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**2014 Report on the  
Funding of Defined Benefit Pension Plans in Ontario**

*Overview and Selected Findings  
2011-2014*

**Financial Services Commission of Ontario**

**March 2015**

## Table of Contents

<b>1.0</b>	<b>INTRODUCTION.....</b>	<b>3</b>
1.1	Risk-Based Monitoring.....	3
1.2	Funding Relief Measures .....	4
1.3	DB Pension Plan Reporting .....	5
1.4	Key Findings.....	6
<b>2.0</b>	<b>FUNDING DATA ANALYSIS .....</b>	<b>9</b>
2.1	Summary of Funding Data.....	10
2.2	Summary of Actuarial Assumptions and Methods .....	14
<b>3.0</b>	<b>TEMPORARY FUNDING RELIEF .....</b>	<b>17</b>
3.1	Specified Ontario Multi-Employer Pension Plans (SOMEPPs).....	17
3.2	2009 Solvency Funding Relief.....	19
3.3	2012 Solvency Funding Relief.....	19
3.4	Solvency Funding Relief for Broader Public Sector Pension Plans .....	21
<b>4.0</b>	<b>TRENDS ANALYSIS .....</b>	<b>23</b>
4.1	Solvency Funded Status .....	23
4.2	Actuarial Assumptions.....	27
<b>5.0</b>	<b>INVESTMENT DATA ANALYSIS .....</b>	<b>31</b>
5.1	Summary of Pension Fund Profiles .....	31
5.2	Summary of Fund Performance .....	32
5.3	Investment Observations.....	34
<b>6.0</b>	<b>2014 PROJECTIONS .....</b>	<b>35</b>
6.1	Estimated DB Funding Contributions in 2014.....	35
6.2	Projected Solvency Position as at December 31, 2014.....	36
<b>7.0</b>	<b>GLOSSARY.....</b>	<b>39</b>
<b>8.0</b>	<b>APPENDIX – ADDITIONAL INFORMATION FOR PLANS IN FUNDING DATA ANALYSIS .....</b>	<b>40</b>

# **2014 Report on the Funding of Defined Benefit Pension Plans in Ontario**

## **Overview and Selected Findings 2011-2014**

### **1.0 INTRODUCTION**

The Financial Services Commission of Ontario (FSCO) is an agency of the Ministry of Finance that regulates Ontario registered pension plans in accordance with the Pension Benefits Act (PBA) and Regulation 909, as amended (Regulation).

FSCO has prepared this report to provide pension stakeholders with up-to-date funding, investment and actuarial information related to defined benefit (DB) pension plans in Ontario. The information is presented on an aggregate basis for the pension plans included in the study and there is no disclosure of plan-specific information. Except for the Trends Analysis in section 4, the report is based on the latest filed valuation reports for DB pension plans that have valuation dates between July 1, 2011 and June 30, 2014, and financial statements for the fiscal year ending between July 1, 2013 and June 30, 2014. For the purposes of the trends analysis, data was drawn from the reports filed for DB pension plans with valuation dates between July 1, 2010 and June 30, 2014.

#### **1.1 Risk-Based Monitoring**

In July 2000, FSCO implemented a risk-based approach to monitor the funding of DB pension plans.<sup>1</sup> This approach involves the collection of key actuarial and financial data from valuation reports filed with FSCO, using a standard form called the Actuarial Information Summary (AIS).<sup>2</sup> The collected data are entered into a database and a selective risk-based review system is used to assist staff in identifying individual reports for detailed compliance reviews.

In 2006, to broaden the risk-based approach to monitoring DB pension plans, FSCO implemented a risk-based monitoring of pension fund investments.<sup>3</sup> This program involves the collection of key financial and investment data for DB plans on an annual basis, using a standard form called the Investment Information Summary (IIS). The collected data are entered into a

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<sup>1</sup> Risk-based Supervision of the Funding of Ongoing Defined Benefit Pension Plans (May 2000), an overview of the risk-based approach, is available at: <https://www.fsrao.ca/media/22491/download>

<sup>2</sup> The AIS is a standardized form, developed jointly by FSCO, the Canada Revenue Agency, the federal Office of the Superintendent of Financial Institutions, and the Régie des rentes du Québec. It is required to be completed by an actuary and filed with FSCO in conjunction with a funding valuation report.

<sup>3</sup> Further information on the risk-based approach for monitoring pension fund investments is available at: <https://www.fsrao.ca/media/23286/download>

database and a selective risk-based review system identifies plans with potential concerns for further review.

In 2009, FSCO initiated a project called the Enhanced Risk-Based Regulation Project (RBR Project) to develop and implement a more comprehensive approach to risk-based regulation of Ontario registered pension plans. After considering the pension plan environment in Ontario, its current regulatory activities, as well as the experience and practices of other pension regulators who have adopted a risk-based approach to pension supervision, FSCO developed a proposed risk-based regulation framework which was posted for consultation in March 2011. After considering the submissions received from the consultation process, which overall were strongly supportive of FSCO's initiative to enhance its risk-based approach to regulation, the final Risk-Based Regulation Framework document was adopted and posted on FSCO's website in Fall 2011.<sup>4</sup>

FSCO's risk-based regulation framework considers a broad range of pension plan risks including those related to funding, investment, administration, governance and sponsor-related risks. In addition, it applies a more integrated approach towards assessing pension plan risks than the previous monitoring processes. The final Risk-Based Regulation Framework document sets out an implementation strategy with a goal of transitioning to the new framework over the next several years. During this transition, the principal activities include:

- enhancing the existing risk-based monitoring processes by integrating the monitoring and review of funding and investment risks;
- establishing risk-based processes for monitoring administration, governance and plan sponsor risks;
- enhancing stakeholders' understanding of FSCO's risk-based approach through ongoing engagement, which includes education and communication; and
- establishing quality control and maintenance processes that include the oversight and update of the risk-based methodology and application.

## **1.2 Funding Relief Measures**

1. In August 2007, Ontario introduced changes to the funding rules in the Regulation for multi-employer pension plans (MEPPs). The Regulation provides temporary funding relief for Specified Ontario Multi-Employer Pension Plans (SOMEPPs) that filed reports with valuation dates on or after September 1, 2007 and before September 1, 2010. The ending date for this temporary funding relief was extended twice – once to September 1, 2012 and then to September 1, 2017. A SOMEPP is exempt during this period from the requirement to fund on a solvency basis.
2. In June 2009, the Regulation was amended to provide temporary solvency funding relief for other Ontario registered DB pension plans meeting certain eligibility conditions. The temporary solvency funding relief measures are effective with the first filed report with a valuation date on or after September 30, 2008 and before September 30, 2011 (solvency relief report).

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<sup>4</sup> FSCO's final Risk-Based Regulation Framework document is available at:

<https://www.fsrao.ca/media/23281/download>

These measures provide for:

- the deferral of special payments required to liquidate any new going concern and new solvency deficiency for up to 12 months;
- the consolidation of existing solvency special payments into a new five-year payment schedule; and
- the extension of the period for liquidating a new solvency deficiency from five years to a maximum of 10 years, with member consent.

In November 2012, the Regulation was amended to continue providing temporary solvency relief for eligible Ontario-registered DB pension plans. These temporary solvency funding relief measures apply to the first filed report with a valuation date on or after September 30, 2011 and before September 30, 2014. The relief measures are similar to the ones provided in the June 2009 amendment and include the option of consolidating existing solvency special payments into a new five-year payment schedule, and allowing new solvency deficiencies to be amortized over up to 10 years instead of five years, with member consent. In addition, the Regulation has been amended to generally allow all plans to defer, for up to one year, the start of special payments required to liquidate a new going concern unfunded liability or new solvency deficiency.

3. In May 2011 the Ontario government implemented changes that would provide solvency funding relief to certain pension plans in the public sector and broader public sector. The funding relief is to be provided in two stages over a number of years. Those pension plans that meet the criteria for temporary Stage 1 solvency funding relief are named in Schedule 1 of Ontario Regulation 178/11. Similarly, those pension plans that meet the criteria for temporary Stage 2 solvency funding relief will be named in Schedule 2 of Regulation 178/11. The substantive relief measures are outlined in Regulation 178/11. Eligibility criteria, the application process and additional conditions as well as examples of steps that eligible pension plans could take and the measurement of financial impacts are not part of the regulation, but are outlined in a [technical paper](#) issued by the Ministry of Finance.<sup>5</sup>

This report contains additional details and summary statistics relating to the use of these relief measures.

### **1.3 DB Pension Plan Reporting**

The AIS and IIS databases provide FSCO with the information it needs to compile relevant pension plan funding and investment data, and identify certain DB pension plan trends in Ontario. FSCO's 2014 Report is its eleventh annual report on the funding and investment of DB pension plans in Ontario.

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<sup>5</sup> Details of framework and the technical paper can be found at:  
<http://www.ontariocanada.com/registry/view.do?postingId=11343&language=en>

## 1.4 Key Findings

The 2014 Report's key findings are summarized below. It is important to note that the analyses of the funding data are based on actual information from reports filed with FSCO with valuation dates between July 1, 2011 and June 30, 2014. Therefore, the information is drawn from a three-year period and do not have a common date. This is in contrast to the projected solvency ratios which are estimates as at a common date.

### *Funding Data*

1. The 1,311 pension plans included in our data had valuation dates of their last filed reports distributed as follows:

**Valuation Date of Most Recently Filed Report**

	<b>July 1, 2011 to June 30, 2012</b>	<b>July 1, 2012 to June 30, 2013</b>	<b>July 1, 2013 to June 30, 2014</b>	<b>July 1, 2011 to June 30, 2014</b>
Number of plans	108	105	1,098	1,311
Percentage of plans	8%	8%	84%	100%

2. Overall, the funded position of pension plans improved compared to what was reported in the 2013 Report on the Funding of Defined Benefit Pension Plans in Ontario (the 2013 Report).<sup>6</sup> In particular:
  - ❖ the median funded ratio on a *going concern* basis has increased from 100% to 105%, and
  - ❖ the median funded ratio on a *solvency* basis has increased from 82% to 92%.
3. Compared to the 2013 Report, there was a decrease in the percentage of plans that were less than fully funded both on a going concern and a solvency basis at their last valuation date. Specifically:
  - ❖ 36% of the plans were less than fully funded on a going concern basis (versus 50% in the 2013 Report), and
  - ❖ 77% of the plans were less than fully funded on a solvency basis (versus 91% in the 2013 Report).

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<sup>6</sup> FSCO's 2013 Annual Report on the Funding of Defined Benefit Pension Plans in Ontario is available at: <http://www.fSCO.gov.on.ca/en/pensions/actuarial/Documents/DBFundingReport2013.pdf>

4. Assumptions and methods for the going concern valuations continue to be quite uniform when compared to prior valuations. For example, the trend analysis shows that:
  - ❖ over 99% of the plans used the unit credit cost method (either with or without salary projections);
  - ❖ over 99% of the plans used either a market or smoothed market value of assets (72.3% used a market value, 27.5% used a smoothed market value and 0.2% used a book value);
  - ❖ the average interest rate assumption used for going concern valuations decreased from 5.77% to 5.40% over a four-year period, based on reports with valuation dates from July 1, 2010 to June 30, 2014. The reports included in our analysis with valuation dates between July 1, 2013 and June 30, 2014 showed that 93.0% used an interest rate at or below 6.0%; and
  - ❖ all of the plans with valuation dates between July 1, 2011 and June 30, 2014 used a mortality table with a base year of 1994 or later.

### ***Projected Solvency Ratio as at December 31, 2014***

In addition to looking at the actual information contained in the filed valuation reports, an estimate has been made of the projected solvency ratio for all the plans in aggregate as at a common date of December 31, 2014, in order to provide a snapshot of the estimated solvency funded status of pension plans at a more current date.

1. The median solvency ratio for pension plans was 92% based on valuation dates of the most recently filed reports (which cover a three-year period as previously noted). In comparison, the projected median solvency ratio as at December 31, 2013 and December 31, 2014 was estimated to be 94% and 88% respectively.
2. The projections use information contained in the most recently filed valuation reports and estimates the following elements to determine the estimated solvency ratio:
  - ❖ the investment returns based on an assumed representative pension plan asset mix;
  - ❖ the effect of changes in interest rates from the valuation date of each plan's report to the projection date; and
  - ❖ the required contributions specified in each plan's report.
3. The minimum required contributions for 2014; including employer normal cost, member required contributions and special payments; are estimated to decrease by 13% from \$9.6 billion for 2013 to \$8.4 billion for 2014.

## ***Temporary Funding Relief Data***

The statistics on the utilization of the temporary funding relief measures as of December 31, 2014 are as follows:

- ❖ Of the 73 MEPPs that contain a defined benefit provision, 49 plans have elected to be treated as a SOMEPP. These 49 MEPPs represent 94% of the total plan membership covered by the 73 MEPPs.
- ❖ The opportunity to elect temporary solvency funding relief introduced on June 23, 2009 has ended. The three permissible funding relief options were available only for the first filed report with a valuation date on or after September 30, 2008 and before September 30, 2011. The final statistics related to the 2009 Solvency Funding Relief are reported in FSCO's 2013 Annual Report on the Funding of Defined Benefit Pension Plans in Ontario.
- ❖ Effective November 1, 2012, the Regulation was amended to continue providing temporary solvency relief similar to the measures introduced in 2009. Of the 1,311 DB pension plans and 176 Frozen DB Plans that are in our data, 1,329 plans are eligible for the 2012 Solvency Funding Relief and have filed their solvency relief report under these provisions. Of these 1,329 eligible plans, 228 (17%) elected to use one or both of the available solvency funding relief options.
- ❖ In May 2011 the Ontario government implemented changes that would provide solvency funding relief to certain pension plans in the public sector and broader public sector. There were three windows of opportunity for eligible plans to apply for temporary solvency funding relief under these provisions. The third and final window for applications closed on December 31, 2012. There are 25 pension plans named in Schedule 1 and, as of March 2015, there are 17 pension plans named in Schedule 2 of Ontario Regulation 178/11.

## ***Trends Analysis Data***

The analysis of solvency ratios shows an improvement for valuation dates in the 12-month period ending June 30, 2014, compared with the solvency ratio reported in the previous 12-month period. The median solvency ratio in reports with valuation dates in the 12-month period ending June 30, 2014 is 93%. In comparison, the median solvency ratio for reports with valuation dates in the 12-month period ending June 30, 2012 and June 30, 2013 are 70% and 73% respectively.

Of the 1,098 pension plans that filed a report with a valuation date between July 1, 2013 and June 30, 2014, 209 (19%) have a solvency ratio of less than 85%. In comparison, the percentage of plans with a solvency ratio of less than 85% in the two 12-month periods ending June 30, 2012 and June 30, 2013 are 86% and 83% respectively.



## ***Investment Data***

1. The typical asset mix of pension funds changed from a fixed income/non-fixed income split of 43%/57% in 2012 to a split of 42%/58% in 2013.
2. While larger plans continued to pay relatively lower investment fees than smaller plans in 2013, the effect of the size of pension funds on investment performance became less noteworthy than before.
3. MEPPs invested more of their pension funds in non-fixed income assets than did single employer pension plans (SEPPs).
4. There do not seem to be significant differences in asset mix, average return and average investment fees between plans of different benefit types.

## **2.0 FUNDING DATA ANALYSIS**

This section provides an analysis and summary of the funding data, including actuarial assumptions and methods, for DB pension plans with valuation dates between July 1, 2011 and June 30, 2014. The data was compiled from the AIS and valuation reports that FSCO received on or before the data cutoff date of December 31, 2014.

Generally, valuation reports must be filed once every three years on both a going concern and solvency basis. However, solvency concerns revealed in a valuation report require annual filing until solvency concerns no longer exist. Early filings may be required when events such as plan mergers, partial windups, or sales of businesses occur, and may also be done on a voluntary basis. Unless otherwise noted, the analysis in this report is based on data from a plan's most recently filed valuation report in order to avoid double counting.<sup>7</sup>

For the purposes of this report, the following plans are excluded in order to focus on the plans that are of most interest to users of our report and to ensure that the results of our analysis are not skewed:

- designated plans,
- plans where members are no longer accruing future DB or defined contribution (DC) benefits (referred to as Frozen Plans),
- seven large public sector plans, and
- plans that have been wound up or are in the process of winding up.

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<sup>7</sup> The Trends Analysis in Section 4 uses data from reports with valuation dates in the different periods and therefore may include more than one valuation report from a pension plan.

Table 2.1 presents a profile of the 1,311 pension plans that have been included in the database used for the funding data analysis. Additional details on the plans that were analyzed are in Section 8.0 of this report.

**Table 2.1 - Summary of Included Plans**

Plan/ Benefit Type	# of Plans	Active Members	Retired Members	Other Participants	Total Participants	Market Value of Assets (\$ Millions)
Final Average	384	146,452	104,791	40,461	291,704	60,280
Career Average	112	18,186	14,197	8,923	41,306	3,510
Flat Benefit	188	40,383	81,797	21,467	143,647	22,014
Hybrid	386	159,920	162,080	78,983	400,983	54,765
Frozen Hybrid	168	23,730	41,165	18,104	82,999	9,117
MEPP	73	374,585	110,353	388,196	873,134	24,149
<b>Total</b>	<b>1,311</b>	<b>763,256</b>	<b>514,383</b>	<b>556,134</b>	<b>1,833,773</b>	<b>173,835</b>
<b>Average Age</b>		<b>49.76</b>	<b>70.94</b>	<b>48.93</b>		

Table 2.2 below summarizes the profiles of 176 Frozen DB Plans and seven large public sector plans that were excluded from the database. There are 71 plans that have wound up or are in the process of winding up that have also been excluded from the database.

**Table 2.2 - Summary of Excluded Plans**

Plan Type	Plan Sub- Type	# of Plans	Active Members	Retired Members	Other Participants	Total Participants	Market Value Of Assets (\$ Millions)
<b>Public Sector Pension Plans</b>	<b>Large Public Sector</b>	7	748,960	426,450	150,043	1,325,453	305,992
	<b>Average Age</b>		<b>45.16</b>	<b>71.20</b>	<b>53.88</b>		
<b>Frozen DB Plans</b>	<b>No Future DB/DC accruals</b>	176	9,262	27,985	11,274	48,251	6,128
	<b>Average Age</b>		<b>50.69</b>	<b>75.43</b>	<b>44.46</b>		

## 2.1 Summary of Funding Data

Of the 1,311 plans that were analyzed, which together cover 1,833,773 plan members, 471 plans (36%) were less than fully funded on a going concern basis. These 471 underfunded plans cover 1,168,013 (64%) of the total plan members.

On a solvency basis, 1,014 plans (77%) of the 1,311 plans were less than fully funded and cover 1,600,187 plan members (87% of total members).

Tables 2.3a, 2.3b, 2.4a, and 2.4b show the distribution of underfunded plans by plan/benefit type and by membership.

**Table 2.3a – Distribution of Underfunded Plan on a Going Concern Basis by Plan Type**

Plan/Benefit Type	By Plan		
	Total Number of Plans	Number of Underfunded Plans	% of Total Plans by Plan/Benefit Type
Final Average	384	146	38%
Career Average	112	24	21%
Flat Benefit	188	45	24%
Hybrid	386	136	35%
Frozen Hybrid	168	78	46%
MEPP	73	42	58%
<b>Total</b>	<b>1,311</b>	<b>471</b>	<b>36%</b>

**Table 2.3b – Distribution of Underfunded Plan on a Going Concern Basis by Membership**

Plan/Benefit Type	By Membership		
	Total Number of Members	Number of Members in Underfunded Plans	% of Total Membership by Plan/Benefit Type
Final Average	291,704	146,602	50%
Career Average	41,306	6,417	16%
Flat Benefit	143,647	90,406	63%
Hybrid	400,983	154,227	38%
Frozen Hybrid	82,999	31,625	38%
MEPP	873,134	738,736	85%
<b>Total</b>	<b>1,833,773</b>	<b>1,168,013</b>	<b>64%</b>

**Table 2.4a - Distribution of Underfunded Plans on a Solvency Basis by Plan Type**

Plan/Benefit Type	By Plan		
	Total Number of Plans	Number of Underfunded Plans	% of Total Plans by Plan/Benefit Type
Final Average	384	281	73%
Career Average	112	97	87%
Flat Benefit	188	147	78%
Hybrid	386	288	75%
Frozen Hybrid	168	135	80%
MEPP	73	66	90%
<b>Total</b>	<b>1,311</b>	<b>1,014</b>	<b>77%</b>

**Table 2.4b - Distribution of Underfunded Plans on a Solvency Basis by Membership**

Plan/Benefit Type	By Membership		
	Total Number of Members	Number of Members in Underfunded Plans	% of Total Membership by Plan/Benefit Type
Final Average	291,704	215,816	74%
Career Average	41,306	37,252	90%
Flat Benefit	143,647	131,042	91%
Hybrid	400,983	284,526	71%
Frozen Hybrid	82,999	75,386	91%
MEPP	873,134	856,165	98%
<b>Total</b>	<b>1,833,773</b>	<b>1,600,187</b>	<b>87%</b>

Table 2.5 provides summary information grouped by plan maturity (as measured by the proportion of solvency liabilities relating to pensioners).

**Table 2.5 – Funding Information Grouped By Maturity**

Proportion of Solvency Liabilities relating to Pensioners	Number of Plans	Total Membership	Solvency Assets (\$ Millions)	Solvency Liabilities (\$ Millions)	Ratio of Solvency Assets to Solvency Liabilities	Ratio of Active Members to Pensioners
Less than 25%	249	235,374	11,490	13,047	88%	5.9 : 1
25% ≤ ratio < 50%	582	1,078,104	65,805	80,342	82%	2.4 : 1
50% ≤ ratio < 75%	383	370,570	61,731	66,869	92%	0.6 : 1
75% and over	97	149,725	34,320	39,030	88%	0.2 : 1
<b>Total</b>	<b>1,311</b>	<b>1,833,773</b>	<b>173,346</b>	<b>199,288</b>	<b>87%</b>	<b>1.5 : 1</b>

Tables 2.6 and 2.7 below provide a more detailed breakdown of the going concern and solvency funded ratios with respect to different types of DB pension plans.

For all plans that were analyzed, the median funded ratios were 105% on a going concern basis and 92% on a solvency basis. Also note that 50 (68.5%) of the 73 MEPPs had a solvency ratio of less than 85%. These 50 plans have approximately 799,294 active, retired and former members, which represent approximately 92% of the total MEPP membership.

**Table 2.6 - Going Concern Funded Ratio**

<b>Funded Ratio (FR)</b>	<b>Final Average</b>	<b>Career Average</b>	<b>Flat Benefit</b>	<b>Hybrid</b>	<b>Frozen Hybrid</b>	<b>MEPP</b>	<b>All Plans</b>
FR < 0.60	2	0	0	3	1	0	6
0.60 ≤ FR < 0.80	14	1	3	10	7	4	39
0.80 ≤ FR < 0.90	54	4	9	46	27	11	151
0.90 ≤ FR < 1.00	76	19	33	77	43	27	275
1.00 ≤ FR < 1.20	185	69	85	193	66	26	624
FR ≥ 1.20	53	19	58	57	24	5	216
<b>Total</b>	<b>384</b>	<b>112</b>	<b>188</b>	<b>386</b>	<b>168</b>	<b>73</b>	<b>1,311</b>
Median Ratio	1.04	1.06	1.07	1.04	0.98	0.98	1.05

**Table 2.7 - Solvency Funded Ratio**

<b>Solvency Ratio (SR)</b>	<b>Final Average</b>	<b>Career Average</b>	<b>Flat Benefit</b>	<b>Hybrid</b>	<b>Frozen Hybrid</b>	<b>MEPP</b>	<b>All Plans</b>
SR < 0.60	1	0	2	3	3	6	15
0.60 ≤ SR < 0.80	29	10	22	17	10	38	126
0.80 ≤ SR < 0.85	43	20	21	47	23	6	160
0.85 ≤ SR < 0.90	77	25	42	70	36	8	258
0.90 ≤ SR < 1.00	131	42	60	151	63	8	455
1.00 ≤ SR < 1.20	88	13	39	89	24	4	257
SR ≥ 1.20	15	2	2	9	9	3	40
<b>Total</b>	<b>384</b>	<b>112</b>	<b>188</b>	<b>386</b>	<b>168</b>	<b>73</b>	<b>1,311</b>
Median Ratio	0.94	0.89	0.89	0.93	0.92	0.77	0.92

## 2.2 Summary of Actuarial Assumptions and Methods

The key actuarial assumptions and methods used in going concern valuations are outlined below:

- Over 99% of the plans used the unit credit cost method (with salary projections for final average plans and hybrid plans with final average benefits) to calculate their going concern liabilities.

**Table 2.8 - Liability Valuation Method**

<b>Liability Valuation Method</b>	<b># of Plans</b>	<b>% of Plans</b>
Unit Credit (with salary projection)	848	64.7%
Unit Credit (with no salary projection)	458	34.9%
Entry Age Normal	3	0.2%
Aggregate	2	0.2%
<b>Total</b>	<b>1,311</b>	<b>100.0%</b>

- Assets were most frequently valued using a market or market-related approach, with over 99% of the plans using either a market or smoothed market value.

**Table 2.9 - Asset Valuation Method**

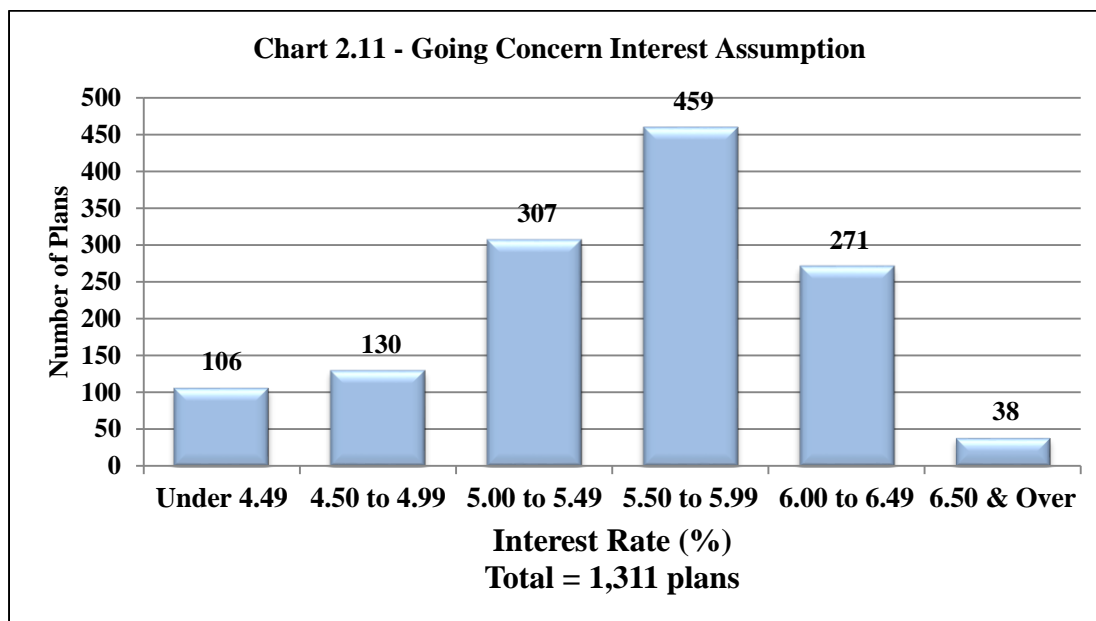
<b>Asset Valuation Method</b>	<b># of Plans</b>	<b>% of Plans</b>
Market	948	72.3%
Smoothed Market	361	27.5%
Book	2	0.2%
<b>Total</b>	<b>1,311</b>	<b>100.0%</b>

- For going concern valuations, all plans used a mortality table with a base year of 1994 or later. Approximately 77% of the plans have used the Canadian pensioners' mortality tables (CPM-RPP2014) and improvement scales published on February 13, 2014 by the Canadian Institute of Actuaries (CIA) in their final report on Canadian pensioners' mortality (CPM) (the 2014 CIA CPM Study). The Canadian pensioners' mortality tables and improvement scales are based on experience studies conducted by the CIA.

**Table 2.10 - Mortality Assumption**

Mortality Assumption	# of Plans	% of Plans
1994 GAM Static	3	0.2%
1994 GAR	3	0.2%
1994 UP	260	19.8%
1994 UP with variation	28	2.1%
CPM-RPP2014	1,009	77.1%
RP2000 or RP2000 with variation	4	0.3%
Other <sup>8</sup>	4	0.3%
<b>Total</b>	<b>1,311</b>	<b>100.0%</b>

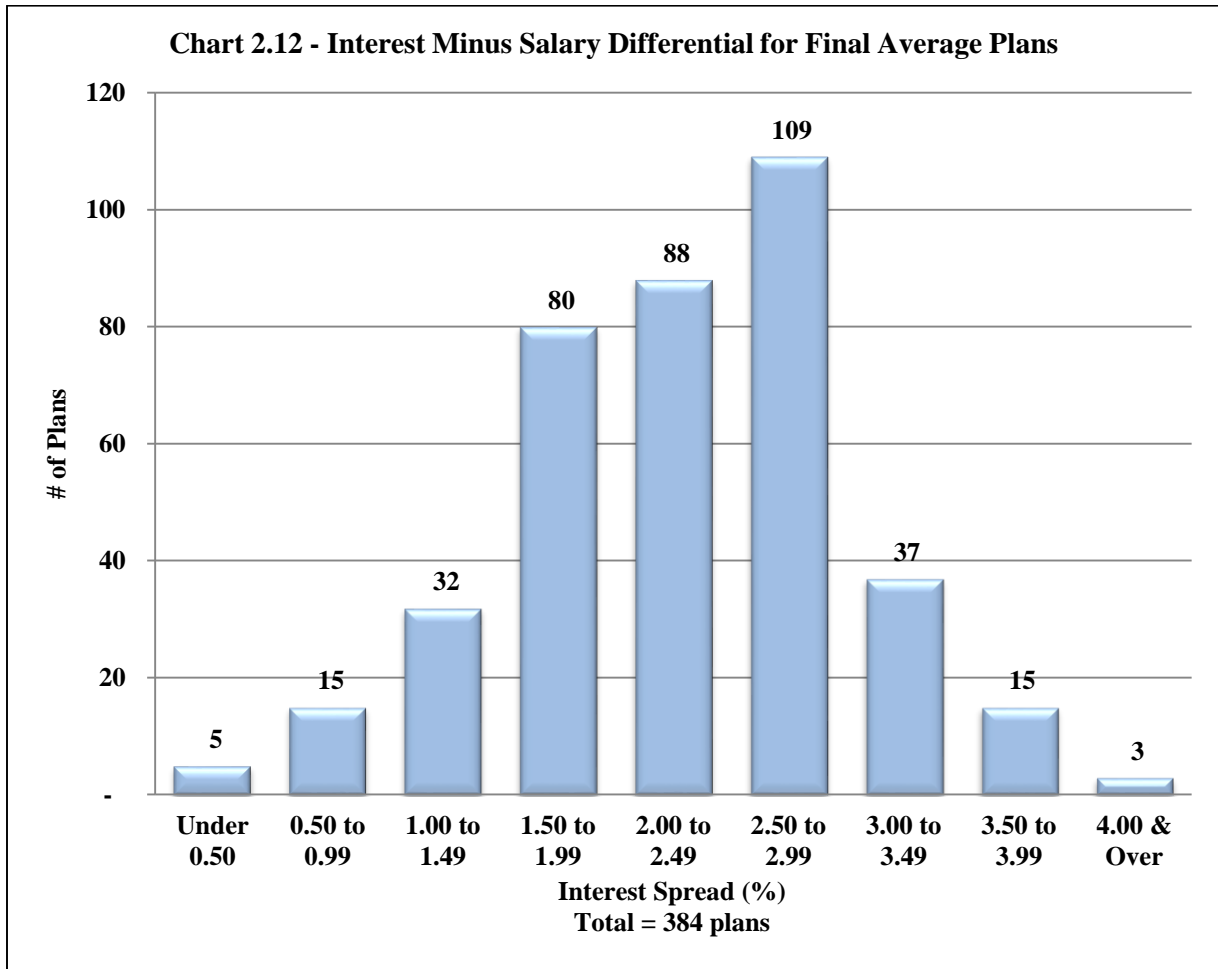
- Interest rate assumptions used to value the going concern liabilities were generally lower than in prior years, with approximately 92% of plans using a rate at or below 6.00%. Rates continued to fall within a relatively narrow range, with 74% of the plans using a rate between 5.0% and 6.0% inclusive.<sup>9</sup>



<sup>8</sup> All 4 plans used a variation of the 1995 Buck Mortality table.

<sup>9</sup> Of the 38 plans that used a going concern interest rate assumption of 6.50% or over, 33 plans used an interest rate of exactly 6.50%. Of the 271 plans that used a going concern interest rate assumption in the range of 6.00% to 6.49%, 208 plans used an interest rate of exactly 6.00%.

- For final average earnings plans, the difference between the interest assumption and the salary increase assumption used in going concern valuations, typically fell within a range of 1.5% to 3.0% inclusive. This accounts for 77% of all plans providing final average benefits.<sup>10</sup> The average spread between the interest assumption and the salary increase assumption was 2.17%.



<sup>10</sup> Of the 37 final average plans with an interest-salary differential in the range of 3.00% to 3.49%, 18 plans had an interest-salary differential of exactly 3.00%. Of the 109 final average plans with an interest-salary differential in the range of 2.50% to 2.99%, 48 plans had an interest-salary differential of exactly 2.50%. Of the 88 final average plans with an interest-salary differential in the range of 2.00% to 2.49%, 48 plans had an interest-salary differential of exactly 2.00%.



- Table 2.13 shows the provision for wind up expenses that was used in solvency valuations, grouped by plan membership size, including active members, former members and other plan beneficiaries.<sup>11</sup> The expense allowance is also expressed as average dollar amounts per plan and per plan member. The average expense allowance per member generally decreases as plan membership size increases. The reverse pattern appears for plans with 10,000 or more members. Since there are only a small number of plans in the last two size categories (i.e., more than 5,000 members), greater caution should be exercised when interpreting the results for plans of this size.

The average per member wind up expense allowances are generally comparable to those previously reported in the 2013 Report, with slight increases for plans with less than 5,000 plan members.

**Table 2.13 - Provision for Wind Up Expenses**

Plan Membership	Total Plans	Total Membership	Wind Up Expenses		
			Total WU Expenses	Average Per Plan	Average Per Member
<100	400	19,638	23,084,050	57,710	1,175
100-499	500	121,260	66,589,800	133,180	549
500-999	151	104,876	39,724,325	263,075	379
1,000-4,999	187	391,351	103,237,900	552,074	264
5,000-9,999	34	244,078	41,975,000	1,234,559	172
10,000-49,999	23	391,832	161,124,000	7,005,391	411
<b>All Plans</b>	<b>1,295</b>	<b>1,273,035</b>	<b>\$435,735,075</b>	<b>\$336,475</b>	<b>342</b>

### 3.0 TEMPORARY FUNDING RELIEF

This section provides membership and funding statistics, as well as the impact on funding costs for plans that used the temporary funding relief measures available under the PBA and Regulation.

#### 3.1 Specified Ontario Multi-Employer Pension Plans (SOMEPPs)

For a MEPP that elects to be treated as a SOMEPP, the contributions to the plan must not be less than the sum of:

- the normal cost;
- the remaining special payments for any previously established going concern unfunded liability; and
- the special payments for any new going concern unfunded liability determined in the valuation report.

<sup>11</sup> For confidentiality reasons, the three plans each with more than 50,000 total membership were excluded from this analysis. Solvency valuations that did not explicitly disclose a provision for wind up expenses were also excluded from this analysis.

Any new going concern unfunded liability must be liquidated over a period of 12 years instead of the usual 15 years. Furthermore, there are funding requirements for benefit improvements, requiring any increase in the going concern unfunded liability as a result of the improvements to be liquidated over a period of eight years under prescribed conditions. There is no requirement to fund on a solvency basis during the period of temporary funding relief, although solvency valuations are still required to be performed and their results must be set out in the valuation report.<sup>12</sup>

The following tables provide selected statistics on the MEPPs that contain a defined benefit provision. Up to December 31, 2014, 49 of the 73 MEPPs have elected to become SOMEPPs.

**Table 3.1 - Membership Information**

	# of Plans	Total (Median) Membership Count			
		Active Members	Retired Members	Other Participants	Total
SOMEPPs	49	352,309 (1,065)	97,733 (648)	371,855 (1,150)	821,897 (3,371)
Non-SOMEPPs	24	22,276 (551)	12,620 (218)	16,341 (153)	51,237 (1,057)
<b>Total (All DB MEPPs)</b>	<b>73</b>	<b>374,585 (866)</b>	<b>110,353 (446)</b>	<b>388,196 (692)</b>	<b>873,134 (2,312)</b>

**Table 3.2 - Funding Information**

	Total (Median) Value			
	Market Value of Assets	Solvency Assets ‡	Solvency Liabilities	Ratio of Solvency Assets to Solvency Liabilities
	(\$ Millions)			
SOMEPPs	20,271 (125.0)	20,160 (124.6)	31,668 (180.0)	63.7% (72.1%)
Non-SOMEPPs	3,878 (53.3)	3,869 (53.0)	4,214 (73.5)	91.8% (90.2%)
<b>Total (All DB MEPPs)</b>	<b>24,149 (103.8)</b>	<b>24,029 (103.5)</b>	<b>35,882 (133.6)</b>	<b>67.0% (77.4%)</b>

‡ Market value of assets less provision for wind up expenses

The plans that elected to become SOMEPPs tend to be significantly larger than non-SOMEPPs, when measured by the size of their assets, liabilities or plan membership. For example, the median size of solvency liabilities for SOMEPPs is approximately 2.45 times larger than that for non-SOMEPPs.

In terms of funding levels, SOMEPPs are significantly less well funded than non-SOMEPPs. The median solvency ratio for SOMEPPs is 72.1% compared to 90.2% for non-SOMEPPs.

<sup>12</sup> More information on SOMEPPs is available at:

<https://www.fsrao.ca/media/22316/download>

## 3.2 2009 Solvency Funding Relief

Effective June 23, 2009 and for a temporary period, the administrator of a plan that had met certain criteria may choose one or more of the following three funding relief options in the first filed report with a valuation date on or after September 30, 2008 and before September 30, 2011 (referred to herein as the 2009 solvency relief report):<sup>13</sup>

**Option 1** - Defer, up to one year, the start of special payments required to liquidate any new going concern unfunded liability or new solvency deficiency determined in the 2009 solvency relief report.

**Option 2** - Consolidate special payments for pre-existing solvency deficiencies into a new five-year payment schedule that starts on the valuation date of the 2009 solvency relief report.

**Option 3** - With the consent of active and former members if the plan is not jointly governed, extend the period for liquidating the new solvency deficiency from five years to a maximum of 10 years.

The opportunity to elect temporary solvency funding relief introduced on June 23, 2009 has ended. The final statistics related to the 2009 Solvency Funding Relief are reported in FSCO's 2013 Annual Report on the Funding of Defined Benefit Pension Plans in Ontario.

## 3.3 2012 Solvency Funding Relief

Effective November 1, 2012, the Regulation was amended to continue providing temporary solvency relief for private sector pension plans that was introduced by the government in June 2009. The temporary solvency funding relief measures being provided in this amendment are similar to the measures introduced in 2009, and apply to the first filed report with a valuation date on or after September 30, 2011 and before September 30, 2014 (referred to herein as the 2012 solvency relief report). The measures include:

**Option 4** - Consolidate existing special payments for solvency deficiencies into a new five-year payment schedule that starts on the valuation date of the 2012 solvency relief report; and

**Option 5** - Extending the period for liquidating a new solvency deficiency determined in the report from a maximum of five years to a maximum of ten years, subject to the consent of the plan members.

There is no option corresponding to Option 1 from the 2009 funding relief measures, as the Regulation has been amended to permit all plans to defer, for up to one year, the start of special payments required to liquidate a new going concern unfunded liability or new solvency deficiency.

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<sup>13</sup> More information on temporary solvency funding measures is available at:

<https://www.fsrao.ca/temporary-solvency-funding-relief-measures>

Based on the valuation reports included in the database, a total of 205 eligible plans elected to use one or more of the 2012 funding relief options. In addition, 23 of the Frozen DB Plans described in Table 2.2 have also elected to use 2012 solvency funding relief. These 228 plans are referred to as the ‘2012 Electing Plans’ in this report. Because the election of 2012 solvency funding relief is based on the first report filed with a valuation date on or after September 30, 2011 and before September 30, 2014, the number of plans electing relief will continue to increase until the election period ends.

Table 3.3 shows the distribution of options chosen by the 2012 Electing Plans. As shown below, the use of Option 4 was the most prevalent choice, accounting for 75% of all plan elections. The next most common choice was the combination of Options 4 and 5, which accounted for 18% of plan elections. Of the 228 plans that elected various options under the 2012 solvency funding relief, 141 of those plans also made an election for solvency relief under the 2009 solvency funding relief options.

**Table 3.3 - Distribution of 2012 Solvency Relief Options Elected**

<b>Election</b>	<b>Number of Plans<sup>‡</sup></b>	<b>% of Plans</b>	<b>Previously Elected 2009 Solvency Relief</b>
Option 4 only	171	75%	104
Option 5 only	17	7%	12
All Options	40	18%	25
<b>Total</b>	<b>228</b>	<b>100%</b>	<b>141</b>

<sup>‡</sup> Plans that are Designated Plans are excluded

Of the 1,311 DB pension plans and 176 Frozen DB Plans, there are 1,329 plans that are eligible for 2012 solvency funding relief and that have filed their 2012 solvency relief reports. Table 3.4 presents, for eligible plans that have filed their 2012 solvency relief reports, the percentage of these plans that have elected to use one or more of the 2012 solvency funding relief options.

**Table 3.4 – Percentage of Eligible Plans Electing 2012 Solvency Relief Options**

	<b>Number of Plans</b>	<b>Number of Eligible Plans That Have Filed 2012 Solvency Relief Report</b>	<b>2012 Electing Plans</b>	
			<b>Number of Plans</b>	<b>Percentage of Plans</b>
Plans in database	1,311	1,163	205	18%
Frozen DB Plans	176	166	23	14%
<b>Total</b>	<b>1,487</b>	<b>1,329</b>	<b>228</b>	<b>17%</b>

Of the 1,329 eligible plans that have filed their 2012 solvency relief reports, 228 plans elected to use one or more of the 2012 solvency funding relief options

Tables 3.5 and Table 3.6 present a profile of the 2012 Electing Plans as at December 31, 2014.

**Table 3.5 Membership Information for the 2012 Electing Plans**

	Number of Plans	Membership Count			
		Active Members	Retired Members	Other Participants	Total
Plans in database	205	68,929	70,166	27,431	166,526
Frozen DB Plans	23	1,442	2,205	2,482	6,129
<b>Total</b>	<b>228</b>	<b>70,371</b>	<b>72,371</b>	<b>29,913</b>	<b>172,655</b>
Median		100	80	43	254

**Table 3.6 Funding Information for the 2012 Electing Plans**

	Number of Plans	Solvency Assets	Solvency Liabilities	Ratio of Solvency Assets to Solvency Liabilities
		(\$ Millions)		
Plans in database	205	22,868	25,470	89.8%
Frozen DB Plans	23	544	587	92.7%
<b>Total Value</b>	<b>228</b>	<b>23,412</b>	<b>26,057</b>	<b>89.8%</b>
Median Value		24	27	88.9%

### 3.4 Solvency Funding Relief for Broader Public Sector Pension Plans

In May 2011 the Ontario government implemented changes that would provide solvency funding relief to certain pension plans in the public sector and broader public sector. These changes were implemented by Ontario Regulation 178/11.

The funding relief is to be provided in two stages (referred to as Stage 1 and Stage 2):

- Stage 1 relief starts from the plan's Stage 1 valuation date which is set out in the Schedule to Ontario Regulation 178/11. It is a three year period during which plans would be permitted to fund to a lower solvency standard with required minimum interest payments;
- At the end of Stage 1, each plan would be assessed by the Minister of Finance, based on technical measures, to determine whether sufficient progress had been made in meeting their sustainability commitments;
- Those plans that demonstrate sufficient steps have been taken towards sustainability would be eligible to enter Stage 2 of the process;

- Stage 2 would provide the plan sponsor with up to 10 years to implement negotiated plan changes and liquidate solvency deficiencies;
- Plans that fail to enter Stage 2 or which choose not to enter Stage 2 relief would be transitioned back to the normal PBA funding rules;
- Contribution holidays (Stage 2) and benefit improvements (Stage 1 and 2) would be restricted while under the funding relief. These restrictions would remain in place for a period of time after exiting the process.

The substantive relief measures are outlined in Regulation 178/11. Eligibility criteria, the application process and additional conditions as well as examples of steps that eligible pension plans could take and the measurement of financial impacts are not part of the regulation, but are outlined in a technical paper issued by the Ministry of Finance. Those pension plans that meet the criteria for temporary Stage 1 solvency funding relief are named in Schedule 1 to Ontario Regulation 178/11. Similarly, those pension plans that meet the criteria for temporary Stage 2 solvency funding relief will be named in Schedule 2 to Regulation 178/11.

There were three windows of opportunity for eligible plans to apply for temporary solvency funding relief under these provisions. The third and final window for applications closed on December 31, 2012.

There are 25 pension plans named in Schedule 1 and, as of March 2015, 17 pension plans are named in Schedule 2 of Ontario Regulation 178/11. Table 3.7 presents the profile of the 25 plans based on their most current valuation report.

**Table 3.7 – Plans covered by Reg. 178/11 based on the most current filed valuation report**

# of Plans	Active Members	Retired Members	Other Participants	Total Participants	Market Value Of Assets	Going Concern Liabilities	Solvency Liabilities
					(\$ Millions)		
25	87,195	59,931	17,684	164,810	33,121	36,228	37,130
Average Age	46.3	74.5	49.6	56.9			

## 4.0 TRENDS ANALYSIS

The following trends analysis incorporates data from all filed reports with valuation dates between July 1, 2010 and June 30, 2014.

### 4.1 Solvency Funded Status

Table 4.1 shows a breakdown of plans by solvency ratios for the following valuation periods:<sup>14</sup>

- 2010 Valuation Period denotes valuation dates between July 1, 2010 and June 30, 2011
- 2011 Valuation Period denotes valuation dates between July 1, 2011 and June 30, 2012
- 2012 Valuation Period denotes valuation dates between July 1, 2012 and June 30, 2013
- 2013 Valuation Period denotes valuation dates between July 1, 2013 and June 30, 2014

The majority of plans have a valuation date of either December 31 or January 1. Plans that have solvency concerns are required to file valuation reports annually. Having filed a report in more than one of the valuation periods noted above, they would be represented in more than one valuation period.

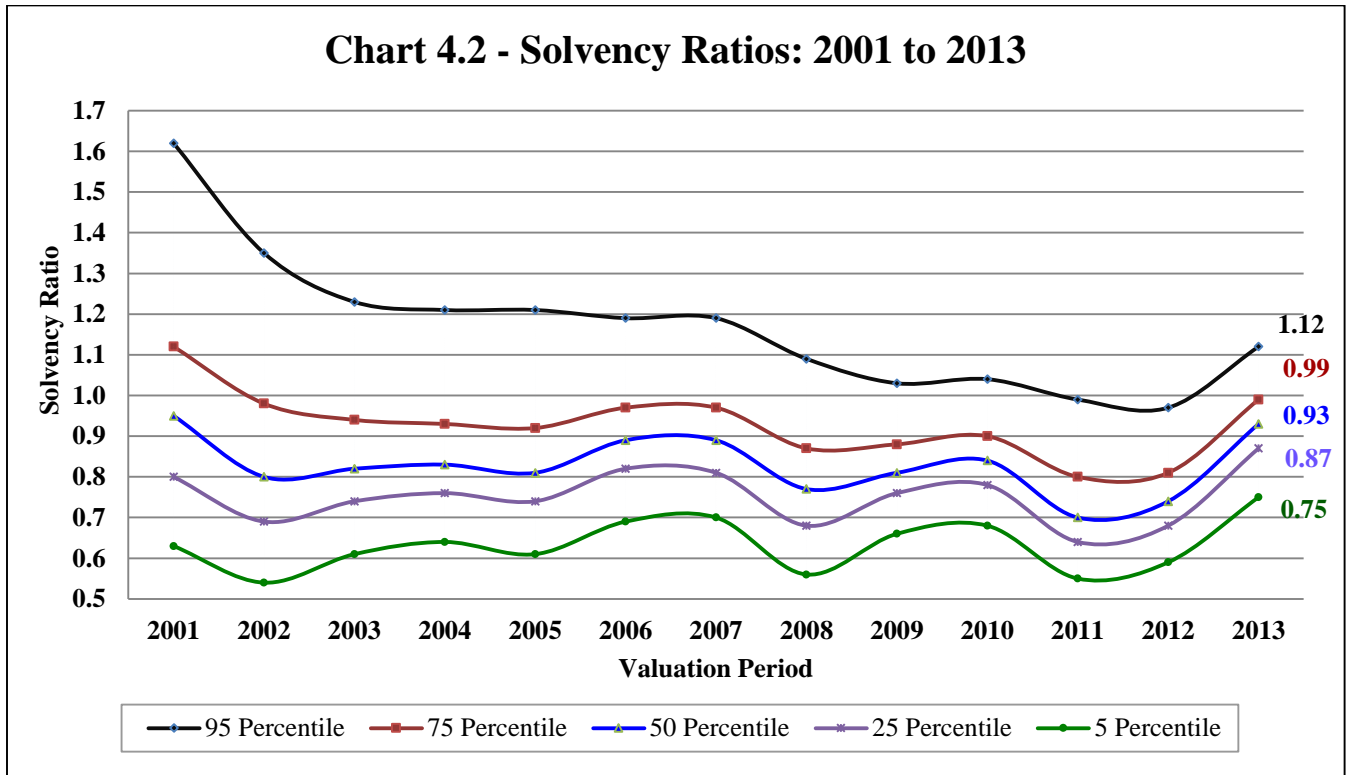
**Table 4.1 - Solvency Ratios by Valuation Period**

Solvency Ratio (SR)	2010		2011		2012		2013	
	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans
SR < 0.60	392	44.3%	53	10.6%	49	6.8%	7	0.6%
0.60 ≤ SR < 0.80	138	15.5%	329	66.0%	474	66.0%	87	7.9%
<b>Sub-Total &lt; 0.8</b>	<b>530</b>	<b>59.8%</b>	<b>382</b>	<b>76.6%</b>	<b>523</b>	<b>72.8%</b>	<b>94</b>	<b>8.5%</b>
0.80 ≤ SR < 0.85	117	13.2%	46	9.3%	71	9.9%	113	10.3%
0.85 ≤ SR < 0.90	95	10.7%	26	5.3%	60	8.4%	217	19.8%
0.90 ≤ SR < 1.00	93	10.5%	24	4.8%	37	5.2%	416	37.9%
<b>Sub-Total &lt; 1.00</b>	<b>835</b>	<b>94.2%</b>	<b>478</b>	<b>96.0%</b>	<b>691</b>	<b>96.3%</b>	<b>840</b>	<b>76.5%</b>
1.00 ≤ SR < 1.20	35	4.0%	14	2.8%	14	1.9%	232	21.1%
SR ≥ 1.20	16	1.8%	6	1.2%	13	1.8%	26	2.4%
<b>Total</b>	<b>886</b>	<b>100.0%</b>	<b>498</b>	<b>100.0%</b>	<b>718</b>	<b>100.0%</b>	<b>1,098</b>	<b>100.0%</b>
Median Ratio	0.85		0.70		0.73		0.93	

Table 4.1 shows that the solvency ratios improved during the 2012 and 2013 Valuation Periods, after having deteriorated in the 2011 Valuation Period. The percentage of plans with a solvency ratio less than 0.85 has decreased dramatically from 82.7% in 2012 to 18.8% in 2013. The proportion of underfunded plans on a solvency basis (i.e., a solvency ratio less than 1.0) also decreased significantly from 96.3% in 2012 to 76.5% in 2013.

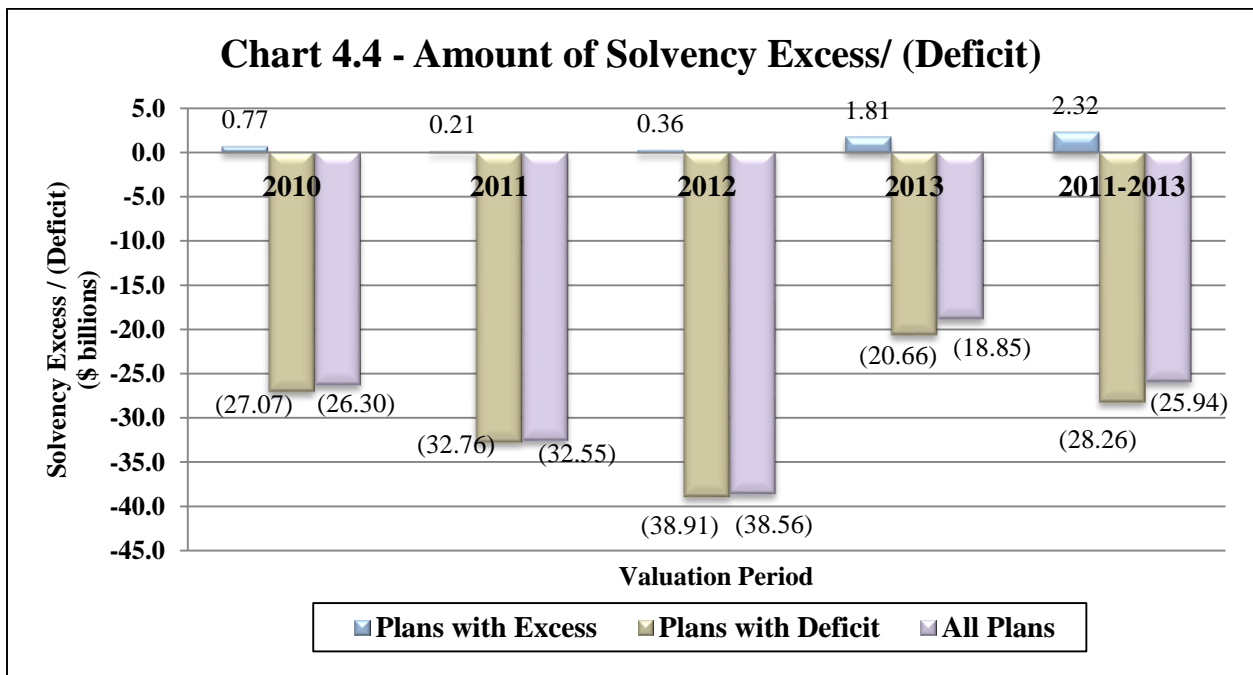
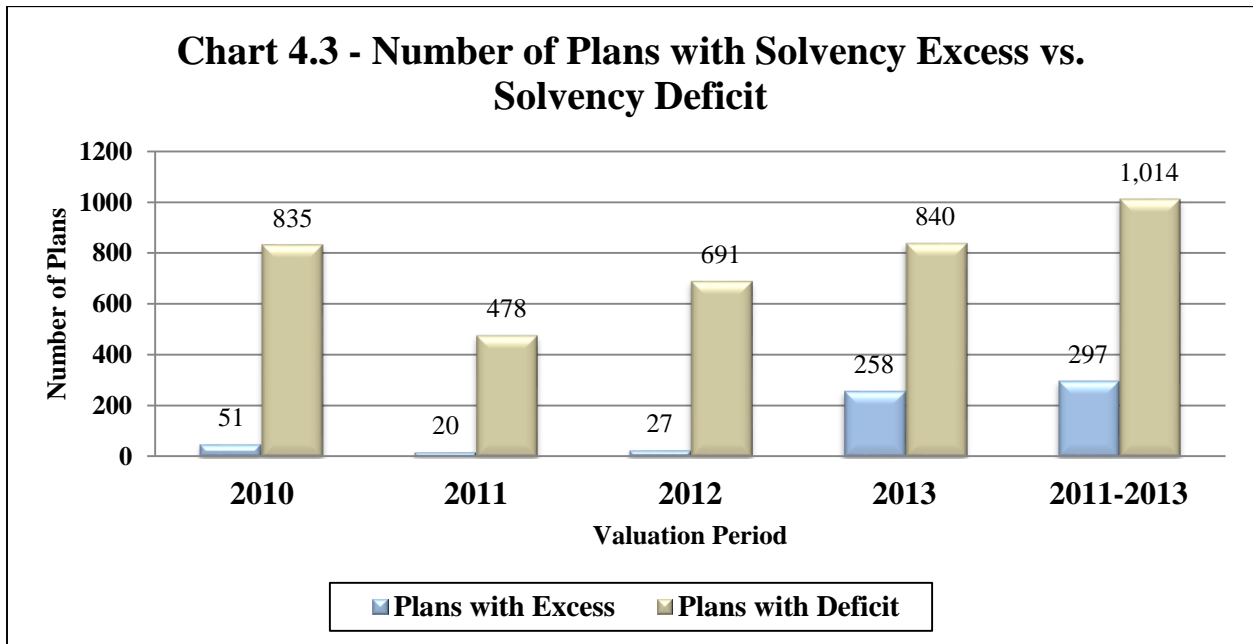
<sup>14</sup> The number of plans for 2010-2011 inclusive may differ from those reported in the 2013 Report due to (a) reports filed after last year's cutoff date of Dec 31, 2014, and (b) plans that have been wound up, converted to a DC arrangement, or became a Frozen DB plan with no DB/DC accruals.

Chart 4.2 shows the distribution of solvency ratios at different percentiles from 2001 to 2013. Since the 2007 valuation period, the solvency ratios of pension plans have been volatile. Of note, the solvency ratios, at most percentiles, for the 2013 valuation period are at their highest levels since 2001, the earliest valuation period for which data is available.





Charts 4.3 and 4.4 compare plans with a solvency excess to those with a solvency deficit for each of the four valuation periods from 2010 to 2013, as well as for the three-year valuation period of 2011 to 2013.<sup>15</sup> Chart 4.3 compares the number of plans and Chart 4.4 compares the amount of solvency excess or deficit. The number of plans with solvency excesses has remained well below the number of plans with solvency deficits.



<sup>15</sup> Individual valuation periods include those plans that filed a report with a valuation date that fell during that individual period. The 2011-13 period includes only the last funding valuation report filed for a plan with a valuation date falling between July 1, 2011 and June 30, 2014. The total number of plans included in each of the 2011, 2012 and 2013 valuation periods is therefore higher than the number of plans included in the combined period 2011-2013.

On a dollar amount basis, the latest filed reports during 2011-2013 valuation periods (i.e., July 1, 2011 to June 30, 2014) revealed a *net* solvency deficit of \$25.94 billion (after allowance for expenses) on solvency liabilities of \$199.29 billion. This represents the total level of underfunding for the 1,311 DB plans analyzed in the 2014 Report, exclusive of the seven large public sector plans and the other excluded plans previously described. In contrast, the *net* solvency deficit shown in the 2013 Report was \$47.53 billion for the prior three valuation periods (i.e. July 1, 2010 to June 30, 2013). While the \$21.59 billion decrease in the net solvency deficit resulted from reports filed in the 2013 valuation period, note that these reports could potentially capture actuarial gains and losses over the last three years, depending on when the previous valuation report was filed for any particular plan.

Under the Regulation, where a valuation report filed with FSCO discloses that a solvency deficiency exists, the employer is required to make special payments to eliminate the deficiency within five years. These rules are modified for plans that availed themselves of either the solvency relief measures, or that are being treated as SOMEPPs.

Ontario's legislation allows certain benefits (e.g., post-retirement indexation, consent benefits, excluded plant closure and excluded permanent layoff benefits) to be excluded in the determination of solvency liabilities. There were 250 plans that excluded one or more of these benefits, resulting in a reduction of liabilities totaling \$21.10 billion. Thus, the total *wind up* funding shortfall for those plans that filed a report with valuation dates between July 1, 2011 and June 30, 2014 would have exceeded their *net* solvency deficit by the same amount. This translates into a wind up funding deficit of \$47.04 billion (\$25.94 billion plus \$21.10 billion), after making allowances for expenses, on wind up liabilities of \$220.39 billion. It measures the funding shortfall of all the plans in the database if they were to have wound up at their last valuation dates. Of course, this only depicts a hypothetical scenario as the majority of pension plans continue operating on a going concern basis.

## 4.2 Actuarial Assumptions

### Going Concern Interest Rate

Table 4.5 shows the interest rate assumptions used in the going concern valuations. Since 2010, there has been a trend to use a lower interest rate assumption. This downward trend has been reported since FSCO started publishing trend statistics. However, for the first time, the average has not decreased in the last period but instead has remained flat.

**Table 4.5 - Interest Rate Assumption by Valuation Period**

Rate (%)	2010		2011		2012		2013	
	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans
Rate < 4.00	3	0.3%	17	3.4%	21	2.9%	35	3.2%
4.00 ≤ Rate < 4.50	15	1.7%	15	3.0%	35	4.9%	45	4.1%
4.50 ≤ Rate < 5.00	34	3.8%	38	7.6%	75	10.4%	108	9.8%
5.00 ≤ Rate < 5.50	130	14.7%	99	19.9%	153	21.3%	257	23.4%
5.50 ≤ Rate < 6.00	243	27.4%	158	31.7%	263	36.7%	407	37.1%
6.00 ≤ Rate < 6.50	379	42.9%	144	29.0%	140	19.5%	216 <sup>†</sup>	19.7%
6.50 ≤ Rate < 7.00	80	9.0%	27	5.4%	31	4.3%	30	2.7%
Rate ≥ 7.00	2	0.2%	0	0.0%	0	0.0%	0	0.0%
<b>Total</b>	<b>886</b>	<b>100.0%</b>	<b>498</b>	<b>100.0%</b>	<b>718</b>	<b>100.0%</b>	<b>1,098</b>	<b>100.0%</b>
Average (%)	5.77%		5.51%		5.40%		5.40%	

<sup>†</sup> Of the 216 plans that used a going concern interest rate assumption in the range of 6.0% to 6.49%, 170 plans used an interest rate of exactly 6.0%.

The average of the assumed interest rates declined from 5.77% to 5.40% over the period July 1, 2010 to June 30, 2014. As has been the case since the 2011 valuation period, the most prevalent assumed interest rates remained within the 5.50% to 5.99% range.

The proportion of plans using an interest rate assumption of 6.00% or higher has decreased each period, from 52.1% of plans in the 2010 valuation period to 22.3% in the 2013 valuation period. Of the 2013 valuations filed, 93.0% of them used an assumed interest rate at or below 6.00%.

### Solvency Interest Rates

Chart 4.6 shows the non-indexed commuted value basis over the preceding five year period based on the Canadian Institute of Actuaries' Standards of Practice – Practice Specific Standards for Pension Plans.

Chart 4.7 shows the non-indexed interest rates for annuity purchases for the same five year period as set out in the Canadian Institute of Actuaries' Educational Notes which provide guidance for Assumptions for Hypothetical Wind up and Solvency Valuations. Effective June 30, 2013, the Canadian Institute of Actuaries began issuing their guidance based on the duration of the liabilities expected to be settled through the annuity purchase. The chart shows estimated interest rates based on liabilities with a medium duration, where applicable.

The Government of Canada (GoC) bond yields used in calculating the non-indexed commuted value interest rates and non-indexed annuity proxy interest rates have declined over the period from January 2008 to December 2014.

The Canadian Institute of Actuaries also updated the mortality table for the commuted value basis and the annuity proxy basis during this period, from a static table to one that takes into account future mortality improvements. The 1994 Uninsured Pensioner Mortality Table with generational improvements using projection Scale AA (“UP94 Generational”) assumes that mortality rates will continue to decrease over time.

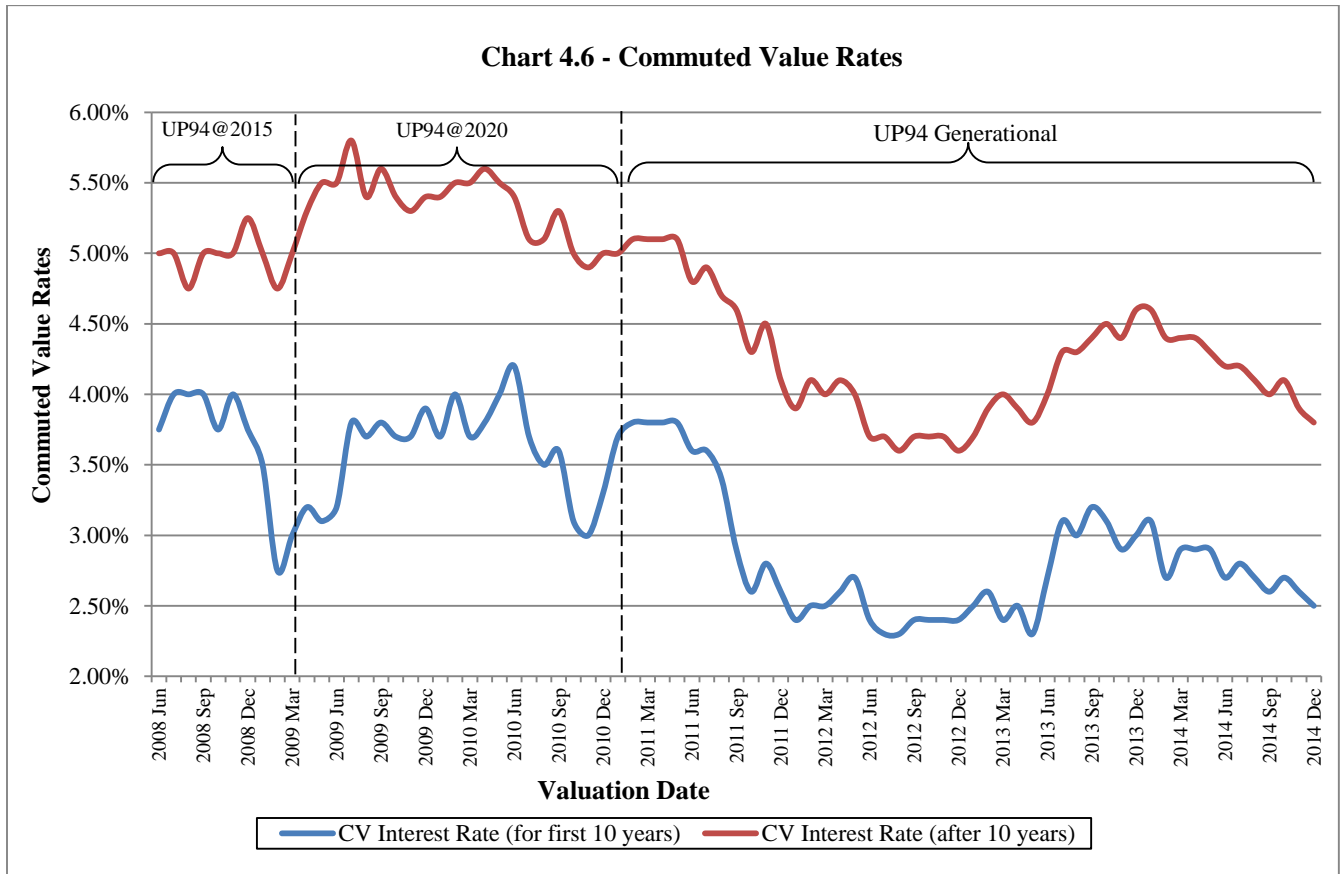
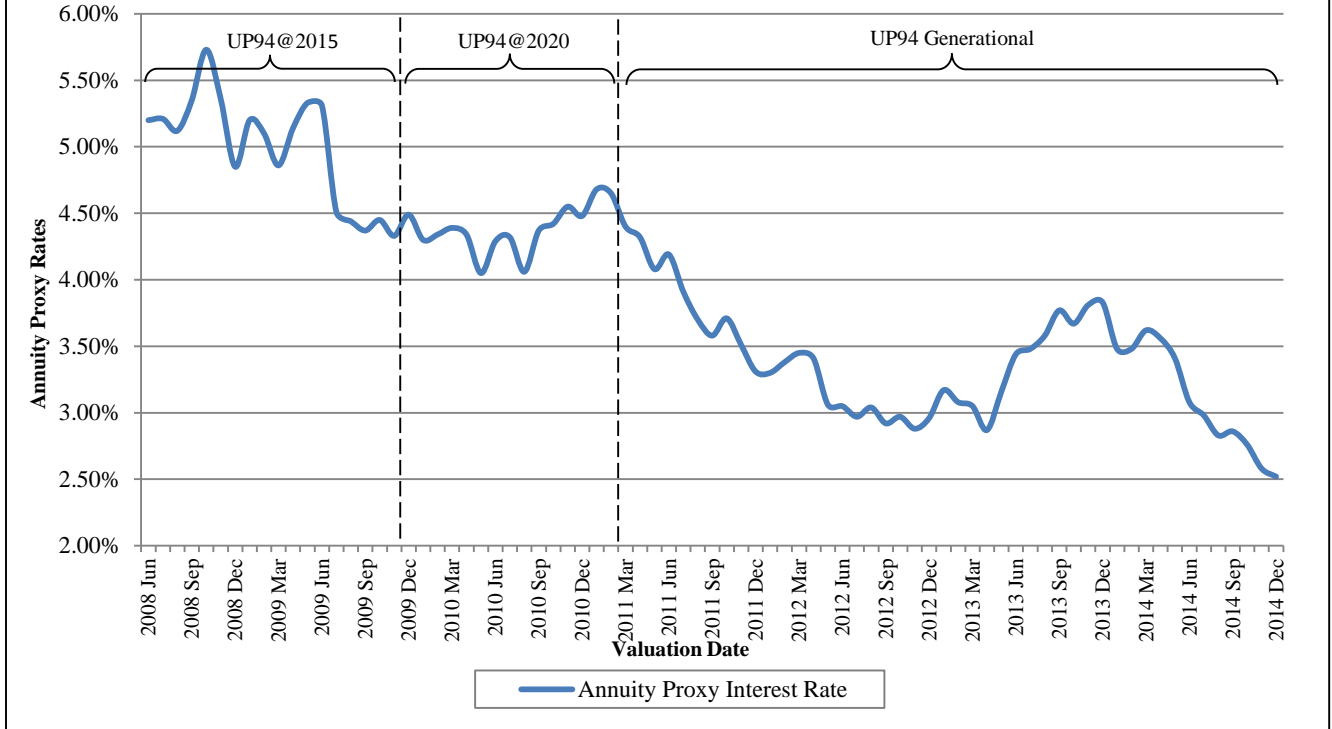


Chart 4.7 - Annuity Proxy Rates



## Mortality Basis

Table 4.8 shows the distribution of the mortality tables used in going concern valuations. Starting in the 2011 valuation period, all plans used a mortality table with a base year of 1994 or later, i.e., the 1994 tables (GAM, GAR, UP).

The majority of plans have begun using the Canadian pensioners' mortality tables (CPM-RPP2014) and improvement scales published on February 13, 2014 by the Canadian Institute of Actuaries (CIA) in their final report on Canadian pensioners' mortality (CPM) (the 2014 CIA CPM Study). The Canadian pensioners' mortality tables and improvement scales are based on experience studies conducted by the CIA.

**Table 4.8 - Mortality Assumption by Valuation Period**

Mortality Assumption	2010		2011		2012		2013	
	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans
1994 GAM static	10	1.1%	2	0.4%	0	0.0%	2	0.2%
1994 GAR	8	0.9%	3	0.6%	6	0.8%	0	0.0%
1994 UP	793	89.5%	432	86.8%	624	87.0%	60	5.5%
CPM-RPP2014	0	0.0%	0	0.0%	1	0.1%	1,004	91.4%
Other <sup>16</sup>	75	8.5%	61	12.2%	87	12.1%	32	2.9%
<b>Total</b>	<b>886</b>	<b>100.0%</b>	<b>498</b>	<b>100.0%</b>	<b>718</b>	<b>100.0%</b>	<b>1,098</b>	<b>100.0%</b>

Except for the 1994 GAR table which uses generational mortality (i.e., it includes projected mortality improvements), there was insufficient information to identify whether projected mortality improvements had been incorporated into the mortality tables used for valuations. In addition, there was insufficient information to distinguish between the three CPM mortality assumptions and any possible variations of these tables. The necessary data to facilitate this analysis will be collected and this information will be shown in future reports when the data becomes available.

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<sup>16</sup> Starting in the 2011 valuation period (i.e. valuation dates on or after July 1, 2011), all plans that used "Other" mortality assumptions used a variation of other post-1994 mortality tables (e.g., a variation of the UP94 table, RP2000, etc.).

## 5.0 INVESTMENT DATA ANALYSIS

The plans included in the investment data analysis are a subset of the 1,311 plans identified in section 2 of this report. This subset consists of plans that have filed an IIS for the most recent monitoring cycle (fiscal year ends between July 1, 2013 and June 30, 2014). There are 1,291 plans included in the investment data analysis, representing 98% of the plans included in the funding data analysis.<sup>17</sup>

For hybrid plans, only the defined benefit assets are included in the data.

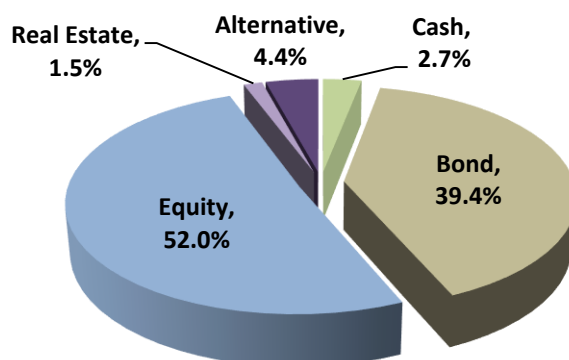
### 5.1 Summary of Pension Fund Profiles

In aggregate, the asset mix of the 1,291 pension funds for the most recent monitoring cycle is described in Table 5.1 and depicted in Chart 5.2.

**Table 5.1 – Investment Profile of All Plans as a Whole**

	Asset Class <sup>18</sup>	Market Value (\$Millions)	% of Total Investments
Asset Mix	Cash	4,833	2.7%
	Bond	70,007	39.4%
	Equity	92,320	52.0%
	Real Estate	2,636	1.5%
	Alternative Investments <sup>19</sup>	7,731	4.4%
	<b>Total</b>	<b>177,526</b>	<b>100.0%</b>

**Chart 5.2: Asset Mix of All Plans as a Single Portfolio**



On a broad basis, fixed income assets (consisting of cash and bonds) constitute 42% of total investments. Non-fixed income assets (consisting of equity, real estate and alternative investments) constitute 58% of total investments.

<sup>17</sup> The plans that are not included in the investment data analysis subset are primarily plans with outstanding IIS filings.

<sup>18</sup> Plan assets invested in pooled funds totaled \$83,515 million or 47.0% of total investments. Pooled funds are included in the asset mix of all plans based on their underlying asset classes.

<sup>19</sup> Alternative Investments include hedge funds, private equity, infrastructure, currency hedging, resource properties, commodities, etc.

## 5.2 Summary of Fund Performance

This section provides statistics on asset mix and investment performance by various categories for the latest monitoring cycle.

The 1,291 plans included in the analysis are very diverse. To illustrate the investment results for pension plans that have different characteristics, the asset mix and performance data are presented by different plan type, benefit type, plan size, solvency ratio and percentage invested in pooled funds.

In the Asset Mix section, the weight of each asset class is shown for all plans in each subgroup and for all plans as a whole.

In the Performance section, all performance numbers are determined at the individual plan level. “Average Return” means the average rate of return, net of all investment expenses. “Average investment fees” mean the average expenses paid from the pension plan that are related to managing the pension plan’s investments, expressed as a percentage of average assets during the reporting year.

### *By Plan Type*

The investment profile of SEPPs and MEPPs is given below. The asset mix and average performance returns are shown in Table 5.3a, while the percentile performance returns appear in Table 5.3b.

**Table 5.3a – Investment Results by Plan Type**

Plan Type		SEPP	MEPP	All Plans
# of Plans		1,219	72	1,291
Asset Mix	Fixed Income	43.5%	33.5%	42.2%
	Non-Fixed Income	56.5%	66.5%	57.8%
Performance	Average Return <sup>20</sup>	12.90%	14.79%	13.00%
	Average Investment Fees	0.48%	0.46%	0.48%

<sup>20</sup>The average return in this table and those in Tables 5.3-5.6 are the arithmetic (equally-weighted) average of investment returns of the pension funds in each subgroup. The average of investment returns weighted by the sizes of all pension funds is 12.53%, compared to 13.00% on an equally-weighted basis shown in this table.



**Table 5.3b – Performance Result Percentiles by Plan Type**

Plan Type	SEPP	MEPP	All Plans
<b>Investment Returns</b>			
90 <sup>th</sup> Percentile	18.19%	19.41%	18.31%
75 <sup>th</sup> Percentile	16.08%	17.46%	16.31%
Median	13.85%	15.63%	13.93%
25 <sup>th</sup> Percentile	10.57%	13.01%	10.66%
10 <sup>th</sup> Percentile	5.96%	10.24%	6.20%
<b>Investment Fees</b>			
90 <sup>th</sup> Percentile	0.87%	0.62%	0.86%
75 <sup>th</sup> Percentile	0.60%	0.50%	0.60%
Median	0.42%	0.41%	0.42%
25 <sup>th</sup> Percentile	0.29%	0.33%	0.29%
10 <sup>th</sup> Percentile	0.15%	0.28%	0.16%

**By Benefit Type**

The investment profile of pension plans with various benefit types is provided in Table 5.4.

**Table 5.4 – Investment Results by Benefit Type<sup>21</sup>**

Benefit Type		F AE	CAE	FB	Hybrid	All Plans
# of Plans		381	126	235	549	1,291
Asset Mix	Fixed Income	38.3%	39.6%	45.3%	44.4%	42.2%
	Non-Fixed Income	61.7%	60.4%	54.7%	55.6%	57.8%
Performance	Average Return	13.28%	13.26%	14.00%	12.33%	13.00%
	Average Investment Fees	0.46%	0.48%	0.50%	0.49%	0.48%

**By Plan Size**

The investment profile of pension funds of various sizes is provided in Table 5.5.

**Table 5.5 – Investment Results by Plan Size**

Size of Plan Assets		Small (<\$25 Million)	Medium (>\$25M, <\$250M)	Large (>\$250 Million)	All Plans
# of Plans		680	479	132	1,291
Asset Mix	Fixed Income	42.6%	42.8%	41.9%	42.2%
	Non-Fixed Income	57.4%	57.2%	58.1%	57.8%
Performance	Average Return	12.83%	13.25%	13.00%	13.00%
	Average Investment Fees	0.59%	0.37%	0.33%	0.48%

<sup>21</sup> MEPPs are included in the various benefit type categories to which they belong.

## By Solvency Ratio

The investment profile of pension plans with various solvency ratios is provided in Table 5.6.

**Table 5.6 – Investment Results by Solvency Ratio (SR)**

Solvency Ratio (SR)		SR < 0.85	0.85 ≤ SR < 1.0	SR ≥ 1.0	All Plans
# of Plans		292	710	289	1,291
Asset Mix	Fixed Income	41.7%	43.9%	39.2%	42.2%
	Non-Fixed Income	58.3%	56.1%	60.8%	57.8%
Performance	Average Return	12.98%	12.85%	13.41%	13.00%
	Average Investment Fees	0.54%	0.48%	0.42%	0.48%

## By Percentages Invested in Pooled Funds

The results for plans with various percentages invested in pooled funds are provided in Table 5.7.

**Table 5.7 – Investment Results by Percentage Invested in Pooled Funds**

Percentage Invested in Pooled Funds		< 20%	20% to 80%	> 80%	All Plans
# of Plans		163	217	911	1,291
Asset Mix	Fixed Income	47.3%	36.5%	42.4%	42.2%
	Non-Fixed Income	52.7%	63.5%	57.6%	57.8%
Performance	Average Return	11.71%	13.33%	13.16%	13.00%
	Average Investment Fees	0.36%	0.38%	0.53%	0.48%

## 5.3 Investment Observations

This section presents some key observations about the analyses set out in sections 5.1 and 5.2. The focus is on those findings that are both sufficiently recognizable for 2013 and commonly evident for the previous monitoring cycles. These observations are as follows:

- Larger plans pay relatively lower investment fees than smaller plans.
- Pension funds of MEPPs invested more in non-fixed income assets than SEPPs.
- The typical asset mix of pension funds changed from a fixed income/non-fixed income split of 43%/57% in 2012 to a split of 42%/58% in 2013.
- There do not seem to be significant differences in asset mix, average return and average investment fees between different benefit types.

## 6.0 2014 PROJECTIONS

### 6.1 Estimated DB Funding Contributions in 2014

Table 6.1 presents the estimated funding contributions — comprising normal costs and special payments — that are expected to be made in respect of the DB plans in 2014, including those related to defined benefit provisions under hybrid plans. The estimates are based on the information from the most recently filed reports with valuation dates between July 1, 2010 and June 30, 2014.<sup>22</sup>

**Table 6.1 - Estimated DB Funding in 2014**

	Plans with Solvency Excess	Plans with Solvency Deficit	All Plans
	(\$ Millions)	(\$ Millions)	(\$ Millions)
Number of Plans	297	1,014	1,311
Employer Normal Cost Contributions	744	2,891	3,635
Member Required Contributions	197	499	696
<b>Sub-total</b>	<b>941</b>	<b>3,390</b>	<b>4,331</b>
Special Payments	186	3,928	4,114
<b>Total</b>	<b>1,127</b>	<b>7,318</b>	<b>8,445</b>

The total DB funding contributions in 2014 are estimated to be \$8.4 billion, which is 13% lower than the estimated contributions of \$9.6 billion for 2013, as set out in the 2013 Report. The decrease of \$1.2 billion consists of the following changes:

- a decrease of 1.3 billion in the required special payments; and
- an increase of \$122 million in the required employer normal cost and member contributions.

The special payments of \$4.1 billion represents 49% of the total estimated 2014 funding contributions of \$8.4 billion.

The table also provides a breakdown of the estimated funding contributions between plans that had a solvency excess and plans that had a solvency deficit. The total special payments of \$186 million for plans with a solvency excess represent 17% of the total contributions of \$1.1 billion for these plans. This compares with the total special payments of \$3.9 billion for plans with a solvency deficit, representing about 54% of the total contributions of \$7.3 billion for these plans.

The estimated 2014 funding contributions are determined without considering the existence of a prior year credit balance or funding excess, which can be used to reduce required contributions during the valuation period. A total of \$2.7 billion of prior year credit balances were reported for 214 plans that had a non-zero prior year credit balance.

<sup>22</sup> For plans where the AIS reported contributions did not extend to the end of 2014, the 2014 estimated contributions were determined assuming contributions would continue at the same rate as that reported for the valuation period.

## 6.2 Projected Solvency Position as at December 31, 2014

This section presents a projection of the solvency funding position of DB plans to the end of 2014. The projection reflects the impact of investment returns, changes in the solvency interest rates and the special payments expected to be made during 2014. The methodology and assumptions used are described below.

### *Methodology and Assumptions*

The results reported in the last filed valuation reports (i.e., assets and liabilities) were projected to December 31, 2014 to reflect investment returns and the changes in the solvency valuation bases. These projections were based on the following assumptions:

- Sponsors would use all available funding excess and prior year credit balance, subject to any statutory restrictions, for contribution holidays.
- Sponsors would make the normal cost contributions and special payments, if required, at the statutory minimum level.
- 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 reflected.

The median investment returns of pension funds (shown in Table 6.2) were used to project the market value of assets. The actual investment performance of individual plans was not reflected.

**Table 6.2 – Median Pension Fund Returns**

<b>Year</b>	<b>Annual Rate of Return<sup>23</sup></b>
2010	10.4%
2011	0.5%
2012	9.4%
2013	14.2%
2014	10.7%

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<sup>23</sup> For years 2010 to 2013, the rates are the median investment returns of pension funds provided in the Canadian Institute of Actuaries' *A Report on Canadian Economic Statistics 1924-2013*, dated May 2014. The rate for 2014 is derived from a representative weighted average of the 2014 return on the S&P/TSX index (30%), the MSCI World index (25%), and the FTSE TMX Universe Bond index (45%).

**Table 6.3 – Actuarial Basis for Projected Solvency Liabilities**

Valuation Date	Commuted Value Basis <sup>24</sup>	Annuity Purchase Basis <sup>25</sup>
December 31, 2013	Interest: 3.00% for 10 years, 4.60% thereafter Mortality: 1994 UP generational	Interest: 3.83% Mortality: 1994 UP generational
December 31, 2014	Interest: 2.50% for 10 years, 3.80% thereafter Mortality: 1994 UP generational	Interest: 2.52% Mortality: 1994 UP generational

### **Projection Results**

Table 6.4 presents the distribution of solvency ratios that were reported in the last filed valuation reports and the distribution of projected solvency ratios (PSRs) derived from the projected assets and liabilities.

**Table 6.4 - Distribution of Solvency Ratios**

Distribution of Solvency Ratio	As at Last Filed Valuation	PSR as at December 31, 2013 <sup>26</sup>	PSR as at December 31, 2014
10 <sup>th</sup> percentile	80%	81%	76%
25 <sup>th</sup> percentile	86%	87%	81%
<b>50<sup>th</sup> percentile</b>	<b>92%</b>	<b>94%</b>	<b>88%</b>
75 <sup>th</sup> percentile	99%	102%	94%
90 <sup>th</sup> percentile	106%	111%	103%

As shown in Table 6.4, the median PSR is projected to decrease from 94% to 88% between December 31, 2013 and December 31, 2014. In general, the change, if any, in the median PSR is the net effect of the following factors:

- assumed pension fund returns in 2014 being higher than the solvency valuation discount rates used at December 31, 2013;
- the extent by which expected contributions made during 2014 were different than the increase in solvency liabilities due to benefit accruals in 2014; and
- the change in the solvency valuation interest rates used to calculate the solvency liabilities as at December 31, 2014. Both the commuted value interest rates and the annuity purchase interest rate as at December 31, 2014 are lower compared to their respective rates as at December 31, 2013.

<sup>24</sup> The commuted value basis used for the December 31, 2013 and December 31, 2014 solvency projections in this report is based on the Canadian Institute of Actuaries' Standards of Practice – Practice-Specific Standards for Pension Plans, Section 3500 on Pension Commuted Values, dated June 2010.

<sup>25</sup> The interest rates for annuity purchases as at December 31, 2013 and December 31, 2014 are based on the recommendations set out in the Canadian Institute of Actuaries' Educational Notes (EN) providing guidance for Assumptions for Hypothetical Wind UP and Solvency Valuations. Specifically, the January 2014 EN is used for December 31, 2013 and the January 2015 EN is used for December 31, 2014. The rate for both valuation dates is calculated as the December CANSIM V39062 rate plus 30 bps.

<sup>26</sup> The projected solvency ratios as at December 31, 2013 have been restated due to the adoption of a revised projection methodology for the 2014 Report.

## 7.0 GLOSSARY

The following terms are explained for the purpose of this report:

**Defined Benefit Pension Plan:** In a defined benefit pension plan, the amount of the pension benefit is determined by a defined formula, usually based on years of service. There are several types of defined benefit plans, including:

- **Final Average** – the benefit is based on the member’s average earnings over the member’s last several years (typically 3 or 5) of employment and years of service.
- **Career Average** – the benefit is based on the member’s earnings over the member’s entire period of service.
- **Flat Benefit** – the benefit is based on a fixed dollar amount for each year of service.

**Defined Contribution Pension Plan:** In a defined contribution plan, the pension benefit is based solely on the amount of pension that can be provided by the amount contributed to the member’s individual account together with any expenses and investment returns allocated to that account.

**Frozen Hybrid:** Pension plans in which members have a frozen defined benefit entitlement, but are accruing future defined contribution benefits.

**Funded Ratio:** The funded ratio of a plan is the ratio of the plan’s assets to the plan’s liabilities.

**Funding Valuation:** This is a valuation of a defined benefit pension plan prepared for funding purposes. Two types of valuations are required by the PBA: a *going concern* valuation (which assumes the pension plan will continue indefinitely); and a *solvency* valuation (which assumes the plan would be fully wound up as at the effective date of the valuation). Under Ontario’s legislation, a solvency valuation may exclude the value of specified benefits (e.g., indexation, prospective benefit increases, or plant closure/layoff benefits).

**Hybrid Pension Plan:** A hybrid pension plan contains both defined benefit and defined contribution provisions. A member’s pension benefit may be a combination of the defined benefit plus the defined contribution entitlement or a pension benefit which is the greater of the defined benefit entitlement or the defined contribution entitlement.

**Investment Return:** The rate of return on the pension fund for the reporting year, net of all investment expenses.

**Liability and Asset Valuation Methods:** These are the actuarial methods used by actuaries to value the liabilities and assets of a pension plan.

**Multi-Employer Pension Plan (MEPP):** A multi-employer pension plan covers the employees of two or more unrelated employers and is specifically defined in the PBA. These plans may provide defined benefits but the required contributions are negotiated and fixed through collective bargaining.

**Solvency Concerns:** A valuation report indicates solvency concerns if any of the following circumstances exist, except for certain plans exempted by the Regulation:

- The employer has elected under subsection 5(18) of the Regulation to exclude plant closure benefits or permanent layoff benefits from the determination of solvency liabilities;
- The solvency ratio is less than 80% if the valuation date is before December 31, 2012, or less than 85% if the valuation date is on or after December 31, 2012;
- The solvency liabilities exceeds the solvency assets by more than \$5 million for a valuation date before December 31, 2012, and:
  - The solvency ratio is less than 90% if the valuation date is before December 31, 2010, or
  - The solvency ratio is less than 85% if the valuation date is on or after December 31, 2010;

**Smoothed Market Value:** The smoothed market value is determined by using an averaging method that stabilizes short-term fluctuations in the market value of plan assets, normally calculated over a period of not more than five years.

**Solvency Ratio or Solvency Funded Ratio:** The ratio of the solvency assets to the solvency liabilities of the pension plan.

## 8.0 APPENDIX – ADDITIONAL INFORMATION FOR PLANS IN FUNDING DATA ANALYSIS

This appendix provides additional details of the profile of the plans that have been included in the funding data analysis. The data consists of DB pension plans that have filed valuation reports with valuation dates between July 1, 2011 and June 30, 2014. Please refer to **Section 2.0 – Funding Data Analysis** of this report for details of how the data was compiled.

Table 8.1 shows a reconciliation of the 1,361 plans analyzed in the 2013 Report to the 1,311 plans analyzed in the 2014 Report.

**Table 8.1 – Reconciliation of Plans from the 2013 Report to the 2014 Report**

Plan Type:	Final Average	Career Average	Flat Benefit	Hybrid	Frozen Hybrid	MEPP	TOTAL
<b>2013 Report</b>	<b>425</b>	<b>132</b>	<b>202</b>	<b>391</b>	<b>135</b>	<b>76</b>	<b>1,361</b>
New plans / Spin-offs	1		1				2
Previously registered outside of Ontario	1			1	1		3
Change to Non-designated Status					1		1
Filed outstanding report *				2	1		3
Previously excluded					1		1
<u>Change in Benefit Type</u>							
• FAE	(17)			10	7		0
• CAE	1	(14)		6	7		0
• FB			(9)	7	2		0
• Hybrid		1	1	(23)	21		0
Frozen DB (excluded from analysis)	(15)	(3)	(1)	(2)	(3)		(24)
Wind up (excluded from analysis)	(8)	(4)	(4)	(3)	(4)	(1)	(24)
Change to Designated Status	(1)			(1)			(2)
Plan merger			(2)				(2)
Registration changed to outside of Ontario	(2)			(1)		(1)	(4)
DC conversion					(1)		(1)
Outstanding report	(1)			(1)		(1)	(3)
<b>2014 Report</b>	<b>384</b>	<b>112</b>	<b>188</b>	<b>386</b>	<b>168</b>	<b>73</b>	<b>1,311</b>

\* These are plans that were not included in last year's analysis because they did not file a funding valuation report with a valuation date between July 1, 2010 and June 30, 2013. They have since filed a funding valuation report with a valuation date between July 1, 2011 and June 30, 2014.



Table 8.2 compares the number of plans analyzed in the current report with the plans analyzed in previous reports.

**Table 8.2 – Plans Included in Current and Previous Reports by Plan/Benefit Type**

Year	Final Average	Career Average	Flat Benefit	Hybrid	Frozen Hybrid	MEPP	Total	Total Membership
2014	384	112	188	386	168	73	1,311	1,833,773
2013	425	132	202	391	135	76	1,361	1,860,156
2012	455	140	216	387	113	76	1,387	1,832,800
2011	491	152	234	381	110	70	1,438	1,828,604
2010	548	172	262	371	83	70	1,506	1,866,444
2009	640	197	322	310	n/a	70	1,539	1,899,155
2008	619	220	338	315	n/a	72	1,564	1,867,653
2007	663	236	362	292	n/a	79	1,632	1,880,563
2006	730	271	394	224	n/a	79	1,698	1,863,433
2005	805	293	424	127	n/a	73	1,722	1,801,895
2004	839	292	422	86	n/a	79	1,718	1,765,255

Table 8.3 shows a breakdown of the number of plans by size of plan membership.

**Table 8.3 – Number of Plans by Size of Membership in Plan**

Number of Members in Plan	Non-MEPP	MEPP	Total
0 – 49	220	-	220
50 – 99	184	2	186
100 – 249	290	4	294
250 – 499	205	4	209
500 – 999	141	12	153
1,000 – 4,999	161	27	188
5,000 – 9,999	25	10	35
10,000 +	12	14	26
<b>Total</b>	<b>1,238</b>	<b>73</b>	<b>1,311</b>

Table 8.4 shows a breakdown of the total members covered by size of plan membership.

**Table 8.4 – Total Membership by Size of Membership in Plan**

<b>Number of Members in Plan</b>	<b>Non-MEPP</b>	<b>MEPP</b>	<b>Total</b>
0 – 49	5,929	-	5,929
50 – 99	13,804	157	13,961
100 – 249	47,056	660	47,716
250 – 499	72,640	1,435	74,075
500 – 999	97,761	8,420	106,181
1,000 – 4,999	329,077	65,335	394,412
5,000 – 9,999	175,030	76,989	252,019
10,000 +	219,342	720,138	939,480
<b>Total</b>	<b>960,639</b>	<b>873,134</b>	<b>1,833,773</b>

### Acronyms

AIS	Actuarial Information Summary
CAE	Career Average Earnings
DB	Defined Benefit
DC	Defined Contribution
FAE	Final Average Earnings
FB	Flat Benefit
FSCO	Financial Services Commission of Ontario
FR	Funded Ratio
IIS	Investment Information Summary (Form 8)
MEPP	Multi-Employer Pension Plan
PBA	Pension Benefits Act (Ontario)
PSR	Projected Solvency Ratio
SEPP	Single Employer Pension Plan
SR	Solvency Ratio
SOMEPP	Specified Ontario Multi-Employer Pension Plan