
Funding of Defined Benefit Pension Plans in Ontario

Sixth Annual Report

*Overview and Selected Findings
2006-2009*

Financial Services Commission of Ontario

March 2010

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Funding of Defined Benefit Pension Plans in Ontario Sixth Annual Report

Overview and Selected Findings 2006-2009

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 in order to provide pension stakeholders with up-to-date funding, investing, and actuarial information related to defined benefit (DB) pension plans in Ontario. The information is presented on an across-the-board basis only. It is based on the latest filed funding valuation reports for DB plans that had valuation dates between July 1, 2006 and June 30, 2009, and the financial statements for the fiscal year ending in the period between July 1, 2008 and June 30, 2009.

Risk-Based Monitoring

In July 2000, FSCO implemented a risk-based approach to monitor the funding of DB pension plans¹. 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 identifies individual funding reports for detailed compliance reviews.

Over the three- year period ending on December 31, 2009, AIS data for approximately 5,600 funding valuation reports were entered into our database and screened through the selective review system. Twenty-eight per cent of these reports were selected for further review, and approximately 31% of the selected reports were identified as having material compliance concerns that required further follow up. With very few exceptions, FSCO has been able to resolve the identified concerns with the plans' actuaries and/or administrators.

In 2006, to broaden the risk-based approach to monitoring DB pension plans, FSCO implemented a risk-based monitoring of pension fund investments³. This program involves the collection of key financial and investment data for DB plans on an annual basis, using a standard

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: <http://www.fSCO.gov.on.ca/english/pensions/riskbasedsupervision.pdf>

² The AIS is a standardized form, developed jointly by FSCO, the Canada Revenue Agency and the federal Office of the Superintendent of Financial Institutions. It is prepared 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: <http://www.fSCO.gov.on.ca/english/pensions/InvestmentInformationSummary.asp>

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 each of the first two years of implementation, 2005-2006 and 2006-2007, the number of plans that filed an IIS was approximately 4,000. Starting from the third monitoring cycle, this number decreased to approximately 2,000 as a result of the exclusion of designated plans⁴. For the most recent monitoring cycle, IIS data for 1704 plans have been entered into the IIS database and assessed with the predetermined criteria. Of all these IIS filings, approximately 29% were flagged for further review. Approximately half of those flagged were identified as having material concerns that were brought to the attention of the plans' administrators. These concerns were resolved without further follow up in all but 40 cases. For these 40 cases, FSCO has taken additional steps to address the issues raised.

Funding Relief Measures

On August 24, 2007, Ontario introduced changes to the Regulation affecting the funding rules for multi-employer pension plans (MEPPs). The Regulation provides temporary funding relief for Specified Ontario Multi-Employer Pension Plans (SOMEPPs) in respect of reports filed with valuation dates on or after September 1, 2007 and before September 1, 2010 (subsequently extended to September 1, 2012). A SOMEPP is exempt from the requirement to fund on a solvency basis.

On June 23, 2009, the Regulation was further amended to provide temporary funding relief for Ontario registered DB pension plans. These measures provide for the deferral of special payments for new going concern and solvency deficiencies for up to 12 months, consolidation of previously determined solvency special payments, and amortization of new solvency deficiencies over 10 years instead of 5 years, with member consent.

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

DB Plan Reporting

The AIS and IIS databases provide FSCO with the information it needs to compile relevant pension plan funding and investment data and to identify certain DB pension plan trends in Ontario. This is FSCO's sixth annual report on DB funding and investments.

⁴ Designated Plans are defined in section 8515 of the federal Income Tax Regulations. Generally, these are plans for connected persons and highly-paid executives.

Key Findings

Some of the key findings in this sixth annual report are:

Funding Data

- Overall, the funded position of pension plans has deteriorated from what was last reported in the annual DB funding report dated March 2009 (the Fifth Annual Report)⁵. In particular, the median funded ratio on a going concern basis has decreased from 106% to 104%, while the median funded ratio on a solvency basis has decreased from 91% to 89%.
- Compared with the Fifth Annual Report, more plans were less than fully funded on either a going concern or solvency basis, or both, at their last valuation date. Specifically:
 - Seventy-nine per cent of the plans were less than fully funded on a solvency basis (versus 76% in the Fifth Annual Report).
 - Thirty-nine per cent of the plans were less than fully funded on a going concern basis (versus 32% in the Fifth Annual Report).
- Assumptions and methods for the going concern valuations continue to be quite uniform when compared to prior valuations. For example:
 - Over 98% of the plans used the unit credit cost method.
 - Over 99% of the plans used either a market or smoothed market value of assets.
 - The average interest rate assumption used for going concern valuations decreased from 6.34% to 6.12% over the 2005 to 2008 valuation period, and over 97% of the 2008 valuations used an interest rate below 7%.
 - All but four of the 2008 valuations, or approximately 99%, used an up-to-date (1994 or later) mortality table.
- The minimum required contributions for 2009, including employer normal cost, member required contributions and special payments, are estimated to be \$6.7 billion, modestly higher than the \$6.4 billion estimated in the Fifth Annual Report for 2008.
- After a significant decline during 2008, the funded position of pension plans is expected to partially recover during 2009. Overall, the median solvency ratio⁶ for pension plans is projected to increase from 79% to 85% between the 2008 and 2009 year ends. The key drivers of this improvement are the good investment performance of financial markets during 2009, offset by the use of modestly lower interest rates for determining the commuted values and the cost of annuity purchases. Special payments for less than fully funded plans are expected to further improve the funded position of these plans.

⁵ Available at: <http://www.fscs.gov.on.ca/english/pensions/DBFundRep09.pdf>

⁶ A plan's solvency ratio is the ratio of the market value of the plan's assets to the plan's solvency liabilities.

Funding Relief Data

- The statistics on the utilization of the temporary funding relief measures as of December 31, 2009 are as follows:
 - Of the 70 MEPPs that contain a defined benefit provision, 30 or 43% have elected to be treated as a SOMEPP.
 - Of the 475 non-designated DB plans that have filed a valuation report with a valuation date on or after September 30, 2008, 130 or 27% have elected to use one or more of the funding relief options introduced in June 2009.

Investment Data

- The typical asset mix of pension funds changed from a fixed income/non-fixed income split of 40%/60% in 2007 to a split of 45%/55% in 2008.
- Generally, plans with lower solvency ratios invested more in non-fixed income assets than plans with higher solvency ratios. Plans with lower solvency ratios also had poorer performance on both absolute and relative bases.
- About 65% of the plans did not outperform the market, when actual returns net of investment expenses were compared to market index returns.

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, 2006 and June 30, 2009. The data were compiled from the AIS and funding valuation reports received by FSCO on or before the data cutoff date, December 31, 2009.

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,⁷ annual filing is required until these concerns are eliminated. Early filings may also be required when events such as plan mergers, partial windups, or sales of businesses occur. To avoid double counting, only the data from a plan's most recently filed report were considered.

For the purposes of this report, designated plans, and plans where members are no longer accruing future DB benefits (referred to as Frozen DB Plans) have been excluded. In addition, seven large public sector plans have been excluded in order not to skew the results of our analysis.

In total, 1,539 plans were included in the funding data analysis. Table 2.1 below presents a profile of these plans.

Table 2.1 - Summary of Plans Included

Plan/ Benefit Type	# of Plans	Active Members	Retired Members	Other Participants	Total Participants	Market Value of Assets (\$ Millions)
Final Average	640	214,799	131,132	57,653	403,584	\$58,907
Career Average	197	38,332	24,569	13,913	76,814	5,568
Flat Benefit	322	105,258	112,399	35,452	253,109	23,969
Hybrid	310	156,799	125,115	69,039	350,953	32,293
Multi-Employer	70	366,583	94,632	353,480	814,695	17,442
Total	1,539	881,771	487,847	529,537	1,899,155	\$ 138,179
Average Age		42.50	71.70	42.20		

⁷ A report indicates solvency concerns if (i) the solvency ratio is less than 80%, or (ii) the solvency ratio is between 80% and 90% and the solvency liabilities exceed the market value of assets by more than \$5 million.

The plans that were excluded from the funding data analysis consist of 252 Frozen DB Plans and 7 large public sector plans as described previously. The profiles of these plans are summarized in Table 2.2.

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	697,392	358,163	143,579	1,199,134	\$194,000
	Average Age		44.30	70.04	52.55		
Frozen DB Plans	Future DC accruals only	63	3,971	3,187	2,977	10,135	\$683
	No future DB/DC accruals	189	12,388	31,760	13,588	57,736	\$4,971
	Total	252	16,359	34,947	16,565	67,871	\$ 5,654
	Average Age		45.79	73.81	48.85		

In addition, 56 plans that are in the process of winding up have been excluded from the funding data analysis.

2.1 Summary of Funding Data

The main findings regarding the funded status of DB pension plans are as follows:

- Of all the 1,539 plans analyzed, 605 (39%) were less than fully funded on a going concern basis, while 1,222 (79%) were less than fully funded on a solvency basis.
- Of the 640 final average earnings plans, 314 (49%) were less than fully funded on a going concern basis and 459 (72%) were less than fully funded on a solvency basis.
- Of the 197 career average earnings plans, 55 (28%) were less than fully funded on a going concern basis and 174 (88%) were less than fully funded on a solvency basis.
- Of the 322 flat benefit plans, 89 (28%) were less than fully funded on a going concern basis and 294 (91%) were less than fully funded on a solvency basis.
- Of the 310 hybrid plans, 121 (39%) were less than fully funded on a going concern basis and 242 (78%) were less than fully funded on a solvency basis.
- Of the 70 multi-employer pension plans (MEPPs), 26 (37%) were less than fully funded on a going concern basis and 53 (76%) were less than fully funded on a solvency basis.

The information above is summarized in Table 2.3 below.

Table 2.3 - Distribution of Underfunded Plans

Plan/Benefit Type	Total # of Plans	Going Concern Funded Ratio < 1.0		Solvency Funded Ratio < 1.0	
		#	%	#	%
Final Average	640	314	49%	459	72%
Career Average	197	55	28%	174	88%
Flat Benefit	322	89	28%	294	91%
Hybrid	310	121	39%	242	78%
Multi-Employer	70	26	37%	53	76%
Total	1,539	605	39%	1,222	79%

Tables 2.4 and 2.5 below provide a more detailed breakdown of the going concern and solvency funded ratios in respect of different types of DB pension plans.

For all plans analyzed, the median funded ratios were 104% on a going concern basis and 89% on a solvency basis. Note also that of the 70 MEPPs, 26 (37%) had a solvency ratio of less than 80%. These 26 plans have approximately 602,000 members and former members, representing almost 74% of the total MEPP membership.

Table 2.4 - Going Concern Funded Ratio

Funded Ratio (FR)	Final Average	Career Average	Flat Benefit	Hybrid	MEPP	All Plans
FR < 0.60	8	2	7	2	1	20
0.60 ≤ FR < 0.80	41	5	11	12	3	72
0.80 ≤ FR < 0.90	104	11	30	33	8	186
0.90 ≤ FR < 1.00	161	37	41	74	14	327
1.00 ≤ FR < 1.20	252	113	139	139	36	679
FR ≥ 1.20	74	29	94	50	8	255
Total	640	197	322	310	70	1,539
Median Ratio	1.00	1.06	1.11	1.04	1.05	1.04

Table 2.5 - Solvency Funded Ratio

Solvency Ratio (SR)	Final Average	Career Average	Flat Benefit	Hybrid	MEPP	All Plans
SR < 0.60	13	4	14	6	11	48
0.60 ≤ SR < 0.80	111	44	98	44	15	312
0.80 ≤ SR < 0.90	155	75	115	92	3	440
0.90 ≤ SR < 1.00	180	51	67	100	24	422
1.00 ≤ SR < 1.20	129	19	27	51	16	242
SR ≥ 1.20	52	4	1	17	1	75
Total	640	197	322	310	70	1,539
Median Ratio	0.92	0.86	0.84	0.91	0.91	0.89

2.2 Summary of Actuarial Assumptions and Methods

The key actuarial assumptions and methods used in going concern valuations are as follows:

- Over 98% of the plans used the unit credit cost method (with salary projection for final average plans) to calculate the going concern liabilities.

Table 2.6 - Liability Valuation Method

Liability Valuation Method	# of Plans	% of Plans
Unit Credit (with salary projection)	891	57.9%
Unit Credit (with no salary projection)	629	40.9%
Entry Age Normal	14	0.9%
Individual Level Premium	2	0.1%
Aggregate	2	0.1%
Other	1	0.1%
Total	1,539	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.

Table 2.7 - Asset Valuation Method

Asset Valuation Method	# of Plans	% of Plans
Market	1,017	66.1%
Smoothed Market	511	33.2%
Book	6	0.4%
Book & Market Combined	3	0.2%
Other	2	0.1%
Total	1,539	100.0%

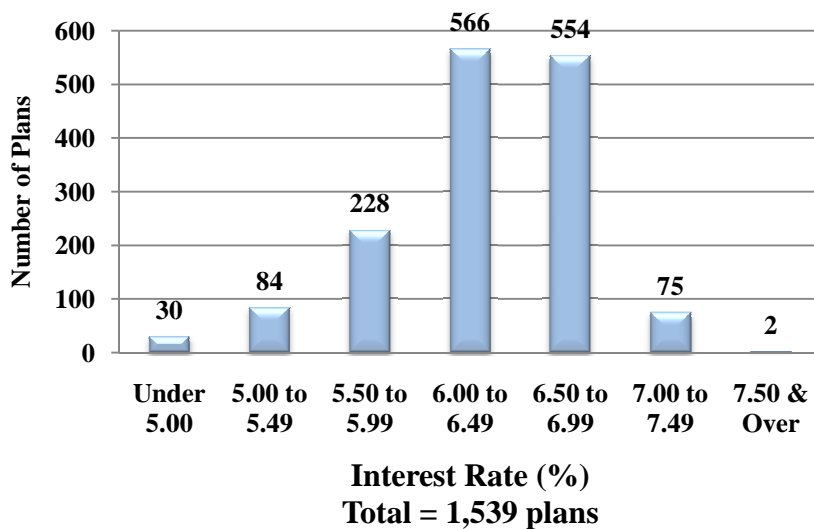
- For going concern valuations, less than 1% of the plans used a mortality assumption based on the 1983 Group Annuity Mortality (GAM) table developed by the Society of Actuaries, while 99% used a more up-to-date table (e.g., 1994 GAM Static, 1994 Group Annuity Reserving (GAR), 1994 Uninsured Pensioner (UP), and RP-2000). The 1994 UP (with or without projection of mortality improvement) mortality assumption is now used by more than 92% of the plans.⁸

Table 2.8 - Mortality Assumption

Mortality Assumption	# of Plans	% of Plans
1983 GAM	12	0.8%
1994 GAM Static	46	3.0%
1994 GAR	22	1.4%
1994 UP	1,424	92.5%
Other (RP-2000, 1995 Buck)	35	2.3%
Total	1,539	100.0%

- Interest rate assumptions used to value the going concern liabilities were generally lower than in prior years, with approximately 89% of the plans using a rate at or below 6.50%. Rates continued to fall within a relatively tight range, with 67% of the plans using a rate between 6.0% and 6.5% inclusive.⁹

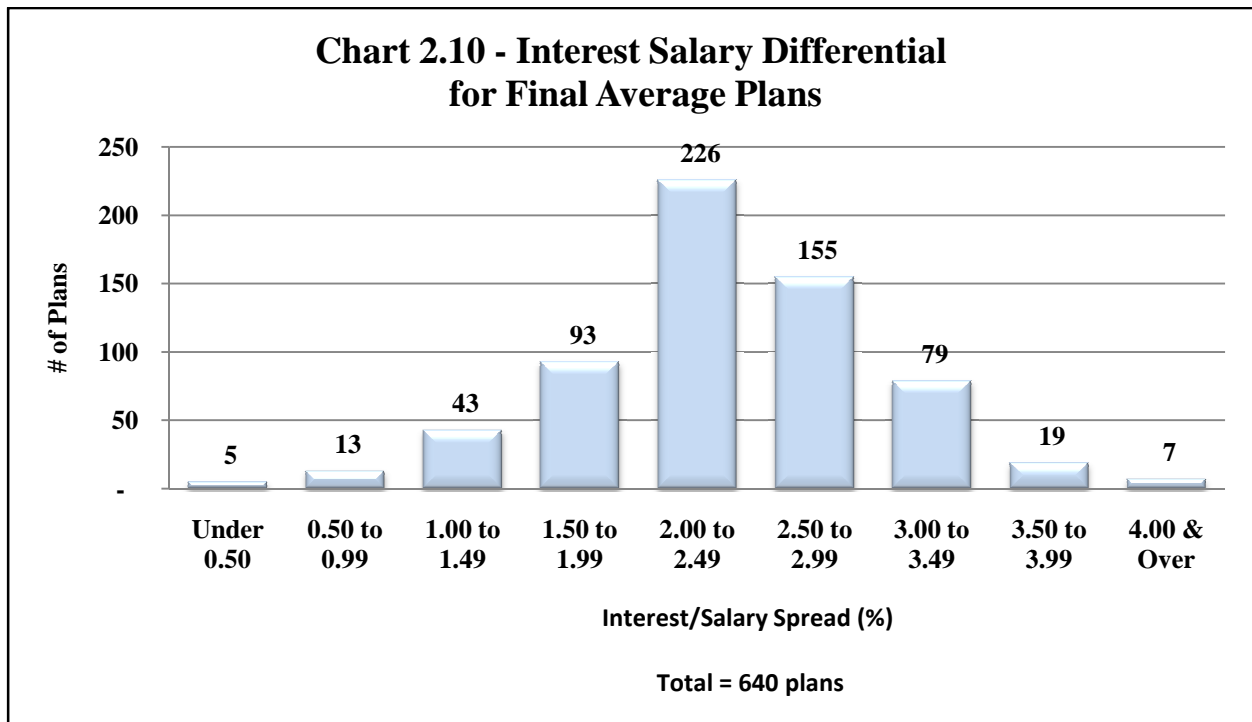
Chart 2.9 - Going Concern Interest Assumption



⁸ Also see commentary on mortality assumptions that accompanies Table 4.6 in this report.

⁹ Of the 554 plans that used a going concern interest rate assumption in the range of 6.50% to 6.99%, 462 plans used an interest rate of 6.50%.

- 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 (accounting for 83% of all final average plans).¹⁰



¹⁰ Of the 79 final average plans with interest-salary differential in the range of 3.00% to 3.49%, 58 plans had an interest-salary differential of 3.00%.

- Table 2.11 shows the total wind up expense allowance made in solvency valuations by plan membership size, including members, former members and other beneficiaries.¹¹ 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. Because 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 wind up expense allowances are generally comparable to those previously reported in the Fifth Annual Report, with the exception of a modest increase for plans with less than 500 plan members.

Table 2.11 - Provision for Wind Up Expenses

Plan Membership	Total Plans	Total Membership	Wind Up Expenses		
			Total WU Expenses	Average Per Plan	Average Per Member
<100	475	22,636	\$ 21,637,295	\$ 45,552	\$ 956
100-499	583	141,768	61,807,500	106,016	436
500-999	171	119,294	36,287,431	212,207	304
1,000-4,999	213	431,294	98,757,571	463,651	229
5,000-9,999	36	243,322	46,769,000	1,299,139	192
10,000-49,999	25	441,306	148,801,000	5,952,040	337
Total	1,503	1,399,620	\$ 414,059,797	\$ 275,489	\$ 296

¹¹ For confidentiality reasons, the two plans with more than 50,000 members and other beneficiaries were excluded from this analysis.

3.0 Temporary Funding Relief

This section provides summary membership and funding statistics, as well as the impact on funding costs for plans that utilized the temporary funding relief measures available under the PBA and Regulation. Where applicable, we have made comparisons to plans that did not elect to use any funding relief.

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 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 limitations on benefit improvements, requiring amortization over 8 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 set out in the valuation report¹².

The following tables provide selected statistics on the MEPPs that contain a defined benefit provision. Up to December 31, 2009, 30 of the 70 MEPPs have elected to become a SOMEPP.

Table 3.1 - Membership Information

	# of Plans	Total (Median) Membership Count			
		Active Members	Retired Members	Other Participants	Total
SOMEPPs	30	113,345 (1,615)	44,806 (782)	101,831 (1,447)	259,982 (3,832)
Non-SOMEPPs	40	253,238 (582)	49,826 (309)	251,649 (533)	554,713 (1,538)
Total (All MEPPs)	70	366,583 (1,049)	94,632 (431)	353,480 (722)	814,695 (2,489)

Table 3.2 - Funding Information

	Total (Median) Value			
	Market Value of Assets	Solvency Assets ‡	Solvency Liabilities	Ratio of Solvency Assets over Solvency Liabilities
	(\$millions)			
SOMEPPs	\$7,854 (\$104.0)	\$7,817 (\$103.5)	\$11,797 (\$150.7)	66.3% (68.0%)
Non-SOMEPPs	\$9,589 (\$80.5)	\$9,548 (\$80.3)	\$11,477 (\$77.7)	83.2% (97.7%)
Total (All MEPPs)	\$17,442 (\$86.3)	\$17,364 (\$86.1)	\$23,274 (\$92.8)	74.6% (91.7%)

‡ Market value of assets less provision for wind up expenses

The plans that elected to become a SOMEPP tend to be significantly larger than non-SOMEPPs as measured by the size of assets, liabilities and membership. For example, the median size of

¹² Further information on SOMEPPs is available at: <http://www.fsco.gov.on.ca/english/pensions/meppsolvency-ganda.asp>

solvency liabilities for the SOMEPPs is approximately 94% larger than that for the non-SOMEPPs.

In terms of funding levels, the SOMEPPs are significantly less well funded than the non-SOMEPP plans. The median solvency ratio for the SOMEPPs is 68.0% compared to 97.7% for the non-SOMEPP plans.

3.2 2009 Funding Relief

Effective June 23, 2009 and for a temporary period, the administrator of a plan that meets 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 (referred to as the 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 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 members and former members, extend the period for liquidating the new solvency deficiency from 5 years to a maximum of 10 years.

Up to December 31, 2009, a total of 475 non-designated DB plans filed a valuation report with FSCO that had a valuation date on or after September 30, 2008¹⁴. Of these, 130 (27%) plans elected one or more of the funding relief options (Electing Plans) and 345 (73%) plans did not elect any relief (Non-Electing Plans).

Table 3.3 - Membership Information

	# of Plans	Total (Median) Membership Count			
		Active Members	Retired Members	Other Participants	Total
Electing Plans	130	56,179 (126)	55,741 (78)	21,593 (48)	133,513 (317)
Non-Electing Plans	345	1,003,683 (68)	463,494 (43)	456,249 (33)	1,923,426 (188)
Total (All Plans)	475	1,059,862 (77)	519,235 (55)	477,842 (38)	2,056,939 (240)

¹³ Further information is available at: <http://www.fSCO.gov.on.ca/english/pensions/solvency-qanda.asp>

¹⁴ This number includes 67 Frozen DB Plans and 4 public sector pension plans that were excluded from the funding data analysis as described in Section 2.0 of this report.

Table 3.4 - Funding Information

	Total (Median) Value			
	Market Value of Assets	Solvency Assets ‡	Solvency Liabilities	Ratio of Solvency Assets over Solvency Liabilities
	(\$Millions)			
Electing Plans	\$12,761 (\$16.4)	\$12,720 (\$16.3)	\$17,380 (\$21.6)	73.2% (73.7%)
Non-Electing Plans	\$198,491 (\$11.8)	\$197,558 (\$11.6)	\$218,507 (\$15.0)	90.4% (77.3%)
Total (\$ millions)	\$211,253 (\$13.9)	\$210,278 (\$13.9)	\$235,886 (\$17.7)	89.1% (76.1%)

‡ Market value of assets less provision for wind up expenses

Electing Plans tend to be larger than Non-Electing plans as measured by the size of assets, liabilities, and membership. For example, the median size of solvency liabilities in respect of the Electing Plans is approximately 44% larger than that of the Non-Electing Plans.

In terms of funding levels, the Electing Plans are generally less well funded than the Non-Electing Plans. The median solvency ratio for the Electing Plans is 73.7% compared to 77.3% for the Non-Electing Plans.

Table 3.5 shows the distribution of the options elected by the Electing Plans. As can be seen, the combined use of Options 1 and 2 was the most prevalent choice, accounting for 63% of all plan elections. The next most common choice was Option 1 only at 15% of plan elections, followed by Option 2 only and “All Options”, each of which were chosen by 9% of the Electing Plans.

Table 3.5 - Distribution of Funding Relief Options

Electing Plan	Number of Plans	% of Plans
Option 1 only	20	15%
Option 2 only	12	9%
Option 3 only	0	0%
Option 1 and 2	81	63%
Option 1 and 3	4	3%
Option 2 and 3	1	1%
All Options	12	9%
Total	130	100%

In order to assess the cash funding implications of these relief measures, we compared 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 reports filed by the 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 \$1,175 million to \$513 million, a reduction of approximately \$662 million or 56%. It is also noted that the bulk of the reduction (95%) was attributable to the lower solvency special payments.

Table 3.6 - Required Contributions in the 12-month Period Commencing on the Valuation Date

Required Contributions	Before Application of Funding Relief	After Application of Funding Relief	Reduction in Required Contributions
	(\$ Millions)		
Employer Normal Cost	\$223	\$223	\$0
Going Concern Special Payments	\$41	\$12	\$29
Solvency Special Payments	\$911	\$278	\$633
Total Minimum Required Contributions	\$1,175	\$513	\$662

Effect of Solvency Asset Smoothing

The Regulation permits solvency valuations to be performed using smoothed asset values. This gives plan sponsors the ability to adjust funding contributions gradually rather than immediately by recognizing investment gains and losses over a period of up to five years. We considered the asset valuation method used for solvency valuation purposes in the valuation reports for the Electing Plans and the Non-Electing Plans and in particular, whether there was a change to the method since the last filed valuation report. As shown in Tables 3.7 and 3.8 below, there were no significant differences between the Electing Plans and the Non-Electing Plans in terms of changing the solvency asset valuation method in their last filed valuation reports.

For plans that did change the method, the vast majority changed from a market value basis to a smoothed market value basis. About 67% of the Electing Plans used a market value of assets before the funding relief election; this decreased to 50% after the election.

Table 3.7 - Changes in Solvency Asset Valuation Methods

Status	Electing Plans		Non-Electing Plans		Total	
	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans
Changed to smoothed value of assets	24	18%	47	14%	71	15%
Changed to market value of assets	2	2%	7	2%	9	2%
No change in asset valuation method	104	80%	291	84%	395	83%
Total Plans	130	100%	345	100%	475	100%

Table 3.8 - Distribution of Solvency Asset Valuation Methods

Type of Method	Electing Plans		Non-Electing Plans		Total	
	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans
Smoothed value of assets	65	50%	115	33%	180	38%
Market value of assets	65	50%	230	67%	295	62%
Total Plans	130	100%	345	100%	475	100%

4.0 Trends Analysis

The following trends analysis incorporates data from all filed reports with valuation dates between July 1, 2005 and June 30, 2009.

4.1 Solvency Funded Status

Table 4.1 shows a breakdown of plans by solvency ratios for the following valuation years¹⁵:

- 2005 valuation year: July 1, 2005 to June 30, 2006
- 2006 valuation year: July 1, 2006 to June 30, 2007
- 2007 valuation year: July 1, 2007 to June 30, 2008
- 2008 valuation year: July 1, 2008 to June 30, 2009

The majority of plans have a valuation date of either December 31 or January 1. Plans having solvency concerns are required to file valuation reports annually and, therefore, would appear in our database for more than one valuation year.

Table 4.1 - Solvency Ratios by Valuation Year

Solvency Ratio (SR)	2005		2006		2007		2008	
	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans
SR < 0.60	34	4.3%	22	2.4%	13	1.8%	36	8.1%
0.60 ≤ SR < 0.80	325	40.8%	161	17.5%	134	18.4%	238	53.5%
Sub-Total < 0.8	359	45.1%	183	19.9%	147	20.2%	274	61.6%
0.80 ≤ SR < 0.90	193	24.2%	301	32.8%	246	33.7%	83	18.7%
0.90 ≤ SR < 1.00	114	14.3%	254	27.6%	192	26.3%	42	9.5%
Sub-Total < 1.00	666	83.6%	738	80.3%	585	80.2%	399	89.8%
1.00 ≤ SR < 1.20	88	11.0%	139	15.1%	110	15.1%	35	7.9%
SR ≥ 1.20	43	5.4%	42	4.6%	34	4.7%	10	2.3%
Total	797	100.0%	919	100.0%	729	100.0%	444¹⁶	100.0%
Median Ratio	0.81		0.89		0.89		0.77	

Table 4.1 above shows that the solvency ratios deteriorated significantly in 2008 compared to the two prior valuation years. The percentage of plans with a solvency ratio less than 0.80 tripled from about 20% in 2006 and 2007 to 61.6% in 2008. Furthermore, the proportion of underfunded plans on a solvency basis in 2008 is at its highest level (i.e. 89.8%) over the last four years.

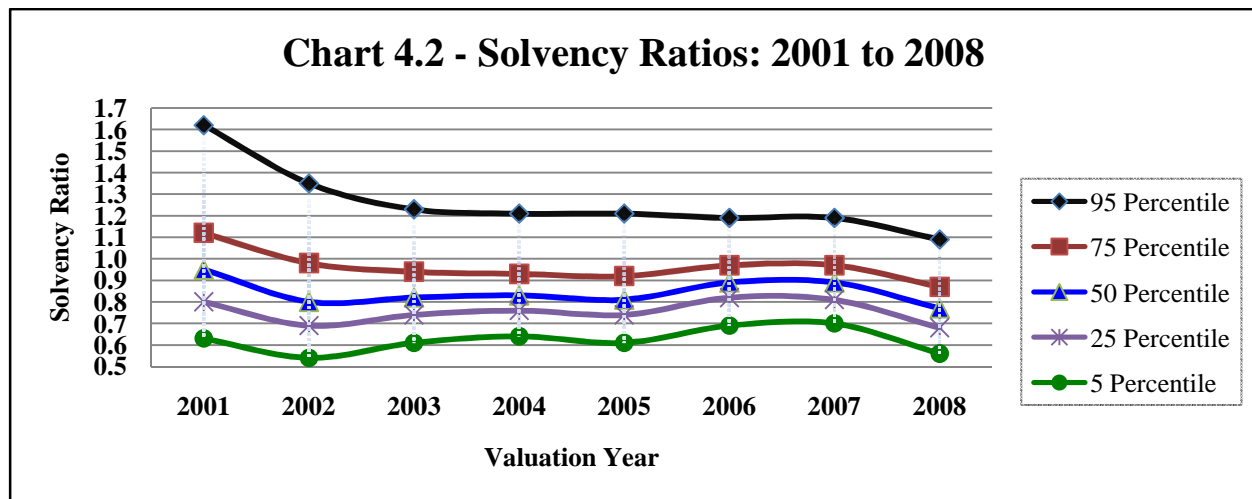
¹⁵ The numbers of plans for 2005 and 2006 are lower than those reported in the Fifth Annual Report, primarily because a number of plans have been excluded from our current analysis as a result of either a plan wind up or a change to a Frozen DB Plan status.

¹⁶ There were fewer reports for the 2008 valuation year than for the prior valuation years. This could be attributable to two main factors: (a) an early data cutoff date (i.e., December 31, 2009) used for the purposes of this report; and (b) an increasing number of plans have either been wound up or are in the process of winding up, have converted to a defined contribution arrangement, or have become a Frozen DB Plan.

The solvency funded position of pension plans in 2008 was affected by the following factors:

- Turmoil in financial markets resulted in a median return of *negative* 15.9% for Canadian pension funds¹⁷ ;
- Deficit reduction special payments were made or contribution holidays were taken during 2008, which had a positive or negative effect, respectively;
- MEPPs that elected to become a SOMEPP obtained relief from solvency funding requirements thereby lowering their pension plan contributions from the prior level;
- Solvency valuation assumptions changed modestly from those used in the 2007 valuation:
 - The interest rate assumption for calculating transfer values changed from 4.75% for the first 10 years and 5.0% thereafter (effective at the end of 2007) to 4.20% for the first 10 years and 5.70% thereafter (effective at the end of 2008)¹⁸ .
 - The interest rate assumption used to value immediate pensions increased from 4.50% (effective at the end of 2007) to 4.85% (effective at the end of 2008).
 - The mortality assumption for calculating transfer values changed to the 1994 Uninsured Pensioner Mortality Table with projection for mortality improvement to year 2020 using Scale AA rather than to 2015, while that used for the valuation of annuity liabilities remained unchanged.

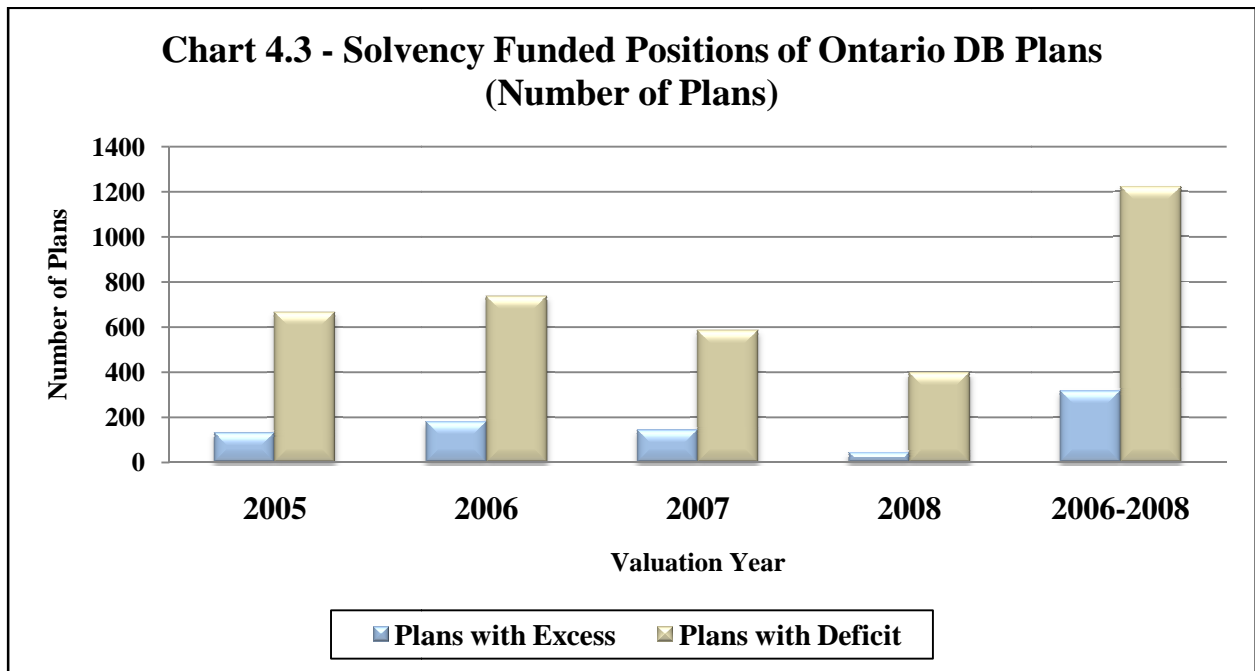
Chart 4.2 shows the distribution of solvency ratios at different percentiles from 2001 to 2008. Of note, the solvency ratios at all percentiles declined sharply from the 2007 valuation year to the 2008 valuation year.



¹⁷ Source: Canadian Institute of Actuaries, *Report on Canadian Economic Statistics 1924-2008*, June 2009, Table 8A.

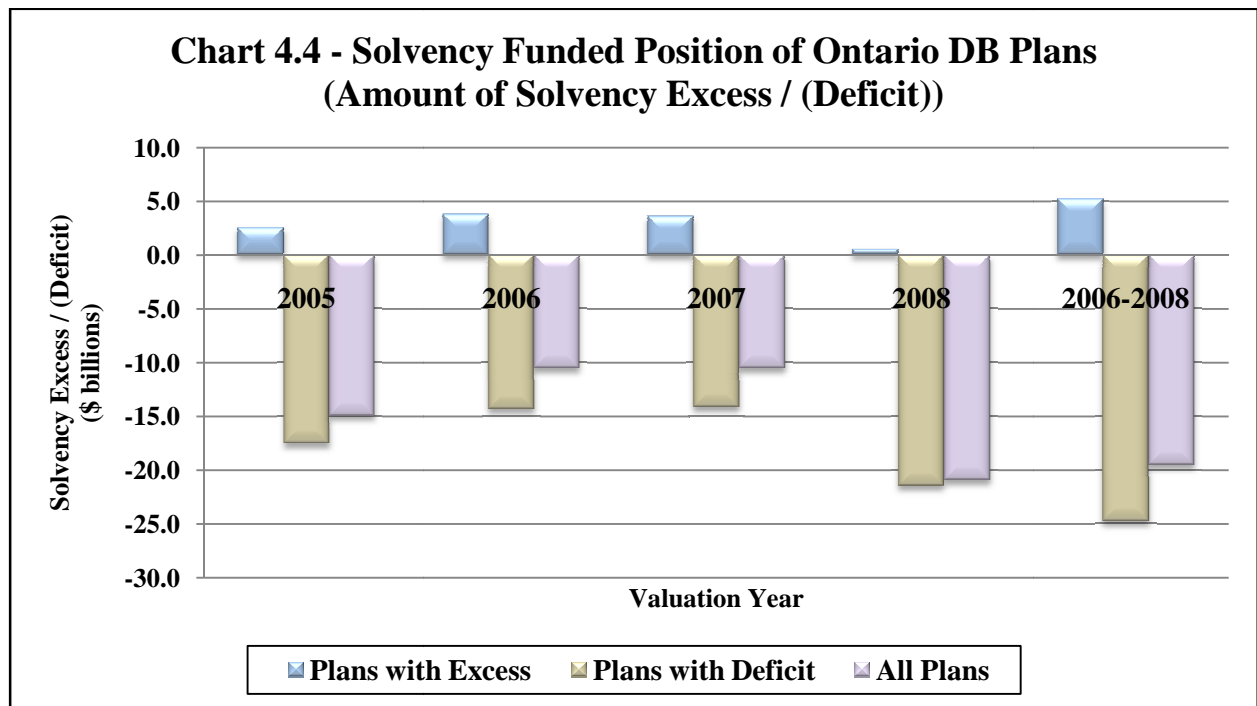
¹⁸ The rates shown for the end of 2008 are based on the CIA's Standards of Practice for Pension Commuted Values, section 3800, effective April 1, 2009.

The charts below compare plans with a solvency excess to those with a solvency deficit for each of the four valuation years from 2005 to 2008, as well as for the three-year valuation period of 2006 to 2008¹⁹. Chart 4.3 compares the number of plans and Chart 4.4 compares the amount of solvency excess (deficit).



The number of plans with solvency excesses has remained well below the number of plans with solvency deficits.

¹⁹ Individual valuation years include those plans that filed a report with a valuation date that fell during that individual year. The 2006-08 period includes only the last funding valuation report filed for a plan with a valuation date falling in the period July 1, 2006 to June 30, 2009. The sum of the number of plans included in each of the 2006, 2007 and 2008 valuation years is therefore higher than the number of plans included in the combined period 2006-2008.



On a dollar amount basis, plans that filed a report within the three valuation years 2006 to 2008 reported a *net* solvency deficit of \$19.6 billion (after allowance for expenses) on solvency liabilities of \$157.3 billion. This represents the aggregate level of under-funding for the 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 reported in the Fifth Annual Report was \$9.6 billion. 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 5 years.

Ontario's legislation allows certain benefits (e.g., post-retirement indexation, consent benefits, plant closure and permanent layoff benefits) to be excluded in the calculation of solvency liabilities. There were 237 plans that excluded one or more of these benefits, resulting in a reduction of liabilities in the amount of \$12.8 billion. Thus, the aggregate *wind up* funding shortfall for those plans that filed a report within the three valuation years 2006 to 2008 would have exceeded their *net* solvency deficit by the same amount. This translates into a wind up funding deficit of \$32.4 billion (\$19.6 plus \$12.8), after allowance for expenses, on wind up liabilities of \$170.1 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 still continue.

4.2 Actuarial Assumptions

Table 4.5 shows the interest rate assumptions used in the going concern valuations. Since 2005, there has been a clear trend to use a lower interest rate assumption. This downward trend has been reported since we started publishing trend statistics for valuation years after 2000.

Table 4.5 - Interest Rate Assumption by Valuation Year

Rate (%)	2005		2006		2007		2008	
	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans
Rate < 5.00	6	0.8%	12	1.3%	14	1.9%	10	2.3%
5.00 ≤ Rate < 5.50	22	2.8%	40	4.4%	34	4.7%	29	6.5%
5.50 ≤ Rate < 6.00	84	10.5%	129	14.0%	91	12.5%	58	13.1%
6.00 ≤ Rate < 6.50	223	28.0%	284	30.9%	298	40.9%	181	40.7%
6.50 ≤ Rate < 7.00	350	43.9%	376	40.9%	263	36.1%	155	34.9%
7.00 ≤ Rate < 7.50	104	13.0%	77	8.4%	28	3.8%	10	2.3%
Rate ≥ 7.50	8	1.0%	1	0.1%	1	0.1%	1	0.2%
Total	797	100.0%	919	100.0%	729	100.0%	444	100.0%
Average (%)	6.34%		6.23%		6.16%		6.12%	

The average of the assumed interest rates declined from 6.34% to 6.12% over the four valuation years 2005 to 2008. As for the 2007 valuation year, the most prevalent assumed interest rates for 2008 remained within the 6.00% to 6.49% range.

The proportion of plans using an interest rate assumption of 7% or higher has decreased each year. Over 97% of the plans with a 2008 valuation used an assumed interest rate below 7%.

Table 4.6 shows the distribution of the mortality tables used in going concern valuations. Almost all plans are now using more up-to-date mortality tables, i.e., the 1994 tables (GAM, GAR, UP). In the 2008 valuation year, all but 4 plans (99%) used a mortality table of 1994 or later.²⁰

Table 4.6 - Mortality Assumption by Valuation Year

Mortality Assumption	2005		2006		2007		2008	
	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans	# of Plans	% of Plans
1983 GAM	23	2.9%	13	1.4%	8	1.1%	4	0.9%
1994 GAM static	76	9.5%	54	5.9%	13	1.8%	7	1.6%
1994 GAR	9	1.1%	14	1.5%	8	1.1%	11	2.5%
1994 UP	682	85.6%	816	88.8%	675	92.6%	408	91.8%
Other	7	0.9%	22	2.4%	25	3.4%	14	3.2%
Total	797	100.0%	919	100.0%	729	100.0%	444	100.0%

Other than for the 1994 GAR table which uses generational mortality (i.e. includes projected mortality improvements), sufficient information was not available to identify whether projected mortality improvements had been incorporated into the mortality tables used for valuations. The necessary data to do this analysis will be gathered for future reports.

²⁰ All of the plans in 2008 using “Other” mortality assumptions (14 of them) used other post-1994 mortality tables – e.g., RP2000.

5.0 Investment Data Analysis

The plans included in the investment data analysis were those of the 1,539 plans summarized in Table 2.1 that have filed an IIS for the most recent monitoring cycle (which covers plans whose plan fiscal year end date was between July 1, 2008 and June 30, 2009). There are 1,331 plans in this subset²¹, representing 86% of the total.

For hybrid plans, only the defined benefit component of the pension fund is included in the data.

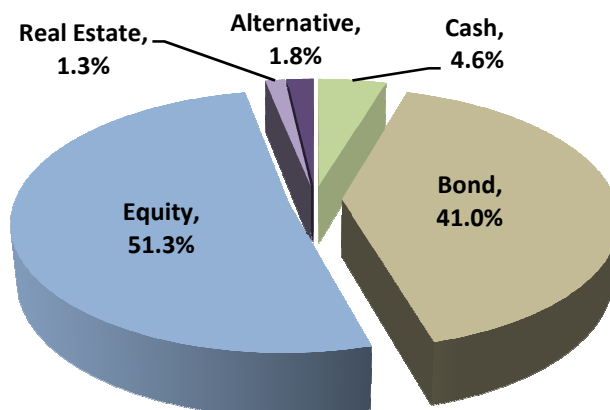
5.1 Summary of Pension Fund Profiles

The asset mix of the 1,331 pension funds, as a whole, for the most recent monitoring cycle is described in Table 5.1 and depicted in Chart 5.1.

Table 5.1 – Investment Profile of All Plans as a Whole

	Asset Class²²	Market Value (\$Millions)	% of Total Investments
Asset Mix	Cash	\$5,267	4.6%
	Bond	\$46,777	41.0%
	Equity	\$58,571	51.3%
	Real Estate	\$1,530	1.3%
	Alternative Investments ²³	\$2,065	1.8%
	Total	\$114,210	100.0%

Chart 5.1: Asset Mix of All Plans as a Single Portfolio



²¹ Plans included in the funding data analysis that are not in the investment data analysis are primarily plans with outstanding IIS filings.

²² Plan assets invested in pooled funds totaling \$46,771 million or 40.9% of total investments. Pooled funds are included in the asset mix of all plans based on their underlying asset classes.

²³ Alternative Investments include hedge funds, private equity, infrastructure, currency hedging, resource properties, commodities, etc.

On a broad basis, fixed income assets consisting of cash and bonds constitute 45% of total investments, whereas non-fixed income assets consisting of equity, real estate and alternative investments constitute 55% of total investments.

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 1,331 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. “Return” means the rate of return, net of all investment expenses, while “Outperformance” measures how a pension fund performs relative to the market. Outperformance relative to market performance for an individual fund is determined as the fund’s actual rate of return (net of investment expenses) minus the weighted average of market index returns, given the individual pension fund’s actual asset mix.

By Plan Type

The investment profile of single employer pension plans (SEPPs) and multi-employer pension plans (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		1,265	66	1,331
Asset Mix	Fixed Income	45.9%	43.1%	45.6%
	Non-Fixed Income	54.1%	56.9%	54.4%
Performance				
Performance	Average Return ²⁴	-15.22%	-16.10%	-15.26%
	Average Outperformance	-1.26%	-1.30%	-1.26%

²⁴ 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 -17.00%, compared to -15.26% 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	-8.85%	-11.23%	-8.91%
75 th Percentile	-12.96%	-14.55%	-13.02%
Median	-15.61%	-16.68%	-15.66%
25 th Percentile	-18.61%	-19.05%	-18.63%
10 th Percentile	-21.20%	-19.99%	-21.19%
Investment Outperformance			
90 th Percentile	3.53%	3.66%	3.53%
75 th Percentile	1.07%	0.75%	1.04%
Median	-1.28%	-1.57%	-1.30%
25 th Percentile	-3.60%	-3.72%	-3.60%
10 th Percentile	-6.39%	-6.16%	-6.38%

By Benefit Type

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

Table 5.3 – Investment Results by Benefit Type²⁵

Benefit Type		FAE	CAE	FB	Hybrid	All Plans
# of Plans		558	183	312	278	1,331
Asset Mix	Fixed Income	44.9%	47.0%	43.9%	48.1%	45.6%
	Non-Fixed Income	55.1%	53.0%	56.1%	51.9%	54.4%
Performance	Average Return	-15.08%	-15.25%	-15.51%	-15.35%	-15.26%
	Average Outperformance	-1.00%	-1.38%	-1.27%	-1.69%	-1.26%

By Plan Size

The investment profile of pension funds of various sizes is given 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		851	397	83	1,331
Asset Mix	Fixed Income	45.5%	46.8%	45.1%	45.6%
	Non-Fixed Income	54.5%	53.2%	54.9%	54.4%
Performance	Average Return	-15.05%	-15.53%	-16.18%	-15.26%
	Average Outperformance	-0.88%	-1.56%	-3.74%	-1.26%

²⁵ 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 given in Table 5.5.

Table 5.5 – Investment Results by Solvency Ratio (SR)

Solvency Ratio (SR)		SR < 0.8	0.8 ≤ SR < 1	SR ≥ 1.0	All Plans
# of Plans		263	777	291	1,331
Asset Mix	Fixed Income	43.9%	45.3%	47.20%	45.6%
	Non-Fixed Income	56.1%	54.7%	52.80%	54.4%
Performance	Average Return	-16.60%	-15.28%	-14.00%	-15.26%
	Average Outperformance	-2.26%	-1.20%	-0.52%	-1.26%

By Percentages Invested in Pooled Funds

The results for plans with various percentages invested in pooled funds are given 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		217	229	885	1,331
Asset Mix	Fixed Income	47.6%	44.6%	43.9%	45.6%
	Non-Fixed Income	52.4%	55.4%	56.1%	54.4%
Performance	Average Return	-12.48%	-16.20%	-15.70%	-15.26%
	Average Outperformance	-1.87%	-2.15%	-0.89%	-1.26%

5.3 Investment Observations

This section presents some main observations of the analyses set out in sections 5.1 and 5.2. The focus is on those findings that are both sufficiently recognizable for 2008 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 40%/60% in 2007 to a split of 45%/55% in 2008.
- Pension funds of MEPPs generally invested more in non-fixed income assets than SEPPs.
- Flat benefit plans invested more in non-fixed income assets than other plans, while hybrid plans invested more in fixed income assets.
- Plans with lower solvency ratios invested more in non-fixed income assets than plans with higher solvency ratios. Plans with lower solvency ratios also had poorer performance on both absolute and relative bases.
- About 65% of the plans did not outperform the market, when actual returns net of investment expenses were compared to market index returns.

6.0 2009 Projections

6.1 Estimated DB Funding Contributions in 2009

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 2009, 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, 2006 and June 30, 2009.²⁶

Table 6.1 - Estimated DB Funding in 2009 (\$ Millions)

	Plans with Solvency Excess	Plans with Solvency Deficit	All Plans
Number of Plans	330	1,209	1,539
Employer Normal Cost Contributions	\$1,123	\$2,265	\$3,388
Member Required Contributions	\$281	\$265	\$546
Sub-total	\$1,404	\$2,530	\$3,934
Special Payments	\$68	\$2,711	\$2,779
Total	\$1,472	\$5,241	\$6,713

The total DB funding contributions in 2009 are estimated to be \$6.7 billion, which is modestly higher than the 2008 estimate of \$6.4 billion set out in the Fifth Annual Report. The increase of approximately \$0.3 billion is attributable to the following factors:

- An increase of \$274 million in the required special payments (primarily from solvency valuations); and
- An increase of \$69 million in the required employer normal cost and member contributions.

The special payments of \$2.8 billion represent 42% of the total estimated 2009 funding contributions of \$6.7 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 aggregate special payments for plans with a solvency excess (\$68 million) represent 5% of the total contributions (\$1.5 billion) for these plans. This compares with the aggregate special payments for plans with a solvency deficit (\$2.7 billion), which represent 52% of the total contributions (\$5.2 billion) for these plans.

²⁶ For plans where AIS reported contributions did not extend to the end of 2009, the 2009 estimated contributions were determined assuming contributions would continue at the same rate as that reported for the valuation period.

The estimated 2009 funding contributions are determined without consideration of prior year credit balances, which can be used to reduce required contributions during the valuation period. A total of \$788.9 million of prior year credit balances were reported for 121 plans that had a non-zero prior year credit balance.

6.2 Projected Solvency Position as at December 31, 2009

This section presents a projection of the solvency funding position of DB plans to the end of 2009 by capturing the impact of investment returns, changes in solvency interest rates and the special payments expected to be made during 2009. 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, 2008. Projections were then made to the end of 2009 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; and
- 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 below) 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 Return²⁷
2005	11.8%
2006	12.3%
2007	1.5%
2008	-15.9%
2009	15.6%

²⁷ For years 2004 to 2008, the rates are the median investment returns of pension funds provided in the Canadian Institute of Actuaries' *A Report on Canadian Economic Statistics 1924-2008*, dated June 2009. The rate for 2009 is derived from a representative weighted average of the 2009 return on the S&P/TSX index (30%), the MSCI World index (25%) and the DEX Universe Bond Index (45%). Note that the PSR as at December 31, 2008 shown in the Fifth Annual Report was determined using an annual rate of return of -14.1% for 2008.

The projected liabilities as at December 31, 2008 and December 31, 2009 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 Basis²⁸	Annuity Purchase Basis²⁹
December 31, 2008	Interest: 4.20% for 10 years, 5.70% thereafter Mortality: 1994 UP projected to 2020	Interest: 4.85% Mortality: 1994 UP projected to 2015
December 31, 2009	Interest: 3.90% for 10 years, 5.40% thereafter Mortality: 1994 UP projected to 2020	Interest: 4.59% Mortality: 1994 UP projected to 2015

Projection Results

Table 6.4 presents the distribution of solvency ratios that were reported in the 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, 2008	PSR as at December 31, 2009
10 th percentile	71%	70%	77%
25 th percentile	81%	74%	81%
50th percentile	89%	79%	85%
75 th percentile	98%	84%	89%
90 th percentile	108%	94%	99%

²⁸ The commuted value basis used for the December 31, 2008 and December 31, 2009 solvency projections in this report is based on the Canadian Institute of Actuaries' Standards of Practice for Pension Commuted Values, section 3800, effective April 1, 2009. Note that the interest rates used to determine the PSR as at December 31, 2008 in the Fifth Annual Report were based on the Canadian Institute of Actuaries' Standards of Practice for Pension Commuted Values, section 3800, effective February 1, 2005.

²⁹ The interest rate for annuity purchase at December 31, 2009 is derived based on the recommendation for the period July 31, 2009 to December 30, 2009, inclusive, as set out in the Canadian Institute of Actuaries' *Educational Note* Annuity Purchase Discount Rate Assumptions for Hypothetical Wind-up and Solvency Valuations, dated November 2009. Specifically, the rate is calculated as the December [CANSIM V39062 rate plus 50 bps](#).

As can be seen from the above table, the median PSR is projected to increase from 79% to 85% between December 31, 2008 and December 31, 2009. The increase in PSR was due mainly to positive investment returns for pension funds since March 2009 (15.6% - see Table 6.2) and the funding improvements due to special payments expected to be made during 2009. These gains are partially offset by a decrease in the interest rates for calculating the liabilities for commuted values and annuities. Plans with solvency ratios less than the median (and often with higher proportional special payments) are expected to see a larger increase in their PSRs in 2009, while the PSRs for plans with solvency ratios above median (and often with lower proportional special payments) are estimated to have a somewhat smaller increase during the same period.

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 normally 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 normally based on the member’s earnings over the member’s entire period of service; and
- **Flat Benefit** – the benefit is normally based on a fixed dollar amount for each year of service.

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

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, for example, indexation, prospective benefit increases, or plant closure/layoff benefits.

Hybrid Pension Plan: A hybrid pension plan contains both defined benefit and defined contribution provisions.

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

Investment Outperformance (Underperformance): The amount by which the pension fund’s investment return for the reporting year exceeds (falls short of) the corresponding market return determined for the same reporting period, using a weighted average of the benchmark market indices for the different asset classes of the pension fund’s asset mix.

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: A multi-employer pension plan covers the employees of two or more employers and is specifically defined in the legislation. Typically, these plans provide defined benefits but the required contributions are negotiated 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.