Universities Academic Pension Plan

2018 Annual Report

Table of Contents

Profile 1

Governance of the Plan 2

Message from the Chair 5

Management Discussion and Analysis

- Financial Position of the Plan 7
- Investment Report 13
- Administration Report 26

Management's Responsibility for Financial Reporting 32

Independent Auditors' Report 33

Financial Statements 36

- Notes to the Financial Statements 39

Glossary 56

Profile

The Universities Academic Pension Plan (UAPP) was established in 1978 as a defined benefit pension plan for members of the academic and professional staff of Alberta universities and Banff Centre. The UAPP was set up under the Public-Sector Pension Plans Act (Alberta) and the Provincial Treasurer was the trustee until December 31, 2000. The UAPP became an independent pension plan registered under the Employment Pension Plans Act (Alberta) and the Income Tax Act (Canada) as of January 1, 2001. The UAPP is now established under the Sponsorship and Trust Agreement signed by the plan's Sponsors: the academic staff associations and the boards of governors of the University of Alberta, University of Calgary, University of Lethbridge, Athabasca University, and Banff Centre.

• The Board of Trustees (Board), as established under the Sponsorship and Trust Agreement, is responsible for administering the Plan and investing the Fund.

• The UAPP is financed by employer and employee contributions, and by investment earnings. The Alberta Government also contributes towards eliminating the unfunded liability for service before 1992.

• At December 31, 2018, the UAPP has 8,172 active members, 2,273 deferred members and 5,602 pensioners.

• The UAPP Fund's market value at the end of 2018 was $4,831 million.

Governance of the Plan

BOARD MANDATE

The Board is responsible for administration of the UAPP (Plan), investment of UAPP funds (Fund), setting contribution rates required to fund the UAPP, and assisting Sponsors in developing appropriate changes to the UAPP. In carrying out its mandate, the Board is assisted by a small management team.

MISSION

It is the mission of the Board to deliver on its mandate in a manner that is consistent with:

- high quality services to the UAPP members and stakeholders,
- prudent investment of the Fund,
- seeking stable contribution rates within the funding requirements of the Employment Pension Plans Act,
- best practices in pension plan governance and management, and
- all applicable rules, laws, and regulations.

BOARD COMPOSITION

The Board of the UAPP oversees the Plan and is composed of five employer trustees and four employee trustees. The total votes carried by the employer trustees are the same as the votes carried by the employee trustees. The offices of Chair and Vice-Chair alternate every two years between employer and employee trustees.

VALUES

In carrying out its mission, the Board is guided by the following values:

- work in full partnership with Sponsors,
- be member/stakeholder focused,
- be open, accountable, and responsible for its actions,
- conduct UAPP business with trust, fairness, and integrity,
- adhere to the highest ethical standards,
- value and treat its employees as a vital resource, and
- strive to adopt best business practices.

Governance of the Plan

Administration Service Provider
Buck (UAPP Administration Centre)
Member Pension Inquiries:
201 City Center Drive
Suite 1000
Mississauga, ON L5B 4E4
Phone: 1.866.709.2092
Email: uapp.pensions@buck.com

Pensioner Payroll
CIBC Mellon Global Securities Services
Pensioner Payroll Inquiries:
CIBC Mellon Pension Benefits Dept.
PO Box 5858, Station B
London, ON N6A 6H2
Phone: 1.800.565.0479
Website: www.CIBCMellon.com

Investment Management
Alberta Investment Management Corp.
Beutel, Goodman & Company Ltd.
Fiera Capital Corporation

Asset Consultants & Actuary
Aon Hewitt

Auditor
KPMG LLP

Contact the Board

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#1002, Park Plaza
10611 98 Avenue
Edmonton, AB T5K 2P7
Fax: 780.415.8871
Website: www.uapp.ca

Management Team
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Dave Schnore
Phone: 780.415.8869
E-mail: dave.schnore@uapp.ca

Director, Finance & Administration
Chris Schafer, ASA, ACIA
Phone: 780.415.8870
E-mail: chris.schafer@uapp.ca

Pension Officer
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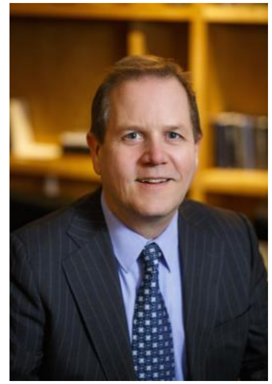
Phone: 780.415.8868
E-mail: vinko.majkovic@uapp.ca

Administrative Officer
Chloe Muller
Phone: 780.415.8866
E-mail: chloe.muller@uapp.ca

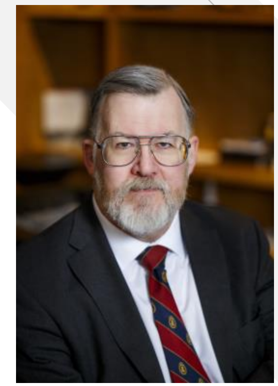
Governance of the Plan

Aditya Kaul
University of Alberta
Employee Appointee



Bruce Byford
Banff Centre
Employer Appointee

Deborah Meyers
Athabasca University
Employer Appointee



Geoffrey Hale (Vice Chair)
University of Lethbridge
Employee Appointee

Gitta Kulczycki
University of Alberta
Employer Appointee

Lawton Shaw
Athabasca University
Employee Appointee

Linda Dalgetty (Chair)
University of Calgary
Employer Appointee

Nancy Walker
University of Lethbridge
Employer Appointee

Paul Rogers
University of Calgary
Employee Appointee

Committees of the Board

Investment Committee
Aditya Kaul (Chair)
Geoffrey Hale (Vice Chair)
Linda Dalgetty
Gitta Kulczycki
Bob Normand
Andrew Tambone
Laurence Waring

Actuarial Committee
Paul Rogers (Chair)
Deborah Meyers
Lawton Shaw
Nancy Walker

Audit Committee
Gitta Kulczycki (Chair)
Bruce Byford
Megan Costiuk
Paul Rogers

Message from the Chair

The UAPP Board remains focused on keeping the UAPP on a sound financial track and securing your benefits under the UAPP. I am pleased to present the UAPP's Annual Report for the year. The purpose of the Report is to provide members and employers a comprehensive update on the Plan's results in 2018. The Report provides the financial statements, describes the accomplishments, and discusses the challenges that lie ahead for the Plan.

The UAPP Fund ended 2018 with $4.83 billion in assets, down from $4.85 billion at the end of 2017, due to the performance of the investments during the year. 2018 was a very challenging year for most investors with equity markets suffering from market corrections twice during the year. The UAPP Fund generated an investment loss of 0.5% for the year, which was the first loss for the Fund since 2008. Our fixed income and alternative investments provided positive returns, while our investments in equities experienced losses in 2018. While the 2018 return was disappointing, the Fund has generated an average annual compound return of 6.3% and 9.0% over the last four and ten years respectively.

Based on an actuarial extrapolation, the Plan's actuarial liabilities increased by $241.5 million during the year to $5.87 billion at December 31, 2018. The resulting actuarial deficit is $920.7 million, a decrease of $28.7 million from the previous year-end results in an increase in the funding position of the Plan from 83.1% to 84.3%. The majority of the actuarial deficit, at 90% of the total, relates to the funding associated with the pre-1992 service.

To provide a more complete review of the financial position of the Plan, the Board will continue its practice of undertaking an actuarial valuation every two years. An actuarial valuation is being undertaken as at December 31, 2018. This will allow for the review and adjustment, where appropriate, of the actuarial assumptions used in the valuation and the contributions required to fund the benefits. As mentioned previously, the Board remains focused on its long-term goal to ensure the provision of pension benefits to Plan members and their beneficiaries.

The Investment Committee and the Board continued to monitor the Fund's investment performance and developments in the capital markets. Progress continues in the transition to the Plan's revised asset mix, which was developed after the completion of an asset liability study in 2016. By shifting funds from public equities to infrastructure, private equity, and fixed income, the Board hopes to reduce the volatility of required contributions while maintaining benefit security. The performance of the various asset classes during 2018 have reinforced this strategy.

The UAPP faces the same funding challenges common to most Canadian defined benefit plans. The greatest of these are reflected in changing demographics, low interest rates, volatile investment markets, and improvements in mortality. These challenges have a multifaceted impact on the funding of UAPP. Pension plans rely heavily on investment returns to provide a substantial portion of the cost of benefits. The Board continues to closely monitor the performance of the Fund, the Plan's financial position, and industry developments relevant to the UAPP on a quarterly basis.

Message from the Chair

The Board remains committed to working with the Plan Sponsors on issues related to the Plan's funding, unfunded liability for pre-1992 service, benefits design, and other issues.

The Board places a high priority on quality services to members and is pleased to note members continue to be provided with excellent service, as shown by the performance against standards set in ten key areas of service vital to our members. The details of the standards and related performance are included in the Report in the section dealing with Plan Administration.

We regularly update UAPP members and other stakeholders through publications such as the quarterly Communiqué and the UAPP website. A call centre is also available to members seeking information about the UAPP. The Retirement Planner tool, available through the website, is regularly used by the members. The Trustees' Office also provides pension information sessions when requested by employers.

Our relationship with our investment managers is vital to the successful execution of the Board's investment policies. In this regard, we thank the staff at Alberta Investment Management Corporation, Beutel Goodman & Company Ltd., and Fiera Capital Corporation for their work and look forward to continuing our cooperative and mutually beneficial relationships.

The Board would like to express its gratitude to Megan Costiuk (external member of the Audit Committee), and Bob Normand, Andrew Tambone, and Laurence Waring (external members of the Investment Committee), who give generously of their time and expertise to the work of our Audit and Investment Committees.

On behalf of the Board, I would like to thank David Head who left the Board during 2018. I would like to welcome Deborah Meyers, who is replacing David as the Board's employer representative from Athabasca University.

The Board relies on a small team to carry out its mandate. On behalf of the Board, it is my great pleasure to acknowledge and thank our strong team at the Trustees' Office for their dedication and service to the UAPP.

Linda Dalgetty
Chair, Board of Trustees

Financial Position of the Plan

The Plan's Assets

After nine consecutive years of positive investment returns, the Plan's assets decreased in value during 2018. The net negative return of 0.5% was the lowest experienced by the fund since the financial crisis of 2008. The market value of the Plan's assets fell by $20.2 million, from $4,851.1 million at the end of 2017 to $4,830.9 million at December 31, 2018. Some of the investment losses were offset by positive cash flow during 2018 as the fund received contributions of $280.2 million while making benefit payments of $272.3 million. For the first time since 2011, the actual return on Plan assets was less than the assumed return. For 2018, the assumed return was 5.6%.

Investment expenses for 2018 were $23.5 million, up from $21.0 million in 2017, as the focus continues to be risk-adjusted returns net of expenses. The increase in expenses is due to a greater allocation of assets to alternative investments which are generally more expensive to access.

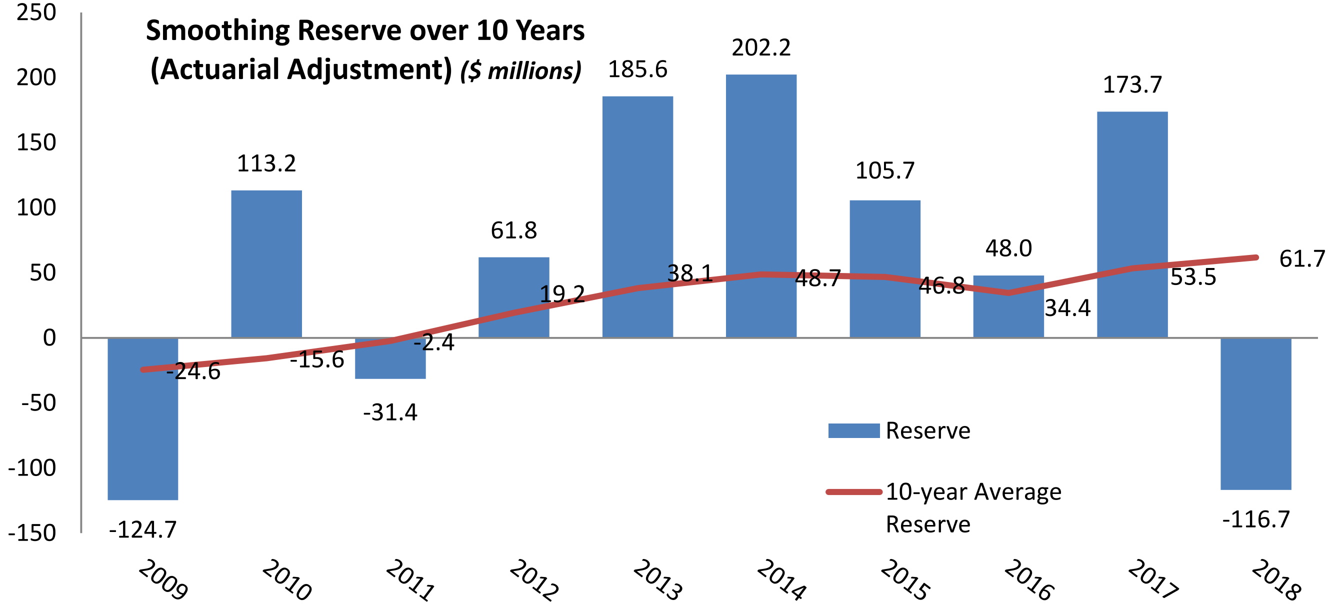
$ Millions	December 31, 2018			December 31, 2017		
Service Period	Pre-92	Post-91	Total	Pre-92	Post-91	Total
Fair Value of Net Assets	655.8	4,175.1	4,830.9	744.8	4,106.3	4,851.1
Actuarial Adjustment	11.8	104.9	116.7	(31.9)	(141.8)	(173.7)
Actuarial Value of Net Assets	667.6	4,280.0	4,947.6	712.9	3,964.5	4,677.4
Accrued Pension Liability	1,498.7	4,369.6	5,868.3	1,547.5	4,079.3	5,626.8
Actuarial Deficiency	(831.1)	(89.6)	(920.7)	(834.6)	(114.8)	(949.4)
Funded Ratio	44.5%	97.9%	84.3%	46.1%	97.2%	83.1%

As permitted under the funding requirements of the Employment Pension Plans Act of Alberta, UAPP uses the "smoothed" value of assets in calculating the actuarial financial position of the Plan. Because market values can fluctuate significantly from day-to-day, the smoothing method allows the Plan to look at the general trend in the status of the fund rather than a precise point-in-time situation. The smoothing reserve decreased by $290.4 million during 2018. The Plan has a negative reserve of $116.7 million at December 31, 2018, down from a positive reserve of $173.7 million at the end of 2017. While the market value of the Fund decreased during the year, the actuarial value of the assets increased by $270.2 million to $4,947.6 million from $4,677.4 million at the start of 2018.

Intuitively, one may expect the actuarial value of assets to move in the same direction as the market value of assets in any given year. In most years, that is the case. However, the Plan experienced several years of strong positive investment returns up to the end of 2017, resulting in a large cushion

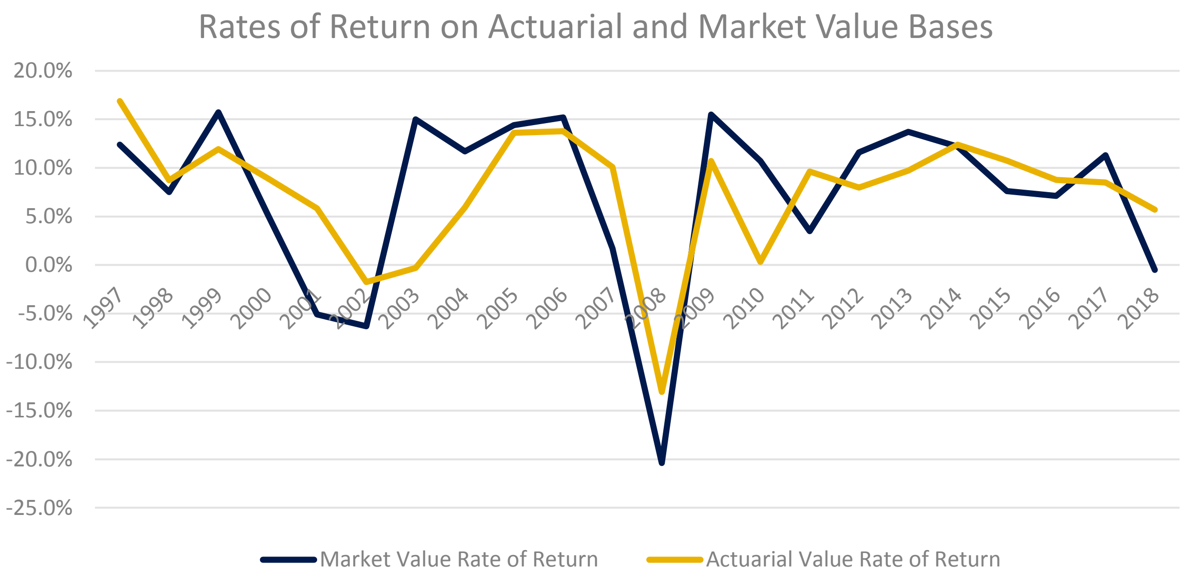
Financial Position of the Plan

when it came time to smooth the asset value. Since 2018 experienced a poor return, that cushion was eliminated and, in fact, moved into a negative position. The actuarial value is determined by averaging the actual market value at December 31, 2018 with the projected market value at the same date from each of the prior two year-end dates. This method is summarized in Note 14 of the Financial Statements and in the most recent actuarial valuation report, as at December 31, 2016.



The 10-year average smoothing reserve has increased from $53.5 million to $61.7 million, due to the 2018 negative reserve being less than the large negative reserve of $198.7 million from 2008 dropping out of the 10-year average calculation. Over this time period, the highest annual reserve continues to be $202.2 million at December 31, 2014 and the lowest reserve is a negative reserve of $124.7 million at December 31, 2009. UAPP has employed the smoothing method since December 31, 1996. Over the intervening 22 years, the average annual market value rate of return is 7.3% and the average annual actuarial (smoothed) value rate of return is 7.5%. The purpose of smoothing the asset values is to reduce fluctuations in market values from one year to the next.

Financial Position of the Plan



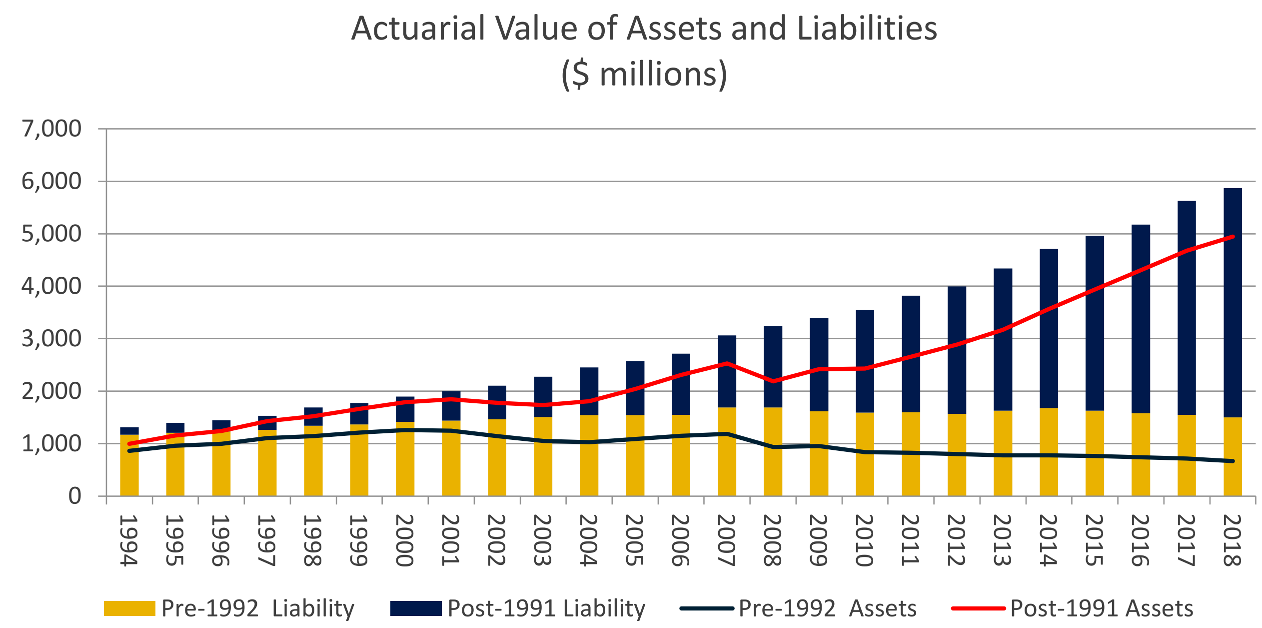
The Plan's Liabilities

The Plan's accrued liabilities as of December 31, 2018 are estimated at $5,868.3 million, a growth of 4.3% over the December 31, 2017 liability estimate of $5,626.8 million. Both liability estimates are based on extrapolations by the Plan's actuary using the membership data and methods utilized in the December 31, 2016 actuarial valuation. The assumptions used in each extrapolation are determined separately. A summary of the key assumptions can be found in Note 5 of the Financial Statements.

Contributions to fund the Plan's liabilities are generally comprised of two components: 1) current service cost, which is the cost of providing pensionable service to members actively accruing pensions under the terms of the Plan, and 2) unfunded liabilities, which are pension benefits accrued in prior years for which the Plan has insufficient assets. These unfunded liabilities arise when investment returns are less than assumed and when the present value of the accrued pension benefits increase more than expected, usually due to Plan experience being different than assumed or due to changes in the actuarial assumptions.

The last actuarial valuation was performed as at December 31, 2016 and the Board has elected to undertake a new valuation as at December 31, 2018. The assumptions used in the previous valuation will be reviewed in the context of prior Plan experience with guidance provided by the actuary. Any changes made to the assumptions will be summarized in the actuarial valuation report which will be posted to the UAPP website later in 2019.

Financial Position of the Plan



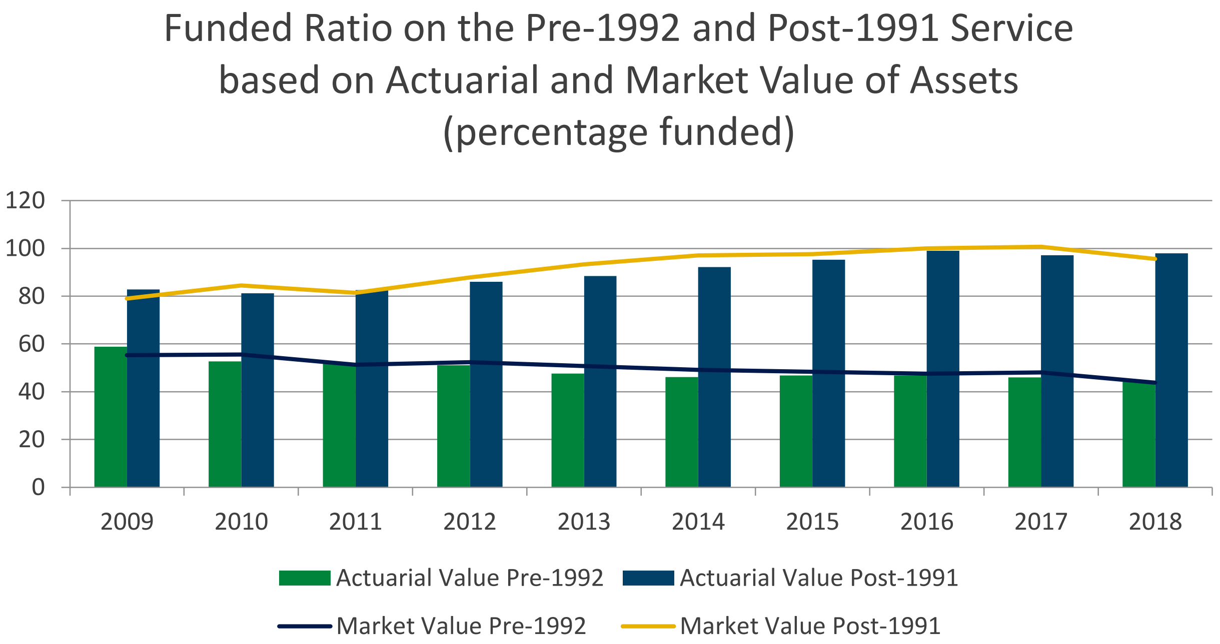
The Plan's Funded Ratio

Investment returns during 2018 did not meet expectations. As a result, the Plan's funded ratio on a market value basis decreased to 82.3% at the end of 2018 from 86.2% at December 31, 2017. On an actuarial value basis, the funded ratio actually increased to 84.3% from 83.1% due to the asset-smoothing methodology. In recent years, strong investment returns have contributed to the consistent generation of smoothing reserves (where the market value of the assets is greater than the actuarial value of the assets). However, experience in 2018 has caused the Plan to record a negative reserve at year-end for the first time since 2011, the last time the actual investment returns were less than expected.

Since 1993, the Government of Alberta has been making contributions to fund the UAPP unfunded liabilities related to pensions accrued prior to 1992. The rate of annual contributions has been fixed at 1.25% of salary of the active membership, continuing until the earlier of the date the pre-1992 unfunded liability is retired or December 31, 2043. The remainder of the pre-1992 deficit and any post-1991 unfunded liability are funded by the employers and employees. The funded ratio for pre-1992 service continues to decline due to the long amortization period. About 28% of the total 2018 pre-1992 unfunded liability contribution came from the Government, though the initial share of the contribution was approximately 50%.

The funded ratio for pre-1992 service is 44.5% (2017: 46.1%) on an actuarial value basis and is 43.8% (2017: 48.1%) on a market value basis. The funded ratio for post-1991 service is 97.9% (2017: 97.2%) on an actuarial value basis and is 95.5% (2017: 100.7%) on a market value basis. The funded ratio for all service is 84.3% (2017: 83.1%) on an actuarial value basis and is 82.3% (2017: 86.2%) on a market value basis.

Financial Position of the Plan

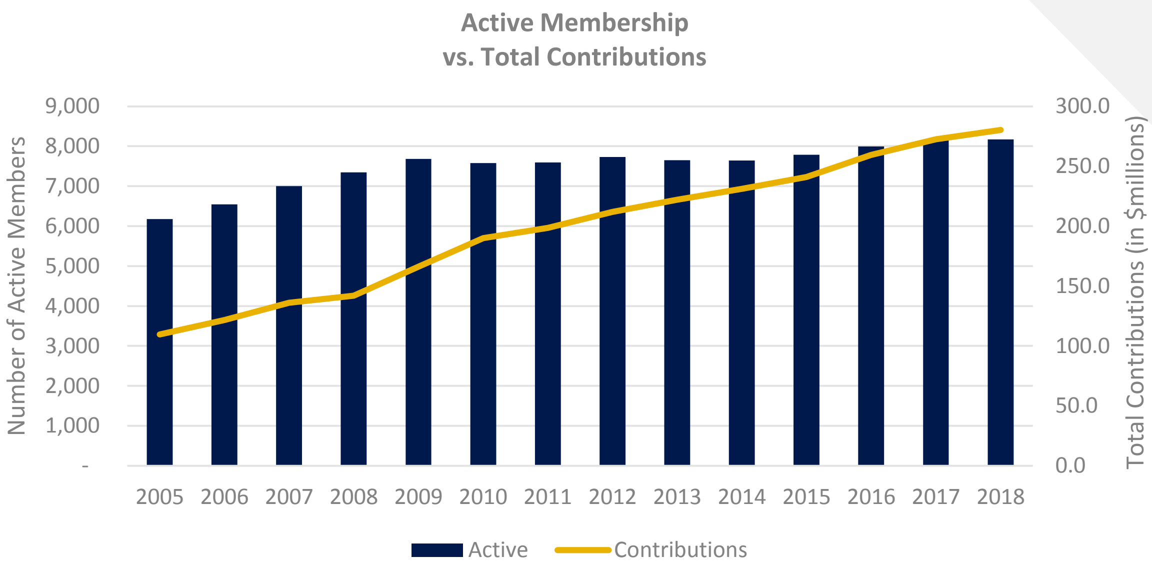


An actuarial valuation will be completed during 2019 following which the Board will be able to assess the sufficiency of current contribution rates for the paying off of both pre-1992 and post-1991 unfunded liabilities.

Looking to the Future

As an open defined benefit pension plan, UAPP invests with an eye on achieving sound long-term financial stability. However, this lengthy focus is challenged by the realities of the present. The number of members actively accruing pensions and making ongoing contributions to the fund has increased very slowly in recent years. Retired members are living longer such that pensions are being paid for longer than expected when previous contribution rates were set. Despite some increases, interest rates continue to be near historic lows which creates situations of higher commuted values paid on lump sum pension transfers and some investment challenges. The pre-1992 unfunded liability also presents UAPP with its own unique difficulties.

Financial Position of the Plan



As at December 31, 2018, the Plan has 8,172 active members. Ten years earlier, there were 7,345 active members, an increase of only 11% over the decade. Three of the last ten years saw a decline in the year-end number of active members. The active membership is not expected to significantly increase in the next few years and new members are the lifeblood of a defined benefit plan. Over the same period, total Plan contributions have doubled from $141.8 million during 2008 to $280.2 million during 2018. There are multiple reasons for the faster escalation in contributions, including inflationary and productivity growth in the salaries of Plan members on which contributions are based. However, higher contribution rates have played a major role in this difference as well. The December 31, 2008 actuarial valuation identified the total contribution rate to be 25.09% of pay while the December 31, 2016 report determined the rate as 30.11% of pay, both including the Government of Alberta's fixed share of the pre-1992 unfunded liability.

The Board has contracted with the Plan's actuary to prepare an actuarial valuation as at December 31, 2018 to evaluate the financial position of the UAPP. Each valuation presents an opportunity to update economic assumptions, like the discount rate, and demographic assumptions, like the mortality tables. Once that valuation is complete, new contribution rates may be established to ensure that the Plan's funding remains on track. Following the last valuation, the post-1991 unfunded liability was scheduled to be eliminated by December 31, 2027 and the pre-1992 unfunded liability by December 31, 2043.

The transition of the fund's asset mix continued during 2018 as the actual combined allocations to private equity and infrastructure holdings increased from 3.3% (about $159.7 million) to 5.5% (about $263.8 million). The long-term target asset mix as disclosed in the Statement of Investment Policies and Goals is 5.0% for private equity and 7.0% for infrastructure, with both allocations expected to be completely filled by 2020. The Board will continue to work with its investment manager to monitor progress towards this goal.

Investment Report

Investment Beliefs and Approach

As discussed in previous Annual Reports, the development of the UAPP's strategic, long-term investment policy is based on several key beliefs.

1. There is a relationship between risk and return. Achieving higher returns generally requires exposure to higher risks. The relationships between risk and return are more predictable over the longer term. Equities will, in the long-term, provide greater returns than fixed income investments although with greater short-term volatility. The long-term strategic asset allocation decision is the most important factor in determining investment risk and return.

2. In establishing the asset mix policy of the Fund, the liabilities of the Plan should be taken into consideration. As an example, inflation has a direct impact on the UAPP's liabilities. Investments in inflation-sensitive assets like Real Return Bonds, Real Estate and Infrastructure are a way of managing the inflation risk.

3. Diversification within and across asset classes can reduce risk over the long term without compromising expected returns and is a prerequisite to prudent fund management. Exposure to foreign currencies as a result of moderate levels of foreign investments can provide diversification benefits. Currency hedging should only be undertaken on an opportunistic basis.

4. Over the long term, longer term bonds will outperform cash and short-term bonds. Longer term bonds will outperform during periods of stable and declining rates but will underperform during periods of significantly rising interest rates. Relative to shorter term bonds, longer term bonds generally provide better matching with the Plan's liabilities thus reducing the volatility of the required contributions and funded status.

5. Active management will serve the Plan better than passive management in most asset classes. Markets are efficient to varying degrees, and short-term deviations from long-term fundamentals can occur. Therefore, there is an expectation for skilled managers to add value and/or reduce risk relative to passive exposure to the market. The opportunity for value added and/or reduced risk from active management should be weighed against the incremental cost relative to passive market exposure.

6. Over the long-term, but not necessarily in most years, investment in a value stock portfolio will tend to produce performance similar to or better than investment in a growth stock portfolio and the performance of the value stock portfolio will be less volatile.

7. A specialist manager structure offers a number of benefits over a balanced manager structure including the potential to hire the best manager for each asset class, greater flexibility to replace underperforming funds, and the ability to make use of passive investment funds for appropriate asset classes.

8. With respect to foreign equities, global mandates are preferred over combinations of U.S. and international equity mandates because global mandates allow managers more flexibility and greater opportunities to add value.

Investment Report

9. Market timing is not seen as an effective strategy for generating consistent returns. Therefore, a rebalancing protocol around the strategic asset mix is seen as the most effective way of ensuring that portfolio risk does not drift materially above or below the intended risk level.

10. Investment managers should be monitored regularly for changes in ownership, investment process and philosophy, key investment personnel, and for investment returns against relevant peer groups and indices. Managers may be terminated on the basis of qualitative issues even if investment returns are acceptable. Investment returns should be evaluated over at least a 4-year period. Emphasis should be placed, not only on the level of returns, but also on the amount of risk taken to achieve those returns. Tracking error should be assessed in terms of the impact on volatility of the Plan's required contributions and funded status.

These beliefs require an investment approach that seeks to obtain higher long-term returns while containing the volatility in short-term results. This goal underlies the UAPP's investment policy and risk management measures.

Investment Policy

The UAPP's investment policies are based on the investment beliefs and expectations of the Board and are set out in the Statement of Investment Policies & Goals (SIP&G). The asset mix policy, or the Fund's long-term allocation to the different asset classes, is a key component of the SIP&G. It is through the asset allocation decision that the Board diversifies its investments across asset classes and attempts a balance between the objective of higher long-term returns and the need to reduce shorter term volatility in those returns.

The Board, through its Investment Committee, monitors on an ongoing basis the performance of the Fund, the funded status of the Plan, capital markets and economic developments and expectations. Based on this monitoring, the Board may make adjustments to the asset mix and take other appropriate measures to control risk or improve returns. The Board reviews the SIP&G at least once a year.

The following table compares the Board's current Long-term Policy Asset Mix benchmark and ranges to the actual asset mix of investments for 2018 and 2017. A copy of the full text of the UAPP's SIP&G is available on the UAPP website www.uapp.ca under Publications.

Investment Report

Long-term Policy Asset Mix
(percentage of Fund)

Asset Class	2018 Benchmark [1]	2018 Min	2018 Max	2018 Actual	2017 Benchmark [1]	2017 Min	2017 Max	2017 Actual
	%			%	%			%
Money market and fixed Income								
Cash and short term	0.0	0.0	1.0	0.4	0.0	0.0	1.0	0.4
Universe bonds	11.5	8.0	14.0	13.4	11.5	8.0	14.0	13.3
Private mortgages	5.0	3.0	7.0	4.1	5.0	3.0	7.0	3.6
Long duration bonds	11.5	8.0	14.0	11.0	11.5	8.0	14.0	11.0
Real return bonds	7.0	5.0	9.0	7.0	7.0	5.0	9.0	6.7
	35.0	**26.0**	**41.0**	35.9	35.0	**26.0**	**41.0**	35.0
Public equities								
Canadian	16.0	10.0	20.0	11.3	16.0	10.0	20.0	12.5
Foreign								
Global	28.0	22.0	31.0	29.5	28.0	22.0	31.0	31.6
Emerging markets	8.0	5.0	9.0	7.2	8.0	5.0	9.0	7.5
	52.0	**40.0**	**60.0**	48.0	52.0	**40.0**	**60.0**	51.6
Alternative investments								
Real estate	8.0	5.0	11.0	8.8	8.0	5.0	11.0	7.4
Infrastructure and private debt and loan	4.0	3.0	9.0	3.8	4.0	3.0	9.0	3.6
Timberland	1.0	0.0	1.0	0.9	1.0	0.0	1.0	0.8
Private equity	0.0	0.0	7.0	1.7	0.0	0.0	7.0	0.6
	13.0	**12.0**	**25.0**	15.2	13.0	**12.0**	**25.0**	12.4
Strategic opportunities and currency	-	-	-	0.9	-	-	-	1.0
Total	100.0			100.0	100.0			100.0

(1) The benchmark represents the interim policy weighting as the Plan transitions to reduced long-term weightings in Canadian and global equities and increased weightings in private equity and infrastructure investments. During the transition, specific actual allocations may fall outside of the Min and Max levels shown in the table.

As can be seen from the table, the Plan holds a highly-diversified portfolio of investments in fixed income securities, Canadian and foreign equities, alternative investments, and strategic opportunities. This includes participation in both passively and actively managed pooled investment funds. The Plan invests in units of pooled investment funds which are created and managed by investment managers. Pooled fund units have a market-based unit value that is used to allocate income to participants in the pool and to value purchases and sale of units. There are thousands of securities held in various pooled investment funds. These securities may be bought and sold on a daily basis. The Plan has a broad global diversification across publicly traded equities and fixed income which increases opportunities to add value. In addition, the Fund's investments in real estate and infrastructure provide better cash yields that grow with inflation.

The Plan's money market and fixed income portfolio is exposed to credit risk and interest rate risk through bond and mortgage holdings and derivative products. Based on the view that currencies are a zero-sum game in the long-run, currency exposure to foreign equity markets is largely unhedged. Up to 25% of the Plan's foreign currency exposure can be hedged. Therefore, unless currency exposure is hedged, the returns from foreign markets will be impacted by changes in the exchange rate of the Canadian dollar.

Investment Report

Investment Management

UAPP engages three investment managers to manage its investment portfolio. Beutel, Goodman & Company Ltd. and Fiera Capital Corporation manage the Canadian long bond and the majority of the universe bond portfolios totaling 22.0% of total investments. The majority of UAPP's investments totaling 78.0% are managed by Alberta Investment Management Corporation (AIMCo). AIMCo manages UAPP's public equity investments, alternative investments, private mortgages, and real return bonds, along with some universe bonds.

Beutel, Goodman & Company Ltd. is a privately-owned Canadian company founded in 1967, with over $35 billion in assets under management. Fiera Capital Corporation was established in 2003 and has more than $136 billion in assets under management. AIMCo is an Alberta provincial corporation established in 2008, reporting to the President of Treasury Board, Minister of Finance. In total, AIMCo administers investment portfolios of around $110 billion on behalf of other public sector pension plans and the Government of Alberta. These investment managers invest the UAPP's assets subject to the investment policies set out in the Board's SIP&G. The majority of investments are managed through pooled investment funds.

To mitigate implementation risk, clearly defined benchmarks, guidelines, standards, and controls have been established at both the total Fund and asset class levels. Investment managers have the flexibility to act within the prescribed limits in order to add value over the policy. Both compliance with the SIP&G and performance against the specified benchmarks are monitored formally on a quarterly basis. The Board has retained an independent asset consultant, Aon Hewitt, to provide evaluation of investment managers on a regular basis.

Proxy Voting

Proxy voting is an important tool in corporate governance. The Board delegates responsibility for proxy voting to investment managers. Pension funds are to be managed in the best interests of beneficiaries. This principle governs the voting of proxies. The UAPP Board considers proxy voting to be a key element of responsible investing and that thoughtful voting is a contributor to optimizing the long term value of investments.

Risk Management

The Board recognizes that in order to meet the return objectives of the Plan, UAPP must take on risk inherent in the assets in which UAPP invests. UAPP invests in a diverse set of asset types to help improve the likelihood of achieving our desired results for a given level of risk.

Investment risk management is a key focus for the Board and the investment managers. Investment managers seek to measure and monitor both historic and possible future risks, allocating risk as a scarce resource to the most promising investment opportunities. A quantitative investment risk system is designed to operate across all asset classes and a variety of risk types such as credit risk, price risk, interest rate risk, currency risk, and liquidity risk. UAPP monitors the risk of the Plan's liabilities in relation to the investment assets.

Evaluating Investment Performance

A key assumption in calculating the Plan's pension obligation is the discount rate. The estimated value of the Plan's pension obligation is highly sensitive to this assumption. According to the audited financial statements, a decrease in the discount rate by 1% increases the pension obligation by approximately $847.2 million. The current discount rate of 5.6% includes a long-term real return rate of 3.35% and an assumed inflation rate of 2.25%. This rate represents the Plan's long-term investment return objective for funding purposes. In the 2016 actuarial valuation, the discount rate decreased to 5.6% from 5.95% used in the 2014 valuation.

The Plan's investment performance can also be assessed in terms of whether investment managers are adding value above their respective benchmarks. In this case, the performance of the Plan is measured against a policy benchmark return calculated using the Plan's policy allocation to each asset class and the market index return for the specific class. While investment performance can be compared to other funds, this comparison is meaningful only to the extent that the funds being compared have similar investment objectives, risks and constraints and policies. A fund that is 100% invested in fixed income, for example, does not provide a valid comparison to a fund that is 100% invested in equities.

Investment Report

2018 Investment Performance

Investments: $4,808.4 million
(2017: $4,828.8 million)

Return on Investments: (0.5)%
(2017: 11.3%)

Investment Loss: $(2.3) million
(2017: $505.5 million Income)

Investment Expense: $23.5 million
(2017: $21.0 million)

At December 31, 2018, the fair value of the Plan's investments totaled $4,808.4 million, down from $4,828.8 million at the end of the previous year.

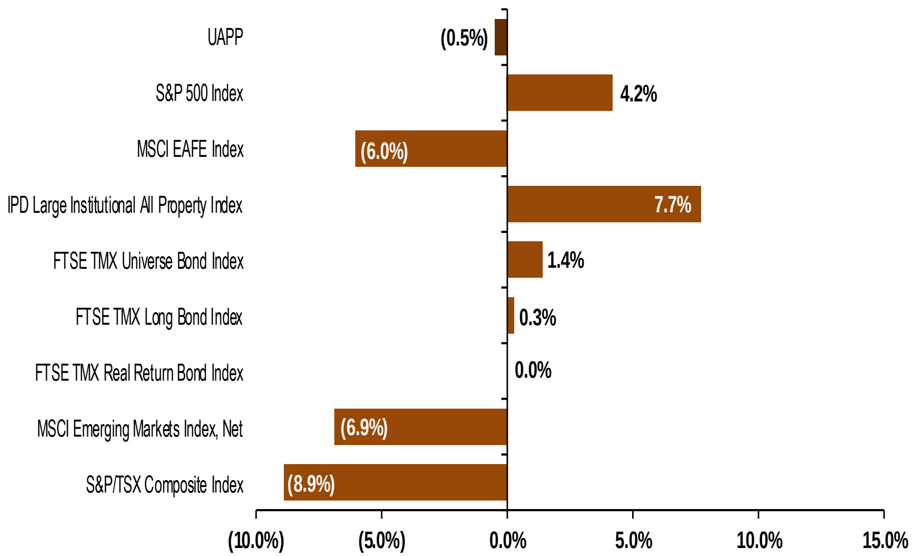
Overall, UAPP finished the 2018 year with a loss on investments, after expenses, of 0.5% compared to a gain of 11.3% in 2017.

UAPP gained 0.5% on its investments in the 1st quarter, when the public equity bull run appeared to lose steam. The US Federal Reserve System and the Bank of Canada continued to increase interest rates, with the US target rate increasing by 100 basis points, or 1%, by the end of 2018. While equity markets reversed their 1st quarter losses in the 2nd and 3rd quarters, those gains were reversed again in the 4th quarter. Trade war fears and plunging oil prices pushed markets into negative territory for the year.

UAPP posted a modest return of 1.8% in the 2nd quarter and a flat return of 0.1% in the 3rd quarter. In the 4th quarter, investments lost 2.9%, reversing all previous quarter gains, and leaving UAPP with an overall loss for the year of 0.5%.

The following chart summarizes the market returns in Canadian dollars from various indices around the world and the overall return of UAPP for 2018.

Returns for Major Markets and the UAPP (in $CDN)



The weaker Canadian dollar was favorable to foreign investment returns. The Standard & Poor's (S&P) 500 Index, which tracks the performance of the top 500 American companies, gained 4.2% in Canadian dollars (loss of 4.4% in U.S. dollars) compared to a gain of 13.8% in Canadian dollars (21.8% in U.S. dollars) in 2017.

Approximately 18% of the Plan's investments (2017: 18%) are denominated in U.S. dollars. The weaker Canadian dollar in relation to the U.S. dollar had a positive impact on the value of U.S. dollar investments held by the Plan. At December 31, 2018, one U.S. dollar was worth $1.36 Canadian compared to $1.25 Canadian at the beginning of the year. As a result, U.S. dollar investments were worth more when translated into Canadian dollars at December 31, 2018 resulting in more favorable returns in Canadian dollars.

The Morgan Stanley Capital International (MSCI) EAFE Index covering Europe, Australasia and the Far East, lost 6.0% in Canadian dollars compared to a gain of 16.8% in 2017. Approximately 18% (2017: 20%) of the Plan's investments are denominated in currencies other than the Canadian and U.S. dollars including the Euro which comprises 3% (2017: 4%) of the Plan's investments. At December 31, 2018, one Euro was worth $1.56 Canadian compared to $1.51 Canadian at the beginning of the year.

Investment Report

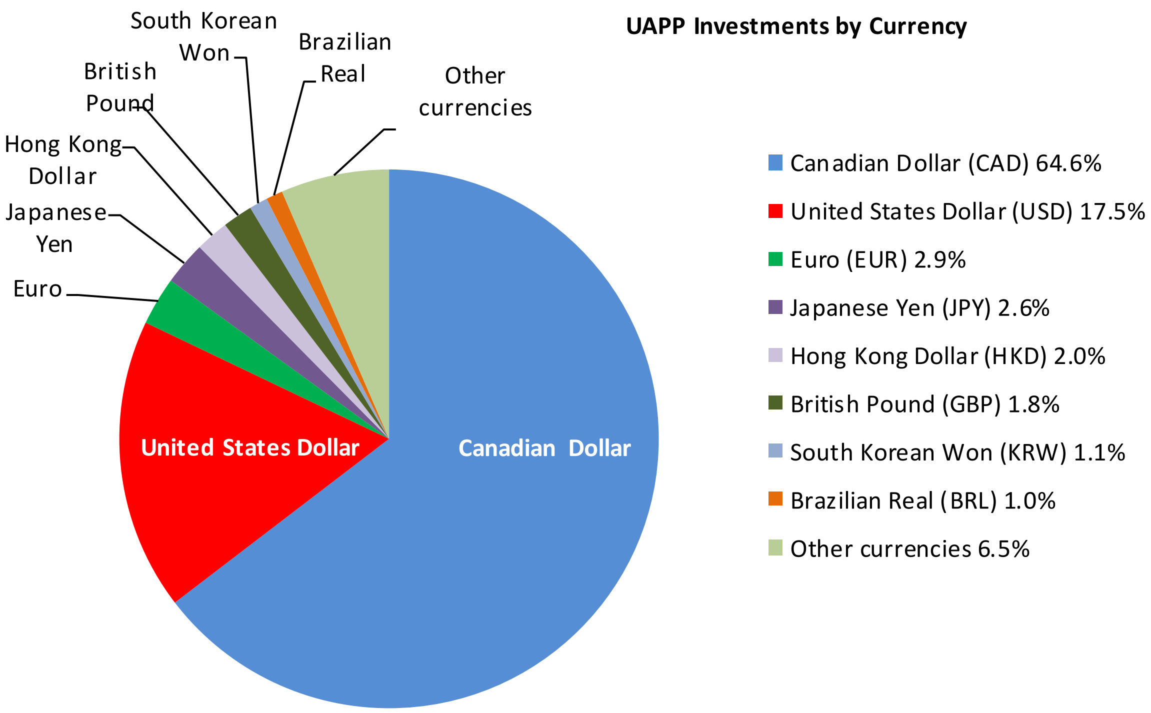
Outside of the global developed equity markets, the MSCI Emerging Markets Index lost 6.9% in 2018 in Canadian dollars compared to a gain of 28.3% in 2017.

The Canadian public equities, represented by the S&P Toronto Stock Exchange (TSX) Composite Index, lost 8.9% in 2018 compared to a gain of 9.1% in 2017.

The Canadian real estate market represented by the IPD Large Institutional All Property Index increased by 7.7% in 2018 compared to an increase of 7.0% in 2017.

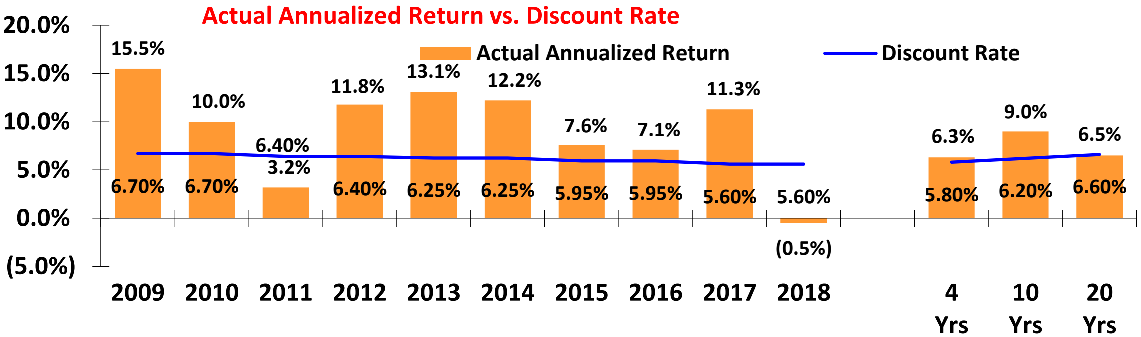
The FTSE TMX Universe Bond Index and the FTSE TMX Long Bond Index posted gains of 1.4% and 0.3% respectively compared to gains of 2.5% and 7.0% in 2017. The FTSE TMX Real Return Bond Index returned 0.0% compared to a gain of 0.7% in 2017.

The table below shows UAPP's exposure to foreign currencies and its investments in Canadian dollars.



Investment Report

The chart below compares the Plan's actual return over one year and annualized returns over four, ten and twenty years against the Plan's actuarial discount rate for funding purposes.

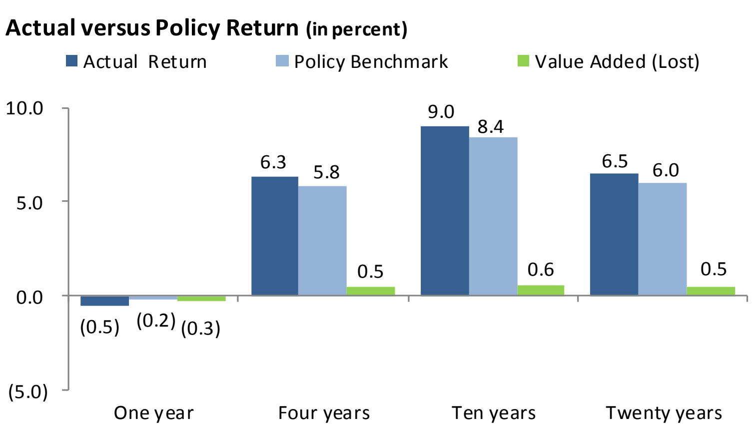


The Plan's annualized returns over four, ten, and twenty years are 6.3%, 9.0%, and 6.5% respectively. Over four and ten years, the Plan's actual investment return is greater than the long-term return objective for funding purposes. Over twenty years, the Plan's actual investment return is slightly less than the long-term return objective for funding purposes (6.60%).

Actual versus Policy Return

According to the Plan's SIP&G, the Board has set a performance goal based on the expectation that investment management will add 0.5% per annum over a four-year period beyond the passively managed market-based policy benchmark.

Over the past four years, the value added by investment management decisions was 0.5% per annum.



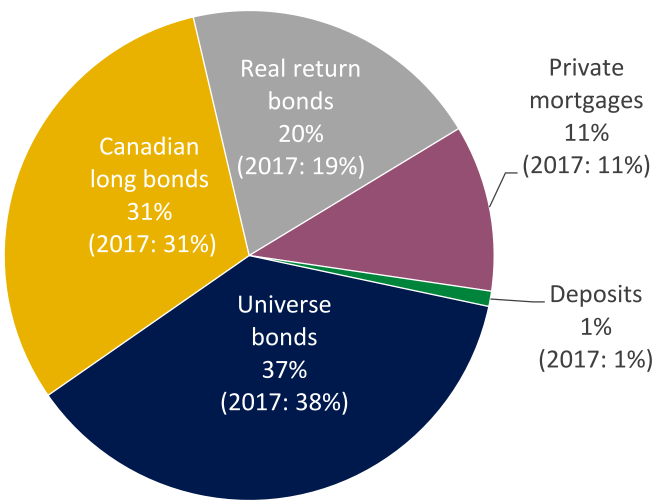
Investment Report

PERFORMANCE BY ASSET CLASS

Fixed Income

At December 31, 2018, fixed income holdings comprise 35.9% of the Plan's total investments or $1,729 million compared to 35.0% or $1,691 million at December 31, 2017. The Canadian long bond portfolio and the majority of the universe bond portfolio are managed by Beutel, Goodman & Company Ltd. and Fiera Capital Corporation. AIMCo manages private mortgages, real return bonds, universe bonds, and deposits in the Consolidated Cash Investment Trust Fund.

Summary of Fixed Income Holdings (by pooled investment fund)



Total Fixed Income	Actual Return %	Benchmark Index Combined Benchmark* %	Net Value Added %
One year	1.4	0.9	0.5
Four year	2.7	2.6	0.1

* The combined benchmark includes the FTSE TMX Long Bond Index, FTSE TMX Real Return Bond Index, FTSE TMX Universe Bond Index, and FTSE TMX 91-Day T-Bill Index.

In 2018, the Plan's total fixed income securities gained 1.4%, outperforming against the combined benchmark gain of 0.9% by 0.5%.

Canadian Equities

At December 31, 2018, Canadian public equities represented 11.3% of the Plan's total investments or $544 million down from 12.5% or $604 million at the end of the previous year. The Plan's Canadian equity portfolio is invested in AIMCo's Canadian Equities Master Pool, which in turn invests in the Global Alpha Strategy (GLAS) and structured equity products which replicate Canadian public equities. The purpose of GLAS is to gain access to more markets than would be available if the pool was locked to specific countries or industries, providing more value-add return (alpha) over the long-term. GLAS's portfolio includes directly held investments in public companies in the U.S., Europe, Australasia, and the Far East (EAFE) with smaller allocations to emerging markets and Canada. Non-Canadian exposure is swapped out to provide exposure to the Standard and Poor's Toronto Stock Exchange (S&P/TSX) while still maintaining the alpha earned in GLAS. Interest bearing securities support the notional value of index swaps and futures contracts.

Investment Report

Canadian Equities Master Pool Industry Exposure Relative to Benchmark December 31, 2018	Benchmark S&P/TSX Composite Index	Over (Under) Benchmark
Sector	%	%
Communication services	6.0	0.4
Consumer discretionary	4.3	0.1
Consumer staples	4.0	(0.8)
Energy	17.8	(0.4)
Financials	32.9	0.5
Health Care	1.6	(0.2)
Industrials	10.8	(0.4)
Information technology	4.0	0.9
Materials	11.4	0.6
Real estate	3.2	(0.4)
Utilities	4.1	0.0
*	100.0	

* Total exposure may not add up to 100% due to rounding.

In 2018, the Canadian equity portfolio lost 10.1%, underperforming against the S&P/TSX Composite benchmark loss of 8.9% by 1.2%.

Total Canadian Equities	Actual Return %	Benchmark Index S&P/TSX Composite %	Net Value Added (lost) %
One year	**(10.1)**	**(8.9)**	**(1.2)**
Four year	**2.6**	**2.5**	**0.1**

Foreign Public Equities

At December 31, 2018, foreign public equities accounted for 36.7% of the Plan's total investments or $1,763 million, down from 39.1% or $1,886 million the previous year. UAPP's global public equity portfolio consists of units owned in AIMCo's Global Equities Master Pool (80%) and Emerging Markets Equity Pool (20%).

In 2018, the foreign public equity portfolio lost 3.0%, underperforming against the combined benchmark loss of 1.6% by 1.4%.

Total Foreign Equities	Actual Return %	Benchmark Index Combined Benchmark* %	Net Value Added (lost) %
One year	**(3.0)**	**(1.6)**	**(1.4)**
Four year	**9.1**	**8.5**	**0.6**

* Combined benchmark incudes the MSCI World and MSCI Emerging Markets indices.

Investment Report

Global Equities Master Pool

The Plan's global equity portfolio is invested in units of AIMCo's Global Equities Master Pool. The Pool's investment in GLAS provides exposure to a diverse market which ideally provides a higher rate of return than what could be earned investing solely in traditional global markets. The Pool replicates exposure to foreign equity markets by investing in structured equity products using index swaps and futures contracts. Interest-bearing securities support the notional value of index swaps and futures contracts.

Global Equities Master Pool
Industry Exposure Relative to Benchmark
December 31, 2018

Sector	Benchmark MSCI World Total Return Index %	Over (Under) Benchmark %
Communication services	8.3	0.3
Consumer discretionary	10.4	0.2
Consumer staples	8.7	(0.9)
Energy	5.9	(0.4)
Financials	16.2	0.5
Health Care	13.4	(0.2)
Industrials	10.9	(0.4)
Information technology	14.9	0.9
Materials	4.6	0.6
Real estate	3.2	(0.4)
Utilities	3.5	(0.1)
*	100.0	

* Total exposure may not add up to 100% due to rounding.

In 2018, the Plan's global equity portfolio lost 1.9%, underperforming against the MSCI World Index benchmark loss of 0.5% by 1.4%.

Total Global Equities	Actual Return %	Benchmark Index MSCI World Index %	Net Value Added (lost) %
One year	(1.9)	(0.5)	(1.4)
Four year	9.3	8.9	0.4

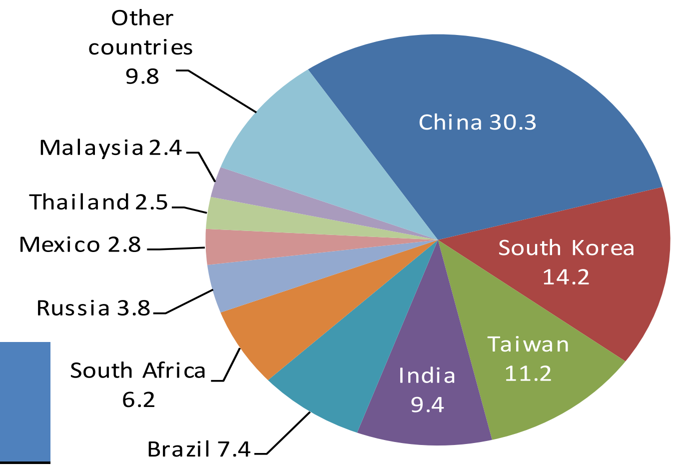
Emerging Markets Pool

Approximately 20% of UAPP's foreign equity portfolio includes an investment in AIMCo's Emerging Market Pool which holds an investment in GLAS with the non-emerging market exposure being swapped out to the MSCI Emerging Markets Index.

In 2018, the Plan's emerging markets portfolio lost 8.2%, underperforming against the MSCI Emerging Markets Index benchmark loss of 6.9% by 1.3%.

Emerging Markets	Actual Return %	Benchmark Index MSCI Emerging Markets Index %	Net Value Added (lost) %
One year	(8.2)	(6.9)	(1.3)
Four year	8.4	6.9	1.5

Top Ten Countries in Emerging Markets Pool
(in per cent)



Investment Report

Alternative Investments

Alternative investments totaling $731 million or 15.2% (2017: $600 million or 12.4%) of the Plan's total portfolio includes real estate, infrastructure, private equity, and timberland investments. In 2018, the Plan's actual gain from alternative investments was 11.0%, 3.4% more than the combined benchmark gain of 7.6%. Over four years, the annualized return was 8.6%, 1.4% more than the combined benchmark gain of 7.2%.

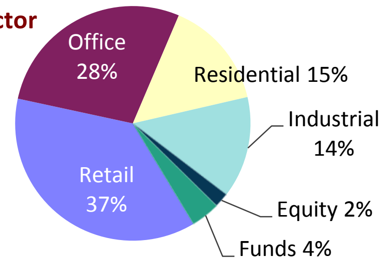
Real Estate

At December 31, 2018, real estate investments comprised 8.8% of the Plan's total investments or $425 million compared to 7.4% or $357 million the previous year. Real estate investments provide diversification and high cash flow and are expected to provide protection from inflation. The UAPP invests in AIMCo's Private Real Estate Pool which includes a mix of office, retail, industrial, and residential properties located in Ontario, Alberta, Quebec, and British Columbia.

In 2018, the Plan's actual gain from real estate investments was 11.5%, outperforming the IPD Large Institutional All Property Index benchmark gain of 7.7% by 3.8%.

Real Estate	Actual Return %	Benchmark Index IPD Large Institutional All Property Index %	Net Value Added %
One year	11.5	7.7	3.8
Four year	7.6	7.1	0.5

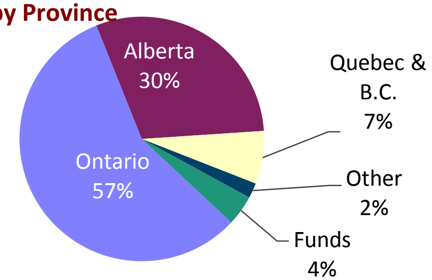
Private Real Estate Pool by Sector



Private Income (Infrastructure and Private Debt and Loan)

During the year, UAPP divested its investment in the Private Debt and Loan pool. Proceeds from the sale were reinvested in fixed income and global public equities. At December 31, 2018, the UAPP's investment in AIMCo's Infrastructure pools comprised 3.8% of total Plan investments or $183 million, up from 3.6% or $176 million held in Infrastructure and Private Debt and Loans at the end of the previous year. The $183 million investment in infrastructure pools (2017: $132 million) includes projects that provide attractive returns and include projects in transportation (e.g. toll roads, airports, ports, and rails), power (e.g. contracted power generation and power transmission pipelines), and utilities (e.g. water, waste water, and natural gas networks).

Private Real Estate Pool by Province



Investment Report

In 2018, investments in infrastructure gained 6.6%, underperforming the Consumer Price Index plus 6% benchmark gain of 7.7% by 1.1%.

Infrastructure and private debt and loan *	Actual Return %	Benchmark Index Consumer Price Index (CPI) plus 6% %	Net Value Added (lost) %
One year	6.6	7.7	(1.1)
Four year	10.0	7.6	2.4

** Investment in Private Debt and Loan pool was liquidated during the year.*

Timberland

At December 31, 2018, the UAPP's investment in AIMCo's Timberland Pool comprised 0.9% of total Plan investments or $43 million, up from 0.8% or $40 million at the end of the previous year. The Timberland investment includes forestry land in Canada and globally. The investment in Canada represents an interest in a limited partnership which holds forestry land and land held for higher and better use in the Province of British Columbia. The foreign investment primarily includes forestry and agricultural land in Australia and New Zealand.

In 2018, the Timberland investment gained 17.7%, outperforming the Consumer Price Index plus 4% benchmark gain of 5.7% by 12.0%.

Timberland	Actual Return %	Benchmark Index Consumer Price Index (CPI) plus 4% %	Net Value Added %
One year	17.7	5.7	12.0
Four year	12.2	5.6	6.6

Private Equities

The private equity portfolio includes investments in institutionally-sponsored international private equity pools managed by experienced external investment advisors with proven track records. Investments in private equities were first made during the fiscal year ending December 31, 2017. At December 31, 2018, the Plan's investment in AIMCo's private equities comprised 1.7% of the Plan's total investment portfolio, or $81 million, up from 0.6%, or $28 million, in the previous year. Investments in private equities are benchmarked against CPI plus 6.5%. For the current year, private equities earned 12.9%, outperforming the benchmark gain of 8.2% by 4.7%.

Strategic Opportunities Pool and Currency Hedges

At December 31, 2018, the UAPP's investment in AIMCo's Strategic Opportunities Pool comprised 0.9% of total Plan investments or $43.3 million, down from 1.0% or $47.1 million at the end of the previous year. AIMCo's Strategic Opportunities Pool consists of investments in infrastructure and hydropower in emerging market countries in Brazil and Colombia. In 2018, the Strategic Opportunities Pool had a loss of 2.2%.

At December 31, 2018, the fair value of the UAPP's investment in foreign forward exchange contracts totaled a negative $2.4 million compared to a negative $0.1 million at the end of the previous year.

Investment Report

Table of Investment Returns

	December 31, 2018		Annual Returns				
	Investments (in millions)	Asset Mix (%)	2018 %	2017 %	2016 %	2015 %	Annualized 4 yr %
Total Fund	$ 4,808.4	100.0%	(0.5)	11.3	7.1	7.6	6.3
Policy Return			(0.2)	10.1	7.0	6.5	5.8
Value Added (Lost) from Active Management			(0.3)	1.2	0.1	1.1	0.5
Consumer Price Index (1)			1.7	2.1	1.2	1.4	1.6
Total Fixed Income	$ 1,729.0	35.9%	1.4	3.7	2.7	3.0	2.7
Combined Benchmarks			0.9	3.7	2.3	3.4	2.6
Short-term fixed income	20.3	0.4%	1.7	1.0	0.9	0.9	1.1
FTSE TMX 91-Day T-Bill Index			1.4	0.6	0.5	0.6	0.8
Universe Bonds	642.8	13.4%	1.7	2.7	2.1	2.7	2.3
FTSE TMX Universe Bond Index			1.4	2.5	1.7	3.5	2.3
Private Mortgages	197.6	4.1%	4.7	2.5	2.1	5.0	3.6
FTSE TMX Universe Bond Index plus 1%			2.4	3.5	2.7	4.5	3.3
Long Duration Bonds	531.8	11.0%	0.5	7.0	2.9	2.4	3.2
FTSE TMX Long Bond Index			0.3	7.0	2.5	3.8	3.4
Real Return Bonds	336.5	7.0%	0.1	1.3	3.5	3.0	2.0
FTSE TMX Real Return Bond Index			0.0	0.7	2.9	2.8	1.6
Total Public Equities	$ 2,307.2	48.0%	(4.8)	17.0	9.6	9.0	7.4
Combined Benchmark			(3.3)	15.1	10.0	7.1	7.0
Total Canadian Equities	544.4	11.3%	(10.1)	10.5	20.3	(7.4)	2.6
S&P/TSX Composite Capped Index			(8.9)	8.9	21.1	(8.3)	2.5
Foreign Equities			(3.0)	19.2	4.6	17.3	9.1
MSCI World Index and MSCI Emerging Markets Index			(1.6)	17.0	4.7	15.1	8.5
Global Equities	1,418.8	29.5%	(1.9)	16.6	3.4	20.6	9.3
MSCI World Index			(0.5)	14.4	3.8	18.9	8.9
Emerging Markets	344.0	7.2%	(8.2)	30.4	8.7	6.2	8.4
MSCI Emerging Markets Index			(6.9)	28.3	7.3	2.0	6.9
Alternative Investments	$ 731.3	15.2%	11.0	9.2	6.5	9.5	8.6
Combined Benchmark			7.6	7.3	6.2	7.6	7.2
Real Estate	424.9	8.8%	11.5	8.5	5.4	5.1	7.6
IPD Large Institutional All Property Index			7.7	7.0	5.8	8.0	7.1
Infrastructure and Private Debt and Loan *	183.1	3.8%	6.6	10.6	8.3	19.1	10.0
CPI plus 6%			7.7	8.1	7.2	7.4	7.6
Timberland	42.6	0.9%	17.7	17.5	10.1	7.6	12.2
CPI plus 4%			5.7	6.1	5.2	5.4	5.6
Private Equities	80.7	1.7%	12.9	n/a	n/a	n/a	n/a
CPI plus 6.5%			8.2	n/a	n/a	n/a	n/a
Strategic Investments	$ 43.3	0.9%	(2.2)	7.0	(3.2)	42.9	9.2
Currency Hedges	(2.4)	-	n/a	n/a	n/a	n/a	n/a

** Investment in private debt and loan was liquidated during the year.*

(1) The Consumer Price Index (CPI) is reported on a one month lagged basis.

Administration Report

The Board of Trustees for the Universities Academic Pension Plan is responsible for the ongoing operation and administration, including the collection of member data and contributions, the calculation and payment of pension benefits, and the communication of pension information to plan members and employers. The 2018 results in these areas are as follows.

Membership

There are three types of members of the UAPP:

- Active members are those currently employed by an employer participating in the plan.
- Deferred members are those who have terminated and have accrued benefits in the plan but have not withdrawn their entitlement or commenced a pension.
- Pensioners are those who have commenced a pension, including surviving spouses.

Membership

Participation	2018	2017
Active members	8,172	8,153
Deferred members	2,273	2,114
Pensioners	5,602	5,380
TOTAL	**16,047**	**15,647**

The number of deferred members who continue to have funds in the Plan increased to 2,273 at the end of 2018 from 2,114 at December 31, 2017. This group continues to be the fastest growing group as it has increased at an average annual rate of 7.0% over the last ten years.

Active Membership Distribution

Age at Year-End	2018	2008
<35 years	9%	11%
35<40 years	13%	14%
40<45 years	15%	16%
45<50 years	17%	17%
50<55 years	17%	17%
55<60 years	15%	14%
60<65 years	10%	8%
65<69 years	4%	3%
TOTAL	**100%**	**100%**

Active membership in the UAPP increased 0.2% in 2018 from 8,153 at December 31, 2017 to 8,172 members at December 31, 2018. For the 4th consecutive calendar year, the plan experienced growth in active membership. Over the last decade, active membership in the UAPP has grown at an average annual rate of 1.1% though the age distribution of the group has slightly aged.

New Pensioners

Retirement Type	2018	2017
Retirements at Age 65 or Later	120	120
Retirements Before Age 65	199	201
Pensions to Surviving Spouses	7	8
TOTAL	**326**	**329**

New Pensioner Retirement Choices

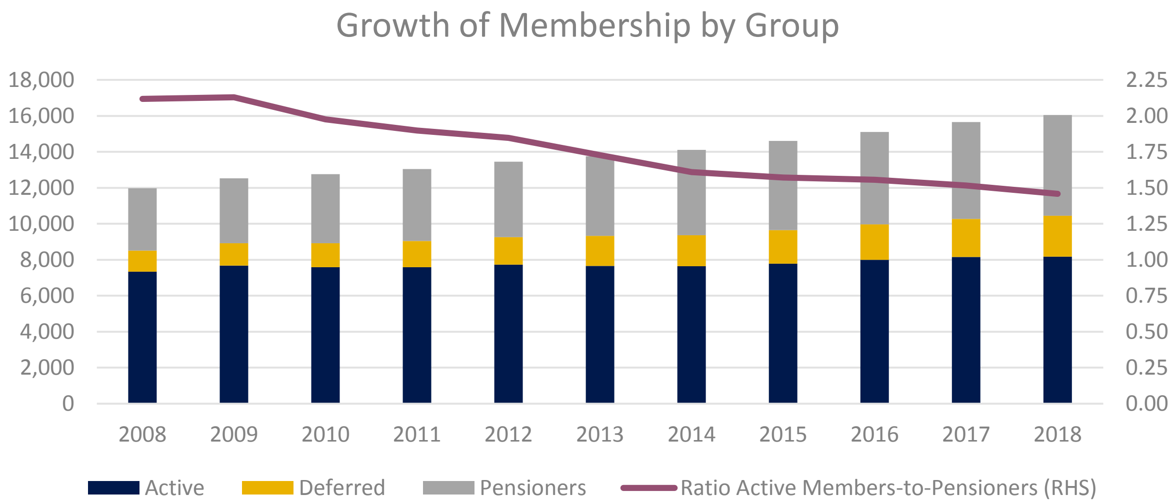
Percentage Electing Option	2018	2017
Single life – with or without guarantee	27%	20%
Joint life – 2/3 spouse, no guarantee	10%	11%
Joint life – 2/3 spouse, 10-year guarantee	17%	15%
Joint life – 100% spouse, no guarantee	17%	18%
Joint life – 100% spouse, 10-year guarantee	29%	36%
TOTAL	**100%**	**100%**

The number of retired members and surviving spouses of pensioners receiving a pension from the UAPP increased by 4.1% during 2018, rising to 5,602 at December 31, 2018 from 5,380 at the start of the year. The most popular pension choice among new retirees with a spouse continues to be a Joint Life pension.

Administration Report

Monthly Payment Distribution As At December 31, 2018

Dollar Value ($) Per Month	Member Pensions	Spouse Pensions	Total
1 to 999	910	30	940
1,000 to 1,999	780	37	817
2,000 to 2,999	678	31	709
3,000 to 3,999	708	25	733
4,000 to 4,999	757	16	773
5,000 to 5,999	621	8	629
6,000 to 6,999	465	7	472
7,000 and over	525	4	529
TOTAL	**5,444**	**158**	**5,602**



Cash Flow

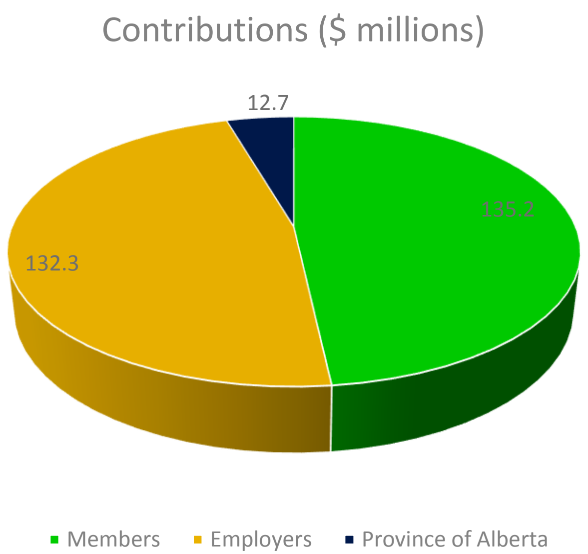
Total contributions received from employers, employees, and the Province of Alberta were higher by 2.8% in 2018 ($280.2 million) versus 2017 ($272.5 million) due to growth in the UAPP's active membership, higher salaries, and higher contribution rates.

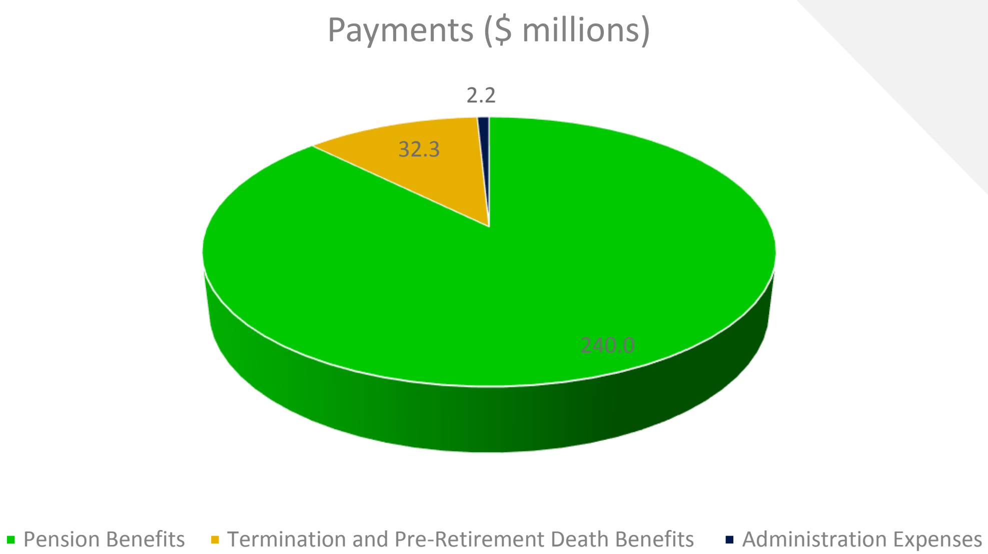
Total payments to pensioners grew by 4.6% during 2018 to $240.0 million from $229.5 million in 2017. Pensioners received a cost-of-living increase of 0.78% effective January 1, 2018.

Termination and pre-retirement death benefit payments to or on behalf of former members of the UAPP were $32.3 million for 2018 (2017: $23.5 million). The significant increase is due to an increase in the number of members who terminated and withdrew benefits.

Administration Report

Management strives to ensure service providers provide efficient and cost-effective services to the UAPP. The UAPP's general plan expenses amounted to $2.2 million during 2018 ($139 per member) compared to $2.1 million ($140 per member) in 2017.





Administration Report

Ten-Year Financial and Membership Review

Financial Position ($ millions)	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**
Fair Value of Net Assets	$4,830.9	$4,851.1	$4,349.3	$4,043.7	$3,767.6	$3,357.2	$2,952.0	$2,627.5	$2,540.4	$2,294.3
Actuarial Adjustment	$116.7	-$173.7	-$48.0	-$105.7	-$202.2	-$185.6	-$61.8	$31.3	-$113.2	$124.7
Actuarial Value of Assets	**$4,947.6**	**$4,677.4**	**$4,301.3**	**$3,938.0**	**$3,565.4**	**$3,171.6**	**$2,890.2**	**$2,658.8**	**$2,427.2**	**$2,419.0**
Accrued Pension Liability	$5,868.3	$5,626.8	$5,174.1	$4,961.0	$4,708.0	$4,339.4	$3,996.5	$3,819.0	$3,550.1	$3,390.0
Actuarial Deficiency	**-$920.7**	**-$949.4**	**-$872.8**	**-$1,023.0**	**-$1,142.6**	**-$1,167.8**	**-$1,106.3**	**-$1,160.2**	**-$1,122.9**	**-$971.0**
Funded Ratio	84.3%	83.1%	83.1%	79.4%	75.7%	73.1%	72.3%	69.6%	68.4%	71.4%
Pre-1992 Period Only										
Fair Value of Net Assets	$655.8	$744.8	$750.4	$787.6	$824.9	$826.0	$819.5	$821.1	$886.3	$892.5
Actuarial Adjustment	$11.8	-$31.9	-$11.1	-$25.5	-$51.0	-$52.5	-$20.1	$6.5	-$48.3	$59.1
Actuarial Value of Assets	**$667.6**	**$712.9**	**$739.3**	**$762.1**	**$773.9**	**$773.5**	**$799.4**	**$827.6**	**$838.0**	**$951.6**
Accrued Pension Liability	$1,498.7	$1,547.5	$1,577.7	$1,627.0	$1,677.6	$1,626.1	$1,566.7	$1,599.9	$1,592.0	$1,617.6
Actuarial Deficiency	**-$831.1**	**-$834.6**	**-$838.4**	**-$864.9**	**-$903.7**	**-$852.6**	**-$767.3**	**-$772.3**	**-$754.0**	**-$666.0**
Funded Ratio	44.5%	46.1%	46.9%	46.8%	46.1%	47.6%	51.0%	51.7%	52.6%	58.8%
Post-1991 Period Only										
Fair Value of Net Assets	$4,175.1	$4,106.3	$3,598.9	$3,256.1	$2,942.7	$2,531.2	$2,132.5	$1,806.4	$1,654.1	$1,401.8
Actuarial Adjustment	$104.9	-$141.8	-$36.9	-$80.2	-$151.2	-$133.1	-$41.7	$24.9	-$64.9	$65.6
Actuarial Value of Assets	**$4,280.0**	**$3,964.5**	**$3,562.0**	**$3,175.9**	**$2,791.5**	**$2,398.1**	**$2,090.8**	**$1,831.3**	**$1,589.2**	**$1,467.4**
Accrued Pension Liability	$4,369.6	$4,079.3	$3,596.4	$3,334.0	$3,030.4	$2,713.3	$2,429.8	$2,219.1	$1,958.1	$1,772.4
Actuarial Deficiency	**-$89.6**	**-$114.8**	**-$34.4**	**-$158.1**	**-$238.9**	**-$315.2**	**-$339.0**	**-$387.8**	**-$368.9**	**-$305.0**
Funded Ratio	97.9%	97.2%	99.0%	95.3%	92.1%	88.4%	86.0%	82.5%	81.2%	82.8%
Contributions	$280.2	$272.5	$259.4	$240.9	$231.1	$221.9	$212.0	$198.6	$190.0	$166.2
Benefit Payments	$272.3	$253.1	$236.3	$243.6	$223.6	$205.4	$194.8	$184.0	$174.2	$161.6
Administrative Expenses	$2.2	$2.1	$2.2	$2.1	$2.1	$1.7	$1.8	$1.9	$1.8	$1.9
Investment Expenses	$23.5	$21.0	$10.7	$13.8	$12.8	$11.8	$9.2	$6.9	$6.4	$6.1
Total Return on Investments	-0.5%	11.3%	7.1%	7.6%	12.2%	13.1%	11.8%	3.2%	10.0%	15.5%
Discount Rate	5.60%	5.60%	5.95%	5.95%	6.25%	6.25%	6.40%	6.40%	6.70%	6.70%
January 1 Cost-of-Living Adjustment	0.78%	0.78%	0.72%	1.56%	0.72%	0.96%	1.20%	0.60%	0.06%	2.16%
Plan Members										
Active	8,172	8,153	7,997	7,790	7,640	7,652	7,727	7,592	7,582	7,682
Deferred	2,273	2,114	1,977	1,849	1,720	1,672	1,532	1,444	1,338	1,244
Pensioners	5,602	5,380	5,138	4,960	4,745	4,434	4,185	3,998	3,838	3,607
Total	**16,047**	**15,647**	**15,112**	**14,599**	**14,105**	**13,758**	**13,444**	**13,034**	**12,758**	**12,533**
Average Age (Active)	48.9	48.8	48.8	48.7	48.8	48.8	48.6	48.5	48.2	47.8
Average Service (Active)	9.7	9.6	9.6	9.6	9.5	9.5	9.5	9.3	9.0	9.1
Average Capped Salary	$116,839	$115,241	$114,079	$111,971	$110,150	$107,733	$107,209	$104,245	$101,779	$98,510
Average Age (Pensioners)	74.0	73.8	73.5	72.2	72.9	73.0	72.8	72.5	72.2	72.0
Average Annual Pension	$44,426	$44,465	$44,782	$44,469	$43,966	$43,557	$42,953	$43,209	$42,940	$42,593

Administration Report

Service to Members

Management strives to provide high-quality pension services in a timely manner to UAPP members. Service standards have been established and the delivery of services against those standards is closely monitored in an effort to assess and promote quality service.
Service standards of direct interest to members are as follows:

Responsibilities	Service Level Standards	2018 Results
Time to answer calls	80% of calls answered within 20 seconds with a call abandonment rate below 5%	86.9% of calls answered within 20 seconds with a call abandonment rate of 1.6%
Escalated calls and voice mails	Answered within 1 business day	98.2% of calls answered within 1 business day
Emails	Answered within 2 business days	93.6% of emails answered within 2 business days
Written enquiries	Answered within 5 business days	100.0% of written enquiries answered within 5 business days
Statement of options on termination	5 business days from receipt of all required information	99.1% of options on termination issued within 5 business days from receipt of all required information
Statement of options on retirement	5 business days from receipt of all required information	97.0% of options on retirement issued within 5 business days from receipt of all required information
Statement of options on death	5 business days from receipt of all required information	93.3% of options on death issued within 5 business days from receipt of all required information
MPO* estimate requests	5 business days from receipt of all required information	70.2% of MPO estimates issued within 5 business days from receipt of all required information
MPO* final calculations	10 business days from receipt of all required information	100% of MPO final calculations issued within 10 business days from receipt of all required information
MPO* payment authorization	3 business days from receipt of all required information	100% of all MPO payment authorizations issued within 3 business days from receipt of all required information

*Matrimonial Property Order

Plan Communications

The 2018 Member Handbook was prepared and posted to our website in February 2018, and the quarterly Communiqué was issued to update members and employers on topical subjects related to UAPP and pensions. The updated Handbook included new sections on pre-retirement death benefits and marriage breakdown provisions. Annual member statements, highlighting individual pension entitlements as at December 31, 2017, were posted to the Retirement Planner for active members in May and mailed to retired members in June. The Trustees' Office presented pension seminars for groups of current active and retired employees as well as one-on-one information sessions promoting member understanding of the pension plan. A video version of the seminar is posted on the website.

The UAPP website experienced a large increase in number of visitors in 2018 as it had over 57,000 hits during the year. Popular areas of interest on the site included Frequently Asked Questions, Contact Us, Forms, and Member Handbook.

Administration Report

Plan members made great use of the UAPP Administration Centre (Buck, formerly Conduent) helpline for pension-related information during 2018 as there were over 2,700 calls handled by the call centre in the year. Plan members accessed the Retirement Planner over 9,000 times during the year. The number of calls to the call centre declined from 2017 due to providing members with the ability to reset their own passwords.

Other Developments in 2018

- The eighth annual pensioner status confirmation project commenced in 2018 in accordance with audit guidelines updated during the year.
- Cover letters implemented in all member options packages.
- Administration manuals added to the Retirement Planner to assist employers.
- The Pension Benefits Administration User Group continued to meet regularly to discuss common issues.
- Updated financial software used by the Trustees' Office.
- Added new sections, specifically on pre-retirement death benefits and marriage breakdown provisions, to the annual Member Handbook.

The Year Ahead

Key plans for 2019 include:

- Assess effectiveness of and seek improvements to UAPP website.
- Review user feedback on the employer administration manuals.
- Continue to offer member information seminars and one-on-one member sessions.
- Work with employers to review potential improvements to processes.
- Evaluate the need for an online portal for retired members.
- Coordinate with employers the production of the triennial pension administration audit reporting.

Management's Responsibility for Financial Reporting

The financial statements and information in the 2018 Annual Report are the responsibility of management and have been approved by the Board of Trustees.

The financial statements have been prepared in conformity with Canadian accounting standards for pension plans and, of necessity, include some amounts that are based on estimates and judgments. Financial information presented in the 2018 Annual Report that relates to the operations and financial position of the Universities Academic Pension Plan is consistent with that in the financial statements.

Alberta Investment Management Corporation (AIMCo), Beutel Goodman & Company Ltd., and Fiera Capital Corporation, acting as investment managers, and Buck and CIBC Mellon, acting as pension administrators, maintain systems of internal control, including written policies, standards, and procedures and formal authorization structures.

These systems are designed to provide management with reasonable assurance that transactions are properly authorized, reliable financial records are maintained, and assets are adequately accounted for and safeguarded.

The Audit Committee assists the Board of Trustees in discharging its responsibility to approve the annual financial statements. The Committee meets regularly with both management and external auditors to review the scope and timing of the audit as well as to review any internal control or financial issues and their resolution. The Committee reviews the annual financial statements and recommends them to the Board of Trustees for approval.

KPMG LLP (KPMG), the Plan's external auditor, provides an independent audit of the operations, investments, and financial statements. Their examination is conducted in accordance with Canadian generally accepted auditing standards and includes tests and other procedures that allow them to report on the fairness of the financial statements in accordance with Canadian accounting standards for pension plans. KPMG has full and unrestricted access to discuss the audit and related findings regarding the integrity of financial reporting and the adequacy of internal controls.

Dave Schnore

Executive Director

Chris Schafer

Director, Finance & Administration

Independent Auditors’ Report

To Board of Trustees of Universities Academic Pension Plan

Opinion

We have audited the financial statements of Universities Academic Pension Plan (the Entity), which comprise:

- the statement of financial position as at December 31, 2018
- the statement of changes in net assets available for benefits for the year then ended
- the statement of changes in pension obligation for the year then ended
- and notes to the financial statements, including a summary of significant accounting policies

(Hereinafter referred to as the “financial statements”).

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Entity as at December 31, 2018, its changes in net assets available for benefits and its changes in pension obligation for the year then ended in accordance with Canadian accounting standards for pension plans.

Basis for Opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the “***Auditors’ Responsibilities for the Audit of the Financial Statements***” section of our auditors’ report.

We are independent of the Entity in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other Information

Management is responsible for the other information. Other information comprises the information, other than the financial statements and the auditors’ report thereon, included in the Entity’s Annual Report.

Our opinion on the financial statements does not cover the other information and we do not and will not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit and remain alert for indications that the other information appears to be materially misstated.

Independent Auditors’ Report

We obtained the information, other than the financial statement and the auditors’ report thereon, included in the Entity’s Annual Report as at the date of the auditors’ report.

If, based on the work we have performed on the other information, we conclude that there is a material misstatement of this other information, we are required to report that fact in the auditors’ report.

We have nothing to report in this regard.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with Canadian accounting standards for pension plans, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Entity’s ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Entity or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Entity’s financial reporting process.

Auditors’ Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors’ report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit.

Independent Auditors’ Report

We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion.
  The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Entity's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Entity's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors’ report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors’ report. However, future events or conditions may cause the Entity to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the group Entity to express an opinion on the financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

KPMG LLP

Chartered Professional Accountants

Edmonton, Canada
March 28, 2019

Statement of Financial Position

As at December 31, 2018

	($ thousands) 2018	2017
Net assets available for benefits		
Assets		
Investments (Note 3)	$ 4,808,357	$ 4,828,802
Contributions receivable		
Employers	10,731	10,579
Employees	11,266	10,905
Province of Alberta	1,039	1,041
Accounts receivable	391	512
Total Assets	4,831,784	4,851,839
Liabilities		
Accounts payable and accrued liabilities	837	771
Total Liabilities	837	771
Net assets available for benefits	$ 4,830,947	$ 4,851,068
Pension obligation and deficit		
Pension obligation (Note 5)	$ 5,868,300	$ 5,626,800
Deficit (Note 6)	(1,037,353)	(775,732)
Pension obligation and deficit	$ 4,830,947	$ 4,851,068

The accompanying notes are part of these financial statements.

Statement of Changes In Net Assets Available For Benefits

For the year ended December 31, 2018

	($ thousands) 2018	2017
Increase in assets		
Contributions (Note 7)	$ 280,225	$ 272,505
Investment income (Note 8)	-	505,517
	280,225	778,022
Decrease in assets		
Investment loss (Note 8)	(2,288)	-
Benefit payments (Note 10)	(272,342)	(253,062)
Investment expenses (Note 11)	(23,531)	(21,045)
Administrative expenses (Note 12)	(2,185)	(2,122)
	(300,346)	(276,229)
Increase (decrease) in net assets	(20,121)	501,793
Net assets available for benefits at beginning of year	4,851,068	4,349,275
Net assets available for benefits at end of year	$ 4,830,947	$ 4,851,068

The accompanying notes are part of these financial statements.

Statement of Changes In Pension Obligation

For the year ended December 31, 2018

($ thousands)

	2018			2017
	Pre-1992	Post-1991	Total	Total
Increase in pension obligation				
Interest accrued on pension obligations	$ 86,700	$ 239,100	$ 325,800	$ 318,400
Benefits earned	-	190,700	190,700	175,900
Actuarial assumption changes (Note 5(a))	-	-	-	240,300
Cost-of-living experience loss	2,000	2,900	4,900	-
	88,700	432,700	521,400	734,600
Decrease in pension obligation				
Benefits paid, including interest	137,500	142,400	279,900	260,600
Net experience gains	-	-	-	3,900
Cost-of-living experience gain	-	-	-	17,400
	137,500	142,400	279,900	281,900
Net increase (decrease) in pension obligation	(48,800)	290,300	241,500	452,700
Pension obligation at beginning of year	1,547,500	4,079,300	5,626,800	5,174,100
Pension obligation at end of year	$ 1,498,700	$ 4,369,600	$ 5,868,300	$ 5,626,800

The accompanying notes are part of these financial statements.

Notes to the Financial Statements

For the year ended December 31, 2018

NOTE 1 SUMMARY DESCRIPTION OF THE PLAN

Effective January 1, 2001, the Universities Academic Pension Plan (the "Plan") became a non-statutory pension plan subject to and registered under the *Employment Pension Plans Act* of Alberta. The Plan is also registered under the *Income Tax Act.* The Plan's registration number is 0339572. The Plan operates under a Sponsorship and Trust Agreement signed by the Plan Sponsors. A complete description of the Plan can be found in the Sponsorship and Trust Agreement. The Board of Trustees appointed by Plan Sponsors is responsible for administration of the Plan. The summary description of the Plan described below applies to members who contribute to the Plan on or after January 1, 2001.

a) GENERAL

The Plan is a contributory defined benefit pension plan for academic staff members and other eligible employees of the Universities of Alberta, Calgary, and Lethbridge, Athabasca University and Banff Centre.

In addition, employees of the Board of Trustees and the professional staff of the University of Calgary Faculty Association, the Association of Academic Staff University of Alberta, and the Athabasca University Faculty Association also participate in the Plan.

b) FUNDING POLICY

Contributions and investment earnings are expected to fund all benefits payable under the Plan. Employees and employers are responsible for fully funding service after 1991.

The unfunded liability for service prior to January 1, 1992 is financed by additional contributions from the Province of Alberta, employers and employees. These contribution rates are set on the basis that the additional contributions will eliminate the pre-1992 service unfunded liability on or before December 31, 2043. The Province pays 1.25% of salary and the balance of the required contributions are equally split between employees and employers.

Under the Employment Pension Plans Amendment Regulation 245/2003 (Order in Council 357/2003), the Plan is exempt from funding solvency deficiencies effective January 1, 2003 in respect of all service.

The Board of Trustees, in consultation with the Plan's actuary, reviews the contribution rates at least once every three years.

The contribution rates in effect from July 1, 2018 for employees of the Universities of Alberta, Calgary, and Lethbridge, employees of the Board of Trustees, and the professional staff of the University of Calgary Faculty Association and the Association of Academic Staff University of Alberta were 12.46% of pensionable salary up to the YMPE (12.41% prior to July 1, 2018), 16.23% on pensionable salary above the YMPE and up to the pensionable salary cap (15.91% prior to July 1, 2018), and 1.45% on earnings above the pensionable salary cap (1.77% prior to July 1, 2018). Employers contribute at the same rate as employees.

The contribution rates in effect from July 1, 2018 for employees of Athabasca University, Banff Centre and the professional staff of the Athabasca University Faculty Association were 11.96% of pensionable salary up to the YMPE (11.91% prior to July 1, 2018) and 15.73% on pensionable salary above the YMPE and up to the pensionable salary cap (15.41% prior to July 1, 2018). Employers contribute at a rate 1.0% higher than employees. In addition, employees and employers provide equal matching contributions of 1.45% on earnings above the pensionable salary cap (1.77% prior to July 1, 2018).

Financial Statements

Note 1 (continued)

c) RETIREMENT BENEFITS

The Plan provides for a pension based upon the average pensionable salary of the highest five consecutive years. For service before 1994, the pension is 2% for each year of pensionable service. From January 1, 1994, the Plan's benefits and contributions were integrated with the Canada Pension Plan. As a result, pensions for service after 1993 are reduced at age 65. The reduction is 0.6% of the average YMPE for the same five years as used in calculating the average pensionable salary of the highest five consecutive years. The maximum service allowable under the Plan is 35 years.

Members are entitled to an unreduced pension for service before 1994 if they have attained age 55.

Members are entitled to an unreduced pension for service after 1993 if they have either attained age 60 or have attained age 55 and the sum of their age and years of membership equals at least 80. Members are entitled to a reduced pension for service after 1993 if they have attained age 55.

Members who become disabled and are not in receipt of benefits from an approved disability plan are eligible to apply for a disability pension.

d) DEATH BENEFITS

Death benefits are payable on the death of a member. A surviving spouse may choose to receive a pension based on total service or a lump sum payment. For a beneficiary other than a spouse, a lump sum payment must be paid.

e) TERMINATION BENEFITS

Members who terminate and are not immediately entitled to a pension may elect to receive a deferred pension or a lump sum refund.

Refunds on service performed before 1994 equal employee and employer contributions plus interest, or the commuted value of the member's earned pension, whichever is greater.

Refunds on service performed after 1993 equal 1.75 times employee contributions plus interest, or the commuted value of the member's earned pension, whichever is greater.

Refunds are subject to the Plan's lock-in provisions and excess contribution rules.

f) DISABILITY BENEFITS

Members who become disabled and are in receipt of benefits from an approved disability plan continue to earn pensionable service credits under the Plan.

g) OPTIONAL SERVICE

Leaves of absence which are purchased before April 30th following a return to work are costed based on the contributions which would have been paid during the leave period plus interest. All other optional service purchases are costed on an actuarial reserve basis and are cost neutral to the Plan. Funds related to the transfer of service to other plans are based on the regular termination benefits.

Financial Statements

Note 1 (continued)

h) COST-OF-LIVING ADJUSTMENTS

Pensions payable are increased each year on January 1st by an amount equal to 60% of the increase in the Alberta Consumer Price Index. The increase is based on the increase during the twelve month period ending on October 31st in the previous year.

NOTE 2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND REPORTING PRACTICES

a) BASIS OF PRESENTATION

These financial statements are prepared on the going concern basis in accordance with Canadian accounting standards for pension plans. The Plan has elected to apply International Financial Reporting Standards (IFRS) for accounting policies that do not relate to its investment portfolio or pension obligation. The statements provide information about the net assets available in the Plan to meet future benefit payments and are prepared to assist Plan members and others in reviewing the activities of the Plan for the year.

b) CHANGE IN ACCOUNTING POLICY

Effective January 1, 2018, the Plan adopted the accounting standard IFRS 9 – Financial Instruments on a prospective basis. The adoption of this accounting standard did not impact the financial statements of the Plan.

c) VALUATION OF INVESTMENTS

Investments are recorded at fair value. As disclosed in Note 3, the Plan's investments consist primarily of direct ownership in units of pooled investment funds ("the pools").

Contracts to buy and sell financial instruments in the pools are between the investment managers and the third parties to the contracts. Participants in the pools are not party to the contracts and have no control over the management of the pool and the selection of securities in the pool. The investment managers control the creation of the pools and the management and administration of the pools including security selection. Accordingly, the Plan does not report the financial instruments of the pools on its statement of financial position.

The Plan becomes exposed to the financial risks and rewards associated with the underlying financial instruments in a pool when it purchases units issued by the pools and loses its exposure to those financial risks and rewards when it sells its units. The Plan reports its share of the financial risks in Note 4.

The fair value of units held by the Plan is derived from the fair value of the underlying financial instruments held by the pools as determined by the investment managers (see Note 3(b)). Investments in units are recorded in the Plan's accounts. The underlying financial instruments are recorded in the accounts of the pools. The pools have a market-based unit value that is used to distribute income to the pool participants and to value purchases and sales of the pool units. The pools include various financial instruments such as bonds, equities, real estate, derivatives, investment receivables and payables and cash.

The Plan's cut-off policy for valuation of investments, investment income and investment performance is based on valuations confirmed by the investment managers on the fourth business day following the year end. Differences in valuation estimates provided to Treasury Board and Finance after the year end cut-off date are reviewed by management.

Investments in units are recorded in the Plan's accounts on a trade date basis. All purchases and sales of the pool units are in Canadian dollars.

Financial Statements

Note 2 (continued)

Fair value is the amount of consideration agreed upon in an arm's length transaction between knowledgeable, willing parties who are under no compulsion to act.

d) INVESTMENT INCOME

(a) Investment income is recorded on an accrual basis.

(b) Investment income is reported in the statement of changes in net assets available for benefits and in Note 8 and includes the following items recorded in the Plan's accounts:

i. Income distributions from the pools, based on the Plan's pro-rata share of total units issued by the pools; and

ii. Changes in fair value of units including realized gains and losses on disposal of units and unrealized gains and losses on units determined on an average cost basis.

e) INVESTMENT EXPENSES

Investment expenses include all amounts incurred by the Plan to earn investment income (see Note 11). Investment expenses are recorded on an accrual basis.
Transaction costs are expensed as they are incurred.

f) CONTRIBUTIONS, BENEFIT PAYMENTS AND ADMINISTRATIVE EXPENSES

Contributions, benefit payments, administrative expenses and related accounts receivable and payable are recorded on an accrual basis.

g) VALUATION OF PENSION OBLIGATION

The value of the pension obligation and changes therein during the year are based on an actuarial valuation prepared by an independent firm of actuaries. A valuation must be performed at least every three years and results from the most recent valuation are extrapolated, on an annual basis, to year-end. The valuation uses the projected benefit method pro-rated on service and management's best estimate, as at the valuation and extrapolation date, of various economic and non-economic assumptions.

h) MEASUREMENT UNCERTAINTY

In preparing these financial statements, estimates and assumptions are used in circumstances where the actual values are unknown. Uncertainty in the determination of the amount at which an item is recognized in the financial statements is known as measurement uncertainty. Such uncertainty exists when there is a variance between the recognized amount and another reasonably possible amount, as there is whenever estimates are used.

Measurement uncertainty exists in the valuation of the Plan's pension obligation, private investments, real estate and timberland pools. Uncertainty arises because:

i) the Plan's actual experience may differ, perhaps significantly, from assumptions used in the extrapolation of the Plan's pension obligation; and
ii) the estimated fair values of the Plan's private investments, real estate and timberland pools may differ significantly from the values that would have been used had a ready market existed for these investments.

While best estimates have been used in the valuation of the Plan's pension obligation, private investments, real estate and timberland investments, management considers that it is possible, based on existing knowledge, that changes in future conditions in the short term could require a material change in the recognized amounts.

Financial Statements

Note 2 (continued)

Differences between actual results and expectations in the Plan's pension obligation are disclosed as assumption or other changes and net experience gains or losses in the statements of changes in pension obligation in the year when actual results are known.

Differences between the estimated fair values and the amount ultimately realized for investments are included in net investment income in the year when the ultimate realizable values are known.

i) INCOME TAXES

The Plan is a registered pension plan, as defined by the Income Tax Act (Canada) and, accordingly, is not subject to income taxes.

NOTE 3 INVESTMENTS

The Plan's investments are managed at the asset class level for purposes of evaluating the Plan's risk exposure and investment performance against approved benchmarks based on fair value. The Plan's assets are managed in accordance with the Statement of Investment Policies and Goals (SIP&G) approved by the Plan's Board of Trustees. The fair value of the pool units is based on the Plan's share of the net asset value of the pooled fund. The pools have a market based unit value that is used to allocate income to participants of the pool and to value purchases and sales of the pool units. The investment managers are delegated authorities to independently purchase and sell securities in the pools and Plan, and units of the pools, within the ranges approved for each asset class (see Note 4). Reclassification of fair value hierarchy is referred to in Note 15..

($ thousands)

	Fair Value Hierarchy [a]		2018	2017
Asset class	Level 2	Level 3	**Fair Value**	**Fair Value**
Fixed Income				
Cash and short-term securities	$ 20,381	$ -	$ 20,381	$ 19,152
Bonds and mortgages	1,174,559	197,598	1,372,157	1,346,543
Real return bonds	336,505	-	336,505	325,763
	1,531,445	197,598	1,729,043	1,691,458
Public Equities				
Canadian	544,368	-	544,368	604,227
Global	1,418,841	-	1,418,841	1,522,916
Emerging markets	344,027	-	344,027	362,743
	2,307,236	-	2,307,236	2,489,886
Alternatives				
Real estate	-	424,859	424,859	356,635
Private equity	-	80,695	80,695	28,222
Infrastructure and private debt and loans	-	183,091	183,091	176,049
Timberland	-	42,556	42,556	39,518
	-	731,201	731,201	600,424
Strategic and currency investments*	(2,404)	43,281	40,877	47,034
Total investments	$ 3,836,277	$ 972,080	$ 4,808,357	$ 4,828,802

* This asset class is not listed separately in the SIP&G as it relates to strategic investments and currency overlays made on an opportunistic and discretionary basis (see Note 4).

Financial Statements

Note 3 (continued)

a) Fair Value Hierarchy: The quality and reliability of information used to estimate the fair value of investments is classified according to the following fair value hierarchy with Level 1 being the highest quality and reliability.

- ***Level 1:*** fair value is based on quoted prices in an active market. Although the pools may ultimately hold publicly traded listed equity investments, the pool units themselves are not listed in an active market and therefore cannot be classified as Level 1 for fair value hierarchy purposes. Pool units classified by the Plan as Level 2 may contain investments that might otherwise be classified as Level 1.
- ***Level 2:*** fair value is estimated using valuation techniques that make use of market-observable inputs other than quoted market prices. This level includes pool units that hold public equities, debt securities and derivative contracts totaling $3,836,277 (2017: $4,005,468).
- ***Level 3:*** fair value is estimated using inputs based on non-observable market data. This level includes pool units that hold private mortgages and all alternative investments totaling $972,080 (2017: $823,334).

Reconciliation of Level 3 Fair Value Measurements:

	($ thousands)	
	2018	**2017**
Balance, beginning of year	$ 823,334	$ 751,024
Investment income *	78,502	55,550
Purchases of Level 3 pooled fund units	193,038	118,574
Sale of Level 3 pooled fund units	(122,794)	(101,814)
Balance, end of year	$ 972,080	$ 823,334

* Investment income includes unrealized gains (losses) of $52,050 (2017: $(6,511)).

b) Valuation of Financial Instruments in the Pools

The methods used to determine the fair value of investments recorded in the pools are explained in the following paragraphs:

- ***Fixed income:*** Public interest-bearing securities are valued at the year-end closing sale price or the average of the latest bid and ask prices quoted by an independent securities valuation company. Private mortgages are valued based on the net present value of future cash flows. Cash flows are discounted using appropriate interest rate premiums over similar Government of Canada benchmark bonds trading in the market. Real return bonds are valued similar to public interest bearing securities.
- ***Public equities:*** Public equities are valued at the year-end closing sale price or the average of the latest bid and ask prices quoted by an independent securities valuation company.
- ***Alternatives:*** The estimated fair value of private real estate investments is reported at the most recent appraised value, net of any liabilities against the real property. Real estate properties are appraised annually by qualified external real estate appraisers. Appraisers use a combination of methods to determine fair value including replacement cost, direct comparison, direct capitalization of earnings and the discounted cash flows. The fair value of private equities is estimated by managers or general partners of private equity funds, pools and limited partnerships. Valuation methods may encompass a broad range of approaches. The cost approach is used to value companies without either profits or cash flows. Established private companies are valued using the fair market value approach reflecting conventional valuation methods including discounted cash flows and earnings multiple analysis. Infrastructure investments are valued similar to private equity investments. Private debt and loans are valued similar to private mortgages. The fair value of timberland investments is appraised annually by independent third party evaluators.
- ***Strategic and currency investments:*** The estimated fair value of infrastructure investments held in emerging market countries are valued similar to private equities. Currency investments consist of directly held currency forward and spot contracts.

Note 3 (continued)

- ***Foreign currency:*** Foreign currency transactions in pools are translated into Canadian dollars using average rates of exchange. At year end, the fair value of investments in other assets and liabilities denominated in a foreign currency are translated at the year-end exchange rates.
- ***Derivative contracts:*** The carrying values of derivative contracts in favourable and unfavourable positions are recorded at fair value and are included in the fair value of pooled investment funds (see Note 4(f)). The estimated fair values of equity and bond index swaps are based on changes in the appropriate market-based index net of accrued floating rate interest. Interest rate swaps and cross-currency interest rate swaps are valued based on discounted cash flows using current market yields and exchange rates. Credit default swaps are valued based on discounted cash flows using current market yields and calculated default probabilities. Forward foreign exchange contracts and futures contracts are valued based on quoted market prices. Options to enter into interest rate swap contracts are valued based on discounted cash flows using current market yields and volatility parameters which measure changes in the underlying swap. Warrants and rights are valued at the year-end closing sale price or the average of the latest bid and ask prices quoted by an independent securities valuation company.

NOTE 4 INVESTMENT RISK MANAGEMENT

The Plan is exposed to financial risks associated with the underlying securities held in the pooled investment funds. These financial risks include credit risk, market risk and liquidity risk. Credit risk relates to the possibility that a loss may occur from the failure of another party to perform according to the terms of a contract. Market risk is comprised of foreign currency risk, interest rate risk and price risk. Liquidity risk is the risk the Plan will not be able to meet its obligations as they fall due.

The investment policies and procedures of the Plan are clearly outlined in the SIP&G approved by the Board of Trustees. The purpose of the SIP&G is to ensure the Plan assets are invested and managed in a prudent manner in accordance with current, accepted governance practices incorporating an appropriate level of risk. The Board of Trustees manages the Plan's return-risk trade-off through asset class diversification, target ranges on each asset class, diversification within each asset class, quality constraints on fixed income instruments and restrictions on amounts exposed to countries designated as emerging markets. Forward foreign exchange contracts may be used to manage currency exposure in connection with securities purchased in a foreign currency (see Note 4(b)).

Actuarial liabilities of the Plan are primarily affected by the long-term real rate of return expected to be earned on investments. In order to earn the best possible return at an acceptable level of risk, the Board of Trustees has established the following asset mix policy ranges:

	Target Asset	Actual Asset Mix			
Asset Class	**Policy Mix**	**2018**		**2017**	
		($ thousands)	*%*	*($ thousands)*	*%*
Fixed income	26 - 41%	$ 1,729,043	35.9	$ 1,691,458	35.0
Public equities	40 - 60%	2,307,236	48.0	2,489,886	51.6
Alternatives	12 - 25%	731,201	15.2	600,424	12.4
Strategic and currency investments	(a)	40,877	0.9	47,034	1.0
		$ 4,808,357	100.0	$ 4,828,802	100.0

(a) An investment manager may, at its discretion, use currency overlays limited to a notional amount of 2.5% of that manager's mandate of the Plan's assets.

Financial Statements

Note 4 (continued)

a) Credit Risk

i. Debt securities

The Plan is indirectly exposed to credit risk associated with the underlying debt securities held in the pools. Counterparty credit risk is the risk of loss arising from the failure of a counterparty to fully honour its financial obligations. The credit quality of financial assets is generally assessed by reference to external credit ratings. The credit rating of a debt security may be impacted by the overall credit rating of the counterparty, the seniority of the debt issue, bond covenants, maturity distribution and other factors. Credit risk can also lead to losses when issuers and debtors are downgraded by credit rating agencies usually leading to a fall in the fair value of the counterparty's obligations. Credit risk exposure for financial instruments is measured by the positive fair value of the contractual obligations with counterparties. The fair value of all investments reported in Note 3 is directly or indirectly impacted by credit risk to some degree. The majority of investments in debt securities have credit ratings considered to be investment grade. Unrated debt securities consist primarily of mortgages and private debt placements.

The table below summarizes the Plan's investments in debt securities by credit rating at December 31, 2018:

Credit rating	2018	2017
Investment Grade (AAA to BBB-)	84.0%	86.2%
Speculative Grade (BB+ or lower)	0.1%	0.1%
Unrated	15.9%	13.7%
	100.0%	100.0%

ii. Counterparty default risk - derivative contracts

The Plan is exposed to counterparty credit risk associated with the derivative contracts held in the pools. The maximum credit risk in respect of derivative financial instruments is the fair value of all contracts with counterparties in a favourable position (see Note 4(f)). The investment manager is responsible for selecting and monitoring derivative counterparties on behalf of the Plan. The investment manager monitors counterparty risk exposures and actively seeks to mitigate counterparty risk by requiring that counterparties collateralize mark-to-market gains for the Plan. Provisions are in place to allow for termination of the contract should there be a material downgrade in a counterparty's credit rating. The exposure to credit risk on derivatives is reduced by entering into master netting agreements and collateral agreements with counterparties. To the extent that any unfavourable contracts with the counterparty are not settled, they reduce the Plan's net exposure in respect of favourable contracts with the same counterparty.

iii. Security lending risk

To generate additional income, the Plan participates in a securities-lending program. Under this program, the custodian may lend investments held in the pools to eligible third parties for short periods. At December 31, 2018, the Fund's share of securities loaned under this program is $239,611 (2017: $374,342) and collateral held totals $255,707 (2017: $404,175). Securities borrowers are required to provide the collateral to assure the performance of redelivery obligations. Collateral may take the form of cash, other investments or a bank-issued letter of credit. All collateralization, by the borrower, must be in excess of 100% of investments loaned.

b) Foreign Currency Risk

The Plan is exposed to foreign currency risk associated with the underlying securities held in the pools that are denominated in currencies other than the Canadian dollar. Foreign currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. The fair value of investments

Financial Statements

Note 4 (continued)

denominated in foreign currencies is translated into Canadian dollars using the reporting date exchange rate. As a result, fluctuations in the relative value of the Canadian dollar against these foreign currencies can result in a positive or negative effect on the fair value of investments. Approximately 35% (2017: 39%) of the Plan's investments, or $1,702,596 (2017: $1,859,000), are denominated in currencies other than the Canadian dollar, with the largest foreign currency exposure being to the US dollar at 18% (2017: 18%) and the Euro at 3% (2017: 4%).

If the value of the Canadian dollar increased by 10% against all other currencies, and all other variables are held constant, the potential loss in fair value to the Plan would be approximately 3.2% of total investments (2017: 3.5%).

The following table summarizes the Plan's exposure to foreign currency investments held in the pools:

($ thousands)

2018			2017		
Currency		**Fair Value**	**Currency**		**Fair Value**
US dollar	$	842,281	US dollar	$	887,327
Euro		142,381	Euro		192,065
Japanese yen		123,972	Japanese yen		135,962
Hong Kong dollar		94,941	Hong Kong dollar		86,969
British pound		84,962	British pound		95,624
South Korean won		52,732	South Korean won		58,634
Brazilian real		49,994	Brazilian real		53,773
Other foreign currencies (<1%)		311,333	Other foreign currencies (<1%)		348,646
Total foreign currencies	$	1,702,596	**Total foreign currencies**	$	1,859,000

c) Interest Rate Risk

The Plan is exposed to interest rate risk associated with the underlying interest-bearing securities held in pooled investment funds. Interest rate risk relates to the possibility that the investments will change in value due to future fluctuations in market interest rates.

In general, investment returns from bonds and mortgages are sensitive to changes in the level of interest rates, with longer term interest-bearing securities being more sensitive to interest rate changes than shorter term bonds. If interest rates increased by 1.0% and all other variables are held constant, the potential loss in fair value to the Plan would be approximately 5.9% (2017: 5.8%) of total investments.

d) Price Risk

Price risk relates to the possibility that equity investments will change in value due to future fluctuations in market prices caused by factors specific to an individual equity investment or other factors affecting all equities traded in the market. The Plan is exposed to price risk associated with the underlying equity investments held in the pools. If equity market indices (S&P/TSX, S&P500, S&P1500 and MSCI ACWI and their sectors) declined by 10%, and all other variables are held constant, the potential loss in fair value to the Plan would be approximately 5.9% (2017: 5.9%) of total investments. Changes in fair value of investments are recognized in the statement of changes in net assets available for benefits.

Note 4 (continued)

e) Liquidity Risk

Liquidity risk is the risk that the Plan will encounter difficulty in meeting obligations associated with its financial liabilities. Liquidity requirements of the Plan are met through income generated from investments, employee and employer contributions, and by investing in pools that hold publicly traded liquid assets traded in active markets that are easily sold and converted to cash. Units in pools that hold private investments like real estate, timberland, infrastructure and private equities are less easily converted to cash since the underlying securities are illiquid because they take more time to sell. These sources of cash are used to pay pension benefits and operating expenses, purchase new investments, settle derivative transactions with counterparties and settle margin calls on futures contracts. The Plan's future liabilities include the pension obligation and exposure to net payables to counterparties (Note 4(f)).

f) Use of Derivative Financial Instruments in Pooled Investment Funds

The Plan has indirect exposure to derivative financial instruments through its investment in units of the pools. Derivative financial instruments are used to gain access to equity markets in the pools, manage asset exposure within the pools, enhance pool returns and manage interest rate risk, foreign currency risk and credit risk in the pools.

	Number of counterparties		Plan's Indirect Share *($ thousands)*	
By counterparty	**2018**	**2017**	**2018**	**2017**
Contracts in net favourable position (current credit exposure)	54	59	$ 149,700	$ 57,652
Contracts in net unfavourable position	20	14	(200,168)	(37,607)
Net fair value of derivative contracts	74	73	$ (50,468)	$ 20,045

i) Current credit exposure: The current credit exposure is limited to the amount of loss that would occur if all counterparties to contracts in a net favourable position totaling $149,700 (2017: $57,652) were to default at once.

ii) Cash settlements: Receivables or payables with counterparties are usually settled in cash every three months.

iii) Contract notional amounts: The fair value of receivables (receive leg) and payables (pay leg) and the exchange of cash flows with counterparties in pooled funds are based on a rate or price applied to a notional amount specified in the derivative contract. The notional amount itself is not invested, received or exchanged with the counterparty and is not indicative of the credit risk associated with the contract. Notional amounts are not assets or liabilities and do not change the asset mix reported in Note 3. Accordingly, they are not recognized in the statement of financial position.

	Plan's Indirect Share *($ thousands)*	
Types of derivatives used in pools	**2018**	**2017**
Structured equity replication derivatives	$ (30,915)	$ 13,983
Foreign currency derivatives	(18,790)	3,530
Interest rate derivatives	(1,194)	1,202
Credit risk derivatives	431	1,330
Net fair value of derivative contracts	$ (50,468)	$ 20,045

i) Equity derivatives are structured to receive income from counterparties based on the performance of a specified market-based equity index, security or basket of equity securities applied to a notional amount in exchange for floating rate interest paid to the counterparty. Floating rate notes are held in equity pools to provide floating rate interest to support the pay leg of the equity derivatives. Rights, warrants, futures and options are also included as structured equity replication derivatives.

ii) Foreign currency derivatives include contractual agreements to exchange specified currencies at an agreed upon exchange rate and on an agreed settlement date in the future.

Note 4 (continued)

iii. Interest rate derivatives exchange interest rate cash flows (fixed to floating or floating to fixed) based on a notional amount. Interest rate derivatives primarily include interest rate swaps and cross currency interest rate swaps, futures contracts and options.

iv. Credit risk derivatives include credit default swaps allowing the pools to buy and sell protection on credit risk inherent in a bond. A premium is paid or received, based on a notional amount, in exchange for a contingent payment should a defined credit event occur with respect to the underlying security.

v. At December 31, 2018, deposits in futures contracts margin accounts totaled $14,293 (2017: $4,836). Cash and non-cash collateral for derivative contracts pledged and received, respectively, totaled $(60,773) (2017: $(10,167)) and $893 (2017: $561).

NOTE 5 PENSION OBLIGATION

a) ACTUARIAL VALUATION AND EXTRAPOLATION

An actuarial valuation of the Plan was carried out as at December 31, 2016 by the Plan's actuarial consultants, Aon Hewitt. The December 31, 2016 valuation results were extrapolated to December 31, 2018.

The pension obligation was determined using the projected benefit method prorated on service. The assumptions used in the valuation extrapolation were developed as the best estimate of expected short-term and long-term market conditions and other future events. After consultation with the Plan's actuary, the Board of Trustees adopted this best estimate.

The major assumptions used were:

	2016 Valuation and 2018 Extrapolation	2016 Valuation and 2017 Extrapolation
	%	%
Asset real rate of return		
For 2 years after valuation	3.35	3.35
Thereafter	3.35	3.35
Inflation rate		
For 2 years after valuation	2.25	2.25
Thereafter	2.25	2.25
Discount rate	5.60	5.60
Salary escalation rate *		
For 2 years after valuation	1.50	1.50
Thereafter	2.75	2.75
Mortality table	85% (100% for females) of 2014 Public Sector Canadian Pensioner table with generational projection (Scale CPM-B)	85% (100% for females) of 2014 Public Sector Canadian Pensioner table with generational projection (Scale CPM-B)

** In addition to merit and promotion*

The next actuarial valuation of the Plan must be carried out no later than December 31, 2019. Any differences between the actuarial valuation results and extrapolation results as reported in these financial statements that affect the financial position of the Plan will be accounted for as gains or losses in the following year.

Note 5 (continued)

b) SENSITIVITY OF CHANGES IN MAJOR ASSUMPTIONS

The Plan's future experience will inevitably differ, perhaps significantly, from these assumptions. Any differences between the actuarial assumptions and future experience will emerge as gains or losses in future valuations and may materially affect the financial position of the Plan.

	Changes in Assumptions (%)	Increase in Plan's Actuarial Deficiency ($ thousands)	Increase in Current Service Cost as a % of Pensionable Earnings *
Inflation rate increase holding discount rate and salary escalation assumptions constant	1.0	422,000	1.9
Salary escalation rate increase holding inflation rate and discount rate assumptions constant	1.0	80,600	0.9
Discount rate decrease holding inflation rate and salary escalation assumptions constant	(1.0)	847,200	4.6

* The current service cost as a % of pensionable earnings as determined by the December 31, 2016 valuation is 21.52%.

NOTE 6 DEFICIT

($ thousands)

	2018			2017
	Pre-1992	**Post-1991**	**Total**	**Total**
Deficit (surplus), beginning of year	$ 802,700	$ (26,968)	$ 775,732	$ 824,825
Decrease (increase) in net assets available for benefits	89,000	(68,879)	$ 20,121	(501,793)
Net (decrease) increase in accrued pension liability	(48,800)	290,300	$ 241,500	452,700
Deficit, end of year	$ 842,900	$ 194,453	$ 1,037,353	$ 775,732

In accordance with the requirements of the *Public Sector Pension Plans Act*, separate accounting is required of the pension deficit with respect to service that was recognized as pensionable as at December 31, 1991. The following table summarizes the net assets available for benefits, pension obligation, and the resulting deficit as at December 31, 2018 allocated between the pre-1992 and post-1991 periods:

($ thousands)

	2018			2017
	Pre-1992	**Post-1991**	**Total**	**Total**
Net assets available for benefits	$ 655,800	$ 4,175,147	$ 4,830,947	$ 4,851,068
Pension obligation	1,498,700	4,369,600	5,868,300	5,626,800
Deficit	$ 842,900	$ 194,453	$ 1,037,353	$ 775,732

The deficit for accounting purposes may differ from that for funding purposes (see Note 14).

Financial Statements

NOTE 7 CONTRIBUTIONS

	($ thousands) 2018	2017
Current service		
Employers	$ 94,610	$ 89,973
Employees	94,616	89,680
Contributions to meet post-1991 unfunded liability and optional service		
Employers	21,336	22,145
Employees	24,258	24,423
Contributions to meet pre-1992 unfunded liability		
Employers	16,354	17,103
Employees	16,354	17,103
Province of Alberta	12,697	12,078
	$ 280,225	$ 272,505

NOTE 8 INVESTMENT INCOME (LOSS)

The following is a summary of the Plan's investment income (loss) by asset class:

($ thousands)

	Income (Loss)	Change in Fair Value	2018 Total	2017 Total
Fixed income	$ 83,557	$ (58,943)	$ 24,614	$ 61,221
Public equities				
Canadian	20,214	(77,116)	(56,902)	63,472
Foreign	130,449	(173,500)	(43,051)	324,543
	150,663	(250,616)	(99,953)	388,015
Alternatives				
Real estate	14,277	31,250	45,527	29,959
Private equity	(1,686)	14,090	12,404	394
Infrastructure and private debt and loans	9,094	3,053	12,147	16,289
Timberland	3,898	2,998	6,896	6,399
	25,583	51,391	76,974	53,041
Strategic and currency investments	(431)	(3,492)	(3,923)	3,240
	$ 259,372	$ (261,660)	$ (2,288)	$ 505,517

The change in fair value includes realized and unrealized gains and losses on pool units and currency hedges. Realized and unrealized gains and losses on pool units total $(2,245) and $(255,992) respectively (2017: $48,850 and $40,963 respectively). Realized and unrealized gains and losses on currency hedges total $(1,129) and $(2,294) respectively (2017: $938 and $(3) respectively).

Income earned in pooled investment funds is distributed to the Plan daily based on the Plan's pro rata share of units issued by the pool. Income earned by the pools is determined on an accrual basis and includes interest, dividends, security lending income, realized gains and losses on sale of securities determined on an average cost basis, and income and expense on derivative contracts.

NOTE 9 INVESTMENT RETURNS, CHANGE IN NET ASSETS AND PENSION OBLIGATION

The following is a summary of investment returns (losses), the annual change in net assets, the annual change in the pension obligation and the percentage of the pension obligation supported by net assets.

	(percentage)				
	2018	2017	2016	2015	2014
Increase (decrease) in net assets attributed to:					
Investment income					
Policy benchmark return (PBR) on investments	(0.2)	10.1	7.0	6.5	11.8
Value (lost) added by investment managers	(0.3)	1.2	0.1	1.1	0.4
Time weighted rate of return, at fair value [a]	**(0.5)**	**11.3**	**7.1**	**7.6**	**12.2**
Other sources [b]	0.1	0.2	0.5	(0.3)	0.0
Percent change in net assets [c]	**(0.4)**	**11.5**	**7.6**	**7.3**	**12.2**
Percent change in pension obligation [c]	**4.3**	**8.7**	**4.3**	**5.4**	**8.5**
Percent of pension obligation supported by net assets	**82**	**86**	**84**	**82**	**80**

a) The annualized total return and policy benchmark return on investments over five years is 7.4% (PBR: 6.9%), ten years is 9.0% (PBR: 8.4%) and twenty years is 6.5% (PBR: 6.0%). The Plan's actuary estimates the long-term net investment return on assets for funding purposes to be 5.6% (2017: 5.6%).

b) Other sources includes employee and employer contributions and transfers from other plans, net of benefit payments, transfers to other plans and administration expenses.

c) The percent change in net assets and pension obligation are based on the amounts reported on the statement of changes in net assets available for benefits and the statement of changes in pension obligation, respectively.

NOTE 10 BENEFIT PAYMENTS

	($ thousands)	
	2018	**2017**
Retirement benefits	$ 240,049	$ 229,533
Termination benefits	29,212	23,012
Death benefits	3,081	517
	$ 272,342	$ 253,062

Financial Statements

NOTE 11 INVESTMENT EXPENSES

	2018	2017
	($ thousands)	
Amount charged:		
Management fees [(a)]	$ 23,477	$ 20,991
Alberta Treasury Board and Finance [(b)]	54	54
Total investment expenses	$ 23,531	$ 21,045
Increase in expenses	11.8%	97.1%
Increase in average investments under management	5.2%	9.6%
Increase (decrease) in value of investments attributed to active management	(0.3%)	1.2%
Investment expenses as a percent of dollar invested	0.5%	0.5%

a) For investment management services, including non-recoverable GST of $708 (2017: $580).

b) For investment accounting and Plan reporting services

NOTE 12 ADMINISTRATIVE EXPENSES

	2018	2017
	($ thousands)	
General administration costs	$ 1,988	$ 1,985
Board costs	72	71
Actuarial fees	72	10
Audit fees	53	56
	$ 2,185	$ 2,122

General Plan costs, including the costs for benefit administration and delivery, amounted to $139 per member (2017: $140 per member).

Financial Statements

NOTE 13 REMUNERATION OF BOARD OF TRUSTEES MEMBERS

Plan Sponsors may determine remuneration rates. Current remuneration rates are as follows:

	Chair	Trustee
Remuneration rates effective April 1, 2009		
Up to 4 hours	$ 219	$ 164
4 to 8 hours	383	290
Over 8 hours	601	427

	2018	2017
The following amounts were paid:		
Remuneration		
Chair	$ 5,134	$ 4,375
Trustees (8)	30,758	31,505
Travel expenses		
Chair	1,871	755
Trustees (8)	11,860	16,173

Trustees are paid for attending and preparing for Board of Trustees and Committee meetings and for time spent on specified Plan business upon the approval of the Board of Trustees. Preparation time for a meeting is remunerated at no more than 4 hours.

NOTE 14 CAPITAL

The Plan defines its capital as the funded position. The actuarial surplus or deficit is determined by an actuarial funding valuation performed, at a minimum, every three years. The objective is to ensure that the Plan is fully funded over the long term.

The Plan's surplus or deficit is determined on the fair value basis for accounting purposes. However, for funding valuation purposes, asset values are adjusted for fluctuations in fair values to moderate the effect of market volatility on the Plan's funded status. Under this method, asset values are calculated based on what the asset value would be at the valuation date had the assets earned precisely the rate of return assumed in the actuarial valuation. This calculation is carried out independently at each of two starting points, namely the market value as at each of the two calendar year-ends preceding the valuation date. These two calculated values, together with the market value as at the valuation date, are averaged to determine the actuarial value of assets with a constraint limiting the actuarial value not to exceed 110% or fall below 90% of net assets available for benefits.

Actuarial asset values for funding valuation purposes amounted to $4,947,647 at December 31, 2018 (2017: $4,677,368), comprising of $667,600 (2017: $712,900) pre-1992 and $4,280,047 (2017: $3,964,468) post-1991.

Financial Statements

Note 14 (continued)

The following table summarizes on the funding basis, the accrued pension liability, net assets available for benefits, and the resulting deficit as at December 31, 2018 allocated between the pre-1992 and post-1991 periods:

($ thousands)

	2018			2017
	Pre-1992	**Post-1991**	**Total**	**Total**
Net assets available for benefits	$ 655,800	$ 4,175,147	$ 4,830,947	$ 4,851,068
Actuarial adjustment for fluctuation in fair value of net assets	11,800	104,900	116,700	(173,700)
Actuarial value of net assets available for benefits	667,600	4,280,047	4,947,647	4,677,368
Pension obligation	1,498,700	4,369,600	5,868,300	5,626,800
Actuarial deficit	$ 831,100	$ 89,553	$ 920,653	$ 949,432

The Plan's unfunded liability for service prior to January 1, 1992 is being financed by additional contributions of 1.25% of salaries by the Province of Alberta with employers and employees equally sharing the balance of the contributions of 2.90% (3.54% prior to July 1, 2018) of salaries as required to eliminate the unfunded liability on or before December 31, 2043. The actuarial valuation shows the present value of the Province of Alberta's obligation for future additional contributions was $257.8 million at December 31, 2016.

The Plan's unfunded liability for service after December 31, 1991 is being financed by special payments of 4.44% (4.93% prior to July 1, 2018) of salaries shared equally between employers and employees to eliminate the unfunded liability on or before December 31, 2027.

The additional contributions and special payments have been included in the rates shown in Note 1(b).

NOTE 15 COMPARATIVE INFORMATION

Comparative figures related to the fair value hierarchy in Note 3 have been reclassified to conform to the presentation adopted in 2018. Although there were no changes to the Plan's underlying investments, certain comparative information in the fair value hierarchy was changed to better reflect the quality and reliability of the valuation of the respective pooled fund units. The current classification of investments within the hierarchy reflects the quality and reliability of the valuation of the pool unit. Previous presentation reflected the quality and reliability of the valuation of significant securities held within the pools.

NOTE 16 APPROVAL OF FINANCIAL STATEMENTS

These financial statements were approved by the Board of Trustees of the Plan.

Glossary - Terms

Absolute Return Strategies/Hedge Funds
Encompass a wide variety of investments and trading strategies in private and publicly-traded securities with the objective of realizing positive returns independent of market direction. Investments in absolute return strategies are made through fund-of-funds and specific fund investments to increase strategy diversification.

Active Management
Managing the investments of a portfolio with the objective of outperforming the return of its benchmark. Active management generally takes two forms - security selection and change in asset allocations within the prescribed ranges. Security selection is the buying and selling of particular securities to earn a return above a market index. Asset allocation refers to changing asset class or sector weights to earn a return above what would be available from maintaining the asset class or sector weight in the benchmark.

Alternative Assets
Holdings that are considered non-traditional assets, including real estate, private equity, infrastructure, and timberland. These assets act as a hedge against inflation and are known for being less liquid than traditional assets. They are typically held by investors with long-term investment horizons.

Asset Mix/Allocation
The allocation of a pension fund's investments among various asset classes such as bonds, equities, real estate, etc.

Benchmark
A standard against which investment performance is measured.

Bonds
Certificates of indebtedness issued by corporations, municipalities or governments on which the issuer promises to pay a specified amount of interest for a specified length of time and to repay the loan on maturity or the expiration date. A bond purchaser is lending money to the issuer. Bonds have terms to maturity greater than one year.

Credit Spread
The difference in yield between two bonds due to differences in credit quality.

Duration
The weighted average term to payment of the cash flows of a bond.

Emerging Market
An economy in the earlier stages of development whose markets have sufficient size and liquidity and are receptive to foreign investment (examples include China, Greece, and Brazil).

Equities/Common Stock
Units of ownership of a corporation where owners typically are entitled to vote on the selection of directors and other important matters as well as to receive dividends on their holdings. In the event that a corporation is liquidated, the claims of secured and unsecured creditors and owners of bonds and preferred stock take precedence over the claims of those who own common stock. The liability of owners of equity is limited to the amount paid for the stock.

External Manager
A third-party firm contracted by the Investment Manager to provide investment management services.

Growth Stock
A share in a company whose earnings are expected to grow at an above-average rate relative to the market.

Large Cap
"Large cap" refers to firms with large market capitalization. Market capitalization is simply the market value of a corporation's outstanding shares. In the US market, this refers to companies with market capitalization above $10 billion. These are mega companies of the financial world and include Apple, Alphabet, and Microsoft. Classifications such as "large cap" or "small cap" are only approximations that change over time.

Passive Management
Managing the investments of a portfolio with the objective of matching/replicating the performance of a given market index or benchmark.

Policy Benchmark/Return
The "policy benchmark" is a composite return based on the percentage of a pension plan's fund allocated by policy to each asset class and the market index for that class. It is used to measure the plan's relative performance.

Pooled Fund
A fund in which money from two or more investors is accepted for investment and where units allocated to each investor serve to establish the proportionate interest at any time of each investor in the assets of the fund.

Glossary - Terms

Private Income/Infrastructure
Private income opportunities represent privately-negotiated investments in private and publicly-traded entities. These investments are selected, structured and managed to provide (i) a current income component of total return, (ii) diversification and (iii) an inflation hedge. These investment opportunities are typically capital-intensive and may include infrastructure projects (long-life assets used to provide essential services), bridge loans and corporate finance arrangements (with a current income component of total return). Most infrastructure asses are illiquid assets.

Real Return Bond
A fixed-income security (a bond) that generates a specified real rate of return. The real interest rate is the nominal (set) interest rate minus inflation.

Small Cap
"Small cap" refers to firms with relatively smaller market capitalization. Though there is no rigorous definition, in the US, a company with a market capitalization of between $300 million and $2 billion is considered a small cap. The definition can change over time.

Statement of Investment Policies and Goals
A comprehensive statement by the Board outlining, among other things, the asset mix of the Fund, the allowable range for each asset class and the benchmarks for measuring performance.

Swap
A privately-negotiated contract between two parties to exchange a stream of periodic payments on certain dates in the future based on an underlying investment. The size of these payments is normally determined in relation to a nominal, underlying amount, called the notional amount. The underlying security, representing the notional amount, is not exchanged between counterparties. Swaps available in and between all financial markets include, but are not exclusive to, equities, currencies, fixed income and commodities.

Timberland
Timberland investments are made primarily in privately-owned areas of woodland; that is, forested areas consisting of both hardwood and softwood species. When responsibly managed, timberland investments are a renewable and sustainable resource. Timberland investments are illiquid assets.

Total Return
Interest and dividend income plus price increases or decreases.

Tracking Error
The difference between the performance of a position and the performance of a benchmark.

Treasury Bill/T-Bill
A short-term government debt security.

Unfunded Liability
When the actuarial valuation determines that a pension fund's accrued liabilities exceed the assets available for the payment of benefits.

Value Stock
A stock that tends to trade at a lower price relative to its fundamentals (i.e. dividends, earnings, sales, etc.) and thus considered undervalued by an investor.

YMPE (Year's Maximum Pensionable Earnings)
The maximum earnings set each year by the Canada Pension Plan (CPP) up to which employers and employees are required to make CPP contributions.

Glossary - Indices

BMO Small Cap Index
An index maintained by Bank of Montreal that is made up of 400 representative Canadian public companies and income trusts with market capitalizations of less than 0.1% of the S&P/TSX Composite total capitalization. This index is market capitalization weighted.

Consumer Price Index (CPI)
An indicator of the prices encountered by consumers. It is obtained by calculating, on a monthly basis, the cost of a fixed "basket" of commodities purchased by a typical consumer during a given month. The CPI is published by Statistics Canada and is a widely used indicator of inflation (or deflation) in Canada.

FTSE Canada 91-Day T-Bills Index
An index that represents the performance of Government of Canada 91-day Treasury Bills.

FTSE Canada Long Term Bond Index
An index that tracks the performance of approximately 300 marketable, domestically issued, Canadian bonds with terms to maturity of more than 10 years. This index is comprised of Canada's, provincial, municipal, and AAA- through BBB-rated corporate issuers.

FTSE Canada Real Return Bond Index
An index that tracks the daily performance of real return (inflation-linked) bonds issued in Canada.

FTSE Canada Universe Bond Index
An index that tracks the performance of approximately 1,000 marketable, domestically issued, Canadian bonds with terms to maturity of more than one year. This index is comprised of Canada's, provincial, municipal and AAA- through BBB-rated corporate issuers.

IPD Large Institutional All Property Index
An index that measures the total return from a diversified pool of over 2,400 properties. IPD compiles property level information from pension funds, life insurance companies, and real estate managers on a quarterly basis.

MSCI ACWI (Morgan Stanley Capital International - All Country World Index)
An index maintained by the MSCI Index Committee designed to measure market equity performance of developed and emerging markets. The MSCI ACWI is a free float-adjusted market capitalization index that is calculated on a total return basis, which includes re-investment of net dividends after deduction of withholding taxes. The MSCI ACWI consists of securities across large and mid-cap segments and across style and sector segments in 47 developed and emerging markets.

MSCI EAFE (Europe, Australasia, and Far East)
An index maintained by the MSCI Index Committee that is designed to measure developed public market equity performance, excluding the US and Canada. The MSCI EAFE Index consists of 21 market country indices capturing large and mid-cap equities across developed markets in Europe, Australasia, and the Far East.

MSCI Emerging Markets Free Index
An index maintained by the MSCI Index Committee that is designed to measure emerging public market equity performance net of withholding taxes. The MSCI Emerging Market Index consists of 24 emerging market country indices.

Russell 2500 Index
An index maintained by Russell Investments that measures the performance of the 2500 smallest companies in the Russell 3000. The Russell 2500 is taken to represent small and mid-cap US Equities.

S&P/TSX (Standard & Poor's/Toronto Stock Exchange) Capped Composite Index
An index maintained by the S&P Canadian Index Committee that measures the return on the largest companies and trust units listed on the Toronto Stock Exchange. Any stock in the S&P/TSX Capped Composite Index whose float capitalization exceeds 10% of the Index is capped at 10% during the quarterly rebalancing process.

S&P 500 Index
An index maintained by the S&P Index Committee that includes a representative sample of 500 leading operating companies in the US economy to create a broad market portfolio representing the market capitalization of US public equities.

2018 Annual Report

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