
**2013 Report on the
Funding of Defined Benefit Pension Plans in Ontario**

*Overview and Selected Findings
2010-2013*

Financial Services Commission of Ontario

March 2014

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2013 Report on the Funding of Defined Benefit Pension Plans in Ontario

Overview and Selected Findings 2010-2013

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 only for the pension plans included in the study. 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, 2010 and June 30, 2013, and financial statements for the fiscal year ending between July 1, 2012 and June 30, 2013. For the purposes of the trends analysis, data was drawn from the reports filed for DB pension plans with valuation dates between July 1, 2009 and June 30, 2013.

1.1 Risk-Based Monitoring

In July 2000, FSCO implemented a risk-based approach to monitor the funding of DB pension plans.¹ 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).² 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.³ 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

¹ 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>

² 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.

³ 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 investment 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 2011.⁴

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 current risk-based 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).

⁴ 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. The Regulation was also amended to provide for a filing extension to February 28, 2013 for reports with a valuation date that is on or after September 30, 2011 and before May 31, 2012. 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.⁵

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. This is FSCO's 2013 Report, its tenth annual report on the funding and investment of DB pension plans in Ontario.

⁵ 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 2013 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, 2010 and June 30, 2013. 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. Overall, the funded position of pension plans is not significantly different than what was reported in the 2012 Report on the Funding of Defined Benefit Pension Plans in Ontario (the 2012 Report).⁶ Interestingly, the direction of change is different for the results on a going concern basis and the results on a solvency basis. In particular:
 - ❖ the median funded ratio on a *going concern* basis has increased from 99% to 100%, and
 - ❖ the median funded ratio on a *solvency* basis has decreased from 84% to 82%.
2. Compared to the 2012 Report, there was a decrease in the percentage of plans that were less than fully funded on a going concern basis and an increase in the percentage of plans that were less than fully funded on a solvency basis at their last valuation date. Specifically:
 - ❖ 50% of the plans were less than fully funded on a going concern basis (versus 54% in the 2012 Report), and
 - ❖ 91% of the plans were less than fully funded on a solvency basis (versus 89% in the 2012 Report).
3. 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 (approximately two-thirds used a market value and one-third used a smoothed market value).
 - ❖ The average interest rate assumption used for going concern valuations decreased from 6.01% to 5.38% over a four-year period, based on reports with valuation

⁶ FSCO's 2012 Annual Report on the Funding of Defined Benefit Pension Plans in Ontario is available at: <https://www.fsrao.ca/media/10451/download>

dates from July 1, 2009 to June 30, 2013. The reports included in our analysis with valuation dates between July 1, 2012 and June 30, 2013 showed that 92.6% used an interest rate at or below 6.0%.

- ❖ All of the plans with valuation dates between July 1, 2011 and June 30, 2013 used a mortality table with a base year of 1994 or later.

Projected Solvency Ratio as at December 31, 2013

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, 2013, 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 82% 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, 2012 and December 31, 2013 was estimated to be 73% and 94% 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 report dates to the projection date;
 - ❖ the effect of changes in mortality assumptions from the valuation report dates to the projection date; and
 - ❖ the required contributions determined in accordance with the PBA.
3. The minimum required contributions for 2013— including employer normal cost, member required contributions and special payments — are estimated to increase by 9% from \$8.8 billion for 2012 to \$9.6 billion for 2013.

Temporary Funding Relief Data

The statistics on the utilization of the temporary funding relief measures as of December 31, 2013 are as follows:

- ❖ Of the 76 MEPPs that contain a defined benefit provision, 50 plans have elected to be treated as a SOMEPP. These 50 MEPPs represent 94% of the total plan membership covered by the 76 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. In total, 452 plans

(excluding designated plans) or approximately one-third of the eligible plans elected to use one or more of the funding relief options.

- ❖ Of the 1,361 DB pension plans and 167 Frozen DB Plans that are in our database, 850 plans are eligible for the temporary solvency funding relief introduced on November 1, 2012 and have filed their solvency relief report under these provisions. Of these 850 eligible plans, 201 (24%) 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. Currently, there are 25 pension plans named in Schedule 1 and three 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, 2013, 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, 2013 is 74%. In comparison, the median solvency ratio for reports with valuation dates in the 12-month period ending June 30, 2011 and June 30, 2012 are 84% and 70% respectively.

Of the 689 pension plans that filed a report with a valuation date between July 1, 2012 and June 30, 2013, 497 (72.1%) have a solvency ratio of less than 80%. In comparison, the percentage of plans with a solvency ratio of less than 80% in the two 12-month periods ending June 30, 2011 and June 30, 2012 are 32.9% and 75.6% respectively.

Investment Data

1. The typical asset mix of pension funds changed from a fixed income/non-fixed income split of 45%/55% in 2011 to a split of 43%/57% in 2012.
2. Large plans have higher average return and lower investment fees than small plans.
3. MEPPs generally invested more of their pension funds in non-fixed income assets but did not achieve better performance 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, 2010 and June 30, 2013. The data was compiled from the AIS and valuation reports that FSCO received on or before the data cutoff date of December 31, 2013.

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.⁷

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.

A total of 1,361 pension plans have been included in the database used for the funding data analysis. Tables 2.1a and 2.1b present a profile of these plans and the valuation date of their most recently filed reports. Additional details on the plans that were analyzed are in section 8.0 of this report.

Table 2.1a - Summary of Included Plans

Plan/ Benefit Type	# of Plans	Active Members	Retired Members	Other Participants	Total Participants	Market Value of Assets (\$ Millions)
Final Average	425	159,695	106,504	43,343	309,542	53,974
Career Average	132	22,518	15,681	9,339	47,538	3,439
Flat Benefit	202	55,145	93,713	24,662	173,520	25,319
Hybrid	391	162,660	158,123	81,109	401,892	46,382
Frozen Hybrid	135	23,905	27,326	11,651	62,882	4,636
MEPP	76	373,989	108,941	381,852	864,782	21,070
Total	1,361	797,912	510,288	551,956	1,860,156	154,820
Average Age		49.1	70.0	47.8		

⁷ 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 2.1b – Valuation Date of Most Recently Filed Report

	July 1, 2010 to June 30, 2011	July 1, 2011 to June 30, 2012	July 1, 2012 to June 30, 2013	July 1, 2010 to June 30, 2013
Number of plans	533	144	684	1,361
Percentage of plans	39%	11%	50%	100%

Table 2.2 below summarizes the profiles of 167 Frozen DB Plans and seven large public sector plans that were excluded from the database. There are 82 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)
Public Sector Pension Plans	Large Public Sector	7	737,564	408,516	147,768	1,293,848	267,658
	Average Age		45.0	70.9	53.4		
Frozen DB Plans	No Future DB/DC accruals	167	8,174	26,289	8,216	42,679	5,209
	Average Age		49.7	75.1	51.2		

2.1 Summary of Funding Data

Of the 1,361 plans that were analyzed, which together cover 1,860,156 plan members, 687 plans (50%) were less than fully funded on a going concern basis. These 687 underfunded plans cover 1,300,179 (70%) of the total plan members.

On a solvency basis, 1,240 plans (91%) of the 1,361 plans were less than fully funded and cover 1,766,560 plan members (95% 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	425	237	56%
Career Average	132	57	43%
Flat Benefit	202	68	34%
Hybrid	391	205	52%
Frozen Hybrid	135	75	56%
MEPP	76	45	59%
Total	1,361	687	50%

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	309,542	187,849	61%
Career Average	47,538	12,393	26%
Flat Benefit	173,520	100,476	58%
Hybrid	401,892	217,412	54%
Frozen Hybrid	62,882	46,769	74%
MEPP	864,782	735,280	85%
Total	1,860,156	1,300,179	70%

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	425	382	90%
Career Average	132	127	96%
Flat Benefit	202	191	95%
Hybrid	391	354	91%
Frozen Hybrid	135	118	87%
MEPP	76	68	89%
Total	1,361	1,240	91%

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	309,542	295,313	95%
Career Average	47,538	47,380	100%
Flat Benefit	173,520	170,301	98%
Hybrid	401,892	337,306	84%
Frozen Hybrid	62,882	59,256	94%
MEPP	864,782	857,004	99%
Total	1,860,156	1,766,560	95%

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%	312	284,029	12,136	16,810	72%	5.8 : 1
25% ≤ ratio < 50%	605	1,060,838	65,580	88,350	74%	2.5 : 1
50% ≤ ratio < 75%	359	392,071	55,850	70,183	80%	0.6 : 1
75% and over	85	123,218	20,761	26,512	78%	0.2 : 1
Total	1,361	1,860,156	154,327	201,855	76%	1.6 : 1

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 100% on a going concern basis and 82% on a solvency basis. Also note that 55 (72%) of the 76 MEPPs had a solvency ratio of less than 80%. These 55 plans have approximately 834,893 active, retired and former members, which represent approximately 97% of the total MEPP membership.

Table 2.6 - Going Concern Funded Ratio

Funded Ratio (FR)	Final Average	Career Average	Flat Benefit	Hybrid	Frozen Hybrid	MEPP	All Plans
FR < 0.60	3	0	0	1	2	0	6
0.60 ≤ FR < 0.80	24	4	8	29	12	4	81
0.80 ≤ FR < 0.90	79	8	20	66	23	16	212
0.90 ≤ FR < 1.00	131	45	40	109	38	25	388
1.00 ≤ FR < 1.20	161	60	91	154	41	26	533
FR ≥ 1.20	27	15	43	32	19	5	141
Total	425	132	202	391	135	76	1,361
Median Ratio	0.98	1.01	1.04	0.99	0.98	0.98	1.00

Table 2.7 - Solvency Funded Ratio

Solvency Ratio (SR)	Final Average	Career Average	Flat Benefit	Hybrid	Frozen Hybrid	MEPP	All Plans
SR < 0.60	4	6	13	4	6	21	54
0.60 ≤ SR < 0.80	147	60	81	152	51	34	525
0.80 ≤ SR < 0.90	153	48	74	129	41	10	455
0.90 ≤ SR < 1.00	78	13	23	69	20	3	206
1.00 ≤ SR < 1.20	32	3	11	30	8	4	88
SR ≥ 1.20	11	2	0	7	9	4	33
Total	425	132	202	391	135	76	1,361
Median Ratio	0.84	0.79	0.79	0.83	0.83	0.69	0.82

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

Liability Valuation Method	# of Plans	% of Plans
Unit Credit (with salary projection)	908	66.7%
Unit Credit (with no salary projection)	445	32.7%
Entry Age Normal	5	0.4%
Individual Level Premium	1	0.1%
Aggregate	2	0.1%
Total	1,361	100.0%

- 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 (approximately two-thirds used a market value and one-third used a smoothed market value).

Table 2.9 - Asset Valuation Method

Asset Valuation Method	# of Plans	% of Plans
Market	897	65.9%
Smoothed Market	460	33.8%
Book	1	0.1%
Book & Market Combined	3	0.2%
Total	1,361	100.0%

- For going concern valuations, all plans used a mortality table with a base year of 1994 or later.

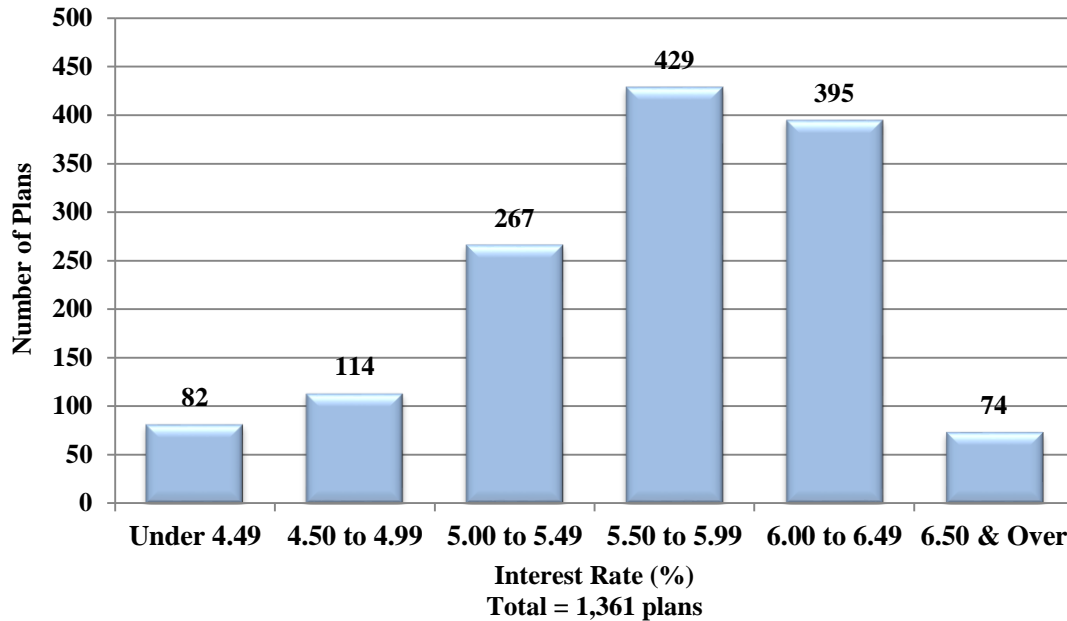
Table 2.10 - Mortality Assumption

Mortality Assumption	# of Plans	% of Plans
1994 GAM Static	7	0.5%
1994 GAR	11	0.8%
1994 UP	1,222	89.8%
1994 UP with variation	77	5.7%
CPM-RPP2014	3	0.2%
RP2000 or RP2000 with variation	30	2.2%
Other ⁸	11	0.8%
Total	1,361	100.0%

⁸ Of these 11 plans, 4 plans used a variation of the 1994 GAR table (e.g., age setback, specified percentage of the standard rates, etc.), 4 plans used a variation of the 1995 Buck Mortality table, and 3 plans used a variation of the 1994 GAM Static table.

- Interest rate assumptions used to value the going concern liabilities were generally lower than in prior years, with approximately 87% of plans using a rate at or below 6.00%. Rates continued to fall within a relatively narrow range, with 73% of the plans using a rate between 5.0% and 6.0% inclusive.⁹

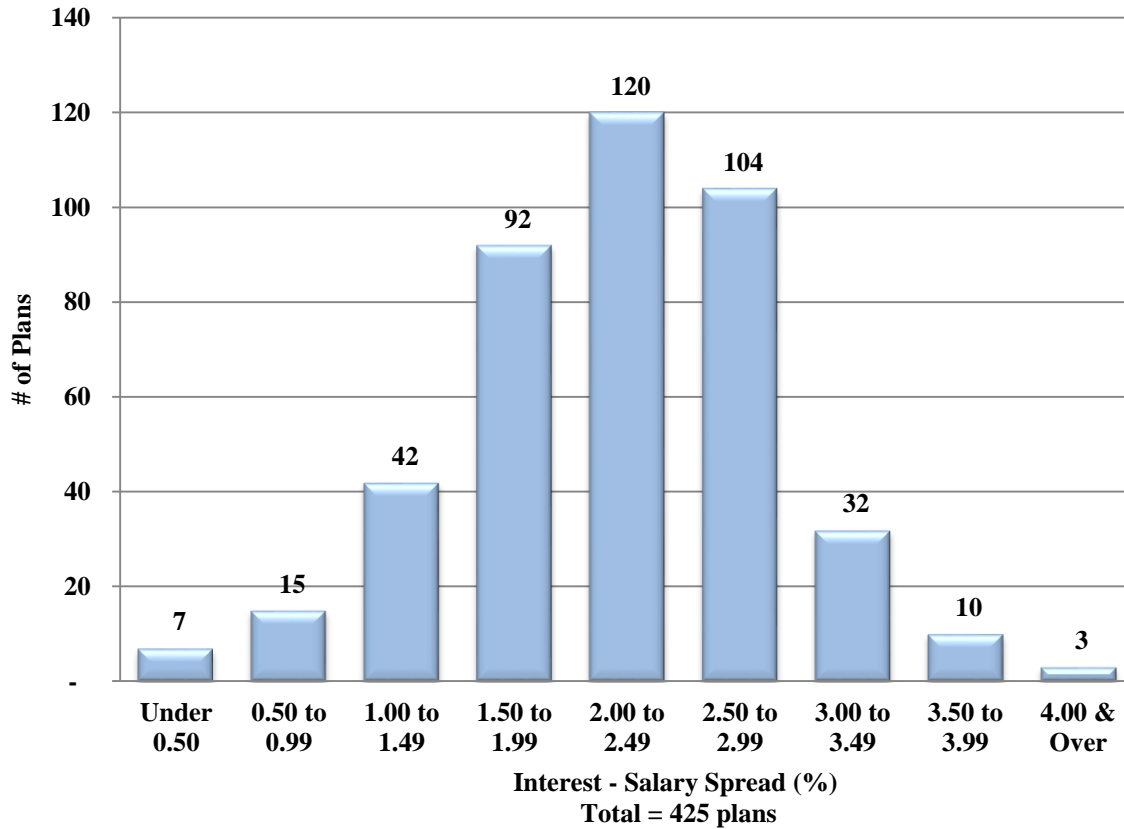
Chart 2.11 - Going Concern Interest Assumption



⁹ Of the 74 plans that used a going concern interest rate assumption of 6.50% or over, 67 plans used an interest rate of exactly 6.50%. Of the 395 plans that used a going concern interest rate assumption in the range of 6.00% to 6.49%, 292 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 80% of all plans providing final average benefits.¹⁰ The average spread between the interest assumption and the salary increase assumption was 2.09%.

Chart 2.12 - Interest Minus Salary Differential for Final Average Plans



¹⁰ Of the 32 final average plans with an interest-salary differential in the range of 3.00% to 3.49%, 24 plans had an interest-salary differential of exactly 3.00%. Of the 104 final average plans with an interest-salary differential in the range of 2.50% to 2.99%, 70 plans had an interest-salary differential of exactly 2.50%. Of the 120 final average plans with an interest-salary differential in the range of 2.00% to 2.49%, 83 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.¹¹ 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 2012 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	420	20,329	\$ 22,357,900	\$ 53,233	\$ 1,100
100-499	519	127,150	66,156,725	127,470	520
500-999	156	109,622	39,580,875	253,724	361
1,000-4,999	192	400,989	98,490,450	512,971	246
5,000-9,999	35	245,864	41,231,000	1,178,029	168
10,000-49,999	24	402,714	152,382,000	6,349,250	378
All Plans	1,346	1,306,668	\$ 420,198,950	\$ 312,183	\$ 322

¹¹ 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.

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.

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.¹²

The following tables provide selected statistics on the MEPPs that contain a defined benefit provision. Up to December 31, 2013, 50 of the 76 MEPPs have elected to become SOMEPPs.

Table 3.1 - Membership Information

	# of Plans	Total (<i>Median</i>) Membership Count			
		Active Members	Retired Members	Other Participants	Total
SOMEPPs	50	351,875 (1,057)	96,592 (668)	365,118 (1,116)	813,585 (3,451)
Non-SOMEPPs	26	22,114 (401)	12,349 (212)	16,734 (153)	51,197 (775)
Total (All MEPPs)	76	373,989 (845)	108,941 (414)	381,852 (687)	864,782 (2,229)

¹² More information on SOMEPPs is available at:
<https://www.fsrao.ca/media/22316/download>

Table 3.2 - Funding Information

	Total (<i>Median</i>) Value			
	Market Value of Assets	Solvency Assets ‡	Solvency Liabilities	Ratio of Solvency Assets to Solvency Liabilities
	(\$ Millions)			
SOMEPPs	17,654 (108.7)	17,551 (107.8)	33,022 (172.7)	53.1% (62.2%)
Non-SOMEPPs	3,415 (41.9)	3,403 (39.6)	4,106 (55.0)	82.9% (82.3%)
Total (All MEPPs)	21,069 (89.9)	20,954 (89.6)	37,128 (126.0)	56.4% (68.8%)

‡ 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 214% 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 62.2% compared to 82.3% for non-SOMEPPs.

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):¹³

- 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.

¹³ More information on temporary solvency funding measures is available at:

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

The opportunity to elect temporary solvency funding relief introduced on June 23, 2009 has ended. Overall, approximately one-third of the plans that were eligible for solvency funding relief elected to do so. Table 3.3 shows the distribution of options chosen by plans that elected to use one or more of the funding relief options (Electing Plans).

Table 3.3 – Distribution of 2009 Solvency Relief Options Elected

Election	All Electing Plans[‡]
Option 1 only	131
Option 2 only	33
Option 3 only	8
Options 1 and 2	215
Options 1 and 3	23
Options 2 and 3	3
All Options	39
Total	452

[‡] Plans that are Designated Plans are excluded

As the table shows, the combined use of options 1 and 2 was the most prevalent choice, accounting for 47.6% of all plan elections. The next most common choice was option 1, which accounted for 29.0% of plan elections, followed by all options at 8.6% and option 2 at 7.3% of Electing Plans.

To assess the cash funding implications of these relief measures, a comparison was made between the minimum levels of required contributions before and after the application of funding relief, for the 12-month period following the valuation date of the solvency relief reports filed by Electing Plans. As shown in Table 3.4, the required funding contributions for Electing Plans were reduced significantly. Specifically, their minimum required contributions were reduced from \$3,923 million to \$1,916 million — a reduction of \$2,007 million or 51 per cent. The bulk of the reduction (93%) was attributable to the lower solvency special payments.

Table 3.4 - Required Contributions in the 12-month Period Commencing on the Valuation Date of the Solvency Relief Report for the 452 Electing Plans

Required Contributions	Before	After	Reduction in Required Contributions
	Application of Funding Relief	Application of Funding Relief	
	(\$ Millions)		
Employer Normal Cost	697	697	0
Going Concern Special Payments	760	623	137
Solvency Special Payments	2,466	596	1,870
Total Minimum Required Contributions	3,923	1,916	2,007

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.

Based on the valuation reports included in the database, a total of 182 eligible plans elected to use one or more of the 2012 funding relief options. In addition, 19 of the Frozen DB Plans described in Table 2.2 have also elected to use 2012 solvency funding relief. These 201 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 3.5 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 17% of plan elections. Of the 201 plans that elected various options under the 2012 solvency funding relief, 126 of those plans also made an election for solvency relief under the 2009 solvency funding relief options.

Table 3.5 - Distribution of 2012 Solvency Relief Options Elected

Election	Number of Plans [‡]	% of Plans	Previously Elected 2009 Solvency Relief
Option 4 only	151	75%	94
Option 5 only	16	8%	11
All Options	34	17%	21
Total	201	100%	126

[‡] Plans that are Designated Plans are excluded

Of the 1,361 DB pension plans and 167 Frozen DB Plans, there are 850 plans that are eligible for 2012 solvency funding relief and that have filed their 2012 solvency relief reports. Table 3.6 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 3.6 – Percentage of Eligible Plans Electing 2012 Solvency Relief Options

	Number of Plans	Number of Eligible Plans That Have Filed 2012 Solvency Relief Report	2012 Electing Plans	
			Number of Plans	Percentage of Plans
Plans in database	1,361	743	182	25%
Frozen DB Plans	167	107	19	18%
Total	1,528	850	201	24%

Of the 850 eligible plans that have filed their 2012 solvency relief reports, 201 plans elected to use one or more of the 2012 solvency funding relief options. The remaining 649 plans did not elect to use any of the relief options available to them. Of these 649 non-electing plans, 138 plans did elect to use one or more of the 2009 solvency funding relief options.

Table 3.7 and Table 3.8 present a profile of the 201 Electing Plans as at December 31, 2013.

Table 3.7 Membership Information for the 201 Electing Plans

	Membership Count			
	Active Members	Retired Members	Other Participants	Total
Total	68,630	62,286	26,943	157,859
Median	123	75	41	239

Table 3.8 Funding Information for the 201 Electing Plans

	Solvency Assets	Solvency Liabilities	Ratio of Solvency Assets to Solvency Liabilities
	(\$ Millions)		
Total Value	16,792	24,158	69.5%
Median Value	22	30	73.3%

** Based on the solvency relief report from the 2012 funding relief measures*

To assess the cash funding implications of these relief measures, a comparison was made between the minimum levels of required contributions before and after the application of solvency funding relief. The comparison is made for the two year period following the valuation date of the 2012 solvency relief report. This is because the ability to defer, for up to one year, the start of special payments required to liquidate any new going concern unfunded liability or new solvency deficiency is generally available to all plans.

Table 3.9 shows that the required minimum going concern and solvency special payments for Electing Plans were reduced by 25% in the first year and 26% in the second year. Although the 2012 solvency funding relief options do not affect the going concern special payments, they are shown in Table 3.9 in order to provide the total required special payments of the 2012 Electing Plans.

Table 3.9 – Required Special Payments for the Two Year Period Following the Valuation Date of the 2012 Solvency Relief Report for the 2012 Electing Plans

	Required Special Payments	Year 1	Year 2
		(\$ Millions)	
Before Application of Funding Relief	Going Concern Special Payments	92	140
	Solvency Special Payments	618	1,126
	Total Minimum Special Payments	710	1,266
After Application of Funding Relief	Going Concern Special Payments	92	139
	Solvency Special Payments	442	800
	Total Minimum Special Payments	534	939
Reduction in Special Payments Due to Funding Relief		176	327
% Difference		25%	26%

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.

Currently, there are 25 pension plans named in Schedule 1 and three pension plans named in Schedule 2 of Ontario Regulation 178/11. Five of the 25 plans in Schedule 1 have not yet filed their Stage 1 valuation report. The three pension plans in Schedule 2 have all filed their Stage 2 valuation report. Table 3.10 presents the profile of the 25 plans based on their most current valuation report.

Table 3.10 – 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	86,624	59,029	17,418	163,071	30,974	34,436	35,411
Average Age	46.3	74.6	49.6	56.9			

4.0 TRENDS ANALYSIS

The following trends analysis incorporates data from all filed reports with valuation dates between July 1, 2009 and June 30, 2013.

4.1 Solvency Funded Status

Table 4.1 shows a breakdown of plans by solvency ratios for the following valuation years:¹⁴

- 2009 Valuation Year denotes valuation dates between July 1, 2009 and June 30, 2010
- 2010 Valuation Year denotes valuation dates between July 1, 2010 and June 30, 2011
- 2011 Valuation Year denotes valuation dates between July 1, 2011 and June 30, 2012
- 2012 Valuation Year denotes valuation dates between July 1, 2012 and June 30, 2013

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 years noted above, they would be represented in more than one valuation year.

Table 4.1 - Solvency Ratios by Valuation Year

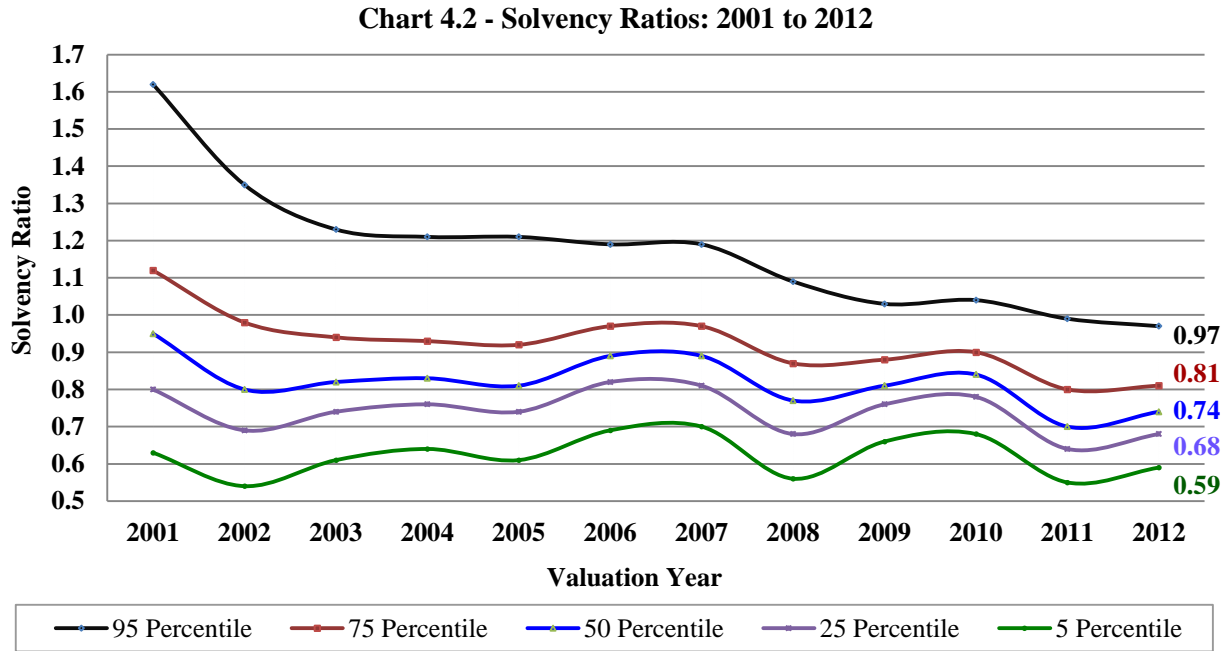
Solvency Ratio (SR)	2009		2010		2011		2012	
	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans
SR < 0.60	19	2.3%	15	1.7%	53	10.6%	41	6.0%
0.60 ≤ SR < 0.80	339	40.6%	278	31.2%	326	65.0%	456	66.1%
Sub-Total < 0.8	358	42.9%	293	32.9%	379	75.6%	497	72.1%
0.80 ≤ SR < 0.90	304	36.4%	363	40.9%	78	15.6%	128	18.6%
0.90 ≤ SR < 1.00	104	12.5%	155	17.4%	24	4.8%	36	5.2%
Sub-Total < 1.00	766	91.7%	811	91.2%	481	96.0%	661	95.9%
1.00 ≤ SR < 1.20	55	6.6%	60	6.7%	14	2.8%	15	2.2%
SR ≥ 1.20	14	1.7%	19	2.1%	6	1.2%	13	1.9%
Total	835	100.0%	890	100.0%	501	100.0%	689	100.0%
Median Ratio	0.81		0.84		0.70		0.74 ¹⁵	

Table 4.1 shows that the solvency ratios improved during the 2012 Valuation Year, after having deteriorated in the 2011 Valuation Year. The percentage of plans with a solvency ratio less than 0.80 had more than doubled from 32.7% in 2010 to 75.6% in 2011, but has decreased to 72.1% in 2012. The proportion of underfunded plans on a solvency basis (i.e., a solvency ratio less than 1.0) stayed relatively constant at 95.9% compared to last year's 96.0%.

¹⁴ The number of plans for 2009-2011 inclusive may differ from those reported in the 2012 Report due to (a) reports filed after last year's cutoff date of May 31, 2013, and (b) plans that have been wound up, converted to a DC arrangement, or became a Frozen DB plan with no DB/DC accruals.

¹⁵ This median solvency ratio pertains only to those plans that have filed a report in the 2012 valuation year. This differs from the median solvency ratio shown in Table 2.7 as that ratio is based on all plans included in the funding data analysis, some of which would have a last filed a report prior to the 2012 valuation year.

Chart 4.2 shows the distribution of solvency ratios at different percentiles from 2001 to 2012. Of note, the solvency ratios at all percentiles declined sharply in the 2008 and 2011 Valuation Years.



Charts 4.3 and 4.4 compare plans with a solvency excess to those with a solvency deficit for each of the four valuation years from 2009 to 2012, as well as for the three-year valuation period of 2010 to 2012.¹⁶ 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.

Chart 4.3 - Number of Plans with Solvency Excess vs Solvency Deficit

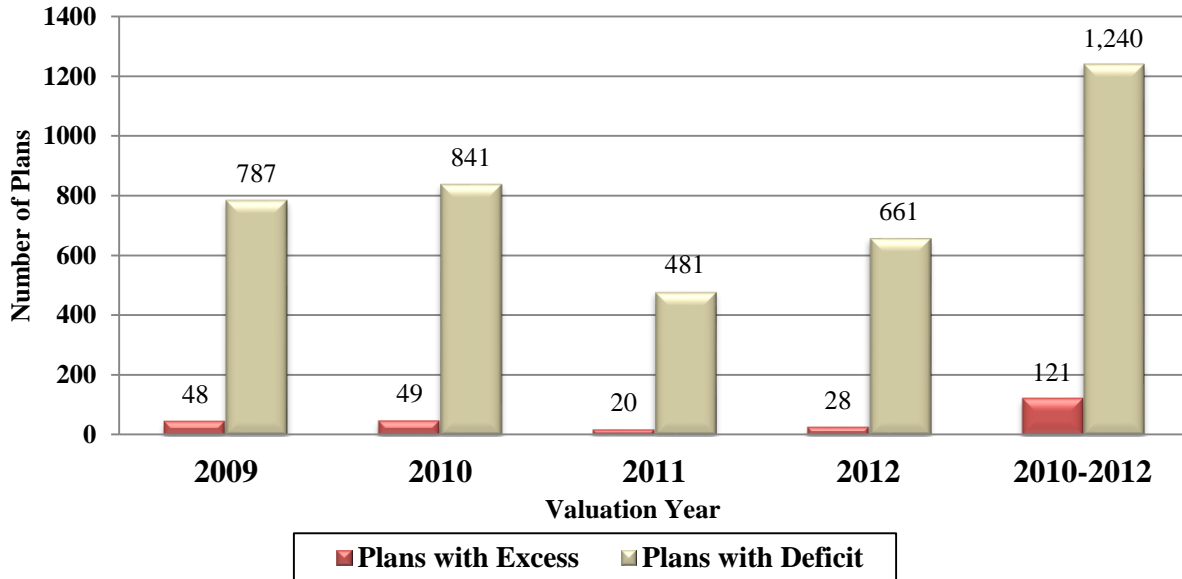
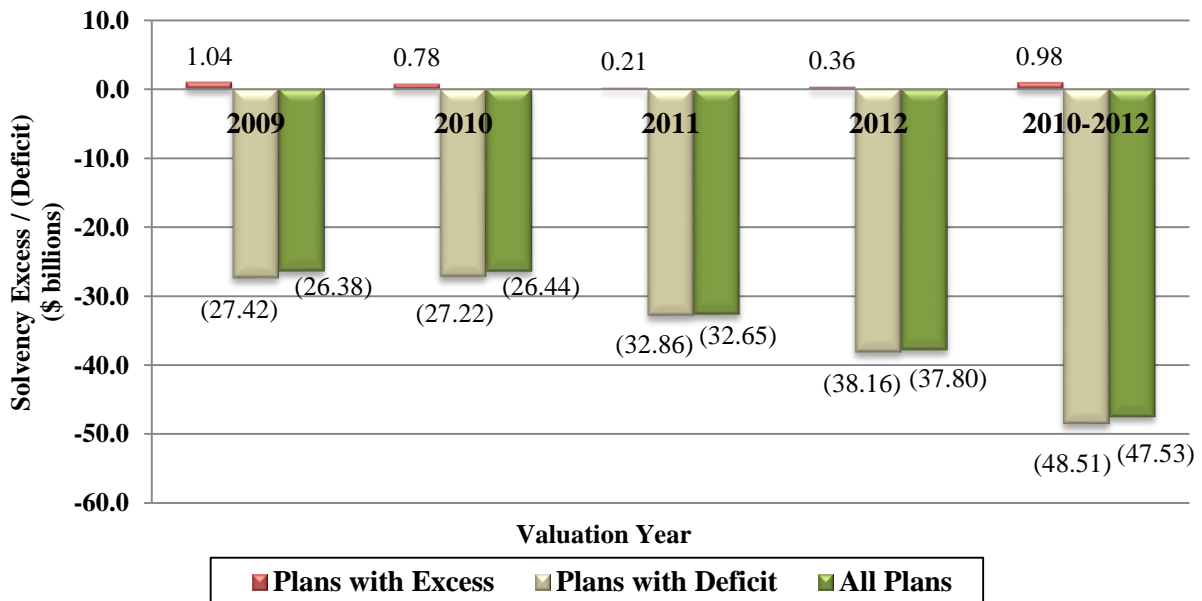


Chart 4.4 - Amount of Solvency Excess/ (Deficit)



¹⁶ Individual valuation years include those plans that filed a report with a valuation date that fell during that individual year. The 2010-12 period includes only the last funding valuation report filed for a plan with a valuation date falling between July 1, 2010 and June 30, 2013. The total number of plans included in each of the 2010, 2011 and 2012 valuation years is therefore higher than the number of plans included in the combined period 2010-2012.

On a dollar amount basis, the latest filed reports during 2010-2012 valuation years (i.e., July 1, 2010 to June 30, 2013) revealed a *net* solvency deficit of \$47.53 billion (after allowance for expenses) on solvency liabilities of \$202.06 billion. This represents the total level of underfunding for the 1,361 DB plans analyzed in the 2013 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 2012 Report was \$41.48 billion for the prior three valuation years (i.e. July 1, 2009 to June 30, 2012). While the \$6.05 billion increase in the net solvency deficit resulted from reports filed in the 2012 valuation year, note that these reports could potentially capture actuarial 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 calculation of solvency liabilities. There were 247 plans that excluded one or more of these benefits, resulting in a reduction of liabilities totaling \$17.88 billion. Thus, the total *wind up* funding shortfall for those plans that filed a report with valuation dates between July 1, 2010 and June 30, 2013 would have exceeded their *net* solvency deficit by the same amount. This translates into a wind up funding deficit of \$65.41 billion (\$47.53 billion plus \$17.88 billion), after making allowances for expenses, on wind up liabilities of \$219.94 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 will continue as going concerns

4.2 Actuarial Assumptions

Going Concern Interest Rate

Table 4.5 shows the interest rate assumptions used in the going concern valuations. Since 2009, there has been a clear trend to use a lower interest rate assumption. This downward trend has been reported since FSCO started publishing trend statistics.

Table 4.5 - Interest Rate Assumption by Valuation Year

Rate (%)	2009		2010		2011		2012	
	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans
Rate < 4.00	2	0.2%	3	0.3%	16	3.2%	22	3.2%
4.00 ≤ Rate < 4.50	3	0.4%	15	1.7%	15	3.0%	32	4.6%
4.50 ≤ Rate < 5.00	20	2.4%	34	3.8%	41	8.2%	74	10.7%
5.00 ≤ Rate < 5.50	67	8.0%	131	14.7%	99	19.8%	149	21.6%
5.50 ≤ Rate < 6.00	176	21.1%	243	27.3%	157	31.3%	253	36.8%
6.00 ≤ Rate < 6.50	327	39.2%	383	43.1%	146	29.1%	133 [†]	19.3%
6.50 ≤ Rate < 7.00	233	27.9%	79	8.9%	27	5.4%	26	3.8%
Rate ≥ 7.00	7	0.8%	2	0.2%	0	0.0%	0	0.0%
Total	835	100.0%	890	100.0%	501	100.0%	689	100.0%
Average (%)	6.01%		5.77%		5.51%		5.38%	

[†] Of the 133 plans that used a going concern interest rate assumption in the range of 6.0% to 6.49%, 108 plans used an interest rate of exactly 6.0%.

The average of the assumed interest rates declined from 6.01% to 5.38% over the period July 1, 2009 to June 30, 2013. The most prevalent assumed interest rates had been within the 6.00% to 6.49% range since the 2007 valuation year (not shown). However, this changed for the 2011 and 2012 valuation years with the most prevalent interest rates falling into the 5.50% to 5.99% range.

The proportion of plans using an interest rate assumption of 6.00% or higher has decreased each year, from 67.9% of plans in the 2009 valuation year to 23.1% in the 2012 valuation year. Of the 2012 valuations filed, 92.6% 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.

The Government of Canada bond yields used in calculating the non-indexed commuted value interest rates and non-indexed annuity proxy interest rates have declined over the five year period illustrated. However, over the last six months of 2013, the rates have risen from the lows of the five year period. The Canadian Institute of Actuaries has also updated the mortality table during this five year period, from a static mortality table to a mortality table that takes into account mortality improvements in the future. 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 4.6 - Commuted Value Interest Rates

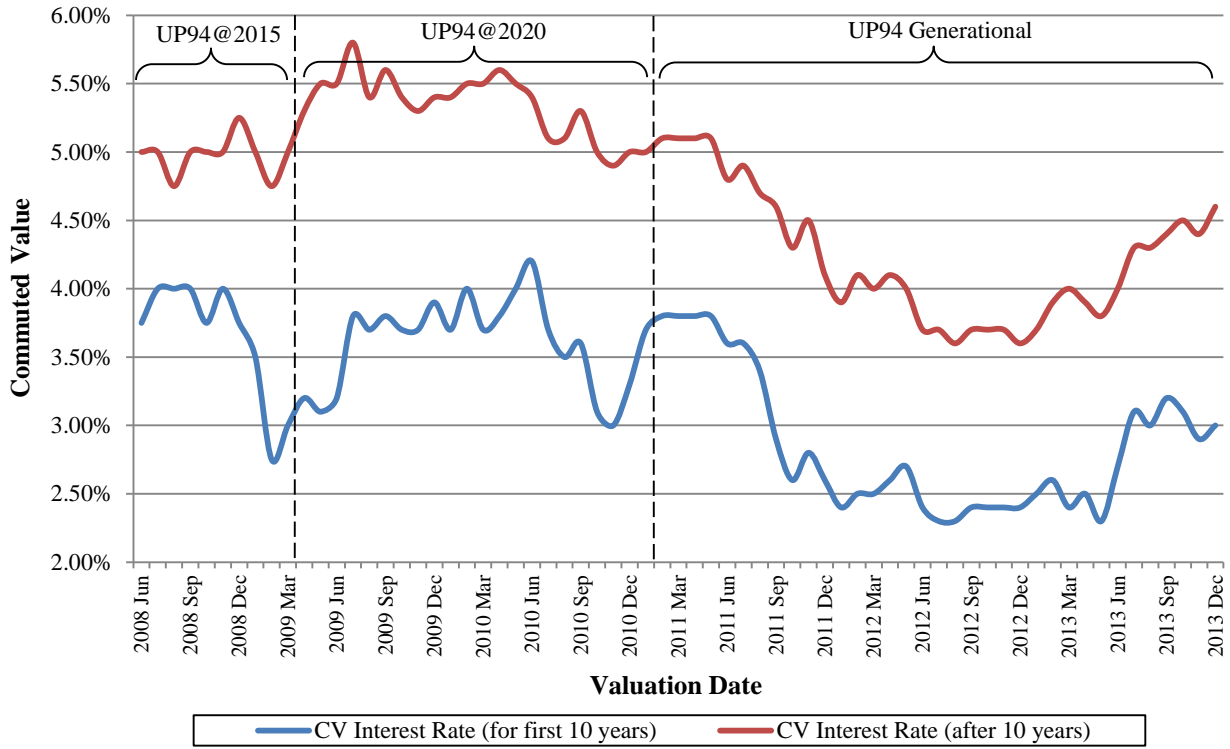
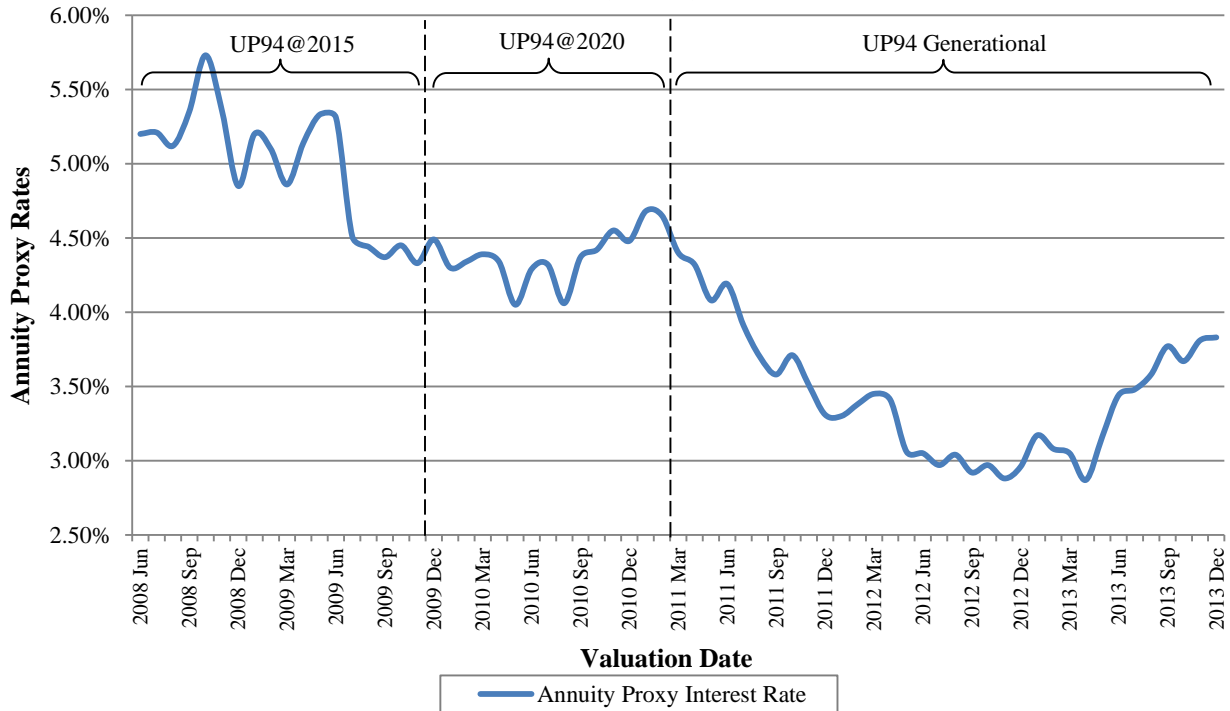


Chart 4.7 - Annuity Proxy Interest Rates



Mortality Basis

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

Table 4.8 - Mortality Assumption by Valuation Year

Mortality Assumption	2009		2010		2011		2012	
	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans
1994 GAM Static	7	0.8%	10	1.1%	2	0.4%	0	0.0%
1994 GAR	8	1.0%	8	0.9%	3	0.6%	6	0.9%
1994 UP	774	92.7%	795	89.3%	435	86.8%	611	88.7%
CPM-RPP2014	N/A	0.0%	N/A	0.0%	N/A	0.0%	3	0.4%
Other ¹⁷	46	5.5%	77	8.7%	61	12.2%	69	10.0%
Total	835	100.0%	890	100.0%	501	100.0%	689	100.0%

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. The necessary data to do this analysis is being collected and this information will be shown in future reports when the data becomes available.

¹⁷ Starting in the 2011 valuation year (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 1,361 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, 2012 and June 30, 2013). There are 1,310 plans included in the investment data analysis, representing 96% of the plans included in the funding data analysis.¹⁸

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

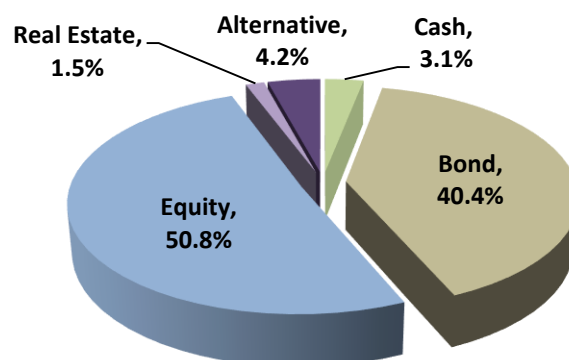
5.1 Summary of Pension Fund Profiles

In aggregate, the asset mix of the 1,310 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 ¹⁹	Market Value (\$ Millions)	% of Total Investments
Asset Mix	Cash	4,967	3.1%
	Bond	64,788	40.4%
	Equity	81,504	50.8%
	Real Estate	2,325	1.5%
	Alternative Investments ²⁰	6,796	4.2%
	Total	160,380	100.0%

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 43% of total investments. Non-fixed income assets (consisting of equity, real estate and alternative investments) constitute 57% of total investments.

¹⁸ The plans that are not included in the investment data analysis subset are primarily plans with outstanding IIS filings

¹⁹ Plan assets invested in pooled funds totaled \$72,911 million or 45.5% of total investments. Pooled funds are included in the asset mix of all plans based on their underlying asset classes.

²⁰ 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 1,310 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 5.2A, while the percentile performance returns appear in Table 5.2B.

Table 5.2A – Investment Results by Plan Type

Plan Type		SEPP	MEPP	All Plans
# of Plans		1,235	75	1,310
Asset Mix	Fixed Income	44.5%	37.2%	43.5%
	Non-Fixed Income	55.5%	62.8%	56.5%
<hr/>				
Performance	Average Return ²¹	8.37%	8.43%	8.38%
	Average Investment Fees	0.49%	0.44%	0.49%

²¹ 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 8.82%, compared to 8.38% on an equally-weighted basis shown in this table.

Table 5.2B – Performance Result Percentiles by Plan Type

Plan Type	SEPP	MEPP	All Plans
Investment Returns			
90 th Percentile	10.80%	11.65%	10.83%
75 th Percentile	9.63%	9.95%	9.66%
Median	8.40%	8.89%	8.43%
25 th Percentile	7.23%	7.98%	7.26%
10 th Percentile	5.90%	7.07%	5.97%
Investment Fees			
90 th Percentile	0.91%	0.55%	0.88%
75 th Percentile	0.63%	0.46%	0.61%
Median	0.43%	0.41%	0.43%
25 th Percentile	0.28%	0.34%	0.29%
10 th Percentile	0.13%	0.29%	0.14%

By Benefit Type

The investment profile of pension plans with various benefit types is provided in Table 5.3.

Table 5.3 – Investment Results by Benefit Type²²

Benefit Type		FAE	CAE	FB	Hybrid	All Plans
# of Plans		405	143	248	514	1,310
Asset Mix	Fixed Income	41.6%	41.5%	45.7%	44.3%	43.5%
	Non-Fixed Income	58.4%	58.5%	54.3%	55.7%	56.5%
Performance	Average Return	8.43%	8.17%	8.37%	8.39%	8.38%
	Average Investment Fees	0.46%	0.53%	0.47%	0.51%	0.49%

By Plan Size

The investment profile of pension funds of various sizes is provided in Table 5.4.

Table 5.4 – Investment Results by Plan Size

Size of Plan Assets		Small (<\$25 Million)	Medium (>\$25M, <\$250M)	Large (>\$250 Million)	All Plans
# of Plans		725	465	120	1,310
Asset Mix	Fixed Income	44.1%	43.2%	43.5%	43.5%
	Non-Fixed Income	55.9%	56.8%	56.5%	56.5%
Performance	Average Return	7.92%	8.87%	9.26%	8.38%
	Average Investment Fees	0.60%	0.38%	0.31%	0.49%

²² 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 5.5.

Table 5.5 – Investment Results by Solvency Ratio (SR)

Solvency Ratio (SR)		SR < 0.8	0.8 ≤ SR < 1.0	SR ≥ 1.0	All Plans
# of Plans		526	664	120	1,310
Asset Mix	Fixed Income	43.2%	43.4%	46.2%	43.5%
	Non-Fixed Income	56.8%	56.6%	53.8%	56.5%
Performance	Average Return	8.56%	8.32%	7.91%	8.38%
	Average Investment Fees	0.49%	0.48%	0.50%	0.49%

By Percentages Invested in Pooled Funds

The results for plans with various percentages invested in pooled funds are provided in Table 5.6.

Table 5.6 – Investment Results by Percentage Invested in Pooled Funds

Percentage Invested in Pooled Funds		< 20%	20% to 80%	> 80%	All Plans
# of Plans		171	220	919	1,310
Asset Mix	Fixed Income	49.2%	39.9%	42.7%	43.5%
	Non-Fixed Income	50.8%	60.1%	57.3%	56.5%
Performance	Average Return	8.55%	9.05%	8.18%	8.38%
	Average Investment Fees	0.38%	0.37%	0.54%	0.49%

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 2012 and commonly evident for the previous monitoring cycles. These observations are as follows:

- Large plans have higher average return and lower investment fees than small plans.
- Pension funds of MEPPs generally invested more in non-fixed income assets but this did not result in better performance than SEPPs.
- The typical asset mix of pension funds changed from a fixed income/non-fixed income split of 45%/55% in 2011 to a split of 43%/57% in 2012
- There do not seem to be significant differences in asset mix, average return and average investment fees between different benefit types.

6.0 2013 PROJECTIONS

6.1 Estimated DB Funding Contributions in 2013

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 2013, 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, 2013.²³

Table 6.1 - Estimated DB Funding in 2013

	Plans with Solvency Excess	Plans with Solvency Deficit	All Plans
Number of Plans	118	1,243	1,361
	(\$ Millions)	(\$ Millions)	(\$ Millions)
Employer Normal Cost Contributions	190	3,367	3,557
Member Required Contributions	42	610	652
Sub-total	232	3,977	4,209
Special Payments	36	5,393	5,429
Total	268	9,370	9,638

The total DB funding contributions in 2013 are estimated to be \$9.6 billion, which is 9% higher than the estimated contributions of \$8.8 billion for 2012, as set out in the 2012 Report. The increase of \$0.8 billion consists of the following changes:

- An increase of \$649 million in the required special payments
- An increase of \$148 million in the required employer normal cost and member contributions.

The special payments of \$5.4 billion represent 56% of the total estimated 2013 funding contributions of \$9.6 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 \$36 million for plans with a solvency excess represent 13% of the total contributions of \$268 million for these plans. This compares with the total special payments of \$5.4 billion for plans with a solvency deficit, representing about 58% of the total contributions of \$9.4 billion for these plans.

The estimated 2013 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

²³ For plans where the AIS reported contributions did not extend to the end of 2013, the 2013 estimated contributions were determined assuming contributions would continue at the same rate as that reported for the valuation period.

during the valuation period. A total of \$3.6 billion of prior year credit balances were reported for 198 plans that had a non-zero prior year credit balance.

6.2 Projected Solvency Position as at December 31, 2013

This section presents a projection of the solvency funding position of DB plans to the end of 2013. The projection reflects the impact of investment returns, changes in the solvency interest rates and the special payments expected to be made during 2013. 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 first adjusted, where appropriate, to reflect the capital market conditions as at December 31, 2012. Projections were then made to the end of 2013 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

Year	Annual Rate of Return ²⁴
2009	16.2%
2010	10.4%
2011	0.5%
2012	9.4%
2013	12.2%

The projected liabilities as at December 31, 2012 and December 31, 2013 were determined by extrapolating the solvency liabilities from the last valuation, and then adjusting them to reflect any changes in the solvency valuation basis, as provided in Table 6.3.

²⁴ For years 2009 to 2012, the rates are the median investment returns of pension funds provided in the Canadian Institute of Actuaries' *A Report on Canadian Economic Statistics 1924-2012*, dated May 2013. The rate for 2013 is derived from a representative weighted average of the 2013 return on the S&P/TSX index (30%), the MSCI World index (25%), and the DEX Universe Bond index (45%).

Table 6.3 – Solvency Liability Projection Basis

Valuation Date	Commuted Value Basis²⁵	Annuity Purchase Basis²⁶
December 31, 2012	Interest: 2.4% for 10 years, 3.60% thereafter Mortality: 1994 UP generational	Interest: 2.96% Mortality: 1994 UP generational
December 31, 2013	Interest: 3.0% for 10 years, 4.60% thereafter Mortality: 1994 UP generational	Interest: 3.83% 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, 2012	PSR as at December 31, 2013
10 th percentile	65%	63%	83%
25 th percentile	72%	68%	89%
50th percentile	82%	74%	94%
75 th percentile	89%	81%	101%
90 th percentile	99%	89%	110%

As shown in Table 6.4, the median PSR is projected to increase from 73% to 94% between December 31, 2012 and December 31, 2013. In general, the change, if any, in the median PSR is the net effect of the following factors:

- Assumed pension fund returns in 2013 being higher than the solvency valuation discount rates used at December 31, 2012;
- The extent by which expected contributions made during 2013 were greater than the increase in solvency liabilities due to benefit accruals in 2013; and
- The change in the solvency valuation interest rates used to calculate the solvency liabilities as at December 31, 2013. Both the commuted value interest rates and the annuity purchase interest rate as at December 31, 2013 are higher compared to their respective rates as at December 31, 2012.

²⁵ The commuted value basis used for the December 31, 2012 and December 31, 2013 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.

²⁶ The interest rates for annuity purchases as at December 31, 2012 and December 31, 2013 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 June 2013 EN is used for December 31, 2012 and the January 2014 EN is used for December 31, 2013. The rate for both valuation dates is calculated as the December CANSIM V39062 rate plus 70 bps.

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 calculation 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 dataset consists of DB pension plans that have filed valuation reports with valuation dates between July 1, 2010 and June 30, 2013. Please refer to **Section 2.0 – Funding Data Analysis** of this report for details of how the dataset was compiled.

Table 8.1 shows a reconciliation of the 1,387 plans analyzed in the 2012 Report to the 1,361 plans analyzed in the 2013 Report.

Table 8.1 – Reconciliation of Plans from the 2012 Report to the 2013 Report

Plan Type:	Final Average	Career Average	Flat Benefit	Hybrid	Frozen Hybrid	MEPP	TOTAL
2012 Report	455	140	216	387	113	76	1,387
New plans / Spin-offs	1			3	1		5
Previously registered outside of Ontario	1			2			3
Change to Non-designated Status	2						2
Filed outstanding report *	1	1			1		3
Previously excluded					8		8
<u>Change in Benefit Type</u>							
• FAE	(18)	1		15	2		0
• CAE		(4)		3	1		0
• FB	1		(4)	3			0
• Hybrid	2	1		(15)	12		0
Frozen DB (excluded from analysis)	(10)	(3)	(5)	(1)	(1)		(20)
Wind up (excluded from analysis)	(6)	(3)	(3)	(3)	(1)		(16)
Change to Designated Status	(1)						(1)
Plan merger	(1)	(1)					(2)
Registration changed to outside of Ontario	(2)		(2)	(2)			(6)
DC conversion				(1)	(1)		(2)
2013 Report	425	132	202	391	135	76	1,361

* These are plans that were not included in last year's analysis because they did not file a report with a valuation date between July 1, 2009 and June 30, 2012. They have since filed a report with a valuation date between July 1, 2010 and June 30, 2013.

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
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	236	-	236
50 – 99	188	1	189
100 – 249	294	5	299
250 – 499	217	5	222
500 – 999	145	14	159
1,000 – 4,999	167	26	193
5,000 – 9,999	25	11	36
10,000 +	13	14	27
Total	1,285	76	1,361

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

Number of Members in Plan	Non-MEPP	MEPP	Total
0 – 49	6,351	-	6,351
50 – 99	14,116	78	14,194
100 – 249	47,562	813	48,375
250 – 499	77,322	1,666	78,988
500 – 999	101,914	9,780	111,694
1,000 – 4,999	341,854	62,000	403,854
5,000 – 9,999	170,901	82,904	253,805
10,000 +	235,354	707,541	942,895
Total	995,374	864,782	1,860,156

Abbreviations

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