
*Report*

# Report of the Task Force on Target Benefit Plans

**CIA Task Force on Target Benefit Plans**

**June 2015**

Document 215043

*Ce document est disponible en français*

**Executive Summary**

The Canadian Institute of Actuaries' (CIA) Task Force on Target Benefit Plans was established in response to increasing public interest in target benefit pension plans (TBPs) in general, and requests for input from several jurisdictions regarding appropriate regulatory guidelines for such plans. Our mandate included three elements: provide recommendations on the management of TBPs, comment on certain regulatory aspects of such plans, and recommend whether the CIA should promote them and to what extent.

The task force's report is the result of discussions with industry experts, particularly with those who have been involved for years in the design, administration, and funding of TBPs and plans that are very similar to them. Our intended audience is stakeholders with expertise in the management and funding of occupational pension plans (e.g., actuaries, pension policymakers, and regulators).

Our main findings are as follows:

- We support the concept of TBPs as a viable alternative design that should be made more readily available to the pension industry in Canada.
- Stakeholders would be well served by considering a wider spectrum of TBP designs than has been explored to date. This includes at one extreme plans that aim for a very high degree of benefit security and stability, as well as those with more modest risk-sharing elements and greater benefit variability.
- Risk management (starting with understanding the risks that the plan faces as a whole, and how these risks are shared among individual members) is critical. It is particularly important to understand the impact of intergenerational risk sharing.
- An explicit benefits/funding/investment policy is an essential element of TBP design and management.
- Regulation of TBPs should take into account each plan's chosen risk profile and its unique risk management efforts in relation to the benefits communicated (i.e., the plan's position on the TBP spectrum). Plans that are more defined contribution (DC)-like with equitable, transparent, but more volatile benefits should not be subjected to the more rigorous requirements designed for defined benefit (DB)-like plans that aim to minimize benefit volatility.
- Recognizing the limited resources of most Canadian pension regulators, a perfectly flexible and individualized approach may be unrealistic. In this case, Alberta-style regulations (i.e., prescribed minimum provisions for adverse deviations (PfADs) varying based on asset mix and choice of discount rate) with some minor modifications and an "opt-out provision" could achieve a reasonable balance between the needs of various stakeholders.
- Conversion of past-service benefits from a DB plan to a TBP should be allowed. The minimum conversion basis could differ based on whether members' consent is sought/received or not.
- Stochastic methods can provide valuable insight to trustees in terms of setting and meeting their funding/benefits/investment objectives, understanding how their plan

works and the nature of variable outcomes, along with managing/communicating expectations to plan members. The CIA should have technical standards regarding stochastic projections for TBPs.

- The CIA should make available research and education as to the nature of TBPs, the measurement and implications of inter-generational risk sharing, and the identification, impact, and use of a wide variety of risk management tools. Such research and education should be practical and focused on helping parties successfully work with the TBP design.

**Table of Contents**

## 1. Introduction

The Canadian Institute of Actuaries' (CIA) Task Force on Target Benefit Plans was established in response to increasing public interest in target benefit pension plans (TBPs) in general, and requests for input from several jurisdictions regarding appropriate regulatory guidelines for such plans. Our mandate included three elements: provide recommendations on the management of TBPs, comment on certain regulatory aspects of such plans, and recommend whether the CIA should promote them and to what extent.

This report is the result of discussions with industry experts, particularly with those who have been involved for years in the design, administration, and funding of TBPs and plans that are very similar to them. It includes considerable technical detail, and is intended for an audience with expertise in the management and funding of occupational pension plans (e.g., actuaries, pension policymakers, and regulators).

The CIA would like to thank the following members of the Task Force on Target Benefit Plans for their contributions:

Barbara Sanders, Chair
Benoit Brière
Stephen Butterfield
Derek Gerard
Karen Hall
H. Clare Pitcher
Yves Plourde
Phil Rivard
Todd Saulnier
Michel St-Germain

Additional thanks are due to Theo Nijman (scientific director, Network for Studies on Pensions, Aging and Retirement) and Peter Skjødt (international advisor, Danish Insurance Association) for their valued feedback on the international summaries contained in appendices A and B.

### 1.1. What is a TBP?

The task force's first challenge was to agree on a common definition for a TBP. For the purposes of this report, a TBP is a *collective, pre-funded pension plan pooling both economic and demographic risks, with a predefined retirement income goal (the "target benefit"), where the employer's financial liability is limited to predefined contributions while members' benefits may periodically be adjusted upwards or downwards relative to the original target.*

The employer's contributions would normally be based on a predefined formula much like in a DC plan (e.g., an amount per hour worked or a percentage of pay), although it is conceivable (as in New Brunswick's shared risk model) to have the employer's contribution obligation vary within a relatively narrow, predefined range based on the financial position of the plan.[1] As

[1] While having contributions vary within a range provides the plan with an additional lever to control the affordability of benefits, the accounting implications of this approach are unclear and may prove to be disadvantageous from the sponsor's point of view.

long as the employer's liability is clearly limited by a pre-defined cap, the plan would satisfy this portion of our definition.

A direct result of limiting the employer's liability in this way is that members become the ultimate bearers of the plan's risks. This is similar to DC plans, but with an important distinction: in traditional DC plans these risks are borne by each member individually, whereas in a TBP they are borne collectively as the risks are pooled among the members. For this reason, TBPs have also been called "collective DC" plans.

### 1.2. Potential Advantages of TBPs

DB plan coverage in Canada has been declining for some time. During the past 15 years, many sponsors of DB plans have found that the combination of volatile markets and a low-interest-rate environment resulted in a pattern of plan costs that was no longer acceptable. While many DB plan sponsors and administrators have implemented various types of strategies (e.g., de-risking investments) in order to reduce cost volatility, the decline in DB plan coverage is likely to continue as there are virtually no new DB plans being established.

At the same time, DC plans also have significant shortcomings, including:

- Members often have insufficient knowledge and/or level of engagement to effectively manage retirement assets;
- High management expense ratios can erode value;
- Most members retiring from DC plans choose not to annuitize and are left with the risk of outliving their assets; and
- DC plan members' retirement outcomes are very sensitive to market cycles.

The task force believes that TBPs can provide a valuable alternative to these traditional arrangements, addressing their challenges through a hybrid approach. In particular, TBPs can retain the stability of costs associated with DC plans while allowing members to benefit from improved pension outcomes by pooling assets in a common fund and by pooling certain risks.

### 1.3 TBPs as a Wide Spectrum of Designs

It is important to note that our definition of TBPs does not explicitly mention or limit how often members' benefits may be adjusted, or by how much. In this sense, it is deliberately broader than how TBPs are currently perceived by most stakeholders.

In particular, the definition includes at one extreme TBPs that aim to provide a very high degree of protection for accrued benefits (i.e., a very low probability of benefit reductions, and therefore objectives that are very DB-like), and at the other extreme TBPs under which benefits may be adjusted up and down frequently in response to market conditions and other plan experience (i.e., closer to the DC end of the design spectrum). Between these extremes, we envision a spectrum of intermediate plan designs with varying degrees of expected benefit volatility.

The task force observes that, up until now, most discussion focused on the subset of TBPs lying closest to the DB end of the spectrum. The shared risk plans (SRPs) that emerged in New

Brunswick are key examples of these types of plans. While these complex TBPs may be the right solution in certain circumstances, they are not so in every case.

The task force believes it is critical from a public policy standpoint to consider a much wider spectrum of TBP designs. Specifically, simpler TBPs lying closer to the DC end of the spectrum have great potential for expanding and improving pension coverage in Canada, as they may be attractive to stakeholders who either currently sponsor DC plans or who do not sponsor any pension plan. These types of plans may also be better suited for smaller, perhaps unrelated groups, who may wish to join together in a multi-employer-type arrangement.

### 1.4 Understanding of the Risk-Sharing "Deal"

In a TBP, communication of the risk-sharing "deal" is critical. The risks need to be clearly identified and the risk management framework needs to be clearly articulated. Further, all stakeholders, including plan sponsors, trustees, administrators, committee members, and members, need to understand the deal. One of the biggest risks for a TBP is that stakeholders misunderstand the nature of the deal, which can lead to parties taking actions that deviate from the plan's objectives, stakeholders losing sight of the plan's value, and disenchanted members or employers wanting to exit it.

Risk sharing is therefore a subject that must be properly addressed and articulated when designing a TBP.

## 2. Risk Sharing and Its Consequences

The primary sources of risk in any pension arrangement, including a TBP, are mortality, investment, and inflation. Other risks (e.g., the risk of salary-related losses in career-average-pay or final-average-pay plans, or retirement losses in plans providing early retirement subsidies) may also be relevant.

### 2.1 Who Bears What Risk, for Whom?

In a DC plan all risks are borne individually. In a traditional DB plan the plan sponsor assumes responsibility for losses arising from adverse experience.[2] When required, the plan sponsor must fund the plan so that the lifetime incomes promised to members can continue to be provided, unaffected by the loss. The guarantee provided by the sponsor is central to the ability of a traditional DB plan to maintain a stable benefit level.

[2] Except perhaps in relation to inflation risk, in plans that do not provide indexing or do so only on an ad-hoc basis.

| | Traditional DC | TBP | Traditional DB |
|---|---|---|---|
| **Idiosyncratic mortality risk**[3] | Individual | Pooled | Pooled |
| **Residual mortality risk**[4] | N/A | ? | Hedge provided by plan sponsor |
| **Investment risk** | Individual | ? | Hedge provided by plan sponsor |
| **Inflation risk** | Individual | ? | Hedge provided by plan sponsor *or* borne individually *or* combination |
| **Other risks** | Individual | ? | Hedge provided by plan sponsor |

A TBP has three options to address the absence of a funding guarantee from a plan sponsor.

1. *Allocate the risk directly to individual members*, translating plan experience in each period to immediate benefit adjustments. If the plan suffers a loss, accrued benefits are reduced right away; if the plan experiences a gain, accrued benefits are increased.
2. *Transfer downside risk to a third party* by purchasing a commercial hedging product. This may involve entering into a longevity risk hedging contract with an insurer, or employing derivatives to hedge the risk of investment losses of a certain size, etc. Some risks may be difficult to transfer completely to a third party, and many risks are expensive to transfer. Transferred risks are still subject to counterparty risk.
3. *Intergenerational risk sharing:* have different generations of plan members enter into hedging contracts for all or part of the residual mortality, investment, inflation, and/or other risks among themselves. This can take the form of explicit arrangements (e.g., the operation of counter-cyclical risk buffers), or more implicit ones such as when younger generations partially or wholly underwrite the risks of older generations by putting their own benefits at greater risk.

Of the three options outlined above, intergenerational risk sharing appears to be the one envisioned by most stakeholders to date. The task force maintains that it is not the only viable option and we encourage policymakers to carefully consider the consequences of promoting this approach to the exclusion of the other approaches.

## 2.2 A Closer Look at Intergenerational Risk Sharing

Risk and reward are generally at odds, and intergenerational risk sharing is no exception. If the approach to intergenerational risk sharing is explicit, as in the case of countercyclical buffers (PfADs), the trade-off between risks and rewards is clear: a lower target benefit today in the

[3] Mortality risk can be split into two components: idiosyncratic and residual. *Idiosyncratic mortality risk* refers to individual variations in mortality among members with similar risk characteristics. In a DC plan this risk is borne individually. In a DB plan and in a TBP this risk is pooled: individual mortality risks are offset against each other, thereby reducing the overall mortality risk.

[4] A large plan with a homogeneous membership will have minimal *residual mortality risk*. Smaller plans will have less diversification and may be left with more residual mortality risk. Residual mortality risk also arises from uncertainty about the "true" mortality rates applicable to a particular cohort (i.e., when making an assumption about current mortality rates and potential future mortality improvements).

hope of more future upside potential and less frequent potential reductions in benefits.[5] With other approaches, the cost may not be immediately visible and/or could be transformed into two other risks:

- *Counterparty* risk – if the capacity of successive generations to honour the implicit contract is constrained (e.g., because the number of new entrants is declining), or if the willingness of the next generation to participate in the risk transaction wanes, the TBP may collapse.
- *Plan termination* risk – even if members do want to see the plan continue, events affecting the sponsor (e.g., bankruptcy) may lead to the demise of the plan. In plans with sizeable risk transfers between generations, a plan termination may occur at a time when there are large imbalances in the subsidies received and provided by different member groups. Since at termination the plan has no access to additional assets, these subsidies would be crystallized without the opportunity for "evening out the scales" later.

In addition, we advise caution regarding the following:

- False diversification – a key element that makes diversification of any sort work is that experience fluctuates on either side of the average; individual fluctuations are then offset against each other within the portfolio, reducing the plan's overall risk. This is likely to work within a time period but is more tenuous across generations since the average (around which fluctuations occur) might itself shift. This is precisely what has been happening with mortality risk: longevity has been increasing for decades and this trend is projected to continue. More importantly, the rate at which mortality improvements occur is difficult to predict. Past projections have repeatedly, albeit unintentionally, underestimated the rate of improvement; if this tendency were to continue, pooling residual mortality risks across different generations would work less like true diversification and more like an unintended, one-way transfer of risks and costs into the future. Applying alternative approaches such as leaving this portion of the risk directly with individuals (e.g., by adjusting pension amounts or the retirement age under the plan in response to changes in longevity estimates) may be more desirable.
- Entanglement with other subsidies – intergenerational risk sharing works by providing subsidies from one generation to another in times of need. If the plan already provides persistent subsidies to certain groups of members (e.g., on early retirement), intergenerational risk sharing will magnify these, which can become a source of conflict.

The task force is not suggesting that intergenerational risk sharing be abandoned. On the contrary, we believe this practice provides a valuable benefit to TBP members when applied deliberately and transparently. We do, however, suggest that other TBP arrangements that rely less on intergenerational risk transfers and more on transfers of risks between individual members within the same generation also be considered.

[5] Assuming the full PfAD is put in place at inception. If, by contrast, the PfAD is built up over time (e.g., through experience gains) then future upside potential is also limited, at least temporarily.

Furthermore, if intergenerational risk sharing is employed, we offer the following suggestions:

- Be mindful of potential demographic shifts and have a plan for dealing with them when they occur. This includes sudden maturation of the plan due to a precipitous decline in active membership, as well as slow maturation in a new TBP established for future service only.
- Carefully consider persistent subsidies such as enhanced early retirement benefits or disability benefits as they complicate risk management and can endanger sustainability.
- Be aware of what makes members willing to engage in intergenerational risk sharing. Do they receive compensation for taking on additional risks, or do they do so out of a sense of solidarity (e.g., in unionized environments)? If the latter, communication should be geared to keeping the culture of solidarity alive as it serves to strengthen the sustainability of the plan. When designing new plans, assess how much natural solidarity there is likely to be, both among active members (i.e., within a generation), and among actives and retirees (i.e., intergenerational).
- Clearly communicate members' entitlements in case of plan termination.

### 2.3 A Balancing Act: Costs, Risks, and Intergenerational Risk Sharing

Ultimately, a TBP with a given level of target benefit must balance three elements: costs, risks, and the extent of possible intergenerational transfers. Reducing one element increases one or both of the other elements. Much of the focus to date has been on reducing benefit risk. It should be stressed that this cannot be achieved without either increasing plan costs or triggering larger intergenerational transfers, or both. Stated differently, a plan that has a fixed contribution commitment cannot reduce benefit risk over a fixed horizon (say, 15 years) without either lowering the target benefit level (today, or in the future) or relying on forms of intergenerational risk sharing that provide less than full compensation to members for bearing risk for others. The latter approach, although potentially attractive in the short term from a cost standpoint, can significantly endanger sustainability over the long term. Stakeholders must be aware of these trade-offs and design their plans accordingly.

## 3. TBP Design and Management

The basic design elements of a TBP are as follows:

- *Contribution rate:* the distinguishing feature of TBPs is that the contribution rules are set first, at a fixed level (or within a fixed range), while benefits are derived from what can be afforded by that contribution level, with the ability to adjust benefits as experience develops.
- *Target benefit level:* once the contribution level is set, an appropriate target benefit is chosen based on what is determined to be affordable, given stakeholders' tolerance for (downside) benefit risk and desire for benefit improvements over time. Actual benefits may differ from the target, and the target itself may be redefined from time to time, as experience develops.
- *Investment policy:* similar to a DB plan, the investment policy of a TBP defines the rules for selecting and managing the plan's investments. By specifying a certain risk/reward

trade-off, it directly affects affordability of the target benefit as well as the risk of actual benefits falling short of or exceeding the target.

- *Benefit/funding policy:* the collection of rules that govern periodic assessment of affordability and the method of varying benefits relative to the target (or adjusting the target itself). The main elements of this policy are as follows:
    - *Affordability test:* the valuation basis (consisting of methods and assumptions) that is used to decide if the target is affordable at the outset and continues to be affordable at each subsequent valuation date.
    - *Triggers for action:* specific thresholds defined in terms of the outcomes of the affordability test (e.g., funded ratio <100%), at which point a correction needs to be made. On the downside, the correction would ensure that benefits remain affordable. On the upside, the correction would distribute any excess assets that are deemed not to be needed to keep the plan sustainable.
    - *Actions to be taken:* also known as the "benefit ladder" or "policy ladder", this is an explicit list of contribution/investment/benefit changes to be made when specific triggers are hit. The policy ladder outlines the type of actions to be taken and their priority, as well as their extent and any limitations (e.g., increase future accruals but by no more than 0.5% of pay; use up no more than one-fifth of the excess assets between defined amounts). The policy ladder may leave some actions undefined, usually in respect of triggers identifying extreme events.

Note that what is "affordable" is influenced by all of the elements above, necessitating harmony between the various policies. Often, the benefits/funding policy and the investment policy might be integrated into a single policy, which we will refer to as the BFI policy.

### 3.1 Benefits/Funding/Investment Policy

The BFI policy is key to the design and successful maintenance of a TBP. It provides the transparency for stakeholders to identify the plan's unique balance of costs, risks, and intergenerational risk sharing, and documents the risk management strategies pursued to maintain this balance. The BFI policy will vary by plan depending on the plan stakeholders' approach to risk sharing and risk management. Examples of considerations in developing a BFI policy are:

- One group of stakeholders may be most interested in minimizing intergenerational risk transfer. They may choose to have fixed contributions and be comfortable with a wide range of benefit variability. They may adopt a policy where no margins are applied and no reserve assets are held. Instead, best estimate experience gains and losses are immediately reflected in the benefit level.
- Another group may choose to make benefit stability the highest priority. They are more likely to adopt a BFI policy with large margins and reserves and wide ranges where there is no adjustment to benefits, contributions, or investments.
- Yet another group of stakeholders may choose to adjust investment policy first. For example, they may reduce investment risk if an affordability trigger is met, or agree on

an investment strategy that differs for actives as opposed to retirees, or is otherwise based on the liability characteristics of the plan.

In all of these cases—and they are all examples of actual cases—plan stakeholders must think ahead and come to an agreement respecting the costs they believe to be acceptable, the risks they agree to take, and the degree of intergenerational risk sharing they determine to be fair. The BFI policy documents this agreement by outlining the affordability testing requirements, margins, reserve levels, and priorities for benefit, contribution, or investment adjustments that will support the plan stakeholders' intentions.

### 3.2 Sample Cases and Resulting Risk Profiles

To understand the mechanisms that can be used in risk management of a TBP, consider the following three sample plan designs. It should be noted that these designs by no means represent a comprehensive or "ideal" set of options. They are simply three different designs intended to facilitate the discussion.

| Design Features | Sample Plan #1 | Sample Plan #2 | Sample Plan #3 |
|---|---|---|---|
| Contributions | Fixed contributions, with no variations | Fixed contributions, with no variations | Contributions vary within a fixed range |
| Benefit | Active members retain individual accounts; on retirement, the accounts are pooled to provide a target pension that is affordable on best estimate assumptions—i.e., 50% probability of increases and 50% probability of decreases | Target benefit, defined in terms similar to a DB plan (e.g., % of pay per year of service, plus ancillary benefits such as indexing or early retirement), has 75% probability of being delivered | Target base benefit, defined in terms similar to a DB plan, has 95% probability of being delivered. Plan also identifies ancillary benefits (e.g., indexing or early retirement subsidies) that have a 75% probability of being delivered |
| Actuarial methodology | Traditional unit credit—to ensure that each generation of members accumulates the assets required to support their own benefits. | Projected unit credit with 15-year open group projection: past and future plan liabilities are compared to projection of assets plus future contributions over a 15-year period. The ratio of assets to liabilities is permitted to vary over a fairly wide range (the "no | Traditional unit credit, as for Sample #2, but stochastic open group projections are also conducted on a regular basis (the BFI policy could specify trigger points) to demonstrate the plan's ability to maintain benefits. The ratio of assets to liabilities is permitted to vary over a narrow range with no |

| Design Features | Sample Plan #1 | Sample Plan #2 | Sample Plan #3 |
|---|---|---|---|
| | | action" range) before any adjustments are made (e.g., 90% to 120%) | action (e.g., 100% to 110%) but limited action is permitted above 110% (with limited use of the excess), and full use of the excess over 140% |
| Trigger points for benefit adjustments | Single trigger point—if the funded ratio is more than 100%, then benefits are increased. If the funded ratio is under 100%, then benefits are decreased. There is no "range"—not even a narrow one—over which the benefit remains level | Multiple trigger points with fairly wide "no action" range (where neither contributions nor benefits are adjusted). Within this range, investments may be adjusted. At the edges of this range, adjustments might be:<br>• On the downside, reduce ancillary benefits; after which more significant reductions to benefits are made, and<br>• On the upside, the order of adjustments might be: restore cutbacks, increase ancillary benefits, improve benefit formula | Multiple trigger points with narrow "no action" range (where neither contributions nor benefits are adjusted). Within this range, investments may be adjusted. At the edges of this range, adjustments might be:<br>• On the downside, the first step is to increase contributions or reduce ancillary benefits; after which more significant reductions to benefits are made, and<br>• On the upside, the order of adjustments might be: restore cutbacks, increase ancillary benefits, reduce contributions, improve benefit formula<br>• The magnitude of the adjustments depends on the level of excess that can be used |

The samples outlined above each emphasize different levers in the pension sustainability toolbox. They also fall on different parts of the TBP spectrum.

Sample Plan #1 is very comparable to a traditional DC plan that offers one investment option. The primary difference is that the TBP pools the post-retirement mortality risk among the membership. This design is closest to the DC end of the TBP spectrum.

Sample Plan #3 is most comparable to a traditional DB plan, and to the approach adopted by New Brunswick with the shared risk model. There is a high probability that the targeted benefit will be delivered, a good likelihood of benefit improvements as a result of experience gains, and the ability to make modest adjustments to contributions. This design is closest to the DB end of the TBP spectrum.

Sample Plan #2 is similar to Sample Plan #3, but is more open to benefit variability. There is a better than 50% probability that the benefit will be delivered as promised, and a bias towards benefit improvements as a result of experience gains. This design lies between Sample Plans #1 and #3 on the spectrum.

## 3.3 Risk Management

In most TBPs, the fundamental objective is to deliver a lifetime retirement income at or around its declared target benefit.[6] The primary risk to be managed is then benefit risk: the risk of actual benefits falling (significantly) short of the target.[7]

Sample Plan #1 makes no attempt to manage the magnitude of this risk but simply ensures that it is more-or-less balanced, so that a high probability of benefits falling short of the target is offset by a high probability of benefits exceeding the target. As long as the risk profile of this plan reflects the desires of the stakeholders and is appropriately communicated to members, a plan of this type should be allowed to operate as a TBP.

If stakeholders were not comfortable with the level of benefit volatility and benefit risk offered by Sample Plan #1, they could employ a multitude of risk management mechanisms, some of which are listed below. It should be reiterated that each of the mechanisms below would necessarily impact either the level of the target benefit or the extent of uncompensated intergenerational risk transfers, or both.

### *3.3.1 Mechanisms to Reduce Benefit Risk through Investment Policy*

We discuss the investment policy separately from other risk management mechanisms, because the policy—i.e., the decision regarding asset mix—fundamentally determines the risk/reward profile of the plan as a whole. The benefits/funding policy then effectively allocates these risks and rewards among different generations of members.

If the goal was to reduce investment risk in the plan as a whole (as opposed to how much of this risk trickles through to individual cohorts now and in the future), stakeholders could consider:

[6] A slightly different objective might be to deliver a benefit that is near the nominal target at retirement and keeps pace with inflation thereafter.

[7] In practice *benefit risk* can mean a number of different things: the risk of falling short of the target in an ongoing plan, the risk of reducing accrued benefits in an ongoing plan, the risk of benefits fluctuating from year to year (volatility), or the risk of benefits falling short of the target when the plan is terminated (wind-up risk). Likewise, *benefit security* is often used interchangeably to denote absence of one or more of these risks. This can create some confusion. The first and second risks are similar and can be managed using the same tools. The third is quite different and requires different strategies. The fourth is often viewed as less important in a TBP, but should not be ignored. We focus here on the first usage.

- Reducing the volatility of asset values. This may be a one-sided reduction (e.g., hedging of downside risks through derivatives, for a fixed cost) or two-sided (choosing assets with a lesser downside and upside).
- Managing interest rate risk. Changes in long-term bond yields can have an impact on the valuation of assets and on the valuation of benefits to the extent the discount rate is adjusted to reflect different economic conditions. Investments that reduce the duration mismatch between the assets and the value of the benefits (as determined by the affordability test) are helpful in reducing benefit risk.
- Managing inflation risk. Changes in inflation expectations can have an impact on the value of assets. They may also have an impact on the value of benefits. Exposure to assets that are sensitive to inflation may be helpful in managing an inflation-linked target benefit.

Reducing investment risk normally comes at the cost of a reduced risk premium and lower expected returns over the long term. Consequently, if the overall investment risk inherent in a TBP is to be reduced, the corresponding target benefit would normally also be reduced.

Selecting the "right" level of investment risk is challenging because the interests of retired members (desiring benefit stability) and active members (looking for future growth potential) are somewhat at odds. A potential solution to the problem of opposing priorities may be to maintain separate funds with different risk profiles for active and retired members and to apply separate benefit adjustments based on the experience of each fund.[8] However, separation of assets has drawbacks, including limited opportunity for intergenerational risk sharing, and additional cash flow/liquidity constraints that may lead to lower overall benefit levels.[9]

As an alternative, the pension fund may apply a life cycle strategy, either at the individual member level or at the plan level, with investments backing younger members' benefits being more focused on growth than on stability. As members approach retirement (or, equivalently, as the plan matures) the assets would gradually shift towards less volatile instruments.

### *3.3.2 Other Mechanisms to Reduce Benefit Risk*

In many cases there is a desire to reduce the frequency and/or magnitude of negative accrued benefit adjustments while maintaining an investment policy that allows significant exposure to growth assets. The following table gives examples of some of the tools that can be used to achieve this objective.

[8] This approach respects the principle originally articulated by economist Jan Tinbergen that the number of policy goals can be no more than the number of policy instruments available to achieve them: in this case two goals (growth vs. stability) call for two instruments. See Ambachtsheer, K. (2014) "Taking the Dutch Pension System to the Next Level: A View from the Outside", NETSPAR Occasional Paper, Network for Studies on Pensions, Aging and Retirement for more.

[9] Notional separation of accounts overcomes the cash flow issue, but tracking notional entitlements is a non-trivial exercise and administrative complexity may outweigh any advantages.

| Tool | Description | Impact |
|---|---|---|
| Contribution flexibility | Employee and employer contributions could fluctuate within a prescribed, and presumably reasonably narrow, range | Charges future generations more/less than past generations for the same benefit. Allocates greater risk to active members than retired members. May have negative accounting implications |
| Adjusting future service accruals | Some stakeholders may wish to adjust future service accruals before adjusting past service benefits. This decision could be influenced by the source of the projected funding shortfall | Allocates greater benefit risk to future generations. Active members are subsidizing pensioners if the reason for the reduction in service accrual is a funded ratio below target as opposed to a fundamental change to the affordability test |
| Conditional indexation of pensions in pay | Currently, the most common example of a conditional benefit is inflation-linked indexation of pensions in payment. Stakeholders are generally more accepting of giving up a potential increase as opposed to reducing an existing payment. Reduces downside risk relative to a plan with automatic indexation of pensions in pay | This risk management tool causes the immediate risk impact to be borne by pensioners rather than by active members |
| Conditional updates of the earnings base in a career-average-pay plan | The earnings base is updated only if the increase is deemed to be affordable over the long term. Reduces downside risk relative to a final-average-pay plan. Note that the adjustments to accrued benefits can be linked to the Consumer Price Index (CPI) or average industrial wage rather than individual members' actual pay increases. This approach reduces the subsidies between cohorts that may have vastly different salary growth expectations | The impact is the opposite of conditional indexation: the risk is borne by active members rather than by pensioners |

| Tool | Description | Impact |
|---|---|---|
| Counter-cyclical risk buffer (PfAD) | The countercyclical buffer creates a "no-action" range for benefits: adjustments are not made unless the size of the buffer exceeds some maximum or is less than a minimum | This is a form of explicit inter-generational risk sharing. It reduces both upside and downside risk. This approach shifts the timing and incidence of benefit payments by reducing the target (to compensate for the cost incurred in putting up and replenishing the buffer) and by making less frequent decreases in the future |
| Static margin in valuation assumptions (particularly the discount rate) | Static margins add conservatism to the affordability test by holding back all or a portion of the unearned risk premium | Margins shift the timing and incidence of benefit payments by reducing the initial target benefit and distributing gains (realized risk premium) as benefit improvements. The actual level of benefit risk is difficult to compare across plans with different levels of margins |
| Dynamic margins | The risk management policy could permit margins to vary with circumstances | Care must be taken, as changing the valuation discount rate (due to changes in the margins) changes the plan's risk profile and redistributes wealth. Ideally, the BFI policy should describe under what circumstances margins can be added or released |
| Projection valuation methods (open group) | Valuation methods typically used for DB plans are "closed group", meaning new entrants are not contemplated. A TBP, however, is often considered on an "open group" basis, so that future contributions and benefit accruals of both existing and new members are taken into account over some fixed horizon. Projection valuation methods can give stakeholders a more realistic depiction of the future course of the plan | The way the projection is applied in the affordability test can have significant intergenerational impact. It is critical that plan stakeholders clearly identify and agree upon the methodology and assumptions used and understand their impact on intergenerational risk sharing |

| Tool | Description | Impact |
|---|---|---|
| Asset smoothing | Asset smoothing delays the impact of both positive and negative investment experience. It encourages a long-term view with respect to plan decisions. It is also another means of creating a flexible buffer to reduce the impact of short-term fluctuations on benefit levels | When applied over a short horizon, it does not significantly alter the *relative* risk profiles of different cohorts of members. Longer horizons introduce more risk sharing between cohorts |
| Valuation frequency | Less frequent (e.g., triennial rather than annual) valuations may reduce the incidence of benefit fluctuations by offsetting positive and negative plan experience during the intervaluation period. They encourage plan stakeholders to maintain their focus on the long term instead of reacting to short-term fluctuations | Less frequent valuations can deprive stakeholders of valuable information (e.g., regarding continued appropriateness of lump sum payouts that depend on the financial position of the plan). A better approach with a similar risk reduction impact would be to monitor affordability frequently (e.g., via annual updates to valuation results) but introduce benefit changes gradually. See "delayed adjustments" below |
| Delayed adjustments | Positive (and negative) adjustments can be phased in over time. For example, if the funded ratio is 110%, instead of increasing benefits right away, the plan may apply a 2% increase in the first year with a plan for additional future increases, which may be cancelled if there is future negative experience | Delayed adjustments result in more intergenerational risk sharing. The longer the horizon over which adjustments are spread out, the greater this impact is. If only negative adjustments are delayed, the risk transaction between older and younger cohorts is imbalanced |

### *3.3.3 The Role of Stochastic Valuations*

Valuation of liabilities in a TBP is required for two distinct purposes:

- During the design phase, to establish the appropriate target benefit given the level of contributions and degree of investment risk to which the stakeholders are willing to commit; and
- On an ongoing basis, to assess whether the target benefit can be maintained or whether benefits need to be adjusted.

While a deterministic valuation[10] could conceivably be used for both purposes, a stochastic valuation may provide valuable insight, particularly during the design phase. Specifically, a stochastic valuation can help stakeholders:

- Identify the likelihood of the plan being able to meet its targets, and the likelihood of benefits being paid at the identified levels in the benefit/policy ladder;
- Understand the effectiveness of various mechanisms designed to make the plan more resilient to emerging experience and assess the residual risk borne by individual members (i.e., the benefit volatility that remains after applying the risk management steps outlined in the BFI policy); and
- Understand the sources of the plan's resilience in terms of how risks and rewards are allocated among different generations of plan members over time.

These are important considerations in setting the target benefit and selecting the BFI policy that are difficult to assess with only a deterministic valuation. The task force believes that best practice would involve the use of stochastic valuations at the design stage.

For ongoing assessment of benefits in relation to the target, a simple deterministic affordability test with clearly defined trigger points for action may be sufficient. Ideally, this affordability test would be selected and tested at the plan design stage based on a stochastic valuation conducted at that time and would reflect plan-specific information. To supplement the deterministic affordability test, a BFI could require more frequent stochastic analysis, either at regular intervals or when certain triggers are met.

### *3.3.4 Transparency*

Fundamentally, a TBP must operate with as much transparency as possible in order to maintain trust among participants. This distinguishes it from traditional DB plans, which are generally completely opaque to members. This opaqueness is acceptable if members are not bearing any risk but is not desirable in a TBP in light of the potentially significant risk transfers among members.

Even in plans that aim for a high degree of benefit security/stability and take steps to manage risks appropriately, extreme events may make changes to benefits or plan terms unavoidable. In these cases, those in charge of managing the plan must be able to demonstrate to members that negligence or recklessness was not the cause of the negative outcomes, and this is much easier if transparency is maintained with respect to the development and terms of the BFI policy as well as ongoing actions and decisions and their impact on members. It is much more difficult to convince members of the correctness of certain actions in the past when the decision-making process and the impacts of those actions were kept opaque.

[10] A deterministic valuation considers only a single stream of future plan experience. A stochastic valuation involves the simultaneous projection of the assets and liabilities of the plan under a wide range of future economic scenarios.

Transparency can be improved by:

- *Policy and tools* – creating a written BFI policy, with a clearly defined risk management framework, including affordability testing rules, trigger points, and associated actions, and choosing risk management tools (as discussed in the table above) that encourage transparency;
- *Communications* – providing members with timely and relevant communications regarding the nature of the deal, the benefits, and risks—the risk management framework is key, particularly if less-transparent tools are selected; and
- *Governance* – ensuring that governance structures clearly articulate and support the risk-sharing "deal", that members have the appropriate level of involvement in plan governance, and that the decision-making process is open and communicated to them.

### 3.4 Accounting and Expensing

The current accounting rules require plan sponsors to recognize the cost of a DC plan on the basis of the contributions made with no recording of any asset or liability on the sponsor's balance sheet. For DB plans, the cost for accounting purposes is based on the value of accruing benefits, with an asset or liability recorded on the sponsor's balance sheet calculated on the basis of the market value of assets and the value of the DB liabilities using a market discount rate based on corporate bonds yields. DB plan accounting standards have resulted in volatile recognized costs and volatile balance sheet impacts, which arguably is one of the reasons many employers have replaced their DB plans with DC plans.

Under the current standards, in our experience, the interpretation of the accounting rules by the accounting community defaults to DB plan accounting treatment when a plan is not of the traditional DC plan nature or a multi-employer plan as defined in the standards.

For a TBP under which there is no volatility in sponsor contributions, and if there is no risk of funding a deficit on plan wind-up (or of refunding surplus), a sponsor should be able to recognize as expense the fixed contributions remitted to the TBP with no requirement to record an asset or a liability on its balance sheet (i.e., DC plan accounting treatment).

However, if a TBP includes the possibility of variations in sponsor contributions (even within a relatively narrow corridor) we realize the potential for an increased liability for the sponsor. We encourage the accounting community to review the accounting standards such that features of TBPs can be recognized in a measured way, as opposed to the current interpretation, which appears to default to DB plan accounting treatment.

## 4. Regulation of TBPs

### 4.1 Objectives

Current DC plan regulations focus on promoting transparency, good governance, and appropriate communication so that members understand and appreciate the risks related to participation in these arrangements and so they can make informed decisions. By contrast, regulation of DB plans is primarily concerned with ensuring that the benefits are secure and that guarantees provided by the sponsor are honoured.

TBPs occupy a spectrum between DB and DC plans with various levels of benefit security. Their regulation should reflect this fact. Existing regulations in New Brunswick and Alberta appear to focus on the DB end of the TBP spectrum. For TBPs near the DC end of the spectrum, which could be beneficial from a public policy standpoint, such DB-focused requirements would be unnecessarily complex and onerous. One alternative would be to have separate rules for such plans, but this would result in fragmented regulations for TBPs with an arbitrary dividing line between DC-like and DB-like implementations.

Our preferred solution is a holistic regulatory framework rooted in the DC model yet capable of addressing the needs of plans near the DB end of the spectrum. The primary objective of such a framework, borrowed from the Dutch regulator, would be to ensure that "reasonable expectations" of plan members are met. Accordingly, regulations would be focused in four areas:[11]

| | | |
|---|---|---|
| 1. | Risk management | What are the risk exposures of the plan?<br>What measures does the plan have in place to manage those risks?<br>Are those measures sufficient and appropriate in relation to the goals and risk tolerances of the plan's stakeholders? |
| 2. | Disclosure and communication | Are the benefits and their associated risks disclosed clearly and in a timely manner to stakeholders? |
| 3. | Financial health | Can the pension fund live up to the benefits communicated to members, both in the short and long term? |
| 4. | Governance | Is management and oversight of the plan adequately organized? |

Under this framework, each TBP would be free to choose the risk profile that is right for its own stakeholders. The regulator would assess each TBP's risk management policy, communication, financial health, and governance structure in relation to the plan's own desired risk profile rather than against a single DB-like benchmark. This approach would accommodate TBPs along the entire length of the design spectrum, including those with simple, direct benefit adjustment mechanisms (e.g., Sample Plan #1). At the same time, it would hold plans that make significant representations about benefit security (e.g., Sample Plan #3) to a naturally higher standard in terms of funding and risk management. Instead of directly dictating the levels of risk assumed within the operation of TBPs, regulations would be focused on ensuring consistency between what members understand to be the "pension deal" and the way the plan is managed.

There are two issues with this approach. The first relates to conversion of benefits accrued under a traditional DB plan to a TBP. In this situation, it would be reasonable to set limits on the extent to which the risk-sharing arrangements are altered in an existing "pension deal". Past service conversion is discussed further in section 4.6 of this report. The second issue is the current capacity of Canadian pension regulators: with fragmented and uneven resources among the various jurisdictions, it may not be possible to implement the ideal regulatory model outlined above. The following two sections review key elements of the existing regulatory models in Canada and beyond, with the goal of arriving at a more realistic solution.

[11] From a presentation by Dirk Broeders (senior strategy analyst, De Nederlandsche Bank) at the October 2012 Discussion Forum organized by the International Centre for Pension Management, accessible at http://www.rijpm.com/event/past/21.

### 4.2 International Experience

When thinking about management and regulation of TBPs, it is instructive to look at international experience with shifting pension guarantees over the last 15 years. We present two case studies (the Netherlands and Denmark) in the appendices and summarize the lessons that can be learned.

From the Dutch example (see appendix A):

- Having conflicting benefit/funding goals muddies investment decisions. Decide what is more important: pension in real terms or nominal terms?
- If the focus is on protecting nominal benefits, conditional indexation is a good start. It creates some resilience but may not be enough to protect a plan from reductions in the benefit level.
- Large amounts of risk capital can reduce the likelihood of pension reductions. However, once that capital is depleted, recovery is difficult and tensions may flare between different cohorts of members. Flexible benefits (i.e., ones not subject to hard guarantees) allow pension plans, particularly mature ones, to react to circumstances in a timely and equitable manner.
- An explicit plan of action to follow in case of both positive and negative plan experience (i.e., a complete policy ladder set up *ex ante*) can help avoid conflict and misunderstandings.
- Stochastic projections are a useful tool for helping stakeholders assess the robustness of their plan over the long term. They can also help establish desirable levels of risk capital.
- Regulations must encourage prudent risk management rather than assume that this will naturally emerge.
- Communication must stress the contingent nature of the benefit in simple terms that members understand.

From the Danish experience (see appendix B):

- It is possible to create more secure and equitable pensions by taking away unaffordable guarantees. The key is to still act prudently, not recklessly, when investing assets and when distributing gains. Making decisions in a risk management framework with a long-term perspective helps with that.
- A long-term perspective is critical for regulators as well, as is the ability to correct pro-cyclical behaviour driven by market anomalies. Regulators should have the ability to exercise flexibility during system-wide crises.
- Intergenerational equity is key: pension plans must watch out for systematic biases and one-way transfers of wealth. Testing this is onerous but essential for maintaining public confidence and sustainability.
- Trends in longevity cannot be ignored. Each cohort's costs and benefits must reflect the best estimate of their mortality experience, including future mortality improvements. Increased costs due to increased life expectancies should not be shifted to the future.

### 4.3 Financial Health and Risk Management

Turning to the consideration of pension regulations in Canada, the first and most significant area to examine is the regulation of the financial health of the TBP and the framework for managing the risks shared by TBP stakeholders. Although a number of provinces have passed legislation enabling the creation of TBPs in principle, as of the date this report was written, only two jurisdictions (New Brunswick and Alberta) have put in place accompanying regulations[12]. A quick summary of the salient features of each with respect to the assessment of benefit affordability and benefit risk is given in the following table; more detailed information is provided in appendices C and D.

| | New Brunswick | Alberta |
|---|---|---|
| **Prescribed method** | *Annual deterministic test:* Traditional unit credit with 15-year open group projection *Additional test at inception and when benefits change:* 20-year stochastic projection to assess probabilistic goals | *Triennial deterministic test:* Traditional or projected unit credit, closed group basis |
| **Prescribed assumptions** | None | Benchmark discount rate (BDR) as baseline, higher PfAD if using higher rate (see below) |
| **Probabilistic goals with respect to benefit risk** | *Primary:* less than 2.5% chance of cuts in base benefits over 20-year horizon *Secondary:* Amount of ancillary benefits actually provided over 20-year horizon is at least 75% of aspired ancillaries | No explicit goals |
| **Minimum required contributions at onset** | Normal cost + admin expenses over 0.5% of assets + amount necessary to meet probabilistic goals | Normal cost + 15-year amortization of any shortfalls + prescribed PfAD[13] + admin expenses |
| **Trigger for action on downside** | Open group funded ratio (OGFR) < 100% two years in a row | Actual contributions < minimum required contributions |
| **Opportunity to take action on upside** | Open group funded ratio > 105% | Fund value > Actuarial liability + PfAD[12] |

[12] TBP regulations were also created recently in British Columbia. These will come into force in September 2015.

[13] PfAD determined by reference to asset mix (higher PfAD for higher equity content) and discount rate (higher PfAD for rate exceeding BDR).

| | New Brunswick | Alberta |
|---|---|---|
| **Spending limit on upside** | • Spending can eliminate portion of OGFR in excess of 140% and one-fifth of OGFR between 105% and 140%<br>• Probabilistic test must still be satisfied | PfAD requirement must still be met after benefit improvement |
| **Benefit ladder** | Explicit requirement; subject to restrictions on the type, order, and extent of actions to be taken | Discretionary (type, order, extent); no requirement for explicit ladder |

### *4.3.1 Comments on the New Brunswick SRP Regime*

We offer the following comments on the New Brunswick SRP regime in light of international experience and the regulatory objectives outlined in section 4.1.

**Positive features:**

- Gives stakeholders and regulators an indication as to whether the plan is likely to deliver the benefits communicated, at least over the medium term (15–20 years) assuming reasonable evolution of the plan's demographic profile;
- Encourages risk management framework by setting explicit risk management goals, discourages reckless investment and inappropriate levels of risk;
- Encourages understanding of plan risks and resiliency in face of adverse experience through stochastic projections;
- Encourages long(er)-term view;
- Supports plan sustainability and intergenerational equity by requiring explicit benefit ladder, and limits the ability to impose certain large impacts only on specific groups;
- Establishes clear priorities with respect to nominal benefits versus indexation; and
- Explicitly requires inclusion of expected future improvements in mortality rates.

**Features that could be improved:**

- With open-group valuation and 15-year projection horizon, a plan can spend (i.e., give benefit improvements or indexation) while in a "deficit" on a closed group basis[14], as long as it can meet the probability thresholds. We understand this may have been a necessary measure to facilitate conversion of accrued benefits from public sector DB plans such that a high hope of indexing could be provided even in the early years of conversion, but this may be less desirable in other situations (e.g., with new plans that do not have past service conversion or in the case of private sector plans).

[14] And likely an even greater deficit on a wind-up basis.

- The requirement to perform stochastic valuations for routine plan changes such as annual indexation of benefits appears rather onerous.
- The benefit security threshold (97.5% for base benefits) was appropriate for conversion of very secure DB plan benefits, but many situations exist where a lesser degree of benefit security would be acceptable.
- The link between the valuation discount rate used and the risk capital required is not defined under the regulation, and could remain opaque if not otherwise disclosed.
- It does not require assessment of potential demographic shocks.
- Very little emphasis is placed on the short-term financial position of the plan, especially in case of wind-up (other than a void conversion clause if a converted plan is wound up within five years of conversion). Depending on the type of sponsor (sector, industry) this information may have more relevance.
- It is focused almost exclusively on TBPs that are on the DB-like side of the spectrum.

### *4.3.2 Comments on the Alberta GC+ Regime*

Likewise, we offer the following comments on the Alberta going-concern-plus (GC+) regime for TBPs.[15]

**Positive features:**

- Simplicity—deterministic tests and triggers are easy to understand and implement;
- Transparency—it requires explicit risk capital (PfADs) rather than relying on implicit margins;
- Flexibility—it allows lower benefit security than available under the New Brunswick model; and
- It prevents opportunistic selection of valuation assumptions by directly linking required risk capital (PfAD) to choice of discount rate.

**Features that could be improved:**

- Transparency—it may not provide sufficient information to stakeholders to facilitate adequate management and communication;
- There is no linkage of minimum PfAD to plan provisions (flat vs. career-average-pay-linked vs. final-average-pay-linked benefits; indexation ambition, if any; etc.) to demographic profile, or to specific risk tolerances of stakeholders;
- It has a very short horizon (three years); no information about the extent to which following the minimum requirements will ensure meeting the target over the long term;
- It does not require assessment of potential demographic shocks;
- It does not promote a culture of risk management:
  - It does not require plan-specific assessment of risk exposures; and

[15] Many of these points were already reflected in the CIA's submission to Alberta Finance's consultation on the GC+ framework in 2013, available at www.cia-ica.ca/docs/default-source/2013/213056e.pdf.

  - It puts some measures in place to manage risks but does not require assessment of whether those measures are sufficient and appropriate given the specific goals of the plan;
- It allows for a discretionary benefit ladder;
- There is a potentially incongruent assessment of affordability on the upside and downside due to using different measures as triggers (i.e., there is one test to signal a benefit reduction and a different one to allow for a benefit improvement, and it is possible to trigger both tests at the same time);
- A 15-year amortization of shortfalls allows the plan to dip well below 100% funded on a closed group basis without taking immediate corrective action on benefit side; this may not be appropriate in all situations; and
- It is focused almost exclusively on TBPs that are on the DB-like side of the spectrum.

Of primary overall concern is that it is not actuarially clear to us that the GC+ approach actually provides an appropriate level of benefit security for the majority of plans and in the majority of cases.

### *4.3.3 A Possible Path Forward*

The task force recognizes that it is challenging to craft regulations that can work for all types of TBPs without such regulations being overly complex. Given that many industry stakeholders point to regulatory complexity as one factor in the trend away from DB arrangements, we suggest that a key objective should be to avoid making a complex system even more so.

We suggest that Alberta-style regulations, with the following modifications to address their most serious shortcomings—inspired by the New Brunswick shared risk approach—could be a workable model:

- A BFI policy, with an explicit policy ladder of triggers and benefit actions, should be a requirement for any plan to be considered a TBP. The risk-sharing deal needs to be explicit and transparent and we see this policy as essential to this process.
- A TBP should be permitted to adopt and apply a customized BFI policy (i.e., affordability test, triggers, and consequences) that differs from the minimum PfADs prescribed in the regulations if the plan can provide evidence that it has performed stochastic modelling at the outset to validate the risk management framework adopted and demonstrate that the benefit risk does not exceed a minimum reasonable threshold. As an example, the threshold chosen by the plan might be expressed in terms of a probability that benefits at a minimum level will be delivered over a specified mid- to long-term time horizon, such as “75% probability that target benefits will be delivered over the next 20 years”.

In order to facilitate the latter point, the task force encourages the CIA to establish technical standards for stochastic modelling of TBPs, drawing on the technical guidance applicable to stochastic modelling of insurance liabilities.

### 4.4 Communication and Disclosure

It is critical to the successful functioning of a TBP that there be clear communication with plan members, at inception and at regular intervals, concerning the potential benefits and risks of the plan. The consequence of inadequate communication with plan members is that members do not understand or value the plan, leading to potential disenchantment and a higher risk of member-driven plan collapse.

We support detailed and prescriptive regulations regarding communication and disclosure to members. We strongly believe that disclosure to members about the nature of the plan, particularly the fact that benefits are not guaranteed, is crucial to managing member expectations. It will also be important for the industry to develop ways of communicating target benefits to members so as to facilitate member understanding of the pension deal and the potential volatility in contributions and benefits.

From a prescriptive point of view, in addition to most of the disclosures already generally required for DB plans (i.e., confirmation of basic member information, information on the terms of the plan, estimates of accrued benefits, etc.), we believe members should be given:

- An explanation of the plan's benefits/funding policy and the implications for individual member benefits.
- A minimum window for notifying all members of a change that is being implemented as a result of the benefits/funding policy, whether an increase or decrease in contributions, or a change in the benefit level.
- Details in the annual statements on the expected retirement benefits if the plan meets the objectives in the benefits/funding policy and the accumulated termination value that would be awarded if the plan had been terminated at the statement date.
- A measure of the current financial status of the plan in relation to benefit affordability. This could be achieved by including in the annual member statements a graphical representation of the current result of the affordability test in relation to the plan's "range of affordability". The results of prior years of affordability tests could also be included for comparison and to demonstrate trends.
- The annual benefit statement should also recap the actions to be taken if the results were to fall outside of the range in future years. We see this as an alternative to a probabilistic statement about members' benefit risks, which may not actually be as effective in communicating the contingent nature of the benefit promise.

As a minimum there should be a reminder every year that the benefits are estimates only, are not guaranteed, and may be adjusted.

Different disclosure items lend themselves to different vehicles. The array of vehicles currently required by pension legislation is sufficient and the items specific to TBPs need only be worked into that framework. For example:

- Member booklets—add a comprehensive explanation of the benefits/funding policy;
- Annual statements—add current and historical affordability test results and their implications, a reminder that benefits are not guaranteed, the reporting of the target

benefit, and the reporting of the benefit value had the plan been terminated on the statement date;

- After each valuation—require notification to relevant parties of the affordability test results revealed by the valuation and of any upcoming actions required by the benefits/funding policy (at least, say, 90–180 days before the changes are to take effect); and
- As needed or prior to conversion—require notification to members.

Finally, reporting the level of benefits that could be provided in a hypothetical wind-up scenario would be helpful to plan trustees and stakeholders, and informing a member of the benefit he or she could expect "were the target benefit plan to have been wound up on the statement date" is a useful communication item for members.

### 4.5 Governance

Other organizations have commented more broadly on a variety of issues related to governance of TBPs, such as:

- The Association of Canadian Pension Management—ACPM Target Benefit Plan Paper, March 30, 2012;
- Aon Hewitt—Delivering on the Target Benefit Plan: Governance and Risk Alignment, December 2013; and
- The Canadian Bar Association—CBA Submission to the Federal Government Consultation on Pension Innovation for Canadians: The Target Benefit Plan, June 2014.

The task force therefore focused on the aspects of governance that have actuarial implications, namely:

- The governance model for TBPs should reflect their unique characteristics and clearly differentiate the role of the sponsor(s) from the role of administrator, as noted below; and
- TBPs should be required to specify a pre-determined ladder of triggers and benefit adjustments, to which the sponsor(s) would agree and which the administrator would implement. It would be important that the ladder not allow the administrator too much flexibility in implementation such that the risk-sharing arrangement is fundamentally altered (such as permitting too much variation in the actuarial valuation basis or the margins applied to determine affordability).

The governance model should clearly differentiate:

- The role of the sponsor (i.e., the parties that establish the plan: an employer or employers, a union, a combination of such parties, etc.). For example, it:
    - Has the power to amend, subject to collective bargaining agreement;
    - Establishes the governance structure; and
    - Establishes the BFI policy.

- The role of the administrator (e.g., a board of trustees or a third-party administrator and trustee). For example:
  - Calculation and payment of benefits;
  - Implementation of the investment policy;
  - Application of the benefits/funding policy, including application of triggers on contributions and benefit changes;
  - Communication; and
  - Compliance.

As the sponsor is typically supporting very little or no risk, the administrator should be expected to act only in the best interest of participants (i.e., those who actually support the risk). However, to safeguard sustainability, "participants" must explicitly include all current and future members of the plan. Administrators should be protected from lawsuits when benefits are reduced in accordance with the plan's BFI policy. Pension regulators should establish minimum governance requirements, but these requirements should be flexible enough to allow appropriate best practices to emerge.

### 4.6 Past Service Conversion

In September 2014, the Association of Canadian Pension Management issued the ACPM Target Benefit Plan Supplemental Paper, which discussed the issues with, and made certain proposals for, past service conversion of a DB plan to a TBP. The task force has therefore focused on the more actuarial aspects of the conversion question.

It agrees that conversion of existing plans to TBPs should be allowed. There are several arguments for this, including:

- It is considerably more efficient, more cost effective, and less administratively onerous to maintain one ongoing plan than a legacy, closed plan that will eventually wind down and a new start-up plan with a small asset base.
- The existence of a sizeable fund provides the plan and its members with upside growth opportunity. Allowing for the conversion to TBP gives plan sponsors seeking more cost certainty an option that maintains this growth opportunity for plan members.
- It is not actuarially obvious that the guarantee promised by a DB plan is of superior value to members as compared to the potential rewards offered by a TBP.
- The employer DB guarantee can and has been removed in the past. A conversion to a TBP may be a better option for members than a conversion to a DC plan and the transfer of individual lump sum pension values to members' personal retirement savings accounts.
- Our experience suggests that pension coverage in Canada would be further harmed if conversion of an existing plan into a TBP were not permitted. It would leave plan sponsors seeking cost certainty with the only option they have currently; i.e., to convert the plan to DC and possibly to offer members a transfer of the lump sum value.

- In the past, plan sponsors have used positive plan experience for contribution holidays. The current trend is for plan sponsors to use positive plan experience to facilitate de-risking strategies. In a TBP, the focus would shift and positive plan experience would be more likely to have a direct benefit to members.

The majority of this section deals with the conversion from a DB plan; at the end, we also discuss converting from a DC plan. The key questions are:

1. Should member consent be required and at what level?
2. On what basis (i.e., actuarial assumptions and methods) should conversion be funded?

The task force suggests that there should be a reasonable consent requirement; i.e., that no more than a minimum percentage of the membership objects to the conversion, but that this requirement could be waived if the conversion were funded on a minimum prescribed basis.

With respect to the funding requirement for conversion, we suggest that if the plan meets the member consent requirement, the minimum requirement for funding the conversion could be that the targeted benefits are deemed "affordable" on the basis agreed to by the plan stakeholders in the benefits/funding policy.

If member consent is not provided (it may not be sought), then the minimum requirement for funding the conversion should be that the plan be fully funded on a solvency basis on conversion. It would be acceptable for the plan sponsor to commit to pay a solvency deficiency as at the date of conversion over the ensuing five years, with no ability to increase or reduce this funding commitment. There is an actuarial issue with this approach, however. Depending on the affordability test in the TBP, it is possible that a converted DB plan that is fully funded on a solvency basis also finds itself in the position where the affordability test supports an immediate target benefit increase. Therefore, it would be critical to "ring fence" the past service assets for a minimum period (such as 10 years). For example, the plan might not be able to use past service assets for benefit improvements for the first 10 years following conversion.

In addition, if consent is not provided, retired members should be given the option at the time of conversion to have their accrued pension entitlements transferred to an insurance company on a guaranteed basis. This approach would provide a reasonably secure alternative to older members who may not be comfortable with the risk profile of the converted plan.

With respect to conversion to a TBP from a DC plan, as long as members retain the ability to transfer their DC plan account balance to a personal retirement savings plan, then the pension "deal" will not have changed. This suggests converting the DC account balance to a TBP pension using an actuarial equivalent basis and the affordability testing, but allowing lump sum withdrawals on termination or retirement, at least in respect of the pre-conversion benefit.

## 4.7 Other Issues

### *4.7.1 Lump Sum Transfers (Individual Termination and Retirement)*

Currently, if a DB plan participant terminates employment, he or she receives the option of a lump sum transfer value calculated according to actuarial standards and based on a principle that this value should correspond to the equivalent value of the guaranteed deferred pension

based on a discount rate close to a risk-free rate. In a TBP, where the corresponding deferred pension is not guaranteed but is subject to adjustments according to future experience, a transfer value based on a risk-free discount rate would generally not be appropriate. Instead, the lump sum value of the benefits accrued under a TBP should be calculated according to the valuation basis used in determining ongoing affordability of the target.

Furthermore, since the risk is supported collectively by the participants with controlled transfers between generations, it would not be appropriate for terminated participants to receive the full value of the deferred target if that target were deemed unaffordable at the time of termination.[16]

This leaves the issue of whether the terminated participants should receive a share of reserves or margins held in respect of PfADs. The parties involved in the sponsorship of each TBP should be free to address this issue, rather than be subjected to prescriptive legislative restrictions. It would be understood that if a terminated member does not have access to the PfAD in a lump sum settlement, he or she would be incented to choose the deferred pension option. Member communications on termination of employment should be required to explicitly state the approach taken.

TBPs could follow existing legislation to determine whether or not to offer a lump sum transfer option at retirement. However, for a TBP, there is always the risk of anti-selection; i.e., that a terminating or retiring member will select the option that will give him or her the highest possible return. As this would be at the expense of other plan members, a TBP should be allowed to take this anti-selection risk into account when determining the appropriate rules for permitting a lump sum transfer, for determining the amount of any such transfer, and when selecting assumptions for the affordability test.[17]

### *4.7.2 Distributing Plan Assets on Plan Wind-Up*

Given the nature of the plan and the pension "promise", the amount payable to each member on plan termination should simply be an asset share, i.e., a share of the plan's assets determined in proportion to the value of the individual's accrued target benefits under the plan. There should be no obligation for any party to "top up" the plan assets on plan termination in the event that assets are not sufficient to provide the target benefit. Neither should there be any allocation of assets to any parties other than individual members. This is consistent with there being no obligation to fund on a solvency basis.

It is important to understand that the methods and assumptions prescribed for wind-up of a DB plan would not be appropriate for a TBP. Since the total amount to be distributed among members on wind-up of a TBP is fixed, different valuation bases result in different relative allocations between members. A more conservative basis places a higher value on payments to be made far in the future than would a basis using "best estimate" assumptions. Consequently,

[16] See the sections relating to "self-funding plans" in the CIA's Submission to Federal and Provincial Regulators on Pension Funding and Transfer Values dated October 30, 2014, available at http://www.cia-ica.ca/docs/default-source/2014/214113e.pdf.

[17] For example, members with impaired life expectancies would likely choose the lump sum option at retirement. The plan could reflect this by using lighter than normal mortality assumptions in the valuation of pensions in pay.

a conservative basis would be more favourable to younger members, while a basis using "best estimate" assumptions would be more favourable those already in receipt of pensions.

A TBP, therefore, should carefully document the agreement regarding the valuation basis to be used for calculating asset shares in the event of plan wind-up. One reasonable objective would be to avoid sudden intergenerational value transfers on wind-up, suggesting the use of the same valuation basis as would have normally been used to establish affordability of benefits while the plan was ongoing. If the normal affordability test included an open-group projection, some value shifts might be unavoidable since there would no longer be a future service element. When communicating members' hypothetical asset shares, this should be anticipated. This is precisely the approach taken in New Brunswick (where the "termination value funded ratio" is defined separately from the "open group funded ratio").

### *4.7.3 Tax Considerations*

The task force focused on pension regulations for TBPs and did not go into great depth regarding exploring the ideal tax regime for TBPs. However, we do have a few general comments regarding the issues that must be addressed.

The tax rules for TBPs should neither incent toward nor against this type of plan. In particular, contributions and investment income should be tax deferred, and benefits taxable when received. Also, members of a TBP should have access to additional RRSP contributions, subject to the overall tax assistance limit.

Access to additional RRSP contributions is controlled through the calculation of a PA. Such PA calculation is either based on DC contributions subject to the 18% limit, or to the value of DB accrual using a factor of 9 and subject to the maximum pension rules.

The current PA system does not easily accommodate the contingent nature of benefits under a TBP. Specifically, the situation where the actual benefit does not match the target benefit could lead to a series of complicated adjustments to previous PAs.

Calculating PAs for a TBP on the basis of the contributions made would be much simpler and would correspond to the nature of the TBP, i.e., fixed contributions / variable benefits. However, the current 18% limit will be an issue for some DB plan sponsors (including many in the public sector) who may want to convert their plan into a TBP, since some DB plans' required contributions currently exceed the 18% threshold. Therefore, it may be appropriate to provide an exception to the 18% limit for TBPs.

The tax rules should also be reviewed with respect to the limit on "excess" assets—i.e., the maximum reserves that can be held to support pension liabilities. The contributors to a TBP have committed to fixed contributions, which means that contribution holidays are not contemplated. In addition, a TBP that seeks to provide a high level of benefit security may need to hold a reserve in excess of the current limits under the Income Tax Act.

Finally, the tax rule requiring pensions to be paid on an "equal and periodic" basis will need to be adjusted to recognize that pension payments from a TBP will not necessarily be "equal".

## 4.8 Special Situations

Given the objective of all jurisdictions in Canada to increase pension plan coverage, we believe it is important for regulators and the pension industry to allow—and indeed facilitate—the use of TBPs for both single- and multi-employer situations, for both the public and private sectors, and in both the union and non-union environments. We believe that TBPs can provide a viable alternative to traditional DC plans, especially as DB plan coverage continues to decline. We also believe that the concepts employed by TBPs can be used to increase the ability of traditional DB plans and jointly sponsored DB plans to achieve and maintain a sustainable balance.

We have the following comments on certain specific situations.

### *4.8.1 Plans without Union Representation*

In the unionized environment the union is clearly the ideal body to represent the active members in the governance of the plan. In the non-union environment, or where inactive/retired members are involved, the ideal representation arrangement is not immediately obvious. It could include appointment by a staff association (in much the same way as a union would appoint its representatives), election within the member group(s), or some other means. To facilitate increased pension coverage in the non-union environment, we encourage policymakers and regulators to find solutions to the challenge of member representation.

From an actuarial standpoint, appropriate representation becomes more important as the complexity of the plan (in particular, the level of intergenerational risk sharing) increases. For TBPs near the DC end of the spectrum with only minimal risk sharing, however, member representation in governance might be less critical. Such plans could be designed and implemented without significant member involvement, in much the same way as traditional DC plans are designed and implemented today: members make individual decisions based on the menu of options offered by the plan.[18]

### *4.8.2 Single-Employer Plans and Pooled TBPs*

Single-employer TBPs face two specific challenges: size and plan termination risk.

There is a critical size required to make a TBP feasible. This is true even for the simplest arrangements near the DC end of the spectrum. First, there are non-negligible costs associated with designing, implementing, and managing a TBP. Second, risk pooling works best within large, relatively homogeneous groups. This is particularly true for mortality risks. A small plan may experience significant gains or losses on account of random fluctuations in mortality experience and, unlike in a DB plan where the sponsor would underwrite the residual risk, in a TBP those gains and losses would be shared among members.

The critical size increases as the complexity of the plan increases, driven by the following factors:

- Implementation and ongoing management costs are higher for more complex arrangements; and

[18] In such plans, the importance of providing a cash-out option upon retirement becomes more important.

- More complex arrangements usually involve more intergenerational risk-sharing elements. Risk sharing between generations requires not only that the plan as a whole be reasonably large but that each cohort be "large enough". Otherwise, normal fluctuations in hiring patterns may cause cohorts to be uneven, resulting in uneven risks being generated and uneven capacity to bear risk.

Even if a single employer is of a suitable size to implement a TBP, a design that allows significant intergenerational risk transfers may be undesirable if continuity of the employer is not guaranteed (e.g., in the private sector). As a result, single employers in the private sector may be better served by simpler TBPs closer to the DC end of the spectrum.

As an alternative, several employers (related or unrelated) may join together in a pooled TBP, similar to a multi-employer pension plan (MEPP). Although promising, the pooled TBP idea has some challenges:

- It requires a "champion" to set up the pool. It is unclear what entity within the current pension landscape would take on this role: insurance companies, consulting firms, or perhaps government or another non-profit entity.
- When participating employers withdraw from the pool, the affordability of the target may be adversely affected, depending on the demographic profile of the withdrawing members relative to the profile of the remainder of the pool. The impact would differ based on the valuation methods and assumptions used to determine affordability.

### *4.8.3 MEPPs*

MEPPs have been designed and operated for years under the basic construct of a TBP: fixed contributions and variable benefits. It makes sense, therefore, for there to be only one set of regulations that applies to all TBPs, including MEPPs. However, the regulation of MEPPs should not be made any more onerous as a result of new TBP legislation/regulation. One means of dealing with this could be to make it optional for MEPPs to choose to be regarded as TBPs under any new legislation, or to continue operating as they do currently.

## 5. Conclusion

The task force believes that it is important for pension policy makers across Canada to facilitate the growth of private pensions by permitting innovative designs such as TBPs. We further believe that it is essential for these plans to operate under legislation that recognizes the unique nature of this type of pension deal, and does so in a manner that does not increase, or even serves to lighten, the compliance requirements for plan sponsors and administrators. We believe that TBPs are reasonably well positioned to allow for such legislation. The key in a TBP is for the parties who put the plan in place to describe the nature of the pension deal and its ongoing administration with a sufficient degree of rigor such that all stakeholders can understand and support the risk-sharing and risk management agreement.

With respect to the question as to whether the CIA should promote TBPs, it is the task force's view that the CIA plays a critical role in research and education for the pension industry, plan sponsors and stakeholders, and the public. This includes research and education as to the nature of TBPs, the measurement and implications of inter-generational risk sharing, and the

identification, impact, and use of a wide variety of risk management tools. TBPs do have the potential to improve the Canadian pension system. Therefore, this research and education should be practical and focused on helping parties successfully work with the TBP design.

## Appendix A: Case Study – The Netherlands

The Dutch pension system is often cited as one of the best in the world. However, its experience with conditionally indexed plans can serve as a cautionary tale for Canadian TBPs.

### Background

Dutch occupational pensions are quasi-mandatory; consequently, coverage is very high. The pension landscape is dominated by very large industry-wide plans. Single-employer (corporate) plans are relatively few in number and dwindling.

Although final-average-pay plans were prevalent at the turn of the millennium, the vast majority of Dutch plans today are DB-like with benefit accruals based on career-average earnings. Pre- and post-retirement indexation is offered on a conditional basis. Many plans have an explicit "policy ladder" that defines surplus thresholds for indexing. Due to a number of factors, most plans were not able to index benefits in payment since 2008.

Up until the global financial crisis, most members considered the nominal pension benefit to be guaranteed. However, under Dutch regulations it is possible to reduce nominal accrued benefits, albeit as a measure of last resort, similar to Canadian MEPPs. In fact, cuts in pensions have been made over the last few years in a number of Dutch plans, including some of the biggest. The cuts have generally been small (<5%).

Although solidarity is a key component of Dutch culture and permeates pension arrangements, in recent years significant divisions have appeared between generations of plan members, calling into question the limits of intergenerational risk sharing and the extent of subsidies in the current system. The appetite for individual arrangements (or at least ones with clear property rights) is growing.

### Regulatory Landscape

In the Netherlands, pension supervision falls under the authority of two regulators: the Dutch central bank (DNB) and the Netherlands Authority for the Financial Markets (AFM). While the AFM primarily oversees communication and fiduciary responsibilities with respect to investments, the DNB monitors the financial position of pension funds and sets minimum standards. The DNB's stated objective in this regard is to ensure that "reasonable policyholder expectations are fulfilled by [each] pension fund".

In assessing financial health and measuring risks, the Dutch supervisor demands that assets and liabilities be marked to market as this approach "minimizes the opportunity for manipulation and supports a fair distribution of assets among participants". Alternative approaches that are popular in Canada, the U.S., and the UK (such as valuation of liabilities on a best-estimate basis, perhaps with some margins for conservatism) are seen as a roadblock to functional risk management, creating distortions and disincentives that can lead to flawed decision-making.

Up until 2015, a Dutch pension plan was considered to be in good health if its assets met 105% of its technical liabilities plus a solvency buffer. Technical liabilities were equal to the present value of nominal benefits discounted using nominal bond yields; conditional benefits did not have to be pre-funded. Valuations were performed annually. If the 105% funding threshold was not met, the plan had to submit a three-year recovery plan to the DNB. Similar to existing

regulations for MEPPs in Canada, actions in the recovery plan could include changes to plan contributions, benefits, and/or investments.

The additional solvency buffer was forward-looking and was based on a value-at-risk measure; its purpose was to ensure that the plan had sufficient reserves to withstand significant shocks with 97.5% certainty without the funded ratio dipping below 100% over the course of a single year. Plans could determine the size of the buffer in one of three ways:

- Simplified model—no modelling required; the reserve is a flat 25% of technical provisions. This option is available to small plans with a straightforward benefit policy and risk-averse investments.
- Standard model—a plan-specific assessment of the combined reserve required to withstand certain key shocks. The type and size of each shock is specified by the regulator, corresponding to the 97.5$^{th}$ percentile event in the DNB's internal econometric model.
- Internal model[19]—a plan-specific stochastic model.

Regardless of which model was used, if the plan had less than the required solvency buffer then a 15-year recovery plan had to be put in place.

Pension funds had some degree of freedom in setting the contribution rate. The two main practices were to set contributions as:

- The normal cost of nominal benefits + allowance for expenses + extra requirement (if applicable) for maintaining solvency buffer + optional contribution for any conditional benefits, all discounted at nominal bond yields; or
- The normal cost of benefits discounted at the plan's expected return on assets in real terms.

One of the criticisms of the funding regime outlined above was its short-term focus on nominal benefits. This focus opposed the desire of the social partners for long-term growth of the retirement benefit in real terms. From an investment perspective these two goals were incompatible and often resulted in myopic decisions.

**Recent Developments**

Due to a number of factors, the system of quasi-guaranteed nominal pension rights and conditional indexation has become untenable. In the wake of the global financial crisis and the ensuing European sovereign debt crisis, the situation has worsened considerably: with assets plummeting and bond yields hovering near 0% in the Eurozone, Dutch pension plans' once-healthy capital reserves were depleted. There was significant political pressure to loosen capital requirements in order to avoid pro-cyclical feedback on pension plan solvency and on the Dutch economy as a whole[20] as funds looked to divest from risk. Temporary solvency relief was provided from 2008 to 2013. However, the government and DNB recognized that a longer-term solution was also needed; one that would not only demand better risk management from

[19] Applicable only if it results in *more* stringent funding requirements than the other models.
[20] Dutch pension fund assets exceed 130% of the country's gross domestic product.

existing plans but also facilitate emergence of an occupational pension system fit for the 21st century. The new system would aim to maintain the valuable parts of the existing system (pooling of mortality risks, pooling of assets for investment management, an ambition to provide inflation protection) but do so in a sustainable way.

One of the new designs considered by the social partners and the government was the "defined ambition" plan. This is an adjustable pension contract in real terms: there is a targeted accrual much like in a TBP and automatic indexing both pre- and post-retirement. However, the nominal benefits are not separated from the indexation; instead the entire benefit is subject to adjustments based on the financial position of the plan. The "ambition" of the plan is to provide inflation-protected benefits to members, but there are no guarantees whatsoever, for any part of the benefit. The plan may employ buffers to smooth experience but such risk capital would not be a requirement. The defined ambition plan addresses the dilemma of short-term nominal returns versus long-term real returns, by explicitly identifying the latter as the only goal. The hope was that an appropriate funding regime could be developed that would take into account this choice, saving plans from the myopia induced by existing regulations.

The idea was compelling from a policy standpoint but ultimately proved too difficult to implement. In particular, valuation of the contingent inflation-adjusted ambition was too complex and relied heavily on subjective inputs for the future expected risk premium and future inflation. Changing these inputs would result in opaque redistribution among members, which was flagged as one of the undesirable characteristics of the current system. In addition, neither the "social partners" (employers and unions) nor the government were willing to bear the legal risk of converting existing DB rights to the new system. Consequently, the Dutch defined ambition idea was no longer pursued in its originally proposed form.

The new regulatory regime (FTK2), which came into effect January 1, 2015, is a compromise, tweaking requirements for existing plans while the search for a new, more sustainable model for the occupational pension system continues. The changes include:

- Scrapping the policy ladders that tie indexation to what is affordable in the coming year; instead indexation can only be granted if it is sustainable (i.e., if it is affordable for all future years, taking into account the expected equity risk premium).
- Slightly increasing the solvency buffer as a percentage of technical liabilities (but it continues to apply to nominal benefits only).
- Changing the recovery plan for the solvency buffer from a 15-year fixed horizon to a 10-year rolling horizon.
- Implementing a long-term feasibility test to assess the extent to which the plan's contribution-, benefit-, and investment policies, together with the funded status, are in line with the benefits and risks communicated to stakeholders. The feasibility test is expected to promote sustainability by assessing a plan's ability to provide discretionary

benefits (such as indexation) that are either not explicitly funded by contributions, or are funded but not protected by the solvency buffers.[21]

- Enhancing communication requirements, consisting of estimates of future retirement income in real terms, both for accrued and projected service. The communication will include both the expected pension and the potential pension under a "bad" and a "good" scenario.

**Lessons Learned**

- Having conflicting benefit/funding goals muddies investment decisions. What is more important: a pension in real terms or in nominal terms? Funding to two objectives can lead to suboptimal choices.
- If the focus is on protecting the nominal benefits, conditional indexation is a good start. It creates some resilience but it is not enough to protect a plan from benefit cuts.
- Large amounts of risk capital can reduce the likelihood of pension reductions. However, once that capital is depleted, recovery is difficult and tensions may flare between different cohorts of members.
- Flexible benefits (i.e., ones not subject to hard guarantees) allow pension plans, particularly mature ones, to react to circumstances in a timely and equitable manner.
- An explicit plan of action to follow in case of both positive and negative plan experience (i.e., a complete policy ladder set up *ex ante*) can help avoid conflict and misunderstandings.
- Regulations must encourage prudent risk management.
- Stochastic projections are a useful tool for helping stakeholders assess the robustness of their plan over the long term. They can also help establish desirable levels of risk capital.
- Communication must stress the contingent nature of the benefit in simple terms that members understand.

**The Way Forward?**

It is worth noting that the latest entry into the Dutch national pension dialogue was a proposal for personal pensions with risk-sharing (PPR),[22] submitted by a leading group of academics with considerable weight in the debate. The PPR is reminiscent of an individual DC plan with fixed contributions and clear ownership rights during the accumulation phase. Its primary innovation is during the payout phase: by separating the withdrawal, investment, and insurance functions, a PPR allows members to tailor the risk profile of their individual income streams to their own preferences.

[21] Details of the feasibility test are not published yet, but it is likely to be a stochastic continuity analysis with a relatively long horizon.

[22] Bovenberg, L., and T. Nijman (2015). Personal Pensions with Risk-Sharing: Affordable, Adequate and Stable Private Pensions in Europe, Netspar Discussion Paper. Network for Studies in Pensions, Aging and Retirement.

The baseline design (without the insurance function) is essentially a targeted drawdown product where the annual income is adjusted to reflect emerging investment experience and remaining life expectancy. If desired, members can add longevity insurance to their personal accounts to hedge the risk of falling income on account of survival to advanced ages. As usual, this longevity insurance relies on the redistribution of wealth between members with different mortality experience, but it is implemented transparently in the form of explicit mortality credits made to the individual accounts of survivors, financed by the account balances of members who pass away. The mortality credits act as additional ("biometric") returns supplementing the returns on financial assets. Members may also choose to enter other risk transactions (e.g., with respect to wage inflation, or long-term care costs) under a similar structure.

This design maintains the benefit of pooled asset management, provides clear ownership rights during both the working life and in retirement, and eliminates the intergenerational subsidies inherent in the uniform contribution / uniform accrual system. By employing a life cycle strategy during the accumulation phase, it allows younger members to take on more risk for their own benefit, not for the benefit of older members. It also provides protection from idiosyncratic mortality risks for retirees, if desired.

The implementation of risk-sharing in a PPR is deliberately different from variable annuities and TBPs, reflecting the evolution of the Dutch system away from opaqueness and forced solidarity, and towards transparency, flexibility, and individual choice in structuring risk.

## Appendix B: Case Study – Denmark

The Danish pension system is very highly regarded, taking first place in the Melbourne Mercer Global Pension Index three years in a row. Occupational pension design and regulation in Denmark has undergone a dramatic shift over the last 15 years.

At the turn of the millennium, the most common pension design was a with-profits deferred annuity product with guaranteed minimum returns through the member's life and a guaranteed mortality basis applicable at retirement. Although individual contribution accounts were maintained, each pension provider[23] also carried collective reserves and had some flexibility in allocating profits/bonuses to various groups or cohorts within the portfolio. Assumptions were set conservatively, aiming to deliver bonuses to plan members under most situations. Bonuses paid were subject to the same guarantees as regular contributions.

### Regulatory Regime

Denmark's first risk-based regulatory regime was introduced in 2001. In addition to switching to marked-to-market valuation of assets and liabilities, the new rules instituted a "traffic light" system that required pension providers to perform a series of stress tests to determine forward-looking estimates of short-term risk capital they might need. The system was designed to foster an awareness and appreciation of risks among stakeholders, without the regulator intervening or prescribing actions unless necessary.

The exercise revealed significant risk exposures in many organizations. Some providers began to hedge previously uncovered positions, particularly the threat of falling interest rates, just in time as yield rates drifted down. Providers also began to reduce the guarantees they offered on new contributions. Recognizing that properly hedged portfolios couldn't provide much (if any) upside, alternative designs emerged: plans with 0% guarantees (protecting the accumulated contributions only), "waterproofing retirement income" (no guarantees until 10 years before retirement to provide some upside, then guarantees kick in), or contracts with no investment guarantees at all. Some pension providers allowed plan members to choose among various investment and guarantee packages while some provided a "one size fits all" investment and guarantee setup. During this time, a number of providers developed life cycle investment vehicles, where the individual plan member's savings are initially invested mainly in stocks and as retirement approaches an increasing share of the savings is invested in bonds and other more stable investment products.

At the same time, the mortality guarantees built into the with-profits system were also softened, so pensions could be adjusted in response to changes in longevity estimates.

The proliferation of low or no guarantees allowed providers to hold less risk capital, so plans could invest with fewer constraints. Investment in less-liquid alternatives providing stable, long-term returns increased, enabling pension organizations to provide a higher income stream to plan members.

[23] These include corporate entities, multi-employer associations, and insurance companies, competing on equal footing for pension premiums.

Even as new contracts were issued without much in the way of guarantees, in a falling-interest-rate environment old contracts with relatively high guarantees were posing a solvency issue for some providers. In many situations, honouring the higher guarantees would have required significant redistribution of profits from contracts with lower guarantees. However, the Danish "principle of contribution" significantly limits the possibility of redistributing between portfolios with different guarantees. As a result, many plans attempted to "buy out" the old contracts and were able to do so with remarkable success: when faced with the choice of a higher guarantee and no upside versus a lower (say 0%) guarantee with a potentially significant upside, members converted in significant numbers. As these transactions proliferated, the regulator stepped in to ensure that the compensation offered to converting members was actuarially fair.

When the global financial crisis hit in 2008 many Danish pension funds were in relatively good shape to weather the storm. During the crisis, the regulator made a number of temporary adjustments to the rules to ease pro-cyclical pressures given some anomalies in the Danish financial markets. Still, in 2012 at the height of the European sovereign debt crisis many plans were challenged by historically low interest rates and by the short-term volatility caused by the Euro crisis. The government provided relief by adjusting the discount rate towards the upcoming European Solvency II regime, in exchange for stricter requirements for recognizing future mortality improvements and more detailed monitoring of equity between policyholders (based on age, level of guarantee, etc.).

Over time, the traffic light system has also been replaced with an individual capital assessment and the Own Risk and Solvency Assessment (ORSA), but these were seen as developments of the risk-based Solvency II framework, rather than abrupt changes.

**Lessons Learned**

- The Danish pension paradox: create more secure and equitable pensions by taking away guarantees. The key is to still act prudently, not recklessly. Making decisions in a risk-management framework with a long-term perspective helps with that.
- A long-term perspective is critical for regulators as well, as is the ability to correct pro-cyclical behaviour driven by market anomalies. They should have the ability to exercise flexibility during system-wide crises.
- Intergenerational equity is key: pension plans must watch out for systematic biases and one-way transfers of wealth (from young to old, from low-guarantee contracts to high-guarantee ones, etc.). Testing this is onerous but essential for maintaining public confidence and sustainability.
- Trends in longevity cannot be ignored. Each cohort's costs and benefits must reflect the best estimate of their mortality experience, including future mortality improvements. Increased costs due to increased life expectancies should not be shifted to the future.

## Appendix C: Summary of New Brunswick SRP Legislation

### Administrator

The New Brunswick SRP must be administered by a trustee, a board of trustees, or a non-profit corporation. If the non-profit is the administrator, each director of the corporation's board is a trustee of the plan. A trustee must act independently of the party who appointed him or her, and must be appointed for a period of at least three years.

The plan terms must specify a dispute resolution process in the event of a deadlock among the trustees and the Superintendent of Pensions must be advised of a deadlock when it occurs. If the deadlock is not resolved within six months, the superintendent can intervene.

### Characteristics of SRPs

An SRP must meet certain minimum criteria. The main criteria are as follows:

- It must specify the member and employer contributions, which can vary within in a narrow margin. Contributions to be made by members are not to exceed 50% of total contributions to the plan.
- It must specify base benefits and ancillary benefits for the plan. Base benefits enjoy a higher level of protection than ancillary benefits under an SRP.
- If must have a funding policy. The main purpose of the funding policy is to provide the administrator with clear direction with respect to the actions it must take, or consider taking, relative to contribution and benefit levels under the plan.
- It must have a statement of investment policy and goals. The main purpose of the statement is to provide target asset allocations for the various asset classes under the plan and ranges around such targets.
- It must have risk management goals and procedures. Minimum risk management goals found in the legislation have to be measured annually using an asset liability model and economic assumptions that must be approved by the superintendent.

Policies have to be reviewed at least annually by the administrator, and the superintendent must be advised of such a review taking place and of any changes made to such policies.

### Contributions

Member and employer contributions must be a pre-determined flat dollar amount or fixed percentage of earnings. Members cannot pay more than 50% of the total contributions to be made to the plan. Temporary contributions are allowed for a pre-determined period.

Contribution amounts must be determined at the onset of the plan. It must be sufficient to provide for the normal cost (including any portion of investment expenses that exceed 50 basis points), and has to be such that the minimum risk management goals for the plan are met.

Total contributions can also vary within a narrow range limited to the greater of 2% of earnings or 25% of the initial contribution amount. Such variations will take effect no later than 12 months from the valuation date that required the adjustment. The triggers that cause a variation in contributions (increase or reduction) must be specified in the funding policy.

**Base and Ancillary Benefits**

Under an SRP, pension benefits can be reduced when the plan experience is such that benefit reductions are triggered under the funding policy.

Benefits under an SRP are classified into two broad classes: base and ancillary.

An SRP provides a higher degree of protection to base benefits as opposed to ancillary benefits.

*Base benefits* would typically be the lifetime pension payable at normal retirement date (or with an actuarial reduction if payable early). It would also include any ancillary benefits that would be payable if the member retired at the time a determination is required.

*Ancillary benefits* would include any benefit over and above the base benefits, such as subsidized early retirement, bridge benefits, and pre-retirement and post-retirement indexing.

**Funding Policy**

The funding policy is a required document under an SRP. It identifies the rules the administrator must follow to manage the level of contributions and benefits depending on the plan's funded status.

The policy must specify the risk management goals and procedures for the plan and the amount of the contributions to be made to the plan. It must also include a funding deficit recovery plan (FDRP) that would provide details on which actions the administrator must take when the plan's funding level falls to certain pre-determined levels, and a funding excess utilization plan that identifies the actions that the administrator may take when funding levels are in excess of pre-determined levels. The policy should also document who pays for expenses related to the plan's administration, plus the main assumptions used on conversion, including the discount rate used to calculate the liability and identify the process for changing those assumptions in the future.

**Risk Management Goals**

An SRP must meet certain minimum risk management goals.

The primary goal states that there should be at least a 97.5% probability that accrued base benefits at the end of each year will not be reduced over a period of 20 years from the valuation date.

An SRP must also meet a secondary goal related to indexing and other ancillary benefits. It states that the ancillary benefits expected to be provided under the SRP on average over the next 20 years exceed 75% of the value of the ancillary benefits specified in the plan text.

It also has a further condition on benefits accrued to the conversion date for those plans that converted to an SRP and provided benefits of a final average nature, or indexing either pre- or post-retirement. Such plans must be expected to provide on average over the next 20 years, for benefits accrued to the conversion date, at least 75% of the increase in the CPI, or 75% of the indexing that was specified in the plan text immediately before it was converted.

In order to measure whether or not the above risk management goals are attained, the actuary must conduct a stochastic analysis using an asset liability model that considers, among other

things, the terms of the FDRP, funding excess utilization plan, and the targeted base and ancillary benefits found under the plan document. The model must use best estimate economic assumptions, the same demographic assumptions as used for the funding policy valuation. The model can provide for new entrants after the valuation date in conducting projections for the future, but the net active population of the plan should not be allowed to increase unless approved by the Superintendent of Pensions. The model must provide for at least 1,000 different series of economic projections over 20 years.

**Funding Deficit Recovery Plan**

An FDRP is a necessary part of a funding policy under an SRP. It provides the administrator with the actions that must be undertaken when the plan's funded ratio falls below 100% in two successive valuations.

An FDRP must provide as a last resort that past and future base benefits be reduced. When past base benefits are reduced, it must apply equally to current members and former members including retirees.

However, the recovery plan may also include intermediary steps such as increases in contributions within the allowed limits, reduction or removal of non-vested ancillary benefits, and reduction of future base benefit accruals of at most 5%. The order of priority of such intermediary actions must be specified.

Reductions in benefits must be implemented until such time as the primary risk management goal is attained, and if past base benefits have to be reduced as a last resort, the funded ratio must also attain 105% after the reduction is applied.

The funded ratio used by the administrator in order to determine the actions to be taken under the funding policy is referred to as the "open group funded ratio". It is calculated every year by the actuary as part of the valuation process. Just like any funded ratio calculation, it is the ratio of the assets over the actuarial liability of the pension plan. One particularity of the open group funded ratio is that the assets are increased by the present value of member and employer contributions in excess of the normal cost of benefits to be accrued in each year in the future for a period of 15 years following the valuation date.

**Funding Excess Utilization Plan**

A funding excess utilization plan is also a necessary part of a funding policy under an SRP. It provides the administrator with the actions that must be undertaken when the plan's funded ratio is at least 105%.

The amount of funding excess that can be spent as a result of actions taken by the administrator cannot exceed 20% of the excess between 105% and 140%. All excess above 140% can be spent.

Nothing prevents a funding policy from providing that the administrator starts spending when the funded ratio reaches a higher threshold than 105%, and the amount available to be spent could also be less than the maximum provided for under the legislation.

However, once spending is allowed under the funding policy, certain steps are mandated. As a first step a funding excess utilization plan shall restore any past base benefits and ancillary benefits, in that order, that have been already reduced under an FDRP, subject to the maximum amount available for spending in accordance with the funding policy. If the plan had converted from a DB plan of a final average nature and/or with automatic escalated adjustment formulas, as a second step the SRP must provide escalated adjustments or other ancillary benefits affected by the conversion. Finally, once the above actions have been fully implemented, the funding excess utilization plan can provide for further actions from the administrator, such as further improvements in ancillary benefits, reductions in contributions, implementation of reserves for indexing, improvements of base benefits not exceeding 10% of such benefits, and any other actions acceptable to the superintendent. However, the administrator can only implement actions that are within its power in accordance with the terms of the funding policy.

**Investment Policy**

As is the case for traditional pension plans, an SRP must also have a statement of investment policies and goals that provides the target investment allocation for the plan and allowable ranges for each asset class. It must also meet all the other regular minimum content found for traditional pension plans under the investment section of the regulation. The statement of investment policies and goals must be considered in the valuation process and the calculation of the various risk management goals. The statement of investment policies and goals must be filed with the superintendent, it must be reviewed by the administrator annually, and a notification that the review took place must be filed with the superintendent along with any modifications.

**Conversion of Pension Plan to SRP**

The SRP regulation allows conversion of traditional DB pension plans. For purposes of the conversion, pension plans of a “final average earnings” nature can be frozen as of the conversion date, and those providing guaranteed escalated adjustments are allowed to convert that guarantee into the contingent escalated adjustments provided for under the SRP regulations.

Furthermore, accrued base benefits and ancillary benefits after a conversion will be subject to potential reductions in accordance with the terms of the SRP regulation.

In other words, base and ancillary benefits are no longer “guaranteed”, and the removal of that “guarantee” applies to benefits accrued before and after the conversion date.

**Actuarial Valuation Report**

The SRP regulations require that an actuarial valuation be conducted every year. Furthermore, the plan must be assessed against the risk management goals every year using an asset liability model.

The regulations also mandate that the assets be valued at fair market value, and that the liability be calculated using the unit credit actuarial cost method. The valuation will identify the liability and normal cost, plus the present value of expected contributions in excess of the normal cost over the next 15 years.

Two funded ratios have to be calculated during the valuation process: the "termination value" and "open group" funded ratios.

The termination value funded ratio is simply the ratio of the market value of assets over the liability at the valuation date. It is used in the determination of lump sum payments available to members who cease membership in the plan.

The open group funded ratio is the ratio of the sum of the market value of assets and the above-explained present value of excess contributions over 15 years over the liability at the valuation date. It is the main measure used under the funding policy to determine which actions the administrator of the plan is required to take, or must consider taking, after each valuation is conducted. In order to calculate this present value of excess contributions, the actuary is required to project the plan's experience in the future, allowing for the replacement of terminated active members by new members. The future level of active membership in the plan must not increase in the future unless approved by the superintendent.

The discount rate must be in line with the plan's purposes, and escalated adjustments that are contingent on the plan's performance are not included in the normal cost, and are not included in the liability until they are granted. All other assumptions must be based on the expected future experience of the plan in accordance with accepted actuarial practice. Once granted, they become part of the base benefit that is protected at the 97.5% level under the primary risk management goal.

SRPs do not have to comply with solvency funding requirements.

A separate valuation can be conducted to determine the amount of eligible employer contributions under the Income Tax Act, which should include the value of future escalated adjustments, as is allowed under the act.

If an employer who is contributing to an SRP intends to reduce or increase significantly the number of members under the plan, it must advise the administrator, who must assess the impact of such actions and recommend corrective measures.

**Termination of Employment or Membership**

Under an SRP, vesting rules are the same as those for traditional pension plans. Before vesting, a refund of the members' own contributions with interest is payable.

After vesting, a member must elect between a deferred pension and a lump sum "termination value". The concept of termination value differs from the traditional commuted value offered under a traditional DB plan.

The termination value uses the same discount rate and mortality table as the ones used for the funding policy valuation. It is therefore determined through the valuation process rather than mandated under the legislation. Furthermore, the assumed retirement age is the normal retirement age for purposes of calculating the termination value, which means that the value of ancillary benefits related to early retirement, such as subsidized early retirement reductions and bridge benefits, would not be reflected in the termination value. The termination value is also pro-rated by the termination value funded ratio. When a plan is in a deficit position on that basis, the member would only receive the funded portion of his benefit. When the plan is in

surplus on that basis, the member would receive a share of that surplus. As a minimum condition, the member will never be entitled to less than his or her own contributions to the plan with interest.

Interest on member contributions to an SRP must be calculated using the fund rate of return (net of expenses paid from the fund).

As mentioned above, the concept of termination value differs greatly from the concept of commuted value. The ultimate termination value no longer reflects the value of the accrued benefits (or targeted benefits under an SRP), but rather tries to provide the member with his or her share of the assets of the plan (albeit without the value of early retirement benefits or future escalated adjustments). However, by providing that a share of surplus be given to terminating members through the application of the termination value funded ratio, one could conclude that such surplus would ultimately be used to provide enhancements and therefore the members do not completely forfeit those benefits.

On the other hand, if a terminating member elects to leave their deferred pension in the plan, they will be entitled to future escalated adjustments, and will also be provided with the early retirement subsidies that the plan terms provides under such circumstances.

**Wind-Up of an SRP**

Upon wind-up of an SRP, every member and former member is entitled to his or her share of the plan's assets at the date of wind-up, allocated on the basis of the funding policy liability of the plan upon wind-up.

There is no requirement to purchase annuities for either the members or former members, including retirees.

However, the legislation provides that if an SRP was wound up within the first five years following conversion, the conversion is void, and the wind-up would be based on the terms of the plan and regulations as if it had not converted.

**Disclosure of Information**

In addition to the regular information that is provided to members under traditional pension plans, the regulation requires the administrator of an SRP to provide an annual report on the key results of the actuarial valuation and the risk and management goals and procedures, including a disclosure of the risk factors affecting the pension plan. Any changes made to benefits or contributions have to be disclosed. The regulation also specifies that SRP administrators must disclose in clear, plain language that contributions are limited to those allowed under the funding policy and that benefits of members and former members always remain subject to reduction.

**Immunity**

The SRP legislation provides immunity to the various parties involved in the conversion of a traditional pension plan to an SRP.

**Appendix D: Background and Summary of Alberta TBP Legislation**

The origin of Alberta's target benefit legislation and funding standards relates back to the introduction of a temporary solvency-funding moratorium for MEPPs in 2006. At that time it was recognized that MEPPs, which are funded through collectively bargained contribution rates, are de facto TBPs and have always been so. Therefore, these plans should be communicated and funded as such. The first step adopted by Alberta was the introduction of a solvency-funding moratorium for qualifying MEPPs. The second was the development of Alberta's GC+ funding model based on incorporating PfADs.

Since it was recognized that these collectively bargained MEPPs have always exposed plan members to funding risk, the objective of GC+ was to create a funding model that reflects the fixed nature of the contribution promise while promoting a transition to higher levels of benefit security over time. Generally speaking, it was believed that benefit security has been eroding during an extended period of unfavourable economic conditions for pension plans. The GC+ funding rules clearly contemplate the conversion of existing or accrued DBs into a formal TBP design. The basic framework of GC+ funding is as follows:

- Solvency funding does not apply. However, a TBP's wind-up position must be determined and reported to members.
- Plan liabilities are measured on a best estimate basis.
- The legislation defines a target level of provision for adverse experience that ideally should be present to provide for the desired level of benefit security. The desired level of security in this instance is at the higher end of the spectrum and reflects the level of benefit security that was present under the prior funding regime.
- On an accrued basis, the PfAD is defined as an objective and not a requirement. However, all future service accruals must include the desired PfAD related to those accruals, which promotes the development of the targeted PfAD over time. Where the accrued PfAD target is not fully funded, no remedial action is required unless the plan's financial position deteriorates below the funding requirements determined on the best-estimate funding basis. This approach allows plans to apply built-up PfADs as an effective offset or buffer if and when a plan encounters adverse experience.
- Before plans are permitted to enhance accrued benefits or provide cost-of-living adjustments, the full amount of the targeted PfAD must exist and remain in place after the introduction of the benefit enhancement.
- The targeted PfAD levels reflect each plan's risk profile on two measures. The first is in relation to the plan's equity exposure. The higher the equity allocation within the investment strategy, the higher the targeted PfAD. For a pension plan invested in accordance with a 60/40 allocation of equities and fixed income investments, the base PfAD target is 17%. The second measure relates to the plan's assumed long-term net rate of return on investments. The legislation defines a benchmark discount rate (BDR) that relates to each plan's investment strategy. The BDR is premised on a 4% real rate of return for equities over the long term, which was selected following the completion of an independent study commissioned by Alberta. The BDR is also tied to prevailing long-

term bond yields. Plans that have a more favourable long-term outlook on investment returns are permitted to assume net rates of return that exceed the BDR. However, their targeted PfAD levels are increased by 0.15% for every basis point the assumed net rate of return exceeds the BDR. For example, if the BDR for a 60/40 plan was 6.0% and the actuarial funding valuation was completed using a 7.0% net rate of return assumption, the targeted PfAD level would be increased by 15%, from 17% to 32%. For a pension plan with a going concern duration of liabilities equal to 15 years, any reduction in the funding target related to the assumption of a higher long-term rate of return would essentially be offset by an increase in the targeted PfAD level. Therefore, a plan could not pursue a benefit enhancement simply by adopting a more optimistic or aggressive stance regarding future investment returns.

- The legislation also ties the determination of commuted values payable from TBPs to the underlying risk associated with the benefit promise, as well as the funding position of the arrangement at the time of computation. Accordingly, benefit provisions that were established and can only be supported through the ongoing assumption of investment risk will no longer be commuted as though such entitlements are risk free. For the vast majority of negotiated cost DB MEPPs today, application of the current CIA commuted value standards ignores the risk inherent in the delivery of the benefit entitlement and thus overestimates the commuted value. These overpayments to former members who elect portability are funded by the plan's remaining members and result in a transfer of wealth between the two groups. Alberta recognized this concern and addressed it as part of its TBP legislation.
- With a move to more principle-based legislation, Alberta will develop further policies related to TBPs, and plans on issuing an interpretative guideline in due course.