

# PLAC Network Best Practices Series

## Guidelines for the Design and Implementation of the Payout Phase

Inter-American Development Bank

Labor Markets Division  
Social Sector

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## Guidelines for the Design and Implementation of the Payout Phase

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# PLACNetwork

NETWORK FOR PENSIONS IN  
LATIN AMERICA AND THE CARIBBEAN

Best Practices Series

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**GUIDELINES FOR THE DESIGN  
AND IMPLEMENTATION OF  
THE PAYOUT PHASE**

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# 1► Foreword

The Labor Markets Division of the Inter-American Development Bank (IDB) supports countries in Latin America and the Caribbean to build stronger pension systems by seeking to increase their coverage (support in old age to the vast majority of the population), sufficiency (a pension benefit that allows for a dignified life in old age) and sustainability (pension benefits financed in the present and in the future). To advance these objectives, the IDB created in 2015 the Network for Pensions in Latin America and the Caribbean (PLAC Network). The PLAC Network is a regional public good that serves as a platform for dialogue and learning among pension institutions and experts. It is one of the mechanisms through which the IDB supports the efforts of countries in the region to improve the institutional and technical capacity of their pension entities.

In this context, we are delighted to launch the second in a series of PLAC Network Best Practices Documents. These documents address main topics of interest and concern to pension policymakers in the region, chosen through consultation among all PLAC Network members. The work is led by an expert and guided by the PLAC Network team and is subject to several rounds of comments and contributions of all members of the Network. We also invite you to review the first document in the series, regarding *Pensions Supervision*.

This second document is entitled *Guidelines for the design and implementation of the payout phase*. The document delivers a practical set of guidelines to assist regulators and supervisors in designing and implementing legal, regulatory, and supervisory frameworks to integrate the pension payout phase into a comprehensive risk-assessment model. The guidelines aim to be consistent with other standards and guidelines wherever appropriate but tailored to the unique circumstances of the PLAC Network member countries. Such an approach was devised to ensure relevance across the board for all PLAC members.

This publication is the result of a successful collaborative effort between the PLAC Network team and all its member countries. The international expert William Price crafted the document under the guidance of Waldo Tapia, Mariano Bosch, Carolina Cabrita Felix, Manuel Garcia-Huitrón and Laura Karina Gutierrez from the IDB, followed by several rounds of technical exchanges with the member institutions. The document also received comments and suggestions by Edgar Robles as an external reviewer. Additionally, an early draft of this document was presented and discussed at the Second PLAC Network Annual Meeting, which took place in Montevideo on April 11th, 2019. This publication would not have been possible without the time commitment and insightful suggestions from the PLAC Network members. It is a publication for and co-created by them. Future topics in this series include best practices on parameter adjustment mechanisms for pension systems.

PLAC Network Team

Please direct **any comments or inquiries about this publication** to the PLAC Network team

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1. William Price, CEO of D3P Global, wrote this report with the guidance of the IDB Pension Team of Waldo Tapia, Mariano Bosch, Manuel García-Huítón, and the project leadership of Carolina Cabrita Felix and Laura Karina Gutierrez. Professor Edgar Robles conducted the external review.



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## 2► Executive Summary

**This report sets out guidelines for the design and implementation of the pension payout or decumulation phase (the guidelines are summarized in Box 1).** The report was produced for the Network for Pensions in Latin America and the Caribbean (PLAC Network), which was created by the Inter-American Development Bank (IDB) in 2015. It is the second set of guidelines for the Network – following Guidelines for the Supervisory Assessment of Pension Funds.

**This report delivers a practical set of guidelines to assist regulators and supervisors in designing and implementing legal, regulatory, and supervisory frameworks.** The aim is for the project to be informed by academic and policy work but to be a practical guide rather than a policy paper. The guidelines aim to be consistent with other standards and guidelines wherever appropriate but tailored to the unique circumstances of PLAC countries. The report was developed in collaboration between the IDB, the PLAC member countries, and an external expert.

**The material was created in six key stages mixing literature reviews, detailed discussions with PLAC members, a questionnaire, and a conference.** The first step was a review of existing academic and policy work, guidance from professional bodies and standards from regional and international organizations, and standard-setters. Discussions were held with PLAC members, the IDB, and the expert team, followed by a detailed questionnaire on the current institutional and market framework in the PLAC countries. A three-day conference and workshop was held on the payout phase in Uruguay. A first draft report was created, discussed, externally peer reviewed, and then revised and finalized after a further round of inputs.

**The member countries of the IDB network are diverse in overall development and pension systems, each with its own unique features. However, the guidelines can be used in all countries. Different options for different levels of development or between defined benefit (DB) or defined contribution (DC) pension plans are identified as needed.** For example, all countries are urged to set out clear objectives for the retirement income that pensions are designed to deliver. Targets should aim to tackle inequality by gender, region, or race. However, the level of income targeted will differ between countries. Likewise, all countries are urged to ensure the availability of simple and efficient retirement income products that provide protection against inflation and mortality risk, even if these products differ depending on the sophistication of the local capital market.

**There are 16 guidelines split into four main areas. These mirror the four main sections of the first PLAC Guidelines for the Supervisory Assessment of Pension Funds.** The alignment between the two sets of guidelines is deliberate to make the reports simpler to implement. A fundamental message in both is for regulators and supervisors to take a broad and holistic view of risks to their objectives and to integrate various challenges into a unified framework. The four main areas include the following:

- **Strategic approach and regulatory design**
- **Data, analysis, and risk assessment**
- **Supervisory actions to mitigate risks and improve the payout phase**
- **Resources and organization for effective supervision of the payout phase**



**A key message from the six guidelines in the section “strategic approach and regulatory design” is to set clear outcome-based targets to guide regulation and supervision. A pension system ultimately should be targeting income in retirement rather than delivering lump-sum payouts.** The clarity on what the system is trying to achieve helps to guide many of the choices that follow. The guidelines in this section then focus on how to tackle the risks members face and improve the products, process, and providers involved – noting that all direct providers should be regulated. The academic and policy literature has focused a great deal on products and, to a lesser extent, providers, although it is insufficient in showing how people choose or are allocated to pensions. However, if costs can be reduced and processes improved, pension payouts could be boosted by 10-20% without any increases in contributions<sup>i</sup>. The guidelines highlight the benefit of using multiple interventions to tackle aging since supervisors alone will not be sufficient. In an ideal world, the public and private pension markets would be well aligned, and this could lead to a simpler approach to private pension payouts in some cases<sup>ii</sup>.

**The central message from the three guidelines focused on “data, analysis, and risk assessment” is to integrate the payout phase into a comprehensive risk-assessment model. Supervisors need to collect, analyze, and publish data to identify and then take action to mitigate the risks.** The first PLAC Guidelines on Supervision have detailed information on how to build a robust supervisory framework. The payout phase should be integrated into such a framework – even for countries where pension supervisors share the responsibility with insurance supervisors. Some countries have a handover between the pension and insurance supervisors, but, ultimately, the pension supervisor needs to focus on whether the pension system is operating as expected. Suggestions are provided for how to improve supervisory coordination. Investigating and tackling risks in the products, processes, and providers require good data. For payouts, data on mortality are particularly important, and supervisors may need to take a proactive role to ensure it is collected and collated for the benefit of all concerned.

**There are four guidelines focused on “supervisory actions to mitigate risks and improve the payout phase.” Some apply to all pension types, and some are specific to DB plans.** They start with the importance of good (corporate) governance – echoing the first set of PLAC guidelines – and supporting the strategic guideline to create market structures in which only well-governed and regulated entities operate. One guideline focuses on the importance of prudent funding of DB promises – or solvency capital backing insurance company annuity products – and the potential benefits of risk-sharing DB plans.

**The final 3 guidelines cover the “resources and organization for effective supervision of the payout phase.”** The first of these highlights the need to understand and have resources for actuarial issues. This is for ongoing work with DB plans but also to help design regulations or marketplaces for DC payouts that can improve outcomes for members. The next guideline highlights the importance of supervisory IT capability (SupTech) given the importance of data collection, analysis, and risk targeting for risk mitigation. The final guideline focuses on the potential and risks from financial services technology (FinTech). The aim is for countries to embrace the opportunities created – particularly to expand pension coverage – but also to ensure that proper regulatory and supervisory protections are in place.

**The IDB looks forward to continuing working with the countries in the PLAC Network as they implement the guidelines.** The role of the IDB and the PLAC Network is to develop new approaches based on robust dialogue and the sharing of experiences and challenges in the various countries. This information flow and shared experience will be even more critical in the coming months and years as the guidelines are implemented and citizens of the countries begin to see the benefits in improved payout phases delivering better pensions.



## BOX 1 ■ GUIDELINES FOR THE DESIGN AND IMPLEMENTATION OF THE PAYOUT PHASE

### Strategic approach and regulatory design

1. Regulators and supervisors should create clear outcome-focused objectives to deliver retirement income until death, with targets for adequacy, efficiency, sustainability, coverage, and security.
2. Regulators should use multiple policies to help deliver income in old age, including (automatic) adjustments of retirement age as longevity increases; reducing withdrawals, early retirement, taxes or matching incentives that support retirement income products; increasing state pensions when people delay retirement; and boosting employment for older workers.
3. Regulators should ensure a simple, low-cost, and efficient payout system and actively consider default or mandatory products using auctions to facilitate efficient choices where they are offered.
4. Supervisors should ensure only regulated organizations that have (or can achieve) scale, expertise, and good governance are part of the payout value chain.
5. Default or mandatory solutions should have phased withdrawals linked to life expectancy as a minimum but ideally one of the following: phased withdrawals and a deferred annuity; variable noninsured annuities; or a life annuity from an insurer.
6. Supervisors should restrict access to assets in accumulation and payout phases until the core retirement income objective is met and prevent lump sums before retirement except for exceptional cases. If savings are needed for other purposes such as housing or education, separate accounts should be created.

### Data, analysis, and risk assessment

7. Supervisors should integrate risk assessment and mitigation of payout risks into their overall (risk-based) supervision model to make the right risk and resource trade-offs.
8. Supervisors should assess payout risks across all elements of the product, process, and providers – proactively sharing data, risk assessments and mitigations with insurance supervisors.
9. Supervisors should collect, improve, and publish data, including on mortality, to assess and mitigate risks to their objectives.

### Supervisory actions to mitigate risks and improve the payout phase

10. Supervisors must set out the governance for all entities involved in pension payouts, assess their performance, and take corrective action if needed.
11. Supervisors should ensure that investment regulations encourage alignment of the accumulation and payout phases, support capital market developments that better fund long-term retirement income, and allow a focus on ESG issues.
12. Supervisors should ensure employer-sponsored DB pensions and that insurance company-delivered annuity products are backed by prudent funding levels and/or regulatory capital. Risk sharing in DB plans should be encouraged.
13. Supervisors should address consumer protection with good overall design rather than rely on member making informed, active choices. Complimentary basic education and clear member messages help reach this objective.

### Resources and organization for effective supervision of the payout phase

14. Supervisors must understand actuarial concepts related to retirement income and employ or have access to actuarial inputs for regulatory design, data collection, and periodic risk assessment.
15. Supervisors should develop IT capacity (SupTech) for automatic data collection and analysis to enable retirement income projection as well as facilitate price monitoring, risk assessment, external publications, and monitoring of objectives.
16. Supervisors should explore how FinTech solutions can support simpler and safer access to better value products, ensuring they have the capacity to assess risks first rather than enable products they do not understand.



### 3► Introduction, scope, and coverage

**This report sets out 16 guidelines to improve the design and implementation of the payout phase.** The guidelines are contained in pages 17-67 – with around three pages per guidelines after an introduction and overview of the nature of the payout phase. It is the second set of best practice guidelines – following the Guidelines for the Supervisory Assessment of Pension Funds<sup>iii</sup>. It was developed through a combination of literature review, comparison of existing standards and guidelines, responses to a detailed questionnaire by members of the IDB’s PLAC Network, multiple discussions with countries in the network, a conference on the payout phase jointly hosted with the IDB, AIOS, and the Central Bank of Uruguay, and, finally, two rounds of discussions and external peer review on the report as it was drafted.

**The project aims to provide practical guidelines that can assist regulators and supervisors. They face difficult decisions on legislation, regulation, and supervision to help tackle the risks people face to deliver retirement income.** So, the report sets out the guidelines with explanations on how to implement them in different circumstances. This includes differences between DB and DC pensions, between countries with different levels of capital market development, and differences in institutional frameworks. While the work is informed by the academic and policy literature – and references to it are included throughout the paper – it is not intended to be a literature survey or an academic paper with new modeling or research<sup>iv</sup>.

**This report, and the guidelines, broadly focus on funded pension plans, not unfunded pay-as-you-go public pension plans or “social pensions” paid to people by virtue of age and income rather than contributions.** Precise dividing lines between different pension pillars are sometimes difficult to draw. Many of the guidelines would be useful for regulators and supervisors dealing with funded social security plans as well as the “typical” range of mandatory private plans (second pillars) and voluntary occupational or personal plans (third pillars). Good practice would be for any institution involved in delivering retirement income to be regulated and supervised, which is often not the case for public bodies delivering “first-pillar” pensions.

**Some words are used interchangeably to refer to broad categories of actors.** These cover the individuals who are members of the pension plans, entities running different parts of the pension value chain, and the bodies conducting the regulation and supervision. Individuals in pension plans are sometimes called affiliates, members, and account holders. These members will typically contribute their own money to the pensions, sometimes supplemented by employer contributions and sometimes by government contributions, taxes, or matching incentives. Entities delivering pensions perform tasks from enrolment, collection, and payments, through to administration, investment management, custody of the assets, and, finally, the payout of the pension to the member. Some countries have unified regulation and supervision where the “supervisor” can make rules with the power of secondary legislation. All countries have a Ministry of Finance or Labor or Central Bank responsible for the legislation.

**Some supervisors only have a narrow focus on core supervisory tasks but will often be the most knowledgeable body in the country and thus still have a key role to play in broader policy discussions.** Reflecting the diversity of the PLAC Network, the aim is to provide guidelines that some members can operationalize



immediately but that in other cases PLAC members may need to share with other institutions or include in their dialogue with government ministries.

**The 16 guidelines on the design and implementation of the payout phase are grouped under the same four headings as the PLAC Guidelines for Supervisory Assessment of Pensions Funds:**

- Strategic approach and regulatory design
- Data, analysis, and risk assessment
- Supervisory actions to mitigate risks and improve the payout phase
- Resources and organization for the effective supervision of the payout phase

**This alignment should make it simpler for PLAC members to understand and implement the new guidelines. It also highlights the importance of integrating the approach to a specific issue into the overall risk and supervision model.** As in the first set of guidelines, the 16 headline statements are designed for all regulators and supervisors to follow – hence, they use “should” or “must” statements. To reflect different country characteristics and institutional arrangements, the detailed text after each guideline highlights various ways to meet the objective. These statements use “can” and “may” to highlight the choices. Throughout the text, there are key references and a series of short examples in boxes of good or bad practice<sup>9</sup>.

**There is also the question of mandatory versus voluntary private pensions. In general, they are considered in a similar way.** There could be more flexibility on the use of voluntary assets if the person has sufficient retirement income from other sources. If people are being compelled to save in pension funds, it is obviously incumbent on the authorities to ensure high standards of governance and asset security. However, it is not clear that anyone saving in voluntary pensions would be happy with a low-security, low-governance approach, so this distinction should not be pushed very far.

**The project has developed tools to support the understanding and implementation of the guidelines.** The first is a spreadsheet comparing the PLAC guidelines on the payout phase with a range of other guidelines and reviews. These include work by the IDB, OECD, World Bank, International Organization of Pension Supervisors (IOPS), International Association of Insurance Supervisors (IAIS), CFA Institute, and the Mercer-Melbourne Global Retirement Index. The second is a comparison of the answers from each country to the questionnaire. The detailed questionnaire used for this exercise then provides a third tool because filling gaps can help set the agenda on data collection for the next few years. This will contribute to the growth of comparative data in the region that the PLAC Network and the IDB have been developing along with AIOS. As discussed below, several countries already have retirement income projection tools. Where countries do not, they should consider developing them since a key theme throughout the guidelines is the importance of income in retirement rather than asset accumulation at retirement. Tools and member communications that help people focus on income measures are hence important.

**The next section reviews payout phase risks and challenges before turning to the guidelines.** As highlighted above, it is not intended to be a review of the literature but an introduction to the key risks and issues that need to be addressed in order to improve the payout phase. The guidelines then aim to help supervisors take practical steps to meet these challenges.



## 4► The Nature of the Payout Phase

### 4.1► Risks

**The payout or decumulation phase is when any assets or entitlements accumulated by members to contribute to their pension are paid back to them.** The accumulation phase can be in DC plans where workers build up a stock of assets to which they are entitled or from DB plans where workers have accumulated rights to a payout – from a cash lump sum to a stream of income. The payout phase can be complicating to understand because it is affected by many risks and there are typically many different types of product, different processes to make choices, and sometimes many different types of providers.

**The delivery of income in retirement to savers is affected by many different risks. Perhaps the defining one is longevity risk: the fact that people do not know how long they will live and hence how many years of old age they need to finance.** The inherent uncertainty about when people will die is often exacerbated by a tendency for people to underestimate their average life expectancy. The questionnaire responses from the PLAC members confirmed the remarkable growth in average life expectancy in the past 40 years and the continued expectations for growth in the coming 40 years. As important, they highlighted the very large differences between life expectancy at birth and at 60 or 65 years of age. They also confirmed the large gap between the life expectancy of men and women in most countries, as well as the persistence of lower retirement ages for women than men, although this is changing.

**The increases in life expectancy have globally led to a need to reimagine old age and retirement as featuring both the third and fourth ages of life.** When the first major pension systems were created in Germany in the 19th century and in the UK in the early 20th century, they provided income to the relatively few people who would live beyond age 60 or 65. Reaching 60 or 65 is now the expectation, and life expectancy at 60 or 65 is in the 80s or even 90s. This creates the need for a “third and fourth” age of life. The third age is the “early” old age when mortality rates are still relatively low. The fourth age is the “traditional” retirement period, which a much smaller proportion of the population will reach. Hence, it resembles a traditional insurance problem where people need protection against the risk of reaching very old age as opposed to a saving strategy for the near certainty they will reach early old age. The implications of the third and fourth age in retirement have influenced these guidelines and are identified throughout.

**Unfortunately, there are many more risks than “only” longevity that affect the likelihood of a successful old age.** These include risks in relation to the accumulation phase such as salary; economic growth; asset returns; interest rates; inflation; unemployment; health; behavioral and regulatory; and legal. Risks in the decumulation phase are sometimes the same as for the accumulation phase and are sometimes new and include the following: asset returns, interest rates, inflation, conversion risk, longevity, behavioral and regulatory, and legal. Inflation risk is perhaps particularly important the longer people spend in retirement because if benefits or payouts are flat in nominal terms, the impact of inflation over 10 to 20 years can be very large.



**Some of the risks relate to the ability of the worker, the employer, and the government to make contributions. This obviously affects how much money there will be to secure income in retirement.** The level and growth in workers' salary obviously impact how much they will contribute in a DC system where contributions are a percentage of income. They typically affect contributions in a DB system but will also affect the creation of rights to retirement income and the cost of these rights – or liabilities to the pension fund. Likewise, the ability of employers and the government to fund any required contributions will impact the size of a pension fund or the funding level in a DB system.

**The level of contributions interacts with legal provisions for accrual of benefits.** There are very wide differences in the generosity (and hence sustainability) between benefit formulas in different countries in the PLAC Network – and within countries between different groups of workers. Typically, these risks are lower in the decumulation phase if there is no need for continued funding. However, for DB plans, a worker's retirement income may depend on continued contributions from employers or governments in both funded and pay-as-you-go systems.

**Another group of risks relate to the returns on the contributions made due to the investment strategy adopted and the capital market instruments available.** These risks exist in the accumulation and decumulation phase because assets remain invested in both cases. However, the nature and incidence of the risks change. For example, members with a DC pension plan would be exposed to investment risk during the accumulation phase, but if they buy an annuity from an insurance company, the insurance company now takes on the investment (and longevity) risk. The members take on regulatory risk – that is, the chance that poor regulation and practice by the insurer lead to a failure. If members need to convert assets into income, one risk is a large fall in asset prices just before retirement. Target date and life cycle funds aim to mitigate this by gradually moving into less volatile assets as retirement nears, but this can go too far and reduce returns on which the person will need to rely in future years. These and other issues are covered in more detail in Guideline 11.

**The report highlights that there are many (competing) approaches from investment managers and academics to the best investment strategy.** A key insight is that a typical investment approach that focuses on maximizing assets subject to a risk constraint may not be the best way to deliver a stream of retirement income to a saver. Rather, tools that borrow from the “asset-liability-management” approach used to manage DB funds can be taken into the individual DC world to help deliver what the saver really needs (i.e., income) rather than just a stock of assets that still need to be converted into income. With a stock of assets, members still face “conversion risk” where they do not have any certainty on income until they have converted their stock of assets into a stream of income; however, if they take the income from their assets, they are subject to repeated conversion or rollover risk as bonds reach maturity, and the member needs to reinvest.

**Throughout the guidelines, the level of development of the capital market or other areas is highlighted where important.** All PLAC countries can deliver some payout solutions. However, some will need further capital market development to access all options. One example is the existence of inflation-indexed bonds that support retirement income solutions that can exactly mitigate inflation risk (whether through individual preference or as often required by legal provisions). Another example is the importance of progressively extending the government yield curve to include bonds of 20, 30, or 40 years in order to help match the increasing time horizon of retirement income and reduce (re)investment risk.



**Inflation risk is particularly important for final pension payouts but can be understated if countries look too closely only at income at 65 or 70 rather than also at 75 or 80.** The “miracle” of compound interest that can help to accumulate assets in the first place works in reverse in relation to inflation risk in retirement. An income that might be sufficient at 65 can easily be cut in half or more in real terms over time at even modest rates of inflation. If countries do not have inflation linked bonds, it is still possible to broadly mitigate the risk of inflation by choosing an escalating stream of payments – for example, to grow by 3% a year to match a nominal bond return – to ensure a counterweight to the gradual but potentially significant impact of inflation.

**Finally, the payout phase is subject to regulatory, legal, and political risks.** For some countries, there are very strict conditions that make the payout phase even more demanding than usual – for example, constitutional provisions in Colombia and Uruguay that are discussed in more detail below. However, all countries face problems in the legal and regulatory environment and need to guard against damage from short-term political decisions. The UK government recently ended a requirement to take a retirement income and has allowed total access via lump sum. As described below, this has led to a rapid withdrawal of assets that has partially undone decades of patient asset accumulation.

## 4.2► Challenges and consequences of payout risks

**Exacerbating the risks for the payout phase are a range of human and institutional features that must also be addressed in the guidelines.** The first area is the range of behavioral and decision-making issues that people have with complex, long-duration problems<sup>vi</sup>. All the issues that exist in the accumulation phase in relation to the decision to join a pension, to contribute, and to understand the options are even more prevalent in the payout phase. The impact of inertia, reliance on rules of thumb (heuristics), the excessive influence of recent events, and loss aversion combine with profound gaps in all countries in financial literacy. Even if people do not have behavioral biases, they often will not understand the complex decisions and trade-offs on spending retirement assets or understand the choices offered by a DB fund.

**Guideline 16 on FinTech highlights how new technology can help to expand coverage to previously unreached groups.** This is important because informal labor markets are very prevalent in the PLAC member countries as identified in the questionnaire responses. This makes behavioral insights particularly important in motivating this uncovered group. In this regard, the work of the IDB Retirement Saving Laboratory is exciting and important<sup>vii</sup>.

**However, most issues rightly identified by behavioral economics research about how badly people deal with complex choices are only relevant if they have to make a choice.** An underappreciated benefit of DB pension design is that this systems typically do not require member choice other than contributing in either the accumulation or decumulation phase. Likewise, a DC accumulation phase does not require a choice for the decumulation phase – that itself is a design choice by regulators. It would be simple for the DC accumulation phase to be linked to a specific decumulation product such as a phased withdrawal followed by a deferred annuity. This would expose members to investment risk in the accumulation phase without guaranteeing the total assets or the income they would buy – hence, it would be DC. However, finally transferring the product into the deferred annuity would give the member a DB income. As discussed later in the document, there



are other choice-less pension products with risk sharing features – from conditional defined contribution through to noninsured life annuities (sometimes called tontines in the recent literature). The key point is that requiring choice is itself a choice by legislators and regulators. Mandatory requirements or default options remove the need for members to tackle the many behavioral biases academics and marketing professionals have documented and employed.

**Unfortunately, for many people, the “problem” of the payout phase is that they did not contribute to the accumulation phase or gain pension rights, so they have no assets or claims and hence no income.** This is a large group given the findings from the IDB SIMS database that only 53% of workers were contributing to a pension in 2015<sup>viii</sup>. Their old-age income will then depend on any noncontributory public assistance, working longer than they may want or being truly physically able, and relying on other sources of savings and any potential income if they are lucky enough to own a home and have a family. For far too many, the result is poverty in old age, particularly advanced old age<sup>ix</sup>. Hence, there has rightly been an increased focus on the role of noncontributory pensions in recent years as a key method to reduce old-age poverty<sup>x</sup>. Lump-sum payouts may seem the only option in the interim for people with small balances, but even here there are options to try and boost balances through improved incentives, as well as provide incentives to leave assets invested longer so that they can grow and provide more income. This could then be taken at a “minimum pension” level until the balance is exhausted and people (hopefully) then receive state support.

**Even where people are contributing to a pension, this can often translate poorly into coverage of those receiving, or predicted to receive, a pension.** This is a long-standing issue about the design of traditional DB pensions – with “vesting” periods that require workers to stay at the firm for five or even 10 years before any rights to a pension become a legal entitlement. This has a particularly adverse effect on gender equality if women have shorter employment periods due to breaks for having children. Workers who are mobile early in their career, whether jobs moves are voluntary or forced via redundancy, may also suffer. Several countries are seeking to tackle these issues, including Guyana, which has plans to introduce a new private pension law. In Guyana, DB plans registered within three years of the enactment of the new Private Pensions Act will be subject to a maximum vesting period of five years. DB plans registered after three years of enactment will have a maximum vesting period of two years. DB plans already registered under the Insurance Act 1998 will have a maximum vesting period of 10 years. DC plans will have a maximum vesting period of two years under the new Pensions Act for employer contributions.

**If workers can withdraw their pension assets, this will affect their future pension if they do not replace them.** Withdrawals are sometimes permitted when changing employers or leaving the country or for other purposes, whether for housing, education, or hardship. For these and other reasons, contributions do not translate simply into coverage of retirement income. If coverage of contributors is low to start with, the situation can be very serious. For example, in Colombia, only 20% of the population over 60 are expected to receive a pension. Improving basic or solidarity pensions is one part of the story, but so is improving the accumulation and payout phases of contributory private pensions, particularly for the informal sector<sup>xi</sup>.

**Another issue is the density of contributions – the issue that some workers may contribute 12 months a year, but many contribute far less.** This is a longstanding issue and flows from the nature of the labor market in many Latin American and Caribbean (LAC) countries. While beyond the scope of this report, improving the



labor market to improve pension outcomes is essential<sup>xii</sup>. However, in several countries, people with balances that are too low to deliver a meaningful income are allowed to take 100% of the assets as a lump sum<sup>xiii</sup>. This more or less guarantees that there will be no benefit to the person in old age<sup>xiv</sup>.

**There are then a set of issues in relation to the sustainability of pension promises from DB regimes.** The scope of these guidelines does not cover public pay-as-you-go pensions, although many of them would be relevant. The core focus is on funded or partially funded public or social security funds as well as private individual or occupational pensions – whether mandatory, auto-enrolment, or voluntary. In these DB plans, there is a key funding question: Does the pension fund have sufficient assets to meet the liabilities created by promises to pay the pensions? As highlighted in more detail later, this is an area where, unfortunately, the assets are not sufficient in many cases. In other cases, a pension fund may report that it is fully funded, but if it uses very optimistic assumptions on investment returns and life expectancy, in reality, it may be underfunded. In these cases, a supposed DB pension plan can fail to pay those benefits, with members only receiving a percentage of the promised benefits. So, funding policy and sustainability are critical elements of the payout for DB funds.

**It is important to remember that definitions of “defined contribution” and “defined benefit” can differ between countries.** There is a spectrum of plan types that share the risks identified at the start of this section in different ways between different groups. Some DB plans are in fact risk-sharing plans where workers will receive a promised benefit level, but whether it increases each year in relation to inflation depends on funding levels. In this case, the workers and the employer (typically) are sharing the investment risk. In some DC plans, there are investment guarantees that ensure workers are effectively promised a minimum balance at retirement; importantly, they are then exposed to annuity pricing risk and conversion risk if they try and turn those assets into an income. These blurred dividing lines can be useful as they create risk-sharing options that may be preferable to a pure DB or pure DC system.

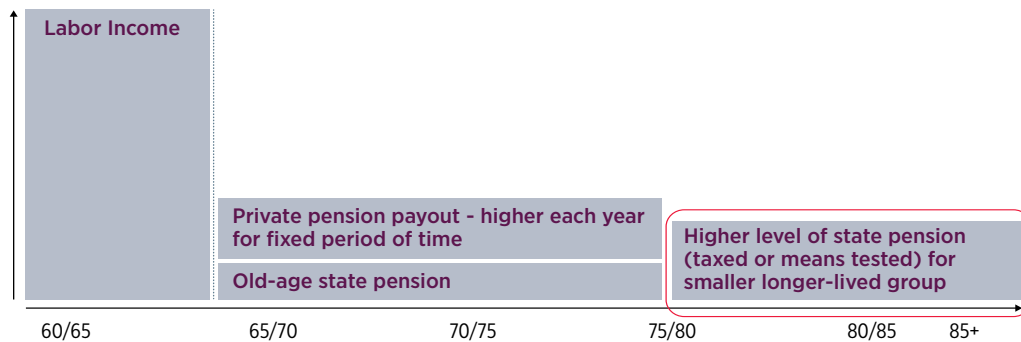
**Even if financial education was very strong, the terminology of the payout phase is often very complex and used in different ways in different countries.** Looking at annuities, in some countries- they are a product delivering income in retirement. In others, they are a product delivering a lump sum at retirement – almost the exact opposite. Much of the complexity can be avoided with good design (particularly for members), but it is essential for regulators and supervisors to understand the core mechanics of how to price an annuity so that they can have control of the agenda and not cede it to others. One additional problem is that reforming countries can be misdirected by some examples from existing annuity markets in large developed countries. These often had very different histories, objectives, and target groups. The fact that countries with deep and liquid capital markets with long duration and inflation-linked bonds can have poorly performing payout markets shows that good design and good capital market preconditions are both important to good outcomes.

**The consequence of not fixing these issues is either greater fiscal burdens on the public sector, working longer, saving more, or having less money – either leading to absolute or relative poverty or, at best, “only” a significant fall in living standards in old age.** Sustainability issues that are not tackled can lead to severe cuts during economic crises – seen, for example, in Greece, where pensioners faced cuts of 40%. Employer plans that were unregulated or underregulated can have funding shortfalls which means that members face very large pension cuts. Excessive access or lump-sum payments can see even significant assets depleted, so people may have enough income initially but face poverty if they live for a long time.



**The concept of the third and fourth ages of pensions can be used to provide a potentially powerful but relatively simple solution through better integration of public and private pensions.** The almost universal approach to public pensions is to pay them from a given retirement age at the same level for everyone (though sometimes with a means test) and then increase them all by the same amount each year. This means that someone at say 65 or 70 who may well have some savings, or some continuing income, will often be paid the same as someone who is 75, 80, or indeed 90 with no savings and no chance of working. One option is for state pensions to start at a lower rate for people between say 65 and 75 and then rise significantly at older ages. This could be revenue neutral because the numbers reaching 75 or 80+ are lower than those who reach 65-75. This change could be regressive because the rich tend to live longer. Tax policy and means testing can be used to counteract this tendency, although these do have implementation costs. The added benefit of such an approach would mean that private savings could be focused on a specific and limited period – for example, between 65 and 75. Filling a 10-year gap is both technically and financially simpler than trying to convert assets into a lifetime income<sup>xv</sup>. However, in the absence of such changes, the priority for private and funded pensions is to provide an income in old age and ideally until death.

FIGURE 1 ■ HOW HIGHER PUBLIC PENSIONS IN THE FOURTH AGE COULD SIMPLIFY PENSIONS



Source: Price (2017).



## 4.3 ► Products, processes, and providers

As this introduction has highlighted, tackling the profound risks posed by the payout phase can be daunting. However, ultimately, it requires taking decisions about real or tangible things such as the products people can use, the process of turning assets into income, and the providers involved. Table 1 below shows how three of the key retirement risks (longevity, investment, and inflation) are dealt with (or not) by different payout products. To aid in the navigation of the document, products, processes, and providers can be defined as follows:

- **Products:** When people have accumulated savings, and they reach the legal age at which they can access their savings, they are sometimes allowed to take all the money at once (known as a lump sum), they can take regular payments until the money is gone (known as phased or programmed withdrawal), or they can buy a product that provides a guaranteed income (typically known as an annuity). Sometimes they can take a combination of these options. There can be many different types of annuity. Fixed or period-certain annuities pay out only for a fixed number of years (say 10 or 15 years). An annuity that will make payments until someone dies is typically known as a “life annuity.” Annuities can provide payouts fixed in nominal or real terms, with payments that increase by a given percentage each year or that are variable, so that future payouts can change depending on investment outcomes and mortality developments. Annuities always require an understanding of mortality and discount rates and can be technically challenging<sup>xvi</sup>. Noninsured annuities do not need an insurance company with capital to back them as the mortality risk is shared among a group that is pooling mortality risk. The group could also pool investment risk or have each individual bear the investment risk in his or her own individual account. This option is currently used in a number of countries, including in Sweden’s mandatory DC pillar. The area is receiving increased academic and policy interest – sometimes under the name “tontines.”
- **Process:** How members transition from accumulation to payout varies greatly between pension plans and countries. The simplest is a worker in a DB plan who reaches retirement age and receives the eligible income until he or she dies – sometimes with provision for surviving spouses and dependents. No choice is needed, and the design of the pension implies the payout phase. Most plans, including some DB plans, are not so simple. Members may have to make choices between different payout options and sometimes between providers. There can be “default” products or a full and free choice between a 100% lump-sum payout through to a phased withdrawal through to an annuity – assuming annuities are available in the country. Choices are sometimes constrained or mediated through auctions or comparison platforms. Members sometimes receive financial advice, either “free” from the government or plan provider or remunerated by commission where the adviser is paid depending on the product chosen.
- **Providers:** The payout phase can be delivered by the pension fund used for accumulating assets or by insurance companies. In countries with DB funds, the pension fund (potentially backed by an employer) may be responsible for paying a guaranteed pension, or it could choose to use an insurer. In the case of phased withdrawals, a pension fund managing the accumulation phase can cover the decumulation since there are no fixed liabilities created that need to be backed by capital (however, read on to learn more about Colombia’s experience). Some countries allow only a limited number of players into the payout



market even if many more insurance companies exist. In some countries, a state or not-for-profit entity is responsible for paying out the pensions. The public pensions and private pensions are sometimes closely coordinated in terms of payments levels and processes or sometimes separate.

TABLE 1 ■ DIFFERENT PAYOUT PRODUCTS TACKLE DIFFERENT RETIREMENT INCOME RISKS

RETIREMENT PRODUCT	PROTECTION OFFERED			BENEFITS PROVIDED	
	Longevity risk	Investment risk	Inflation risk	Bequest	Liquidity
Fixed real-life annuities	Yes	Yes	Yes	Limited	No
Fixed nominal life annuities	Yes	Yes	No	Limited	No
Escalating real life annuities	Yes	Yes	Yes Plus	Limited	No
Escalating nominal life annuities	Yes	Yes	Partial	Limited	No
Variable life annuities, guaranteed benefits	Yes	Yes	Possible	Limited	No
Variable life annuities, bonus payments	Shared	Shared	Shared	Limited	No
Variable life annuities, unit linked	Shared	No	No	Limited	No
Phased withdrawals	No	No	Possible	Yes	Possible
Lump sum	No	Possible	Possible	Yes	Yes
Self-annuitization	No	Possible	Possible	Yes	Yes

Source: Rocha et al. "Annuities and Other Retirement Products," 2011.

Following this introduction to the nature and challenges of the payout phase, the rest of the report sets out the details of the guidelines. Each section starts with a high-level summary of the guidelines in that section and is then followed by the guidelines themselves. A brief discussion and examples follow each guideline, with the leading examples included in boxes to aid in the flow of the discussion.



## 5► Guidelines on Design and Implementation of the Payout Phase

### 5.1► Part One: Strategic approach and regulatory design

**Summary:** A key message from the 6 guidelines in the “strategic approach and regulatory design” section is to set clear outcome-based targets to guide regulation and supervision, noting that a pension system ultimately should be targeting income in retirement rather than delivering lump-sum payouts. Clarity on what the system is trying to achieve – including the need to tackle inequality (e.g. in gender) – helps to guide many of the choices that follow. The guidelines in this section then focus on how to tackle the risks members face and improve the nature of the products, process, and providers that are involved in the payout phase – noting that all providers should be regulated. The academic and policy literature has focused a great deal on products and to a lesser extent on providers, but insufficiently on how people choose or are allocated to pension payouts. If costs can be reduced and processes improved, payouts could be boosted by 10-20% without any increases in contributions. The guidelines highlight the benefit of using multiple interventions to deal with the challenges of aging since supervisors alone cannot solve all problems. Ideally, the public and private pension markets would be well aligned, and this could lead to simpler private pension payouts in some cases.

#### 5.1.1► Regulators and supervisors should create clear outcome-focused objectives to deliver retirement income until death, with targets for adequacy, efficiency, sustainability, coverage, and security.

**The first guideline is for regulatory and supervisory agencies to develop clear, outcome-focused objectives to guide their actions.** This may seem obvious, but many authorities are guided by broad legal duties that are translated into sensible overarching principles but remain silent on what the system is aiming for in terms of coverage or income level, for example. Conducting this exercise forces the supervisor to take an integrated view of the accumulation and decumulation phase. This is because final pension outcomes for members cannot be determined without being clear about what actually happens to them and their accumulated assets in the payout phase. It also clarifies what different parts of the pension system can and should deliver. For example, the private-funded pensions that are the main focus of these guidelines will be unable to deliver retirement income for 100% of the old. Hence, public, noncontributory, income support, or minimum pension guarantees are required if everyone is to be covered<sup>xvii</sup>. Guideline 1 can be implemented at all levels of development (though with different outcomes being targeted) and is necessary for countries with DC or DB plans or both. Many countries and authorities have undertaken this kind of exercise, with some having the metrics as public targets and some using them internally to guide strategy.



There are different ways to specify the desired outcomes, but a focus on coverage, adequacy, sustainability, efficiency, and security<sup>xviii</sup> was advocated in the work on outcomes based assessments<sup>xix</sup> – and provides the key objectives in the latest OECD Core Principles for Private Pensions Regulation.<sup>xx</sup> They were also highlighted in the first PLAC Guidelines on Supervision. Clear outcomes should also be a critical first step in developing a (risk-based) supervisory framework because its resources should be focused on the risks to achieving the outcomes.<sup>xxi</sup> The following are key outcomes for which measures of success should be specified:

- **Coverage** – the percentage of the working-age making contributions – by gender and the percentage of those 65 and 80 who are or are projected to be receiving pensions;
- **Adequacy** – the level of income people will be receiving in absolute terms and relative to poverty measures and average earnings – again by gender and at age 65 and 80. In many systems, there may be reasonable numbers at age 65, but in the current policies, income levels at 80 from private pensions may be tiny or nonexistent;
- **Efficiency** – costs as a percentage of assets under management and real net of fee investment returns in both the accumulation and the payout phase – supplemented by the costs of buying an annuity and the value of the annuity relative to “fair” value as calculated by the money’s worth ratio (see below for more detail).
- **Sustainability** – principally relating to funding levels for DB pension plans or capital adequacy for insurers backing annuity products. Regulators should also consider political sustainability if likely coverage and adequacy of pensions are low – or there are stark inter-generational differences – for example, as in the pre- (DB) and post- (DC) transition generation in Mexico.
- **Security** – relating to asset security so that contributions made now will be there in decades to come, but also relating to the exposure of assets to large investment shocks close to retirement and the overall quality of the supervisory regimes as measured by adherence to international standards.

**This clarity on objectives is particularly important for the payout phase because it is so fundamental to specify what the system is trying to achieve.** The dissonance between the assumption that pension contributions are designed to deliver income in old age and policies and approaches that fail to translate retirement assets into income can be very stark. Indeed, given the number of countries that permit lump sums, early access, and other withdrawals, it could be considered that the implicit objective for many pension pillars is to deliver assets at age 55 or 60 to be used rapidly rather than income in old age. If the regulator and supervisor aim to deliver income in old age, then the framework adopted must work back from this objective and make changes to make it more likely to happen.

**Clarity on the purpose of the pension pillar is also important to help guide decisions, particularly in relation to the aims of the public pension pillar.** It used to be argued in Australia that a 100% lump sum from private pensions was not a problem because of the generous levels of the public old-age pension. However, the government-sponsored Murray Review rejected that argument<sup>xxii</sup> in 2014, sparking a debate on developing sensible default retirement income products to be determined by the superannuation funds that run the pension accumulation phase (see Box 5). In other countries with very generous public or first pillar pensions, including a number in LAC, it could be argued that private pensions are a useful top-up. For some this may



be accurate, but it is predicated on the public pension pillar being sustainable. For many (and perhaps most) countries that are almost completely reliant on public DB pillars, this is not the case<sup>xxiii</sup>. Indeed, this is the argument behind the EU's 2012 White Paper on Aging that highlights that countries with a reliance on public-only pension provision should diversify their systems with private pensions (but not replace their public pensions completely). Therefore, a generous public DB plus a private pension taken as a lump-sum combination no longer seems viable.

**A critical part of the outcomes exercise is to benchmark the country relative to the outcomes it has chosen.**<sup>xxiv</sup> This helps set the timeline and agenda for action – whether in relation to outcomes (e.g., on relative poverty for a particular group, on average expected retirement income or for costs) or net of fee returns relative to international comparators. The exercise will also identify gaps in data (as did the questionnaire for this project). Progressively filling the gaps can help set the agenda on data, analysis, and risk assessment for a supervisor over the next few years. Closing gaps in outcomes may be a multi-year, even multi-decade exercise.

TABLE 2 ■ **EXAMPLES OF OUTCOME INDICATORS RELEVANT TO THE PAYOUT PHASE**

OUTCOME	POTENTIAL INDICATORS FOR THE PAYOUT PHASE
<b>EFFICIENCY</b>	<ul style="list-style-type: none"> <li>• Net of fee returns for phased withdrawals</li> <li>• One-off and ongoing costs of the payout product</li> <li>• Employment rates for older workers</li> </ul>
<b>COVERAGE</b>	<ul style="list-style-type: none"> <li>• Coverage of people contributing to a pension</li> <li>• Coverage of people receiving a pension (at 65/retirement age and 80)</li> <li>• Gender gap in coverage of pension contributions and receipt</li> <li>• Density of contributions by age and gender</li> </ul>
<b>ADEQUACY</b>	<ul style="list-style-type: none"> <li>• Initial income at (early) retirement vs. income when 80 or 85</li> <li>• Gender differences in income level</li> <li>• Income from public and private pensions compared to poverty and average earnings</li> </ul>
<b>SUSTAINABILITY</b>	<ul style="list-style-type: none"> <li>• Capital adequacy / solvency of insurance providers</li> <li>• Funding levels for Defined Benefit Pensions</li> <li>• Rate of change of longevity for men and women</li> <li>• Expected years of employment relative to expected retirement years</li> </ul>
<b>SECURITY</b>	<ul style="list-style-type: none"> <li>• Number of international standards (incl. PLAC guidelines) fully met</li> <li>• % of Occupational DB assets legally separated from employer</li> <li>• % Governing boards meeting good governance requirements</li> </ul>

Source: Author - William Price.

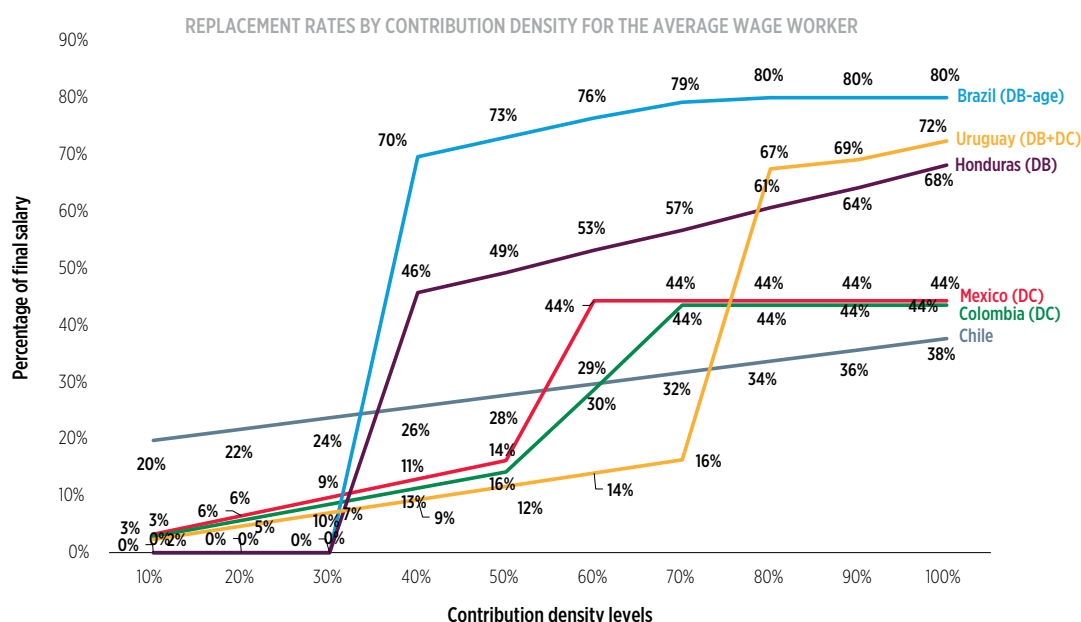
**Taking income adequacy for example, no single measure is always appropriate – but a combination of absolute and relative measures is likely the best approach.** The International Labour Organization (ILO) identifies a minimum replacement rate of 40% of previous earnings in ILO Convention No. 102 on minimum standards in social security. Many financial planners in the investment industry would identify a figure in the range of 50% to 70% as a sensible target for total replacement income for most workers. For people who are lifetime poor and receiving non-contributory pensions or other forms of income support, these are likely to



replace 90% or more of their “working” income because the old-age poverty avoidance policy has replaced the policy that operated during their “working” lives.

**It is important to consider income adequacy outcomes for various groups of workers because wide inequalities often exist in expected replacement rates across countries and income levels.** Figure 2 shows results from IDB modelling of replacement rates in various countries relative to the “density of contributions” – how many months a year or years in a working life – a person contributes. The figure shows a very wide divergence across countries based on modelling that assumes workers start contributing at age 20 and then retire at the normal legal retirement age but with different contribution densities. Regulators and supervisors need to determine whether the system is designed to deliver these good outcomes or whether changes are needed to ensure a better overall picture. The outcome of this discussion will then determine goals that policy and supervisory actions should aim to achieve. This approach can be taken for each outcome in turn; detailed indicators to support this analysis are provided in Price, Ashcroft and Hafeman (2016), the IDB PLAC Database, the OECD Global Pension Statistics or the metrics used in the Melbourne Mercer annual pension index.

FIGURE 2 ■ REPLACEMENT RATE BY CONTRIBUTION DENSITY FOR WORKER ON AVERAGE SALARY – SELECTED PLAC MEMBERS AND PENSION PLANS



Source: Altamirano, Berstein, Bosch, García, and Oliveri (2018).



**5.1.2 ► Regulators should use multiple policies to help deliver income in old age, including (automatic) adjustments of retirement age as longevity increases, reducing early withdrawals or early retirement, tax and matching incentives that support retirement income products, increasing state pensions when people delay retirement, and boosting employment for older workers.**

**The second major strategic recommendation is for regulators and supervisors to use multiple tools to improve the payout phase.** The scale of the problems facing countries is so large that no single measure will be sufficient. Some supervisors may argue that this is the job of the regulator and/or the Government ministries, which is certainly also true. However, when poor outcomes are delivered by a pension system, part of the failure will ultimately be attributed to the pension supervisor. Guideline 2 is relevant for countries at all levels of development, but the policy mix will be different. For example, the size of incentives to encourage saving in private pensions or resources for boosting the employability of older workers may differ between higher and lower income countries. The recommendation is equally relevant for countries that have DC and DB plans. A key issue for the incentive to contribute will be fairness between workers contributing to DC and DB systems, given that many DB systems have substantial implicit subsidies embedded.

**Increasing retirement ages is an inevitable response to growing longevity to balance years of working and contributing with years of retirement. However, increases must be fair.** The rich tend to live longer than the poor. Therefore, if retirement ages are increased uniformly, then it creates a risk of a regressive transfer from the poor to the rich. This can be offset if taxation or benefit accrual formulas are progressive. Another option is to ensure that retirement ages are linked to years of contributions, so that people who start work when they are relatively young do not have to wait until the same age as someone who only started contributing after tertiary education. Clearly, retirement ages are often in primary legislation, so regulators and supervisors may not be able to make changes directly. However, they need dialogue with the ministry that controls the legislation.

**Guideline 2 also includes the potential for a revenue-neutral policy for public pensions to help individuals mitigate risks in the payout phase. It is based on the importance of thinking clearly about the third and fourth age of pensions.** The biggest risk for affiliates is to outlive their assets or for their income in old age to be too low relative to their needs when they have no savings or ability to work. In the US, UK, Canada and other countries it is possible to delay taking the public pension and receive an actuarially fair increase in the future pension for life. In the US, if a worker delays taking their public pension from 62 (the earliest possible age) to 70, then they will receive a pension that is 75% higher until they die.<sup>xxv</sup> Clearly, this is not possible for everyone. However, someone with low savings who can still work or can fill the income gap to age 70 is effectively able to increase the level of life annuity income without needing to navigate the private annuity markets. In the UK, each year that a person delays taking their pension leads to an increase of 5.8%. Therefore, a similar 8-year deferral to the US would increase the annual pension level permanently by 57%.<sup>xxvi</sup> Clearly, the worker losses out on the pension for the years they defer, but as a way to boost the level of income that is guaranteed until death, it is an extremely effective method.<sup>xxvii</sup> Combined with the idea highlighted above for state pensions to be much higher at older ages such as 75 and 80 compared to 65 and 70, this shows how a better alignment of



state and private pensions could simplify the retirement income problem. It reduces the need for the private sector to provide annuities in cases where they were expensive or poorly delivered for any reason.

**Using a mix of policies means each individual change can be smaller, which may make them more politically acceptable.** If a government – with active support and technical advice from the regulator – has started to increase retirement ages gradually as longevity increases, then workers will need to use scarce resources for fewer years. If government tax or matching incentives are directed to rewarding people who opt for retirement income products, then the government can focus more resources on these options rather than give blanket tax relief to all payouts at retirement. If the state pension can be increased because a worker delays retirement, then workers can aim to boost total income by small changes in decisions at the end of their working lives. Taking a small slice of improvement from each option can significantly reduce the burden on any one policy. A final element here is the role of the family. The typically stronger family structures in the LAC region compared to Western nuclear families may be breaking down over time, but risk and resource sharing across families is a potentially compelling way to improve welfare and should be nurtured. In some families, grandparents may support other members, and in other families the flows will go in the opposite direction, so the family as a unit can be vital for child or old age poverty depending on the specific circumstances.

**In some cases, the legislative framework creates significant challenges to delivering good pension outcomes.** A trade-off always exists between adequacy, coverage, and sustainability – although it that can be mitigated by improving the efficiency of the system. In nearly all cases, pension systems are very complex. In some cases, legal or constitutional provisions on pensions can cause significant difficulties and are more challenging to change. One notable example is Colombia, where the law requires that any person making the minimum required pension contributions receive a pension equal to the minimum wage (see Annex E for more detail). Uruguay has constitutional requirements to pay annual increases equal to wage inflation for which matching assets were not readily available. Box 12 shows how they have taken an innovative approach with the creation of new capital market instruments to tackle the challenge. Costa Rica's partially funded social security pillar – CCSS – was reformed by the 1949 Constitution, which gives it added power and a specific status. This makes the job of its regulator, SUPEN, challenging. The CCSS did not plan its future finances well, so now it faces significant funding challenges. However, it is far preferable that such funded or partially funded social security institutions have independent regulation and supervision.



### 5.1.3 ► Regulators should ensure a simple, low-cost, and efficient payout system and actively consider default or mandatory products, using auctions to facilitate efficient choices where offered.

**A vast body of literature discusses pensions and the payout phase, in addition to many very useful reviews by international organizations. However, perhaps the most significant gap in the literature relates to the “how” of providing pensions or payouts.** Of course, notable exceptions exist in the policy literature<sup>xxviii xxix</sup> and some very important examples of changes that have dramatically improved how pension payouts are delivered. Key examples from the LAC region are the auction process in Chile, known as SCOMP, and a lesser-known but still interesting auction example found in Mexico known as SAOR (see Box 3). Many of the examples and policies are equally applicable to all countries at any stage of development since an auction mechanism can be established without significant technical requirements. However, elements that rely on sophisticated capital market instruments also rely on a country having a more developed market. The benefits of a simple, low cost, and efficient structure apply equally to DB and DC systems. However, DC systems typically have fewer integrated accumulation and decumulation phases and hence place greater requirements on members to make choices. The ways auctions and enhanced competition can help DC and DB may be different in certain circumstances. Pension markets struggle to meet the standard model of competition with informed consumers reacting to price signals in repeated encounters with suppliers. That is not to say competition is unimportant, but that other interventions need to be explored – and all judged on their impact on long-run outcomes and the balance between costs and benefits.

**Regulators and supervisors should review a current (or a proposed) approach and ask if it is simple, low-cost, and efficient.**<sup>xxx</sup> In many cases, they will find the system is too complicated to understand for members, advisers, and providers, as well as time-consuming to navigate and expensive in terms of time and fees. Others will lack the data to evaluate the position. As with the design of pension systems in general, the starting point should be the fact that pension systems with broad coverage do not emerge spontaneously. They are always created by public policy action and there is no “natural” market structure. The insurance company model of vertically integrated institutions using sales agents to drive enrollment is only one example. However, it creates very significant problems in the payout phase due to the proliferation of products and providers and a process that often relies on workers who lack sufficient knowledge being tasked with taking irrevocable decisions that even finance professors may find challenging. Box 2 shows how auctions in the accumulation phase in Peru have led to a significant reduction in fees. Box 3 reviews the evidence from Chile and its SCOMP system of auctions to illustrate the potential benefits of more efficient delivery.

**The benefits of the simple, low cost and efficient approach and the power of default options have been repeatedly demonstrated. Recent examples include auto-enrollment in New Zealand, the UK and Turkey that has added millions of new regular savers.** In these cases, low-cost delivery is combined with default options, which should be replicated in the payout phase. The policy successes are based on the behavioral finance literature correctly identifying that people lack the skills and confidence to make decisions with long-run payoffs that require action today.<sup>xxxi</sup> Moreover, each exercise in auto-enrollment created lower cost provision. In the UK, this was through the creation of NEST as a backstop provider limited to fees of 0.5% of AUM a year plus a 0.75% cap on fees for default investment funds from all other providers. Default funds tend to be target



date or life cycle funds and require higher governance standards. In New Zealand, reforms included the creation of nine default funds. Turkey made structural changes, improved investment regulations and placed a charge cap that cut costs by 50% relative to the pre-existing individual voluntary plans. What ultimately matters is net of fee returns, but cost control is vital to improve this metric if additional costs do not enhance returns<sup>xxxii</sup> (e.g., because costs are for sales and marketing and do not impact investment returns).

**The same potential for member benefit also exists in the payout phase.** The potential benefits may be higher given that any annuity product choice is typically a one-off choice with a fixed up-front fee and no ability to switch provider in the future if they deliver poor service (noting that the ability to switch in the accumulation phase is not necessarily a key driver of good outcomes).<sup>xxxiii</sup> Moreover, workers find the choices difficult to understand and have a natural desire for income or cash now rather than postponing it for later – the precise barrier that default mechanisms have overcome in the accumulation phase.

## BOX 2 ■ IMPACT OF AUCTIONS ON FEES IN PERU'S PRIVATE PENSION SYSTEM

Peru introduced an auction mechanism in 2012 to reduce costs and charges in the accumulation phase, which has led to significant price reductions. As the table shows, over four rounds of auctions since 2012, charges for the lowest bid have fallen significantly for both types of charges. A change has occurred in winning providers as bidders react to the competitive pressure typically absent when members are making decisions individually.

	WINNING FEES PER AUCTION			
	Bidding winner			
	First	Second	Third	Fourth
Remuneration	0.47	0.38	0.18	0.00
Managed balance	1.25	1.25	1.25	0.82
Winner AFP	Habitat	Habitat	Prima	Integra

Source: Author. Table: SBS, Peru.



### BOX 3 ■ CHILE AND THE USE OF THE SCOMP AUCTION TO IMPROVE PAYOUT CHOICES

In 2004, a new approach to the choice of payout phase product was introduced in Chile due to problems of high fees, poorly informed consumers, and poor value pricing from providers. The law introduced a mandatory electronic quotation system, Sistema de Consultas y Ofertas de Montos de Pensión (SCOMP), an online market place reached at [www.scomp.cl](http://www.scomp.cl).

The system is mandatory for individuals who want to choose either an annuity or phased withdrawal, but users must be able to finance a pension above the Basic Solidarity Pension. In 2017, this applied to 32% of new pensioners. The annuity products by law must cover spouses and dependents in the case of death of the annuitant and are provided by life insurance companies; as of December 2018, 18 companies had outstanding annuity business. In the initial stages, users enter their demographic details and receive offers from companies automatically through the platform – receiving an Offer Certificate with details. They can then go directly to an insurance company, but that company must offer a better price than the one that they gave via SCOMP. The mandatory requirement to take an annuity or phased withdrawal has made Chile one of the world's largest annuity markets. As of August 2018, more than 600,000 annuities were in payment, representing almost 46% of total pensions in payment in that month. In the past five years, of the new pensioners eligible for an annuity or programmed withdrawal, 75% chose the programmed withdrawal and 25% chose an annuity. The system has been credited with many benefits, the most significant being the reduction in fees and the improvement in the annual payments received. Fees are now around 1.7% for an annuity and 0.7-1% for a phased withdrawal. One study found that *“after controlling for other regulatory changes and the main determinants of annuity rates, the new quotation system raised annuity payments by 15 percent”* (Morales and Larrain, 2017).

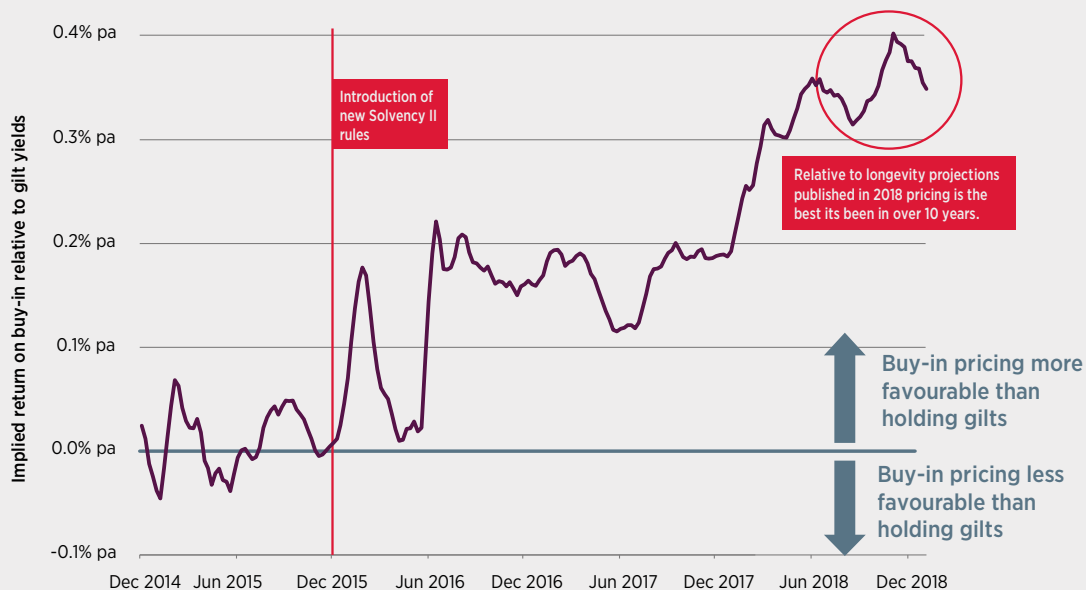
The SAOR (Sistema Administrador de Ofertas y Resoluciones) system in Mexico has similar features to SCOMP at one level (i.e., to create clear and transparent pricing between the different annuity providers to improve competition and pricing). The DC system in Mexico is still not mature, so there is less data or ability to see if SCOMP-like results have emerged.

**The examples given so far have been from DC systems. Auctions and bulk purchasing can also be effective in DB pensions in the payout stage.** Box 4 highlights a UK example where employer-sponsored pension funds can now buyout their pension liabilities with a range of providers. The pension fund can explore the options for buyout whilst still delivering pension payments as they have done in the past from within the pension fund. However, with prior preparation of data and quotes from various providers, they can then take advantage of favorable market pricing to buyout liabilities of some or all groups of pensioners.



#### BOX 4 ■ UK – THE POTENTIAL ROLE OF BULK BUYOUTS TO IMPROVE PENSION PRICING

The development of the bulk buyout market, originally in the UK but also seen in the US, is an example of an improved market structure. In this example, new providers have entered the market to buy DB pension liabilities of large pension funds in bulk. These could be public or private. The benefit of the model is that the pension plan can continue making the payments, but if market conditions change to make it advantageous to sell the liabilities to an insurer, then they may be able to save significant amounts of money and/or time and effort. The key issue is that pension plans, or individuals, do not have to be a price taker when they happen to retire. They can have a default to pay the pensions from within the pension plan and only transact if the situation is advantageous to them. As highlighted in Guidelines 16 on FinTech, in June 2019 one provider started to use blockchain or distributed ledger technology to conduct buyout transactions with its reinsurance arm who is taking the insurance risk.



Source: LCP analysis.

Note: Gilts are the interest rates paid on British government bonds.



### 5.1.4 ► Supervisors should ensure only regulated organizations that have (or can achieve) scale, expertise, and good governance are part of a simple, low-cost payout value chain.

**The importance of good governance was a key element of the first PLAC Guidelines for the Supervisory Assessment of Pension Funds.**<sup>xxxiv</sup> It is based on a combination of regulatory experience, the evidence on how governance can increase long-run investment returns, and the benefits of a high-quality board for an organization. The importance of governance and the ability to achieve scale and expertise is relevant in all countries at all levels of development, but it is more challenging to achieve scale in smaller countries. That said, Kosovo – a country of 2 million inhabitants – has achieved impressive efficiencies in its funded social security plan, which operates on total costs of only 0.5% a year. Expertise levels may differ at various development levels, so not all options are available to all countries.

**Setting clear standards for governance and expertise that support Guideline 4 is relatively common in many jurisdictions.**<sup>xxxv</sup> The standards cover typical core or threshold requirements that the members of a governing board are “fit and proper.” However, they are also much broader and cover issues such as fiduciary duty to act in the best interests of members, approaches to developing and implementing strategy, and dealing with persistent issues such as conflicts of interest. Expertise requirements of course relate to the specific nature of the pension fund, so the board of directors of a DB fund would need access to actuarial expertise, whereas a DC fund might not. Not all members of a board are necessarily expected to have broad expertise in all areas, but the board collectively must have the necessary expertise to do a good job.

**The impact of scale is profoundly important in the pension sector, where economies of scale in investment management and administration are very large.**<sup>xxxvi</sup> Estimates differ but a fund size of US\$2bn to \$20bn would still gain economies of scale. Even the lower end of this range is clearly much larger than many pension funds or even countries in the PLAC network are able to sustain. However, the direction of travel is clear: promote consolidation, leading to larger and better run funds. There are gains from increasing scale whatever the starting level.

**The combined impact of scale, expertise and governance has a critical effect on the performance of a pension fund, which contributes to improving member outcomes.** A detailed examination of the Canadian pension model using robust internationally benchmarked data identified very large outperformance relative to other funds.<sup>xxxvii</sup> This is despite other parts of the Canadian financial sector (e.g., mutual funds) having relatively high fees internationally. The benefits of governance, scale, and expertise for pension funds is supported by other research with different funds in other jurisdictions.<sup>xxxviii</sup>

**Guideline 4 recognizes that many countries will not start with institutions in which scale, expertise, or governance are considered strong by the supervisor.** The key issue is not whether a current industry is perfect – which it clearly will not be – but whether the supervisor can see a viable path by which each pension fund can be significantly improved. If the answer is yes (e.g., trustees or governing boards could have significant training or enhance their expertise with new members), then the supervisor should have a multi-year improvement program. However, if no viable path forward exists – particularly in countries with very large numbers of small legacy occupational pension plans as found in some of the Caribbean countries – then a pathway to



consolidation and exit should be developed. Members should be transferred to larger, better performing funds. Again, this is an area where clarity on the desired outcomes from the pension system can help. Not all countries may be able to deliver total cost of 0.5% as a percentage of assets under management whilst developing high standards, but few would consider that 2% a year (200 basis points) is viable in a world of low real returns.

**If workers are compelled to save in a mandatory pension pillar or quasi-mandatory through auto-enrollment, then the government and the supervisor clearly have a duty to ensure decent standards of governance and asset-security.** This can be a learning process for countries with long-standing voluntary pension systems that realize compelling someone to join a pension fund requires higher standards from pension providers. This was certainly the case in the UK where the governance standards in law and regulation were raised because of the auto-enrollment reforms. However, this argument should not be pushed too far. It is questionable whether savers in a voluntary system (whether occupational DB or DC or individual voluntary pensions) would consider they need weaker protections against fraud or poor management just because they joined a pension fund voluntarily. In voluntary systems that have suffered major failures, there is little sense in the enquiries that follow that the authorities owed a lower duty of care to pension savers who joined voluntarily compared to those who were automatically enrolled or were part of a mandatory system.<sup>xxxix</sup>

**Good governance in the accumulation phase in the best interests of members does not always translate into the payout phase.** Members who benefit when a governing board creates simple default investment funds and negotiates with providers on their behalf can then be faced with choices and processes at the payout phase for which they have little experience or ability to navigate. This is not a necessary situation, but it is often a part of DC pension system designs. Nevertheless, it is relatively simple to bring the benefit of scale, expertise, and governance to members in the payout phase – as set out in Box 5 on proposals from Australia.

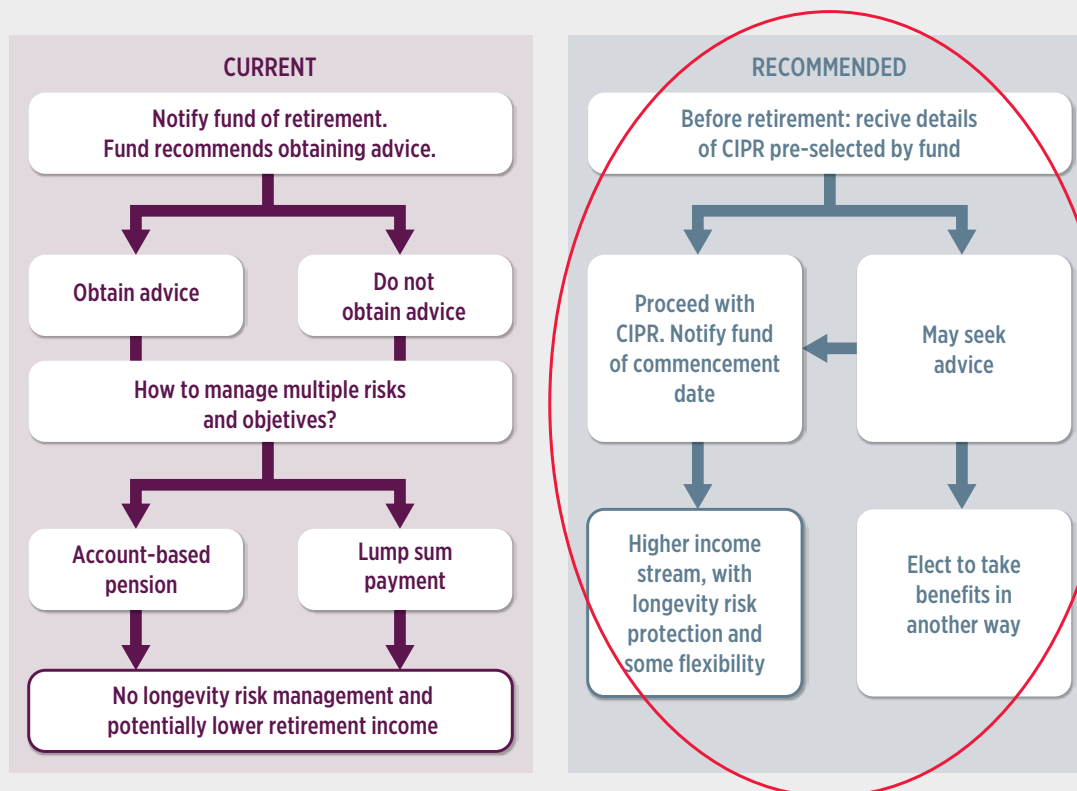
**A related problem is that all potential providers of life insurance products may be eligible to enter the market for pension payouts – even if they have poor records on pricing and service.** As long as a company has a license, it can continue to offer products. However, pension supervisors and regulators can design the payout phase in a tailored manner. Auctions, as highlighted above, can force only the best providers to be able to compete. Another approach is to let only the strongest sub-set of the market enter the pension payout market and to have simpler product rules so they can avoid the product proliferation and attendant confusion seen in many markets while ensuring strong competition or regulation on pricing. Box 6 on India illustrates just such an approach. There are various ways to restrict entry to the largest and most efficient providers. One option is to issue a limited number of licenses to offer pensions. A second and related approach is to auction the rights to provide pensions. A third approach would set very high capital requirements so that only the largest and best-funded providers could enter.<sup>xl</sup> However, this does not guarantee the best prices for members because the best-funded providers could be those with the highest profit margins and potentially the highest prices. This is why simple products chosen through auctions or bidding platforms can provide members access to better prices.



## BOX 5 ■ LEVERAGING EXISTING WELL-GOVERNED INSTITUTIONS TO IMPROVE THE PAYOUT PHASE

Australia has a large and long-standing pension industry. Governance has been a focus for the accumulation phase. However, the payout phase gave people 100% lump sums and total freedom to approach the payout providers. A recent series of reviews, starting with Murray (2014), have focused on improving the payout phase and leveraging the good governance in the accumulation phase for the benefit of members in the payout phase. The proposal is for the people running the accumulation phase to be tasked with developing a default lifetime income product for members and then contract with potential providers to obtain the best deal. The central message is that a provider with good governance, scale, and expertise in the accumulation phase can leverage these for member benefit in the payout phase, rather than the separation of phases and providers seen in many countries. The diagram below compares the current approach of superannuation funds, which is essentially to leave members to make a choice without help, to the future envisaged process where the trustees would have developed a default income solution that members could use unless they wanted to choose.

### USING SUPERANNUATION FUND GOVERNING BOARDS TO DEVELOP COMPREHENSIVE INCOME PRODUCTS



Source: Financial System Inquiry: Final Report November 2014. Commonwealth of Australia.



## BOX 6 ■ INDIA - USING A LIMITED NUMBER OF INSURANCE PROVIDERS AND PRODUCTS.

India has separate pension and insurance regulators (PFRDA and IRDA, respectively). The insurance regulator is responsible for all insurance companies and products. When determining how to create the payout phase, the pension regulator authorized a limited number of annuity service providers using an ‘empanelment’ process with high entry thresholds with companies offering a limited range from their full product suite. The approach gave members a choice between five companies offering four types of products as opposed to 30 companies with 30 different life products.

Moreover, the system leverages its Central Recordkeeping Agency, which is a key part of the accumulation phase, as the portal into making the retirement income choice<sup>xli</sup>. When a member comes to their retirement decision, they can go to the Central Recordkeeping Agency site, trigger the request to exit the pension system, and make a choice of provider and product. This is alongside any request for lump-sum withdrawal (members can withdraw up to 60% of their balance as a lump sum, which is not recommended as best practice).

This payout market structure makes it simpler for the members and the regulator, and it allows a smaller group of providers to exploit scale while still having choice and competition between them. It could easily be updated to make the portal operate as an auction so that members could be allocated to the provider with the best rates, but this has not been done in India so far. The picture below is a screen shot from the platform that shows it is relatively simple to use.

The screenshot shows the NSDL Central Recordkeeping Agency website. The header includes the NSDL logo and the text 'Central Recordkeeping Agency'. Below the header is a form titled 'Annuity Quotes'. The form contains several fields and options:

- Are you a:\*** with radio buttons for ☐ Government Sector Subscriber and ☐ Private Sector Subscriber.
- Date of Birth:\*** with a date picker and the format (DD/MM/YYYY).
- Gender:\*** with radio buttons for ☐ Male, ☐ Female, and ☐ Others.
- Marital Status:\*** with radio buttons for ☐ Single and ☐ Married.
- J & K Resident:\*** with radio buttons for ☐ Yes and ☒ No.
- NPS Corpus to be utilized for purchase of annuity: (in ₹)\*** with a slider and a text box showing 0.
- Annuity-Frequency\*** with a dropdown menu showing Monthly.
- Enter Captcha** with a captcha image showing 3 6 + 8 = and a text box for the answer.

At the bottom of the form are two buttons: **SUBMIT** and **Reset**.

Source: Author. Figure: NSDL, India.



### 5.1.5 ► Default or mandatory solutions should have phased withdrawals linked to life expectancy as a minimum, but ideally one of the following: phased withdrawal with a deferred annuity, variable noninsured life annuities, or a life annuity from an insurer.

**A common approach to the payout phase is to legislate for annuities and phased withdrawals and enact rules on how much money pensioners can take as a lump sum.** This approach then quickly defaults into lump sums and phased withdrawals because few countries have active annuity markets. This is due to problems on the supply side caused by lack of mortality data or capital market instruments to back annuity liabilities – or on the demand side where people are often highly averse to giving all their life savings for an annuity in a single irrevocable transaction. They often perceive (sometimes rightly) that annuities are “bad value,” but also fail to see that they contain a significant element of insurance against outliving assets that a phased withdrawal does not provide. These considerations particularly affect less developed countries on the supply side, but all countries face problems on the demand side. The issue does not typically arise for DB markets in which the pension is paid until the person dies as part of its design, so the concept of accumulation and decumulation are not distinct as they are for a DC pension. For DB plans, the issue is whether they are funded (dealt with under Guideline 12). For DC plans, the problem is most acute where members must make all decisions by themselves.

**Phased withdrawals are a major part of the payout phase in many PLAC member countries and globally.** There is often a “naïve” rule such as needing to payout over 10 years or allowing members to make withdrawals of any size. One option for phased withdrawals to mitigate some longevity risk is to link payout periods to conditional life expectancy at retirement age. This would not guarantee income until death; rather, the income payout period rises as life expectancy rises. In Macedonia, the MAPAS regulator developed a phased withdrawal formula for the payout regulations where the amount paid is related to the average remaining life expectancy and other factors. This initial exercise is worth careful focus (and dedicated internal or external resources), but once in operation it does not need significant ongoing resources.

**Another option is an annuity formula where the payout for the coming year is related to the probability of survival taken from a mortality table.** This approach is more sophisticated and can be effective, although (as identified below) a phased withdrawal for a fixed period followed by a deferred annuity would be preferable (see Box 7). However, there are risks to life-expectancy-linked phased withdrawals if an overly cautious approach is taken – as in the Costa Rican case. In Costa Rica, the payout is related to a fully developed mortality table, but with adjustments to build a conservative payout rule to increase the chances that members will have assets at the end of their lives. The problem with this well-intentioned idea is that there is no mortality pool whereby those who live longer receive the gains from those who do not live as long. Without these mortality or survival credits, the projected income from a single-person phased withdrawal is hence very low, and some estimates suggest that most people are projected to leave around 30% of their assets to their heirs, rather than having access to them in their old age. In all cases, the payout will change when mortality estimates change and will be subject to different expected mortality rates as the person ages in any case.

**Phased withdrawals are simple to deliver. Any country that has an accumulation phase can have a phased withdrawal decumulation phase since it does not need new institutions or capabilities.** However, in some



countries this ‘simple’ approach is not so simple due to legal provisions for the payment of minimum pensions. Annex E on Colombia illustrates the problems this can cause. Nevertheless, these real difficulties should not obscure the fact that phased withdrawals are a simple income product that any system can deliver in technical terms.

**Phased withdrawals of course do not provide full protection against longevity risk, so an approach that is growing in popularity is to begin with phased withdrawals and then have a deferred annuity that starts in later life as insurance against longevity risk.** The aim is to reduce the behavioral, cost, and illiquidity implications of an annuity taken as soon as someone retires (an immediate single-premium annuity). Box 7 shows the approach – and how it can allow members some lump-sum access – albeit with most of the funds in a phased withdrawal that does not allow access. Therefore, members do not have a large asset balance as they retire and then see it all ‘disappear’ as a premium for the immediate annuity. In the example shown, the premiums for the deferred annuity start to be paid at age 65 for an annuity that would start at age 85. This allows the premium to be much smaller and phased, because of course not everyone will reach the age of 85. Other approaches are possible (e.g., spending 10% of total assets at retirement on the deferred annuity).<sup>xlii</sup> This is still a sizeable amount of money, but members will keep the vast majority of their assets and may have greater appreciation for how the deferred annuity provides insurance against a potentially very costly risk of living into advanced old age. The approach is another example of the benefits of thinking separately about the third and fourth ages of retirement.

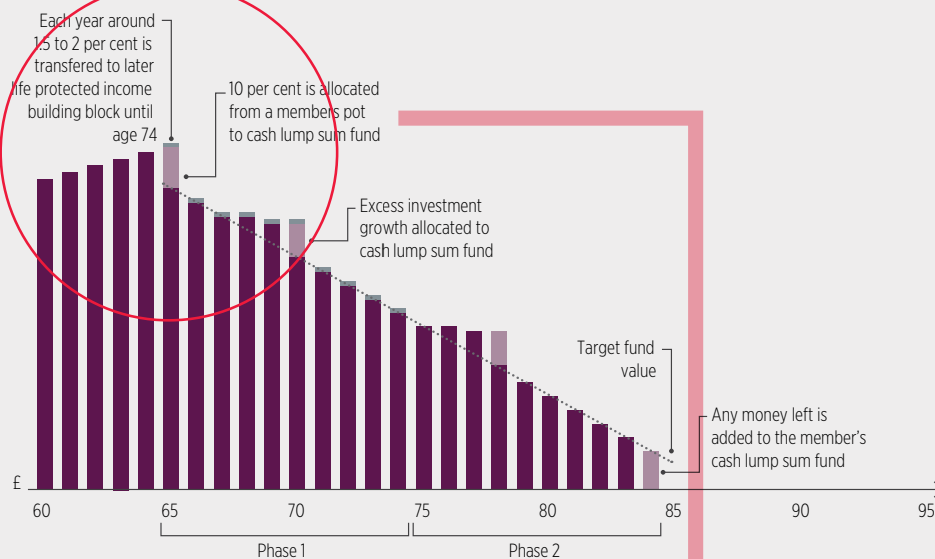


## BOX 7 ■ COMBINING PHASED WITHDRAWALS WITH DEFERRED ANNUITIES

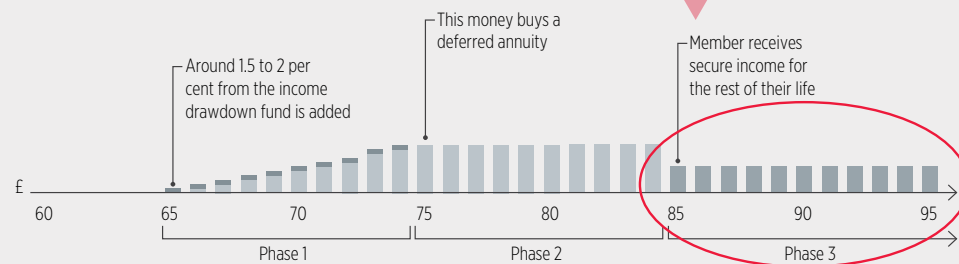
The combined approach uses a phased withdrawal for the third age and then takes a small slice of assets each year to buy a deferred annuity for the fourth age – to which it is less likely the person will live. This has behavioral advantages because the member does not have to hand all their money to an insurer on the day of retirement and the insurance company only has to insure a shorter time, although it will still face significant mortality “tail-risk.” The approach works much better when large groups are involved so that there is less risk of adverse selection and hence is more powerful as a mandatory or default product. The picture shows how small annual payments are made to a deferred annuity in early retirement, leaving the member access to most of their funds for drawdown until the deferred annuity starts and with an initial 10% lump-sum payment also available.

### HOW THEIR INCOME IS GENERATED

#### INCOME DRAWDOWN FUND



#### LATER-LIFE PROTECTED INCOME FUND



Source: Author. Figure: NEST, UK with annotations by author.



**Another promising approach to tackling longevity risk is to allow risk sharing between members in a defined group while still benefiting from the pooling of mortality risk.** This approach to variable life annuities is not new, and as Box 8 shows, Sweden has used it successfully since it introduced mandatory DC pensions in 2003. It is also what underlies the TIAA-CREF model, although the precise formulas and approaches underlying the payout structure are not known, which is why the Swedish example is so useful to study. Singapore's Central Provident Fund has recently introduced the approach, but there too the exact formula and the mortality and discount rates are not fully transparent (the Singapore approach is featured in Box 13 under Guideline 13 on communication because it incorporates some clear and simple ways for members to understand various options).

#### BOX 8 ■ SWEDEN – BENEFITS OF A MANDATORY NONINSURED ANNUITY WITH TRANSPARENCY

The Swedish mandatory private DC pensions (second pillar pension) has two payout options – one of which is a variable non-insured life annuity. The Swedish Pension Agency developed a life-annuity formula tailored to Swedish mortality data that calculates the annual payouts based on the remaining assets in the member account. Mortality data is updated every three years using data from the Swedish statistical agency, over which the pension agency has no control. The combination of a clear formula and the use of external agencies to supply key data overcomes some of the governance and trust issues when an insurance company controls all of the mechanisms of variable and “with-profits” policies. If there is no equivalent agency in a country, then the work could still be done to create the country-specific formula and then contract with insurance companies to deliver the payouts based on that formula.

The formula essentially says that a given stock of assets will provide more income each year if interest rates are higher (and costs are lower)

$$D(x) = \int_0^{\infty} e^{-\delta t} \frac{l(x+t)}{l(x)} dt$$

$$\delta = \ln(1+r) - \epsilon$$

$$l(x) = \int_0^{\infty} e^{-\int_0^x \mu(t) dt}$$

The Swedish approach has an actuarial formula behind it - but no one needs to understand or choose to get the payout and it works very simply at low cost

$$\mu(x) = \begin{cases} a + be^{cx} & \text{for } x \leq 97 \\ \mu(97) + (x - 97) \cdot 0.001 & \text{for } x > 97 \end{cases}$$

Source: Swedish Premium Pension Agency Orange Report 2016.

**The approach of a noninsured life annuity advocated in these guidelines is an example of a tontine.** Tontines draw on an ancient practice whereby people form groups to pool assets so that assets of those who die relatively young are used for the benefit of those who live longer. Various authors in the tontine literature explore different payout formulas and assess their desirability relative to other options, such as a standard



single-premium life annuity or sometimes a self-annuitization option.<sup>xliii</sup> The standard annuity delivered by an insurance company clearly also benefits from recycling mortality or survival credits, but in a particular institutional and legal structure where the insurance company typically promises a specific payment profile and is legally required to deliver it.

**The final suggested option is to continue using standard insured annuities. The basic product is tailored to the core risks of the payout phase identified in the introduction.** Obvious issues need to be dealt with, as identified in these guidelines. However, annuities are effectively what governments provide in state or public pensions – a payout to a person until they die. The other ideas above are useful to provide another lifetime income option (using the deferred annuity) or the noninsured variable annuity. However, if a country has the mechanism to deliver annuities well (e.g., Chile), then these are a very legitimate option for a payout default or mandatory product. This is particularly the case if the mandated product includes benefits for spouses, since this is a powerful way to address gender inequality.

**5.1.6 ► Supervisors should restrict access to assets in accumulation and payout phases until the core retirement income objective is met and not allow lump sums before full retirement age except for exceptional cases. If savings are needed for other purposes (e.g., housing or education), then separate accounts should be created.**

**It is human nature to strongly desire to take a lump sum at retirement. It is simply the same phenomenon that makes saving difficult in the first place.**<sup>xliv</sup> Therefore, many countries face pressure to allow significant lump sums. Another argument often made is that there are many legitimate demands on savings – from short-term need to housing, education, or to start a business – so that pension savings could be put to more useful and urgent work. However, it is difficult to spend the same assets twice, and unless the investment leads to much higher earning capacity or much-reduced costs that are then turned back into savings, the net effect is that the pension income objective is swapped for another policy objective. These issues affect all developed or developing countries, as Box 9 on the UK experience shows. They are typically more severe in countries with DC systems because there is a separate decision on what to do with the assets. However, they are also seen in DB systems – and countries with DB plans should be careful if there are ways in which workers can trade DB rights for (short-term) payments. Examples include transfer value exercises where people move from a DB to a DC system and various forms of buy-out where a DB member may take a cash lump sum in return for their previous right to have an inflation-adjusted increase in their pension each year. The combined impact of withdrawals can be very large – the Society of Actuaries calculated in the US that 40% of contributions are withdrawn before people retire.

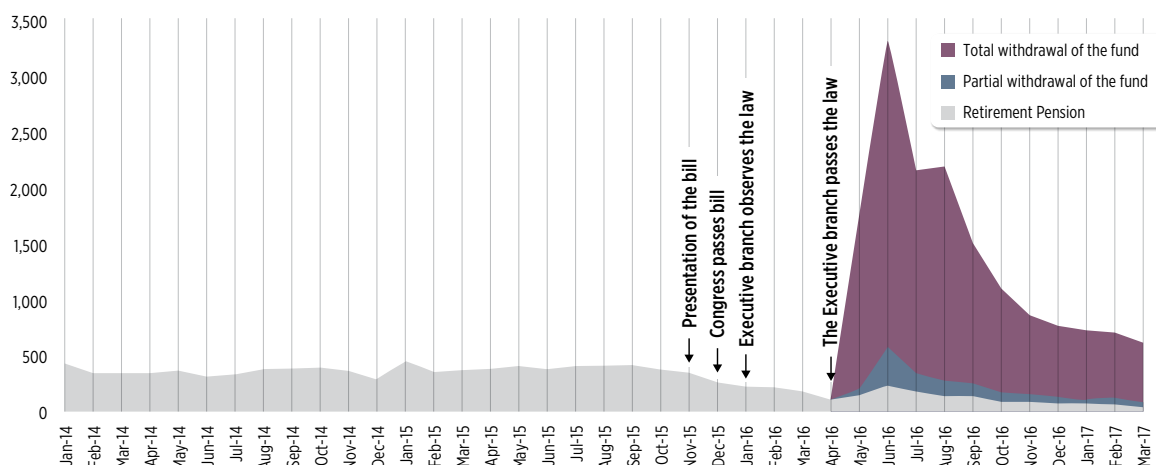
**The case of Peru shows the negative impact of removing restrictions on lump-sum withdrawals.** From 2016, the government changed the income and withdrawal rules at retirement so that people could still take an annuity but also take a partial or total withdrawal from their fund. As shown in Figure 3, this led to a dramatic



increase in withdrawals.<sup>xlv</sup> In the two years since the change, 13% of affiliates had consumed their whole balance, 28% had saved it, 9% had invested it, and the remaining 48% had pursued a mixture of these strategies.

**Supervisors will have a tough challenge if the law has just been changed to allow full lump sums and there is no realistic prospect of changing the law.** The insights from behavioral economics are important in this situation because a mandatory approach to delivering retirement income has been specifically rejected. A supervisor should thus investigate the scope to introduce or change default payout options for those workers who do not take the initiative. They could work with providers to alter the presentation of options to workers. They can develop publicity and targeted adverts to highlight the long-term costs of withdrawing money. Finally, they could seek to buy time (by convincing workers to leave money just for one year at a time), taking a year-by-year approach rather than expecting workers to reject the freedoms completely. The task is undoubtedly difficult since all the behavioral reasons that justify mandatory or default retirement income products are the ones that will drive people to take lump sums when they are available.

FIGURE 3 ■ INCREASE IN LUMP-SUM PAYMENTS IN PERU AFTER FULL WITHDRAWALS ALLOWED



Source: SBS – “Number of Pension Products Chosen by AFP Members” 2014-2017

**Access is more legitimate when pensions are targeted at the informal sector.** Access to finance may be very important, and lack of access may stop people contributing. On the other hand, in some cases it is exactly the lack of access that is attractive (e.g., if people are concerned that family members may force them to draw down savings for short-term needs and leave them without assistance in old age). One approach is to allow people to borrow against their pension assets since they may be more likely to pay the money back than if they can make withdrawals. However, borrowing with potentially high costs could have negative implications. Another approach is to have two accounts so that there is constant access to some money while other money is locked away and can begin to grow (hopefully in conjunction with government incentives such as matching contributions to encourage long-term savings). This approach can deal with liquidity and other priorities, as in Malaysia and Singapore where 30% of savings is accessible for health, education, or housing and 70% is locked away for retirement.



**Another example of the risks of allowing full lump sums comes from Malaysia, a country with an enviable record in the accumulation phase but where most of the assets taken as lump sums are used up rapidly.**

Malaysian private sector workers are required to contribute to the Employees Provident Fund (EPF). Employees contribute 11% of salary and employers 12% or 13% depending on salary level. Thus, the accumulation phase is very strong, and the EPF has grown into one of the world's largest pension funds, with US\$200bn in assets under management. However, workers have been able to access all their retirement savings as a lump sum. One survey identified that 50% of workers used all their money in five years and another showed that 70% used it all in 10 years. Therefore, even in a country with a solid saving ethic and a potent accumulation phase, the ability to access fund balances significantly reduces the ability of those assets to create retirement income.

**BOX 9 ■ UK – THE EFFECT OF REMOVING REQUIREMENTS TO TAKE ANNUITIES**

One way to investigate the effect of introducing default or mandatory requirements for a retirement income product is to investigate what happens when such requirements are removed. The UK provides an example; in 2015, requirements to effectively take an annuity were removed, and members could make any choice. Workers were now free to take 100% of their money as a lump sum. A 25% lump sum remains tax free, and another further withdrawal faces tax at the marginal income tax rate for the value removed.

The regulator – the Financial Conduct Authority (FCA) – has tracked choices since 2015.<sup>xlvi</sup> In the three years to October 2018, nearly 1.5 million pension “pots” or accounts were accessed for the first time under the new rules. Fifty-three percent of workers took a 100% lump sum – often those with the smaller balances. Thirty-one percent of workers chose an income drawdown, akin to a phased or programmed withdrawal. The most likely rate of drawdown for accounts under £100,000 (US\$130,000) was 8% of assets per year or over. Those with more than £250,000 (US\$325,000) in assets tended to draw down less rapidly. Only 13% of savers chose an annuity.

So, the new “freedoms” have led to a very large shift away from annuities to around half of the people taking a 100% lump sum and one-third taking a phased withdrawal – often at rapid rates. The situation can be contrasted with the stock of existing products, where eight times as many annuity contracts are in force as drawdown products.

The UK annuity market had issues prior to 2015 and would have been improved by following the guidelines in this report. Nevertheless, the example shows that even in a country with a very large annuity market that had existed for decades and that had effective mandatory requirements to annuitize, it made no difference to the desire for short-term cash over long-term income. Hence, there was a sudden and large shift to 100% lump sums and high-rate drawdown products despite the long-term consequences for income in very old age. Therefore, without a mandatory or a default income product, accumulated assets are likely to be spent rapidly. This leaves the key policy objective of private pensions unmet. When the effects of this change in the UK are fully felt in future years, the pressure for higher public pensions or acquiescence to higher rates of old-age poverty are likely the only two policy responses that will be left.

Source: Author.



## 5.2 ► Part Two: Data, analysis, and risk assessment

**Summary:** The central message from the three guidelines focused on data, analysis, and risk assessment is to integrate the payout phase into a comprehensive risk assessment model. Supervisors need to collect, analyze, and publish data to identify and mitigate risks. The first PLAC Guidelines on Supervision contain ample detailed information on how to build a robust supervisory framework. The payout phase should be integrated into such a framework – even for countries where pension supervisors share the responsibility with insurance supervisors. Some countries have a handover between the pension and insurance supervisors, but ultimately, the pension supervisor needs to focus on whether the pension system is operating as expected. To investigate and mitigate risks in the products, processes, and providers will require good data. For the payout phase, data on mortality becomes very important, and supervisors may need to take a proactive role to ensure it is collected and collated for the benefit of all concerned.

### 5.2.1 ► Supervisors should integrate assessment and mitigation of payout risks into their overall (risk-based) supervision model to make the right risk and resource trade-offs.

**The guidelines for the supervisory assessment of pension funds had a significant amount of material on the supervision process.** The guidelines assume that supervisors have or will attempt to develop a risk-based supervision model in line with international best practice. Not all PLAC members currently use risk-based supervision, but they can still integrate assessment of accumulation and payouts.

**The six key steps to develop an outcome- and risk-based supervision model are relevant for DB and DC pension plans and for countries at all stages of development, but with differences in emphasis.** The six steps are as follows:

- a. Start with the **long-run outcome-focused objectives** for the supervisor;
- b. Focus on key **system-wide and specific pension fund risks**, which requires obtaining and using the right data;
- c. Use a **range of tools to assess and understand risk** (including quantitative tools) and have a range of tools to deliver solutions;
- d. **Enhance pension fund governance and risk management** as a central way to reduce risks, and shift the first line of defense to (well-run) funds;
- e. Ensure **risk-based selection of pension funds and subjects for supervisory focus**;
- f. **Use prevention and remediation first with sanctions and enforcement for persistent or critical issues**, making sure enforcement is not forgotten



**The key message from Guideline 7 of the Payout Phase Guidelines is that the approach to the payout phase must be integrated into the overall regulatory and supervisory framework.** The payout phase is too often treated as an afterthought or somehow separate. Even if an insurance supervisor is responsible for parts of the payout phase, the pension supervisor needs to assess the risks over the full pension life cycle. They should not just defer to the insurance supervisor because it will not necessarily have the same objectives or legal powers. In countries with multiple regulators and fragmented regulations, effort is needed to consolidate and simplify regulations for the benefit of both regulators and regulated entities.

**Annex B sets out of all the PLAC Guidelines for Supervisory Assessment of Pension Funds for reference.** The new guidelines on the payout phase are best achieved as a development of the first PLAC Guidelines, and they re-emphasize some of the most important ones – particularly outcomes, risk assessment, and the importance of good governance.

### 5.2.2 ► Supervisors should assess payout risks across all elements of the product, process, and providers and proactively share data, risks assessments, and mitigations with insurance supervisors.

**The regulator and supervisor must be comprehensive in their approach, looking at risks across the full pension value chain including product, process, and provider.** The pension supervisor should consider many angles – not least because it will take the blame for poor pension outcomes whether it does or not. Experience has shown – and a recent IOPS-IAIS survey on the importance of retirement income products to insurers confirms it – that it is often unclear who is doing what between the pension and insurance supervisors. Memoranda of understanding to share data and risk assessments should be put in place. These issues are important in less developed countries if they have less capacity to supervise complex systems or ones with many players at each stage. One strategy to reduce the burdens is a simplification of the system across the full value chain. Likewise, these issues are important for both DB and DC pensions – although the value chain is typically more involved in DC pension systems, even if some of the issues (e.g., funding) are more complex in DB (see Guideline 12).

**Coordination with an insurance supervisor can be an important way to maximize the impact of scarce resources.** Building a good relationship takes time – and the right skills – whether the other supervisory is a department in an integrated regulator or a separate entity. Each will have its own priorities and often different approaches. Specialization can be a strength because there are often different players involved in different markets, with the role of the employer often fundamental in pension markets, unlike in other markets. If there are some insurers who have problems with their performance in the insurance market, but not enough to stop them from having a license, the pension supervisor might want to restrict them from starting a new business in the pension payout phase to ensure the best possible standards from the outset.

**Even though coordination is a good thing, it does not mean that employing an integrated supervisor will necessarily be the right approach.** There have been a number of efforts to review the structure of financial supervision, but there are no clear conclusions that one institutional structure or another provides clearly



beneficial results (see for example Madero and Lumpkin, 2007; IOPS, or Hafeman, 2016). A useful analysis from the IMF identified that more than organizational structure, it was the “ability” and the “willingness” of supervisors to tackle risks that were more effective during the global financial crisis (IMF, 2010).

**A practical way to approach supervisory coordination given the diverse institutional arrangements across countries is to use the approach in the Insurance Core Principles (ICPs).**<sup>xlviii</sup> ICP3 is “Information Sharing and Confidentiality Requirements” but is effectively about how to work with other supervisors. ICP25 is “Supervisory Cooperation and Coordination,” which is often about group-wide and cross-border supervision but has very useful practical suggestions for how the cooperation should be conducted. ICP3 on information sharing is *“The supervisor obtains information from, and shares information with, relevant supervisors and authorities subject to confidentiality, purpose and use requirements.”*

**Insurance Core Principle 3 is relevant to the sharing of information on insurance and pensions (and other sectors) but can also provide a useful guide to working across the public and private pension markets.**

Regulation is rarely consistent across public and private pensions, so information sharing, risk assessment, and a joined-up approach to policy can be very important. ICP3 sets out a specific range of areas on which information should be shared. Not all will be relevant for sharing between pension and insurance supervisors who may share responsibilities for the payout phase, but they are a good starting point. Moreover, because they have been through a process of international discussion – often with supervisors who cover both pensions and insurance when they are integrated – they can be a useful independent suggestion for a given country. ICP3 sets out that “Information requested by a supervisor from a relevant supervisor or authority may include:

- information on strategy, business activities and business models including prospective and recent acquisitions or disposals of insurance business;
- financial data relating to an insurer [and by extension a pension provider];
- organisational structure, both legal and management structure;
- information on the management and operational systems and controls used by insurers;
- information on individuals holding positions of responsibility in insurers such as Board Members, Senior Management, Key Persons in Control Functions and Significant Owners;
- information on individuals or insurers involved, or suspected of being involved, in criminal activities;
- information on any failures to comply with supervisory requirements, regulatory investigations and reviews, and on any restrictions imposed on the business activities of insurers;
- information concerning regulated entities related to the insurance group, whether undertaking insurance business or other financial business which is subject to regulation, and information concerning non-regulated entities related to the insurance group such as service companies or holding companies;
- specific information requested and gathered from a regulated entity; and
- reporting information within groups to meet group supervisory requirements, including subsidiaries and non-regulated holding companies.”



**This section is deliberately brief because the tools and techniques to be used are set out in the first PLAC Guidelines, but the importance of Guideline 8 should not be understated.** Ultimately, the tools and techniques identified in the first PLAC Guidelines will be at the core of whether supervisors or regulators will be able to achieve their long-run objectives.

### 5.2.3 ► Supervisors should collect, improve, and publish data, including on mortality, to assess and mitigate risks to their objectives

**A final area to stress, that was also in the first PLAC Guidelines, is collecting, improving, and publishing data on the risks in the payout phase.** This is important in all areas but particularly in relation to mortality data. Supervisors might not have the lead responsibility in this area, but they could have unique convening power to gather combined data from across a fragmented industry and ensure suitable protections for commercially sensitive data. The data can then be analyzed to improve the ability of the industry to price products, regulators to understand risks, and members to appreciate how long the payout phase is likely to last. Data quality typically varies a lot at different levels of development. Therefore, supervisors need to be realistic about what is achievable, but they can play a large role in progressively improving the data. One approach is to determine any gaps in relation to the questionnaire for this project and make a plan over the coming year or years to fill them. The data requirements of DB and DC systems can be different, but with the payout phase, there is a high degree of overlap because the DC accumulation phase can turn into a DB decumulation phase depending on the product chosen.

**As well as collecting and analyzing the data, publication is important. This is obvious for transparency but as important as an exercise in “soft” power to move behavior without the need for sanctions.** Obtaining pricing data for annuities or phased withdrawals, as well as assumptions used in DB plans, such as for mortality, discount rates, and salary increases, can show market participants where they are in relation to average and best practice. This can influence behavior, particularly if the regulator investigates providers that are significantly away from average or best practice on assumptions or pricing, or threatens to create an auction system that will exclude poor value quotes if pricing does not improve.

**Some supervisors mandate the use of specific assumptions when delivering phased withdrawals or annuities, as well as for assessment of DB pension plans.** There are a number of layers to this. Mandatory assumptions for reports to the supervisor are almost always useful to help understand the provider. This allows for simpler comparisons across products and providers. Supervisors may also want to mandate certain stress tests for regulated entities (including public DB plans). A third area where mandatory assumptions are used is for required solvency buffers or capital controls for providers. Finally, and probably the most controversial area, is whether to mandate assumptions for pricing. The right answer will depend on the quality of the assumptions used in the current period. If providers use weak mortality and discount rate assumptions, imposing minimum requirements or mandatory assumptions may be the safest way to reduce the risks. This issue is also important for Guideline 12 on how to ensure that DB plans and insurance companies are sufficiently funded. The issue is also relevant to developing other ways for members to be offered annuities – as set out, for example, in Boxes 4, 7, and 8. If the current market price is poor for individual offers and there does not seem to be effective

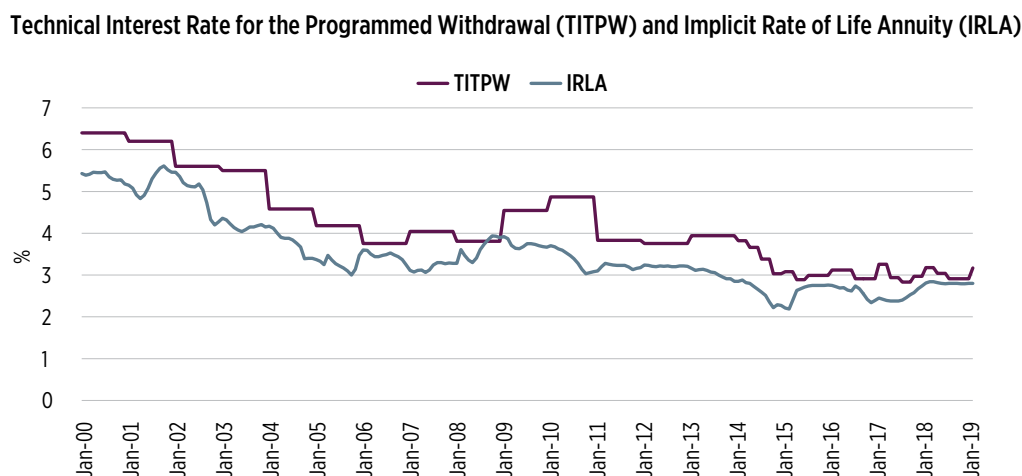


provision, then regulators could consider the suggestions in these boxes and in the guidelines to improve the market structure or the product offered.

**As highlighted in other guidelines, showing projections of retirement income to members, rather than just focusing on asset accumulation, is important.** It helps members to understand what they are likely to receive and get beyond the “money illusion,” where a seemingly large stock of assets leads to overspend as soon as they retire. Better data and assumptions as in Guideline 9 will enable development of such projections. This could be done by the regulator or supervisor, following, for example, the Swedish “Orange Letter” approach, where each year people receive a forecast of their likely combined public and private pension income at retirement. It could also be led by providers. Either way, supporting the income rather than the asset frame is important.

**Supervisors in the Dominican Republic set requirements on the technical interest rate and mortality assumptions that insurance and pension providers must use when calculating product features – or reserves in the case of insurance.** Figure 4 shows how the interest rates have changed over time. It is a good example of how a supervisor can impact the market, but only if the data exists. If mortality data is poor, there may be little that will transform this for decades – unless the supervisor takes a proactive approach. Supervisors can partner with local companies and actuaries and their international counterparts. In other cases, the payout providers may be using sophisticated approaches supported by good mortality data and their own research.

FIGURE 4 ■ CIRCULAR 77-11 ON MORTALITY AND INTEREST RATES IN THE DOMINICAN REPUBLIC



Source: Superintendence of Pensions.

**Note:** Between 2000 and 2003, the average rate of the C fund among AFPs is considered. Between 2004 and 2008, the rate of fund D is considered. Since 2009, the TITPW is calculated as a simple average of the rates of a rate vector corresponding to the result of adding to a temporary structure of real interest rates, called the “Real Zero Curve”, the average of the daily return excesses for corporate bonds with a consolidated AA risk rating, including AA- and AA+ ratings



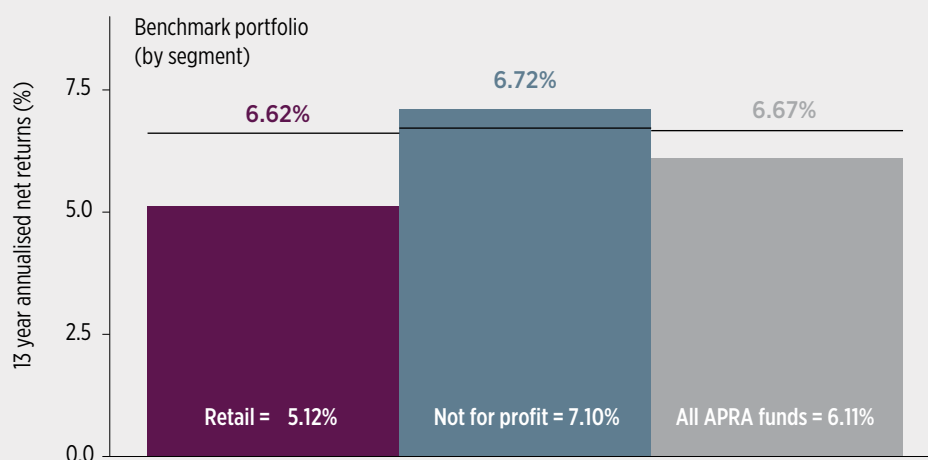
**The final example of the importance of good data comes from Australia.** Over the years, the Australian supervisor APRA collected data on the total fees and gross and net of fee returns from the pension providers. As Box 10 shows, this gave a clear picture of which providers were constantly delivering the best net of fee returns and why. This information has been very useful to a series of reviews and Royal Commissions. They have pushed fundamental reforms to improve private pensions (superannuation) and the financial services sector in general.

#### BOX 10 ■ AUSTRALIA'S DATA COLLECTION UNCOVERED LARGE DIFFERENCES IN PERFORMANCE

An example from the accumulation phase in Australia shows how good data collection over time allowed the supervisor to uncover important features of market performance. Data on net of fee investment returns, gross returns, and asset allocations was collected. This allowed the supervisor APRA to compare them. In the past 12 years, a clear picture emerged of underperformance in retail by for-profit providers. This was due to fee levels and execution relative to their asset allocation. This is an important input into risk assessment of different types of funds, as well as input into the policy debate.

##### FUNDS BY SEGMENT: NOT-FOR-PROFIT FUNDS OUTPERFORM RETAIL FUNDS ON AVERAGE

BENCHMARK ADJUSTED FOR ASSET ALLOCATION, 2005 -2017



Source: PC analysis of unpublished APRA data and financial market index data (various providers).



## 5.3 ► Part Three: Supervisory actions to mitigate risks and improve payouts

**There are four guidelines focused on “supervisory actions to mitigate risks and improve the payout phase,” some of which apply to all pension types and some that are specific to DB plans.** They start with the importance of good (corporate) governance – again echoing the first set of PLAC Guidelines. This also links to the Strategic Guidelines to create market structures in which only well-governed entities participate. One of the guidelines focuses on the importance of prudent funding of DB promises – or solvency capital backing insurance company annuity products – and the potential benefits of risk sharing for DB plans.

### 5.3.1 ► Supervisors must set out required governance standards for all entities involved in pension payouts, assess their performance, and take corrective action if needed.

**Many authorities in LAC, and globally, are increasing their focus on governance of pension entities – or corporate governance, as it is also known.** This is partly driven by global standard setters. All key standards from the OECD, IOPS, and IAIS in the insurance and pension space emphasize the importance of governance. It is also driven by internal and external reviews – for example, via the Financial Sector Assessment Program of the IMF and World Bank – or from within the country as regulators seek to improve outcomes. One example is Costa Rica, which recently passed regulations on the requirements for corporate governance – along with new regulations on risk management – which is a closely related feature of a well-run entity. Although many further developments will be needed to improve standards, it is a useful first step. There can be challenges in governance at any level of development. Governance is also equally important in both DC and DB plans.

**This issue was highlighted in the first PLAC Guidelines for the Supervisory Assessment of Pension Funds and is repeated here because it is so central to delivering an improved payout phase.** The importance of governance is also highlighted under Guideline 4 on scale, expertise, and governance. The details of how to develop an improved focus on governance can be found in many other publications, including the Governance Guidelines of the International Social Security Association (ISSA), the Outcomes and Risk-Based Assessment (ORBS) methodology, CAPSA guidelines, or OECD/IOPS principles.<sup>xlviii</sup> Improving governance is equally important for public-funded DB funds providing social security in many PLAC countries and thus should receive particular focus given the importance to retirement outcomes.

**To take corrective action on governance, supervisors will need adequate power.** This is of course true for all areas of supervision, and adequate power is one of the 10 requirements of the IOPS Principles of Private Pension Supervision. Ensuring adequate power can be challenging against private sector providers, particularly when they are large, well-financed institutions. It can be particularly challenging when public social security



funds are not regulated and supervised (as they should be) because they are often important and powerful institutions with their own sources of influence and support. However, these issues should not detract from the need to build supervisory and regulatory powers to ensure payout providers are held to high standards.

**A very recent example of governance requirements in investment and the payout phase was published by the UK Pensions Regulator in June 2019.** This is a useful example because the UK framework has to work for DB and DC funds as well as large and small funds. The UK is also (gradually) building up governance requirements for public sector plans, although this is an area that needs further development. The main areas that need to be covered are set out below, with the full headings in Annex C:

- The (trustee) board's role in investment governance
- Investment decisions and your statement of investment principles (SIP)
- Monitoring investment governance
- Designing investment arrangements (including default arrangements)
- Strategy and performance monitoring and review
- Market developments

### 5.3.2 ► Supervisors should ensure that investment regulations encourage alignment of the accumulation and payout phases, support capital market developments that better fund long-term retirement income and allow a focus on ESG issues.

**Guideline 5 focuses on payout products that could tackle the main retirement risks. Guideline 11 looks at investment regulations and the ways in which they can support the payout (and accumulation) market.**

There is a blurring of the lines when phased withdrawals are considered because they are effectively only an investment strategy rather than involving any longevity pooling. Guideline 11 hence includes information on investment strategy design that is relevant to phased withdrawals and other “self-annuitization” strategies.

**A great deal of attention has been paid to the investment strategies and investment regulations governing the accumulation phase.** Many countries have seen their systems evolve – particularly from the early years of new DC pensions – from supposedly very conservative approaches with often 100% of assets allocated to government bonds<sup>xlix</sup> to gradual diversification. A detailed annual survey of investment regulations by the OECD shows that most countries retain some investment restrictions or limits.<sup>l</sup> For example, many countries in the OECD survey impose restrictions on investments in real estate or unlisted equity or loans. The vast majority of countries allow investment in equities, but 22 OECD countries and 33 non-OECD countries in the survey impose an upper limit. Countries then often have limits on investments in a particular investment – such as not buying more than 10% of a bond issue – or limits on investments in a particular fund or company – such as not buying more than 10% of a company. These can sometimes be difficult to manage in small countries with small capital markets and some very large companies that dominate local equity markets.



**Over time, nearly all countries in the OECD survey have rightly allowed greater diversification in investment strategies.** This is important because the supposedly conservative starting point of a 100% domestic government bond portfolio is actually quite risky. There is huge concentration risk for one strategy. For a private pension to have such an allocation is doubly risky if the members are also relying on retirement income from a pay-as-you-go public pension. Both the pay-as-you-go fund and the coupons on government bonds rely on the same tax revenues to government.

**There has often been less attention in the policy literature ensuring a coherent link between the asset allocations and investment regulations for the accumulation and payout phase.** This is an area in which countries of all development levels can improve policy, even though countries with thin capital markets might have less flexibility in practice than countries with deeper markets. All countries can achieve broad asset allocation flexibility if international options are included (which they should be). The debate is relevant for DB and DC funds, but with important differences outlined below.

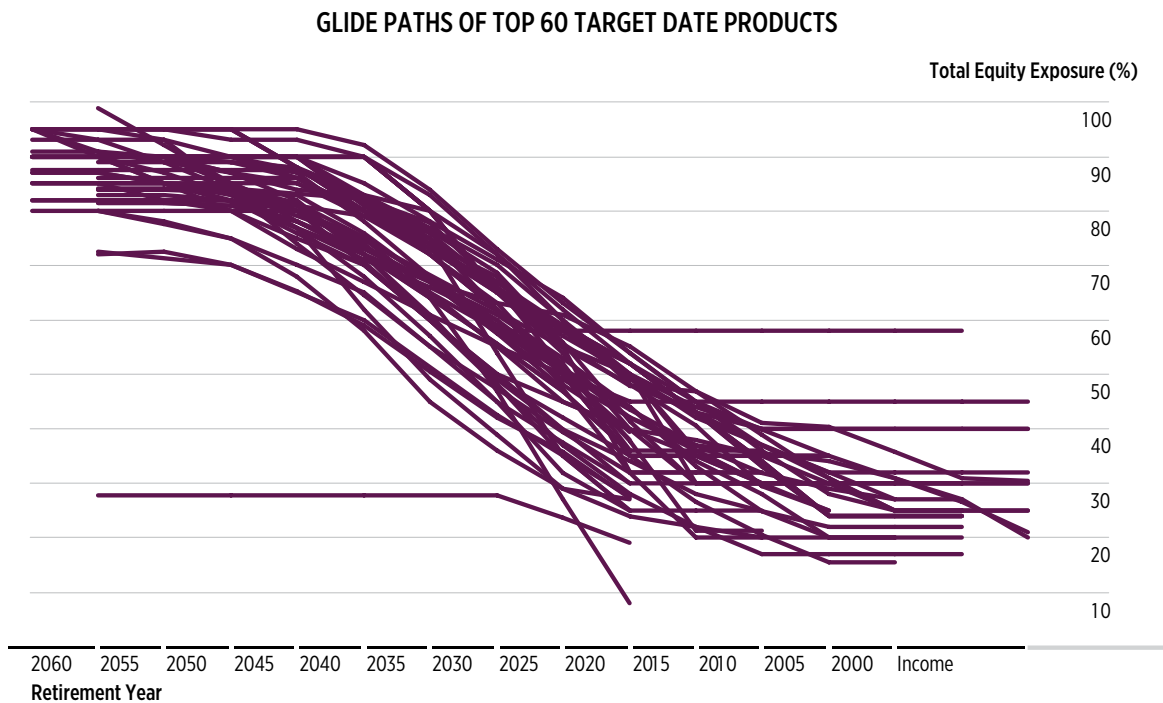
**A number of countries in the PLAC region have developed “multi-fund” approaches to changing asset allocation over time.** This was an improvement on the previous approach that often involved a single fund for all members. However, having asset allocation adjust gradually over time as members get older is not the most efficient method. As Box 11 shows, Mexico recently switched from the multi-fund approach to the more efficient target date or life cycle fund approach. This would be useful for other PLAC members to follow – and supports the next recommendation.

**As countries develop a default or mandatory payout product, they should ensure that the default accumulation investment strategy has a glide path that meets the payout phase.** There is no sense in having a life cycle fund that tapers down to zero equity allocation at 60 or 65 if the main retirement income product will be a phased withdrawal that has 20% in equities. Similarly, there can be inconsistencies in holdings of cash, government, or corporate bonds or holdings of foreign assets. If supervisors are focusing people on annuities, then the underlying asset allocations of the annuity providers should be the target for the period in which a payout product is chosen. This not only minimizes the costs of changing portfolios but also introduces hedging against interest rate changes, because if interest rates fall and hence annuities become more “expensive,” the underlying portfolio of bonds will have risen in value so the member will have a higher stock of assets.

**Asset allocations for a target date fund vary between providers, often quite substantially.** Figure 5 shows a comparison of 60 US target date funds. They include those already past the retirement target date (e.g., the portfolios for 2005 or 2010) and those for retirement a long way into the future (up to 2055 and 2060). The broad shape is the same for most of them as they shift from higher risk and return assets a long way from retirement into lower risk assets toward retirement (with one outlier that has only a maximum of 30% of assets in equity). However, for the 2020 target date, there is a range from 30% equity to around 60%. There is a closer alignment between the main target date providers, but it is clear that there needs to be a framework to determine the approach that will be most effective for the group of workers (and the country) in question, which is discussed further below.



FIGURE 5 ■ A COMPARISON OF THE GLIDE PATHS OF 60 US TARGET DATE FUNDS



Source: Bruns and others (2016).

**Designing the right glide path from asset accumulation to income receipt depends on when and how income will be drawn.** This is a challenge for both DC and DB funds, as well as the suitability of income-generating assets to pension payouts.

**A focus on a specific age is relevant particularly when someone takes an annuity and converts the full asset balance to a new income product in a single transaction.** However, even in countries that have such rules, there is also typically an ability to take a cash lump sum. A pension fund or a regulator could gather the data on payout choices for its membership to model the cash flows required each year – combining the overall mix of lump-sum requests, income drawdown or phased withdrawals, and other payments, for example in the event of death. This would allow the glide path to be tailored to the cash flow requirements, hence mitigating the risk of excess or insufficient liquidity, as well as matching the asset allocation to the revealed time horizon of the participants. Taking the case of rapid drawdown, for example, would mean that the equity component of the default target date fund would be relatively low as drawdown age approached. This would be country specific because it would be driven by the rules and behaviors in each country, but the discipline to model the expected cash flows and develop an asset allocation with the best risk-return combination in relation to the desired cash flow is important. This may change over time as behavior changes, but the key is to model the nature of the plan and adopt clear benchmarks (Idzorek and Marinescu 2017).



The difference in potential target date strategies depending on the nature of the drawdown phase can be seen in the UK's NEST and other funds that had to adapt asset allocations for their suite of target date funds when the UK government removed any requirement to take an income product (see Box 9 for details). NEST already used target date funds. They had broad ranges for asset allocation linked to years from retirement with some flexibility for tactical asset management within the overall shift from more risky assets as "retirement" approached. This approach has been updated so that they are now targeting real returns, with lower volatility in the final "consolidation" phase rather than taking a more cash-like approach when members might previously have needed to liquidate their entire balance in a single transaction to buy an annuity. The change to their Statement of Investment Principles is given below in Figure 6.

FIGURE 6 ■ NEST UK NEW TARGET DATE FUNDS WHEN ANNUITIES ARE NO LONGER REQUIRED

## Approach to investing prior to retirement

Since we published the consultation document in November 2014 we have made changes to the Consolidation phase of our investment strategy. This is to reflect our expectation that fewer members will want to buy an annuity immediately at their State Pension age. The revised text within the **Statement of Investment Principles** reads as follows:

***The Consolidation phase** prepares a member's assets for retirement and typically begins ten years before their Retirement Date Fund matures. Investments in this phase are progressively switched out of higher risk assets. The primary objective of the consolidation phase for funds maturing after 2020 is to outperform CPI after all charges whilst aiming to progressively dampen volatility as a member's fund approaches maturity. For NEST Retirement Date funds maturing through 2020 the Consolidation phase objective is to manage the risks associated with converting a member's accumulated savings into a cash lump sum.*

As members' pots get larger we will keep this investment objective under review, to ensure that for the majority of NEST members in the NEST default strategy, their money is being invested appropriately. One of the key risks we are looking to manage in the Consolidation phase is conversion risk, to avoid significant shocks or poor value when moving from accumulation to decumulation.

Source: NEST.



## BOX 11 ■ MEXICO: INTRODUCTION OF TARGET DATE FUNDS IN PLACE OF MULTI-FUNDS

From December 2019, Mexico changed the way in which the assets of its mandatory private pension system are invested. It moved from a system of multi-funds to target date funds (TDFs). This is due to improvements in efficiency and flexibility that such funds offer.

The pension fund managers (AFOREs) each had five captive investment funds known as SIEFOREs (Sociedades Especializadas de Fondos para el Retiro). They had different investment limits and were targeted at pension savers of different ages – or risk appetites. The most restricted in terms of investments was Siefore Básica 0 (SB0), which required 100% in Mexican debt guaranteed by the federal government. It was for people who were over 60 and approaching the payout phase of their pension. SB1 was also for people over 60 but allowed limited investment in high-quality nongovernment debt, up to 10% in equities, with up to 20% in foreign securities. SB2 was targeted at savers aged between 46 and 59, SB3 for those aged 37 to 45, and SB4 at those under 36. Flexibility in investment limits increased as the age of the saver fell, with SB4 having the most liberal regime (e.g., allowing up to 45% in equities and 30% in securitizations). This multi-fund model had developed over time since the private system started in 1997, when there was only a single fund.

To investigate how to improve their approach, the Mexican pension regulator CONSAR conducted a detailed study of the issues and reviewed international experience. The results were published in a working paper, “What are Target Date Funds? International Experiences and Possible Benefits.” The analysis can be difficult to explain simply to a member because there are often more technical and operational reasons the TDFs (also known as life cycle or life-styling funds) are superior. At heart, the multi-fund model effectively gives workers five different funds into which they put their money, and they have to move from one to the next over time. This involves buying and selling assets and risks step changes in asset allocations. In contrast, a TDF is effectively a single fund for your whole life – making the transition year by year – with smooth and almost imperceptible changes in asset allocation each year. It can be more difficult to implement a target date model in a relatively undeveloped financial system, but most of those in LAC would now have the basic requirements. Advances in the administration and fund management industry over the past 20 years have made the more tailored approach simpler and more cost effective. Therefore, in a TDF world, the saver is not transitioning from one fund designed for a 10-year window to another but gradually altering the asset allocation, as far as possible using new inflows to buy assets to adjust the mix and not existing investments and hence avoiding sales or market timing costs.

TDFs can allow more investment flexibility than multi-funds for younger people because there can be a more gradual “glide path” from higher return assets to more conservative assets over time. In addition, it is easier to match the asset allocation to the nature of the payout vehicle that members can either choose or default or mandate into. However, as discussed in Guideline 11, there is still the possibility of mismatch between the accumulation and payout phases with TDFs.

Source: Author.



**Over the past 20 years, it has become common for DB funds and insurers to embrace Asset-Liability Management (ALM).** This approach involves taking a much closer look at the specific liabilities for which a pension fund is responsible. This led, for example, to a shift away from such an exclusive focus on return-seeking assets – with very large allocations to equities – to one that attempted to match more closely the cash flows that a pension fund would have to deliver.<sup>li</sup> The implications of this for DB funds is explored in more detail in Guideline 12, but there are also important insights for consideration of Guideline 11.

**As highlighted throughout these guidelines, a key task for private pension saving is to deliver income in retirement – often until death – unless the saver has secure, and sufficient, alternative sources of income.** Therefore, even if there is not a contractual obligation to deliver these cash flows, the plan design and investment strategy can learn from that used by DB funds that do have such a contractual obligation.

**Important contributions have come from many sources, including Blake (2008) and, more recently, Horneff, Maurer, and Mitchell<sup>lii</sup> (2019), who focused on which products can best deliver the income objective, and Martellini, Milhau, and Mulvey (2018), who developed their concept of goal-based investing.<sup>liii</sup>** These approaches are not just an academic issue – they are being enacted in real (and very large) pension funds throughout the world.<sup>liiv</sup> These and other innovations are discussed earlier in these guidelines in relation to their lessons for the choice of retirement income product. This includes the potential advantages of combining some form of phased withdrawal with a deferred annuity product. This mixed model clearly encompasses an approach that combines the differing requirements of the third and fourth ages of retirement.

**The ALM-inspired literature is coupled with extensive literature on how investments can deliver a retirement income objective, or to maximize a related concept.<sup>liv</sup>** There are many approaches – aiming to maximize wealth or income, or to minimize the risk of a shortfall relative to a retirement income objective. The strategies focused on the income-delivery optimization problem are complemented by literature on optimal drawdown rules given a certain level of starting wealth. These range from the long-established (but not necessarily effective) “4% rule,” which gives a rule of thumb for how much of your assets you can consume each year, to more dynamic rules that respond to the evolution of investment returns on the portfolio supporting the income drawdown.<sup>livi</sup> These contributions are important. However, it is equally important to remember that many members or affiliates will be unable to clearly state a retirement income objective because there is too much uncertainty to make a clear prediction of needs. Therefore, although retirement income is the right metric on which to focus, requiring total clarity about the required level decades before the event may have as many problems as any “optimal” investment strategy based on unwavering estimations of risk preferences or unchanging estimates of future liabilities. In all cases, the sequence of investment returns is important, because it matters when people suffer from investment downturns. Typically, sequencing risk should be offset by the drawdown rule, but this is not always the case – not least because many “rules” are designed to be simple enough to follow for people who will find most of the investment discussions daunting.<sup>li vii</sup>

**One important thread running through the literature on better integrating the accumulation and retirement phases – or designing approaches that effectively combine them – is the importance of developing deeper and more innovative capital markets.** Hedging inflation risk in retirement is clearly simpler if there is a government inflation-indexed bond that can be purchased directly, or that can provide a price reference against which other providers of inflation-linked bonds can price.<sup>li viii</sup> Delivering income over a 30-year period with reduced reinvestment risk is improved if there are 30-year (and longer) government bonds.



**Uruguay's constitution requires pension payments to rise according to wage inflation each year – for which it is much more difficult to find hedging instruments.** In an innovative move, the Central Bank of Uruguay helped to create wage inflation-linked bonds, which have now been issued (Box 12). This is a brave and innovative response and shows that capital market innovation can help to support pension policy. The approach adopted will not be suitable for all countries, particularly at lower levels of capital market development. However, it shows that there are broader possibilities that can be considered but will need close monitoring in the years to come.

#### BOX 12 ■ URUGUAY: INTRODUCING WAGE INFLATION BONDS TO HEDGE PENSION INCREASE

Since 1996, Uruguay has had a mixed pension system with a pay-as-you-go social security pillar and an individual savings pillar managed by pension fund administrators. Total assets in these funds are now 25% of GDP. Unusually, the pension delivered by the individual pillar must be indexed to wage or salary inflation (as opposed to the more typical case of indexation to consumer prices or no formal indexation requirements for private pension pillars). The indexation to wages is a constitutional requirement. This mirrors the situation in Colombia, where constitutional provisions and political risk around minimum wage levels create a challenging – and very difficult to change – requirement for the pension system.

The individual savings system is rapidly maturing, with the first savers now approaching retirement with no obvious way for annuity providers to hedge the financial risk of delivering annual wage inflation increases. Therefore, the authorities in Uruguay took the bold step of creating a bond so that annuity providers could better manage the financial risks. In August 2017, the government presented to Parliament a new law to allow salary-indexed bonds, known as the “Unidad Previsional” (UP). Parliament gave approval in April 2018. The authorities created and launched a new bond “Notas de Tesoro en UP” in July 2018. The nominal salary index is calculated by the independent National Statistical Institute.

This proactive role has risks, the most obvious being the assumption of the salary-inflation liability on the government balance sheet. There is also the risk of fragmenting the domestic bond market and reducing liquidity in other bond series. However, in the face of a constitutional mandate that has no short-term prospect of being changed, the approach in Uruguay represents a bold innovation to deliver a solution. Moreover, it can be seen as part of a well-established trend whereby government authorities proactively develop the domestic bond market. This includes issuing progressively longer-dated bonds to extend the yield curve and provide a floor against which other bond issuers such as corporates can price their bonds. It also includes issuing price inflation-linked bonds for investors (often pension and insurance funds) seeking to hedge inflation-linked liabilities.

Source: Author.

**There are proposals for other capital market instruments, including longevity bonds and latterly “Selfies” that aim to make it simpler for longevity and other risks to be hedged and simpler investment strategies to be developed.** Longevity bonds have been promoted by Professor David Blake,<sup>lix</sup> among others, and would see the government-issued bonds whose payments would be linked to longevity in the future, which has proven to



be difficult to predict accurately. The “Selfie” concept was proposed by Arun Muralidhar and Professor Robert Merton<sup>x</sup> and in the (related) work by Martinelli. It stands for “Standard of Living-indexed, Forward-starting, Income-only Securities.” The aim is a bond that only pays when a person reaches a predetermined retirement age. Therefore, the bond would be receiving income as people bought it and only pay out some decades later. The benefit would be that people could buy certain units of income in the long-dated future – rather than have to create asset allocations with their inherent volatility and uncertainty that would create this income. The advocates are hence opposed to target date fund approaches because by their nature they aim to generate a stock of assets that are not particularly well-suited to stable income production in retirement and then to match those assets as best as possible to retirement needs. On the other hand, in the absence of new capital market instruments, well-designed target date funds offer enhanced opportunities for matching accumulation and decumulation. These debates also highlight a critical issue in relation to target income. It will vary radically depending on whether a country has relatively low-fee health care or if members need to prepare themselves for large medical and social care expenses. Therefore, the overall level of income required, and its phasing, should be looked at for a given country and reflected in system objectives and regulations.

**These innovations are interesting and important and should be considered carefully going forward.** However, supervisors should also not put off other actions in the hope of a “magic bullet” product from the capital market that will solve all the problems. Instead, they should have a policy of progressive improvements across all aspects of the design and delivery of payouts. It is worth remembering that annuities have existed for thousands of years, before even the most rudimentary capital market in modern terms. Therefore, while they can certainly be improved, and will be improved by better capital market products, the fundamental ability to help members deal with longevity and other risks is often already within reach.

**The final areas to highlight in this guideline in relation to investment regulations and strategy is the impact of Environmental, Social and Governance (ESG) issues.** Pensions are long-term investments, particularly when the accumulation and decumulation phases are combined. These are exactly the type of long-term investments that could be impacted by environmental changes, social disruptions, and poor governance. The IDB has published a range of reports identifying key issues and providing advice to countries on how to integrate them into their national frameworks.<sup>lxi</sup> This is a key part of the broader global effort to meet the UN Sustainable Development Goals.

### 5.3.3 ► Supervisors should ensure employer-sponsored DB pensions and insurance company-delivered annuity products are backed by prudent funding levels and/or regulatory capital. Risk sharing in DB plans should be encouraged.

**Supervising DB plans and life insurance companies is technically demanding and raises unique issues that do not arise with DC funds.** There can be very significant variation in the nature of the benefits between different DB plans. Some promise benefits in relation to final salary that will be fully protected against wage inflation during the accumulation period and price inflation (or sometimes higher) in the payout phase. Some DB plans only promise to deliver a DB lump-sum payment at the retirement age. Some promise an income,



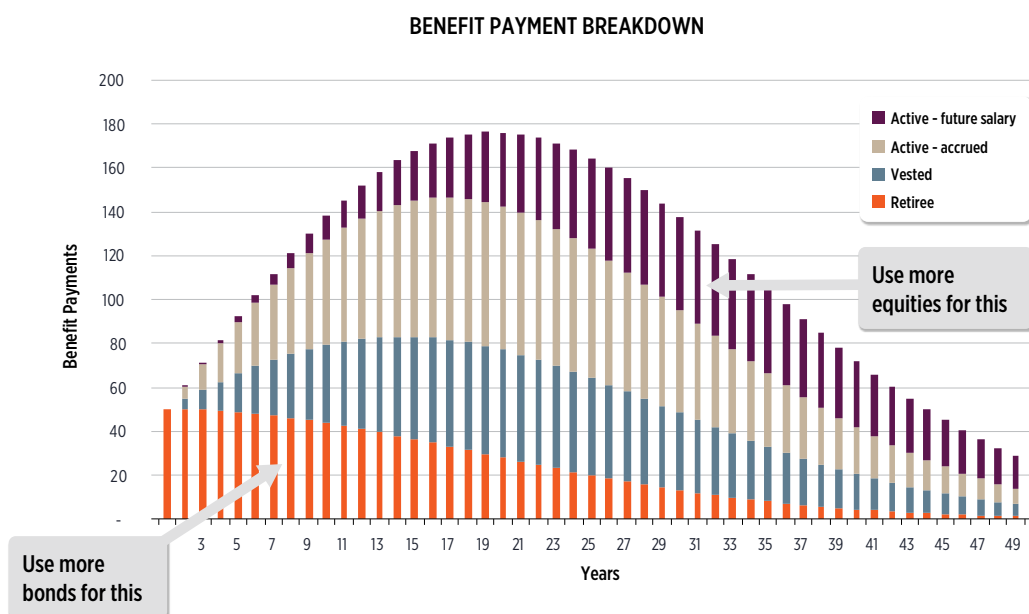
but if they are underfunded, they can reduce the “promised” payments. The rules for insurance companies providing annuities are typically “simpler” in the sense that the company must pay the benefits promised and hold capital to ensure that this will happen. However, within the “plain vanilla” annuity, there are also many variants that include clauses that reduce the liability to the provider to pay out under certain circumstances.

**The literature and practice on insurance supervision is vast, with the key international standards known as the Insurance Core Principles (ICPs) produced by the International Association of Insurance Supervisors.**<sup>lxii</sup>

These PLAC payout guidelines argue that pension supervisors need to take account of the risks in the payout phase, even if some of the entities are outside of their scope, because failures or problems there will impact the pension system. However, the pension supervisors are not intended to supervise the life insurers. Some joint visits with the insurance supervisor could be a good idea for areas of common focus – for example in relation to pricing or the behavior of sales agents. Thus, these guidelines do not go into detail about the desired approach to insurance regulation and supervision. However, the areas of key crossover, such as a focus on governance as already contained in Guidelines 4 and 12, are an important part of the ICPs.

**ALM was originally developed for DB funds and insurance companies.** Figure 7 shows an example of a liability profile for a DB plan that one would expect a sophisticated plan to be regularly producing. Supervisors should expect to be able to see and quiz the plan about their ALM modelling and its implications for their investment strategy development. This is clearly a demanding task, which is why Guideline 14 highlights the need for actuarial support to the supervisor.

FIGURE 7 ■ LIABILITY PROFILE FOR A DB PLAN WITH IMPLICATIONS FOR ASSET ALLOCATION



Source: Evan Inglis, CFA.



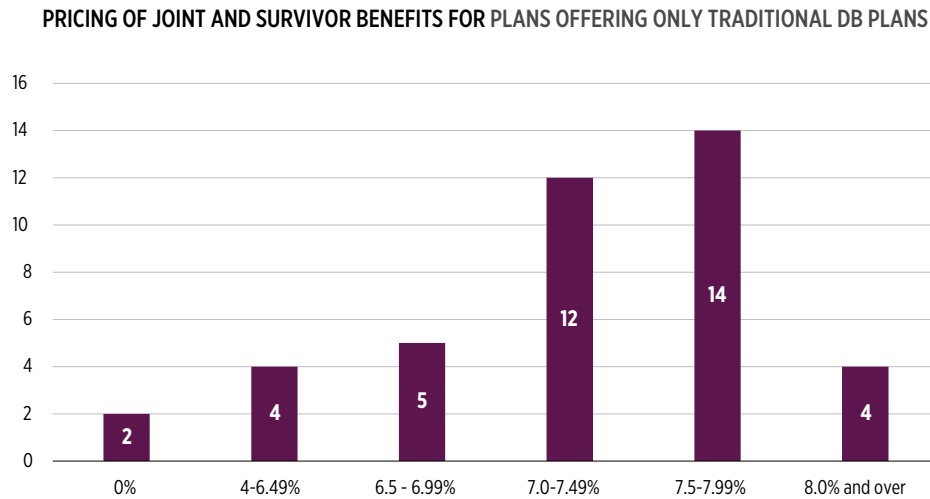
**Supervision of DB plans relies on good quality actuarial valuations to identify the funding level of the plan under different assumptions and scenarios. This is an essential tool to know if a plan can support the promises it is making, now and in the future.** Among other elements, a valuation will need to consider *Interest rates/discount rates; Mortality; Investment Returns; Salaries (and productivity); Inflation; Contributors; Beneficiaries; Gender split; Marriage; and Survivors*. Some of these are very similar to issues any investment strategy should consider, such as expected returns. However, some are specific to DB plans – because of the overall value of the liabilities – and hence the funding ratio will depend on the discount rate chosen to calculate the flow of annual payments in the future into a net present value calculation.

**Other DB funding assumptions take on different importance depending on the rules of the plan.** For example, if a person works for a company with a DB plan for 20 years between 20 and 40 and then leaves, there needs to be a formula for how to update their past salary when calculating their entitlements. If not, then in a high-inflation economy, a worker could have rights based on a salary earned 20 years ago that is worth very little at retirement. Therefore, DB plans have rules to uprate the past salary, but it typically makes a lot of difference if that uprating is done relative to consumer prices or to wage inflation. The same is true of the future payment of pensions. Some plans have rules that payments will be increased if funding is sufficient. Some have rules linking increases to consumer prices. As we saw in the case of Uruguay, some systems require an increase based on wage inflation. Finally, rules on survivors are important because once the main insured person dies, it can lead to an end to all payments, or payments can continue to their spouse and/or to their children. The rules on these entitlements can make massive differences to the cost of liabilities and, as in the Colombian case, have been another reason for providers to exit the annuity market. Other countries have stricter rules for survivors – for example covering children only until they are 18 and ceasing to cover a surviving spouse if he or she gets married again.

**It may seem that “technical” assumptions should have a narrow range of acceptable outcomes. However, there can also be significant differences in the way liabilities are valued and priced.** Figure 8 shows variations in the way joint and single life benefit plans have been calculated in a range of US public plans. This indicates a worrying dispersion in practice, which is difficult to explain without investigation. Two pension plans or two insurers may seem to have similar funding levels, but one could be using very different assumptions and in effect be “hiding” the true picture. On the other hand, the current low interest rate environment for many countries creates the problem that liability measures have increased so significantly that for some plans full funding will be difficult to achieve. If discount rates rose significantly if interest rates rose to more normal levels, then liabilities would fall, and funding would improve.



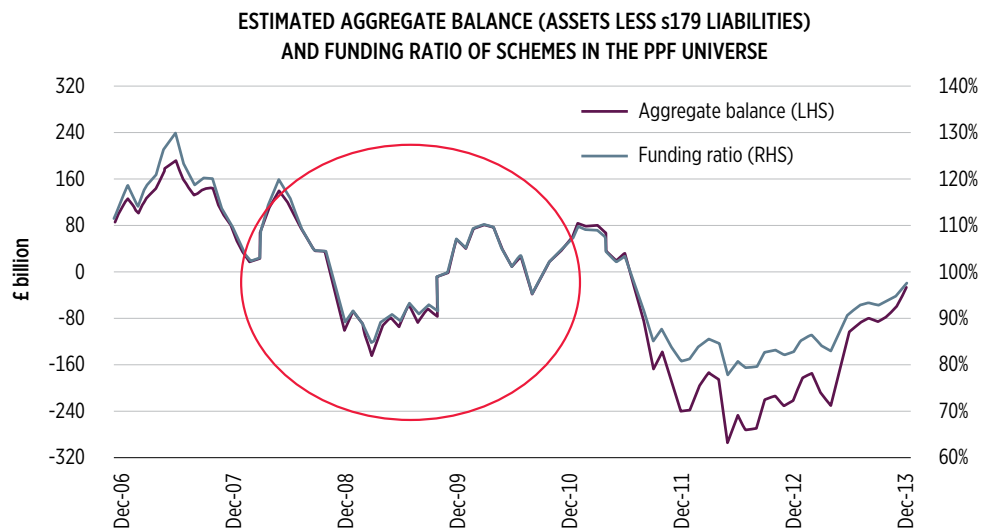
FIGURE 8 ■ PRICING OF JOINT AND SURVIVOR ANNUITY BENEFITS FOR TRADITIONAL DB PLANS



Source: Abashidze and others, 2018.

Once valuation assumptions have been determined, valuations need to be updated periodically. DB funding can be very volatile, so comparisons over time are very important. Small changes in assumptions can create very large changes, turning a previously well-funded plan into one that is underfunded (see Figure 9).

FIGURE 9 ■ VOLATILITY OF DB FUNDING LEVELS



Source: The Pension Protection Fund 7800 index.



**The mortality assumptions are particularly important, and good mortality data and practice are essential.**

Data can be poor (hence the stress in guideline 9 on supervisors playing a proactive role). However, even adequate data can be badly used. Many supervisors allow poor practice with the use of unadjusted “static” or “period” mortality tables as opposed to dynamic or cohort tables. In a country with rising life expectancy, a dynamic table will incorporate the fact that future 65- or 80-year-olds will live longer than the estimates for current 65- or 80-year-olds. A static table, on the other hand, will assume that a current 45-year-old, when he or she reached 65 in 20 years, will have the same rate of mortality as a 65-year-old today. This is despite having the benefit of another 20 years of rising life expectancy. Things could always reverse themselves and life expectancy could fall for whole populations or specific groups. However, there is little evidence for this in the LAC region currently. Table 3 shows the results of a recent international comparison exercise, showing mixed practice in the LAC countries in the survey.

TABLE 3 ■ COMPARISON OF USES OF MORTALITY TABLES AND ROBUSTNESS OF PRACTICE

Country	Minimum table required by regulation		Mortality improvements required by regulation		Mortality improvements used in practice	
	Annuity providers	Pension plans	Annuity providers	Pension plans	Annuity providers	Pension plans
Brazil	No	Yes	No	No	No	No
Canada	No	Yes	Yes	Yes	Yes	Yes
Chile	Yes	Yes	Yes	Yes	Yes	Yes
China	Yes	Yes	No	No	No	No
France	Yes	Yes	Yes	Yes	Yes	Yes
Germany	Yes	Yes <sup>1</sup> /No <sup>2</sup>	Yes	Yes	Yes	Yes
Israel*	Yes	Yes	Yes	Yes	Yes	Yes
Japan	No	Yes	No	No	Yes	No
Korea	No	No	No	No	No	No
Mexico	Yes	No	Yes	No	Yes	No
Netherlands	No	No	Yes	Yes	Yes	Yes
Peru	Yes	Yes	No	No	Some	Some
Spain	No	No	Yes	Yes	Yes	Yes
Switzerland	No	No	No	No	Yes	Some
United Kingdom	No	No	Yes	Yes	Yes	Yes
United States	Yes	Yes	No	Yes	Yes	Yes

Source: OECD

Notes: \*the statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. the use of such data by the OECD is without prejudice to the status of the golan Heights, East Jerusalem and Israeli settlements in the West bank under the terms of international law.

<sup>1</sup> For non-regulated Pensionskassen and insurance oriented Pensionsfonds.

<sup>2</sup> For regulated Pensionskassen and non-insurance oriented Pensionsfonds.



**DB private pension plans ultimately need to fully fund their liabilities. This means at least 100% funding of their benefits and ideally funded with a buffer that will allow them to provide benefits if there are significant issues in relation to mortality or investments.**<sup>lxiii</sup> This can be difficult to achieve, and the full implementation of Guideline 12 will involve a great deal of additional work not highlighted here in detail. However, a good overview is the OECD Core Principles on Private Pensions, in which Principle 7 focuses on how to deal with (occupational) pension plan liabilities. The headline features of the principle are in Annex D, and the detailed guidelines to implement the principle are an important place to start for supervisors seeking additional guidance.

**Without funding, there are no guarantees the pension will be paid. Because most countries do not have a “back-stop” fund that will pay benefits if assets are insufficient, members are very exposed.** A number of countries have developed specific funds that will take over the liabilities of an employer-sponsored DB plan if the employer goes bankrupt and the plan was not fully funded. Such funds exist in the UK, US, Germany, and Sweden, among other places. However, they are relatively rare. They can be hugely beneficial, and any country with large DB liabilities in employer plans should consider them. However, they also require complex and demanding reforms and thus have not been included in these guidelines, particularly because many of the countries with employer-sponsored DB plans are (smaller) Caribbean countries, where it would be difficult to create such a fund country by country. One caveat to the lack of funding when an employer goes bankrupt is if the employer gives ownership of certain assets to the pension plan – known as contingent assets – that provide additional assets in the event of a bankruptcy.

**The challenges of valuing and fully funding DB plans with all the liability on the employer sponsor or government is one reason risk sharing is an attractive idea.**<sup>lxiv</sup> **It makes it simpler to deliver DB plans and may be a more attractive solution for individuals than a purer DC system.** Allowing the annual increases in pensions to vary depending on the funding level can have its attractions, as long as the fund is well governed and is targeting regular annual increases. The Dutch pension model has many attractions in that the rate of annual pension increase is tied to the level of funding – even to the point of mandating nominal decreases if funding levels fall below 100%. This feature came as a shock to many Dutch pensioners during and after the global financial crisis, and there has been much debate in the Netherlands about their system. However, the essential risk-sharing design has many strengths. Regulators and supervisors should consider if introducing risk-sharing features can make their systems fairer and more sustainable. This is particularly important where DB systems have much higher benefits than the DC pillar and include high levels of implicit subsidies from public finances to often relatively small and well-protected groups. Within the public pay-as-you-go pension environment, a type of risk-sharing model is known as a notional defined contribution (NDC).<sup>lxv</sup>



### 5.3.4 ► Supervisors should address consumer protection with good overall design rather than rely on members having deep understanding and making informed, active choices. Complimentary basic education and clear member messages help reach this objective

**The concept and practice of pensions is complicated, so members need some education on what is happening.** However, Guideline 13 on education cautions that there is not a lot of evidence internationally, and none in the questionnaire responses, that financial education campaigns can achieve real and lasting benefits. This is not to say that financial literacy is not important – there is a good correlation between financial literacy and many positive outcomes in terms of financial well-being. However, the problem is the ability of regulators and supervisors to turn their training and education efforts into meaningful improvements in financial literacy that persist. In an ideal world, financial education would start at school and then give children the tools needed for their whole life. Unfortunately, the available evidence does not suggest that this would reliably lead to persistent improvements in financial literacy either.

**There is a need for clear information about the system, particularly around times of decision such as starting a job or approaching retirement.** However, the evidence suggests that mandatory rules, default rules, and “nudges” are more effective than education and communication campaigns. For this reason, in a long list of guidelines that demand action, the focus on financial education is one area in which regulators and supervisors might be able to save time and resources.

**The recommended approach is to use the design of the system and the main products, processes, and providers as the key consumer protection tools – not education.** Then, campaigns can focus on simple messages with a very simple action – such as the UK’s “I am In” campaign related to the introduction of auto-enrolment, which used simple approaches to persuade people not to leave the system. Given that the default was to stay in and so required no action, this was swimming with the tide in terms of getting large numbers into pensions.

**Guideline 5 recommends choosing between one of three main approaches to delivering lifetime income. However, a legitimate issue could be how this approach would take on board different preferences for income, or bequest to families, and how this would be communicated.** Singapore shows how a noninsured annuity can be provided as the mandatory payout vehicle, but tailored to allow simple choices for key features such as whether payments rise over time or whether bequests are likely. Box 13 provides more detail.

**Many supervisors place education and communication requirements on providers. In such cases, the supervisor must be vigilant about the material that is created by providers and used with members.** Some provider material is excellent. Some might be simply sales material, which might include very optimistic or misleading assumptions. Even when information is not produced physically, sales agents can push certain misleading messages. Therefore, the supervisor needs a framework to control this material, potentially producing a simple fact sheet that providers must give to consumers when they are at the point of potential purchase, rather than providing communication when consumers might have no need for it.



This is an area where the use of projection tools can be very useful, particularly if member annual statements are adjusted to include a focus on retirement income rather than only current asset balance. The questionnaire responses highlighted how a number of supervisors did have their own projection tools, and some had worked with the industry to make communications simpler and more useful. However, many had not – and this is an area in which supervisors could usefully focus more work in the future. As highlighted in Guidelines 15 and 16, technology development has made this much simpler to do than in the past.

### BOX 13 ■ COMMUNICATION OF VARIABLE NONINSURED LIFE ANNUITIES IN SINGAPORE

The Central Provident Fund (CPF) in Singapore recently developed improved payout phase options, based around three different variable noninsured life-annuity options known as “CPF LIFE plans.” The example shows how good design and very simple presentation may be the most effective way to help members – rather than attempts to provide expensive and extensive education to enable them to understand all the options and inputs.

The basic presentation is set out below and highlights a focus on income received, whether it will increase over time, and the implications for the money you can leave your family as a bequest. The desire to leave a bequest is often given as a reason to avoid an annuity. Thus, allowing this option for many CPF members helps to preserve the broad membership base. The CPF provides a simple online calculator to translate the CPF balance into the income and bequest scenarios. Members can then make this simplified choice.

What is less clear is how the product works “under the bonnet.” It is based on a variable life annuity operating on current assumptions about mortality and discount rates, which can be changed in the future if needed. It is not clear how many members truly understand the nature of this mechanism, but the existence of the CPF as a trusted counterparty provides reassurance. This approach combines a number of the ideas set out in the guidelines (particularly guidelines 3, 4, and 5). These include having a large-scale provider (or providers) with strong governance and simple products operating in the payout phase. In Singapore, the same institution covers the accumulation phase, but there is no reason this kind of model could not be created in a country with multiple accumulation providers – all potentially lacking scale – with a new and distinct approach to payouts.

There are three CPF LIFE plans for you to choose from – the LIFE Standard Plan, the LIFE Escalating Plan and the LIFE Basic Plan.

The plans differ in terms of the **monthly payout** you would receive.

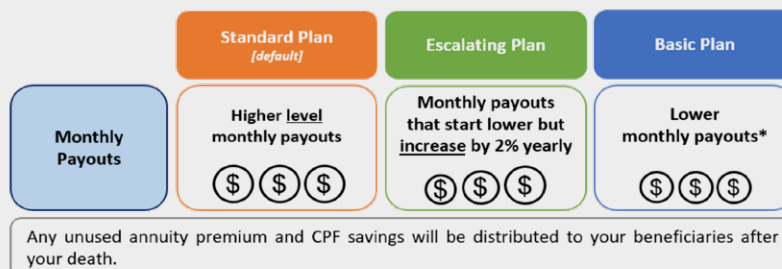


Figure: CPF, Singapore.



## 5.4 ► Part Four: Resources and organization for effective payout supervision

**The final three guidelines cover the “resources and organization for effective supervision of the payout phase.”** The first of these highlights the specific need to understand and staff for actuarial issues. This is for ongoing work with DB plans but also to help design regulations or marketplaces that can improve outcomes for members. The next guideline highlights the importance of supervisory IT capability (SupTech) given the importance of data collection, analysis, and risk targeting. Guideline 16 focuses on the potential benefits and risks from financial services technology (FinTech). As highlighted throughout these guidelines on the payout phase, the first PLAC Guidelines for Supervisory Assessment of Pension Funds are the core resources for the full set of regulatory and supervisory tools to be used on any pension supervisory matters.

### 5.4.1 ► Supervisors must understand actuarial concepts related to retirement income and employ or have access to actuarial inputs for regulatory design, data collection, and periodic risk assessment.

**One reason the payout phase has potentially been given less attention than the accumulation phase is that it is more complicated.** Another reason is the reality or the expectation that insurance supervisors will lead on the issues – even if in practice much of the activity stays within the remit of pension supervisors. The math and concepts behind annuities are not simple for individuals or regulators at any level of development. They are more natural for supervisors covering DB funds, but not necessarily so because their effort may be on funding levels and solvency rather than on understanding of how annuities are priced and sold.

**At heart of annuity pricing is the “annuity factor” – how much must I pay now for \$1 of income until I die, starting at a given date.** Typical numbers for immediate annuities at 60 or 65 range between 10 and 20 (e.g., you need \$20 now to buy \$1 of income for life).<sup>lxvi</sup> Thus, \$100,000 in home currency will buy you \$5,000 a year for life if the annuity factor is 20 and \$10,000 a year for life if it is 10. However, there are many factors that can impact this “price” for future income – across different products and groups within a country and between different countries. Key drivers include mortality or life expectancy, discount rates, investment returns, and operational and capital costs. The longer you expect people to live, the higher the annuity factor is – the price of future income. This is because you will need to make payments for more years. In other words, you will need more money to promise to deliver \$1 of income a year for life – which is the same as saying the annuity factor is higher. This is why it is essential to measure mortality correctly – and why Guideline 9 makes the case for supervisors in countries that have poor data to take a proactive role in helping to improve it.



Guidelines 9 and 12 highlight the importance of correctly using mortality assumptions – for example using dynamic rather than “static” mortality tables. Guideline 14 addresses the technical skills needed to implement the other recommendations. Getting involved in these debates is not simple but will be necessary. However, it is possible to have a burst of activity to set a framework – for example, the right mortality table or type of tables to use – and then be able to scale back resources needed.

One important reason for good data and understanding is that it will be vital to uncovering differences by gender in pension outcomes, which are likely to be significant. Table 4 shows the difference in life expectancy between men and women in a global survey. It includes many countries from the region. LAC countries do not have the largest differences, which are seen in Japan and Korea, but the gender gaps are significant. Combined with a lower density of contributions from women and sometimes earlier retirement ages, this can have a significant impact on future retirement income – or the cross-subsidies required to achieve equal annual income levels.

TABLE 4 ■ GLOBAL DIFFERENCES IN GENDER GAPS IN LIFE EXPECTANCY - OECD

Country	Gender Gap 2010	Change from 2000
Mexico	1.9	(0.0)
China	1.9	1.7
Israel*	2.2	(0.0)
United States	2.6	(0.4)
United Kingdom	2.6	(0.6)
Brazil	2.8	0.4
Chile	2.9	(0.4)
Canada	3.0	(0.5)
Germany	3.2	(0.6)
Switzerland	3.2	(0.5)
Netherlands	3.3	(0.6)
Spain	3.9	(0.1)
France	4.2	(0.4)
Korea	4.5	0.6
Japan	5.0	0.2

Source: Human Mortality Database (HMD) where available.

\* The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Actuarial insight is also important to guide policy on product design. The central driver of better payouts per \$1 from an annuity compared to an individual phased withdrawal is the “mortality credits” – the future income of the group is shared among the surviving members. If large groups are not in the annuity pool, then the income per dollar can reduce because the value falls due to adverse selection. This is the impact of having to cover people who have proactively chosen to take an annuity because they think they will live



longer, which means income payouts will be higher than the standard mortality table would have predicted. Along with mortality, the investment portfolio and costs are significant. With preparation, regulators can use the money's worth ratio to shine a light on the value of payouts by comparing actual annuity pricing to what would be predicted given current mortality and capital market outcomes. This could be achieved with a short-term exercise to develop the tool and the process so that non-actuarial experts could then run the system and respond to pre-agreed triggers for deviations from the money's worth ratio.

**Access to actuarial resources is vital if a supervisor is covering DB pension plans – whether employer-sponsored plans or main social security or public sector plans. However, it is also important to develop the policy for the payout phase.** However, the resources do not necessarily all need to be in-house and permanent. Key reviews, analysis, development of publications, and development of policy and regulations can all draw on short-term external expertise. The regulator in Costa Rica – SUPEN – combined in-house and external expertise to create a first-of-its-kind publication comparing the different DB pension plans, contrasting their membership, funding levels, and key assumptions.<sup>lxvii</sup> This helps to improve transparency in the market and can also be used by the regulator to signal areas of key risk – for example on funding levels or the use of weak assumptions for mortality, discount rates, or salary improvements. SUPEN also publishes the actuarial reports produced by external actuaries for the DB plans it supervises. This is another useful practice. SUPEN also introduced new supplementary regulations on actuarial issues as a first step in the process of improving standards for valuations of DB plans, though many further steps are needed. In Jamaica, the National Insurance Scheme will now have detailed actuarial valuations every three years, rather than every five years as before.

**As highlighted in guideline 12, there are many critical issues to consider when conducting an actuarial valuation. Regulation needs to address the most important assumptions and approaches.** These include discount rates, period of analysis, mortality tables, contribution density, inflation of salary tables, and investment return assumptions, among others. Regulation should include the need for sensitivity and scenarios analysis, in addition to defining how often a fund should have an actuarial valuation and when there should be external audits of those studies. Countries typically opt for annual or three-yearly valuation requirements, with an annual update short of a full valuation in places where full valuations are done every three years. There is no single approach globally to mandating assumptions. The right one in a given country will depend on how well the pension funds are operating. If they are seeking to use the weakest mortality tables and excessive discount rates, then the regulator should consider imposing at least minimum requirements. The International Organisation of Pension Supervisors has published a guide called “The role of actuarial calculations and reviews in pension supervision,” supported by a very detailed background paper that is a useful reference.

**In Sweden, the mandatory DC (second pillar) pension is paid out using a variable life annuity formula, which is published in the annual report for full transparency.** There is a fair degree of investigation and scrutiny that goes into developing such an approach, but importantly, once the pricing formula is created and agreed upon, it can then be operationalized for all new members and subjected to periodic review. This would be another example of a way in which a PLAC member could have a specific project to create a new payout formula – which would be resource-intensive – and then move into a more business-as-usual operational mode. The approach may be similar to a large DB plan that requires a detailed actuarial review every three years but in between can update the key results with new data in a simpler way. If the periodic review flags important changes, then the detailed review can be brought forward.

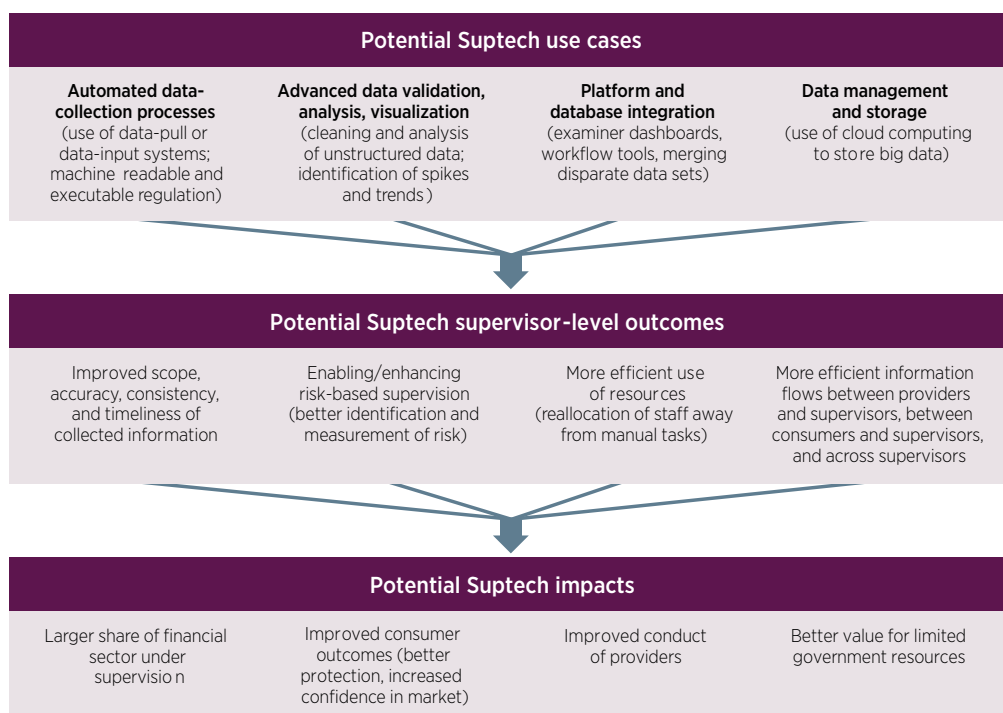


### 5.4.2 ► Supervisors should develop IT capacity (SupTech) for automatic data collection and analysis to enable retirement income projection and facilitate price monitoring, risk assessment, external publications, and monitoring of objectives.

**The guidelines have identified the importance of good data to underpinning analysis, risk assessment, and risk mitigation.** This is not a new message, but developments in data and (financial) technology give supervisors the potential to leverage more, faster, cheaper, and more detailed data to help members secure good outcomes. There will be limits to the affordability of some tools in countries with fewer resources, as well on some tools such as large-scale data mining in smaller countries. However, advances are possible in all countries. The potential uses are relevant for both DB and DC systems.

**The Toronto Centre has prepared useful guides on SupTech and FinTech that trace through the implications for supervisors.** It highlights the applicability of automated data collection and processes, advanced data visualization, platform and database integration, and data management and storage (see Figure 10). If supervisors develop artificial intelligence (AI) and algorithm-based targeting and interventions, it is imperative they are tested well so that their outcomes are ethical and fair. Automation should not lead to particular groups being targeted, excluded, or otherwise disadvantaged. The same is true for Guideline 16 on FinTech.

FIGURE 10 ■ SUPTECH CONCEPTUAL FRAMEWORK



Source: World Bank, 2018.



**Three practical examples can hopefully illustrate the potential of “SupTech” to bring new approaches to reduce well-established risks. The first relates to poor practice by sales agents.** In a voluntary pension system, or a mandatory one where workers make choices over pension providers, pension administrators often use sales agents to secure customers in addition to other distribution channels such as online ones. Sales agents are widely paid commissions per customer, often with a single lump-sum payment that the providing pension company will recover from the annual fees paid by the new pension member. Many agents can give good service. However, this payment model gives sales agents an incentive to enroll as many clients as possible, even where the product may not be suitable or their company may not provide the best or even good options. In the worst cases, there is an incentive for fraud.<sup>lxviii</sup>

**A “SupTech” approach would require all new contracts to be accompanied by a photo of the agent responsible and the new customer with a geolocation and time stamp. In addition, the agent could record the customer’s declaration of understanding and agreeing to the terms of the contract.** All of these would be uploaded to the supervisor’s central database as records in case of future investigations. The supervisor thus would have a proactive tool to make opening false accounts more difficult, as an agent would have to upload fake or duplicate customer photos and statements. This approach could allow the supervisor to monitor in real time the signing of new contracts and identify any unusual activity to investigate in terms of the location and number of new contracts. It would also allow the supervisor to correlate individual sales agents to types of products sold and characteristics of customers, which would identify, for example, if complex products with high investment risks were being sold to low-income consumers.

**A second example of a SupTech solution would be the real-time monitoring and tracking of contract prices for annuities.** Where Supervisors create an auction platform, they have the ability to monitor real prices for new contracts relative to a model of annuity prices based on the money’s worth ratio. Such a model relates annuity prices to key underlying building blocks such as bond yields and mortality tables. It is not a perfect representation of how annuities are priced because there can be longer lags and evidence of asymmetric responses from changing bond yields to annuity prices offered.<sup>lxix</sup> However, such an approach would be able to identify and flag in real time if there were large deviations from expected pricing. Such deviations could be positive or negative, indicating either the potential for collusion among providers if annuity prices are too high or a possibly damaging price war if prices are too low. These potential scenarios could have long-term consequences for the ability of insurers to back policies they have sold with sufficient regulatory capital.

**The third example relates to developing retirement income projections.** This is not strictly speaking about SupTech in the sense that it has been possible for many years and, as the questionnaire responses showed, is currently used by a number of regulators in the PLAC network, including Chile, Costa Rica, and Mexico. However, projection models should be seen as part of the modern toolkit for regulators and supervisors, bearing multiple benefits. For internal risk-assessment work, a projection model can monitor how members’ accounts are likely to develop and compare this development against the adequacy outcomes of the supervisor. This can be done in the aggregate, but also in relation to sub-groups, whether by gender, age, region, or ethnicity, and it gives real-time insight into where there are problems, allowing regulators to target additional resources to higher-risk groups. Regulators can also use the tool with pension members and providers directly so that annual statements of account do not focus simply on account balance but provide an indication of likely fu-

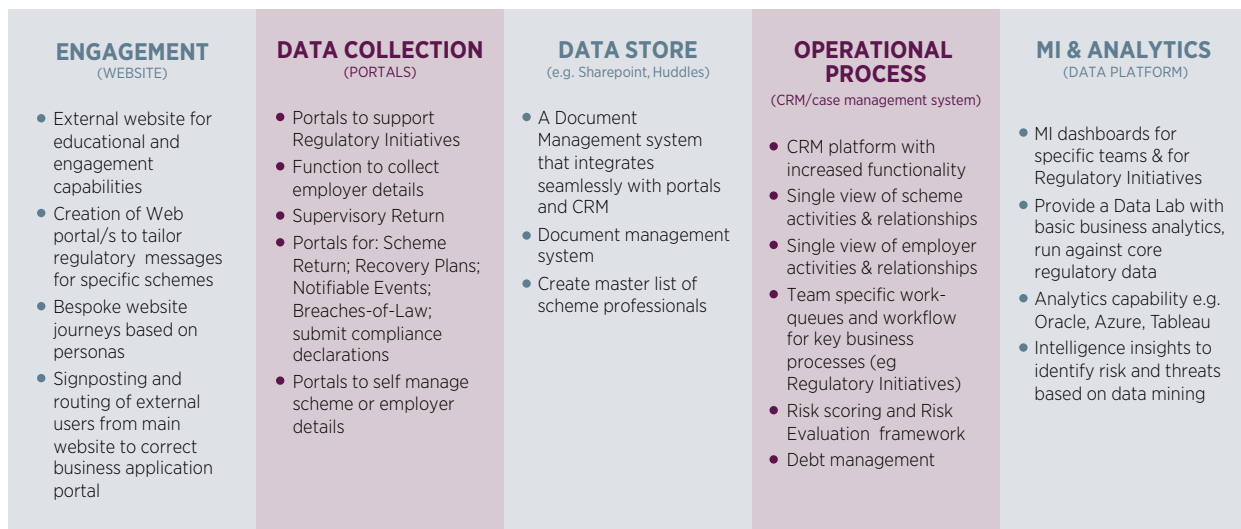


ture retirement income. This is important to help shift member perception from an asset to an income frame. It can also be important if a regulator determines that some providers are using unrealistic assumptions on investment returns or future income to persuade members to switch accounts.<sup>lxx</sup>

**It should also be remembered that before exploiting the latest technological advances, many regulators were still using paper processes that could have been removed by data portals using the technology of 10-15 years ago.** When considering SupTech, all supervisors should review their data-collection and processing systems and eliminate those that are still paper-based. As soon as supervisors can automate data collection through online portals, they will also be able to improve both the quality and the timeliness of the data they receive and publish. Again, using well-established data management tools, supervisors should be able to create charts and tables on key industry metrics that are self-generating and can be put into use internally and externally very rapidly.

**SupTech requires IT support, and ideally undertake a careful IT infrastructure project to work out what a supervisor need. These reviews should be driven by what the regulator wants to achieve, the risks to these objectives, and the capability the regulator needs to tackle these risks.** This requires a detailed process not shown here – although one output is shown in Figure 11 below – where desired activities are linked to the required capabilities, from the benefits of a website (which was also SupTech before the word was invented) to data collection and case management.

FIGURE 11 ■ IT INFRASTRUCTURE TO DELIVER SUPERVISORY FUNCTIONS



Source: The UK Pension Regulator.

**It is important to ensure careful cyber security and data protection protocols so that the benefits of new data, delivered more quickly and in more detail, are not undone by hacking of that data.** The protections in place are not specific to the payout phase, so they are not reviewed in more detail here. However, the key



message, repeated below in relation to FinTech, is that the great benefits of more and better data must not be undone by lax IT security that leads to the loss of valuable data and undermines trust in the supervisor or industry.

**Finally, as with any significant IT or policy change, the options should be subject to a cost-benefit analysis.** As highlighted above, there are pros and cons to new SupTech approaches. There may also be cheaper, high-value projects, such as removing paper processes. A new IT system may seem attractive, but costs must be justified by benefits. Particularly in smaller jurisdictions, where large populations and by extension “big data” do not exist, cutting-edge IT resources may not be required.

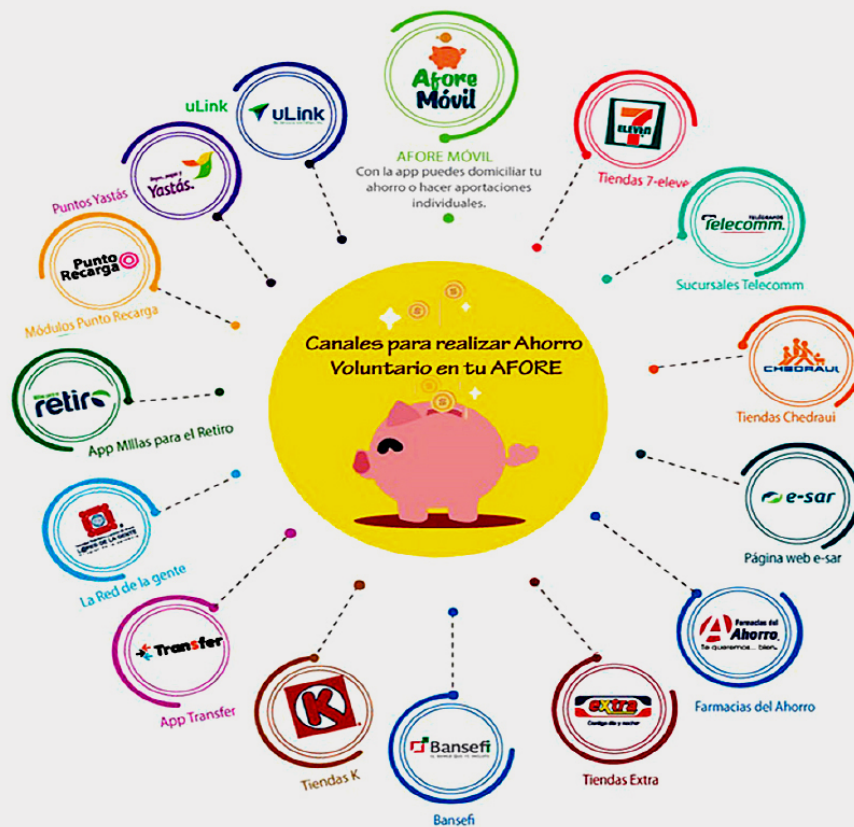
#### 5.4.3 ► Supervisors should explore how FinTech can support simpler and safer access to better-value products, ensuring they have the capacity to assess risks first rather than enable products they do not understand.

**There is no doubt that developments in financial technology, or FinTech, have the potential to significantly improve outcomes in pensions (and other areas of financial services).**<sup>lxxi</sup> One example is expanding coverage to the informal sector by making enrollment and contribution points ubiquitous and by connecting people at lower cost with greater accuracy and financial security to national pension systems.<sup>lxxii</sup> This is an area where countries, including India and Kenya, with some of the lowest development in terms of income per capita are taking the lead. However, on average, it may be more challenging for a supervisor in a developing country with scarce resources to be at the forefront of these developments. FinTech is applicable to both DB and DC systems and is used extensively, for example, in insurance markets. However, because DB plans tend to be provided by large public institutions and company sponsors, the DC market has greater interaction with FinTech tools, at least in terms of customer acquisition. Box 14 shows how the Mexican regulator CONSAR has taken a proactive approach to using the potential benefit of FinTech to tackle longstanding weaknesses with pension coverage and voluntary pension contributions.



## BOX 14 ■ MEXICO'S PROACTIVE FINTECH ENGAGEMENT TO BOOST VOLUNTARY PENSIONS

In addition to well-known examples in India and Kenya, the Mexican pension regulator CONSAR has created a FinTech “infrastructure” to boost voluntary contributions. A carefully designed strategy followed by the implementation of different channels, often using retail outlets as shown in the picture, has made it far simpler to enroll and contribute, for your own pension or that of a family member. The net result has been more voluntary pension contributions in the past four years than over the previous 18.



\*Recuerda que también puedes ahorrar en la ventanilla de tu AFORE

Source: CONSAR



**Looking at FinTech overall, the technologies involved are numerous, and their operation in combination often helps unlock the real potential of FinTech.** Different technologies and their likely impacts on pensions are listed below:<sup>lxxiii</sup>

- a. **Application Program Interface (API)** – important now as a simple “glue” for providers
- b. **AI and Machine Learning** – a growing area, but AI and algorithms must be ethical and fair and not disadvantage particular groups
- c. **Internet of Things** – potential to link consumption spending to contributions for informal sector workers, plus health monitoring that could affect longevity
- d. **Big Data Analytics** – potential particularly for voluntary systems and enforcement
- e. **Distributed Ledger Technology (DLT) (e.g., blockchain)** – a big issue for administration, but is there a solution that is robust to a 40-year horizon yet?
- f. **Cloud Computing** – “simple” improvement in storage, but a great enabler
- g. **Cryptography** – essential to protecting payment systems, pension funds, custodians
- h. **Biometrics** – profoundly important now for pensions and in the future

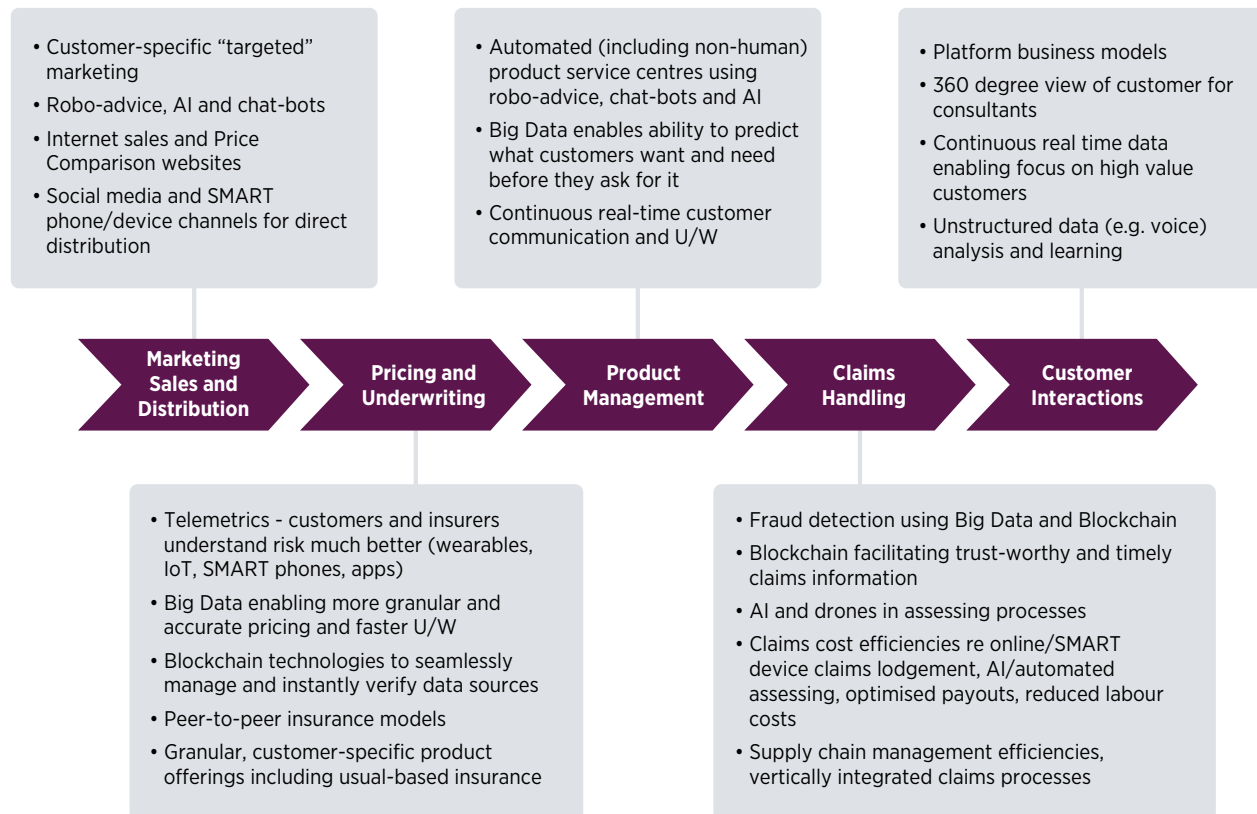
**The products that these new technologies enable are similarly diverse and include the following:**<sup>lxxiv</sup>

- i. **Digital Payments and E-Money** – profoundly important now for pensions
- j. **International Remittances** – potentially significant impact, but need Central Bank consent
- k. **Personal and Business Loans** – likely too small to impact average pension fund
- l. **Peer-to-Peer Lending Platforms** – not relevant to pensions directly
- m. **Crowdfunding Platforms** – not likely to be relevant to pensions
- n. **Robo-Advisers** – relevant and likely to be pushed, but are they an overhyped or worrying “solution” if individuals need advice, as default funds have provided a better solution for many years?
- o. **Cryptocurrencies** – should be very unlikely to impact pensions except in high-end investments and unless investment regulations are very lax

**FinTech changes have the potential to impact all parts of the pension value chain (and that for other financial services).** This potential is highlighted in Figure 12, which is based on work in the insurance industry but has equal applicability to the pension sector.



FIGURE 12 ■ IMPACT OF FINTECH ON THE FINANCIAL SERVICES VALUE CHAIN



Source: IAIS (2017) “Increasing Use of Digital Technology in Insurance and its Potential Impact on Consumer Outcomes.”

**To fully leverage FinTech developments, a country needs a unique biometric national ID with integrated platforms for financial inclusion built on mobile phone platforms as well as “traditional” internet access.**

This unlocks huge possibilities to improve the ability to enroll members in pension plans as well as collect contributions from, communicate with, and potentially guide them through the different phases of retirement. However, as with the insights from behavioral economics, the potential benefits of FinTech applications should not detract from the creation of simple default pathways for ordinary pension savers who do not have the time, inclination, or ability to engage with the details of their pension plans.

**Thus, there are many useful examples, but there are sometimes significant risks.** The use of DLT (blockchain) can improve the security and accuracy of administrative processes. This has led to significant investment by many players, some of it in open, or permission-less, blockchain, which is the kind Bitcoin exemplifies, and some in “permissioned” blockchain restricted to known players, whereby a smaller number of trusted providers can collaborate.<sup>[xxv]</sup> However, blockchain and crypto currencies can be hacked. There have been massive frauds and asset loss in some well-known exchanges,<sup>[xxvi]</sup> which highlights that new technology and good “old-fashioned” supervision form an important partnership to deliver the best outcomes.



**There are now a very large number of useful guides from different regulators and international organizations about the benefits and risks of many aspects of FinTech.** A particularly good source is the Monetary Authority of Singapore (MAS), which has set itself the goal of being a leader in the field and has produced serious and detailed material on how to supervise the risks involved, including by tackling ethical issues of FinTech.<sup>lxxvii</sup> This dedication is useful because the FinTech revolution is progressively increasing its reach across financial services. Insurwave, for example, is the world's first maritime insurance blockchain platform, and Legal and General Reinsurance launched the world's first Pension Risk Transfer blockchain platform in June 2019. Both represent areas with a heavy reliance on accurate and detailed data. Blockchain provides the opportunity to improve the speed and accuracy of complex transactions.

**The final area associated with FinTech is the use of regulatory “sandboxes” to encourage innovation by making it simpler for non-traditional providers to enter the market without passing the full authorization process of a typical provider.** Some potential benefits are<sup>lxxviii</sup> as follows:

- lowering entry barriers such as FinTech for nonbanks to spur competition;
- facilitating increased quality of regulatory reforms to enable innovation;
- increasing legal certainty for innovators, including currently regulated institutions;
- reducing innovators' costs with legal advice to interpret regulations;
- reducing the length of authorization/licensing procedures;
- allowing authority to learn and understand innovations and their risks faster and in greater depth; and
- creating open and continuous authority–industry dialogue and engagement.

**However, set against these potential benefits, there are risks to consider carefully, particularly given the cyber risk of new and untested products that have not had sufficient regulatory scrutiny.** Risks include<sup>lxxix</sup> the following:

- jeopardizing regulatory and supervisory priorities by diverting scarce resources from areas of greater need, including wider innovation reforms;
- failing to set up and enforce effective safeguards for customers and market participants who could be negatively impacted by the pilot;
- undermining competition by steering innovation or restricting innovation efforts to sandboxes benefiting only a limited group of innovators;
- not addressing obstacles outside the regulatory or supervisory framework;
- implying successful pilot products are risk-free or guaranteed by authority; and
- hurting the authority's reputation if any of the risks above materialize.

**The overall message of this discussion of FinTech – and indeed from the guidelines as a whole – is that the supervisor needs to judge the costs and benefits of a change in terms of how it will help improve outcomes in the pension system by mitigating key risks to those outcomes.** It is clear that many regulators



and supervisors can improve their approaches. They can benefit from greater efficiency, particularly in the way they interact with industries, and from their ability to improve risk assessment through relatively low-cost off-site investigations. This type of improvement can release greater resources to areas of critical risk or for more in-depth on-site investigations. Further, it can make it easier to develop and improve risk-based models by increasing the data and tools available to identify, monitor, and measure risks. It is also clear that many citizens, particularly those traditionally excluded due to informal labor markets common in PLAC member countries, can be better served by the pension industry. Thus, the new approaches are opportunities to be seized, but with clear-sighted attention to assessing and mitigating risks as in all areas of supervision.



## 6 ► Conclusion

**This report sets out guidelines for the design and implementation of the pension payout or decumulation phase for funded pensions, as opposed to unfunded pay-as-you-go and “social” pensions.** The report was produced for the Network for Pensions in Latin America and the Caribbean (PLAC Network) created by the Inter-American Development Bank (IDB) in 2015. It is the second set of guidelines for the network – following guidelines for the supervisory assessment of pension funds.

**The report aims to deliver a very practical set of guidelines to assist regulators and supervisors as they design and implement a legal and regulatory framework for their countries and deliver supervisory oversight of the framework.** The work is informed by academic and policy work but is a practical guide rather than a policy paper. The guidelines are aimed at consistency with other standards and guidelines where appropriate but are tailored to the unique circumstances of countries and the challenges they face now.

**The IDB looks forward to continuing to work with countries in the PLAC Network as they implement the guidelines.** The role of the IDB and the PLAC Network is to develop new approaches based on robust dialogue and sharing of experiences and challenges in different countries. This information flow and shared experience will be even more critical in the coming months and years as the guidelines are implemented and citizens of the countries begin to see the benefits of improved payout phases, or more simply of better pensions.



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## Annex A: Questionnaire to PLAC Network members

### QUESTIONNAIRE FOR BEST PRACTICES DOCUMENT ON THE PAYOUT PHASE

Labor Markets Division, Inter-American Development Bank

March 2019

As an appendix to our Best Practices document on the payout phase, we would like to detail how this phase operates in each of our member countries. For that reason, we ask you to please respond to the following questions as completely as possible.

#### Background to the payout phase questionnaire

The payout phase of a pension is also known as the decumulation phase. It is the time when the money saved through a worker's contributions to the pension is paid out. The payout phase can be complicated to understand if there are **many different types of products** and sometimes **types of providers**, and there can be big differences between countries.

**Products** – when people have accumulated savings and reached the legal age at which they can access them, they are sometimes allowed to take all the money at once (known as **a lump sum**), they can take regular payments until there is no more money (known as **phased or programed withdrawal**), or they can buy a product that provides a guaranteed income (known as **an annuity**). Sometimes they can accept a combination of these options. There can be many different types of annuities, from a **“fixed annuity”**, which pays out only for a fixed number of years (say 10 or 15), to one typically known as a **“life annuity”**, which makes payments until someone dies. Annuities require understanding of mortality and discount rates and can be technically challenging.

**Providers** – the payout phase can be provided by **pension funds used for accumulating assets or insurance companies**. In countries that have DB pension funds, the pension fund (potentially backed by an employer) may be responsible for paying a guaranteed pension, or it could choose to pass the payout phase to an insurer.

**Therefore, it is necessary to understand the combined role of the pension supervisor and the insurance supervisor**, which can make the area challenging for both supervisors. Understanding the payout phase is an essential part of understanding both whether a pension system is effectively delivering retirement income to people and how a regulator and supervisor should allocate the system's resources to improve pension outcomes.

*For all questions, please insert answers below each question. Use as much space as required.*



- 1. Which institution(s) is (are) responsible for pension supervision in your country for the accumulation phase (saving phase) of pensions? Please consider all pension schemes that exist in your country.** *Note that this question is the same as that for the supervision good practices questionnaire. If there is a split between a prudential regulator and a market conduct regulator, please provide the names of both regulators.*
- 2. Which institution(s) is (are) responsible for pension supervision in your country for the payout phase of pensions? Please consider all pension schemes that exist in your country.** *Note that this answer will typically include some role for an insurance supervisor if annuity products are legal in your country, but in some countries, payouts from pension funds are covered by separate legislation and rules. In countries with less developed financial systems, there may be no companies providing life-insurance products such as annuities, so only lump-sum payments or phased withdrawals are allowed in pension legislation.*
- 3. What are the rules on access to pension savings, and are they in the form of legislation (from a parliament) or regulation (from a regulator/supervisor)?** *Please include the legal ages for normal retirement and early retirement and requirements for access for disability. Please include also what happens to the assets if the pension member dies. Include rules for access during the accumulation phase – for example, for education, housing, or because someone leaves the country – because early access to pension savings affects the assets available and by extension the payout phase.*
- 4. What are pension members allowed to do when they withdraw their pension assets at retirement? Please give precise details on all the options, from 100% lump-sum payments to options or requirements to take a life annuity that pays out an income until death. In the case of annuities, do members have to provide for their spouse by buying a joint annuity?** *A table at Annex A shows the main types of payout products. It is Table 2.1 from “Annuities and Other Retirement Products” (2011), which describes each type of payout product in pages 23-32 – see <http://www.iopsweb.org/researchandworkingpapers/48266689.pdf>. Please note that all the types of products and their characteristics will be explained in the webinar on March 6, 2019. Countries can use the table in Annex A to identify which products are available in their market, as the table is presented in editable form.*
- 5. Can a worker claim a pension and continue to work, either for the same employer providing the pension or for a different employer?**
- 6. Taxation – for each payout option that a pension member can choose, please provide the tax treatment for that option. Are they all treated the same, or do some options attract more taxation than others?** *For example, there may be different tax rates for each product, or a 100% lump-sum withdrawal could lead to a member being in a higher income bracket and thus paying more taxes than normal, compared to someone who took an annuity and received income over many years.*



Questions 7-20 relate to annuities. If there are no annuities in your country, please go to question 21.

7. If annuities are allowed, who provides them and what is the market size? Please provide any available information on the total market and the market size for each provider. Please provide a link to the relevant published information where this is available. *Note that providers will often be insurance companies, but not always; for example, a specific agency may have been created to provide the annuity payments (as well as other services), as in Sweden or Singapore. DB pension funds may provide annuities from “within the fund” so that they are the entity that pays the pension member until death.*
8. What are the features of the annuities that are available for the pension fund payout phase (see below for other types of annuities that might be allowed in other parts of the financial market but not for pension payouts)? Are the annuities paid until death or only for a fixed period? Is there a guarantee period during which a pension member’s family will receive payment if the member dies (often 5 or 10 years)?
9. Are the annuities nominal and paid at the same rate from start to finish, do they rise by a certain amount each year (escalating annuities), or do they increase by the rate of price inflation each month, being protected against it? Do the annuities have to provide a survivor pension so that they cover both a husband and a wife (or a wife and a husband, depending on who is the main purchaser)?
10. Are deferred annuities available whereby one is purchased at, say, age 65 but does not start payments until the purchaser is 75 or 80? If people can buy a deferred annuity, at what age do they typically want the annuity to start?
11. Are there any types of annuities available in the financial market in addition to those permitted for the pension payout phase (for which some countries restrict the available types)? Is there any innovation outside the main pension payout phase that may be useful to allow for pension payouts (if choices are restricted) or may provide interesting examples for other countries?
12. How do pension members choose annuities (or get allocated a product)? Does a member have a full choice of all products and providers, or do regulations identify a limited number of possible products or providers? Will members receive a default product if they do not make a choice? Do any pension funds negotiate directly with an annuity provider on behalf of all members (common in countries with employer-sponsored pension funds that provide DB, for example)? Is there an auction system that matches members to providers? Are there “best-buy” tables that aim to help members choose between providers?
13. Are any mortality tables specified in regulations that annuity providers must use when calculating annuity prices? If no mortality tables are specified in regulations, are particular tables used in practice by market participants? Are different mortality tables used for men and women, or a single “unisex” mortality table? *Please specify the exact tables required. Please also specify if the tables include an allowance for improvement in mortality (known as cohort or dynamic tables). Examples for the types of information requested in Brazil, Chile, and Mexico are included in Chapter Two of the OECD (2014) publication “Mortality Assumptions and Longevity Risk: Implications for pension funds and annuity pro-*



viders” – see [https://read.oecd-ilibrary.org/finance-and-investment/mortality-assumptions-and-longevity-risk\\_9789264222748-en#page1](https://read.oecd-ilibrary.org/finance-and-investment/mortality-assumptions-and-longevity-risk_9789264222748-en#page1)

14. **Are there any requirements for a discount rate to be used by annuity providers when calculating annuity prices? If there is no regulatory requirement, how do market participants calculate the discount rate to be used?** *As well as the mortality rate, the interest rate or discount rate is a critical input in deciding annuity prices, or how much members will receive each year in return for their pension savings. Some countries specify that a particular interest rate must be used. Other countries do not impose any rules, but providers use a particular interest rate, which is often linked to the interest rate on government bonds. Please identify any regulations as well as common market practice where these are known.*
15. **Are there any other requirements for pricing of annuities in addition to those on mortality tables or discount rates, such as permitted levels of cost or profit?**
16. **Does the pension or insurance regulator/supervisor monitor annuity prices? If prices are monitored, are they examined for efficiency? Is any data published on annuity prices?** *If prices are monitored, but only internally, please provide the relevant publication, which will be treated confidentially. If price information is published, please provide a link to the relevant publication. Some countries (and academics) calculate the money's worth ratio, comparing annuities provided to a theoretically “fair” annuity derived using appropriate mortality tables and discount rates based on government or corporate bonds.*
17. **Are there any further regulatory requirements on insurance companies (in addition to the pricing covered above) when they provide retirement income products, including annuities, to pension fund members, such as the following:**
  - a. Ring fencing (so that the assets comprising the pension payout have to be in a separate account and not be mixed with other assets – that is, co-mingling or a common fund – of the insurance company that are paying for other products). Are there separate statutory funds for pension-related assets to formally separate pension and insurance payouts into a separate company?
  - b. Provision of specific guarantees?
  - c. Rules on asset allocation?
  - d. Increases in payouts over time in line with inflation or wages?
  - e. Requirements for reinsurance and risk transfer on the insurance company?
  - f. Required regulatory capital?
18. **If members are guaranteed a pension until death but it is paid from within the pension fund (common with employer-sponsored DB pension funds), are there any rules on how the pension rises over time?** *The question is focused more on what happens over time than on the exact formula used to calculate the initial pension, whether pensions have to increase with price inflation or wage inflation, or whether they can increase only if there are sufficient assets in the fund (sometimes called “conditional indexation”).*
19. **If members are guaranteed a pension until death but it is paid from within the pension fund, what are the funding or solvency requirements to ensure that the fund can pay the pensions? How does the pension fund (in addition to the regulator) calculate the pension liabilities that must be paid?** *This an-*



swer will typically involve a solvency requirement or requirements for the calculation of liabilities and the closure of deficits. For countries that do not have DB pension funds, this issue should not arise.

- 20. Are there any other insurance products delivered as part of the pension accumulation and payout phases – for example, in relation to required insurance against disability and/or death?**

*Questions 21-27 relate to phased withdrawals. If there are only lump-sum payments and no phased withdrawals in your jurisdiction, please go to question 28.*

- 21. If phased or program withdrawals are allowed, then who provides them? What is the market size and what are the shares of different providers?** *Please provide figures and a link to the relevant publication (either internal or published).*
- 22. Are there any rules on how payments are calculated? Do they have to be provided for a particular minimum period of time? Are there minimum or maximum allowable withdrawals? Does the regulator require the use of a specific formula, or can providers create their own products?** *Please provide the formulas or references to documents that explain the formulas.*
- 23. What are the rules on asset allocation for when a pension member is using a phased withdrawal? Are the rules the same as during the accumulation phase, or are members required to hold a more conservative asset allocation?**
- 24. Are pension members allowed to change their provider once they start to take a programmed withdrawal? What are the rules for switching providers if this is allowed?**
- 25. How does the asset allocation permitted during the accumulation phase link, if at all, to the options that members have in the payout phase?** *For example, if a member chooses an annuity, then typically the insurance company providing the annuity will have a portfolio with a large allocation to government bonds. However, if a member takes a phased withdrawal, that person may have an investment horizon of another 20 years and may want to keep more assets in “growth” assets. If members have to or want to take a lump sum, they will take all their assets in cash, and so they will be very exposed to any equity or bond market volatility close to the date of retirement. This question asks if regulations and market practice take these potential differences into account when determining what asset allocation and payout choices are permitted as members approach retirement.*
- 26. If available, please provide information on the average duration of the investment portfolios of insurance companies (or any provider of annuities), as well as the duration of assets used for programmed withdrawals.** *Note that duration is a measure of the sensitivity of portfolios to interest-rate risk, which may be calculated by the regulator or supervisor, by the companies, or through external studies of the industry. Differences in duration identify differences in asset allocation between lengths of bonds and can also indicate expectations about future changes in interest rates.*



27. What happens when the money runs out from the phased withdrawal (or the fixed period of an annuity)? Are members guaranteed a minimum pension from the government that starts to be paid when the member's pension assets are exhausted?
28. Supervisory action – where the supervisor is responsible for some or all of the payout phase, please give examples of what issues have been investigated in recent years as part of thematic or entity-specific supervisory reviews. What actions, if any, has the supervisor taken to improve the payout phase? Please describe separately:
- a. changes in regulation;
  - b. provision of education for members;
  - c. off-site monitoring and reporting – for example, a thematic report;
  - d. improvements required at a specific entity or by sales agents; and
  - e. enforcement action taken against a specific entity or sales agents.
29. Financial education – are pension fund members given any education or communication materials to assist them with understanding the payout phase? Do you have any evidence that such instruction has been useful in helping members make good choices?
30. Projection tools – does the regulator/supervisor use any tools or models internally to forecast likely pension payouts for different groups of members? Does the regulator/supervisor provide pension fund members with a projection tool so that they can examine pension payouts that they may likely receive in the future?
31. Supervisory cooperation – where the payout phase is covered by the insurance supervisor, what arrangements does the pension supervisor have to ensure collaboration and information sharing?
32. Mis-selling problems – has your country had any mis-selling scandals or problems where members were pushed into buying unsuitable products or were charged very high fees? Please give details of any such problems and the results of any inquiries or regulatory/supervisory changes. Were problems identified by the pension or insurance regulator (where they are different)? *This question does not require a very detailed response, but it would be useful to know if there have been mis-selling problems, the nature of the problem, and then what happened. For example, in the UK, there were repeated problems with mis-selling of different financial products, from private pensions to mortgage endowments to payment protection insurance. Each area was reviewed, some providers were fined, and because the regulator concluded that commissions were driving product options, not members' benefit, it is now illegal in the pension space for advisers to charge commissions to fund their advice; instead, they must be paid a fee agreed upon up front.*

## Statistical Request

33. Costs – please provide figures for the costs of annuity products (typically costs charged at the advice/choice stage) compared to those of phased withdrawal products – typically the ongoing allowed administration and fund-management charges.



34. Capital market instruments that are or could be used to back the payment of income in the payout phase – please provide a summary of the available government and corporate bonds in your country, indicating the length of each type of bond and ideally information on the volume of issuance for each. Please also identify if any bonds have been created that are specifically designed to help in the payout stage (among other reasons). Examples would include inflation-linked government bonds that make it easier for insurance companies or other providers to offer annuities protected against inflation risk. Other examples would include government bonds linked to salary or wage inflation.
35. Please provide figures for what percentage of members take different payout options. Where available, please show how this has changed over time. Obviously, where only one option is possible, such as with lump sum, please just put 100% in the lump-sum column.

Year	% Lump sum	% mix of lump sum and phased withdrawal	% Phased withdrawal	% mix of lump sum and annuity	% Annuity
2000					
..					
2015					
2016					
2017					

36. Income in retirement – please provide figures for how many people in the country are in receipt of a pension, the pension sources, and the breakdown for men and women (e.g., social or poverty-alleviation pension, first-pillar contributory or government/civil service pension, payment from mandatory or voluntary private pension plan, payments from alternative sources of saving). If possible, please provide figures by age to identify differences between people receiving pensions at, for example, 65 or 70 and those still receiving pensions when they are 80 or 85.
37. Duration of pension payouts – please provide any figures, either from administrative data or surveys, for how many years a typical payout lasts for private funded pensions. A critical element of the payout phase is whether income is provided until death. Malaysia, for example, has a very strong accumulation phase, with contributions of 23% of people's salaries. However, a survey found 70% of people had used all their savings within 10 years of retirement, which highlighted that the payout phase was not working well.
38. Life expectancy – what are the latest estimates for life expectancy for men and women, at birth and at ages 60 and 65? What are the latest estimates for expected improvements in life expectancy in the decades to come (ideally, up to 2050)? Does the country have different life expectancy estimates for different groups – for example, the general population, pension fund members, or people with annuities?



39. What is the effective retirement age, or the age at which people retire on average as opposed to the legal retirement age (from answer to question 3)? See, for example, [https://www.oecd-ilibrary.org/social-issues-migration-health/pensions-at-a-glance-2017/the-rise-in-effective-retirement-age-lags-behind-the-rise-in-the-normal-retirement-age\\_pension\\_glance-2017-graph14-en](https://www.oecd-ilibrary.org/social-issues-migration-health/pensions-at-a-glance-2017/the-rise-in-effective-retirement-age-lags-behind-the-rise-in-the-normal-retirement-age_pension_glance-2017-graph14-en).
40. Where known, what is the ratio of average working years divided by expected years in retirement? This will be a function of the average starting age for entry into the labor market and the effective retirement age, split between men and women.
41. What is the homeownership rate among people aged 60 to 65? *This is to assess the importance of the pension payout relative to other assets.*
42. What is the employment rate among people aged 60 to 65? *This is to understand the importance of the pension income compared to the likelihood of continuing employment income.*
43. Please include any other relevant information about the payout phase in your country, including links to any studies, papers, or data useful to understanding the payout phase that have not been included above. *This could include the main payout phase (decumulation phase) public policy challenges in your country, and any information or references to solutions that are being discussed.*

Thank you very much!



## Annex B:

# PLAC Guidelines for the Supervisory Assessment of Pension Funds

### 1. Strategic approach

- 1.1 The supervisor should understand the full range of risks to the delivery of its objectives by obtaining sufficient and regular information on the risk landscape
- 1.2 The supervisor should strategically promote and advance the application of proportional and effective remedies to systemic problems and risks and monitor their effectiveness
- 1.3 The supervisor should understand how the supervised entities should be mitigating risks and ensure that the management-supervised entities and other stakeholders, including affiliates where relevant, have a shared understanding
- 1.4 The supervisor should share data of material importance with other authorities, the supervised industry, and affiliates, subject to maintaining appropriate confidentiality

### 2. Data collection and analysis

- 2.1 The supervisor should obtain data it needs for monitoring and analysis in an efficient and effective manner
- 2.2 The supervisor should preempt and address deficiencies in the timeliness and accuracy of the data it receives
- 2.3 The supervisor should analyze data so as to assess risks to its supervisory objectives
- 2.4 The supervisor should use available data to undertake regular risk assessment of supervised entities proportional to their scale and importance
- 2.5 The supervisor should appropriately and proportionally respond to queries, issues, and risks identified or indicated by its analysis

### 3. In-depth evaluation of risk mitigation

- 3.1 In-depth evaluation should focus on assessments that cannot readily be made off-site
- 3.2 The supervisor should use IT interrogation and surveillance where this would enable a more effective or efficient assessment of supervised entity processes to mitigate key risks
- 3.3 The supervisor should have a defensible methodology to identify and prioritize which entities and risks should be subject to in-depth evaluation
- 3.4 The supervisor should plan, execute and document each in-depth evaluation so as to deliver efficiently the objectives of each evaluation



- 3.5 The supervisor should respond proportionally to deficiencies in supervised entity risk mitigation identified through its evaluation with a focus on persuading entity management to make worthwhile improvements
- 3.6 The supervisor should use the results of in-depth evaluation to inform the direction of future supervisory efforts

#### **4. Resources and organization (for effective supervision)**

- 4.1 Supervisory staff should possess and apply sufficient understanding and expertise to enable credible and defensible judgments
- 4.2 The supervisor should seek to use IT to enable supervisory processes to be undertaken securely, efficiently, and effectively
- 4.3 The supervisor should be organized so as to enable effective communication, coordination, and consistency within the authority and with other relevant agencies



## Annex C:

# Outline of UK Pension Regulator Guidance on investment and payouts

### **The (trustee) board's role in investment governance**

- Working with your investment advisers page
- Investment delegation structures page
- Clear roles and responsibilities page

### **Investment decisions and your statement of investment principles (SIP)**

- Sustainability
- Financial and nonfinancial factors
- Members' views

### **Monitoring investment governance**

- Reviewing your own performance as trustees
- Investment beliefs
- Stewardship
- Setting objectives and strategies
- Implementing the objective
- Accumulation phase
- Decumulation phase

### **Designing investment arrangements (including default arrangements)**

- Understanding your membership
- Interpreting the data
- Available market options

### **Strategy and performance monitoring and review**

- Monitoring
- Fund strategy and performance
- Long-term performance
- Short-term performance



- Monitoring investment managers
- Reviewing fund performance
- Fund documentation
- Fund scale
- Self-select options
- Changing investment funds
- Member notice

### **Market developments**

- Fiduciary management
- Impact investment and patient capital
- Security of assets
- Negotiating additional protections



## Annex D:

### OECD Core Principle 7: Occupational pension plan liability, funding rules, wind-up, and insurance

Occupational pension plans should be adequately funded in accordance with regulations applicable to pension funds or pension entities. The adequacy of funding should be protected through funding rules, wind-up provisions, insurance, or other types of accepted guarantees.

While full funding exists in principle for occupational DC plans, other types of occupational plans should be subject to minimum funding rules or other mechanisms to ensure adequate funding of pension liabilities. Rules for minimum funding levels may be based on accrued and vested benefits (termination approach) or on projected liabilities (ongoing approach) depending on the funding objectives. The termination approach should be promoted at the minimum level and should be complemented with the ongoing approach. Flexibility can be allowed for temporary, limited underfunding under restricted circumstances.

Consideration should be given to the development of prudent but flexible requirements for minimum capital, reserves, or other forms of pension fund guarantees, taking into account the long-term nature of their liabilities. Tax and prudential regulations should encourage a prudent level of funding. Private unfunded pay-as-you-go plans at the individual company level should generally be prohibited.

Appropriate calculation methods for asset and liability valuations, including actuarial techniques and amortization rules, should be set up and based on transparent and comparable standards.

Proper wind-up mechanisms should be in place to ensure the protection of the entitlements and accruals of members and beneficiaries. Legal provisions should ensure that contributions owed to the plan by the employer are paid in the event of the employer's insolvency, in accordance with national laws. Where necessary, legal provisions should set out priority creditors' rights for members, sponsors, and pension funds and/or entities.



## Annex E: Colombia and legal constraints preventing the operation of payouts

Colombia's DC private pension 'RAIS' (Régimen de Ahorro Individual con Solidaridad) is affected by provisions in Law 100 of 1993, which governs the pension regime. The law provides the right to a minimum pension when savers have made a minimum number of contributions (1,150 weeks or just over 22 years) by retirement age. If the worker cannot accumulate enough to fund the minimum pension, the solidarity system covers the difference. Otherwise, the worker must elect for a phase withdrawal or lifetime annuity. Court decisions have interpreted this provision as applying to providers of annuity products and to AFPs that provide phased withdrawals. Annuity providers are effectively able to avoid the provision if they do not offer quotes to savers who may have relatively low annuities that the provision might ultimately affect. However, the real problem is the minimum wage, which is determined by political considerations.

The typical way a provider would deal with this is through imposing charges on the members and/or pooling the longevity risk over the whole group of pensioners so that it can offset losses on long-living members with gains on those who die young. However, the option of increasing charges is constrained by a legal cap on fees of 1.5% of assets under management. The option of pooling the longevity risk is not allowed because the assets in members' accounts with the AFP are the legal property of the savers and pass to their heirs when they die. This normally very important legal right of ownership is hence a potential problem in the Colombian case, but it should not be taken as a problem with clear legal rights in other systems.

Generous rights for survivors and beneficiaries also increase the costs of annuities. This is compounded by court rulings – for example, C-1387 of 1994 – requiring the minimum pension to grow annually in line with CPI, even when this increase is higher than the variation in the minimum wage, which also has to be matched. In addition, firms use Costa Rican mortality tables to estimate changes in longevity, whereas regulations require only static mortality tables rather than dynamic ones. Dynamic tables for Colombians would improve the ability to identify and price retirement income products.

To assist insurance providers, the government provided them a guarantee to cover cases where increases in the minimum wage exceeded the rate of price inflation (the risk known as “deslizamiento”) (State Decree 036, 2015). However, the same “slippage guarantee” was not given to the AFPs. This has created an unusual situation in that the simplest income product to deliver – the phased withdrawal – has become the most difficult and risky for providers. The legal provisions have been affirmed by the constitutional court, so they remain unlikely to be changed – certainly in the short-term. This case highlights the country-specific nature of some risks and particularly how political risk behind minimum wage changes interacts with pension legal risk. But the case is also quite specific, so the difficulties of providing phased withdrawals and annuities in the Colombian pension market should not be taken as a sign that either are inherently impossible to deliver.



# NOTES

- i. This figure is a conservative assessment of the combined value of the different options for improvements identified in these Guidelines – though clearly the impact will vary according to the country. For example, common estimates from the academic literature of the benefits of removing adverse selection into annuity products are around 10%. The options presented for default or mandatory non-life annuities would reduce adverse selection. They could also be more efficient in terms of not requiring regulatory capital. The benefits of auction mechanisms on pricing of annuities was calculated as 15% in Chile by Morales and Larrain. Typical estimates of the impact of improved governance on pension fund performance alone can add a percentage point on returns or even more with Clark and Urwin (2007) finding that “almost all of our best-practice funds had a performance margin of 2% per annum or more over their benchmarks”. Finally, the option to increase annual state pensions through deferring for a year could boost payouts by 5% or more a year. Whilst this last element is a transfer of income lost during deferral to old age – it provides a new opportunity to members to increase the supply of their guaranteed lifetime annuity income in a way that would not be possible in many cases where annuity markets do not exist or are very inefficient.
- ii. An example of better alignment is given in the document where the public pension could be higher at later ages so that private savings need only cover a shorter and fixed time period earlier in old age when public pensions could be lower to make the policy revenue neutral. As explained in the detailed references, it is important to ensure fairness using the tax system or means testing since higher income people tend to live longer, so any cross-subsidy from poor to rich needs to be offset. Other elements of alignment relate to the overall income level that the two pillars are aiming to achieve and the relative balance of risk between government, employer and member so that there is fair risk sharing rather than one or two parties bearing all of them. This option is explained in more detail in the main report.
- iii. The first ‘Guidelines for the Supervisory Assessment of Pension Funds’ provided an overview of the pension markets in Latin America and the Caribbean and a detailed taxonomy of the different types of pension plans and institutional arrangements across the region. These details are not repeated here – but definitions are given in the text as required.
- iv. An excellent survey of the literature and a summary of hundreds of articles can be found in Collins (2015, 2016) from which there are hundreds of further references to different topics on retirement income. References to specific issues relevant to the Guidelines can be found in each section.
- v. Readers interested in modelling of pension outcomes should consult Montoya and others (2018),
- vi. In keeping with focus of this document on practical guidelines rather than a review of the academic evidence this section will not go into detail on the behavioral economics literature. The reader interested in some of key primary material should consult the work of Kahneman and Tversky, Thaler and Sunstein, Gigerenzer & Goldstein, Samuelson & Zeckhauser, Madrian, Choi, Laibson and Shea among others. Useful surveys with



many more references can be found in Thaler and Sunstein's 2008 book 'Nudge', Eldar Shafir's 2013 book 'Scarcity: Why Having Too Little Means So Much' and Kahneman's 2011 book 'Thinking, Fast and Slow'.

- vii. See <https://www.iadb.org/en/labor-and-pensions/home-retirement-savings-laboratory>
- viii. IDB SIMS Database
- ix. Altamirano and others (2018)
- x. Rofman (2015)
- xi. See for example Khanna, Price and Bhardwaj (2017) which sets out a series of thematic and country case studies for how to boost coverage for the informal sector.
- xii. Bosch, M., A. Melguizo, and C. Pagés (2013)
- xiii. The concept of paying out 'trivial' or small balances is seen across the world in both developed and developing countries. There is no simple way to determine what is 'too-low' but as highlighted in footnote 14 the authorities should consider what the balance could achieve if invested longer.
- xiv. One idea to explore for future work is whether people with low balances at retirement should have to leave them invested until they are 75. In such a situation they would at least have more years for investment returns and would target the greatest risk they face of outliving all savings at a time when they are unable to work. 15 extra years of investment returns at 4.5% a year would double the assets which would then be needed for only half the years than if the assets were accessed at 60 or 65. Hence this would boost their income per year 4 times and hence be of real use in the most risky 4<sup>th</sup> age of life
- xv. This idea is explored in more detail in Price (2017) which sets out the relative size of the young old-age and older old-age cohorts for a range of countries globally, including in Latin America. The idea is not explored in more detail in this note – but is one of the areas that could be explored under Guideline 2 that recommends using a wide range of policies to tackle the costs of aging to ensure no one policy has to bear too much weight. This policy needs to be progressive – as do increases in retirement age. One way to ensure that increased retirement ages do not benefit the poor over the rich is to include rules for the maximum number of contributions needed (as many countries do). In this way, someone who started work at 18 and works for (say) 45 years can retire at 63 compared to someone starting to work at 22 (after potentially public funded university education) who would need to retire at 67. The key issue for both ages is that they rise as longevity rises. Clearly many people cannot reach 45 years of contributions – but the point is that whatever level of contributions needs to be reached triggers retirement – so that those people who start work early and perhaps have fewer years of education do not have to wait till the same age as people who had the benefit of more education and more formal jobs.
- xvi. Milevsky (2006) provides a review and analysis of the actuarial underpinnings of retirement income. Milevsky (2016) is a more accessible narrative based on the earlier foundations.
- xvii. Bosch, Melguizo and Pages 2013 'Better Pensions, Better Jobs: Towards Universal Coverage in Latin America and the Caribbean', IDB



- xviii. Other organizations have created similar outcome-based frameworks including the team behind the Melbourne-Mercer Global Pension Index or the US Society of Actuaries – all have a critical focus on the importance of good governance and fairness – which runs through all of the outcomes listed above.
- xix. Price, Ashcroft and Hafeman (2016)
- xx. OECD Principles for Private Pensions (2016)
- xxi. PLAC Guidelines for the Supervisory Assessment of Pension Funds (2018)
- xxii. Murray Review (2014)
- xxiii. See Altamirano and others (2018)
- xxiv. Different countries may have a mix of different outcomes on which to focus. Some may be relative – for example measures of poverty relative to national poverty lines or average income. Some may relate to the whole population groups – for example the percentage of workers contributing to pensions or the percentage of old people receiving pension income. Some may be absolute, for example the level of costs – or may be relative to other countries – for example aiming to have below average costs relative to regional or international peers.
- xxv. See for example Shoven and Slavov (2014) and Hubener, Maurer and Mitchell (2018).
- xxvi. See [www.gov.uk/deferring-state-pension](http://www.gov.uk/deferring-state-pension). Note that the increase for a one-year deferral used to be 10.8% but has been reduced to take account of increases in the level of pension payments and improvements in longevity.
- xxvii. This approach could also be used in relation to private Defined Benefit pension funds as well.
- xxviii. Impavido, G., E. Lasagabaster, and M. García-Huitrón (2010). New Policies for Mandatory Defined Contribution Pensions.
- xxix. CommonWealth and others (2018) “The Value of A Good Pension: How to improve the efficiency of retirement savings in Canada”.
- xxx. The Guidelines do not specify exact metrics for each of the criteria – since cost efficiency that may be possible in one country may not be achievable in another – particularly where countries are very small and so cannot fully exploit economies of scale. But as part of determining current and desired outcomes under Guideline 1, supervisors should consider the current performance of the market in relation to the principles of simple, low cost and efficient and determine where they need to see improvements.
- xxxi. See references provided in the introduction.
- xxxii. See the reports and data published by CEM Benchmarking who provide cost and investment comparisons for a global panel of pension funds.
- xxxiii. Morales and others (2017)
- xxxiv. Good governance is also important for the regulators and supervisors themselves – as is recognised by standard setting bodies. For example, the International Organisation of Pension Supervisors (IOPS)



Principles of Private Pension Supervision Number 10 states: ‘The supervisory authority should adhere to its own good governance practices – including governance codes, internal risk-management systems and performance measurement – and should be accountable’.

- xxxv. See for example the governance requirements for trustees in the UK set by The Pensions Regulator or in Australia set by APRA or from the Canadian Association of Pension Supervisors CAPSA. For a combined academic and practitioner view see Clark and Urwin, 2007 ‘Best-practice pension fund governance’.
- xxxvi. Dyck and Pomorski, “Is Bigger Better? Size and Performance in Pension Plan Management” (Rotman School of Management Working Paper).
- xxxvii. CEM Benchmarking – a leading pension performance benchmarking firms and Ambachtsheer calculate that the benefits of the ‘Canadian Model’ of large, well-governed pension funds with expert investment and operations have added value equal to \$4.2 billion annually over the past 10 years relative to a comparable sample of 132 global funds.
- xxxviii. Clark and Urwin 2007 find that “almost all of our best-practice funds had a performance margin 2% per annum or more over their benchmarks” and Price, Khalif, De Luna-Martinez, Zhang and Arshad 2018 find in a Case Study on the Employee Provident Fund of Malaysia that improvements to governance and expertise (and the investment strategy that followed) improved the outperformance relative to a domestic bond portfolio by some two percentage points compared to the pre-reform period.
- xxxix. A celebrated example is the case of Waterford Crystal in Ireland. The employer had a pension fund in a voluntary system. When the company went bankrupt the assets in the fund were used first to protect the existing pensioners – leaving only 20% funding for members who had not reached retirement. Ultimately the Government of Ireland were forced to make up the difference after significant protests. The voluntary nature of the pension system made no difference to the sense of failure of the company to fund the pension or to the need to protect the members.
- xl. This would obviously make it more difficult for new providers to enter the market, but it may be a necessary compromise for improved delivery of scale providers.
- xli. As reported in a survey by the International Organization of Pension Supervisors in 2018 the Central Recordkeeping Agency (CRA) is funded by nominal charges in relation to specific transactions rather than an annual Asset Under Management or contribution related fees typically seen for account administration. Cost for account opening charges range from INR15-40 (US\$0.23-\$0.62) with the lower cost for accounts targeted at low income people; account maintenance charges range from INR 25-95 (US\$0.38 - \$1.46); transaction charges range are INR 3.75 (US\$0.06). So, the fees are very low in nominal terms and contribute to an overall low level of charges in the Indian NPS given very low charges also for fund management.
- xlii. Horneff, Maurer and Mitchell 2019 ‘Automatic enrolment in 401(k) annuities: Boosting retiree lifetime income, Economic Studies at Brookings – which builds on earlier related work in Horneff, Maurer and Mitchell 2018 ‘Putting the Pension Back in 401(k) Retirement Plans: Optimal Versus Default Longevity Income Annuities’ CFS WP 607.



- xl. For recent articles on tontines see Milevsky and Salisbury 2015 'Optimal Retirement Income Tontines' Insurance, Mathematics & Economics 64; Chen, Sehner and Rach 'On the optimal combination of annuities and tontines'; and an excellent CFA survey in 2019 by Richard Fullmer 'Tontines: A Practitioners Guide to Mortality-Pooled Investments'.
- xliv. There is also a similar risk that governments may be tempted to access money in Defined Benefit funds that are allocated for long-term pension liabilities. This is one of the elements of the 'security' outcomes discussed in Guideline 1. Regulators and supervisors should make every legal effort to protect pension fund assets.
- xliv. Bosch, Caballeroy and Keller 2019 forthcoming 'Los efectos de la Ley 95.5" Mimeo IBD
- xlvi. See <https://www.fca.org.uk/publication/data/data-bulletin-issue-14.pdf> for an example.
- xlvi. See IAIS (2019)
- xlvi. See Price, Ashcroft and Hafeman (2016) Outcomes and Risk Based Assessments, for CAPSA Guidelines on Governance see <https://www.capsa-acor.org/Documents/View/52> and for the OECD/IOPS Core Principles of Private Pension Regulation and Supervision (see <http://www.oecd.org/daf/fin/private-pensions/principles-private-pension-regulation.htm>)
- xlix. In reality, these approaches are very risky as they put all the assets in a single type of security, in a single country and in a security that was not typically very highly rated when the pension reforms were conducted.
- I. OECD Annual Survey of Investment Regulations (2018).
- li. See for example Bauer, Roy, Hoevenaars and Steenkamp (2006).
- lii. Horneff, Maurer and Mitchell (2019).
- liii. Martellini, Milhau and Mulvey 'Introducing "Flexicure" Goal-Based Investing Retirement Solutions', EDHEC -Risk Institute 2018.
- liv. See the example of QSuper in Australia – formally the default fund for the Queensland Government and since 2017 able to offer its services to the general public in Australia <https://qsuper.qld.gov.au/performance/how-qsuper-invests/investment-principles>
- Iv. For an excellent survey see Collins, Lam and Stampfli (2015).
- Ivi. Pfau (2019) provides an excellent comparison and evaluation of the different income drawdown strategies.
- Ivii. See Ezra (2016) in Financial Analysts Journal 72(2):1-7 and Inglis and Price (2017) on payout phase strategies in 'Saving the Next Billion from Old-age poverty': Global Lessons for Local Action.
- Iviii. Examples of natural issuers of inflation-linked corporate bonds would be utilities subject to inflation-linked price regulation.
- lix. Blake, David & Boardman, Tom & Cairns, Andrew. (2010). "Sharing Longevity Risk: Why Governments Should Issue Longevity Bonds." North American Actuarial Journal. 18. 10.2139/ssrn.1964683.



- Ix. Merton, Robert C. and Muralidhar, Arun, “Time for Retirement ‘SeLFIES’?” (2017). Investments and Pensions Europe, Forthcoming. Available at SSRN: <https://ssrn.com/abstract=2945668>
- Ixi. See for examples Bhattacharya and others, 2019 ‘Attributes and Framework for Sustainable Infrastructure’; Miralles-Wilhem and others 2019 ‘A CLEWS Nexus Modeling Approach to Assess Water Security Trajectories and Infrastructure Needs in Latin America and the Caribbean’ and Caldecott and others, 2016 ‘Stranded Assets: A Climate Risk Challenge’ among many others for more detailed guidance.
- Ixii. The ICPs were last updated in 2019 and can be seen at <https://www.iaisweb.org/page/supervisory-material/insurance-core-principles/>
- Ixiii. This section focuses on the full funding of private Defined Benefit funds. Policy for Pay As Go Defined Benefit plans is not in the scope of these Guidelines. There are different approaches to funded and partially funded Social Security funds – which do not typically adopt a fully-funded model. Their approaches can focus on the years for which the pension fund can meet liabilities. The details of different funding models and the similarities and differences between private and public Defined Benefit plans are beyond the scope of this report. But the broad requirements of the Guidelines are equally applicable. Regardless of the funding model chosen, there should be clarity that promised benefits can be funded. Assumptions should be accurate and not seek to ‘hide’ liabilities in both cases. In both cases actuarial support is essential.
- Ixiv. As highlighted in relation to other issues, some countries will have legal or even constitutional barriers to introducing risk-sharing. But that should not stop consideration of the idea, particularly in countries where a few higher income people receive very generous DB payouts and many lower income people have pure DC supplementary pensions. Risk sharing may significantly help make such systems more equitable.
- Ixv. See Holzmann and Palmer for numerous references to the NDC model – with a new book released in October 2019.
- Ixvi. This section is designed to give an intuitive understand of annuity factors. The precise formulas by which they are calculated are complex and affected by a range of factors such as whether they are single or joint life, the presence of guaranteed periods, the impact of adjustments for health, when the annuity is due to start, whether it rises with inflation or other metrics and many others.
- Ixvii. See <https://www.supen.fi.cr/estudios-actuariales>
- Ixviii. There are many examples globally of mis-selling of financial products or outright fraud. For examples of mis-selling see for example Halan, Sane and Thomas (2013) who estimate that mis-selling in the Indian Unit Linked Insurance market cost investors US\$28bn between 2005 and 2012 (<http://www.igidr.ac.in/pdf/publication/WP-2013-007.pdf>); the investigations by the US Consumer Finance Protection Bureau into sales practices at Wells Fargo and multiple investigations and reports by the UK FSA and FCA into commission-driven mis-selling which has led to the banning of sales commission in certain markets including in pensions. The annuity auction platform ‘SCOMP’ in Chile was developed partly in response to the negative impact of poor sales practices.
- Ixix. See for example Milevsky (2015) ‘The sluggish and asymmetric reaction of life annuity prices to changes in interest rates’, Journal of Risk and Insurance.



- Ixx. A fully-specified retirement income projection tool in a Defined Contribution setting should ideally meet a detailed set of criteria for best practice – see for example Dowd and Blake (2013) ‘Good Practice Principles in Modelling Defined Contribution Pension Plans’, Discussion Paper PI-1302 Cass Business School. For a simpler and open source starting point for retirement income modelling that can be developed to meet the country specific context see Sane and Price (2018) ‘Simulating Pension Income Scenarios with penCalc: An Illustration for India’s National Pension System.’ Policy Research Working Paper No. 8304, World Bank, Washington, DC.
- Ixxi. The Financial Stability Board defines FinTech as “Technologically enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on financial markets and institutions and the provision of financial services.” (The Financial Stability Board (FSB) is an international body that monitors and makes recommendations about the global financial system).
- Ixxii. Khanna, Price and Bhardwaj (2017) Saving the Next Billion From Old Age Poverty: Global Lessons for Local Action, Narosa Press, India.
- Ixxiii. This discussion follows the work of Dias, 2017 with commentary added to highlight the applicability to the pensions space.
- Ixxiv. This discussion again follows the work of Dias, 2017 with commentary added by William Price to highlight the applicability to the pensions space.
- Ixxv. Two recent alliances have been created that are drawing together major providers across the FinTech value chain – one called INATBA and another called the HyperLedger Greenhouse, sponsored by the open-source Linux Foundation. Both aiming to make it easier and safer to exploit the benefits of distributed ledger technology.
- Ixxvi. See for example the investigations into the ‘OneCoin’ crypto currency among many others that have suffered losses through hacking or created losses through fraud.
- Ixxvii. Monetary Authority of Singapore “Technology Risk Management Guidelines” covering from governance to cyber risk exercises – see [www.mas.gov.sg](http://www.mas.gov.sg)
- Ixxviii. This section draws on Dias (2017) ‘Regulatory Sandboxes’ produced for the Toronto Centre for Global Leadership in Financial Supervision.
- Ixxix. Based on Dias (2017).

