

# Sustainability, Cost-Effectiveness, Fairness and Value

## *A Primer on Modern Pension Plan Design*

**Dr. Bruce Kennedy, Executive Director  
BC Public Service Pension Plan  
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**W**e all have dreams about retirement. Some day you expect to retire, and you hope to maintain a comfortable lifestyle. To finance your retirement, you need a strategy of some sort. There are many retirement saving options including various types of pension plans, other savings and investments. Most strategies will combine several different types of pension plans and other forms of savings and investments arrangements.

Various pension plan models have become prominent in Canada’s national occupational pension policy debate. The one big advantage that all occupational plans provide over ad hoc private savings is that they impose a disciplined routine of making deductions from pay, with the deductions then saved and invested. Beyond this, the various pension plan models have a range of different features.

This primer will help you understand how different pension plans work financially, how they relate to one another and how the BC Public Service Pension Plan fits into the array.

*The BC Public Service Pension Plan is an occupational pension plan that provides members with a disciplined routine of saving for retirement.*

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# The risks inherent in saving for retirement

Regardless of how you choose to save for retirement, there are some unavoidable risks. The two most significant are longevity risk and investment risk.

## Longevity risk

You do not know how long you will live, and that uncertainty poses a major challenge to financing your retirement. Quite simply you cannot know exactly how much money you will need if you do not know how long you will live.

## Investment risk

Retirement savings rely on investment returns to provide much of the required income. No matter how well an investment is managed, there is always a risk it will not grow as much as expected. Somebody has to bear this risk.

## Managing risks

Pension plans employ professional expertise to help manage risks:

- actuaries help manage a wide range of demographic and economic risks,
- auditors help mitigate risks of fraud and misrepresentation, and
- investment managers help mitigate many aspects of investment risk.

Still, despite all the professional effort that goes into risk management, longevity risk and investment risk will always remain. Understanding the management of these risks will explain some of the differences in the pension plan designs we see today.

# Unfunded pension plans versus pre-funded pension plans

Unfunded pension plans do not set aside money for pensions in advance. The pension sponsor pays out the pensions as and when they are required. Some government-sponsored pension plans—including Old Age Security, the Guaranteed Income Supplement and the Member of Parliament pension plan—are unfunded.

Pre-funded pension plans do set aside money in advance. That money is invested over long periods of time and is used to pay pensions when the plan member retires.

This primer focuses on pre-funded pension arrangements. Occupational pension plans, including the BC Public Service Pension Plan, are legally required to be pre-funded and to meet legislated funding standards.

The reasons for pre-funding occupational pension plans are:

## Fairness across generations

Each generation pre-pays for its own pension benefits. In contrast, in unfunded arrangements, the number of pensioners drives the amount that contributors are required to pay.

*The BC Public Service Pension Plan is a pre-funded pension plan. Money is set aside in advance and invested over a long period.*

## Cost efficiency

Pension plans involve very long time horizons. Today's young pension contributors may be drawing pension benefits sixty years from now. Over these long-time horizons, investment returns growing year over year contribute significantly to the pension. Typically, as much as 70 to 80 per cent of the pension comes from investment returns.

## Sustainability

Pension entitlements earned through employment are more secure (financially and politically) if adequate funds have already been set aside to pay for them.

*Different authorities will define each pension plan slightly differently. These explanations cover the most commonly used characteristics.*

# Defined contribution pension plans

How a defined contribution plan works:

- *Contributions* to a plan are fixed and known (i.e., defined),
- the money contributed goes into individual accounts, and
- the pension benefit paid depends on the investment performance of the individual's account.

## Each employee bears the risk through an individual account

In a defined contribution plan, employees have individual accounts and bear all the longevity and investment risks. If they live longer than they predict or their investment returns do not match their expectations they have to find the extra funds themselves, or reduce their retirement income. The employer may bear some of the financial cost (by making employer contributions to the plan), but these contributions are known. The employer bears no investment or longevity risk.

Defined contribution pension plans can play a positive role in the pension system. They are definitely better for both the employees, and for taxpayers, than no disciplined mechanism to assist employees in saving and investing for their retirement. For some small employers who do not have access to larger multi-employer pension arrangements, a defined contribution plan may be all that they are willing and able to provide.

Relative to other pension plan models available, however, defined contribution plans rank low on efficiency and cost-effectiveness. This is because it is quite difficult for individuals to manage either longevity risk, or investment risk, effectively.

# Defined benefit pension plans

How a defined benefit plan works:

- The *pension benefit* is fixed and is calculated from a formula (i.e., it is defined),
- the plan's financial performance affects how much needs to be paid into the plan, but not the benefit that must be paid out, and
- in a single-employer environment, the employer typically sponsors the plan. Members often but not always contribute to the plan, but the employer bears the financial risk and is responsible for the plan's liabilities.

## **Pooled longevity risk**

A defined benefit pension plan pools longevity risk. Individuals cannot know what their own age at death will be, but the plan's actuary can project what the overall mortality of the plan's membership will be. This means a defined benefit plan can finance efficiently based on that group projection.

The plan ensures the employee will not outlive their pension. The plan is more efficient because it does not need to over-fund to protect individuals from outliving their pension.

## **Pooled investment management**

The structure of large defined benefit pension plans promotes efficient, low-cost investment management. These plans pool the investments of many individuals into a large pension fund that can be professionally managed at low cost. The fund can be invested for the long term, and it can focus on the financial needs of the plan as a whole, rather than on the preferences and liquidity needs of individual members. Large defined benefit pension plans also have access to a broader range of asset classes than do individual investors.

Many employers in both private and public sectors are turning away from traditional defined benefit pension arrangements because they are unwilling or unable to bear the employer risk associated with defined benefit plans.

*The BC Public Service Pension Plan has many defined benefit characteristics but the employer does not bear all the risk.*

*The BC Public Service Pension Plan shares financial risk between employers and employees.*

# Target benefit pension plans

The defined benefit and defined contribution models are the old stalwarts of pension plan design. Many journalists and other commentators from outside the pension industry have viewed them as the only pension plan options. The target benefit model is a more recent development.

How a target benefit pension works:

- it pays a formula-driven pension benefit, but it is not guaranteed,
- the contribution rates are fixed,
- the fund is pooled and managed professionally, and
- if the funding performance is inadequate, the benefit is reduced.

The target benefit plan is similar to a defined contribution plan in so far as the employer bears no investment or longevity risk. However, the target benefit plan manages to retain the efficiency of defined benefit plans by pooling the investment risk and longevity risk. The employees bear all investment and longevity risk, but they do so collectively rather than individually.

If target benefit plans combine some of the more attractive features of defined benefit plans and defined contribution plans, why are there so few target benefit plans in Canada? It is because over the past few decades they have effectively been prohibited by regulation, not intentionally, but because pension standards were drafted decades ago and not modernized. In the past few years, some jurisdictions have been amending their pension standards legislation to provide a broader range of options and to allow more room for innovation.

Does this mean target benefit is the ultimate in pension plan design? Not necessarily. Arguably the target benefit model may go too far in shifting risk from the employer onto the employees. Over time, bearing no risk could undermine the employer's moral authority with respect to the governance of the plan. For example, why should employers have any influence over a plan's investment management if they bear none of the investment risk?

The Target Benefit model is innovative, and it is efficient, but there are many other pension plan design options to consider.

*The BC Public Service Pension Plan shares some characteristics with target benefit plans, and it uses a target benefit approach for inflation adjustments.*

# The risk-bearing space

The broad array of options available for distributing a pension plan's risks is set out in the "risk-bearing space" depicted in figure 1.

The **horizontal axis** of the risk-bearing space addresses how risk is distributed between employers and employees.

- The left end corresponds to 100 per cent employer risk (e.g., employer-sponsored defined benefit pension plans).
- The right end corresponds to 100 per cent employee risk (e.g., defined contribution and target benefit plans).

The **vertical axis** of the risk-bearing space addresses whether the investment and longevity risks are being pooled collectively or borne individually by employees. You could also think of this axis as ranging from high efficiency and cost-effectiveness at the top, to low efficiency and low cost-effectiveness at the bottom.

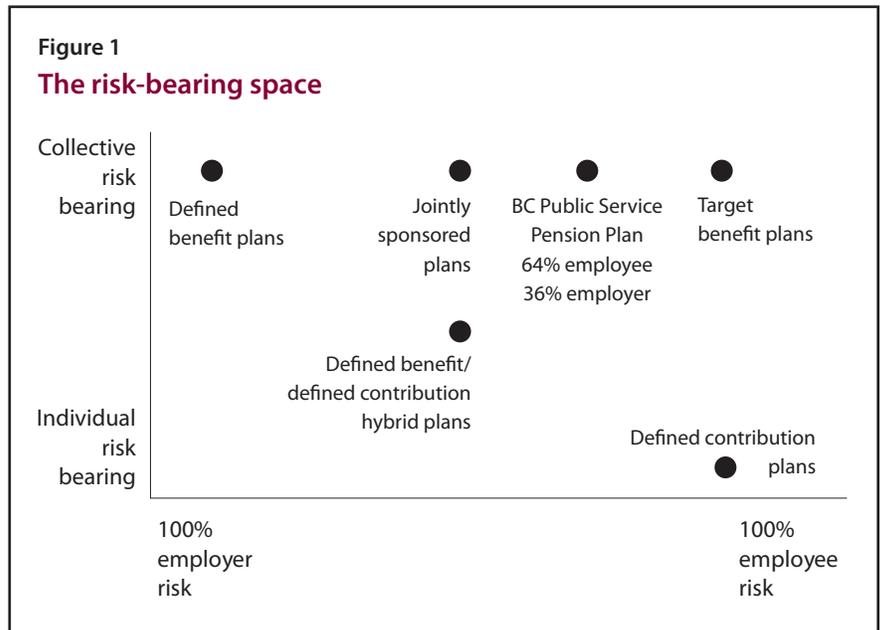
- The bottom of the axis corresponds to individual risk-bearing (e.g., defined contribution plans).
- The top of the axis corresponds to collective risk-bearing (e.g., target benefit plans and defined benefit plans).

Most of the current criticism of defined benefit pension plans is associated with the horizontal axis. Employers in both the private sector and the public sector are increasingly uncomfortable with bearing all of the employer risk inherent in conventional defined benefit plans. Many want to shift risk onto their employees and shift their plan design toward the right.

Most of the defence of defined benefit pension plans is associated with the vertical axis. It is by pooling investments in large funds with long, group-based time horizons that defined benefit plans achieve investment management efficiency. And it is by pooling longevity risk across the membership that defined benefit plans can manage longevity risk more efficiently. These efficiency advantages are independent of how risk is shared between employers and employees. All of the plan designs that lie along the top of the risk-bearing space share these advantages, and are equally efficient.

Jointly sponsored defined benefit plans are depicted midway along the top of the risk-bearing space. These plans split the risks of providing a formula-driven promised pension benefit 50/50 between the employer and employee. They maintain the full efficiency of a defined benefit plan by retaining the pooling of investment and longevity risk.

In contrast, a hybrid pension plan with a 50/50 split between defined benefit component and a defined contribution component would lie midway along the diagonal connecting the defined benefit and defined contribution positions. Such a hybrid would also share the risk 50/50 between employers and employees, but it would sacrifice 50 per cent of the potential pooling efficiencies because half of the plan would be managed in individual accounts.



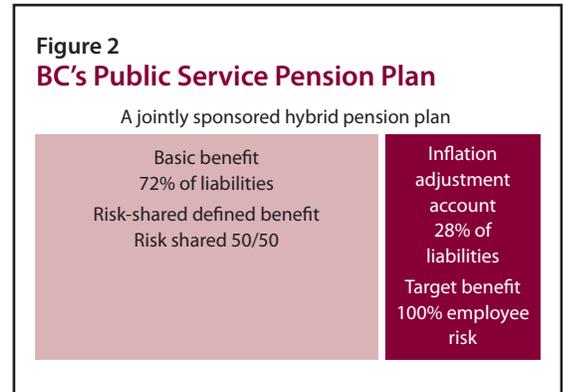
BC's Public Service Pension Plan is another sort of hybrid. It combines the two efficient pension plan models, both of which are found along the top row of figure 1: the jointly sponsored plan and the target benefit plan. The BC Public Service Pension Plan targets providing an indexed pension benefit, but it distinguishes between

- a basic (non-indexed), jointly sponsored pension promise, and
- a separately funded target benefit indexation arrangement.

The basic component accounts for 72 per cent of the liabilities for the total (indexed) benefit targeted by the plan, and the risk on this component is shared 50/50 between employers and employees (see figure 2).

The inflation adjustment component accounts for 28 per cent of the total liabilities. The contribution rates are fixed for this component, and the employees bear the full risk for it through benefit adjustments, rather than through contribution rate adjustments.

The overall result is a jointly sponsored hybrid that splits the risk approximately 36 per cent to the employers and 64 per cent to the employees, and also maintains the full efficiency of a defined benefit plan.



## Current trends in Canada

It is helpful to look at the broader picture of occupational pension arrangements in Canada before looking in more detail at the specific developments in Canada's public sector.

In Canada, there are about six million workers with occupational pensions. This group is split evenly with about 3 million workers with pension coverage in each of the public and the private sectors (see figure 3). But with the private sector being so much larger overall, the three million in the private sector only constitute 24 per cent of employees. Pension coverage in the public sector is 87 per cent.

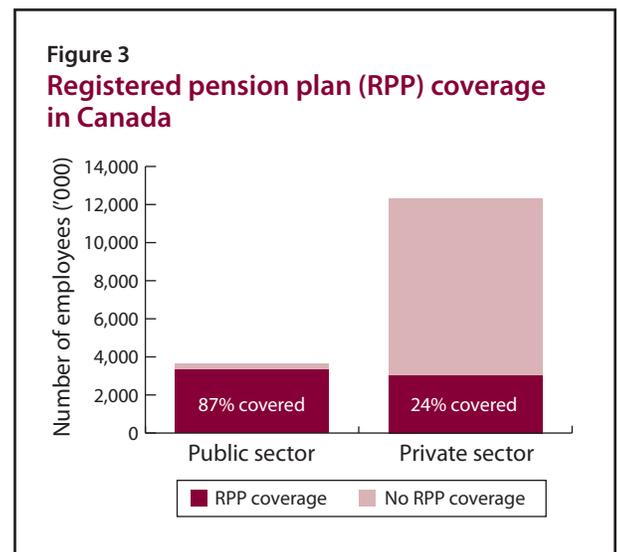
Facing a tough business environment and volatile financial markets, many private sector employers have been increasingly unwilling or unable to bear the financial risk that comes with sponsoring a defined benefit pension plan. For many, this has meant either switching to a defined contribution pension plan, or providing no pension at all.

Providing no pension has been the dominant trend. Private sector pension coverage peaked at 32 per cent in 1982. It stood at 28 per cent a decade ago and is now down to 24 per cent.

Declining pension coverage in the private sector is contributing to Canada's very low household sector savings rates, and to increasing reliance on the Guaranteed Income Supplement in retirement. The guaranteed income supplement is not pre-funded and it relies 100 per cent on federal taxpayers for its revenue.

Occupational pension plans in the public sector have not experienced the same trends of declining coverage and shifting to defined contribution. They have been adapting in other ways, however, to the cost and risk pressures that have been impacting all pension plans.

*The BC Public Service Pension Plan is the eighth largest in Canada. It has 56,000 active members.*



# How are Canadian public sector pension plans adapting?

## Aggregating for scale

In order to reduce investment management and administration costs, many jurisdictions have been encouraging pooling of resources. Alberta Investment Management Corporation in Alberta and the British Columbia Investment Management Corporation (bcIMC) in British Columbia are good examples of the trend.

- BC created bcIMC in 2000 and BC Pension Corporation in 2001. bcIMC now has \$100 billion under management, and the Pension Corporation is the administrative agent for a half million public sector pension plan members.

## Cost sharing

The emerging norm appears to be a 50/50 matching of employer and employee contribution rates. Plans where the employees pay much lower contribution rates than the employers do are facing pressure to share costs more equitably.

- Each of the four multi-employer public sector pension plans in BC either has reached an equal matching of contribution rates or has an agreed plan to equalize their contribution rates.

## Risk sharing through contingent benefits

Some public sector pension plans now make part of the pension benefit a contingent benefit rather than a promised benefit. Inflation adjustments are generally the part of the pension benefit that is being made contingent. Ontario Teachers' Pension Plan is a recent example.

- Since 1981, the contribution rate to support inflation adjustments on BC's public sector pension plans has been fixed, and inflation adjustments have been made contingent on adequate funding being available in segregated accounts held for inflation adjustments.

## Risk sharing through joint sponsorship

Typically joint sponsorship reforms include half the financial risk associated with promised benefits shifting from the employers to the employees.

- Since 2001, the BC public sector pension plans have been governed under joint trust agreements that split the sponsorship risk for promised benefits 50/50 between the employers and employees. If contribution rates must increase, they rise equally for employers and employees.

*The BC Public Service Pension Plan has assets of \$19.4 billion invested by bcIMC.*

*The Public Service Pension Plan is governed by the Public Service Pension Board of Trustees. There are 14 trustees—7 are appointed by the government of BC (the plan's employer partner) and 7 are appointed by the BC Government and Service Employees' Union (the plan's member partner).*

## Processes for ongoing reform

Plan design reforms are much more effective at stabilizing plan financing if they are made earlier rather than later. The trustees of the most effective public sector plans view their plans as evolving institutions that must keep adapting to changing circumstances. Having effective reforms and amendment mechanisms in place helps plans to adapt and stay current.

- In 2001 the pension plan rules for BC's four big multi-employer public sector pension plans were taken out of legislation. They are now routinely amended using processes involving the pension plan's partners and/or its board of trustees.

BC's public sector pension plans have done very well since 2001 under their jointly sponsored hybrid arrangements. Their sustainability is attested to by international debt-rating agencies, which cite BC's strong public sector pension plans as a positive factor in helping to support BC's triple-A bond rating. The sharing of costs and risks in these pension arrangements seems fair and appropriate both between generations, and between employers (taxpayers) and employees. These plans have the lowest overall management costs of any plan in their peer group, of any plan in Canada for that matter. They have effective governance arrangements and amendment processes that help to keep the plans current.

## So what is the ultimate pension plan design?

There is no ultimate pension plan design. What Canadians should learn from recent decades is that pension plans should not be tied to static, outdated templates. They need flexibility to innovate and evolve. Ideally, all reforms should be the product of negotiation among a plan's stakeholders, and should be entered into voluntarily. The outcome of any appropriate process cannot be predetermined.

Circumstances and preferences will vary. Rather than thinking in terms of ideal solutions, we should think harder about processes of evolution that will promote frequent marginal changes to keep the plans current, and to achieve improvements in sustainability and cost-effectiveness. Plans should also aim to reach cost and risk sharing arrangements that are acceptable to their stakeholders, without sacrificing efficiency and cost-effectiveness.

Now that many jurisdictions are starting to relax their legislative constraints on pension plan models there is an opportunity for more innovative and more thoughtful approaches to plan design and risk reduction. Perhaps there are some lessons that can be taken from BC's public sector pension plans.

We should never give up on occupational pension plans. They are the best institutions that we have ever developed for promoting savings and channelling them into productive investments. Without a healthy system of occupational pension plans, the retirement goals of many Canadians will be just retirement dreams.

## **Bruce Kennedy, Executive Director**

BC College Pension Plan,  
BC Teachers' Pension Plan, and  
BC Public Service Pension Plan

Dr. Kennedy did his graduate studies in public administration and pension reform during the 1980s. He was subsequently a BC public servant for about two decades, serving mostly in the Ministry of Finance. He negotiated for BC during the Canada Pension Plan reforms of the mid 1990s (supporting the Minister of Finance), and he was the lead negotiator for government during the discussions that established joint trusteeship for BC's public sector pension plans in 2001. He also oversaw for government the implementation of BC's reformed public sector pension governance arrangements.

Bruce is a former member of the Municipal Pension Board of Trustees, the Public Service Pension Board of Trustees, the Teachers' Pension Board of Trustees, the College Pension Board of Trustees, the board of BC Investment Management Corporation, and the board of BC Pension Corporation. He currently serves three separate pension plans, and three different boards of trustees, as Executive Director of the BC Public Service Pension Plan, as Executive Director of the BC Teachers' Pension Plan, and as Executive Director of the BC College Pension Plan.

