Fund financial statements of
The University of British Columbia Staff Pension Plan

December 31, 2020

Deloitte.

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Independent Auditor's Report

To the Pension Board of
The University of British Columbia Staff Pension Plan

Opinion

We have audited the fund financial statements of The University of British Columbia Staff Pension Plan (the "Plan"), which comprise the statement of financial position as at December 31, 2020, and the statement of changes in net assets available for benefits for the year then ended, and notes to the fund financial statements, including a summary of significant accounting policies (collectively referred to as the "fund financial statements").

In our opinion, the accompanying fund financial statements present fairly, in all material respects, the net assets available for benefits of the Plan as at December 31, 2020, and the changes in net assets available for benefits for the year then ended in accordance with the financial reporting provisions of Section 38(i)(c) of the regulations to the Pension Benefits Standards Act S.B.C. 2012 and Bulletin PENS 18-003 issued by the BC Financial Services Authority ("BCFSA") in April 2018 (the "Financial Reporting Framework").

Basis for Opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards ("Canadian GAAS"). Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Fund Financial Statements* section of our report. We are independent of the Plan in accordance with the ethical requirements that are relevant to our audit of the fund 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.

Emphasis of Matter - Basis of Accounting

We draw attention to Note 2 to the fund financial statements, which describes the basis of accounting. The fund financial statements are prepared to assist the Pension Board of the Plan to meet regulations of Section 38(i)(c) of the Pension Benefit Standards Act S.B.C 2012 and Bulletin PENS 18-003 issued by BCFSA in April 2018. As a result, the fund financial statements may not be suitable for another purpose. Our opinion is not modified in respect of this matter.

Responsibilities of Management and those Charged with Governance for the Fund Financial Statements

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

In preparing the fund financial statements, management is responsible for assessing the Plan'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 The University of British Columbia either intends to liquidate the Plan or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Plan's financial reporting process.

Auditor's Responsibilities for the Audit of the Fund Financial Statements

Our objectives are to obtain reasonable assurance about whether the fund financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's 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 GAAS 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 these fund financial statements.

As part of an audit in accordance with Canadian GAAS, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the fund 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 Plan'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 Plan's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the fund 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 auditor's report. However, future events or conditions may cause the Plan to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the fund financial statements, including the disclosures, and whether the fund financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We 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.

Deloitte LLP

Chartered Professional Accountants
June 24, 2021
Vancouver, British Columbia

The University of British Columbia Staff Pension Plan

Statement of financial position

As at December 31, 2020

(Expressed in thousands of dollars)

	Notes	2020 $	2019 $
Assets			
Investments	4		
Fixed income			
Cash and cash equivalents		**10,482**	4,713
Derivative investments, net		**983**	2,149
Long term fixed income		**524,488**	494,389
Private debt		**37,718**	7,645
Infrastructure debt		**211,894**	194,601
Mortgages		**118,643**	112,061
Equities			
Canadian equities		**163,334**	155,921
Foreign equities		**379,175**	325,521
Emerging market equities		**170,682**	158,450
Alternative investments			
Private equities		**73,238**	62,243
Infrastructure equities		**226,790**	246,082
Real estate		**206,762**	179,436
Hedge funds		**155**	168
		2,124,344	1,943,379
Cash	4	**13,052**	16,723
Receivable from manager	5	**25,216**	—
Prepaid expenses		**—**	3
		2,162,612	1,960,105
Contributions receivable			
University of British Columbia		**228**	212
Members		**175**	188
		403	400
		2,163,015	1,960,505
Liabilities			
Benefits payable		**118**	51
Accounts payable and accrued liabilities		**2,686**	1,566
		2,804	1,617
Net assets available for benefits		**2,160,211**	1,958,888

The accompanying notes are an integral part of the financial statements.

Approved on behalf of the Pension Board

_______________________________, Chair

_______________________________, Board Member

The University of British Columbia Staff Pension Plan

Statement of changes in net assets available for benefits

Year ended December 31, 2020

(Expressed in thousands of dollars)

	Notes	2020 $	2019 $
Increase in net assets			
University’s required contributions		**61,005**	52,536
Members’ required contributions		**42,409**	36,653
Transfers from other plans for buyback		**50**	147
		103,464	89,336
Investment income	6	**61,707**	60,659
Change in fair value of investments	7	**99,071**	150,164
		264,242	300,159
Decrease in net assets			
Payments to or on behalf of members			
Retirement benefits to members and beneficiaries		**45,037**	41,987
Members' accounts transferred or refunded		**5,539**	6,484
Death benefits		**919**	660
		51,495	49,131
Operations			
Administrative expenses	8	**1,949**	1,796
Investment			
Consulting fees		**52**	53
Management fees	9	**9,423**	7,629
		62,919	58,609
Increase in net assets available for benefits		**201,323**	241,550
Net assets available for benefits, beginning of year		**1,958,888**	1,717,338
Net assets available for benefits, end of year		**2,160,211**	1,958,888

The accompanying notes are an integral part of the financial statements.

1. Description of plan

The following description of The University of British Columbia Staff Pension Plan (the "Plan") is a summary only. For more complete information, reference should be made to the Plan text, which is available from The University of British Columbia's (the "University" or the "Sponsor") Pension Administration Office. The Plan is registered under the Pension Benefits Standards Act of British Columbia (registration no. 85439). As a registered pension plan under the Income Tax Act of Canada, the Plan is exempt from taxation.

(a) General

The Plan is a target benefit pension plan with fixed member and employer contributions. The Plan provides that benefits may be adjusted depending on the Plan's funded status. The Plan is open to eligible full-time, certain part-time monthly-paid and hourly-paid staff.

(b) Funding policy

The Plan text requires members to make contributions of 6.5% of basic salary and the University to make contributions of 9.4% of basic salary.

(c) Benefits

Pension benefits are calculated using the following formula:

For service earned to June 30, 2009, 2% times the average of the member's three best years' of pensionable earnings multiplied by such pensionable service less a Canada Pension Plan benefit offset equal to 0.7% of the lesser of best average pensionable earnings and average YMPE multiplied by such pensionable service. For service earned beginning July 1, 2009 onwards, the benefit is a flat 1.8% of the best average pensionable earnings multiplied by such pensionable service. Calculated benefits in excess of Canada Revenue Agency's allowable eligible maximum benefit are paid in accordance with a Supplemental Retirement Arrangement ("SRA"), if the member is eligible. The SRA is a separate non-registered pension plan. Cost of living increases are calculated each year based on the Consumer Price Index for Canada and added to pension benefits, subject to the Plan's ability to pay.

Termination benefits are payable on termination of employment and death benefits are paid in the event of death prior to retirement.

2. Basis of accounting

These financial statements present the aggregate financial position of the Plan as a separate financial reporting entity independent of the Sponsor and Plan members. The financial statements have been prepared in accordance with the accounting policies set out in note 3 to comply with the financial reporting provisions of Section 38(i)(c) of the regulations to the Pension Benefits Standards Act S.B.C. 2012 and Bulletin PENS 18-003 issued by the BC Financial Services Authority ("BCFSA") in April 2018 (the "Financial Reporting Framework").

2. Basis of accounting (continued)

The basis of accounting used in these financial statements materially differs from Canadian accounting standards for pension plans because it excludes the pension obligation of the Plan. The bulletin issued by BCFSA confirms that the BCFSA permits audited financial statements to be prepared without disclosing the pension obligation. Consequently, these financial statements do not purport to show the adequacy of the Plan's assets to meet the Plan's pension obligations.

The accounting policies adopted in the preparation of these financial statements have been prepared on the basis of Part IV of the CPA Canada Handbook, Canadian accounting standards for pension plans (the "Handbook"), except for the exclusion of the pension obligation as noted above.

The Plan has adopted Canadian accounting standards for private enterprises in connection with any balances or transactions outside of the scope of Part IV of the Handbook.

3. Significant accounting policies

(a) Use of estimates

The preparation of fund financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the amounts of increases and decreases in net assets available for benefits for the reporting period. The most significant estimates relate to the estimated fair values of level 3 investments, as described in note 3(b). Actual results could differ from those estimates.

(b) Investments

Investments are recorded on a settlement date basis and at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Fair values for investments are determined using the following methods:

(i) Cash and cash equivalents

Cash and cash equivalents consist of cash or money market securities issued by government or government-guaranteed entities, high-grade corporates and asset backed commercial paper that mature within the next 12 months.

(ii) *Derivative investments*

Derivative investments consist of foreign currency forward contracts and are based on the quoted market closing forward rates.

3. Significant accounting policies (continued)

(b) Investments (continued)

(iii) Bonds and equities

Publicly traded bond and equity investments are held through pooled funds and separately managed accounts. Pooled fund net asset values are reported in their respective financial statements and are generally based on the quoted market price of the underlying investments. Publicly traded bonds and equity securities held in separately managed accounts are valued based on quoted market prices.

(iv) Private debt

Private debt instruments are held through investment trusts and limited partnerships consisting primarily of assets that are senior in the capital structure. The fair value of private debt funds is generally based on the net asset values reported in their respective financial statements. Managers adopt either a discounted cash flow methodology that discounts projected interest payments and principal repayments by an appropriate discount rate that includes a market risk premium or a held-to-maturity approach which values investments at par and/or amortized cost, adjusted for the amortization or accretion of purchase discounts or premiums over time.

(v) Infrastructure debt

Private infrastructure debt investments are held through limited partnerships. The fair values of private infrastructure debt funds are based on the net asset values reported on their respective financial statements. Fair values of underlying private debt instruments are based on discounting future cash flows using a discount rate equal to the risk-free rate plus an appropriate risk premium. Publicly traded infrastructure bonds are held through a separately managed account and valuations are based on quoted market prices.

(vi) Infrastructure equity

Infrastructure equity investments are held in trust or through limited partnerships and in a pooled fund investing in publicly traded infrastructure equities. The fair values of infrastructure equity funds are based on the net asset values reported in their respective financial statements and/or valuation report. Fair values of the underlying assets are based on external managers or external appraiser valuations of the underlying infrastructure assets. Valuation methodologies include but are not limited to the discounted cash flow approach, the income approach or recent market transactions.

(vii) Mortgages

Mortgage investments are held in pooled mortgage funds consisting primarily of first mortgages of commercial properties across Canada. Pooled fund net asset values are reported in their respective financial statements. Fair values of the underlying mortgages are based on discounting future cash flows using a discount rate equal to the risk-free rate plus an appropriate risk premium.

3. Significant accounting policies (continued)

(b) Investments (continued)

(viii) Private equities

Private equity investments are held through limited partnership units investing in private equity assets. The fair value of limited partnership units are based on net asset values reported in their respective financial statements. Fair values of the underlying assets are based on valuation methods which include, but are not limited to, the market approach (i.e. observable valuation measures for comparable companies) and the income approach (i.e. discounted cash flow model) with consideration for factors such as expected liquidation value, leverage, and economic conditions.

(ix) Real estate

Real estate investments are held through limited partnerships and publicly traded real estate investment trusts (REITs). The fair values of real estate funds are based on the net asset values reported in their respective financial statements. Fair values of the underlying real estate assets are based on the external manager or third party appraisals of the real estate properties. Publicly traded REITs are valued based on quoted market prices.

(c) Revenue recognition

Adjustments to investments due to the fluctuation of fair values are reflected as part of the change in fair value of investments in the statement of changes in net assets available for benefits. Realized gains and losses are calculated based on the average cost of the investments. Investment income is recognized as follows:

(i) Interest income is recognized in the period earned.

(ii) Dividend income is recognized on the ex-dividend date.

(iii) Income from investments in trusts and limited partnerships is recognized on an accrual basis when earned.

(iv) Pooled fund income is recognized on the date of distribution by the funds.

(d) Members' benefits transferred or refunded

Members' benefits transferred or refunded are recognized as a decrease in net assets on an accrual basis.

(e) Foreign currency translation

Transactions denominated in foreign currencies are translated at the rates of exchange at the date of the transaction. Assets and liabilities denominated in foreign currency are translated into Canadian dollars at the rate of exchange in effect at the statement of financial position date. Unrealized exchange gains or losses on foreign currency are included in the change in fair value of investments.

(Expressed in thousands of dollars)

4. Investments

(a) Cash and cash equivalents

Cash and cash equivalents consist of cash or securities primarily issued by either Canadian chartered banks or the Bank of Canada and mature at various dates in the next fiscal year.

(b) Fair value measurements – Hierarchy disclosure

Part IV of the Handbook establishes a three-tier hierarchy as a framework for disclosing fair values based on inputs used to value the Plan's investments. The hierarchy of inputs is summarized below:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2: inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

The following is a summary of the inputs used as of December 31, 2020 in valuing the Plan's cash, investments and derivative financial instruments:

	Quoted prices in active markets for identical assets (Level 1) $	Significant other observable inputs (Level 2) $	Significant unobservable inputs (Level 3) $	Total $
Cash and cash equivalents	13,052	10,482	-	23,534
Derivative investments, net	-	983	-	983
Long term fixed income	-	524,488	-	524,488
Private debt	-	-	37,718	37,718
Infrastructure debt	-	64,357	147,537	211,894
Mortgages	-	16,969	101,674	118,643
Canadian equities	78,590	84,744	-	163,334
Foreign equities	-	379,175	-	379,175
Emerging market equities	-	170,458	224	170,682
Private equities	-	-	73,238	73,238
Infrastructure equity	-	50,972	175,818	226,790
Real estate	14,624	-	192,138	206,762
Hedge funds	-	-	155	155
	106,266	1,302,628	728,502	2,137,396

(Expressed in thousands of dollars)

4. Investments (continued)

(b) Fair value measurements – Hierarchy disclosure (continued)

The following is a summary of the inputs used as of December 31, 2019 in valuing the Plan's cash, investments and derivative financial instruments:

	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Total
	$	$	$	$
Cash and cash equivalents	16,723	4,713	-	21,436
Derivative investments, net	-	2,149	-	2,149
Long term fixed income	-	494,389	-	494,389
Private debt	-	-	7,645	7,645
Infrastructure debt	-	66,721	127,880	194,601
Mortgages	-	15,922	96,139	112,061
Canadian equities	76,747	79,174	-	155,921
Foreign equities	-	325,521	-	325,521
Emerging market equities	-	158,203	247	158,450
Private equities	-	-	62,243	62,243
Infrastructure equity	-	45,624	200,458	246,082
Real estate	-	-	179,436	179,436
Hedge funds	-	-	168	168
	93,470	1,192,416	674,216	1,960,102

(Expressed in thousands of dollars)

4. Investments (continued)

(b) Fair value measurements – Hierarchy disclosure (continued)

The following table provides the changes during the year ended December 31, 2020 for financial instruments for which Level 3 inputs were used in determining fair value:

	Private debt $	Infrastructure debt $	Mortgages $	Emerging market equities $	Private equities $	Infrastructure equity $	Real estate $	Hedge funds $	Total $
Balance, January 1, 2020	7,645	127,880	96,139	247	62,243	200,458	179,436	168	674,216
Purchases	41,352	18,936	190	—	7,585	14,283	24,475	—	106,821
Sales	(7,225)	(9,413)	—	(33)	(4,582)	(14,454)	(10,277)	(4)	(45,988)
Realized gains/(losses)	742	6,291	3,616	4	3,797	12,388	6,413	(234)	33,017
Net transfers into and/or									—
out of Level 3	(82)	—	—	—	—	33	(15,558)	—	(15,607)
Expenses	(1)	(481)	(190)	—	(1,435)	(840)	(1,257)	—	(4,204)
Change in unrealized appreciation/depreciation	(4,713)	4,324	1,919	6	5,630	(36,050)	8,906	225	(19,753)
Balance, December 31, 2020	37,718	147,537	101,674	224	73,238	175,818	192,138	155	728,502

The following table provides the changes during the year ended December 31, 2019 for financial instruments for which Level 3 inputs were used in determining fair value:

	Private debt $	Infrastructure debt $	Mortgages $	Emerging market equities $	Private equities $	Infrastructure equity $	Real estate $	Hedge funds $	Total $
Balance, January 1, 2019	—	94,748	—	433	57,273	211,046	206,612	203	570,315
Purchases	7,608	35,662	166,140	—	10,348	26,307	15,953	—	262,018
Sales	(279)	(7,075)	(55,250)	(180)	(7,500)	(25,909)	(56,633)	—	(152,826)
Realized gains/(losses)	417	4,866	1,892	—	2,934	29,130	19,084	—	58,323
Net transfers into and/or out of Level 3	—	—	(15,922)	—	—	(45,623)	—	—	(61,545)
Expenses	—	(186)	(41)	—	(1,491)	(567)	(1,480)	—	(3,765)
Change in unrealized appreciation/depreciation	(101)	(135)	(680)	(6)	679	6,074	(4,100)	(35)	1,696
Balance, December 31, 2019	7,645	127,880	96,139	247	62,243	200,458	179,436	168	674,216

(Expressed in thousands of dollars)

4. Investments (continued)

(b) Fair value measurements – Hierarchy disclosure (continued)

The total unrealized and realized gains (losses) recognized during the year related to Level 3 investments was ($6,549) ($5,291 in 2019). There were no transfers between Level 1 and Level 2 during the years ended December 31, 2020 and 2019.

(c) Geographical allocation

The composition of the entire portfolio of investments, by country or region, is summarized as follows:

	2020	2019
	%	%
Canada	**60**	60
United States	**18**	19
United Kingdom	**2**	3
Europe	**9**	8
Asia	**9**	10
Other	**2**	-
	100	100

5. Receivable from manager

The Plan received a promissory note in the amount of $25,216 as a result of a fund redemption. The promissory note was repaid subsequent to year end.

6. Investment income

	2020	2019
	$	$
Interest income	**5,716**	6,420
Dividend income	**12,340**	10,437
Real estate income	**3,996**	9,863
Infrastructure income	**19,370**	15,198
Pooled fund distributions		
Bonds	**14,580**	13,613
Equities	**5,705**	5,128
	61,707	60,659

(Expressed in thousands of dollars)

7. Change in fair value of investments

	2020	2019
	$	$
Realized gains on investments	**43,928**	52,455
Change in unrealized gains on investments	**55,143**	97,709
	99,071	150,164

8. Administrative expenses

	2020	2019
	$	$
Salaries and administrative costs	**1,370**	1,362
Actuarial services	**217**	121
Custodian	**221**	178
Other	**97**	91
Audit	**44**	44
	1,949	1,796

9. Related party

The Plan reimburses UBC Investment Management Trust Inc. ("IMANT"), an entity wholly owned by the Sponsor, for its proportionate share of IMANT's operating costs. Costs for the year ended December 31, 2020, which are included in management fees, totaled $1,439 ($1,340 in 2019).

10. Commitments

(a) Investments

In addition to investments already made in the following asset classes, the Plan is committed to invest the following amounts as at December 31:

	2020	2019	**2020**	2019	**2020**	2019
	€	€	**US$**	US$	**Cdn$**	Cdn$
Private debt	**—**	—	**12,780**	—	**48,397**	22,228
Infrastructure debt		—	**—**	—	**4,102**	22,352
Private equities	**7,713**	9,897	**14,468**	18,849	**—**	—
Infrastructure equity	**525**	525	**2,600**	1,538	**946**	1,930
Real estate	**—**	—	**18,309**	20,671	**5,058**	5,449
	8,238	10,422	**48,157**	41,058	**58,503**	51,959

As at December 31, 2020, the total commitment in Canadian dollars was $132,696 ($120,370 in 2019).

(Expressed in thousands of dollars)

10. Commitments (continued)

(b) Leases

The Plan has entered into an operating lease for office premises with an expiry date of October 31, 2022. As of December 31, 2020, the future minimum lease payments are as follows:

	$
2021	75
2022	62
	137

11. Financial instruments

The fair values of the Plan's cash, investment income receivable, contributions receivable, receivable from manager, benefits payable and accounts payable are considered by management to approximate their carrying values due to the short-term nature of these financial instruments.

The Plan's investments are recognized at fair value in accordance with the significant accounting policy disclosed in Note 3(b).

12. Risk management

The Plan's investment activities expose it to a variety of financial risks: market risk (including currency risk, interest rate risk and price risk), credit risk and liquidity risk. As a pension plan, the Plan is fundamentally concerned with the management of risk. The Plan's overall risk management program seeks to maximize the returns derived for the level of risk to which the Plan is exposed and seeks to minimize potential adverse effects on the Plan's financial performance. The risk exposure is set to achieve the overall liability requirements of the Plan design.

The assets of the Plan are managed by a wholly-owned subsidiary of the University, IMANT. The Plan employs a Statement of Investment Policies and Procedures ("Policy") to identify, assess, manage and monitor its financial risks. The Policy provides asset mix ranges and limitations on the quality and concentration of investments the Plan is to hold. The Board of the Plan ("Pension Board") formulates the Plan's policy asset mix and the terms in the Policy document, which it recommends to the UBC Board of Governors for approval. The day to day management and adherence to the policy is the responsibility of the staff of IMANT. IMANT employs 41 investment managers (39 in 2019) across 60 mandates (59 in 2019).

The Pension Board oversees the management of the Plan with a focus on effective plan design, governance, investment policy, financing, administration and legal compliance. IMANT staff monitors the investment performance of the Plan, including asset class and manager performance against specified benchmarks and reports regularly to the Pension Board on overall performance and compliance with the Policy.

(Expressed in thousands of dollars)

12. Risk management (continued)

A majority of the Plan's assets are invested in pooled funds. Pooled funds provide a more cost effective means of achieving diversification within selected asset classes. The manager of each pooled investment fund is governed by the manager's own investment policy for the pooled fund. IMANT staff are responsible for ensuring that the detailed investment policy statement setting out the investment constraints for the managers of such segregated accounts is prepared and agreed to by the managers.

(a) *Price risk*

The Plan is exposed to price risk. This arises from investments held by the Plan for which prices in the future are uncertain. The value of the various holdings in the funds may move up or down, sometimes rapidly. The Plan manages price risk by allocating its assets across a number of different investment managers with different mandates and investment styles. Different types of investments have historically reflected higher levels of risk, as measured by their volatility of returns.

Given the overall target asset class holdings of the Plan, management expects most annual returns to be within a +/-9% (+/-8% in 2019) range of an expected long-term return of roughly +6%(+6% in 2019) (i.e. results ranging from -3% to +15%) (-2% to +14% in 2019). This is based on AON's capital market assumptions as at December 31, 2020. While there may be some changes to the expected return from year to year of the individual asset classes, these changes should not be significant as the expected returns and volatilities are based on long-term results. The range of expected annual returns is based on the following asset class volatility figures:

	2020	2019
Cash and cash equivalents	**+/-1.1%**	+/- 1.2%
Long term fixed income	**+/-11.8%**	+/- 6.9%
Private debt	**+/-15.8%**	+/- 15.8%
Infrastructure debt	**+/-8.7%**	+/- 6.4%
Mortgages	**+/-2.8%**	+/- 2.6%
Canadian equities	**+/-16.5%**	+/- 16.0%
Foreign equities	**+/-14.5%**	+/- 14.4%
Emerging market equities	**+/-23.4%**	+/- 23.6%
Private equities	**+/-22.1%**	+/- 22.6%
Infrastructure equity	**+/-19.1%**	+/- 18.9%
Real estate	**+/-15.5%**	+/- 15.4%

(Expressed in thousands of dollars)

12. Risk management (continued)

(a) Price risk (continued)

	Market value at December 31, 2020 $	**Percentage of investments**	Market value at December 31, 2019 $	Percentage of Investments
Cash and cash equivalents	**10,482**	**1%**	4,713	0%
Long term fixed income	**524,488**	**25%**	494,389	26%
Private debt	**37,718**	**2%**	7,645	0%
Infrastructure debt	**211,894**	**10%**	194,601	10%
Mortgages	**118,643**	**5%**	112,061	6%
Canadian equities	**163,334**	**7%**	155,921	8%
Foreign equities	**379,175**	**18%**	325,521	17%
Emerging market equities	**170,682**	**8%**	158,450	8%
Private equities	**73,238**	**3%**	62,243	3%
Infrastructure equity	**226,790**	**11%**	246,082	13%
Real estate	**206,762**	**10%**	179,436	9%
Hedge Funds	**155**	**0%**	168	0%
	2,123,361	**100%**	1,941,230	100%

Based on the estimated range of volatility by asset class this would equate to the following dollar amounts, with all other variables held constant:

	2020	**$**	2019	$
Cash and cash equivalents	**+/-1.1%**	**115**	+/- 1.2%	57
Long term fixed income	**+/-11.8%**	**61,890**	+/- 6.9%	34,113
Private debt	**+/-15.8%**	**5,959**	+/- 15.8%	1,208
Infrastructure debt	**+/-8.7%**	**18,435**	+/- 6.4%	12,454
Mortgages	**+/-2.8%**	**3,322**	+/- 2.6%	2,914
Canadian equities	**+/-16.5%**	**26,950**	+/- 16.0%	24,947
Foreign equities	**+/-14.5%**	**54,980**	+/- 14.4%	46,875
Emerging market equities	**+/-23.4%**	**39,940**	+/- 23.6%	37,394
Private equities	**+/-22.1%**	**16,186**	+/- 22.6%	14,067
Infrastructure equity	**+/-19.1%**	**43,317**	+/- 18.9%	46,509
Real estate	**+/-15.5%**	**32,048**	+/- 15.4%	27,633

(b) Interest rate risk

The Plan is subject to interest rate risk. Interest rate risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market interest rates. Rising interest rates cause a decrease in bond prices. Duration is the most common measure of this risk and quantifies the effect of changes in bond prices due to a change in interest rates. The bond portfolio has an average duration of roughly 14 years (14 years in 2019). Therefore, if long-term interest rates increased by 1%, the bond portfolio would fall in value by approximately 14% (14% in 2019). The impact on the value of the Plan's investments from an increase in interest rates will be partially or fully mitigated by the decrease in the value of the Plan's pension obligation.

(Expressed in thousands of dollars)

12. Risk management (continued)

(c) Foreign currency risk

Foreign currency risk is the risk that the value of non-Canadian investments, denominated in other than Canadian dollars, will increase or decrease because of changes in foreign currency exchange rates. The Plan has significant investments denominated in foreign currencies across a majority of the asset classes including U.S. and international equities, real estate and hedge funds. The Plan's investment policy includes a benchmark target requirement to hedge 100% exposure in non-Canadian real estate and infrastructure investments. In addition to direct hedging by some of the investment managers, the Plan retains an external manager to implement a rolling monthly foreign currency forward program to achieve the 100% hedging target. This program includes hedging of U.S. dollar, Euro, Japanese Yen and Pound Sterling investments. As of December 31, 2020, roughly 40% (40% in 2019) of the Plan's assets were invested outside of Canada, and 35% (36% in 2019) of this exposure was hedged. U.S. dollar exposure accounts for 18% (19% in 2019) of the non-Canadian investment while Europe, Australasia, and Far East ("EAFE") currencies account for 22% (22% in 2019) of the exposure. A 10% strengthening/weakening of the Canadian dollar versus the U.S. dollar at December 31, 2020 would have decreased/increased the U.S. dollar exposure by roughly $38,473 ($37,242 in 2019). This amount would be reduced by non-Canadian real estate and infrastructure investments hedged through the currency hedging program. This assumes that all other variables remain constant.

(d) Credit risk

Credit risk is the risk of financial loss to the Plan if a counterparty to a financial instrument fails to meet its contractual obligations. The Plan's cash and cash equivalent, derivative instruments, long term fixed income, private debt, infrastructure debt, mortgages, contributions receivable and due from manager are subject to credit risk. The maximum exposure to credit risk on these instruments is their carrying value of $942,880 ($832,681 in 2019). The Plan manages the risk by limiting the credit exposure allowed by the investment managers. The investment policies of the various bond managers provide limits to the credit exposure and/or set a minimum overall average portfolio quality allowed by each manager. The Plan also invests in derivative strategies to replicate equity index exposure and to hedge foreign currency exposure. Counterparties for these investments are restricted to a minimum credit rating of "A" or "A2".

The overall credit ratings as a percentage of the total bonds and mortgages as of December 31, 2020 held in the Plan are as follows:

	2020	2019
	%	%
AAA	**7**	13
AA	**33**	29
A	**22**	25
BBB	**11**	9
Mortgages	**5**	4
Unrated	**22**	20
	100	100

12. Risk management (continued)

(e) Liquidity risk

Liquidity risk for the Plan refers to the likelihood of any potential loss from a large percentage of requests for redemptions by Plan members. If all members with a deferred pension entitlement under age 55 had requested a transfer of their termination benefit on December 31, 2020 this would represent approximately 4.0% (4.0% in 2019) of the Plan's assets.

All of the Plan's benefits payable, accounts payable, and accrued liabilities presented on the statements of financial position are due within one year.

Most of the Plan's assets are invested in large pooled funds of which the Plan is just one of many parties invested in these pooled funds which provides a high degree of liquidity. The Plan's managers typically invest in equities and bonds that are very marketable and that have a high degree of liquidity should they need to be sold in a relatively short timeframe.

Liquidity risk for the investment program refers to the risk that the Plan may not be able to generate sufficient cash resources to settle its obligations in full as they fall due or can only do so on terms that are materially disadvantageous.

The investments are exposed to monthly settlement of foreign currency forward contracts as well as cash calls related to the private equity, real estate and infrastructure investments. The sources of funding for these settlements are from the liquid portion of the Plan, the public market securities, as well as capital distributions related to private equity, real estate and infrastructure investments.

Investments in infrastructure, real estate, private equity and hedge funds have more restrictive liquidity constraints than public securities and may require continuing investment commitments. Infrastructure, real estate and private equity investments are mostly made through limited partnership agreements typically with contractual 10 year terms. Investments in the infrastructure, real estate and private equity limited partnerships occur over four to five year periods and redemptions are at the investment manager's discretion. For hedge fund investments, redemptions are on a quarterly or semi-annual basis and require 90 days' notice.

13. Capital management

The Plan defines its capital as the net assets available for benefits. The Plan's objectives when managing capital are to safeguard its ability to continue as a going concern, so that the Plan can provide the basic benefit to the Plan members and indexing subject to the Plan's ability to pay.

The Plan manages the capital structure and makes adjustments to it through implementation of the Statement of Investment Policies and Procedures that affects the earnings of the Plan and through the benefits/funding policy that affects the benefits paid. The Plan is not subject to externally imposed capital requirements.

The UBC Board of Governors is ultimately responsible for monitoring and evaluating the Plan's investment performance on a regular basis.

14. COVID-19

As of year-end 2020, there is still uncertainty over the long-term impact that the COVID-19 pandemic will have on the financial markets and volatility to the Plan. The Pension Board and management continue to review and monitor the Plan's financial position to mitigate risk to ensure the Plan's financial wellbeing. The Plan's assets are invested in a diversified portfolio managed by professional investment managers and monitored regularly to ensure investments are within the parameters set in the Statement of Investment Policies and Procedures.