Superintendent of Pensions 2017 Report

Alberta Government

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www.finance.alberta.ca/publications/pensions/private-sector-pensions.html

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MESSAGE FROM THE SUPERINTENDENT

I am pleased to present the report on the status of pension plans registered in Alberta as of December 31, 2017. This report provides the reader with information on various features of the private pension system, including regulatory activity, the types of plans being registered, and the funding of those plans.

The report is divided into three sections:

- **Section 1** – provides an outline of the Superintendent's roles and responsibilities, a brief description and overview of activities, key objectives for the coming years and challenges faced by the Office of the Superintendent of Pensions in ensuring pension plans are effectively regulated.
- **Section 2** – provides summary of key trends over the decade ending December 31, 2017.
- **Section 3** – examines plan membership and the types of plans registered under the *Employment Pension Plans Act* including funding, solvency, and actuarial assumptions used in defined benefit (DB) pension plans.

I appreciate the continued cooperation and support of the pension industry. This report is part of our ongoing efforts to improve communication and provide useful information to the pension industry, as we strive to meet our mission to provide a fair and balanced regulatory environment that supports the development and maintenance of strong and stable pension plans.

I look forward to continuing to work in partnership with our stakeholders throughout the coming year.

Sincerely,

[Original signed by]

Nilam Jetha
Superintendent of Pensions

SECTION 1 – SUPERINTENDENT OF PENSIONS

Roles and Responsibilities

Administering the *Employment Pension Plans Act (EPPA)*

The office of the Superintendent of Pensions (the Superintendent's Office), a branch of Alberta Treasury Board and Finance, is responsible for the administration and enforcement of the *Employment Pension Plans Act, 2012, Chapter E-8.1 (EPPA).*

The Superintendent administers and enforces the *EPPA*, which came into force on September 1, 2014, and is the successor to the *EPPA* 2000. The *EPPA* applies only to private sector pension plans with Alberta members.

Every Alberta pension plan must be registered, with the exception of certain plans exempted by section 10 of the Employment Pension Plans Regulation (EPPR). The registration of a pension plan allows the Superintendent's Office to ensure that each plan continues to comply with the terms and conditions of the *EPPA*.

- Registered pension plans are monitored to ensure they are administered correctly and that plan funds are sufficient to cover earned benefits and that the required contributions to the plan are made.
- Pension plan applications or amendments that do not meet the requirements of the *EPPA* may be refused registration.
- A Certificate of Registration may be cancelled if a plan does not comply with the requirements of the *EPPA*. A Certificate of Registration is also cancelled when a plan terminates and all assets of that plan have been paid out.

Reciprocal Agreements

The Alberta government is party to two reciprocal agreements, one with the Government of Canada and one with all provinces having similar pension legislation to Alberta's *EPPA*. These agreements are authorized by Part 14 of the *EPPA*.

- Both agreements provide for the reciprocal registration, examination, and inspection of pension plans.
- Under the agreements, a pension plan that is subject to the legislation of more than one authority is supervised by the authority having jurisdiction over the greatest number of plan members (the "regulatory authority").
- Where the agreements apply, and Alberta is the regulatory authority, the Superintendent's Office carries out the duties and responsibilities and administers the legislation of the other pension jurisdictions.

Key Activities During 2017

- The *Employment Pension Plans Act (EPPA)* was amended effective November 21, 2017 to allow Collectively Bargained Multi-Employer Pension Plans (CBMEPs) that apply for an exemption from solvency funding to elect to have commuted values calculated on a going concern basis. To date, 15 of the 22 defined benefit CBMEPs covering 85% of Alberta based CBMEP plan members have elected this option.
- The deadline for filing actuarial valuations that were due between September 30 and December 31, 2017 was extended by six months. This extension was granted so that a review could be undertaken to determine the impact of low interest rates on solvency deficits and the resulting increase in solvency payments. Following this review, on March 23, 2018 pension plans were advised that the Superintendent's office would accept applications from plan administrators to extend the amortization period for funding solvency deficiencies from five up to 10 years. Each application will be reviewed on a case by case basis to determine how much of an extension, if any, is warranted. As a result of the six month extension in filing valuations, the funding data shown in this report will be largely similar to the 2016 report.
- Following a legal challenge made in 2017, a court decision issued on April 13, 2018 gives common-law partners the same rights to split pension benefits as apply to legally married spouses on the breakdown of a common-law relationship.
- An extensive review of the contribution rates, both employer and employee, for defined contribution plans was undertaken. This showed the following:
  a) Average Minimum Employer and Employee Contribution Rate: 5.9%
  b) Average Maximum Employer and Employee Contribution Rate: 8.8%
  c) Median Minimum Employer and Employee Contribution Rate: 3.0%
  d) Median Maximum Employer and Employee Contribution Rate: 5.0%
  e) Most common Employer or Employee Contribution Rate: 5.0%

Key Objectives and Challenges for 2018 and Onwards

- Increasing the number of onsite reviews of specific pension plans, fund-holders and third-party administrators.
- Assessing the above level of contribution rates to defined contribution plans to determine the amount of pension income being provided to plan members.
- Summarizing research on how many defined benefit plans are open and/or closed to new members and/or have frozen service or earnings for future service for current members.
- Design and implement upgrades to the internal data base system to improve plan administrator ease of filing and allow for on-line payment of annual fees

Key Challenges for the Coming Years

- The appropriate degree of funding for a defined benefit pension plan and whether solvency funding is an appropriate funding standard;
- The short and long-term effects of the current economic climate on the existence and affordability of pension plans;
- The appropriateness of fees charged, investment options and information provided to members in defined contribution plans; and
- The use of default funds in member directed defined contribution plans.

Pension industry representatives are encouraged to provide the Office of the Superintendent of Pensions with their feedback as we work to maintain a vibrant and strong pension system.

Regulating Plans

As of December 31, 2017, the Superintendent's Office was responsible for the supervision of **723** pension plans.

- A total of **653** of those plans had registered status under the *Employment Pension Plans Act (EPPA)*.
  - 444 of these plans contained only defined contribution (DC) provisions including five Collectively Bargained Multi-Employer Plans (CBMEPs); and
  - 209 of these plans contained defined benefit (DB) provisions (81 of these also contained DC provisions). 22 of these plans were CBMEPs. Of these, 17 contained DB only provisions and five contained both DB and DC provisions.
- Of the remaining **70** plans, all of which were still subject to the Act and Regulation:
  - three were in the process of being registered;
  - 66 were terminating but awaiting cancellation of the certificate of registration; and
  - one was in delayed windup status.

Cancelled Plans

The Superintendent's Office cancelled Certificates of Registration for **60** pension plans during the period under review. The terminated plans covered **2,311** members. Consistent with previous years, the largest group of the members affected (785) continued membership in another registered pension plan.

The following table outlines why plans were cancelled and shows the membership distribution.

Table 1.1 – Cancelled Pension Plans

Reason for Cancellation	Number of Pension Plans	Total Number of Members Affected
Bankruptcy	0	0
Company Dissolved	4	42
Financial/Administrative Considerations	3	270
Merged with Another Plan	14	785
No Active Members Left in Plan	11	172
Other	15	559
Replaced by Individual or Group RRSPs	13	483
Replaced by a New Plan	0	0
TOTAL	**60**	**2,311**

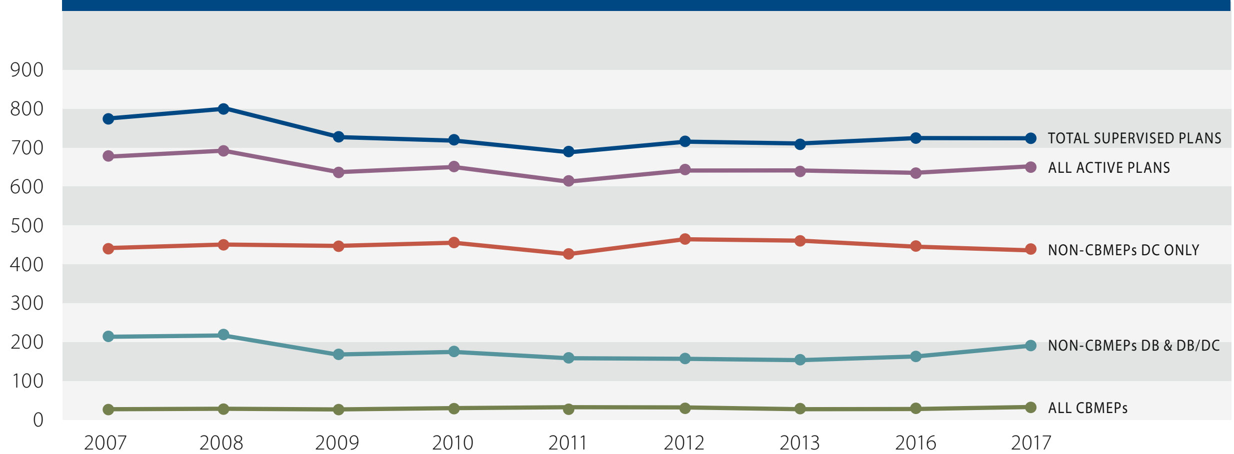
SECTION 2 – ANALYSIS OF HISTORIC TRENDS 2007-2017

In this section, we highlight trends in the number of plans, members, assets and plan cancellations over the last decade.

Supervised Plans →	*All Active plans plus plans in the process of terminating or being registered.*
CBMEPPs →	*Collectively Bargained Multi-Employer Plans.*
DB →	*Defined Benefit.*
DC →	*Defined Contribution.*
DB/DC →	*Mix of both DB and DC.*
Report Year →	*All Report Years are as at June 30, with the exception of 2016 and 2017 which are at December 31.*

Table 2.1 – Number of Supervised Plans and Number of Active Plans by Benefit Type									
Report Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2016**	**2017**
TOTAL SUPERVISED PLANS	772	797	725	718	690	714	705	723	723
ALL ACTIVE PLANS	679	693	637	652	608	645	638	633	653
NON-CBMEPs DC	441	451	445	455	426	465	461	447	439
NON-CBMEPs DB & DB/DC	215	218	168	171	156	154	151	160	187
All CBMEPs	23	24	24	26	26	26	26	26	27

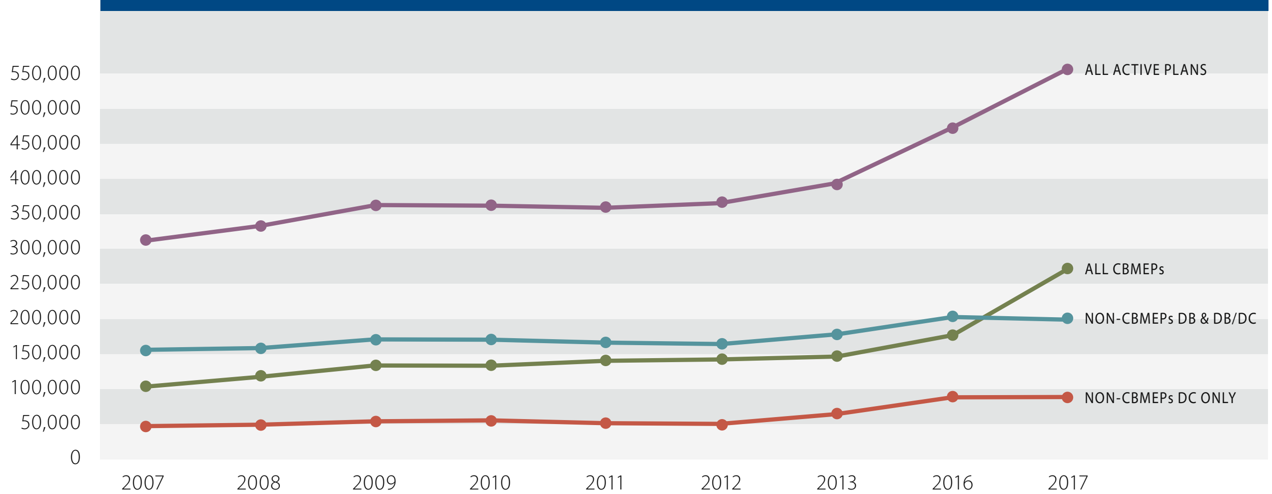
Graph 2.1 – Number of Supervised Plans and Number of Active Plans by Benefit Type



Key Observations – There has been a minor decrease (**6%**) in the total number of active plans registered in Alberta under the *Employment Pension Plans Act* over the 10 year period ending December 31, 2017.

Table 2.2 – Number of Members in Active Plans by Benefit Type									
Report Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2016**	**2017**
ALL ACTIVE PLANS	315,347	335,065	364,509	362,341	358,165	367,977	395,424	473,032	555,937
NON-CBMEPs DB & DB/DC	158,354	161,805	172,939	168,436	164,798	167,391	179,870	204,588	197,588
All CBMEPs	107,888	120,332	135,663	137,276	143,158	146,405	149,086	177,959	272,827
NON-CBMEPs DC	49,105	52,928	55,907	56,629	50,209	54,181	66,468	90,485	85,522

Graph 2.2 – Number of Members in Active Plans by Benefit Type

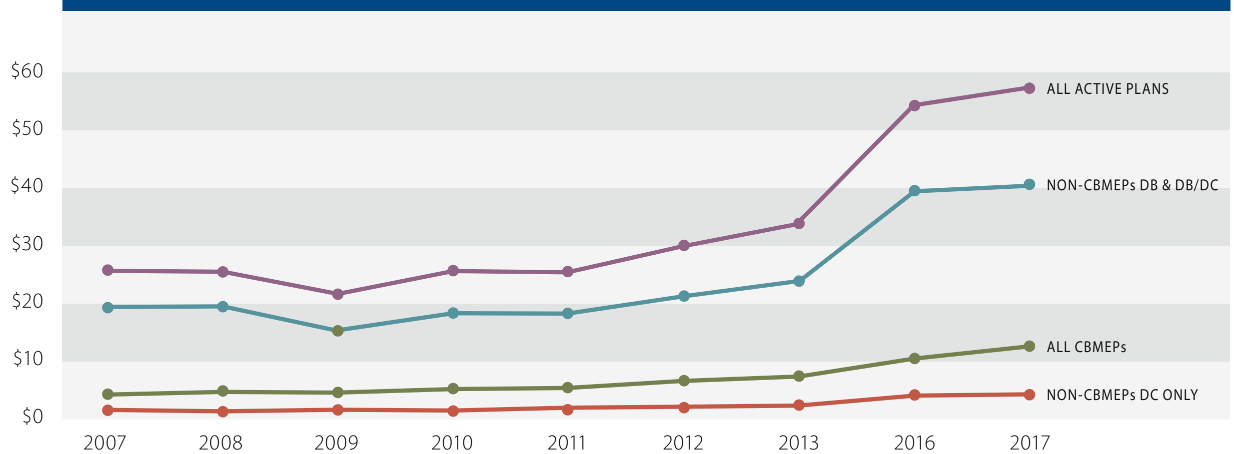


Key Observations – The number of active, retired and deferred members has steadily increased from 315,000 to 556,000, an increase of **76%**. Increases have occurred in all types of plans: 25% in DB plans, 153% in Collectively Bargained Multi-Employer Plans (CBMEPs) – largely due to the transfer of a large CBMEP from another jurisdiction to Alberta – and 74% in Defined Contribution (DC) plans. DC plan membership, in spite of its growth of 74% still represents only 15% of total plan membership as of 2017, virtually unchanged from the 2007 level of 16%.

Table 2.3 – Market Value of Assets (Billions) in Active Plans by Benefit Type

Report Year	2007	2008	2009	2010	2011	2012	2013	2016	2017
ALL ACTIVE PLANS	$25.58	$25.90	$21.18	$25.66	$25.40	$30.03	$33.83	$54.35	$57.35
NON-CBMEPs DB & DB/DC	$19.40	$19.50	$15.37	$18.60	$18.40	$21.42	$24.08	$39.87	$40.73
All CBMEPs	$4.50	$4.90	$4.46	$5.37	$5.37	$6.64	$7.43	$10.31	$12.60
NON-CBMEPs DC	$1.68	$1.50	$1.35	$1.69	$1.63	$1.97	$2.32	$4.17	$4.01

Graph 2.3 – Market Value of Assets (Billions) in Active Plans by Benefit Type

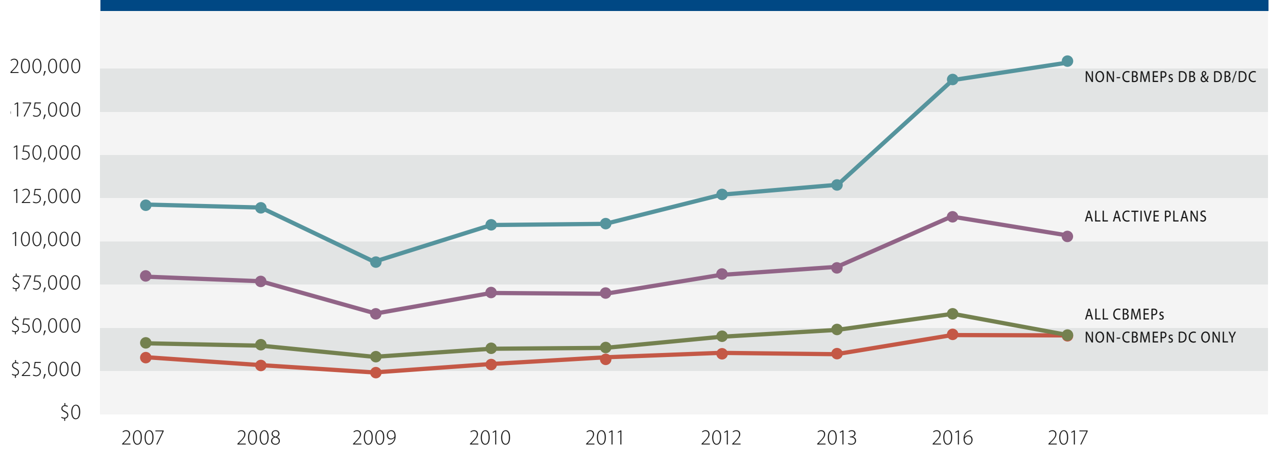


Key Observations – Assets have increased to $57 billion over the decade, a **124%** increase. DB plans have increased by 110%; CBMEPs by 180% and DC plans by 139%.

Table 2.4 – Average Market Value of Assets per Plan Member in Active Plans by Benefit Type

Report Year	2007	2008	2009	2010	2011	2012	2013	2016	2017
NON-CBMEPs DB & DB/DC	$122,500	$120,500	$88,900	$110,400	$111,700	$128,000	$133,900	$194,900	$206,100
ALL ACTIVE PLANS	$81,100	$77,300	$58,100	$70,800	$70,900	$81,600	$85,600	$114,900	$103,200
All CBMEPs	$41,700	$40,700	$32,900	$39,100	$37,500	$45,400	$49,800	$57,900	$46,200
NON-CBMEPs DC	$34,200	$28,300	$24,100	$29,800	$32,500	$36,400	$34,900	$46,100	$46,900

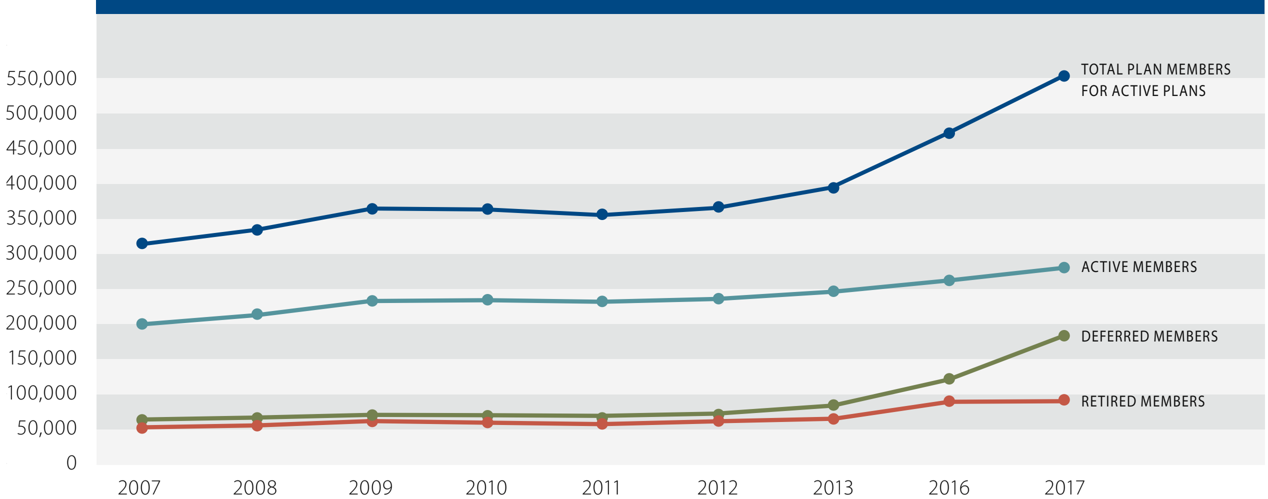
Graph 2.4 – Average Market Value of Assets per Plan Member in Active Plans by Benefit Type



Key Observations – Assets per plan member have increased by **27%** to $103,200 over the decade with DB plans having significantly more assets per member ($206,100) than either CBMEP's ($46,200) or DC plans ($46,900).

Table 2.5 – Number of Members in Active Plans by Type of Membership									
Report Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2016**	**2017**
TOTAL PLAN MEMBERS FOR ACTIVE PLANS	315,347	335,065	364,509	362,341	358,165	367,977	395,424	473,032	555,937
ACTIVE MEMBERS	201,604	215,134	233,970	234,290	232,486	236,074	246,799	262,658	280,750
DEFERRED MEMBERS	61,711	65,129	69,318	67,953	66,813	70,105	83,826	121,463	183,428
RETIRED MEMBERS	52,032	54,802	61,221	60,098	58,866	61,798	64,799	88,911	91,759

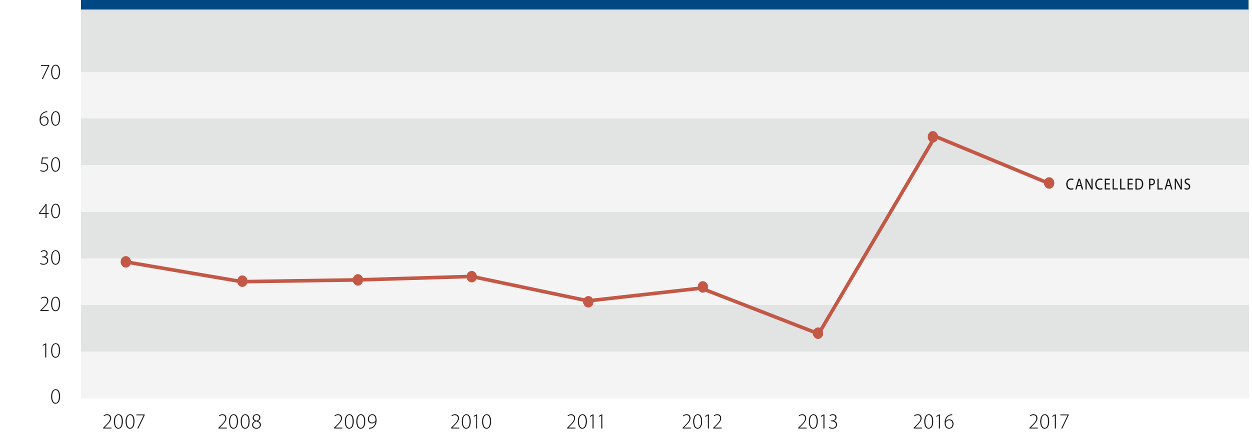
Graph 2.5 – Number of Members in Active Plans by Type of Membership



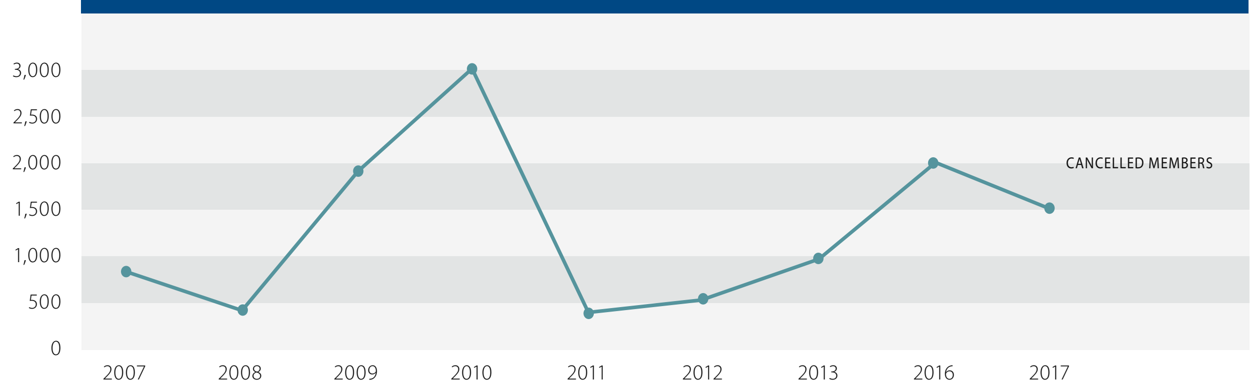
Key Observations – Total membership has increased **76%**. By type of member, Actives have increased by **39%**, Deferreds by **197%** and Retirees by **76%**.

Table 2.6 – Number of Cancelled Plans and Members in the Report Year*									
Report Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2016**	**2017**
CANCELLED PLANS	29	25	25	26	21	24	14	56	46
CANCELLED MEMBERS	840	423	1,921	3,004	391	547	975	2,008	1,526

Graph 2.6 – Number of Cancelled Plans in the Report Year*



Graph 2.7 – Number of Cancelled Members in the Report Year*



*Excludes plans where members transferred to another registered pension plan.

Key Observations – There has been an increase in plan cancellations (excluding cancellations where the members were transferred to another plan) in 2017 compared to years prior to 2016, but the number of plan members affected in any year remain less than **1%**.

SECTION 3 – SUPERVISED PLANS

Plan Funds as at December 31, 2017

Contributions

Required contributions to pension plans before the application of forfeiture credits and excess assets for the year was **$2.99** billion.

- This amount includes employee required contributions, employee voluntary contributions, employee optional ancillary contributions, employer current service contributions, and employer special payments to amortize solvency deficiencies and/or unfunded liabilities.
- Required employer contributions were about $2.03 billion. Approximately $23 million in required employer current service contributions were offset by using existing excess assets and forfeiture credits. This represents about 1.1% of total required employer current service contributions.
- Special payments in respect of solvency deficiencies were $256 million while special payments in respect of unfunded liabilities were $185 million for total special payments of $441 million.
- Required employee contributions were about $469 million with an additional $54 million in employee voluntary and optional ancillary contributions.

The following table outlines contributions made during 2017.

Table 3.1 – Contributions to Registered Pension Plans

Contribution Type	GROSS	OFFSET	NET
Employee Contributions			
Required	$469,278,289		$469,278,289
Voluntary	$30,707,959		$30,707,959
Optional Ancillary	$22,856,912		$22,856,912
Sub-Total *Employee Contributions*	**$522,843,160**		**$522,843,160**
Employer Contributions			
Current Service	$1,943,117,927		$1,943,117,927
Contingency Reserve	$86,543,154		$86,543,154
Forfeitures Used to Offset		($1,686,406)	($1,686,406)
Excess Assets Used to Offset		($21,425,749)	($21,425,749)
Sub-Total *Employer Contributions*	**$2,029,661,081**	**($23,112,155)**	**$2,006,548,926**
Employer Special Payments			
Unfunded Liability Payments	$184,677,767		$184,677,767
Solvency Deficiency Payments	$256,495,428		$256,495,428
Sub-Total *Employer Special Payments*	**$441,173,195**		**$441,173,195**
Sub-Total *Employee Contributions*	**$522,843,160**		**$522,843,160**
Sub-Total *Employer Contributions and Special Payments*	**$2,470,834,276**	**($23,112,155)**	**$2,447,722,121**
TOTAL EMPLOYEE AND EMPLOYER	**$2,993,677,436**	**($23,112,155)**	**$2,970,565,281**

Plan Information as at December 31, 2017

Active Members

A total of **653** active and suspended pension plans covering 280,750 active members were supervised by the Superintendent's Office as of December 31, 2017.

- **412** pension plans with 100 active members or less (totaling 12,086 members) accounted for 63% of all registered pension plans and 4.3% of all active members.

The following table provides a full breakdown of plans by membership size.

Table 3.2 – Active Membership of Active and Pending Plans

Membership Range	Number of Plans	Number of Members
0 - 100	412	12,086
101 - 500	152	34,250
501 - 1,000	33	24,826
1,001 - 5,000	44	89,360
5,001 - 30,000	12	120,728
TOTAL	**653**	**280,750**

Jurisdictions

Of the active and suspended plans, **82.5%** of members were employed in Alberta and 7.0% of members were employed in Ontario – the second largest province of employment.

The remaining 10.5% were employed in the other provinces and territories. A small number of members were employed outside Canada.

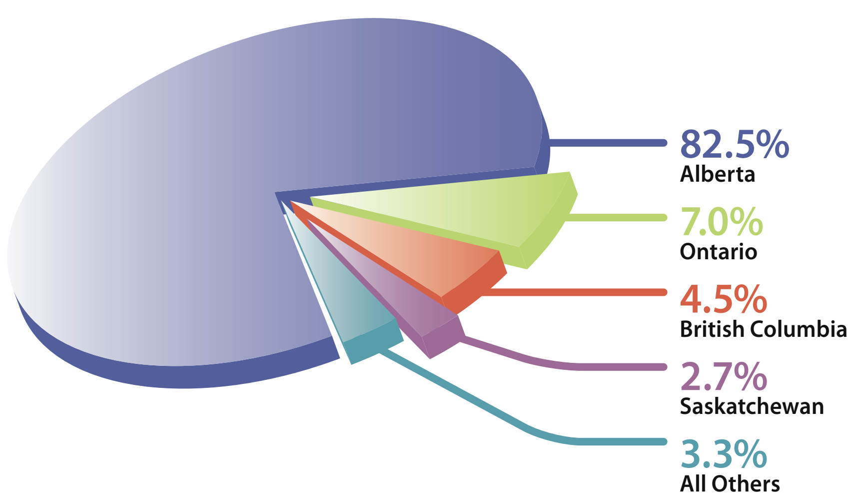
Note that these figures do not include the thousands of Albertans who are members of pension plans registered in other jurisdictions or in the Alberta public sector plans that are not registered under the *EPPA*.

The following table lists the number of plans and the breakdown of membership in each jurisdiction. There is some overlap, as some plans had members in several jurisdictions. The accompanying graph is a province-by-province comparison of percentages of members.

Table 3.3 – Active Membership by Jurisdiction

Jurisdiction	Percentage of Members (%)	Number of Plans	Number of Members
Alberta	82.47%	635	231,535
Ontario	6.98%	111	19,596
British Columbia	4.49%	135	12,606
Saskatchewan	2.70%	107	7,580
Manitoba	1.14%	71	3,201
Newfoundland	0.79%	23	2,218
Quebec	0.74%	48	2,078
Nova Scotia	0.28%	32	786
New Brunswick	0.19%	16	533
Northwest Territories	0.13%	16	365
Yukon Territory	0.03%	7	140
Outside Canada	0.01%	12	84
Prince Edward Island	0.01%	3	28
Nunavut	0.00%	0	0
TOTAL	**100.00%**	**1,216**	**280,750**

Graph 3.1 – Distribution of Active Members by Jurisdiction



Funding and Solvency as at December 31, 2017

The balance of Section 3 deals mainly with DB provisions, so the five CBMEPs with DC only provisions have been included with the rest of the DC plans – this differs from Section 2 where it was useful for trending purposes to include all the CBMEPs in one group.

Assets

The market value of assets of active and suspended pension plans registered in Alberta as of December 31, 2017 was about $57.4 billion.

- The market value of assets attributable to plans with only DC provisions was about $5.4 billion.
- The market value of assets attributable to pension plans with DB provisions (excluding CBMEPs) was about $40.73 billion.
- The market value of assets attributable to DB CBMEPs was about $11.21 billion.
- The per-member market value of assets was approximately:
  - $30,400 for members and former members under a DC provision;
  - $206,100 for members and former members under a DB provision; and
  - $62,000 for members and former members under a DB CBMEP.
- Average market value of assets per plan were approximately:
  - $12.1 million for DC provisions;
  - $220.2 million for DB provisions; and
  - $509.7 million for CBMEPs.
- The difference in assets among the types of plans is explained by the few very large DB plans and CBMEPs versus a large number of small DC plans.
- Where appropriate, this report has separated the 22 DB CBMEP plans from the remainder of the plans registered with our office.

The following table gives a breakdown of total assets and average assets by plan type.

Table 3.4 – Plan Assets by Plan Type

Type of Plan	Number of Plans	Number of Members		Total Market Assets (Thousands)	Average Assets Per Plan (Thousands)	Average Assets Per Member[1]
		Active	Total			
DB CBMEPs	22	77,041	180,815	11,214,342	509,743	62,021
DB ALL OTHERS	187	102,042	197,588	40,731,909	217,818	206,145
ALL DC ONLY	444	101,667	177,534	5,404,098	12,171	30,440
TOTAL	**653**	**280,750**	**555,937**	**57,350,348**	**87,826**	**103,160**

[1] Based on total number of members (i.e., active, deferred and pensioners).

The data up to this point of Section 3 was extracted from the most recent filed **Annual Information Return** for each plan. The data is for all plan members (active, deferred and retired) and for all types of benefit provisions (defined contribution and defined benefit) so the totality of membership and assets for active and suspended plans have been represented.

Liabilities

The balance of Section 3 excludes all DC plans and any data from DC provisions that may exist in DB plans. From this point forward, the data shown relates only to DB plan membership that was extracted from the most recent **Actuarial Valuation Report (AVR)** filed for each plan. The AVR for a DB plan is filed at least once every three years, but some plans file annually or every two years. As a result, any differences in numbers (such as membership) are not comparable to the number shown in the earlier part of Section 3 which is based on data from the latest filed **Annual Information Return**.

Going-Concern Basis

Going-concern liabilities for active and suspended DB pension plans averaged about $204.8 million per plan and $111,505 per member. The following table shows liabilities by plan type on a going-concern basis.

Table 3.5 – Going-Concern Plan Liabilities by Plan Type

Type of Plan	Number of Plans	Number of DB Members		Total Liability	Average Total Liability Per Plan	Average Total Liability Per Member
		Active	Total			
DB Non-CBMEP	184	102,041	197,588	32,964,915,629	179,157,150	166,837
DB CBMEPs	22	77,041	180,815	9,228,892,160	419,495,098	51,041
TOTAL	**206**	**179,082**	**378,403**	**42,193,807,789**	**204,824,310**	**111,505**

Termination Basis

Termination (solvency) liabilities for active and pending DB pension plans averaged about $264.1 million per plan and $143,792 per member. The following table shows liabilities by plan type on a termination basis.

Table 3.6 – Solvency Liabilities by Plan Type

Type of Plan	Number of Plans	Number of DB Members		Total Liability	Average Total Liability Per Plan	Average Total Liability Per Member
		Active	Total			
DB Non-CBMEP	184	102,041	197,588	40,520,890,561	220,222,231	205,078
DB CBMEPs	22	77,041	180,815	13,890,323,085	631,378,322	76,821
TOTAL	**206**	**179,082**	**378,403**	**54,411,213,646**	**264,132,105**	**143,792**

Unfunded Liabilities and Solvency Deficiencies

An unfunded liability exists when liabilities are greater than assets calculated on a going-concern basis (assuming the plan continues in operation). Such deficits must be amortized in 15 years or less.

A solvency deficiency exists when assets would be insufficient to cover all liabilities if the plan were to terminate as of the valuation date. However, because a solvency deficiency is a calculation of an amount requiring an accelerated amortization (five years), it includes credit for the first five years of unfunded liability special payments. Therefore, it is not a pure representation of the wind-up position of the plan. The solvency ratio is a better representation of the wind-up position as it excludes credit for future special payments.

Total unfunded liabilities were $444.4 million while solvency deficiencies totaled $9 billion.

- 62 registered pension plans with DB provisions (excluding CBMEPs), covering 49,693 total members, had an unfunded liability.
- 141 plans with DB provisions (excluding CBMEPs), covering 150,682 total members, had a solvency deficiency.
- A total of 60 plans with DB provisions had *both* an unfunded liability and a solvency deficiency.
- four CBMEPs, covering 26,870 total members, had an unfunded liability.
- 21 CBMEPs, covering 177,802 total members, had a solvency deficiency.
- A total of four CBMEPs had *both* an unfunded liability and a solvency deficiency.

The following table outlines the unfunded liability and solvency deficiency by plan type.

Table 3.7 – Unfunded Liability and Solvency Deficiency by Plan Type

Type of Plan	Number of Plans	Total Members	Total Unfunded Liability or Deficiency	Average Per Plan	Average Per Member
Unfunded Liability					
DB	62	49,693	(343,847,800)	(5,545,932)	(6,919)
CBMEP	4	26,870	(100,617,000)	(25,154,250)	(3,745)
TOTAL	**66**	**76,563**	**(444,464,800)**	**(6,734,315)**	**(5,805)**
Solvency Deficiency					
DB	141	150,862	(5,968,060,345)	(42,326,669)	(39,560)
CBMEP	21	177,802	(3,036,879,879)	(144,613,328)	(17,080)
TOTAL	**162**	**328,664**	**(9,004,940,224)**	**(55,586,051)**	**(27,399)**

Assets in Excess of Liabilities

Going-Concern

- 122 plans with DB provisions (excluding CBMEPs), covering a total of 147,895 members, had plan assets in excess of their plan liabilities on a going-concern basis.
- 18 CBMEPs, covering a total of 153,945 members, had plan assets in excess of their plan liabilities on a going-concern basis.

Solvency

- 43 plans with DB provisions (excluding CBMEPs), covering a total of 46,726 members, had plan assets in excess of their plan liabilities on a solvency basis.
- One CBMEP, covering a total of 3,013 members, had plan assets in excess of their plan liabilities on a solvency basis.

The following table provides further information on plans with excess assets on either a going-concern or solvency basis.

Table 3.8 – Assets in Excess of Liabilities by Plan Type

Type of Plan	Number of Plans	Total Members	Total Assets Exceeding Liabilities	Average Per Plan
Going Concern				
DB	122	147,895	3,578,892,862	29,335,187
CBMEP	18	153,945	1,340,583,468	74,476,859
TOTAL	**140**	**301,840**	**4,919,476,330**	**35,139,117**
Solvency				
DB	43	46,726	117,432,359	2,730,985
CBMEP	1	3,013	29,462,000	29,462,000
TOTAL	**44**	**49,739**	**146,894,359**	**3,338,508**

Going Concern and Solvency Ratios

Going Concern Funded Ratio

- ***Of the plans with defined benefits, excluding CBMEPs:***
  - 64.7% had a funded ratio of 1.00 or better;
  - 23.9% had a funded ratio between 0.85 and 1.00;
  - 11.4% had a funded ratio of less than 0.85; and
  - the asset-weighted average funded ratio was 1.02.
- ***Of the CBMEPs:***
  - 81.8% had a funded ratio of 1.00 or better;
  - 18.2% had a funded ratio between 0.85 and 1.02;
  - 0% had a funded ratio of less than 0.85; and
  - the asset-weighted average funded ratio was 1.15.

Solvency Ratio

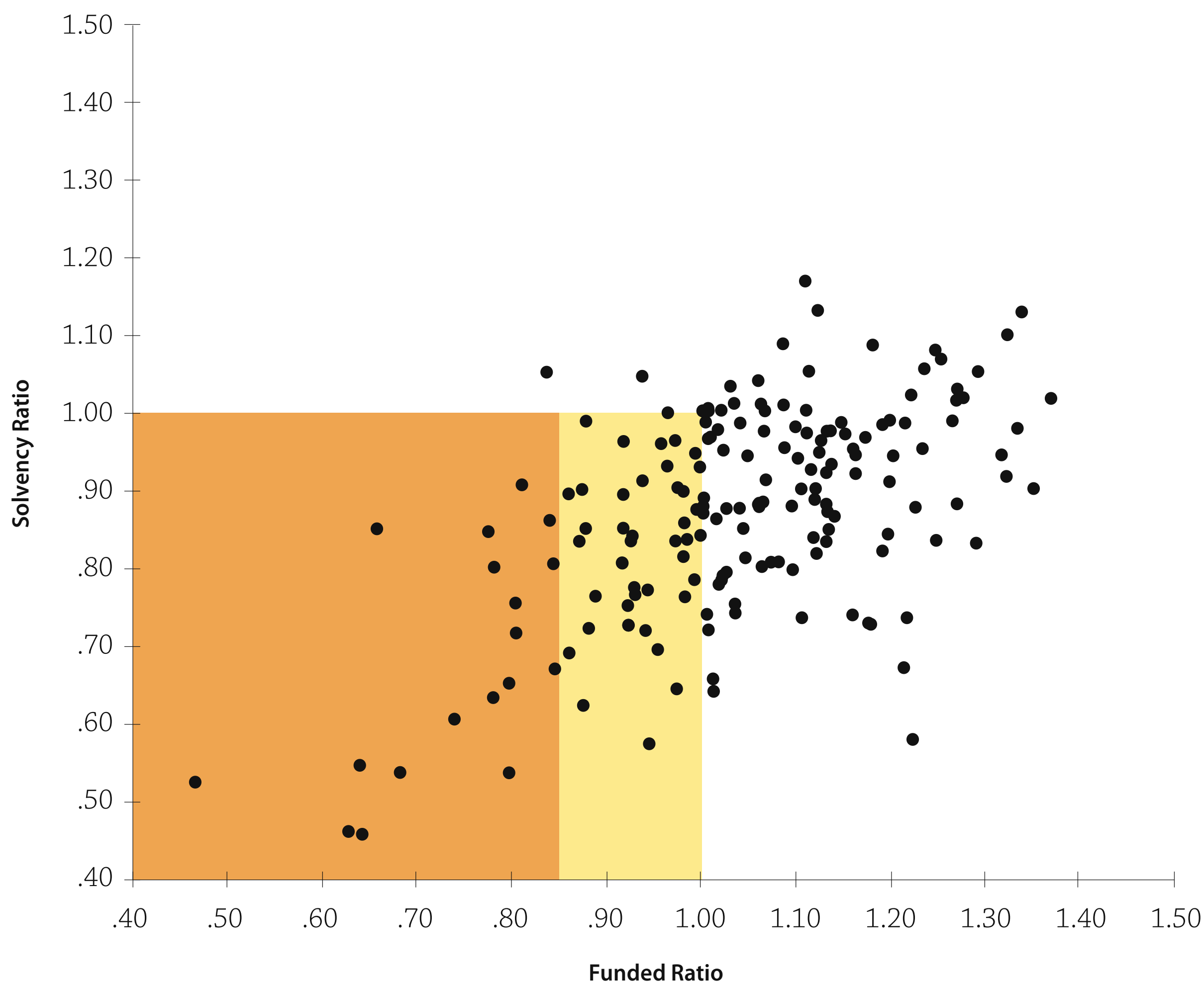
- ***Of the plans with defined benefits, excluding CBMEPs:***
  - 18.5% had a solvency ratio of 1.00 or better;
  - 41.8% had a solvency ratio between 0.85 and 1.00;
  - 39.7% had a solvency ratio of less than 0.85; and
  - the asset-weighted average solvency ratio was 0.88.
- ***Of the CBMEPs:***
  - 4.5% had a solvency ratio of 1.00 or better;
  - 22.7% had a solvency ratio between 0.85 and 1.00;
  - 72.7% had a solvency ratio of less than 0.85; and
  - the asset-weighted average solvency ratio was 0.80.

A total of 10 plans with defined benefits are exempt from making solvency payments because they are classified as a publicly funded plan.

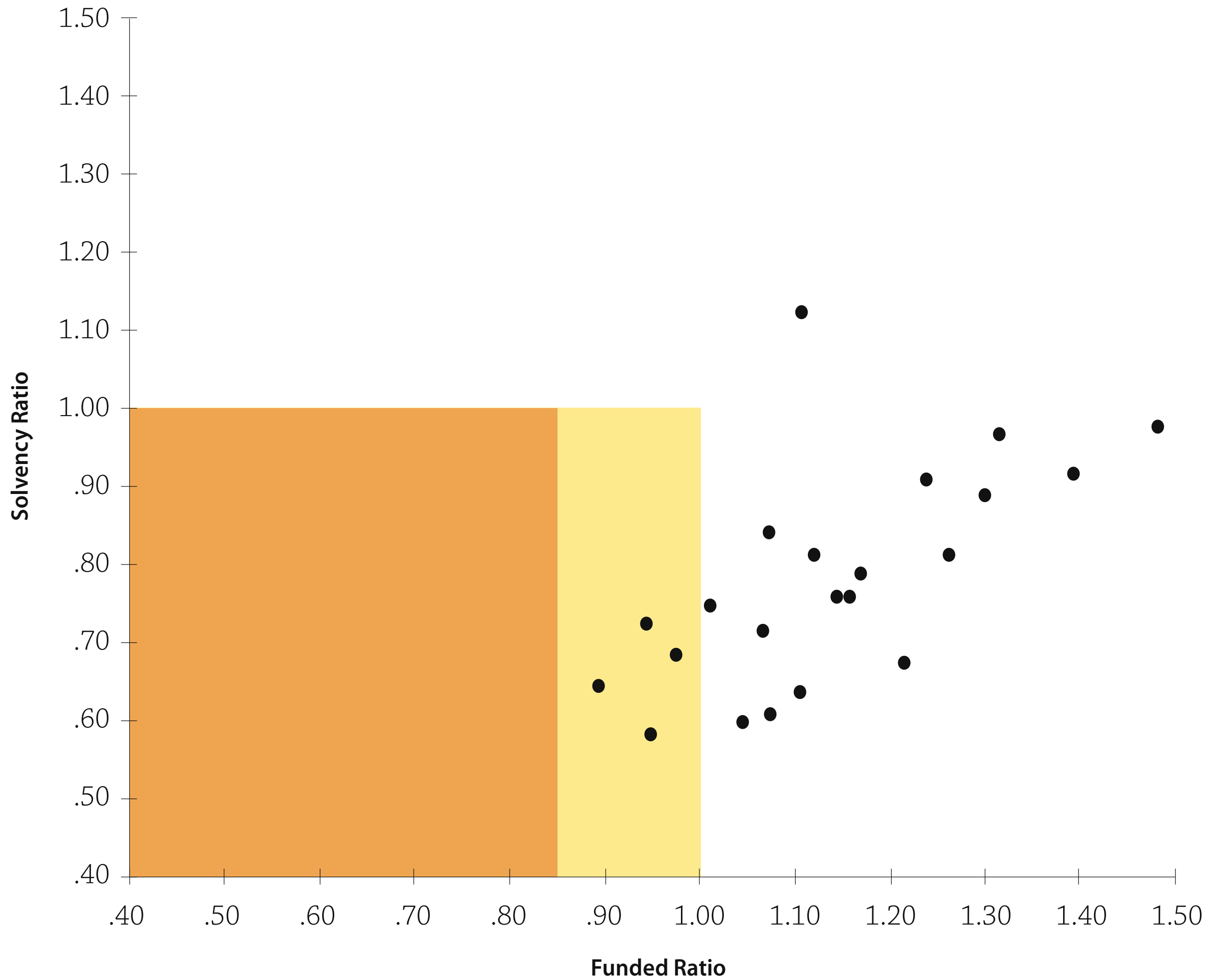
A total of 21 CBMEPs applied for and were granted an exemption from making solvency payments and 15 CBMEPs elected to calculate Commuted Values on a going concern basis.

The following two graphs illustrate the funded and solvency ratios for plans with DB provisions (except CBMEPs) and CBMEPs with DB provisions only, respectively.

Graph 3.2 – Funded Ratio vs. Solvency Ratio for Plans with DB Provisions (Except CBMEPs)



Graph 3.3 – Funded Ratio vs. Solvency Ratio for CBMEPs



Actuarial Assumptions as at December 31, 2017

Asset Valuation Method

Market value of plan assets was the most popular method for determining the value of the assets of a pension plan.

- The majority of plans, 82.5%, used market; another 17.0% used an average/adjusted market value.
- The remaining 0.5% of plans used book value or adjusted book, a blend of book and market value, or used other methods for valuing the actuarial value of assets of the pension plan.

The following table summarizes asset valuation method by plan type.

Table 3.9 – Asset Valuation Method

Type of Plan	DB		CBMEP		ALL
	#	%	#	%	
Adjusted/Average Market (includes smoothing)	30	16.3%	5	22.7%	35
Market Value (includes adjustments for payables/receivables)	153	83.2%	17	77.3%	170
Other (specify)	0	0.0%	0	0.0%	0
Book Value	1	0.5%	0	0.0%	1
TOTAL	**184**	**100.0%**	**22**	**100.0%**	**206**

Mortality Tables and Withdrawal Rates

DB Provisions (Non-CBMEPs)

The CPM 2014 (Canadian Pensioner Mortality) was used by **85.9%** of pension plans with DB provisions. Another 10.9% used the GAM 83 (adjusted) table and 1.1% used the UP (GAM 94 without margins). The remaining 2.1% of the plans used either a true sample mortality or some other mortality table.

CBMEPs

The CPM 2014 (Canadian Pensioner Mortality) was used by **90.9%** of CBMEPs and 4.5% each used the UP 94 (GAM 94 without margins) table or another method.

The percentage of plans using a withdrawal assumption was 45.6%.

Interest Rate Assumptions

A long-term interest assumption of **6.5%** or less was used by 90% of all plans, as shown by the following table.

Table 3.10 – Interest Assumptions

Rate (%)	DB Pension Plans	CBMEP DB Plans	All DB Plans
More than 6.5	20	0	20
6.26 - 6.5	1	3	4
6.01 - 6.25	0	0	0
5.76 - 6	12	4	16
5.51 - 5.75	12	7	19
5.26 - 5.5	28	4	32
5.01 - 5.25	23	2	25
4.76 - 5	28	0	28
4.51 - 4.75	15	1	16
4.26 - 4.5	10	0	10
4.01 - 4.25	6	0	6
3.76 - 4	7	0	7
3.51 - 3.75	4	0	4
3.26 - 3.5	6	0	6
3 - 3.25	2	0	2
Less than 3	10	1	11
TOTAL	**184**	**22**	**206**

Salary Assumptions

A total of **141** pension plans with DB provisions used a salary escalation assumption as shown in the following table. The salary escalation assumption is the sum of inflation, productivity, and merit assumptions.

Table 3.11 – Salary Escalation Assumptions

Rate (%)	Number of DB Plans
More than 5.75	3
5.51 - 5.75	1
5.26 - 5.5	22
5.01 - 5.25	1
4.76 - 5	2
4.51 - 4.75	1
4.26 - 4.5	2
4.01 - 4.25	1
3.76 - 4	15
3.51 - 3.75	9
3.26 - 3.5	23
3.01 - 3.25	14
2.76 - 3	40
2.51 - 2.75	0
2.26 - 2.5	5
2.01 - 2.25	1
1.76 - 2	1
1.5 - 1.75	0
0	43
TOTAL	**141**

Salary – Interest Differential Assumptions

The following table shows the amount by which the interest assumption exceeded the salary escalation assumption in DB pension plans that used a salary escalation assumption.

Table 3.12 – Percentage Difference Between Interest and Salary Escalation Assumptions

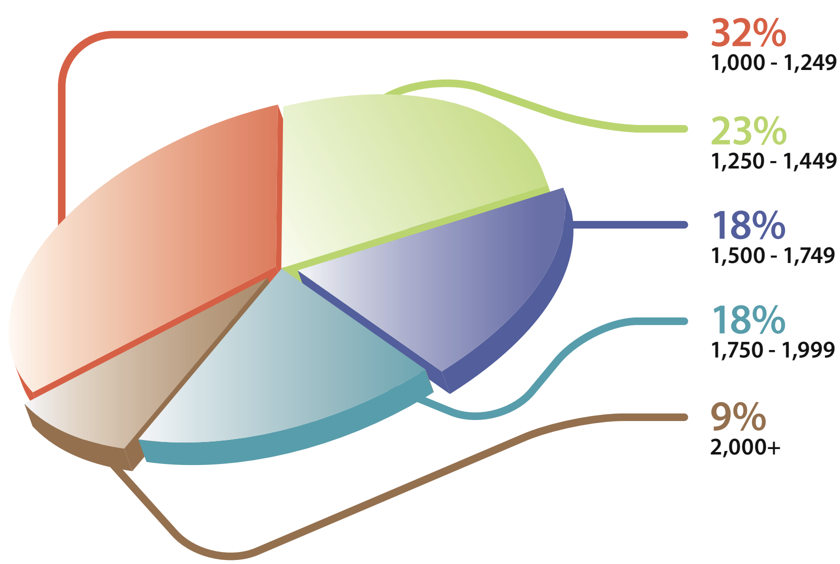
Rate (%)	Number of DB Plans
More than 3	2
2.76 - 3	6
2.51 - 2.75	3
2.26 - 2.5	11
2.01 - 2.25	13
1.76 - 2	38
1.51 - 1.75	16
1.26 - 1.5	12
1.01 - 1.25	5
0.76 - 1	8
0.51 - 0.75	2
0.26 - 0.5	5
0.01 - 0.25	6
0	14
Blank	43
Total	**141**

Hours Worked Assumptions

The final assumption surveyed was average hours worked by a member in a plan year, which applies only to CBMEPs with DB provisions.

The following graph shows a breakdown of the hours worked assumption used by plans and the number of active members assumed by the actuary in completing the valuation report. The unweighted mean average hours per plan is **1,496**.

Graph 3.5 – Average Hours of Work per Member Assumption for CBMEPs



The Office of the Superintendent of Pensions is a branch of Financial Sector Regulation and Policy, a division of Alberta Treasury Board and Finance.

www.finance.alberta.ca/publications/pensions/private-sector-pensions.html

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