In a saver-directed investment choice system, savers may inadvertently end up getting whipsawed by such returns. Guidance from policy-makers and regulators may be helpful for retirement-plan sponsors on this point, such as whether to require hedging overseas currency exposure (or a portion of such exposure). This will differ by country as currency-hedging instruments may not be available or cost-effective in each country.

**Mexico case study** – *We have modelled Mexico as it is an interesting example of a country that has reformed DC regulations but could go further. In Mexico, DC plans have gradually been supplanting a DB system. The government-regulated fund managers for DC savings, AFOREs, each offer five funds (SIEFOREs) that are age-based multi-asset portfolios with government-set limits on asset allocation. As individuals age, they are moved along their age-appropriate SIEFORE. The limit to equity for all funds is relatively conservative, with the youngest savers permitted a maximum of 45% of their assets in equity. Likewise, the restriction on foreign holdings is significant, with a 30% limit for most funds. With the recent change in government, reforms to the DC system are anticipated. The proposed reforms are currently designed to: 1) offer more investment alternatives to the existing AFOREs to encourage competition and hopefully lead to better retirement outcomes for savers; 2) provide greater flexibility to AFOREs to allow for greater asset diversification;<sup>12</sup> and 3) allow for use of financial tools to provide more defence against volatile cycles in markets.*

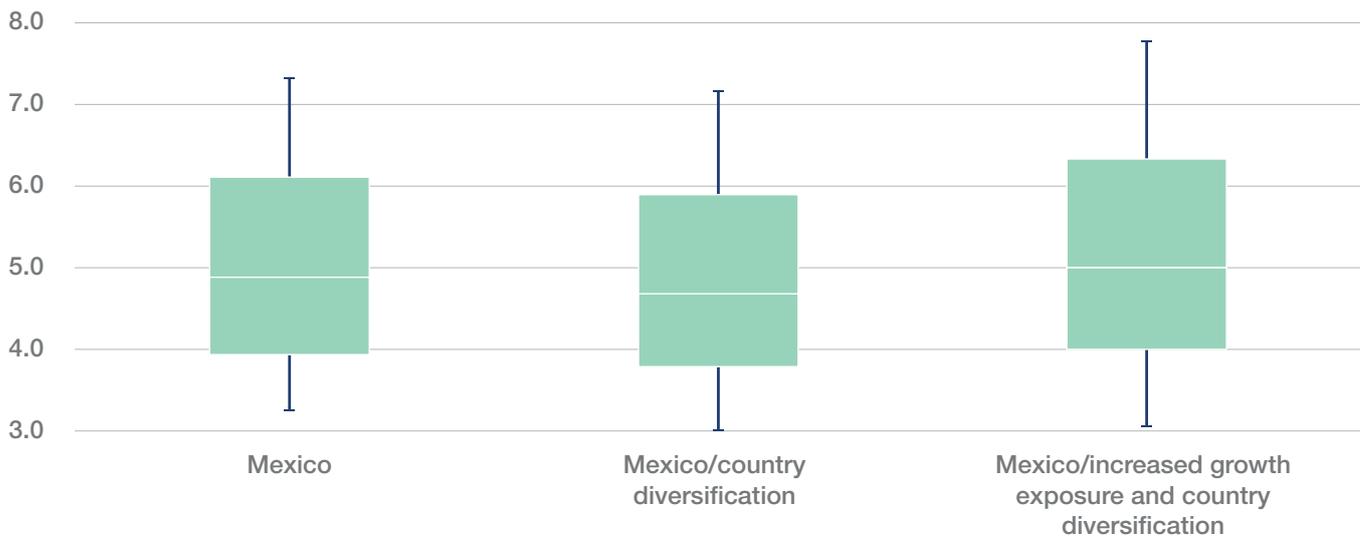
*The modelling below shows the expected outcomes (similar to the prior analysis) for one of the largest SIEFOREs in Mexico and has been run using Mercer’s capital-market assumptions for emerging markets. In the first alternative scenario, we adjust the allocation between domestic and international equities from 90% in domestic equities (a proxy used based on local common practice) to two-thirds in international equity. The results show a small improvement in expected outcomes.*

*The third set of results show the effect of increasing the level of country diversification and increasing the allocation to growth assets. As the portfolio already had a meaningful allocation to alternative assets, this proportion has not been adjusted. In this scenario we see a very meaningful improvement in the expected retirement outcomes, with the 5th percentile outcome now at 3.7 times the ending salary rather than 3.1 times (under the current scenario).*

### Mitigating risk by asset class

When describing alternative asset classes, it is important to distinguish between liquid and illiquid. Liquid alternatives have been used in several countries’ DC systems already in addition to traditional asset classes of equities and bonds. These include: real estate and natural resources stocks; high-yield debt; emerging-market debt; bank loans; and

**Figure 6: Multiple of ending salary at age 65 (assuming starting contribution of 3% of \$30k salary, increasing 1% a year to 9%, and adjusted for salary growth and inflation)**



Source: Mercer analysis and CONSAR Comisión Nacional del Sistema de Ahorro para el Retiro

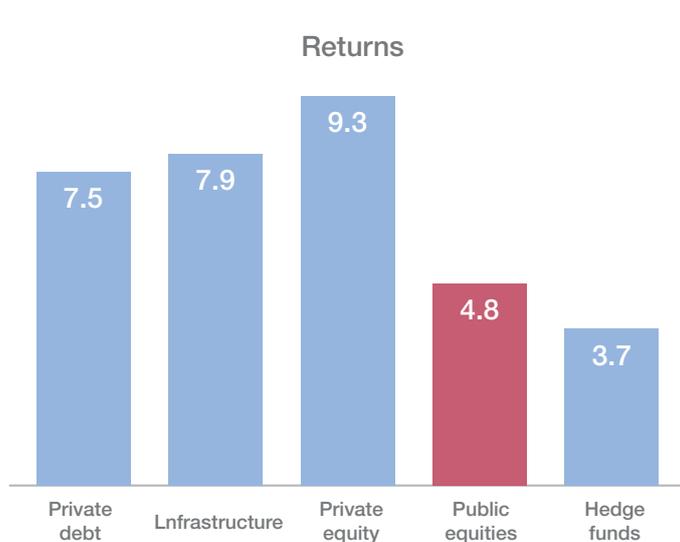
certain hedge-fund strategies. Illiquid alternatives include: private equity; infrastructure debt; private credit; private real estate; and certain other hedge-fund strategies. The opportunity set for many DB plans is broadly open to all illiquid asset classes, but for DC plans, non-traditional investments have tended to be more narrowly focused on liquid alternatives.

While the objectives for a DB plan differ to those of a DC plan, the expected benefits for adding alternative investments fundamentally remain the same, benefitting from potentially superior risk/reward profiles, improved

diversification and a potential to generate alpha with less volatility than public equity markets. Regarding the potential diversification benefit – when examining expected sources of risk and return for a typical “60/40” portfolio (that is, 60% in equities and 40% in bonds), we find that this portfolio has over 95% of its future expected risk derived from the equity risk premium.<sup>13</sup> Clearly, finding ways to reduce the concentration of risk (all things being equal), is a good aim.

As we can see from the chart below, despite a strong bull market since the global financial crisis, several illiquid alternative asset classes have outperformed equities.

**Figure 7: 10-year performance (ann.) 2008–2018**



**2008 crisis performance (cum.)**

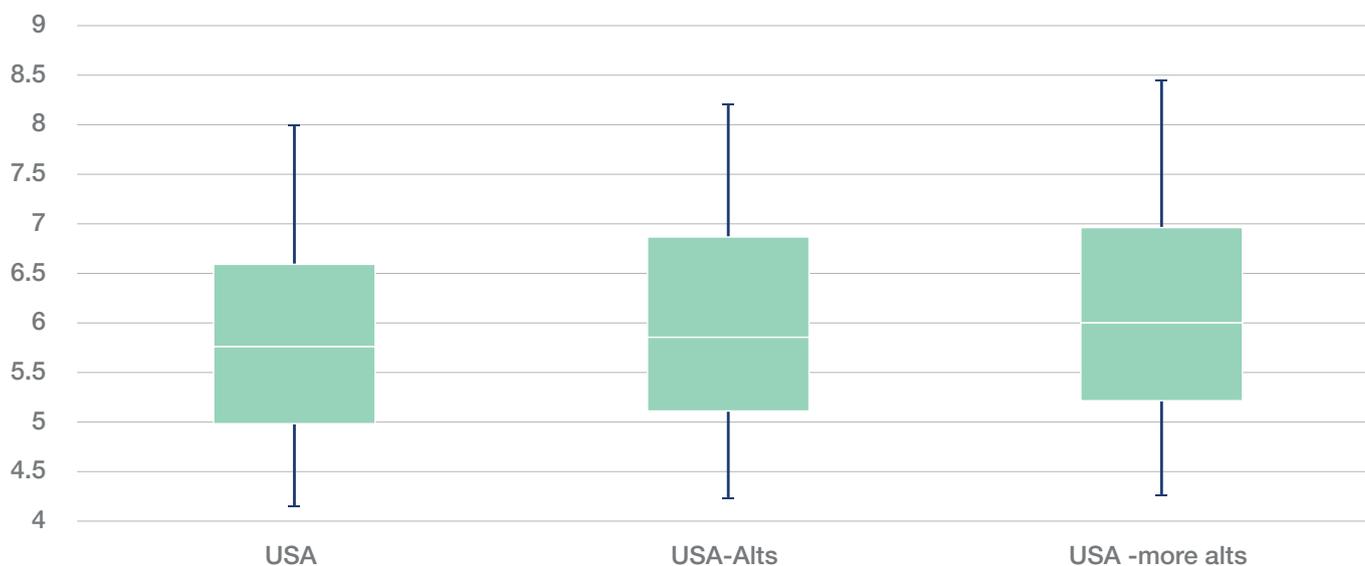


Sources: Mercer Analysis. Burgiss Private iQ (Mezzanine, respectively Buyout and VC)/Cambridge Associated (all Infrastructure) (Q1/17)/MSCI ACWI / 4 HFRI Composite

Using the previous modelling work, we have looked at the impact on financial outcomes if one were to incorporate illiquid alternatives into US-based target-date funds. The first column below replicates the outcomes for the US target-date fund assumptions. The second and third scenarios add an equally weighted alternatives allocation (between private equity, infrastructure and private real estate). In both cases

the allocation has been sourced from the existing return-seeking assets so as not to alter the overall proportions of return-seeking and defensive assets. The second column starts with an allocation of 15% of the return-seeking asset portfolio (approximately 13% of the entire portfolio), whereas the third scenario starts with 25% of the return-seeking asset portfolio (approximately 23% of the entire portfolio).

**Figure 8: Multiple of ending salary at age 65 (assuming starting contribution of 3% of \$30k salary, increasing 1% a year to 9%, and adjusted for salary growth and inflation)**

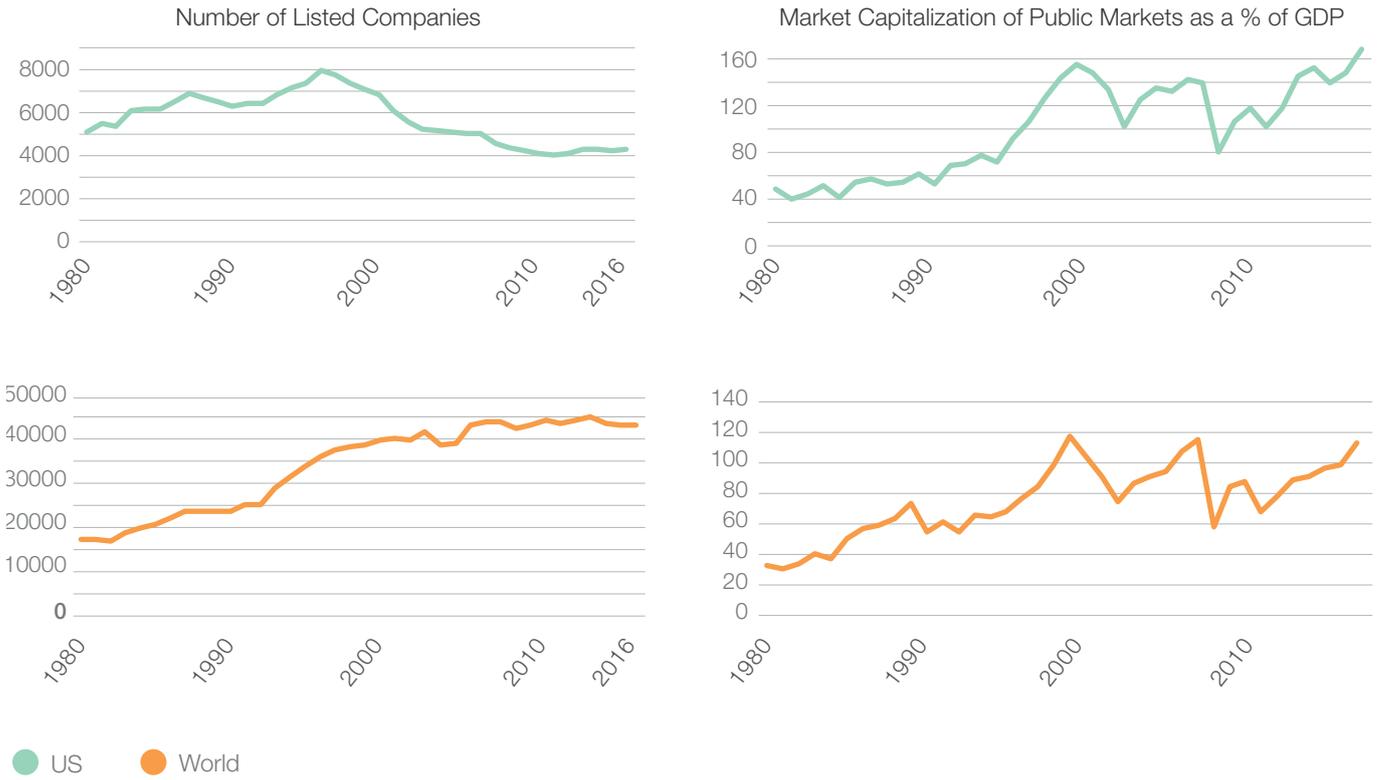


Source: Mercer Analysis

From the above, we see a modest improvement when adding 15% of the return-seeking asset portfolio to alternatives, and a more significant improvement with 25%. For example, with a 25% allocation the median outcome increases from 5.8x to 6.0x, the 5th-percentile outcome increases from 4.2x to 4.3x and the 95th-percentile outcome increases from 8.0x to 8.4x. Fees are always an important consideration, so it is important to note that the return assumptions for the alternative asset classes used in the above modelling are net of fees. However, as with any investment there must be a solid economic rationale for including alternatives (for example, see the side review box on private equity), but also logistical and other operational hurdles will need to be addressed before these can be adopted more readily into DC plans (see the next section).

**Private equity: a rationale** – The performance differential between private and public equities is particularly striking. One possible explanation may be due to the shrinking size of public markets, particularly within the US, when counting the number of publicly listed companies – see the chart below. While the market capitalization of public markets as a percentage of GDP remains at a historical high, we can see that the number of companies this is spread across has reduced from a peak of 8,090 in 1996 to 4,336 in 2017, almost half. This shift has, however, come with an increase in the market share of the largest companies of the US stock market, which was at least partly facilitated with mergers and acquisitions. Notwithstanding, it appears likely that solely investing in public equities does not provide an investor with “total market” exposure, and so expansion into private markets is necessary to fully benefit from economic activity.

**Figure 9: Performance differential between private and public equities**

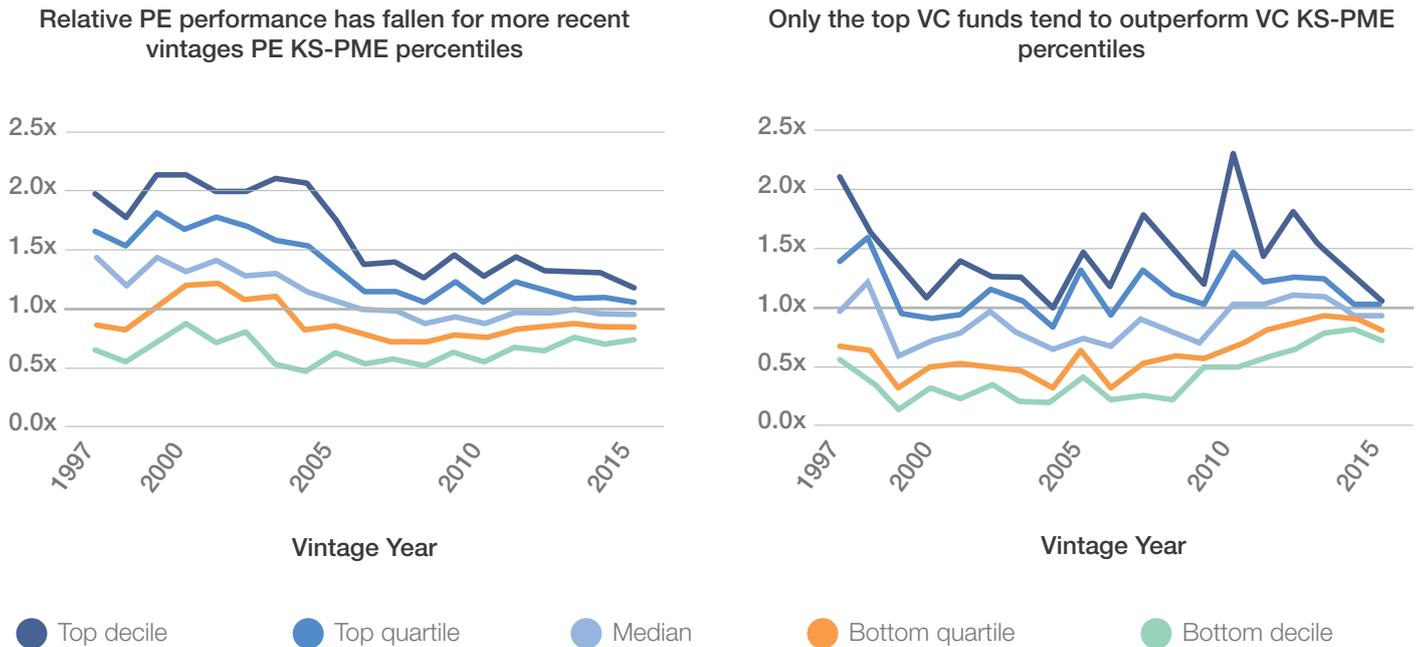


Source: World Bank Statistics

The charts in Figure 10, which show the performance differential between private and public markets through a different measure, illustrate the importance of being able to

identify and access above-average managers. For venture capital, accessing a top-quartile and even top-decile manager is vital to outperforming the public markets.

**Figure 10: Performance differential between private and public equities**



Source: Pitchbook

## Section 3 – Principles for investing in alternatives

**Issue:** Alternatives can be complex, opaque and hard to evaluate.

**Context:** As with any other portfolio management decision, detailed analysis and due diligence must be performed to judge the suitability of adding a new asset class and to determine the economic rationale for adding the investment from a standalone and total portfolio perspective.

Alternative investments tend to be much more complicated to understand, evaluate and monitor than traditional investments. This problem is potentially faced by the group responsible for the design of a DC plan but also the saver, if they have discretion on how to invest their savings. Accredited investor rules (for retail investors) exist in principle to prevent the average saver from misusing, or being misled, investment products they do not fully understand.

From the context of the DC-plan sponsor, this group must also be capable of identifying external investment managers who can deliver the expected aims of the asset class. Outperforming peers, as shown in the private equity example in the prior section, can be critical for some assets. Lastly, for several alternative asset classes it can be a challenge to find suitable benchmarks that are: unambiguous, investable, measurable, appropriate, reflective of current investment opinions, specified in advance and accountable.<sup>14</sup>

**Solutions:** DC-plan sponsors will need experienced, knowledgeable investors on staff and/or will need to hire advisers to perform the above tasks. Many countries do not prohibit investment in alternative assets for DC-plan members but expect DC-plan sponsors to demonstrate due diligence during selection. Such an approach can be used in lieu of quantitative restrictions that serve as a blunt tool in a nuanced environment.

With regards to obtaining the necessary expertise – while achieving scale by itself is not necessarily a solution, it may be more effective to hire the dedicated staff or advisers who are required. For example, the Australian superannuation system has over time consolidated to create extremely large funds capable of allocating significant assets to alternatives. In this regard, development of master trusts (used by DC plans to commingle assets into a single trust), or multiple-employer plans (MEPs) (a single DC plan adopted by multiple employers) may provide the required scale to hire investment staff or pay for guidance. As mentioned below, these may also provide more stability from a liquidity point of view.

Benchmarking remains problematic but not insurmountable. The emphasis of performance measurement for DC plans should firstly be on individual retirement outcomes: did a saver's investment portfolio meet the required aims? However, performance reporting of asset classes or funds

does remain an important part of a DC-plan sponsor's ongoing due diligence. A Danish DC-plan sponsor with significant allocation to alternatives stated in an interview that having a clear expectation of how the investment should perform in different economic environments can be used as a substitute when suitable benchmarks are not available.

Preventing savers from incorrectly using alternatives is critical. For example, a stellar year for private equity could lead to inexperienced savers reallocating their savings to that asset class at the top of a market. We recommend that allocations to complex and illiquid assets are only permitted through professionally managed accounts, such as target-date funds, so that the allocation decisions are left to more experienced decision-makers (investment managers, trustees etc.).

**Verdict:** The complexity hurdle to investing in alternative asset classes is significant but can be overcome when DC-plan sponsors hire or employ experienced teams. Consideration should be given to how such investments are offered to savers, with professionally managed accounts most likely the best option in most cases.

**Issue:** Valuation and liquidity terms incompatible with long-term DC saving.

**Context:** Many DC systems require investment options to be valued daily and allow savers to trade their portfolios daily. This is an issue for DC systems and plans that are either experiencing (or are projected to experience) net withdrawals such as savers redeeming funds from their accounts. To facilitate this, assets must eventually be sold, which can be difficult if including illiquid alternatives. Liquidity is also a concern for corporate-sponsored DC plans that need to be mindful of the impact of potentially significant corporate transactions that could affect the DC plan, and which in reality cannot be predicted by a corporate-plan sponsor. For example, an illiquid portfolio can create challenges if a divestiture greatly reduces the size of the DC plan.

The issue is less problematic in DC systems in which cash flows tend to be positive (i.e. more savers are contributing to, rather than withdrawing from, their accounts), and in which there is less sensitivity to individual corporate transactions: e.g. a multiple employer plan. This is the case in Australia and Denmark, two countries that have relatively high levels of investment in alternative assets. Furthermore, in Denmark, some DC plans are single-choice, where savers simply contribute and invest in a portfolio designed by plan sponsors and they are not able to switch between options.

Individual withdrawals could first be sourced from either liquid assets or cash. However, holding meaningful levels of cash specifically for liquidity may lead to a drag on performance (though cash can be equitized). Furthermore,

using liquid assets to facilitate redemptions could adversely affect the remaining portfolio for the remaining savers as the portfolio allocation to illiquid assets would increase upon redemptions.

Selling units in an illiquid investment can be difficult on two fronts. First, it can be difficult to find an appropriate buyer. Second, it can be difficult to strike an appropriate price for both the buyer and the seller. The difficulty in price valuation remains even if the saver is selling their stake back to the overall pool of assets in a DC plan (i.e. without an external buyer). Without access to accurate daily values, such a process requires proxies to value illiquid assets, which are not particularly accurate and may require subsequent and cumbersome “true-ups” after updated valuations are finally provided.

**Solutions:** Technology could potentially provide a solution to finding daily values. At UC Investments – the management arm of the University of California’s investment programmes (including its endowment, DB plan and DC plan) – data scientists have developed an automated roll-forward approach tool that allows for the more frequent valuation of illiquid assets compared to existing fair value proxies. In a recent paper,<sup>15</sup> the researchers note that: “As allocations to illiquid classes increase, however, the reliability of fair value is increasingly important to other areas of the LP [limited partnership] organization, including investments, risk, operations and actuarial processes. Paradoxically, the subjectivity of fair value – intended to enhance investor understanding – causes it to be unreliable.” While at the time of writing the tool is not yet capable of daily valuation, it has made a significant leap forward from yearly to quarterly valuations with increased accuracy. Further technological advances in this field could soon make the daily valuation of illiquid assets more straightforward. This would have to be further tested in extreme market scenarios.

Furthermore, DC asset owners such as NEST are challenging the investment management community to repackage illiquid asset classes into vehicles that are more suitable for DC investors. In the US and Canada, we have seen products coming to market combining illiquid assets with a liquidity sleeve. Given the growth of DC assets worldwide, continued innovation may make operational issues for investing in alternatives less significant in the future.

In the meantime, DC-plan sponsors will have to develop cash-flow projections and prudently manage allocations to alternatives. Corporate sponsors of DC plans will need to have contingency-planning in place for corporate transactions and factor such events into their sizing decision. Ultimately, for some smaller DC plans this analysis under the current paradigm could prohibit meaningful investment in alternatives. Larger plans, in particular MEPs, with more certainty of future growth, will have more flexibility here. While we would not advocate for smaller plans joining master trusts or MEPs just to gain exposure to alternatives, this is another reason to consider such structures.

Finally, one could make the argument that, as DC plans are set up for long-term retirement savings, there should not be a provision for daily access to those savings. In theory, this view holds weight. However, speaking to consultants who work in DC systems where daily liquidity has been established for a while, it appears that the trend is to provide more access and manoeuvrability rather than curtail it. Changing this may prove to be challenging, but in our view, necessary. The issue of increased longevity means that retirement assets have an even longer investment horizon than before, and as such, daily liquidity makes even less sense.

**Verdict:** There are solutions in the pipeline, but they need further development by asset owners and asset managers. This will be potentially less cumbersome for open and growing plans such as master trusts and MEPs.

**Issue:** Prohibitive fees

**Context:** Fees are another common barrier to implementation, with alternative investments often costing multiple instances of management fees (relative to traditional investments). In the US, litigation fears over fees also act as a barrier to many fiduciaries and has been shown to influence decision-making.

**Solutions:** Fees should be primarily considered from a total portfolio and retirement outcomes perspective. For many portfolios, low-cost exposure to bonds and equity can be achieved through passive management.<sup>16</sup> For active management, fees have been falling due to competitive pressures. Alternative asset classes should be considered from a total portfolio perspective, not just a singular one, under the strict caveat that they are expected to add value after fees.

Similar to the need for the asset management industry to innovate on liquidity, there are challenges to the industry to meet the requirements of DC plans as relates to fees. For example, as the pool of assets managed by NEST in the UK has grown, the management board has gradually begun to allocate assets to investment managers under the proviso that the managers work within their government-mandated fee structure, ensuring that the total expense ratio of any funds offered to investors is less than 0.75% per annum (a UK government regulation). As part of this change, the management board is challenging alternative investment managers to meet the fee and liquidity requirements of NEST.

Consideration must also be given to potential intergenerational issues. For example, private equity investments tend to experience a “J-curve” effect, whereby cash flows and performance are negative to begin with and then become positive as investments reach maturity and are sold for profit. Fees are also varied, depending on the stage of investment. This could be an issue if investors are subject to different parts of the cycle. Diversification of such investments (by vintage year) can help to mitigate these unintended effects.

Finally, however, policy-makers should consider whether to reduce the ease of bringing lawsuits against plan sponsors based on fees. All other things being equal, a downward pressure on fees for the DC savings industry – including management fees of assets – is a positive. However, it is vital to ensure that the ability to bring time-consuming and costly lawsuits does not stifle innovation and portfolio decisions that are expected to bring overall benefits to savers on a net-of-fee basis. Clearly, this is a difficult balancing act, but should be considered carefully in countries where cost pressures drive portfolio decisions.

**Verdict:** Fees should be considered from a total portfolio perspective. Emphasis should be given to any alternative investment meeting their aims, whether it is return-enhancement or risk-reduction, on an after-fee basis. Policy-makers should reconsider the ease with which lawsuits can be brought against DC-plan sponsors if there is evidence suggesting that fears of lawsuits are driving suboptimal portfolio decisions.

**Liquid alternatives** – *A collection of heterogeneous investment strategies that can be used to gain exposure to a variety of non-traditional risks (“alternative risks”). They are expected to provide many of the benefits of illiquid alternatives, such as access to superior risk/reward profiles, improved diversification and a potential to generate alpha with less volatility than public equity markets without the illiquidity. (However, the complexity of doing so is also a potential drawback.) Specifically, this group can range from moderately correlated equity strategies such as multi-asset funds (a blend of traditional asset-class allocations with idiosyncratic positions/trades) to alternative risk premia strategies (which blends traditional style premia/factors such as value, quality etc. with hedge-fund risk premia such as trend and volatility) and then to liquid hedge-fund strategies (diluted or constrained versions of more traditional hedge-fund strategies) that have low equity correlations and beta.*

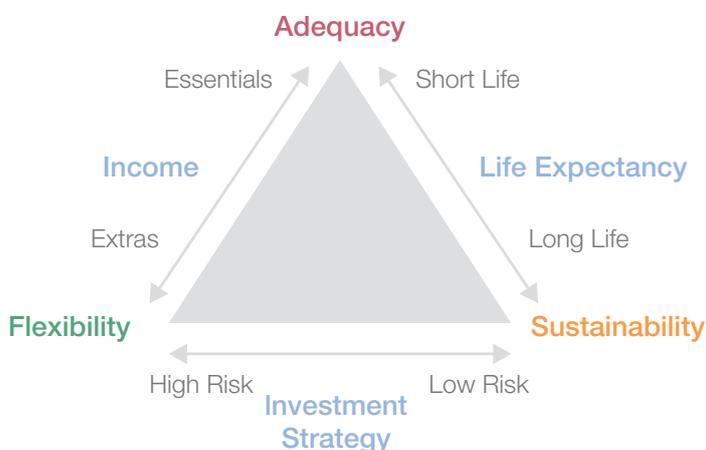
## Section 4 – It’s (also) about decumulation

### What is required?

Accumulating wealth during working years is not by itself a means to a good retirement. This report is focused on the financial aspects of this question, but a good retirement for most will be linked to wider ambitions, from spending more time with family to cultivating hobbies and passions (e.g. travel or community work). Practically speaking, along with health, financial security will play a significant role in meeting these objectives. During “decumulation” individuals at (or close to) retirement age begin to withdraw money from their savings.<sup>17</sup>

Mercer consultants have been developing the concept of a “retirement trilemma” – a way of viewing the sometimes competing goals of good financial outcomes at retirement. This is also referred to as a decumulation strategy. More recently, the Australian government has used a version of this concept in their work developing a comprehensive framework for retirement income (see the next section). The retirement trilemma is shown below.

Figure 11: Retirees need peace of mind



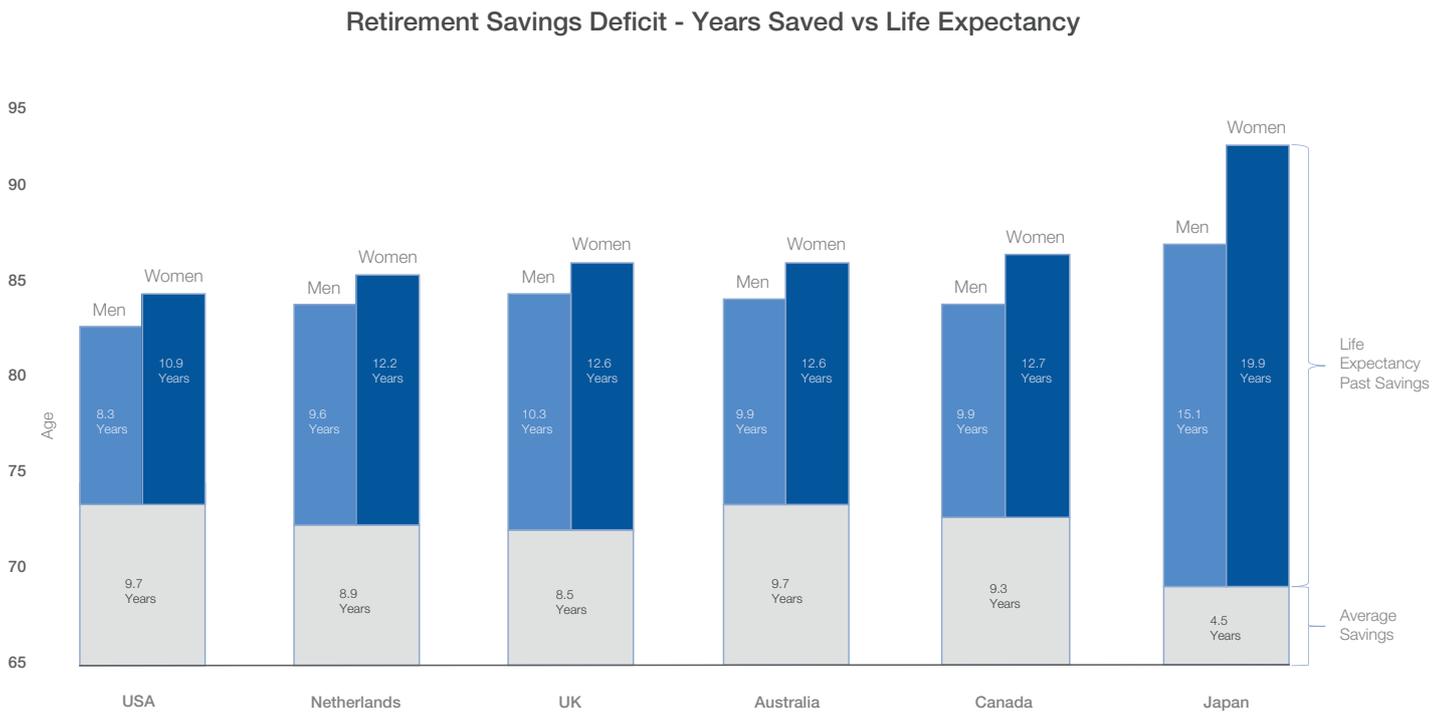
**Adequacy** – A successful decumulation strategy must adequately serve the needs of the retiree. For many people, receiving an income in old age will be an important and desired component of their strategy. In a recent survey, 85% of US savers agreed with the statement, “It is important to have a guaranteed income stream in retirement in addition to social security,”<sup>18</sup> highlighting the utility people gain from retirement income. How income is derived and the level required will depend significantly on personal circumstances, for example, expectations on life expectancy and risk tolerance. For those fortunate enough to have them, state-sponsored and/or occupational DB pensions will form the foundation of their retirement income,

although the use of means-testing can have a big impact on the potential coverage from state-sponsored benefits. Thereafter, income can be sourced in a variety of ways, such as annuities, reverse mortgages, income from investments and continued work past the “normal” retirement age. The chart below shows how the make-up of retirement savings can differ by country.

**Flexibility** – The ability to respond to significant events is also important. There are numerous retirement expenditures, with some to be expected while others may come as a surprise. Consideration should also be given to the potential for windfall gains (i.e. inheritances or proceeds from property sales). For adequacy, the requirement for flexibility is highly specific to the individual and the retirement system in which they reside. For example, healthcare expenditures will depend on an individual’s health status and whether they reside in a country with accessible and universal healthcare. As discussed by Richard Thaler,<sup>19</sup> people tend to separate their money into different categories for various purposes: e.g. emergency cash pots or vacation savings. It is important that any decumulation strategy be responsive to how people intend to manage their finances.

**Sustainability** – This can also be viewed as risk management, most significantly against outliving one’s savings. Individuals require protection from future anticipated or unexpected risks. Once again, the need for this protection will vary according to personal circumstances and the risk aversion of the individual. The most significant risks include financial shocks, inflation, longevity and sequencing. These risks may be mitigated through financial products such as insurance and/or guaranteed investment funds or even through well-managed portfolios.

Figure 12: Expected proportion of retirement income by source



Source: World Economic Forum Analysis

Much work has been carried out to determine what is required in retirement in terms of an income. For example, Figure 12 examines the average savings at retirement, by country, and calculates how long that would last based on a reduced income of 70% of final pay. The figure illustrates the shortfall in all of the major pension markets of at least 8-13 years (15-20 in the case of Japan), with women being particularly disadvantaged due to longer life expectancies. This does assume a steady spending pattern, which although it has been a blanket expectation for a while, there is growing research and support for variable spending patterns. How the pattern is shaped is the (sometimes literal) million-dollar question.

JPMorgan Asset Management analysed Chase data – including aggregated and de-identified Chase credit card (excluding some co-branded cards), debit card, electronic payment, ATM withdrawal and check transactions from 1 January 2016 to 31 December 2016 – and came away with three main conclusions:<sup>20</sup>

1. Overall spending level declines with age on a real dollar basis. This finding contradicts conventional wisdom that spending remains static throughout retirement years. When you assume static consumption, you may end up overstating actual spending by 26% at age 95.
2. There is a spending surge leading up to retirement. This surge in spending in early retirement years, when unaccounted for, can ravage portfolio value due to its interaction with sequencing of return risk.

3. In addition to a spending surge, retirees experienced spending volatility as they transitioned into retirement. Almost 80% of the retirees observed in the research experienced substantial changes in spending.

The findings highlight the need for a new solution that provides spending flexibility while effectively addressing sequencing of return risk.

**Retiring retirement** – Further to the concept of flexibility, a recent survey by Mercer<sup>21</sup> discovered that only 32% of people expect to completely stop working at the point of “retirement”. Furthermore, a report by the McKinsey Global Institute<sup>22</sup> found that “over 65s” account for 7–16% of the “independent workforce” or “gig economy”, debunking the notion that this portion of the labour market is entirely dominated by millennials. Whether due to economic needs or by choice, we should expect fewer full-time retirements compared to the past. Decumulation strategies will have to reflect this change in the retirement paradigm. That is, for the initial years of “retirement” there may be income from continued part- or full-time work. The impact of this shift is significant to labour markets: older-age individuals wishing to stay employed will have to be accommodated by employers and governments, through retraining and the provision of incentives to employers to retain/hire older-age workers. In addition, it reasserts the significance of health status, where healthy employees have the option of continuing to work and unhealthy employees may not.

## What are countries doing?

Addressing the topic of decumulation has been rising on the agenda of policy-makers worldwide, particularly in retirement systems that are well-developed from an accumulation perspective (e.g. those with robust regulatory frameworks and consideration of behavioural finance). Some countries (for example Australia and Singapore) have developed or are in the process of developing default-style solutions, whereas others (such as the Netherlands and the UK) are deregulating markets and have removed requirements to purchase annuities. Below is a selection of some of these developments:

**Australia** – The Australian retirement system, dominated by superannuation, is one of the most well-developed from an accumulation perspective, with high levels of coverage, mandated levels of savings and strong investment architecture. However, the government has stated that the retirement phase is underdeveloped and so is working on bringing forward a retirement income framework with the objective of putting in place Comprehensive Income Products for Retirement or “CIPRs”. CIPRs will have to provide the following:

- A. Efficient, broadly constant income
- B. Longevity risk management (income for life)
- C. Some access to capital

The government has proposed a retirement income covenant to “codify the requirements and obligations for superannuation trustees to improve retirement outcomes for individuals”, including a reflection of the needs and preferences of members. The CIPR is intended to focus on the collective needs of superannuation members, for all or for groups of cohorts. (In Australia, some superannuation funds are set up by industry.) The covenant will be “supported by regulations to provide additional guidance and outline in more detail how trustees will be required to fulfil their obligations. Appropriate enforcement will also be part of the framework.”

In addition, the government plans to mandate that trustees provide individuals with guidance, but not necessarily advice. Tools that help members navigate through different CIPRs may be sufficient. However, if a superannuation fund is to provide advice, then the adviser must hold an Australian Financial Services Licence (AFSL). These advisers are subject to the Australian Future of Financial Advice (FoFA) reforms, which among other provisions require that advisers have fiduciary responsibility to act in the best interest of their clients.

**Denmark** – In Denmark, pillar-two savings were typically invested in guaranteed products. That is, the capital invested was guaranteed to increase by a certain return. More recently, the market has opened to non-guaranteed products, with such products now accounting for roughly 70% of new contributions. With non-guaranteed products there is the expectation that savers will be able to earn better long-term investment returns, but this comes with increased uncertainty regarding the precise level of retirement savings.

In 2003/2004, the Danish pension and insurance industry organization, Forsikring & Pension, began work on introducing a pensions dashboard with the aim of providing transparency to savers by providing information on projected pension benefits from all three pension pillars. Today, the online portal, PensionsInfo, uses up-to-date information from retirement plan providers in real time, and guides savers with an expected retirement income provision across various pension entitlements. The retirement plan providers are regulated by prudent investor principles to invest in line with the retirement-income projections that they forecast. However, all retirement plan providers use a standardized set of economic assumptions to provide projections. These assumptions are set by an independent group of economists hired by Forsikring & Pension, with input from the Danish banking industry. The website also provides information on additional pension benefits such as death and disability benefits, along with related insurances (death, disability and sickness/critical illness covers).

**Netherlands** – In the Netherlands, DB plans continue to be the predominant occupational retirement plans. However, DC plans are viewed as the future of the retirement savings industry. In 2016, the government relaxed regulation on how individuals can invest their DC accounts during both accumulation and decumulation years to harvest risk premia: e.g. in equity markets. As in the UK, the requirement for individuals to buy annuities at retirement age has been removed.

**Singapore** – As mentioned in a prior World Economic Forum paper,<sup>23</sup> the Singapore Central Provident Fund (CPF) enables Singapore citizens to save in different accounts to meet various expenditures. CPF LIFE is used to provide monthly income in retirement. The system is designed to ensure coverage for the following:

- A. “Roof over your head” – this translates to a fully paid-up home at retirement
- B. “Basic Healthcare Coverage” – sufficient savings for future medical expenses
- C. “Cash for daily expenses” – this essentially refers to retirement income that is designed to last throughout retirement

To achieve these goals, savings are separated into different pots. For example, there is a dedicated account to meet healthcare expenditure, while another account can be used for mortgage payments, education costs, insurance or investment while a final account is specifically created to save for old age and/or retirement-related products.

Figure 13: Singapore Central Provident Fund – four accounts



Source: CPF promotional material.

The system encourages saving, while reflecting the more immediate needs that individuals may have for their savings, such as mortgage payments. Like the developing Australian system, there is a recognition that consistent and longevity-proof income is critical for success, and so a minimum amount of capital (across two of the accounts) is set aside for the purchase of an annuity. There is flexibility in regards to when the annuity must be taken, reflecting that people are being encouraged to work past the “normal” retirement age. The desire for bequests to beneficiaries is also factored in, with various pre-set options on how to balance this with monthly income levels. A default option exists for those who do not wish to choose.

**United Kingdom** – The Pension Schemes Act 2015 relaxed previous restrictions on how individuals with DC pots could use their assets. Previously, individuals were able to take up to 25% of their retirement account balance as a tax-free cash lump sum and had to use the remaining 75% (or more) to purchase an annuity. The Act removed the requirement to buy an annuity and instead allowed individuals to place the funds in a flexible draw-down account with no restrictions on how much could be withdrawn in a given year (though standard tax rulings still applied).

The change was proposed as a means of improving choice and flexibility to UK savers, for many of whom purchasing an annuity would either not be suitable or preferable. Opponents of the change argued that the increased choice could lead to irresponsible decision-making and

an increased burden on the state if people did not use their retirement accounts wisely. A 2017 report<sup>24</sup> from the UK regulator found that twice as many retirement accounts were being moved into draw-down accounts rather than being used to purchase annuities, a significant shift from the period prior to the reforms, when over 90% of accounts were used to buy annuities. While over half of the accessed accounts were fully withdrawn, 90% of those held less than £30,000 (and 60% were smaller than £10,000). Some 94% of individuals making full withdrawals had other sources of retirement income in addition to the state (pillar one) pension.

The UK Retail Distribution Review (RDR), which came into effect in 2012, also had a significant impact on the decumulation market in the UK. The RDR introduced new rules for investment advisers; most significantly by removing the ability for advisers to receive commissions from pension/retirement service providers that were ultimately paid for by their clients. In addition, higher minimum levels of qualifications from advisers and a disclosure of how advisers were compensated was required.

In 2014, the UK regulator commissioned a report on the effects of the RDR and found that “firms have materially improved in clearly disclosing to clients the cost of their advice and the scope of their services (whether advice is independent or restricted)”. Also, “the vast majority of advisers are now qualified to the new minimum standards and there has been an increase in the number of advisers going beyond these minimum standards” and “product prices have fallen by at least the amounts paid in commission pre-RDR, and there is evidence some product prices may have fallen even further”.<sup>25</sup> In addition, the review found little evidence that the RDR has led to a significant reduction in the availability of advice to savers, with advisers still willing to take on new business. However, “by revealing the true cost of advice, the RDR has led some consumers to consider the extent to which the advice they receive represents value for money, and in some cases conclude it does not”.

**United States** – In the US, individuals are not required by law to follow specific investment strategies or use certain financial products at retirement, but assuming they have saved into tax-deferred savings accounts, they must take required minimum distributions (RMDs) to begin drawing down their retirement accounts the year after turning age 70.5.

In 2008, the Department of Labor (DoL) established “safe harbor” provisions for DC-plan sponsors to select annuity providers for their plans. However, the provisions have not been regarded as being sufficiently robust to satisfy plan sponsors’ concerns, which has contributed to a low amount of annuity features being added to DC plans in the US. Recent legislative proposals are aiming to address this by providing a more robust safe harbour but this has not yet passed into law. It is not clear whether this will lead to a material increase of annuity products in DC plans – partly because there is very limited demand for such products but also because other challenges remain, including complexity, high fees and concerns regarding portability.

In 2016, the DoL officially proposed a new “fiduciary rule” that was originally due for implementation in 2017. The rule would have required financial advisers to act in their client’s best interests, ahead of their own financial interests, and promote transparency in understanding how the adviser would be compensated. The impact of the rule would have been significant particularly for retirees who had accumulated significant retirement accounts and were expected to decide on what to do with those assets, sometimes with the help of advisers. Ultimately, the rule was challenged in the courts and did not take effect following a change in presidential administration, although some retirement-plan providers in the US did adopt new practices that conformed with the proposed rule.

## What are the solutions?

Conventional economic theory suggests that with enough knowledge, or “financial literacy”, retirees should be able to rationally evaluate different decumulation products and/or determine their own decumulation strategy. However, in several countries, the array of products and services available to retirees can be overwhelming. Several studies/research papers have found that when faced with the complexity of the retirements landscape, people were prone to “switch off” and defer decision-making or simply chose the path of least resistance.<sup>26</sup> While providing financial education should be an aim of both governments and employers (particularly for employers, given the trust that individuals have with their employers – 79% of adults trust their employer to give sound, independent advice),<sup>27</sup> there needs to be further consideration on how to approach decumulation at the societal level.

## Make it easier to understand

Policy-makers and plan providers must recognize that, over a working life, the average saver will work for multiple employers and potentially end up with numerous retirement accounts. The National Longitudinal Survey of Youth 1979, a US-based survey of approximately 10,000 men and women who were aged 14–22 when first interviewed in 1979 and aged 49–58 when interviewed most recently in 2014–2015, found that those surveyed held an average of 11.9 jobs from age 18 to age 50. Nearly half of these jobs were held from ages 18 to 24.

Dashboard reporting, which pools together information regarding different accounts (for example, those held by previous employers), projected government benefits and other benefits (e.g. defined benefit pensions) would be a significant tool for a saver. As mentioned in the prior section, dashboard reporting currently exists in several countries including Australia, Denmark, the Netherlands and Sweden, and is being discussed in the UK.

In Australia, a service is provided to savers to help locate and consolidate “lost” retirement accounts. Transfer procedures in Australia have also been simplified, making it easier for savers to move their retirement accounts as they change jobs. Similar to having dashboards, planning for retirement can be easier for the individual when they have a

complete view of their various savings and benefits. Having a projected outcome at retirement may also encourage increased levels of savings.

The implementation of such tools and services will require investment in the infrastructure of retirement systems by the groups responsible for the administration and record-keeping of savings so that data can flow between organizations, and so that asset transfers are possible without excessive layers of complexity. In addition, governments will have to consider whether the private sector should provide such tools or services or if they should be publicly run. With regards to dashboard reporting, having several different providers using different economic assumptions could confuse individuals if they see lots of different projected outcomes, once again adding to the complexity of retirement planning. A centrally provided dashboard, or use of centrally agreed economic assumptions, such as in Denmark, would mitigate this issue.

Finally, whether through dashboard reporting, financial advice (see below) or otherwise, retirement forecasting needs to be put in terms that people can understand. The use of real income figures is more likely to be helpful and understood when compared to stating retirement in terms of savings balances.

### **Consider defaults**

As shown in the section above, some retirement systems already have, or are moving towards providing, products or solutions that are designed to be a one-stop shop or solution for most savers, and ideally for different cohorts of savers. Target-date funds are often offered as default accumulation vehicles that remove the requirement for savers to fully understand the difference between different asset classes and thus decide on how much to invest in each. Broadly speaking, these are an example of a successful default option, even though they cannot be the “perfect” structure for every person saving for retirement.

There is a crucial difference between default options for accumulation and decumulation. The principles we identified for accumulation are less personalized and more straightforward to implement than for decumulation. As people age, their individual circumstances become more diverse. Mitigation of risks will differ for each person with different expectations on longevity. External factors such as physical assets held, help provided by family members, personal health and dependent care needs will also drive diversity of requirements.

An element of personalization is therefore required. The work carried out by Australia on default products is an interesting example as there is an acknowledgement that a one-size-fits-all approach will not work. Instead, these solutions, created from several underlying products, may allow for levers to be pulled based on individual circumstances. For example, two employees in the same corporation with significantly differing account balances at age 65 could have different proportions of their portfolio allocated to the purchase of an annuity. This may also be affected by each

individual’s risk tolerance. Each country will be different, and assessment will have to be carried out by each policy-maker before committing to adopting defaults in decumulation. In addition, implementation of a default option needs to take into account the needs of more vulnerable groups, especially retirees with fewer resources.

If possible, default decumulation solutions should be designed to be complementary to default arrangements in place for the accumulation years, to make the transition from working to retirement easier for an individual to manage. With regards to how an account is invested, the changes could be phased in over time (as a saver ages), or trigger points could be used to automatically switch between strategies: e.g. when the individual requires a distribution or additional form of income. From the point of view of the individual, these would not be seen as two separate strategies but the continuation of one journey.

### **Provide financial advice**

As mentioned above, default solutions will not be suitable for everyone. A persistent comment throughout this paper has been the need to address personal circumstances, which is especially true for decumulation years. Access to advisers who can help guide and potentially implement decisions will be vital. A recent study in the UK<sup>28</sup> found that “those who take advice are likely to accumulate more financial and pension wealth, supported by increased saving and investing in equity assets, while those in retirement are likely to have more income, particularly at older ages”.

Aligning the interests of the adviser and the saver is perhaps the most significant challenge for all countries. Conflicts of interest can be a significant impediment to achieving good retirement, from either the direct effect of “bad”, inappropriate or costly advice to potentially reducing trust in the advisory model, thus leading to fewer people taking advice despite needing it. Countries have different options available to them to combat this issue.

As mentioned above, the UK implemented their Retail Distribution Review in 2012, which among other things prohibited certain advisers from taking commissions from the providers of pension/retirement products (e.g. annuity providers). Requiring more transparent fees for advice is one method, though a potential drawback is that this leads to advisers leaving the market. More recently in the US, the Department of Labor proposed and legislated a “fiduciary rule”. However, this was ultimately appealed in the courts and not implemented. If it had been implemented, the rule would have required advisers to act in the best interests of their clients.

Enforcing standards and punishing bad actors, particularly in a timely manner, is another important challenge. This is highlighted by the recent Royal Commission in Australia,<sup>29</sup> set up after several major financial firms were shown to have used unscrupulous practices for the provision of advice and associated sales of financial products. The Royal Commission has found that advisers were not doing what was necessary to provide services “efficiently, honestly and

fairly". The commission notes that adding further regulation may only serve to add a layer of complexity to an already complicated system and instead suggested standards should be simplified to broad principles so that they are easier to understand and enforce.

Delivering financial advice in a cost-effective way may be a challenge in some countries and regions, such as in geographically remote areas. The growing use of technology in finance has had an impact on the delivery of financial advice. Tax preparation services in the US, along with other industries (for example, medical consultations) have increasingly moved into teleconferencing to provide customers with one-on-one appointments via the internet.

Furthermore, technology has begun to be incorporated into the issuing of advice, with robo-advisers beginning to make inroads in retirement and general savings planning for many people in the US and Europe, where simple questions (based on risk tolerances and objectives) are used to devise investment portfolios suitable for different cohorts. This service is often offered at a fraction of the cost of human advice and it is likely that this industry will continue to grow in market share, given the convenience and cost benefits offered in comparison to traditional advice models.

However, for many, speaking to a human financial adviser, particularly at inflection points in life (entering education, starting a family, planning for retirement and preparing for death) will continue to have appeal and value. Such advice should be delivered with a set of competency standards, through accreditation of advisers that is recognized and endorsed by regulators and well understood by individuals and not easily imitated. Expertise in areas such as portfolio planning, local tax law and savings and investment regulations is an example of what should be required of financial advisers.

Financial advice is and will continue to be a vital component of ensuring good retirement outcomes. While defaults and technological solutions may be suitable for large portions of the population, savers will need access to advice that is conflict-free, convenient to access, comprehensible, delivered by competent advisers and in the advisee's best interests. All of this must be delivered at a cost-effective and transparent price.

## Section 5 – Key takeaways

DC savings, or indeed other types of savings, are going to make up a large portion of future retirees' retirement accounts. In this paper, we have reviewed the accumulation and decumulation practices of several countries, highlighted the most effective methodologies for policy-makers and retirement-plan sponsors, and have identified areas for future research.

Firstly, when considering accumulation strategies, policy-makers need to consider risk from the perspective of an individual saving for retirement. One of the biggest risks to a retiree is outliving their savings. Our modelling shows that investment policy can have a significant and positive impact for those savers who are consistently contributing and have built up an asset base. Specifically, most savers ought to invest a significant allocation of their portfolios in a diversified portfolio of assets that are expected to generate strong returns over the long-term, particularly while they have a longer investment horizon.

Policy-makers can consider reforms to investment freedoms or introducing “safe harbour” rules for default strategies that allow for the above. With regards to asset-class diversification, retirement-plan sponsors and the asset-management industry will need to overcome some of the existing obstacles, such as how to account for liquidity requirements. In other areas, progress is currently being made: e.g. reducing fees and improving valuation techniques.

Decumulation structures can vary widely between countries and within them: e.g. the relative benefit levels of social security systems can create meaningful differences in how a person plans for retirement. Personal circumstances significantly differ at retirement and tend to be more complicated compared to earlier in life. Governments should explore policies – such as introducing dashboard reporting, auto-consolidation and, potentially, default structures – to help enable retirement outcomes that deliver adequacy, sustainability and flexibility.

Lastly, when defaults are not suitable, individuals need financial advice that is cost-effective and transparently priced, easy to access and understand and from capable advisers who are free from conflicts of interest.

## Appendix – Modelling methodology

Investment outcomes have been modelled as multiples of projected ending retirement balances relative to ending salaries. These outcomes exclude any other benefits, such as corporate defined benefit pensions or government benefits such as social security.

Assumptions for expected return, volatility and correlations of asset classes are based on Mercer's capital-market observations for Australia, Canada, Japan, the Netherlands, the UK and the US. Emerging-market assumptions developed by Mercer have been used for China, India and Mexico. These have been copied below. The return assumptions for the major asset classes are gross of management fees, but are net of fees for the following liquid and illiquid alternative asset classes: global real-estate investment trusts (REITS), listed infrastructure, commodities, US private real estate, infrastructure, private equity and hedge funds, and venture capital.

USA	20-year assumptions		
	Geometric return	Arithmetic return	Volatility
Asset class assumptions			
Global all country, all cap equity (unhedged)	6.8%	8.4%	18.9%
Global REITs	6.2%	8.2%	21.3%
Listed infrastructure	6.3%	7.4%	15.2%
Commodities	3.2%	4.6%	17.2%
Cash	2.9%	3.0%	2.0%
US inflation linked treasuries	3.2%	3.4%	5.6%
US aggregate bonds	3.7%	3.8%	5.3%
US long government bonds	2.9%	3.7%	12.9%
US high yield corporate debt	5.0%	5.5%	10.0%
Emerging market debt (hard currency)	4.7%	5.3%	11.6%
US private real estate	6.8%	8.0%	15.7%
Infrastructure (unlisted)	8.1%	9.3%	16.7%
Private equity	8.9%	11.5%	24.4%
Hedge funds (moderate category)	6.2%	6.5%	8.2%

USA	
Economic assumptions	
Inflation	2.2%
Wage growth	3.7%

EM	20-year assumptions		
	Geometric return	Arithmetic return	Volatility
Asset class			
Domestic (EM) equity	10.2%	12.0%	19.8%
Global equity	7.8%	9.1%	15.9%
Infrastructure (unlisted)	8.9%	10.3%	17.1%
Private equity	10.9%	13.6%	17.1%
Venture capital	11.2%	14.4%	25.3%
Private debt	7.3%	7.8%	10.5%
Mortgage-backed securities	4.6%	5.1%	10.5%
Corporate (EM) debt	8.3%	8.6%	7.9%
Government (EM) debt	7.3%	7.8%	8.6%

EM	
Economic assumptions	
Inflation	3.2%
Wage growth	6.2%

Simplifications have been made in the investment programmes of each country to allow for a more consistent comparison. Developed countries' returns are implicitly based in US dollars, whereas the generic emerging-market returns are based on a generic emerging-market currency. Furthermore, allocations to equity for most models, apart from Mexico, are assumed to have been invested globally rather than splitting the domestic and international allocations. The international allocations are assumed not to be currency hedged. Investments in REITs are assumed to be global. Allocations to bonds are assumed to be a predominantly domestic investment and across a broad (aggregate) index composed of government, corporate and securitized debts.

For all countries, we assume a common starting salary of \$30,000, and a contribution schedule that starts at 3% of salary and increases by 1% each year to 9%. Wage growth and inflation has been factored in using stochastic projections developed by Mercer, and differ for the US and emerging markets. Working life is assumed to begin at age 25 with retirement at 65.

## Summary of allocations for the original eight countries

Age 25		Australia	Canada	Japan	Netherlands	UK	US	India	China
Equity	Global all country, all cap equity (unhedged)	56%	84%	-	55%	50%	89%	10%	15%
	Global reits	-	4%	-	18%	6%	1%	-	-
Other liquid Return seeking Assets	Listed infrastructure	-	4%	-	-	-	-	-	-
	Commodities	-	-	-	9%	-	1%	-	-
	Domestic high yield corporate debt	-	-	-	4%	4%	1%	-	-
	Emerging market debt (hard currency)	-	-	-	4%	5%	-	-	-
	Domestic private real estate	7%	-	-	-	6%	-	-	-
Alternatives / Illiquid return Seeking assets	Infrastructure (unlisted)	12%	-	-	-	-	-	-	-
	Private equity	4%	-	-	-	-	-	-	-
	Hedge funds (moderate category)	-	-	-	-	-	-	-	-
	Cash	8%	-	100%	-	0%	-	-	-
Defensive assets	Domestic inflation linked treasuries	-	0%	-	-	0%	0%	-	-
	Domestic aggregate bonds	13%	8%	-	10%	29%	7%	90%	85%
	Domestic long government bonds	-	-	-	0%	-	-	-	-

Age 40		Australia	Canada	Japan	Netherlands	UK	US	India	China
Equity	Global all country, all cap equity (unhedged)	56%	78%	-	55%	62%	84%	10%	15%
	Global reits	-	3%	-	18%	6%	2%	-	-
Other liquid Return seeking Assets	Listed infrastructure	-	3%	-	-	-	-	-	-
	Commodities	-	-	-	9%	-	2%	-	-
	Domestic high yield corporate debt	-	-	-	4%	3%	2%	-	-
	Emerging market debt (hard currency)	-	-	-	4%	4%	-	-	-
	Domestic private real estate	7%	-	-	-	6%	-	-	-
Alternatives / Illiquid return Seeking assets	Infrastructure (unlisted)	12%	-	-	-	-	-	-	-
	Private equity	4%	-	-	-	-	-	-	-
	Hedge funds (moderate category)	-	-	-	-	-	-	-	-
	Cash	8%	-	100%	-	1%	-	-	-
Defensive assets	Domestic inflation linked treasuries	-	0%	-	-	0%	0%	-	-
	Domestic aggregate bonds	13%	16%	-	10%	17%	11%	90%	85%
	Domestic long government bonds	-	-	-	0%	-	-	-	-

Age 55		Australia	Canada	Japan	Netherlands	UK	US	India	China
Equity	Global all country, all cap equity (unhedged)	56%	54%	-	39%	56%	62%	10%	15%
	Global reits	-	3%	-	13%	6%	3%	-	-
Other liquid Return seeking Assets	Listed infrastructure	-	3%	-	-	-	-	-	-
	Commodities	-	-	-	6%	-	3%	-	-
	Domestic high yield corporate debt	-	-	-	3%	3%	3%	-	-
	Emerging market debt (hard currency)	-	-	-	3%	4%	-	-	-
	Domestic private real estate	7%	-	-	-	6%	-	-	-
Alternatives / Illiquid return Seeking assets	Infrastructure (unlisted)	12%	-	-	-	-	-	-	-
	Private equity	4%	-	-	-	-	-	-	-
	Hedge funds (moderate category)	-	-	-	-	-	-	-	-
	Cash	8%	-	100%	-	2%	-	-	-
Defensive assets	Domestic inflation linked treasuries	-	2%	-	-	0%	2%	-	-
	Domestic aggregate bonds	13%	38%	-	37%	23%	28%	90%	85%
	Domestic long government bonds	-	-	-	0%	-	-	-	-

Age 65		Australia	Canada	Japan	Netherlands	UK	US	India	China
Equity	Global all country, all cap equity (unhedged)	56%	36%	-	6%	0%	42%	10%	15%
	Global reits	-	3%	-	2%	0%	3%	-	-
Other liquid Return seeking Assets	Listed infrastructure	-	3%	-	-	-	-	-	-
	Commodities	-	-	-	1%	-	3%	-	-
	Domestic high yield corporate debt	-	-	-	1%	0%	3%	-	-
	Emerging market debt (hard currency)	-	-	-	1%	0%	-	-	-
	Domestic private real estate	7%	-	-	-	0%	-	-	-
Alternatives / Illiquid return Seeking assets	Infrastructure (unlisted)	12%	-	-	-	-	-	-	-
	Private equity	4%	-	-	-	-	-	-	-
	Hedge funds (moderate category)	-	-	-	-	-	-	-	-
	Cash	8%	-	100%	-	28%	-	-	-
Defensive assets	Domestic inflation linked treasuries	-	6%	-	-	0%	6%	-	-
	Domestic aggregate bonds	13%	52%	-	18%	72%	42%	90%	85%
	Domestic long government bonds	-	-	-	72%	-	-	-	-

## Summary of alternative allocations for the US

Note: RSA refers to return-seeking assets.

Age 25		US	US - 15% of rsa in Alternatives	US - 25% of rsa in Alternatives
Equity	Global all country, all cap equity (unhedged)	89%	75%	66%
Other liquid return Seeking assets	Global reits	1%	1%	1%
	Commodities	1%	1%	1%
	Domestic high yield corporate debt	1%	1%	1%
Alternatives / illiquid Return seeking assets	Domestic private real estate	-	5%	8%
	Infrastructure (unlisted)	-	5%	8%
	Private equity	-	5%	8%
Defensive assets	Domestic inflation linked treasuries	0%	0%	0%
	Domestic aggregate bonds	7%	7%	7%

Age 40		US	US - 15% of rsa in Alternatives	US - 25% of rsa in Alternatives
Equity	Global all country, all cap equity (unhedged)	84%	76%	62%
Other liquid return Seeking assets	Global reits	2%	2%	2%
	Commodities	2%	1%	2%
	Domestic high yield corporate debt	2%	2%	2%
Alternatives / illiquid Return seeking assets	Domestic private real estate	-	3%	7%
	Infrastructure (unlisted)	-	3%	7%
	Private equity	-	3%	7%
Defensive assets	Domestic inflation linked treasuries	0%	0%	0%
	Domestic aggregate bonds	11%	11%	11%

Age 55		US	US - 15% of rsa in Alternatives	US - 25% of rsa in Alternatives
Equity	Global all country, all cap equity (unhedged)	62%	60%	55%
Other liquid return Seeking assets	Global reits	3%	3%	3%
	Commodities	3%	3%	3%
	Domestic high yield corporate debt	3%	3%	3%
Alternatives / illiquid Return seeking assets	Domestic private real estate	-	1%	2%
	Infrastructure (unlisted)	-	1%	2%
	Private equity	-	1%	2%
Defensive assets	Domestic inflation linked treasuries	2%	2%	2%
	Domestic aggregate bonds	28%	28%	28%

Age 65		US	US - 15% of rsa in Alternatives	US - 25% of rsa in Alternatives
Equity	Global all country, all cap equity (unhedged)	42%	42%	42%
Other liquid return Seeking assets	Global reits	3%	3%	3%
	Commodities	3%	3%	3%
	Domestic high yield corporate debt	3%	3%	3%
Alternatives / illiquid Return seeking assets	Domestic private real estate	-	0%	0%
	Infrastructure (unlisted)	-	0%	0%
	Private equity	-	0%	0%
Defensive assets	Domestic inflation linked treasuries	6%	6%	6%
	Domestic aggregate bonds	42%	42%	42%

## Summary of allocations for Mexico

### *Actual allocations for existing AFOREs*

	Domestic equity	Foreign equity	Alternatives	Securitized debt	Corporate debt	Government debt
Age 25/36	17%	2%	12%	9%	11%	49%
Age 37/45	15%	2%	13%	9%	12%	50%
Age 46/59	14%	2%	10%	9%	12%	53%
Age 60+	6%	1%	4%	11%	15%	64%

### *Actual allocations for existing AFOREs – with adjustment to domestic/foreign equity allocation*

	Domestic equity	Foreign equity	Alternatives	Securitized debt	Corporate debt	Government debt
Age 25/36	6%	13%	12%	9%	11%	49%
Age 37/45	6%	11%	13%	9%	12%	50%
Age 46/59	5%	10%	10%	9%	12%	53%
Age 60+	2%	4%	4%	11%	15%	64%

### *Actual allocations for existing AFOREs – adjusted by doubling return-seeking assets exposure*

	Domestic equity	Foreign equity	Alternatives	Securitized debt	Corporate debt	Government debt
Age 25/36	13%	26%	24%	9%	11%	18%
Age 37/45	11%	23%	25%	9%	12%	20%
Age 46/59	8%	15%	16%	9%	12%	40%
Age 60+	3%	6%	6%	11%	15%	59%

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Our objective is to raise awareness among the main stakeholders as to the implications of the market shift and look for opportunities to drive pension policy reforms. We have identified the most effective methodologies and drafted recommendations aimed at ensuring: 1) access by individuals to retirement solutions; 2) the sustainability of retirement systems; and 3) access by businesses and infrastructure to long-term capital.

The World Economic Forum would like to extend thanks to everyone who has taken time to support this project and report, and for your ongoing partnership.

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# Endnotes

- 1 In our first report, “We’ll Live to 100 – How Can We Afford It?”, we estimated that the shortfall in savings – the retirement savings gap – for Australia, Canada, China, India, Japan, the Netherlands, the UK and the US, which have some of the largest retirement savings markets or are some of the most populated nations, stands at \$70 trillion. If measures are not taken to increase overall levels of saving, we project that this gap will grow to \$400 trillion by 2050.
- 2 World Economic Forum (2017), “We’ll Live to 100 – How Can We Afford It?”
- 3 World Economic Forum (2018), “How We Can Save (for) Our Future”.
- 4 Balanced funds are multi-asset portfolios, but without the “glidepath” element of target-date funds. They tend to keep a relatively static allocation between return-seeking and defensive assets, with 60%/40% being a common split. Managed accounts are personalized portfolios overseen by advisory organizations, with bespoke allocations to return-seeking and defensive assets.
- 5 For example, an ending balance of \$200,000 relative to an ending salary of \$50,000 leads to a multiple of four.
- 6 Mercer’s capital-market assumptions have been used for the six developed markets, with simplifications to allow for a consistent comparison. China and India have been modelled using a set of generic capital-market assumptions for emerging markets (non-country-specific) developed by Mercer. Wage and inflation assumptions are dependent on whether developed- or emerging-market assumptions are being used.
- 7 NEST employs a less conventional strategy among target-date funds, with an initial “foundational” phase that includes a significant allocation to defensive assets while savers are relatively young. The glidepath then increases the allocation to return-seeking assets before de-risking again. Many other glidepaths, including in the US, start at their highest allocation to return-seeking assets and then consistently de-risk.
- 8 For example, preventing individuals from investing their entire savings in a single (risky) stock, or entirely in asset classes that are complex and ought to be included only as part of a broader, diversified portfolio.
- 9 For example, most target-date funds begin at their highest allocation to return-seeking assets and then lower the exposure over time. The UK-based NEST target-date funds, however, use a foundational phase at the very beginning, with exposure to return-seeking assets increasing for the first few years of savings, peaking – and then declining again – like a conventional target-date fund. The rationale behind this is to limit the market exposure of younger savers, who may be inclined to stop or reduce contributions or withdraw savings if experiencing significant capital losses very early on.
- 10 OECD, “OECD Survey of Investment Regulations of Pension Funds 2018”.
- 11 OECD (2002), “‘Prudent Person Rule’ Standard for the Investment of Pension Fund Assets”.
- 12 Current regulations in Mexico permit investment in illiquid asset classes.
- 13 Calculated using Mercer’s Global Risk Toolkit.
- 14 “Owned” by whomever is being evaluated based on their performance.
- 15 Guimaraes, Monk and Porter (2018), “Improving Investment Operations through Data Science: A Case Study of Innovation in Valuation”.
- 16 According to Vanguard’s “How America Saves 2018” report, the percentage of US DC plans that offer a “passive core” (at least four passively managed funds) has increased from 36% in 2008 to 61% in 2017.
- 17 The change from accumulation to decumulation may not necessarily coincide with a traditional retirement age as the concept of retirement continues to evolve. For example, many people may need, or want, to continue working (possibly part-time) when past a “normal” retirement age.
- 18 “Wells Fargo/Gallup Investor and Retirement Optimism Index”, 1–5 November 2017.
- 19 Thaler (1985), “Mental Accounting and Consumer Choice”.
- 20 JPMorgan Asset Management, “Three Retirement Spending Surprises”, January 2019.
- 21 Mercer (2018), “Healthy, Wealthy and Work-Wise: The New Imperatives for Financial Security”.
- 22 McKinsey Global Institute (2016), “Independent Work: Choice, Necessity and the Gig Economy”.
- 23 World Economic Forum (2017), “Case Studies in Retirement System Reform”.
- 24 Financial Conduct Authority (2017), “Retirement Outcomes Review Interim Report”.
- 25 Financial Conduct Authority (2014), “Post-Implementation Review of the Retail Distribution Review – Phase 1”.
- 26 For example, Choi, Laibson, Madrian and Metrick (2001), “For Better or For Worse: Default Effects and 401(k) Savings Behavior”; House of Commons Work and Pensions Committee, “Pension Freedoms. Ninth Report of Session 2017–19”.
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