Investor & Treasury Services

Preparing for the Silver Tsunami

Canadian Defined Benefit Pension Survey

February 2020

Contents

All currencies are in Canadian dollars

Key findings

In RBC Investor & Treasury Services' third annual Canadian Defined Benefit Pension Survey, plan sponsors expressed particular concern about the economy, including persistent low interest rates and market volatility. This concern is compounded by a growing number of aging pensioners—often referred to as the "silver tsunami"—and a working-age population that is increasing at a much lower rate. Alternative investments remain popular as pension plans seek higher returns to meet mounting pension obligations. Despite significant challenges, funded status continues to improve, accompanied by higher confidence among plans.

Challenges

Economic factors are weighing on pension plans as **low interest rates** became the most pressing challenge (20%), augmented by **market volatility** (13%), and **economic and geopolitical uncertainty** (7%)

Aligning future liabilities with assets remains a top challenge (13%) and, combined with **demographic changes** (7%) and growing economic uncertainty, points to concerns about Canada's aging population—the "silver tsunami"

De-risking

While **liability-driven investments** have ranked as the most effective de-risking strategy for the past three years, their popularity declined from 39% to 30% over this period

Buy-out annuities (18%) overtook **shared risk plans** (17%) as the second most popular de-risking option

Alternatives

A **significant majority** of pension plans (71%) hold alternative investments within their portfolios or expect to add them during the next 12 months, slightly higher than 2018 (70%)

Alternatives are **particularly important** to mid-sized and large plans (93% and 90%),* as well as multi-employer and public plans (94% and 92%)

For respondents that hold alternatives as part of their pension plans:

- Real estate and infrastructure are **most popular** (95% and 91%), while hedge funds and natural resources are **least popular** (63% and 52%)
- Nearly three-quarters (72%) expect to **increase their alternative allocations** in the near term
- Few intend to **reduce their alternative allocations**, ranging from 0% for real estate to 7% for hedge funds

The **indirect model** continues to be the preferred approach for adding alternatives but declined in popularity year-over-year (68% to 51%); the **direct and consortium models** are gaining momentum (19% to 32% and 8% to 14%)

SRI

Less than half of respondents (43%) view socially responsible investing (SRI) to be important to their strategy with an average score of 3.1**

SRI is:

- **Least important** to small and private plans (2.9)
- **More important** to asset and wealth managers (3.6) than pension plans (3.1)[1]

Funded status

Approximately **two-thirds** of respondents (66%) reported that their pension plans are fully funded on a going-concern basis, up from 56% in 2018

Median funded status of 101% is slightly higher than last year's 100%

Outlook

Confidence in meeting ongoing liabilities increased significantly year-over-year (3.8 to 4.4) and is highest among large plans (4.5)**

The outlook of respondents **improved** regardless of plan size or type

Percentages show proportion of choices unless otherwise indicated
*Based on asset size where small=less than $1 billion; mid-sized=$1 billion to $5 billion; and large=more than $5 billion
**Based on a 5-point scale where 5=extremely important/confident and 1=not at all important/confident
[1]RBC Investor & Treasury Services, Canadian Asset and Wealth Manager Survey, August 2019

Challenges

Economic factors are weighing on pension plans as "low interest rate environment" emerged as the top near-term challenge (overall at 20% and regardless of size, type or status), augmented by "market volatility" (new category tied for second spot at 13%), and "economic and geopolitical uncertainty" (three-way tie for fourth spot at 7%). This is unsurprising given today's persistent low interest rates, ongoing trade wars and heightened concern about climate change—to name but a few of the current headlines.

After two years as the top challenge, "aligning future liabilities with assets" fell to second place overall (21% to 13% in a tie with market volatility). However, when this challenge is combined with "demographic changes" (new category at 7%) and growing economic uncertainty as noted above, it appears evident that the impact of an aging population on Canada's pension system—the "silver tsunami"—continues to be a key concern of respondents.

The uncertain economy
is top-of-mind

The "silver tsunami"
continues to be a key concern

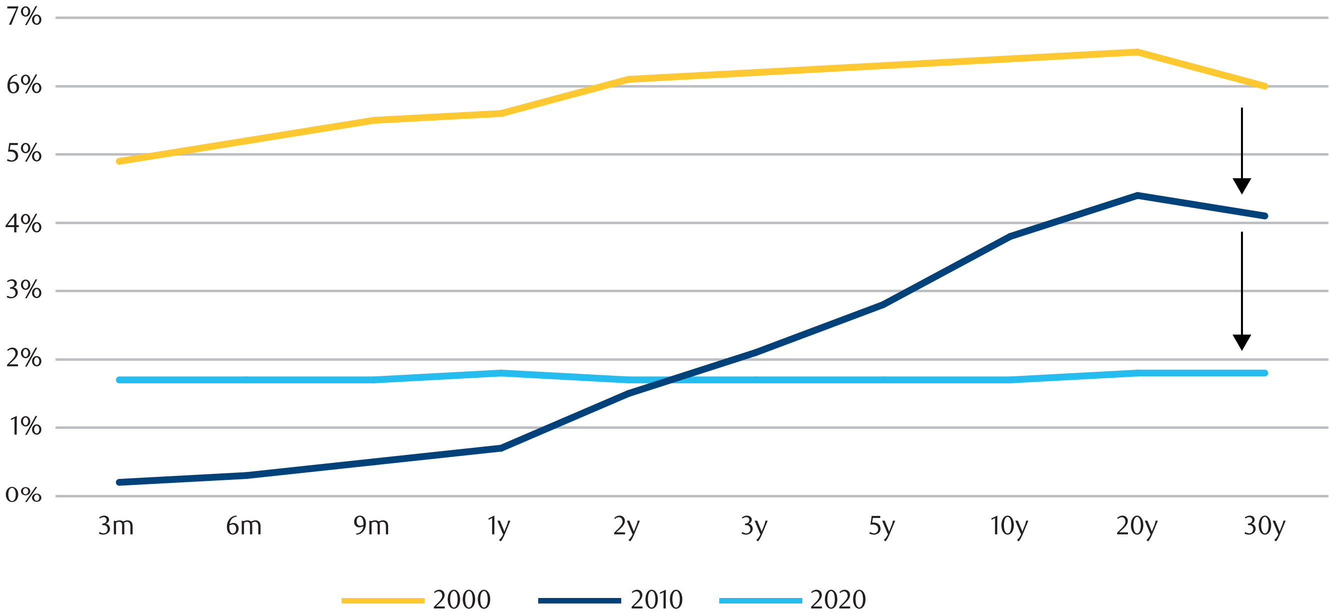
What are the top three challenges your pension plan faces over the next 12 months?

2018	2019	
20%	20%	Low interest rate environment
New	13%	Market volatility
21%	13%	Aligning future liabilities with assets
9%	7%	Adapting to new regulation
New	7%	Demographic changes
19%	7%	Economic and geopolitical uncertainty
11%	6%	Incorporating new instruments and alternative investments
9%	5%	Realizing operational efficiencies
New	5%	Aligning benefits with future member needs
New	4%	Annuitizing closed plans
11%	13%	Other*

*Including developing an effective data strategy; meeting solvency requirements; cost-sharing with employees; cybersecurity; and sustainable development management

Persistent low interest rates

Canada's long-term interest rates have been persistently low since the financial challenges of 2008 as demonstrated by the yield curves for zero-coupon bonds in the graph below.[1] "Low interest rate environment" is deemed to be the top concern among pension plans (20%).



An aging population

Recent population projections reinforce the need for Canadian pension plans to remain focused on the shifting demographic landscape, ensuring alignment of liabilities and assets.

For example, Statistics Canada has reported that, for the first time, the number of Canadian centenarians exceeds 10,000 (82% women), more than tripling since 2001—a clear sign of increasing longevity. In addition, the number of Canadians aged 65 years and older is projected to grow by more than 66% over the next 20 years, while those aged 14 years and younger will increase by less than 12%.[2]

RBC Economics forecasts that Canada's overall population is set to grow by a healthy 14% between now and 2030; however, the number of working-age citizens (25 to 64 years) is expected to increase by only 4% during this time, putting significant pressure on the Canadian pension system.[3]

300%+
growth in the number of centenarians since 2001

14% versus **4%**
total population growth versus increase in working-age citizens over the next 10 years

[1]Yield curves at the beginning of each calendar year for zero-coupon bonds based on pricing data for Government of Canada bonds and treasury bills with terms to maturity ranging from three months (3m) to 30 years (30y) as published by the Bank of Canada
[2]Statistics Canada, Canada's Population Estimates, July 1, 2019
[3]RBC Economics, Daily Economic Update, September 17, 2019

De-risking

Respondents identified a number of strategies to help manage plan risks and challenges. For the third year running, “liability-driven investments” (LDIs) remained the most effective de-risking strategy (30%) but continued to decline in popularity year-over-year (down from 36% in 2018 and 39% in 2017).

“Buy-out annuities” (new category at 18%) assumed second spot from “shared risk plans” (17%), which also experienced a third year of declining importance. Following increased popularity in 2018, “buy-in annuities” showed a significant year-over-year decline in importance from 17% in 2018 to 7% in 2019.

LDIs
continue to be the top de-risking strategy but are declining in importance

Buy-out annuities
emerge as a key de-risking strategy, overtaking shared risk plans for second spot

What do you consider the most effective de-risking strategy?

2018	2019	
36%	30%	Liability-driven investments
New	18%	Buy-out annuities
20%	17%	Shared risk plans
11%	8%	Increased allocation to fixed income
New	8%	Benefit amendments
17%	7%	Buy-in annuities
16%	12%	Other*

*Including merging with another plan; moving to a defined contribution plan; use of alternative investments; and older retirement age (i.e., reduced benefits for those retiring at age 65)

Liability-driven investments

While LDIs continued to be the top de-risking strategy overall, year-over-year results were lower among all categories except mid-sized plans, which increased from 38% to 47%. The decline in 2019 builds on last year's downward trend, which coincided with the easing of pension funding rules in Quebec and Ontario, and the ability to smooth contributions over longer time periods in various other provinces. This change has made it more attractive for pensions to take on potentially riskier and higher-return investments such as alternatives (see page 8) to help alleviate funding pressure from a growing base of pensioners with a higher life expectancy.

Declining popularity of LDIs is accompanied by relaxed pension funding rules, strong interest in alternatives and an aging population

Buy-out annuities

The emergence of buy-out annuities as one of the top de-risking strategies—second spot overall (18%) and among the top three choices regardless of size, type or status—occurs at a time of improvement in the going-concern funded status of pension plans (see page 12).

Improved funded status, combined with the challenges of an uncertain economy and less than favourable demographic projections, may well be viewed as an opportune time for pension plans to consider offloading risk to an insurance company through a buy-out annuity. Under this arrangement, the annuity contract is owned by the retiree, whose pension is paid directly by the insurer. Depending on applicable legislation, a buy-out annuity may discharge the plan of its obligation or fiduciary responsibility to the retirees.

Growing popularity of buy-out annuities coincides with improved funded status, an uncertain economy and changing demographics

Shared risk plans

Shared risk plans include elements of both defined benefit and defined contribution plans. This de-risking strategy continues to be the top choice for public plans but at a significantly lower level of popularity than 2018 (41% to 28%). While the importance of shared risk plans increased among small plans (9% to 17%), this was more than offset by declining popularity across large and mid-sized plans (35% to 20% and 33% to 13%). There are various government proposals to expand the availability of shared risk plans; however, only New Brunswick currently has the full structure in place to operate these plans.

Buy-in annuities

Buy-in annuities, where a pension plan purchases a single annuity contract from an insurance company, also declined in importance as a risk management tool for pensions, particularly among small and private plans (27% to 12% and 25% to 7%). This is perhaps a reflection of heightened interest in buy-out annuities (new category at 18%). Under buy-in annuities, pension benefits are paid to retirees by the pension plan and not by the insurer. The annuity contract is considered an investment by the pension fund and, unlike buy-out annuities, the transaction has no impact on the plan's responsibility toward its retirees.

Alternatives

A significant majority of respondents (71%) currently hold alternatives in their plans or expect to add them during the next 12 months—slightly higher than last year's 70%.

71% of respondents
currently hold alternatives or plan to add them

90% or more of mid-sized, large, multi-employer and public plans currently include or are planning to include alternative investments in their portfolios. Alternatives are less popular among small and private plans (51% and 60%), as well as those closed to new members (57%).

While there was little year-over-year change in the popularity of alternatives overall, mid-sized plans exhibited a significant increase in year-over-year interest (71% to 93%), largely offset by moderate declines among large and small plans. Public plans also indicated increased interest in alternatives (83% to 92%).

The popularity of alternatives is:

- Highest among larger, multi-employer and public plans
- Increasing among mid-sized and public plans

Continued strong interest in alternative investments among larger, multi-employer and public pensions follows the easing of pension funding rules in Quebec and Ontario, providing the opportunity for plans to supplement their portfolios with potentially riskier and higher-return investments such as alternatives in order to help meet increasing obligations from an aging membership.

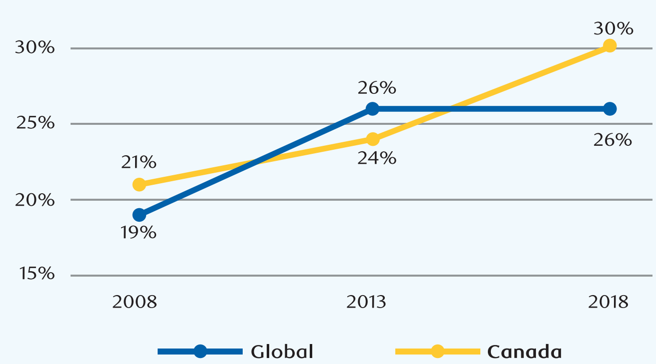
The new rules enable defined benefit plans that are more than 85% funded on a solvency basis (immediate termination) to calculate annual funding on the higher going-concern basis (ongoing operations). This eliminates the requirement to calculate funding based on the two models. While other provinces have maintained both funding requirements, some have smoothed contributions over longer periods.

Pension plans that currently hold alternatives or expect to add them

	2018	2019
Overall	**70%**	**71%**
Size		
Less than $1 billion	59%	51%
$1 billion to $5 billion	71%	93%
More than $5 billion	96%	90%
Type		
Private	63%	60%
Public	83%	92%
Multi-employer	New	94%
Status		
Open to new members	New	79%
Closed to new members	New	57%

Increased alternative allocations

Over the past decade, Canadian pension plan allocations to alternative investments increased from 21% of assets to 30%, currently exceeding the global pension allocation of 26%.[1]



[1] Willis Towers Watson, Global Pension Assets Study 2019, based on the top seven pension markets by assets globally

Strategies

Pension plans are most likely to include real estate and infrastructure investments in their portfolios (95% and 91%), and least likely to hold investments in hedge funds and natural resources (63% and 52%).

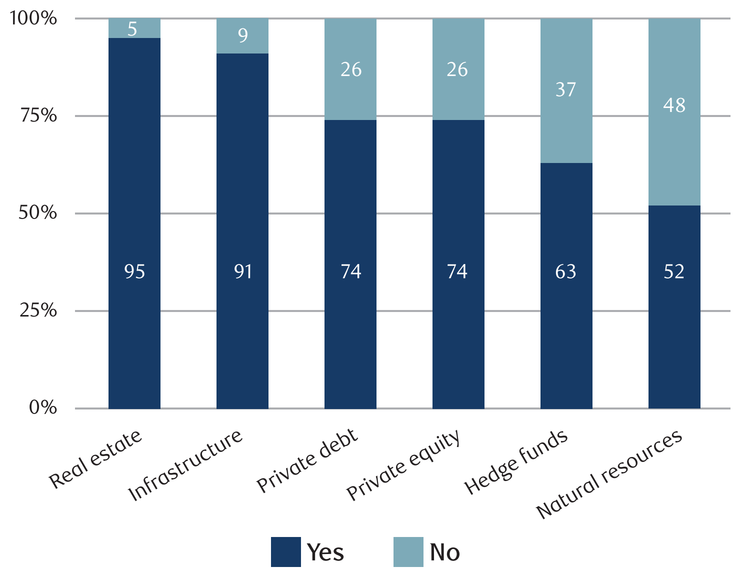
Real estate and infrastructure are the most popular alternatives

Allocation changes

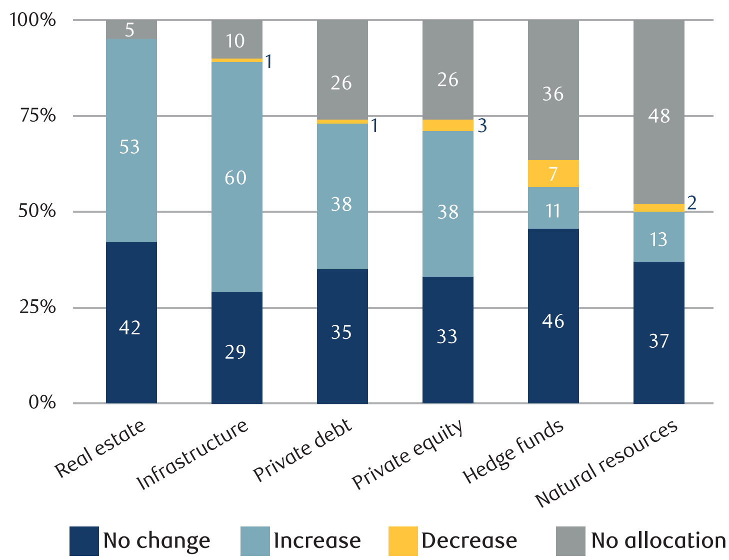
Nearly three-quarters (72%) of respondents that incorporate alternatives into their plans are looking to make increased allocations to one or more alternative investments in the near term. A majority of respondents that hold alternatives intend to increase their allocations to infrastructure and real estate investments (60% and 53%); at the other end of the spectrum, relatively few expect to augment their investments in natural resources and hedge funds (13% and 11%). The survey results indicate that only a few plans will be reducing their allocations to alternatives, ranging from no respondents for real estate to 7% for hedge funds.

72% of respondents are planning to increase their alternative allocations

Are you planning to include the following alternative investments in your plan's portfolio during the next 12 months?



How do you expect to change your alternative investment allocations during the next 12 months?



CDPQ to double infrastructure allocation

The Caisse de dépôt et placement du Québec (CDPQ), the province's largest pension plan, continues to grow its alternative investments and recently announced plans to double the plan's infrastructure allocation to as much as 15% over the next four years. CDPQ currently manages assets of approximately $326 billion, of which $23 billion or 7% is invested in infrastructure, including a 13% stake in London's Heathrow Airport and 30% in Eurostar, which provides high-speed train service between London and various locations in Continental Europe.[1]

[1] Financial Post, Caisse Aims to Double Funding for Projects, November 14, 2019

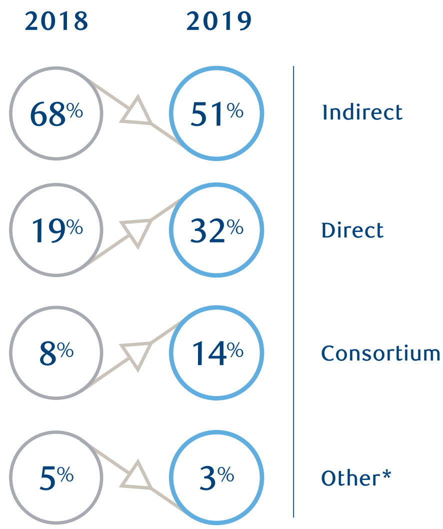
Investment models

The indirect model continues to be the most popular approach for adding alternatives to pension portfolios—overall and regardless of plan size, type or status. However, this model has declined in popularity year-over-year (68% to 51%), offset by increased interest in the direct and consortium models.

Small, mid-sized and private plans demonstrated a growing interest in the direct and consortium models; public plans augmented their preference for the direct model, moving to close the gap with the indirect model (43% for direct versus 48% for indirect). Large pensions reinforced their inclination for the indirect model, primarily at the expense of the direct model.

The indirect alternative model is most popular but declined year-over-year

What is your preferred private equity and real estate investment model?



Preferred alternative models

	Indirect	Direct	Consortium	Other*
Overall	**51%**	**32%**	**14%**	**3%**
Size				
Less than $1 billion	57%	27%	16%	0%
$1 billion to $5 billion	47%	39%	7%	7%
More than $5 billion	48%	30%	18%	4%
Type				
Private	55%	23%	18%	4%
Public	48%	43%	9%	0%
Multi-employer	50%	38%	6%	6%
Status				
Open to new members	48%	38%	11%	3%
Closed to new members	58%	17%	21%	4%

*Multiple models

Socially responsible investing

Less than half of respondents (43%) perceive SRI to be important to their overall strategy (rating of 4 or 5 on a 5-point scale), translating into an average overall importance score of 3.1.* SRI is most popular among public plans (3.5), and least popular among small and private plans (tied at 2.9). This investment approach is more important to plans that are closed to new members than those open to new members (3.3 versus 3.1).

Less than half of respondents view SRI to be important

Importance of SRI

Overall	**3.1**
Size	
Less than $1 billion	2.9
$1 billion to $5 billion	3.3
More than $5 billion	3.4
Type	
Private	2.9
Public	3.5
Multi-employer	3.4
Status	
Open to new members	3.1
Closed to new members	3.3

RBC Investor & Treasury Services' recent survey of Canadian asset and wealth managers reported that 63% of respondents view SRI to be important (average overall importance score of 3.6)—significantly higher than Canadian pension plans (43% and an average score of 3.1).[1]

The lower importance of SRI among pension plans may be a reflection of their beneficiary responsibilities. According to Canadian law firm McCarthy Tétrault, a key concern of pension plans regarding SRI investments is "how, in legal and practical terms, the decisions of fiduciaries to consider non-economic goals can be compatible with their duty to maximize the plan's investment returns for the benefit of its active and retired members without undue risk of loss."[2]

How important is SRI to your plan's overall strategy?

8%	5 - Extremely important
35%	4
31%	3
18%	2
8%	1 - Not at all important

SRI is:

- Least important to small and private pension plans
- More important to asset and wealth managers than pension plans

What is socially responsible investing?
SRI is a responsible investment strategy that screens companies from the investment universe (positive and negative screening) based on environmental, social and governance factors in order to generate measurable impact and a market rate of return.

*Based on a 5-point scale where 5=extremely important and 1=not at all important
[1]RBC Investor & Treasury Services, Canadian Asset and Wealth Manager Survey, August 2019
[2]McCarthy Tétrault LLP, Pension Fund Investment: Managing Environmental, Social and Governance (ESG) Factor Integration, May 1, 2019

Funded status

Approximately two-thirds of respondents (66%) reported that their pension plans are fully funded on a going-concern basis, up significantly from 56% in 2018 and 35% in 2017. This year's median funded status of 101% is slightly higher than last year's 100%.

Two-thirds of pension plans
are fully funded

Improved funded status corresponds with a history of favourable portfolio returns realized by Canadian pension plans in recent years. RBC Investor & Treasury Services' All Plan Universe, which tracks the returns of a cross-section of Canadian defined benefit pension plans, indicates that plans posted positive returns in 13 of 14 consecutive quarters as of September 30, 2019, including the first three quarters of 2019. During this time, only the fourth quarter of 2018 reported a negative return.[1]

2018	2019	
56%	66%	Proportion of fully-funded pension plans **increased significantly**

2018	2019	
100%	101%	Median going-concern funded **status increased slightly**

What is the current going-concern funded status of your pension plan?

2018	2019	
56%	66%	Fully funded (100% or more)
29%	28%	90% to less than 100% funded
15%	6%	Less than 90% funded

[1]RBC Investor & Treasury Services, All Plan Universe Survey, September 30, 2019

Outlook

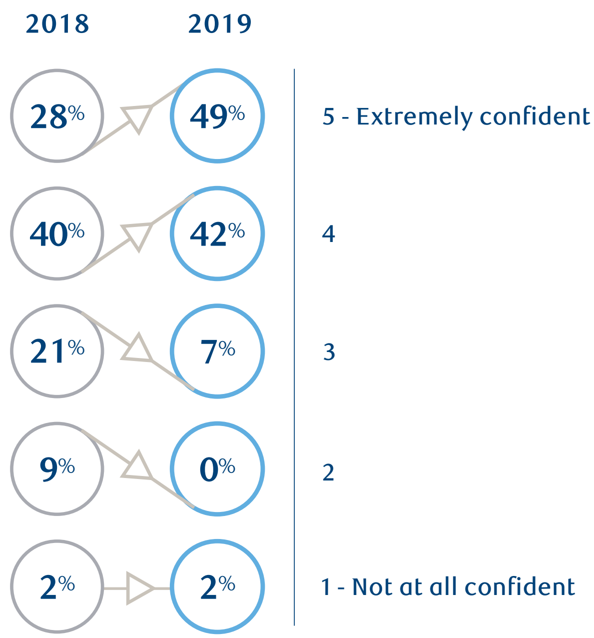
Consistent with the improved going-concern funded status, confidence in meeting ongoing pension liabilities increased significantly from 3.8 to 4.4 year-over-year.* Confidence is highest among large plans (4.5), and lowest among multi-employer plans and those closed to new members (4.2). Year-over-year, the outlook improved regardless of respondent size or type.

Confidence is increasing
regardless of plan size or type

Confidence in meeting ongoing liabilities

	2018	2019
Overall	**3.8**	**4.4**
Size		
Less than $1 billion	3.9	4.3
$1 billion to $5 billion	3.8	4.4
More than $5 billion	3.8	4.5
Type		
Private	3.9	4.4
Public	3.7	4.3
Multi-employer	New	4.2
Status		
Open to new members	New	4.4
Closed to new members	New	4.2

How confident are you in your plan's ability to meet its ongoing liabilities?



*Based on a 5-point scale where 5=extremely confident and 1=not at all confident

About the survey

RBC Investor & Treasury Services' third annual survey of Canadian defined benefit pension plans was conducted in the fourth quarter of 2019. The survey results represent aggregate responses from 119 pension plans, compared to 103 responses in 2018 and 106 in 2017. Updates to certain questions may impact year-over-year comparisons, which should be considered directional.

Location

British Columbia	11%
Prairies	14%
Ontario	36%
Quebec	26%
Atlantic	8%
Other*	5%

Asset size

Less than $1 billion	50%
$1 billion to $5 billion	25%
More than $5 billion	25%

Type

Private	61%
Public	22%
Multi-employer	15%
Other**	2%

Status

Open to new members	65%
Closed to new members	35%

Role

Finance and administration	28%
Executive	21%
Investment	16%
Trustee/board member	15%
Human resources	14%
Other***	6%

*Northern Canada, multiple provinces and the United States
**Combination of public and multi-employer plans
***Operations, public affairs and consultants

About RBC Investor & Treasury Services

RBC Investor & Treasury Services is a specialist provider of asset services, custody, payments and treasury services for financial and other institutional investors worldwide, with over 4,500 employees in 17 countries across North America, Europe, Asia and Australia. We deliver services to safeguard client assets, underpinned by client-centric digital solutions that continue to be enhanced and evolved in line with our clients' changing needs. Trusted with $4.3 trillion in client assets under administration,[1] RBC Investor & Treasury Services is a financially strong partner with among the highest credit ratings globally.[2]

[1]Royal Bank of Canada quarterly results released on December 4, 2019
[2]Standard & Poor's (AA-) and Moody's (Aa2) legacy senior long-term debt ratings of Royal Bank of Canada, as at December 4, 2019

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