Quarterly Update on Estimated Solvency Funded Status of Defined Benefit Plans in Ontario - as of December 31, 2017

Update as at December 31, 2017

- **The median solvency ratio is 94% (compared to 91% as at September 30, 2017)**
- **57.2% of plans had a solvency ratio between 85% and 100%**
- **25.1% of plans had a solvency ratio greater than 100%**

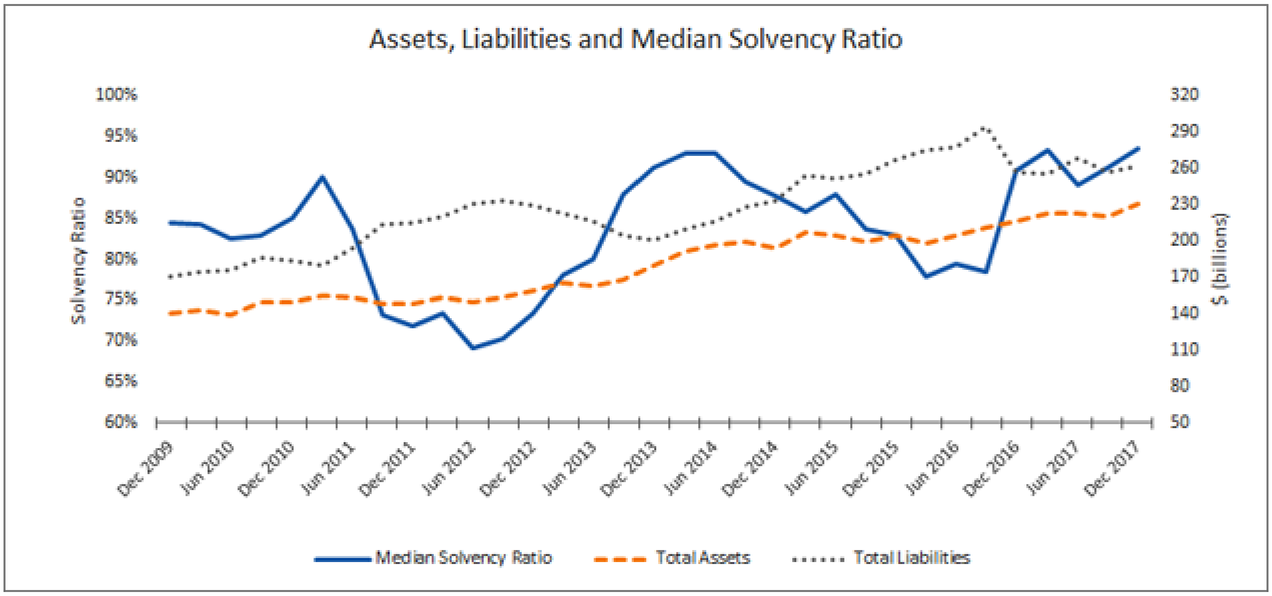
Defined benefit (DB) pension plan solvency positions on a net after-expense return basis were buoyed by strong fourth-quarter domestic and global equity market returns, offset by slightly declining Canadian bond yields. MSCI World equity returned 5.7% in the fourth quarter of 2017 and an exceptional 14.4% for the year. The S&P TSX also provided strong returns of 4.5% in the quarter and 9.1% for the year. FTSE TMX Universe bond returns benefitted from fourth quarter bond yield decreases, returning 2.0% in the quarter and 2.5% for the year. TMX Long Term bonds particularly benefitted from the fourth quarter bond yield decrease, returning 5.2% in the quarter and 7.0% over the year. The resulting median gross expected return was 4.8% and median net after-expense expected plan return was 4.5% in the fourth quarter. For 2017, median plan gross expected returns were 9.1% and median net after-expense expected plan returns were 8.0%. The slight decrease in fourth-quarter Canadian bond yields led to lower commuted value (CV) interest rates, against which solvency liabilities are highly negatively leveraged.

In May 2017, the Ontario government released a new solvency framework for DB pension plans. Highlights included funding on an enhanced going concern basis, a provision for adverse deviations (PfADs) within the going concern basis, and funding on a solvency basis if the plan's funded status falls below 85%. Consultations on proposed regulation amendments to implement the framework began in December 2017 and closed on January 29, 2018.

Solvency Update Asset Return Methodology

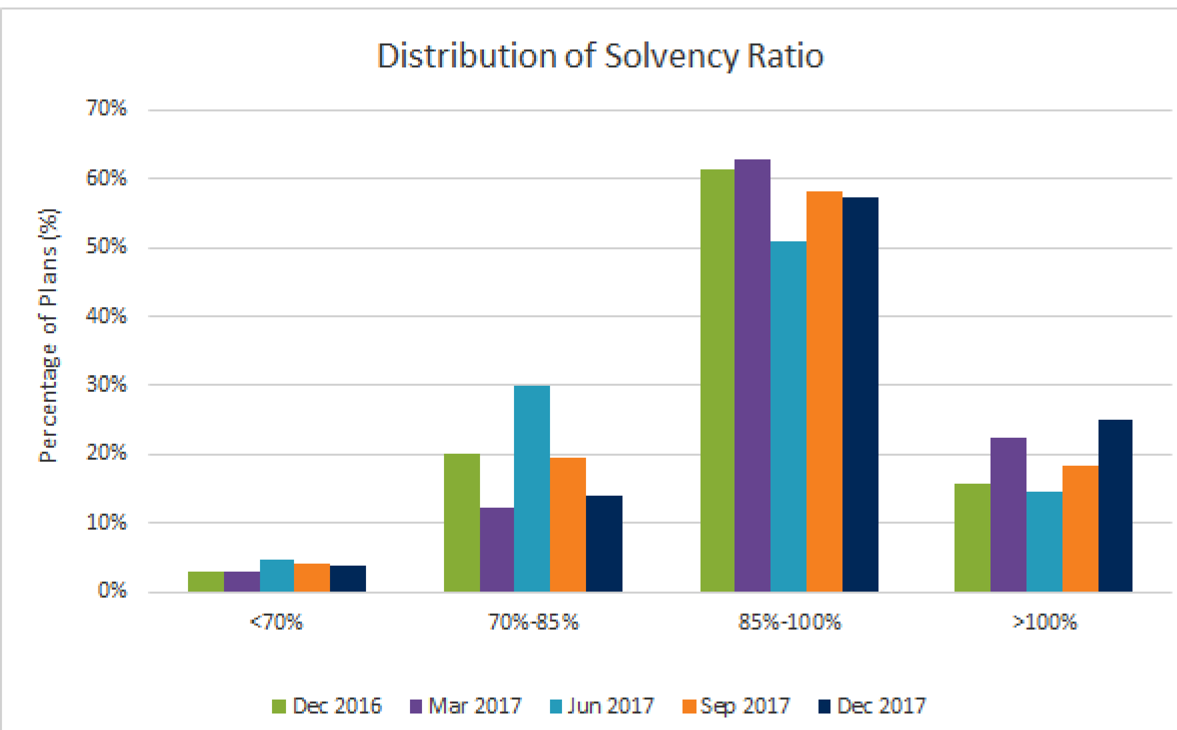
Each plan's unique projection period investment returns were determined based on filed IIS pension information. For 2014, 2015 and 2016, each plan's unique IIS-based annual rates of return were used. For 2017, each plan's returns were estimated based on its 2016 filed IIS asset allocation information in conjunction with 2017 market index returns, offset by a 25 basis point quarterly expense allowance. Please refer to the *Methodology and Assumptions* section below for additional asset return calculation information and pension fund rate of return statistics.

Assets, Liabilities and Median Solvency Ratio



View accessible description of Assets, Liabilities, and Median Solvency Ratio Line Chart

Distribution of Solvency Ratio



View accessible description of Distribution of Solvency Ratio Bar Chart

Methodology and Assumptions:

1. The results reported in the last filed actuarial valuation reports (assets and liabilities) were projected to December 31, 2017 based on these assumptions:
   - sponsors would use all available funding excess and prior year credit balance for contribution holidays, subject to any statutory restrictions;
   - sponsors would make normal cost contributions and special payments, if required, at the statutory minimum level;
   - the amounts of cash outflow would equal the pension amounts payable to retired members as reported in the last filed valuation report. Plan administration costs were not directly reflected in cash outflows, but indirectly were reflected through reduced net after expense investment earnings.

2. In place of returns based on an assumed model pension fund, each plan’s unique annual after-expense rates of return were calculated based on filed IIS information. Individual plan 2015 and 2016 rate of return statistics are summarized as follows:

	1st Quartile	2nd Quartile	3rd Quartile
2015 Gross Return:	7.0%	5.5%	4.1%
2015 Net After Investment Expense Return:	6.6%	5.1%	3.7%
2015 Net After All Expense Return:	6.2%	4.7%	3.1%
2016 Gross Return:	8.1%	6.4%	4.7%
2016 Net After Investment Expense Return:	7.6%	5.9%	4.3%
2016 Net After All Expense Return:	7.2%	5.4%	3.7%

3. In place of returns based on an assumed model pension fund, each plan’s unique annual December 31, 2017 returns were estimated based on each plan’s 2016 filed IIS asset allocation in combination with 2017 market index returns, offset by a 25 basis point quarterly expense charge. Estimated plan gross and net after expense return statistics are as follows:

	1st Quartile	2nd Quartile	3rd Quartile
2017 Q4 Gross Return:	4.9%	4.8%	4.6%
2017 Q4 Net After Investment Expense Return:	4.6%	4.5%	4.4%
2017 Q4 YTD Gross Return:	9.5%	9.1%	8.3%
2017 Q4 YTD Net After All Expense Return:	8.4%	8.0%	7.2%

December 31, 2017 investment rates of return were calculated based on each plan’s 2016 filed IIS asset allocation. The following table summarizes 2016 average IIS plan asset allocations by major asset class:

Cash	Canadian Equities1	Foreign Equities	Fixed Income2	Real Estate	Other
2.8%	25.1%	24.5%	44.3%	1.1%	2.2%

1 Previously, resource properties; venture capital; securities of real estate, resource and investment corporations; other pooled/mutual/segregated funds; and investments in other asset categories had been grouped under Canadian Equities. To the extent that returns on these assets are sufficiently detached from Canadian equity returns as measured by the S&P TSX Index, these asset groupings have been removed from Canadian Equities and two-thirds of other pooled/mutual/segregated funds have been allocated to Real Estate.

2 50% FTSE TMX Universe Bonds and 50% FTSE TMX Long Term Bonds.

Market index returns on the major assets classes have been as follows:

	S&P / TSX Total Return Index	MSCI World Total Net Return Index	FTSE TMX Universe Bond Index	FTSE TMX Long Bond Index
Q4 2017	4.5%	5.7%	2.0%	5.2%
Q4 YTD 2017	9.1%	14.4%	2.5%	7.0%

4. Estimated solvency liabilities were calculated based on the Canadian Institute of Actuaries Standards of Practice and the Canadian Institute of Actuaries Educational Notes, with these key assumptions:

Valuation Date	Commuted Value Basis	Annuity Purchase Basis3
Sept 30, 2017	Interest: 2.60% for 10 years 3.50% thereafter Mortality: CPM2014 generational	Interest: 3.20% Mortality: CPM2014 generational
Dec 31, 2017	Interest: 2.60% for 10 years, 3.40% thereafter Mortality: CPM2014 generational	Interest: 2.92% Mortality: CPM2014 generational

3 based on a medium duration illustrative block

Return to top