
**2012 Report on the
Funding of Defined Benefit Pension Plans in Ontario**

*Overview and Selected Findings
2009-2012*

Financial Services Commission of Ontario

August 2013

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2012 Report on the Funding of Defined Benefit Pension Plans in Ontario

Overview and Selected Findings 2009-2012

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. It is based on the latest filed funding valuation reports for DB pension plans that had valuation dates between July 1, 2009 and June 30, 2012, and financial statements for the fiscal year ending between July 1, 2011 and June 30, 2012.

Generally, this report is issued in March of every year. However, the Regulation was amended to provide a filing extension for valuation reports with a valuation date that is on and after September 30, 2011 and before May 31, 2012, to February 28, 2013. As a result, this year's report is being issued instead in August 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 funding 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 funding reports for detailed compliance reviews.

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 completed by an actuary and filed with FSCO in conjunction with a funding valuation report.

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 database and a selective risk-based review system identifies plans with potential investment concerns for further review. The annual monitoring cycle covers plans whose plan fiscal year end date is between July 1 of one year and June 30 of the next. Over 90% of the plans have a plan fiscal year end date of December 31.

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. Overall, the submissions received from the consultation process were strongly supportive of FSCO's initiative to enhance its risk-based approach to regulation. The final Risk-Based Regulation Framework document was posted on FSCO's website in November 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 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

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

⁴ FSCO's final Risk-Based Regulation Framework document is available at: <https://www.fsrao.ca/media/23281/download>

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. The temporary solvency funding relief measures are limited to eligible plans, and are effective with the first filed valuation report with a valuation date on or after September 30, 2008 and before September 30, 2011 (solvency relief report).

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 Ontario registered DB pension plans. These temporary solvency funding relief measures apply to the first filed valuation 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 for valuation reports with a valuation date that is on or after September 30, 2011 and before May 31, 2012. These reports must be filed by February 28, 2013. In addition, the Regulation has since 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.

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

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 2012 Report, its ninth annual report on the funding and investment of DB pension plans in Ontario.

Key Findings

The 2012 Report's key findings are listed below:

Funding Data

1. Overall, the funded position of pension plans is largely unchanged from what was reported in the 2011 Report on the Funding of Defined Benefit Pension Plans in Ontario (the 2011 Report).⁶ In particular:
 - ❖ the median funded ratio on a *going concern* basis has remained unchanged at 99%, and
 - ❖ the median funded ratio on a *solvency* basis has decreased from 85% to 84%.
2. Compared to the 2011 Report, there was an increase in the percentage of plans that were less than fully funded on either a going concern or solvency basis, or both, at their last valuation date. Specifically:
 - ❖ 54% of the plans were less than fully funded on a going concern basis (versus 52% in the 2011 Report), and
 - ❖ 89% of the plans were less than fully funded on a solvency basis (versus 88% in the 2011 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).

⁶ FSCO's 2011 Annual Report on the Funding of Defined Benefit Pension Plans in Ontario is available at: <https://www.fsrao.ca/media/10461/download>

- ❖ The average interest rate assumption used for going concern valuations decreased from 6.10% to 5.51% over a four-year period, based on reports with valuation dates from July 1, 2008 to June 30, 2012. The reports included in our analysis with valuation dates between July 1, 2011 and June 30, 2012 showed that 86% of them used an interest rate at or below 6.0%.
- ❖ All of the plans with valuation dates between July 1, 2010 and June 30, 2012 used a mortality table with a base year of 1994 or later.

Projected Solvency Position as of December 31, 2012

1. Although the median solvency ratio⁷ for pension plans was 84% based on valuation dates of the most recently filed valuation reports, an estimate of the median solvency ratio as at both December 31, 2011 and December 31, 2012 shows a deterioration in the solvency ratio.
2. The estimated median solvency ratio is estimated to be 73% as at both December 31, 2011 and December 31, 2012. The projections used to arrive at the estimate considers the actual investment returns and changes in interest rates and mortality assumptions from the date of the last filed valuation report to the relevant dates.
3. The minimum required contributions for 2012— including employer normal cost, member required contributions and special payments — are estimated to increase by 10% from \$8.0 billion for 2011 to \$8.8 billion for 2012.

Temporary Funding Relief Data

The statistics on the utilization of the temporary funding relief measures as of December 31, 2012 are as follows:

- ❖ Of the 76 MEPPs that contain a defined benefit provision, 48 plans (63%) have elected to be treated as a SOMEPP. These 48 MEPPs represent 94% of the total plan membership covered by the 76 MEPPs.
- ❖ Of the 1,387 DB pension plans that are included in this report, 1,327 plans are eligible to elect the temporary solvency funding relief that was introduced on June 23, 2009.⁸ Of the eligible plans, 407 plans (31%) have elected to use one or more of the funding relief options and have filed a solvency relief report supporting their elections.
- ❖ Of these 1,327 DB pension plans, 433 plans have filed their solvency relief report under the 2012 solvency funding relief measures (i.e. filed a valuation report with a valuation date on or after September 30, 2011 and before September 30, 2014).

⁷ A plan's solvency ratio is the ratio of its solvency assets to its solvency liabilities.

⁸ The difference of 60 plans (1,387 – 1,327) is comprised of SOMEPPs and plans covered under special regulations that are not eligible to elect the temporary solvency funding relief options.

Of these 433 eligible plans, 130 plans (30%) elected to use one or more of the 2012 temporary 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 of Ontario Regulation 178/11.

Trends Analysis Data

The analysis of solvency ratios shows a significant deterioration for valuation dates in the 12-month period ending June 30, 2012 when compared with the solvency ratios reported in the previous two 12-month periods. The median solvency ratio in valuation reports with valuation dates in the 12-month period ending June 30, 2012 is 0.70. In comparison, the median solvency ratio for valuation reports with valuation dates in the 12-month period ending June 30, 2010 and June 30, 2011 are 0.81 and 0.84 respectively. The percentage of plans with a solvency ratio less than 0.80 more than doubled from 32.7% for plans with a valuation date between July 1, 2010 and June 30, 2011 to 76.3% for plans with a valuation date between July 1, 2011 and June 30, 2012.

Investment Data

1. The typical asset mix of pension funds changed from a fixed income/non-fixed income split of 41%/59% in 2010 to a split of 45%/55% in 2011.
2. Large plans have higher average return and lower investment fees than small plans.
3. As in the 2011 Report, MEPPs generally 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, 2009 and June 30, 2012. The data were compiled from the AIS and funding valuation reports received by FSCO on or before the data cutoff date, May 31, 2013.

Generally, funding valuation reports must be filed once every three years on both a going concern and solvency basis. However, if solvency concerns are indicated,⁹ annual filing is required until solvency concerns no longer exist. Early filings may also be required when events such as plan mergers, partial windups, or sales of businesses occur. To avoid double counting, this report only considers data from a plan's most recently filed report.

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
- wound up plans or plans in the process of winding up.

The funding data analysis included a total of 1,387 plans. Table 2.1 below presents a profile of these plans. For additional details on the plans that were analyzed, see 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	455	168,533	106,602	45,311	320,446	51,920
Career Average	140	24,970	15,881	9,566	50,417	3,287
Flat Benefit	216	58,805	94,417	29,269	182,491	24,139
Hybrid	387	153,316	151,885	76,999	382,200	42,072
Frozen Hybrid ¹⁰	113	22,821	25,337	10,194	58,352	4,132
MEPP	76	359,027	104,419	375,448	838,894	19,307
Total	1,387	787,472	498,541	546,787	1,832,800	144,857
Average Age		48.93	69.30	47.57		

⁹ A report indicates solvency concerns if the employer has elected to exclude plant closure or permanent layoff benefits from the calculation of solvency liabilities, or in any of the following circumstances: (a) the ratio of the solvency assets to the solvency liabilities was less than 80% if the valuation date is before December 31, 2012, and less than 85% if the valuation date is on or after December 31, 2012, or (b) where the solvency liabilities exceeds the solvency assets by more than \$5 million for a valuation date before December 31, 2012 and the ratio of the solvency assets to the solvency liabilities was less than 90% if the valuation date is before December 31, 2010 and less than 85% if the valuation date is on or after December 31, 2010. The Regulation exempts certain plans from the solvency concerns requirements.

¹⁰ Plans in which members have a frozen DB entitlement, but accrue DC benefits for future service.

Table 2.2 below summarizes the profiles of the 158 Frozen DB Plans and seven large public sector plans that were excluded from the funding data analysis. In addition, 101 plans that have wound up or are in the process of winding up have been excluded from the funding data analysis.

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	732,553	394,738	146,019	1,273,310	252,499
	Average Age		44.94	70.80	53.35		
Frozen DB Plans	No Future DB/DC accruals	158	8,252	26,266	7,979	42,497	5,104
	Average Age		46.10	74.99	51.03		

2.1 Summary of Funding Data

Of the 1,387 plans that were analyzed, 753 plans (54%) were less than fully funded on a going concern basis. Overall, these 1,387 plans covered 1,832,800 plan members, of which 1,264,105 (69%) were members of the 753 plans that were not fully funded.

On a solvency basis, 1,238 plans (89%) of the 1,387 plans were less than fully funded and covered 1,709,660 plan members (93% 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	455	286	63%
Career Average	140	66	47%
Flat Benefit	216	75	35%
Hybrid	387	219	57%
Frozen Hybrid	113	68	60%
MEPP	76	39	51%
Total	1,387	753	54%

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	320,446	214,180	67%
Career Average	50,417	15,260	30%
Flat Benefit	182,491	83,198	46%
Hybrid	382,200	219,603	57%
Frozen Hybrid	58,352	47,770	82%
MEPP	838,894	684,094	82%
Total	1,832,800	1,264,105	69%

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	455	392	86%
Career Average	140	132	94%
Flat Benefit	216	205	95%
Hybrid	387	344	89%
Frozen Hybrid	113	100	88%
MEPP	76	65	86%
Total	1,387	1,238	89%

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	320,446	289,309	90%
Career Average	50,417	50,089	99%
Flat Benefit	182,491	179,521	98%
Hybrid	382,200	310,102	81%
Frozen Hybrid	58,352	55,106	94%
MEPP	838,894	825,533	98%
Total	1,832,800	1,709,660	93%

Table 2.5 provides summary information grouped by plan maturity (which is 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%	323	248,116	9,804	12,644	78%	6.3 : 1
25% ≤ ratio < 50%	634	1,073,636	63,012	82,124	77%	2.5 : 1
50% ≤ ratio < 75%	339	370,642	48,815	62,242	78%	0.7 : 1
75% and over	91	140,406	22,720	28,817	79%	0.2 : 1
Total	1,387	1,832,800	144,351	185,827	78%	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 99% on a going concern basis and 84% on a solvency basis. Also note that 46 (61%) of the 76 MEPPs had a solvency ratio of less than 80%. These 46 plans have approximately 783,034 active and former members, which represent approximately 93% 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	4	1	-	1	2	-	8
0.60 ≤ FR < 0.80	31	1	4	33	17	4	90
0.80 ≤ FR < 0.90	85	11	23	67	17	12	215
0.90 ≤ FR < 1.00	166	53	48	118	32	23	440
1.00 ≤ FR < 1.20	147	61	104	137	37	31	517
FR ≥ 1.20	22	13	37	31	8	6	117
Total	455	140	216	387	113	76	1,387
Median Ratio	0.96	1.00	1.04	0.98	1.00	1.00	0.99

Table 2.7 - Solvency Funded Ratio

Solvency Ratio (SR)	Final Average	Career Average	Flat Benefit	Hybrid	Frozen Hybrid	MEPP	All Plans
SR < 0.60	8	5	10	9	8	16	56
0.60 ≤ SR < 0.80	121	41	64	118	34	30	408
0.80 ≤ SR < 0.90	166	64	99	143	38	12	522
0.90 ≤ SR < 1.00	97	22	32	74	20	7	252
1.00 ≤ SR < 1.20	52	6	11	32	9	7	117
SR ≥ 1.20	11	2	-	11	4	4	32
Total	455	140	216	387	113	76	1,387
Median Ratio	0.86	0.82	0.82	0.85	0.84	0.76	0.84

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)	920	66.4%
Unit Credit (with no salary projection)	458	33.0%
Entry Age Normal	5	0.4%
Aggregate	1	0.1%
Other	3	0.1%
Total	1,387	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	907	65.5%
Smoothed Market	475	34.2%
Book	3	0.2%
Book & Market Combined	2	0.1%
Other	0	0.0%
Total	1,387	100.0%

- For going concern valuations, all plans used a mortality table with a base year of 1994 or later.¹¹

Table 2.10 - Mortality Assumption

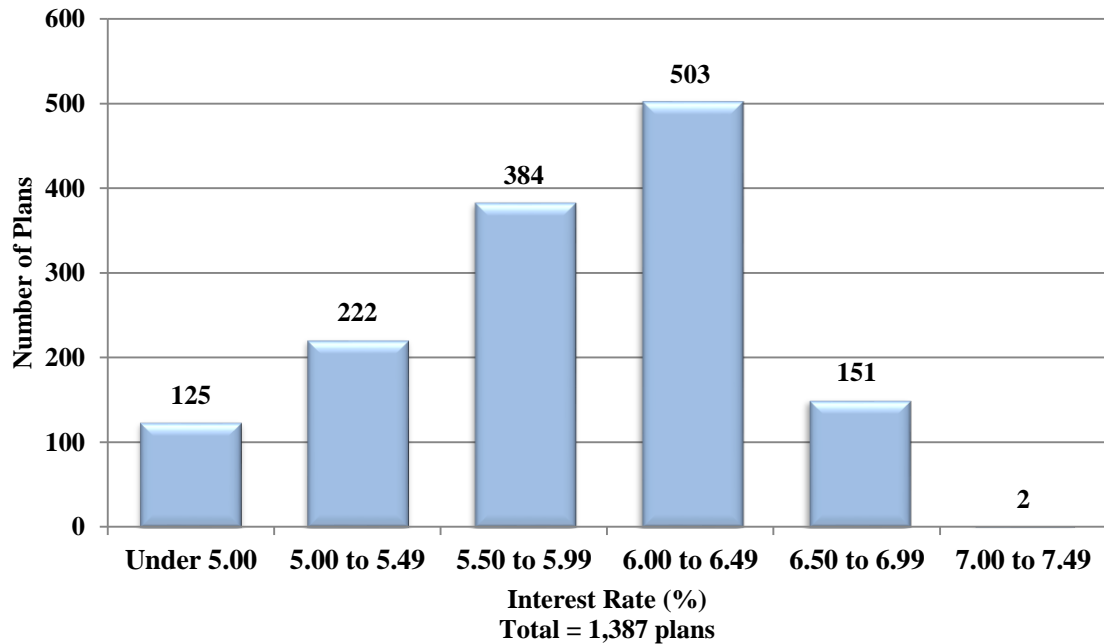
Mortality Assumption	# of Plans	% of Plans
1994 GAM Static	9	0.6%
1994 GAR	10	0.7%
1994 UP	1,262	91.1%
Other ¹²	106	7.6%
Total	1,387	100.0%

¹¹ Also see the commentary on mortality assumptions that accompanies Table 4.6 in this report.

¹² Of these 106 plans, 64 plans used a variation of the 1994 UP table (e.g., age setback, specified percentage of the standard rates, etc.), 32 plans used the RP2000 table or a variation of it, 3 plans used a variation of the 1994 GAR table, 5 plans used a variation of the 1995 Buck Mortality table, and 2 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 99% of plans using a rate at or below 6.50%. Rates continued to fall within a relatively narrow range, with 74% of the plans using a rate between 5.5% and 6.5% inclusive.¹³

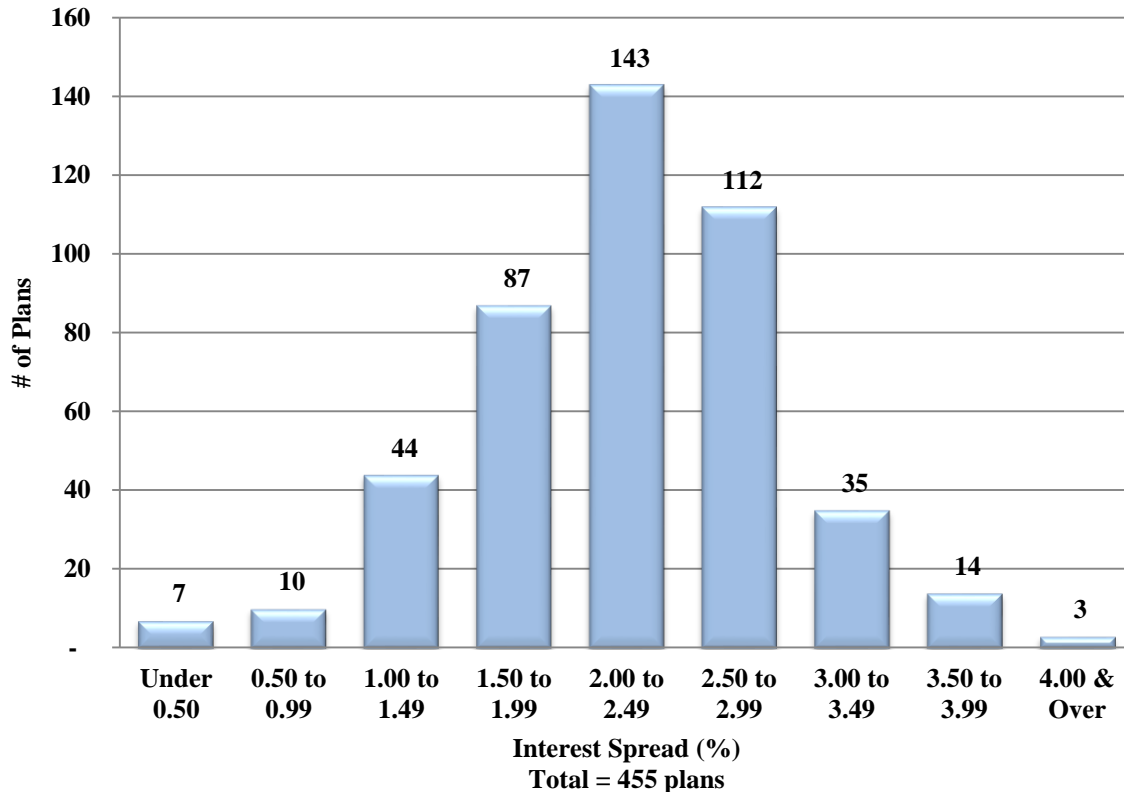
Chart 2.11 - Going Concern Interest Assumption



¹³ Of the 151 plans that used a going concern interest rate assumption in the range of 6.50% to 6.99%, 136 plans used an interest rate of 6.50%. Of the 503 plans that used a going concern interest rate assumption in the range of 6.00% to 6.49%, 357 plans used an interest rate of 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 82% of all plans providing final average benefits.¹⁴ The average spread between the interest assumption and the salary increase assumption was 2.12%.

Chart 2.12 - Interest Salary Differential for Final Average Plans



- Table 2.13 shows the provision for wind up expenses that was used in solvency valuations by plan membership size, including active members, former members and other plan beneficiaries.¹⁵ The expense allowance is also expressed in 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.

¹⁴ Of the 35 final average plans with an interest-salary differential in the range of 3.00% to 3.49%, 29 plans had an interest-salary differential of 3.00%. Of the 112 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 2.50%. Of the 143 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 2.00%.

¹⁵ For confidentiality reasons, the three plans with more than 50,000 members and other beneficiaries were excluded from this analysis. Solvency valuations that did not explicitly disclose a provision for wind up expenses were also excluded from this analysis.

The average per member wind up expense allowances are generally comparable to those previously reported in the 2011 Report, with increases between 1.5% to 5.5% for plans with less than 5,000 plan members. Assumed average wind up expenses per member showed a decrease of 8.4% for plans with between 5,000 and 10,000 members and an increase of 10.4% for plans with more than 10,000 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	436	21,205	\$ 22,456,600	\$ 51,506	\$ 1,059
100-499	526	130,257	65,034,350	123,639	499
500-999	157	111,758	40,244,075	256,332	360
1,000-4,999	194	400,802	97,032,700	500,169	242
5,000-9,999	35	241,536	42,061,000	1,201,743	174
10,000-49,999	23	389,037	148,826,000	6,470,696	383
All Plans	1,371	1,294,595	\$ 415,654,725	\$ 303,176	\$ 321

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 this period, although solvency valuations are still required to be performed and their results must be set out in the valuation report.¹⁶

The following tables provide selected statistics on the MEPPs that contain a defined benefit provision. Up to December 31, 2012, 48 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	48	337,143 (1,080)	91,717 (751)	360,232 (1,260)	789,092 (3,675)
Non-SOMEPPs	28	21,884 (361)	12,702 (219)	15,216 (210)	49,802 (803)
Total (All MEPPs)	76	359,027 (816)	104,419 (411)	375,448 (700)	838,894 (2,132)

¹⁶ More information on SOMEPPs is available at: <https://www.fsrao.ca/media/22316/download>

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	15,913 (98.9)	15,762 (98.4)	28,273 (169.8)	55.7% (69.2%)
Non-SOMEPPs	3,394 (45.2)	3,385 (45.1)	3,908 (55.8)	86.6% (90.5%)
Total (All MEPPs)	19,307 (82.5)	19,147 (81.8)	32,181 (106.9)	59.5% (75.2%)

‡ 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 and plan membership. For example, the median size of solvency liabilities for SOMEPPs is approximately 204% 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 69.2% compared to 90.5% 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 valuation report with a valuation date on or after September 30, 2008 and before September 30, 2011 (referred to herein as the solvency relief report):¹⁷

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 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 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.

From the 1,387 DB pension plans that are included in this report, 60 plans have been excluded from the funding relief analysis in this section because, as of December 31, 2012, they:

- have been wound up or are in the process of winding up;
- have changed their registration to another jurisdiction; or

¹⁷ More information on temporary solvency funding measures is available at: <https://www.fsrao.ca/temporary-solvency-funding-relief-measures>

- are not eligible to elect solvency relief (e.g., SOMEPPs, plans covered under special regulations)

Of the remaining 1,327 plans, 407 plans (31%) elected to use one or more of the funding relief options (Electing Plans) and have filed a solvency relief report in support of their elections.¹⁸

Table 3.3 below presents a profile of the Electing and Non-Electing Plans as at December 31, 2012.

Table 3.3 - Membership Information*

	# of Plans	Total (Median) Membership Count			
		Active Members	Retired Members	Other Participants	Total
Electing Plans	407	169,712 (115)	171,249 (68)	56,313 (39)	397,274 (222)
Non-Electing Plans	920	305,786 (75)	208,459 (50)	126,115 (35)	640,360 (160)
Total	1,327	475,498 (90)	379,708 (60)	182,428 (38)	1,037,634 (188)

* Based on the solvency relief report

Table 3.4 - Funding Information*

	# of Plans	Total (Median) Value		
		Solvency Assets	Solvency Liabilities	Ratio of Solvency Assets to Solvency Liabilities
		(\$ Millions)		
Electing Plans	407	39,597 (17)	55,839 (21)	70.9% (78.6%)
Non-Electing Plans	920	71,326 (13)	81,374 (15)	87.7% (85.9%)
Total	1,327	110,923 (15)	137,213 (19)	80.8% (78.0%)

* Based on the solvency relief report

Electing Plans tend to be larger than Non-Electing plans, when measured by the size of their assets, liabilities and plan membership. For example, the median size of solvency liabilities in respect of Electing Plans is approximately 40% larger than that of Non-Electing Plans.

In terms of funding levels, Electing Plans are generally less well funded than Non-Electing Plans. The median solvency ratio for the Electing Plans is 78.6% compared to 85.9% for Non-Electing Plans.

Table 3.5 shows the distribution of options chosen by Electing Plans. As shown below, the combined use of options 1 and 2 was the most prevalent choice, accounting for 47.1% of all plan elections. The next most common choice was option 1, which accounted for 28.0% of plan elections, followed by all options at 9.3% and option 2 at 7.4% of Electing Plans.

¹⁸ An additional 66 plans elected to use one or more of the funding relief options for a total of 473 plans. However, these electing plans have been excluded from the total because they have wound up, are in the process of winding up (12 plans), or are Frozen DB plans (33 plans), or are Designated plans (21 plans).

Table 3.5 - Distribution of Funding Relief Options

Election	Number of Plans	% of Plans
Option 1 only	114	28.0%
Option 2 only	30	7.4%
Option 3 only	8	2.0%
Options 1 and 2	192	47.1%
Options 1 and 3	23	5.7%
Options 2 and 3	2	0.5%
All Options	38	9.3%
Total	407	100.0%

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 3.6, the required funding contributions for Electing Plans were reduced significantly. Specifically, their minimum required contributions were reduced from \$3,853 million to \$1,895 million — a reduction of \$1,958 million or 51 per cent. The bulk of the reduction (93%) was attributable to the lower solvency special payments.

Table 3.6 - Required Contributions in the 12-month Period Commencing on the Valuation Date of the Solvency Relief Report for the 407 Electing Plans

Required Contributions	Before Application of Funding Relief	After Application of Funding Relief	Reduction in Required Contributions
	(\$ Millions)		
Employer Normal Cost	688	688	0
Going Concern Special Payments	754	622	132
Solvency Special Payments	2,411	585	1,826
Total Minimum Required Contributions	3,853	1,895	1,958

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 valuation 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 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. This is because the Regulation has also 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.

The amendment also provided for a filing extension to February 28, 2013 for the filing of valuation reports with a valuation date on or after September 30, 2011 and before May 31, 2012.

Out of the 1,387 DB pension plans that are included in this report, 433 plans have filed their first valuation report with a valuation date on or after September 30, 2011 and before September 30, 2014 and are eligible to elect one or more of the 2012 funding relief options available. Of these 433 eligible plans, 130 plans (30%) elected to use one or more of the 2012 funding relief options (Electing Plans).

Table 3.7 below presents a profile of the Electing and Non-Electing Plans as at December 31, 2012

Table 3.7 - Membership Information*

	# of Plans	Total (Median) Membership Count			
		Active Members	Retired Members	Other Participants	Total
Electing Plans	130	57,363 (204)	54,215 (123)	21,596 (67)	133,174 (394)
Non-Electing Plans	303	113,032 (76)	144,607 (59)	52,468 (36)	310,107 (171)
Total	433	170,395 (105)	198,822 (92)	74,064 (50)	443,281 (247)

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

Table 3.8 - Funding Information*

	# of Plans	Total (Median) Value		
		Solvency Assets	Solvency Liabilities	Ratio of Solvency Assets to Solvency Liabilities
		(\$ Millions)		
Electing Plans	130	14,679 (40)	21,231 (54)	69.1% (74.6%)
Non-Electing Plans	303	45,073 (17)	60,581 (23)	74.4% (74.1%)
Total	433	59,752 (27)	81,812 (37)	73.0% (72.1%)

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

Table 3.9 shows the distribution of options chosen by Electing Plans. As shown below, the use of option 4 was the most prevalent choice, accounting for 76.9% of all plan elections. The next most common choice was the combination of Options 4 and 5, which accounted for 14.6% of plan elections.

Table 3.9 - Distribution of Funding Relief Options

Election	Number of Plans	% of Plans
Option 4 only	100	76.9%
Option 5 only	11	8.5%
All Options	19	14.6%
Total	130	100.0%

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. 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. Of the 130 Electing Plans, 119 elected to defer the start of the new special payments (either new going concern and/or new solvency special payments).

Table 3.10 shows that the required minimum going concern and solvency special payments for Electing Plans were reduced by 23% 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 3.10 in order to provide the total required special payments of the Electing Plans.

Table 3.10 – Required Special Payments for the Two Year Period Following the Valuation Date of the 2012 Solvency Relief Report for the 130 Electing Plans

	Required Contributions	Year 1	Year 2
		(\$ Millions)	
Before Application of Funding Relief	Going Concern Special Payments	87	132
	Solvency Special Payments	545	991
	Total Minimum Required Contributions	632	1,123
After Application of Funding Relief	Going Concern Special Payments	87	132
	Solvency Special Payments	398	697
	Total Minimum Required Contributions	485	829
Reduction in Special Payments Due to Funding Relief		147	294
% Difference		23%	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 will start from the plan’s Stage 1 valuation date which is set out in the Schedule to Ontario Regulation 178/11. It would be a three year period during which plans would be permitted to fund to a lower solvency threshold 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.

Table 3.11 – 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 [†]	86,222	58,374	17,241	161,837	30,330	33,510	33,995
Average Age	46.27	74.59	49.64	56.84			

[†] Eight of the 25 plans have not yet filed their Stage 1 valuation report.

4.0 TRENDS ANALYSIS

The following trends analysis incorporates data from all filed reports with valuation dates between July 1, 2008 and June 30, 2012.

4.1 Solvency Funded Status

Table 4.1 shows a breakdown of plans by solvency ratios for the following valuation years:¹⁹

- 2008 valuation year: July 1, 2008 to June 30, 2009
- 2009 valuation year: July 1, 2009 to June 30, 2010
- 2010 valuation year: July 1, 2010 to June 30, 2011
- 2011 valuation year: July 1, 2011 to June 30, 2012

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. Therefore, they would appear in FSCO's database for more than one valuation year.

Table 4.1 - Solvency Ratios by Valuation Year

Solvency Ratio (SR)	2008		2009		2010		2011	
	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans
SR < 0.60	36	7.3%	19	2.2%	15	1.7%	52	10.5%
0.60 ≤ SR < 0.80	264	53.1%	341	40.3%	278	31.0%	324	65.8%
Sub-Total < 0.8	300	60.4%	360	42.5%	293	32.7%	376	76.3%
0.80 ≤ SR < 0.90	94	19.0%	311	36.8%	366	40.9%	73	14.8%
0.90 ≤ SR < 1.00	51	10.3%	105	12.4%	157	17.5%	22	4.5%
Sub-Total < 1.00	445	89.7%	776	91.7%	816	91.1%	471	95.6%
1.00 ≤ SR < 1.20	38	7.7%	55	6.5%	61	6.8%	16	3.2%
SR ≥ 1.20	13	2.6%	15	1.8%	19	2.1%	6	1.2%
Total	496	100.0%	846	100.0%	896	100.0%	493	100.0%
Median Ratio	0.77		0.81		0.84		0.70 ²⁰	

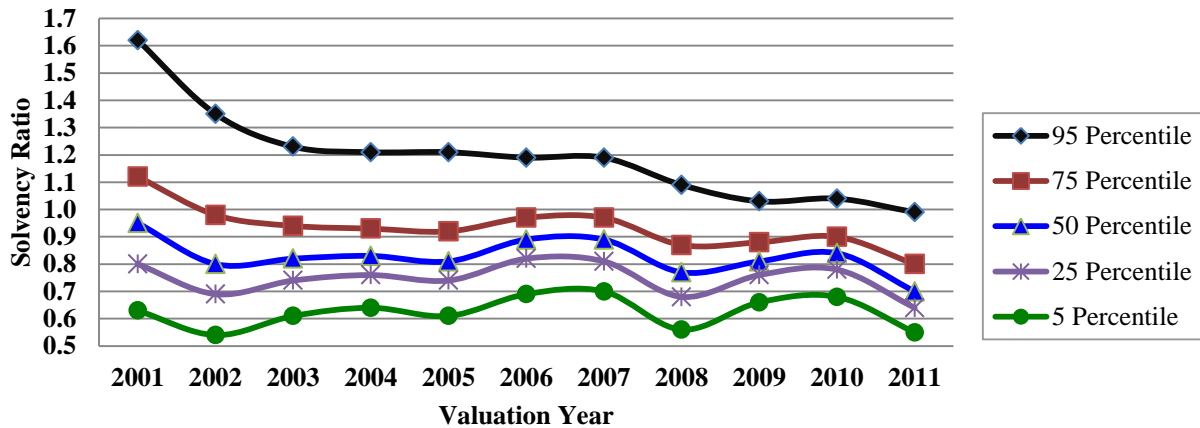
Table 4.1 above shows that the solvency ratios deteriorated during the 2011 valuation year, after having improved in valuation years 2009 and 2010. The percentage of plans with a solvency ratio less than 0.80 more than doubled from 32.7% in 2010 to 76.3% in 2011. The proportion of underfunded plans on a solvency basis (i.e., a solvency ratio less than 1.0) is higher at 95.6% compared to last year's 91.1%.

¹⁹ The number of plans for 2008-2010 inclusive may differ from those reported in the 2011 Report due to (a) reports filed after last year's cutoff date of December 31, 2011, and (b) plans that have been wound up, converted to a DC arrangement, or became a Frozen DB plan with no DB/DC accruals.

²⁰ This median solvency ratio pertains only to those plans that have filed a 2011 valuation. 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 valuation prior to 2011.

Chart 4.2 shows the distribution of solvency ratios at different percentiles from 2001 to 2011. Of note, the solvency ratios at all percentiles declined sharply from the 2007 to 2008 valuation years, improved in 2009 and 2010, and have declined again in the 2011 valuation year.

Chart 4.2 - Solvency Ratios: 2001 to 2011



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 2008 to 2011, as well as for the three-year valuation period of 2009 to 2011.²¹ 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.

²¹ Individual valuation years include those plans that filed a report with a valuation date that fell during that individual year. The 2009-11 period includes only the last funding valuation report filed for a plan with a valuation date falling between July 1, 2009 and June 30, 2012. The total number of plans included in each of the 2009, 2010 and 2011 valuation years is therefore higher than the number of plans included in the combined period 2009-2011.

Chart 4.3 - Solvency Funding Positions of Ontario DB Plans (Number of Plans)

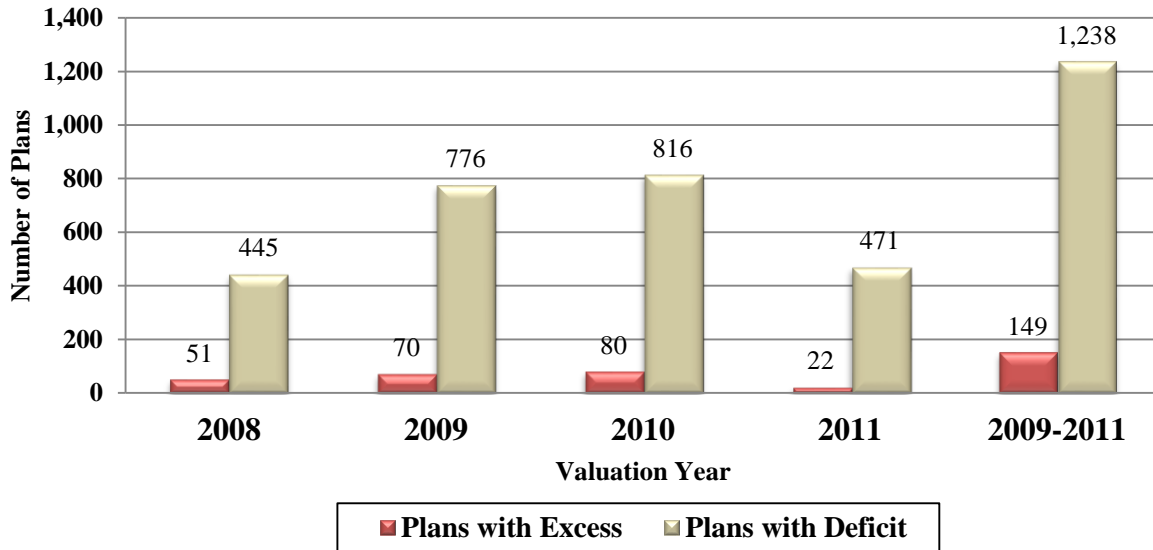
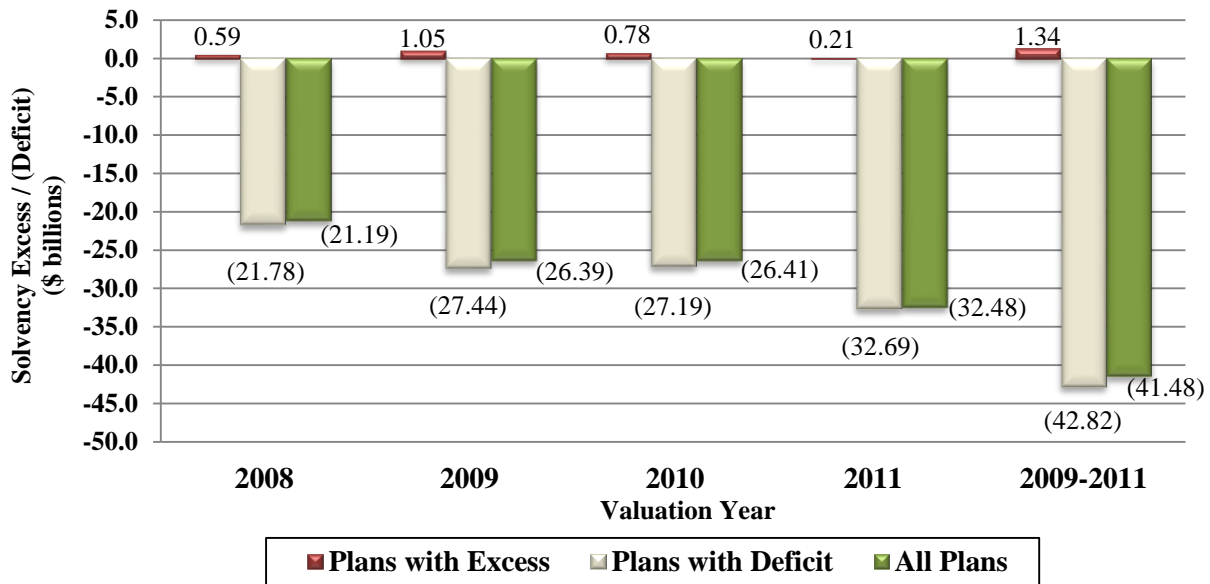


Chart 4.4 - Solvency Funding Position of Ontario DB Plans (Amount of Solvency Excess / (Deficit))



On a dollar amount basis, plans that filed a report during the three valuation years (July 1, 2009 to June 30, 2012) reported a *net* solvency deficit of \$41.5 billion (after allowance for expenses) on solvency liabilities of \$185.8 billion. This represents the total level of under-funding for DB plans registered in Ontario, exclusive of the seven large public sector plans and the other excluded plans previously described. In contrast, the *net* solvency deficit shown in the 2011 Report was \$27.1 billion for the prior three valuation years (July 1, 2008 to June 30, 2011). While the \$14.4 billion increase in the net solvency deficit resulted from reports filed in the 2011

valuation year, note that these reports would 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 funding 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 246 plans that excluded one or more of these benefits, resulting in a reduction of liabilities totaling \$17.5 billion. Thus, the total *wind up* funding shortfall for those plans that filed a report between 2009 and 2011 would have exceeded their *net* solvency deficit by the same amount. This translates into a wind up funding deficit of \$59.0 billion (\$41.5 billion plus \$17.5 billion), after making allowances for expenses, on wind up liabilities of \$203.3 billion. It measures the extent of funding shortfall of all Ontario DB pension plans 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 2008, 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 (%)	2008		2009		2010		2011	
	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans
Rate < 5.00	14	2.8%	24	2.8%	53	5.9%	71	14.4%
5.00 ≤ Rate < 5.50	31	6.3%	69	8.2%	130	14.5%	98	19.9%
5.50 ≤ Rate < 6.00	71	14.3%	180	21.3%	249	27.8%	157	31.8%
6.00 ≤ Rate < 6.50	194	39.1%	330	39.0%	382	42.7%	142	28.8%
6.50 ≤ Rate < 7.00	176	35.5%	236	27.9%	80	8.9%	25	5.1%
7.00 ≤ Rate < 7.50	9	1.8%	7	0.8%	2	0.2%	0	0.0%
Rate ≥ 7.50	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Total	496	100.0%	846	100.0%	896	100.0%	493	100.0%
Average (%)	6.10%		6.01%		5.77%		5.51%	

The average of the assumed interest rates declined from 6.10% to 5.51% over the four valuation years (2008 to 2011). 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 in the 2011 valuation year 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 76.6% of plans in 2008 to 33.9% in 2011. Of the 2011 valuations filed, 86.0% 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 rate 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 rates and non-indexed annuity proxy rate have declined significantly over the five year period illustrated. The Canadian Institute of Actuaries has also updated the mortality table during this five year period, from a static mortality table to a new mortality table that takes into account mortality improvement in the future. The 1994 Uninsured Pensioner Mortality Table with generational improvements using projection Scale AA (“UP94 Generational”) assumes that life expectancy will continue to improve over time.

Chart 4.6 - Commuted Value Rates

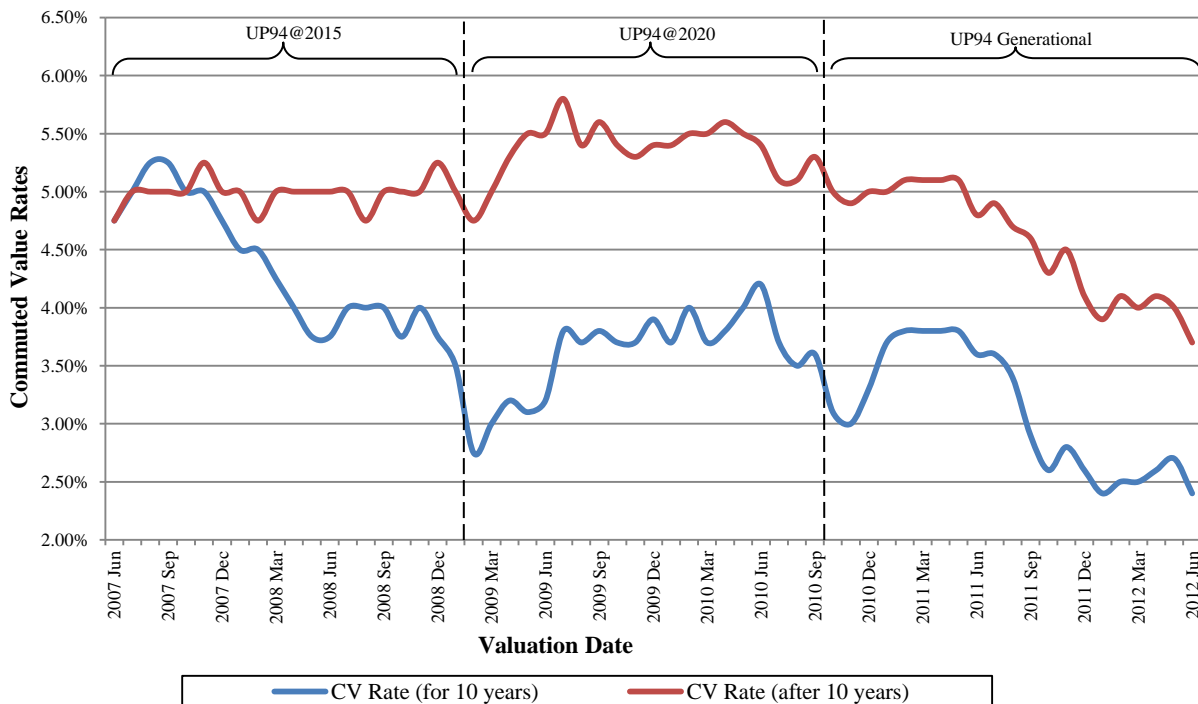
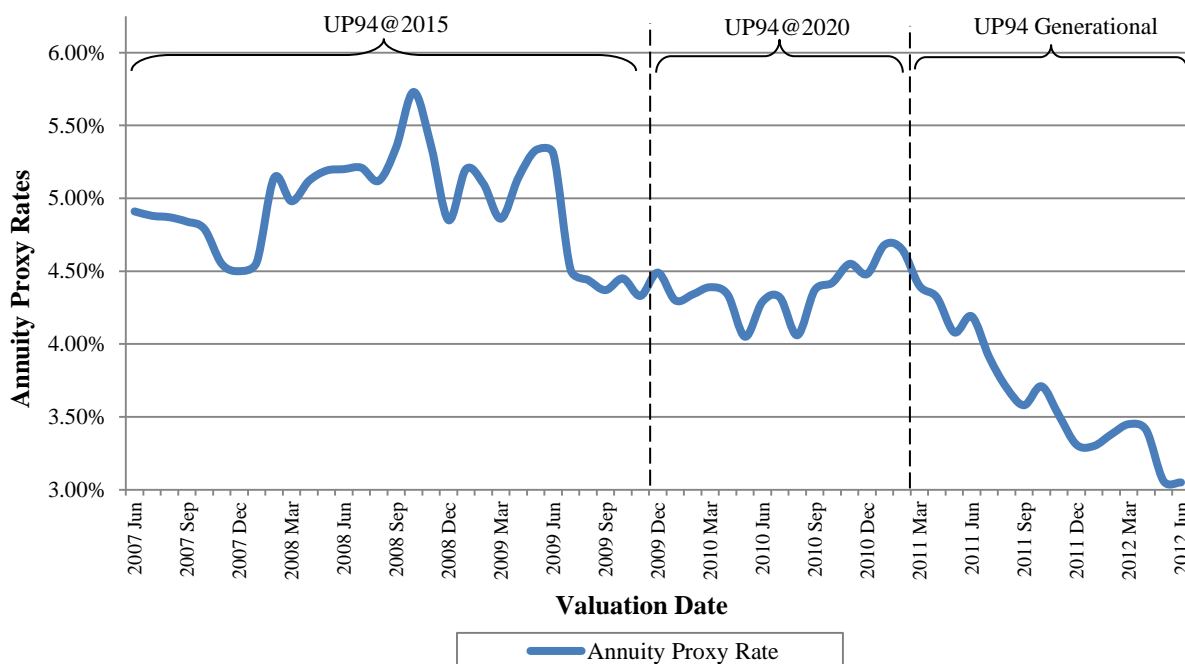


Chart 4.7 - Annuity Proxy Rates



Mortality

Table 4.8 shows the distribution of the mortality tables used in going concern valuations. 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	2008		2009		2010		2011	
	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans
1983 GAM	4	0.8%	0	0.0%	0	0.0%	0	0.0%
1994 GAM static	7	1.4%	7	0.8%	10	1.1%	2	0.4%
1994 GAR	10	2.0%	8	0.9%	8	0.9%	2	0.4%
1994 UP	459	92.6%	787	93.1%	801	89.4%	427	86.6%
Other ²²	16	3.2%	44	5.2%	77	8.6%	62	12.6%
Total	496	100.0%	846	100.0%	896	100.0%	493	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.

²² In the 2011 valuation year (July 1, 2011 to June 30, 2012), all 62 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 1,387 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, 2011 and June 30, 2012). There are 1,276 plans included in the investment data analysis, representing 92% of the plans included in the funding data analysis.²³

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

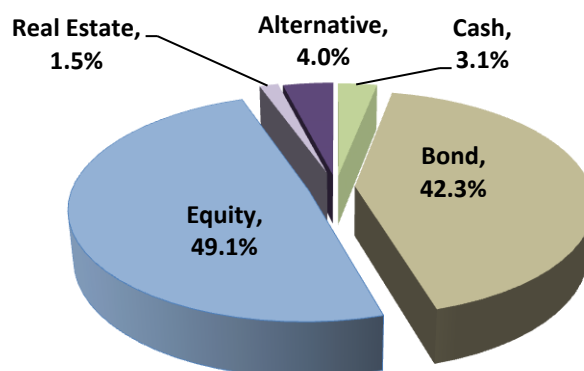
5.1 Summary of Pension Fund Profiles

In aggregate, the asset mix of the 1,276 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 ²⁴	Market Value (\$ Millions)	% of Total Investments
Asset Mix	Cash	4,392	3.1%
	Bond	60,496	42.3%
	Equity	70,216	49.1%
	Real Estate	2,059	1.5%
	Alternative Investments ²⁵	5,747	4.0%
	Total	142,910	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 45% of total investments. Non-fixed income assets (consisting of equity, real estate and alternative investments) constitute 55% of total investments.

²³ The plans that are not included in the investment data analysis subset are primarily plans with outstanding IIS filings

²⁴ Plan assets invested in pooled funds totaled \$63,345 million or 44.3% of total investments. Pooled funds are included in the asset mix of all plans based on their underlying asset classes.

²⁵ 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 1,276 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		1,210	66	1,276
Asset Mix	Fixed Income	46.2%	40.0%	45.4%
	Non-Fixed Income	53.8%	60.0%	54.6%
Performance				
Average Return ²⁶		0.78%	0.02%	0.74%
Average Investment Fees		0.98%	0.63%	0.96%

²⁶ 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 2.97%, compared to 0.74% 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	5.87%	2.59%	5.73%
75 th Percentile	2.68%	1.12%	2.57%
Median	0.26%	-0.60%	0.18%
25 th Percentile	-1.80%	-2.40%	-1.86%
10 th Percentile	-3.56%	-3.55%	-3.56%
Investment Fees			
90 th Percentile	0.90%	0.64%	0.89%
75 th Percentile	0.63%	0.49%	0.61%
Median	0.44%	0.40%	0.43%
25 th Percentile	0.29%	0.33%	0.30%
10 th Percentile	0.14%	0.28%	0.15%

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 Type²⁷

Benefit Type		FAE	CAE	FB	Hybrid	All Plans	
# of Plans		424	149	247	456	1,276	
Asset Mix	Fixed Income	44.0%	43.6%	46.8%	46.3%	45.4%	
	Non-Fixed Income	56.0%	56.4%	53.2%	53.7%	54.6%	
Performance		Average Return	0.79%	0.54%	0.06%	1.13%	0.74%
		Average Investment Fees	0.46%	0.55%	0.48%	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		745	426	105	1,276	
Asset Mix	Fixed Income	44.7%	44.7%	45.7%	45.4%	
	Non-Fixed Income	55.3%	55.3%	54.3%	54.6%	
Performance		Average Return	0.15%	1.40%	2.30%	0.74%
		Average Investment Fees	0.59%	0.37%	0.33%	0.49%

²⁷ 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		373	766	137	1,276
Asset Mix	Fixed Income	45.4%	45.1%	47.1%	45.4%
	Non-Fixed Income	54.6%	54.9%	52.9%	54.6%
<hr/>					
Performance	Average Return	0.31%	0.74%	1.92%	0.74%
	Average Investment Fees	0.48%	0.50%	0.48%	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	219	886	1,276
Asset Mix	Fixed Income	49.8%	42.0%	43.7%	45.4%
	Non-Fixed Income	50.2%	58.0%	56.3%	54.6%
<hr/>					
Performance	Average Return	2.29%	1.73%	0.19%	0.74%
	Average Investment Fees	0.41%	0.38%	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 2011 and commonly evident for the previous monitoring cycles. These observations are as follows:

- The typical asset mix of pension funds changed from a fixed income/non-fixed income split of 41%/59% in 2010 to a split of 45%/55% in 2011.
- Large plans have higher average return and lower investment fees than small plans.
- As in last year's report, pension funds of MEPPs generally invested more in non-fixed income assets than SEPPs.
- There do not seem to be significant differences in asset mix, average return and average investment fees between different benefit types.
- The average return for SEPPs is higher than that of MEPPs.

6.0 2012 PROJECTIONS

6.1 Estimated DB Funding Contributions in 2012

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 2012, including those related to defined benefit provisions under hybrid plans. The estimates are based on the information from the most recently filed funding valuation reports with valuation dates between July 1, 2009 and June 30, 2012.²⁸

Table 6.1 - Estimated DB Funding in 2012

	Plans with Solvency Excess	Plans with Solvency Deficit	All Plans
Number of Plans	146	1,241	1,387
	(\$ Millions)	(\$ Millions)	(\$ Millions)
Employer Normal Cost Contributions	316	3,099	3,415
Member Required Contributions	52	594	646
Sub-total	368	3,693	4,061
Special Payments	37	4,743	4,780
Total	405	8,436	8,841

The total DB funding contributions in 2012 are estimated to be \$8.8 billion, which is 10% higher than the estimated contributions of \$8.0 billion for 2011, as set out in the 2011 Report. The increase of \$0.8 billion consists of the following changes:

- An increase of \$720 million in the required special payments
- An increase of \$112 million in the required employer normal cost and member contributions.

The special payments of \$4.7 billion represent 54% of the total estimated 2012 funding contributions of \$8.8 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 \$37 million for plans with a solvency excess represent 9% of the total contributions of \$0.4 billion for these plans. This compares with the total special payments of \$4.7 billion for plans with a solvency deficit, representing about 56% of the total contributions of \$8.4 billion for these plans.

²⁸ For plans where the AIS reported contributions did not extend to the end of 2012, the 2012 estimated contributions were determined assuming contributions would continue at the same rate as that reported for the valuation period.

The estimated 2012 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 \$4.0 billion of prior year credit balances were reported for 139 plans that had a non-zero prior year credit balance.

6.2 Projected Solvency Position as at December 31, 2012

This section presents a projection of the solvency funding position of DB plans to the end of 2012. The projection reflects the impact of investment returns, changes in the solvency interest rates and the special payments expected to be made during 2012. The methodology and assumptions used are described below.

Methodology and Assumptions

The results reported in the last filed funding valuations (i.e., assets and liabilities) were first adjusted, where appropriate, to reflect the financial conditions as at December 31, 2011. Projections were then made to the end of 2012 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 be the same as the pension amounts payable to retired members as reported in the last filed funding valuation. 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 ²⁹
2008	-15.9%
2009	16.2%
2010	10.4%
2011	0.5%
2012	9.4%

²⁹ For years 2008 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. Note that the projected solvency ratio as at December 31, 2011 (shown in the 2011 Report) was determined using an annual rate of return of 1.0% for 2011.

The projected liabilities as at December 31, 2011 and December 31, 2012 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.

Table 6.3 – Solvency Liability Projection Basis

Valuation Date	Commuted Value Basis ³⁰	Annuity Purchase Basis ³¹
December 31, 2011	Interest: 2.6% for 10 years, 4.10% thereafter Mortality: 1994 UP generational	Interest: 3.31% Mortality: 1994 UP generational
December 31, 2012	Interest: 2.4% for 10 years, 3.60% thereafter Mortality: 1994 UP generational	Interest: 2.96% Mortality: 1994 UP generational

Projection Results

Table 6.4 presents the distribution of solvency ratios that were reported in the last filed funding valuations 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, 2011	PSR as at December 31, 2012
10 th percentile	65%	62%	64%
25 th percentile	75%	67%	68%
50th percentile	84%	73%	73%
75 th percentile	91%	78%	79%
90 th percentile	100%	85%	86%

As shown in Table 6.4, the median PSR is projected to remain steady at 73% between December 31, 2011 and December 31, 2012. In general, the change, if any, in the median PSR is the net effect of the following factors:

- Assumed pension fund returns in 2012 being higher than the solvency valuation discount rates used at December 31, 2011;
- The extent by which expected contributions made during 2012 were greater than the increase in solvency liabilities due to benefit accruals in 2012; and
- The change in the solvency valuation interest rates used to calculate the solvency liabilities as at December 31, 2012. Both the commuted value interest rates and the annuity purchase interest rate as at December 31, 2012 are lower compared to their respective rates as at December 31, 2011.

³⁰ The commuted value basis used for the December 31, 2011 and December 31, 2012 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.

³¹ The interest rate for annuity purchase as at December 31, 2012 is based on the recommendation set out in the Canadian Institute of Actuaries' Educational Note of June 2013 providing guidance for Assumptions for Hypothetical Wind Up and Solvency Valuations With Effective Dates between December 31, 2012 and December 30, 2013. Specifically, the rate 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.

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 funding valuation reports with valuation dates between July 1, 2009 and June 30, 2012. 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 1,438 plans analyzed in the 2011 Report to the 1,387 plans analyzed in the 2012 Report.

Table 8.1 – Reconciliation of Plans from the 2011 Report to the 2012 Report

Plan Type:	Final Average	Career Average	Flat Benefit	Hybrid	Frozen Hybrid	MEPP	TOTAL
2011 Report	491	152	234	381	110	70	1,438
New plans / Spin-offs	6	1	1	1			9
Previously registered outside of Ontario	1			1	1		3
Filed outstanding report *	1		1		1		3
Previously excluded					4	2	6
<u>Change in Benefit Type</u>							
• FAE	(20)			18	2		0
• CAE		(2)		1		1	0
• FB			(3)	3			0
• Hybrid				(11)	11		0
Frozen DB (excluded from analysis)	(10)	(5)		(2)	(4)		(21)
Wind up (excluded from analysis)	(12)	(5)	(14)	(4)	(3)		(38)
Change to Designated Status				(1)			(1)
Plan merger	(1)		(3)				(4)
Registration changed to outside of Ontario	(1)			(1)		(1)	(3)
Plans with reports outstanding **					(1)		(1)
DC conversion	(1)	(1)		(1)	(5)		(8)
Data Correction	1			2	(3)	4	4
2012 Report	455	140	216	387	113	76	1,387

* 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, 2008 and June 30, 2011. They have since filed a funding valuation report with a valuation date between July 1, 2009 and June 30, 2012.

*** These are plans that were included in last year's analysis but are omitted from this year's analysis because they did not file a funding valuation report with a valuation date between July 1, 2009 and June 30, 2012. As such they are considered to have a report outstanding because of the requirement to file a report on at least a triennial basis.*

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
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	241	-	241
50 – 99	201	1	202
100 – 249	291	5	296
250 – 499	227	5	232
500 – 999	145	14	159
1,000 – 4,999	168	27	195
5,000 – 9,999	25	11	36
10,000 +	13	13	26
Total	1,311	76	1,387

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	6,451	-	6,451
50 – 99	15,048	78	15,126
100 – 249	46,571	876	47,447
250 – 499	81,357	1,666	83,023
500 – 999	103,394	9,697	113,091
1,000 – 4,999	338,303	65,364	403,667
5,000 – 9,999	166,035	82,980	249,015
10,000 +	236,747	678,233	914,980
Total	993,906	838,894	1,832,800

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