UNIVERSITY OF TORONTO
PENSION PLAN

FINANCIAL STATEMENTS

JUNE 30, 2019

INDEPENDENT AUDITOR'S REPORT

To the Administrator of the
University of Toronto Pension Plan

Opinion

We have audited the financial statements of the **University of Toronto Pension Plan** [the "Plan"], which comprise the statement of financial position as at June 30, 2019, and the statements of changes in net assets available for benefits and changes in pension obligations for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Plan as at June 30, 2019, and its changes in net assets available for benefits and its changes in pension obligations 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 *Auditor's responsibilities for the audit of the 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 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 – proposed transfer of Plan assets and liabilities

We draw attention to note 9 to the financial statements, which describes the proposed transfer of the assets and liabilities of the Plan to a new jointly sponsored pension plan effective July 1, 2021. Our opinion is not modified in respect of this matter.

Other information

Management is responsible for the other information. The other information comprises the information included in the Annual Financial Report, but does not include the financial statements and our auditor's report thereon.

Our opinion on the financial statements does not cover the other information and we do 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, and in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

We obtained the Annual Financial Report prior to the date of this auditor's report. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact in this auditor's 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 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 management 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 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 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 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 these 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. 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 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 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 financial statements, including the disclosures, and whether the 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.

Ernst & Young LLP

Chartered Professional Accountants
Licensed Public Accountants

Toronto, Canada
December 10, 2019

UNIVERSITY OF TORONTO PENSION PLAN

STATEMENT OF FINANCIAL POSITION

(with comparative figures as at June 30, 2018)
(thousands of dollars)

As at June 30

	2019	2018
ASSETS		
Investment in Master Trust, at fair value *(note 3(a))*	**5,313,112**	5,106,821
Receivables and prepaid expenses	**20,284**	19,094
	5,333,396	5,125,915
LIABILITIES		
Refunds payable	**7,629**	9,632
Accrued expenses	**2,881**	2,247
	10,510	11,879
Net assets available for benefits	**5,322,886**	5,114,036
Pension obligations *(note 7)*	**5,548,919**	5,332,356
Deficit	**(226,033)**	(218,320)

See accompanying notes

On behalf of the Governing Council of the University of Toronto:

(signed)
Ms. Sheila Brown
Chief Financial Officer

(signed)
Ms. Sheree Drummond
Secretary of the Governing Council

UNIVERSITY OF TORONTO PENSION PLAN

STATEMENT OF CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS

(with comparative figures for the year ended June 30, 2018)
(thousands of dollars)

Year ended June 30

	2019	2018
INCREASE IN NET ASSETS		
Increase in fair value of investment in Master Trust *(note 3(b))*	**247,056**	434,460
Employer contributions *(note 4)*	**192,094**	194,742
Employee contributions *(note 1(b))*	**82,675**	78,540
Transfers from other plans	**2,814**	3,412
Total increase in net assets	**524,639**	711,154
DECREASE IN NET ASSETS		
Retirement benefits	**218,859**	207,182
Refunds and transfers *(note 5)*	**45,412**	41,664
Fees and expenses (*note 6)*	**51,518**	46,488
Total decrease in net assets	**315,789**	295,334
Net increase in net assets for the year	**208,850**	415,820
Net assets available for benefits, beginning of year	**5,114,036**	4,698,216
Net assets available for benefits, end of year	**5,322,886**	5,114,036

See accompanying notes

UNIVERSITY OF TORONTO PENSION PLAN

STATEMENT OF CHANGES IN PENSION OBLIGATIONS

(with comparative figures for the year ended June 30, 2018)
(thousands of dollars)

Year ended June 30	**2019**	2018
INCREASE IN PENSION OBLIGATIONS		
Interest on accrued benefits	**294,269**	280,223
Benefits accrued	**198,895**	189,277
Assumption changes		41,662
Transfers from other plans	**2,814**	3,412
Total increase in pension obligations	**495,978**	514,574
DECREASE IN PENSION OBLIGATIONS		
Benefits paid	**263,457**	248,846
Experience gains	**15,958**	10,509
Total decrease in pension obligations	**279,415**	259,355
Net increase in pension obligations for the year	**216,563**	255,219
Pension obligations, beginning of year	**5,332,356**	5,077,137
Pension obligations, end of year	**5,548,919**	5,332,356

See accompanying notes

1. Description of Plan

The following description of the University of Toronto Pension Plan (the "Plan") is a summary only. For more complete information, reference should be made to the official Plan text.

a) General

The Plan is a contributory defined benefit plan open to all full-time and part-time employees of the University of Toronto (the "University") meeting the eligibility conditions.

The Plan is registered under the *Pension Benefits Act* (Ontario) (Ontario Registration Number 0312827) and with the Canada Revenue Agency.

The Governing Council of the University of Toronto acts as sponsor and administrator for the Plan and the investments, through the University of Toronto Master Trust ("Master Trust"), are managed by the University of Toronto Asset Management Corporation ("UTAM"), a separate non-share capital corporation whose members are appointed by the University of Toronto.

b) Funding

Plan benefits are funded by contributions and investment income. Required member contributions are made in accordance with a prescribed formula. The University's contributions are determined periodically on the basis of an actuarial valuation taking into account the assets of the Plan and all other relevant factors.

c) Retirement benefits

At retirement, the number of years of pensionable service earned by a member is multiplied by a percentage of the average of the highest 36 months of earnings to determine the annual pension payable to that member. There are various early retirement provisions in place for different employee groups. Benefits are also payable in the case of termination of employment prior to retirement.

d) Death benefits

Death benefits are available for beneficiaries on the death of an active member and may be taken in the form of a survivor pension or a lump-sum payment. Death benefits may also be available for a spouse on the death of a retired member.

e) Escalation of benefits

The pension benefits of retirees are subject to cost of living adjustments equal to the greater of: i) 75% of the increase in the Consumer Price Index in Canada ("CPI") for the previous calendar year to a maximum CPI increase of 8% plus 60% of the increase in CPI in excess of 8%, or ii) the increase in the CPI for the previous calendar year minus 4%.

2. Summary of significant accounting policies

a) Basis of presentation

These financial statements have been prepared by the University in accordance with Canadian accounting standards for pension plans in Part IV (Section 4600) of the Chartered Professional Accountants of Canada ("CPA Canada") Handbook applied within the framework of the significant accounting policies summarized below.

Section 4600 provides specific accounting guidance on investments and pension obligations. In accordance with Section 4600, Canadian accounting standards for private enterprises in Part II of the CPA Canada Handbook have been chosen for accounting policies that do not relate to the investment portfolio or pension obligations to the extent that those standards do not conflict with the requirements of Section 4600.

b) Investments and investment income

Investments are carried at fair value. The Plan is invested in the Master Trust. The unit value of the Master Trust is calculated based on the fair value of the underlying investments of the Master Trust.

Income from investments is recorded on an accrual basis. Distributions from a master trust arrangement are recorded when declared. Changes in fair values, representing realized and unrealized gains and losses, from one year to the next are reflected in the statement of changes in net assets available for benefits.

c) University of Toronto Master Trust

Investments within the Master Trust are carried at fair value. Fair value amounts represent estimates of the consideration that would be agreed upon between knowledgeable, willing parties who are under no compulsion to act. It is best evidenced by a quoted market price, if one exists. The calculation of estimated fair value is based upon market conditions at a specific point in time and may not be reflective of future fair values.

Fair values of the investments held by the Master Trust are determined as follows:

(i) Short-term notes and treasury bills are valued based on cost plus accrued interest, which approximates fair value. Money market funds are valued based on closing quoted market prices.

(ii) Bonds and publicly traded equities are valued based on quoted closing market prices. If quoted closing market prices are not available for bonds, estimated values are calculated using discounted cash flows based on current market yields and comparable securities, as appropriate.

(iii) Investments in pooled funds (other than private investment interests and hedge funds) are valued at their reported net asset value per unit.

(iv) Hedge funds are valued based on the most recently available reported net asset value per unit adjusted for the expected rate of return of the fund through June 30. The University believes the carrying amount of these financial instruments is a reasonable estimate of fair value.

(v) Private investment interests, consisting of private investments and real assets, are comprised of private externally managed funds with underlying investments in equities, debt, real estate assets and commodities. The investment managers of these interests perform valuations of the underlying investments on a periodic basis and provide valuations periodically. Annual financial statements of the private investment interests are audited and are also provided by the investment managers. The value of the investments in these interests is based on the most recent valuation provided, adjusted for subsequent cash receipts and distributions from the fund and cash disbursements to the fund through June 30. The University believes the carrying amount of these financial instruments is a reasonable estimate of fair value.

(vi) Derivative financial instruments are used to manage particular market and currency exposures for hedging and risk management purposes with respect to the Master Trust's investments and as a substitute for more traditional investments. Derivative financial instruments and synthetic products that may be employed include debt, equity, commodity and currency futures, options, swaps and forward contracts. These contracts are supported by liquid assets with a fair value approximately equal to the fair value of the instruments underlying the derivative contract.

For all derivative financial instruments, the gains and losses arising from changes in the fair value of such derivatives are recognized as investment income (loss) in the year in which the changes in fair value occur. The fair value of derivative financial instruments reflects the daily quoted market amount of those instruments, thereby taking into account the current unrealized gains or losses on open contracts. Investment dealer quotes or quotes from a bank are available for substantially all of the Master Trust's derivative financial instruments.

(vii) Monetary assets and liabilities denominated in foreign currencies are translated into Canadian dollars at the exchange rate in effect at year-end.

Interest income is recorded by the Master Trust on an accrual basis. Dividends are recorded by the Master Trust as revenue on the record date. Realized gains and losses on investments are recorded based on the average cost of the related investments. Unrealized gains and losses on investments are recorded by the Master Trust as a change in fair value since the beginning of the year or since the date of purchase when purchased during the year.

Income and expenses are translated at exchange rates in effect on the date of the transaction. Gains or losses arising from those translations are included in income.

Purchases and sales of investments are recorded by the Master Trust on a trade date basis, and transaction costs are expensed as incurred.

d) Revenue and expense recognition

All employer and employee contributions and other revenue are reflected in the year in which they are due. All expenses are recorded on an accrual basis.

e) Use of estimates

The preparation of 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 reported amounts of increases and decreases in net assets during the reporting period. The more significant estimates used in these financial statements would involve the determination of the fair value of investments where the values are based on non-observable inputs that are supported by little or no market activity, and the use of actuarial assumptions in the determination of the pension obligations. Actual results could differ materially from those estimates.

f) Pension obligations

Pension obligations are determined based on an actuarial valuation prepared by an independent firm of actuaries using an actuarial valuation report prepared for funding purposes. This valuation uses the projected benefits method pro-rated on service and management's best estimate of various economic and non-economic assumptions.

3. University of Toronto Master Trust

As at June 30, 2019 and 2018, all of the units of the Master Trust were held by the Plan. The value of each unit increases or decreases monthly based on the change in fair value of the underlying assets of the Master Trust. This value is used as the basis for the purchase and sale of units in the following month.

a) Investment in Master Trust

The investments of the Master Trust consisted of the following as at June 30, taking into account certain reclassifications resulting primarily from the allocation of the effect of futures and swap contracts. These futures and swap contract reclassifications at the Master Trust level resulted in: $246,233 (2018 – $241,904) of Canadian equities, $264,920 (2018 – $267,778) of United States equities, $75,557 (2018 – nil) of international equities, $178,126 (2018 – $48,494) of emerging markets equities, $12,784 (2018 – nil) of global equities and $917,456 (2018 – $353,987) of government and corporate bonds being reclassified from short-term investments; and nil (2018 – $2,327) of United States equities, $251 (2018 – $16,462) of international equities, $207 (2018 – nil) of emerging markets equities, nil (2018 – $3,248) of global equities, and $18,637 (2018 – nil) of government and corporate bonds being reclassified to short-term investments.

	2019	2018
Short-term investments *(note 3(d))*	**29,842**	8,756
Government and corporate bonds	**1,682,963**	1,639,265
Canadian equities	**520,511**	506,796
United States equities	**1,052,627**	1,010,653
International equities	**791,221**	765,426
Emerging markets equities	**521,825**	503,438
Global equities	**265,726**	254,384
Other	**394,133**	384,238
	5,258,848	5,072,956
Derivative-related net receivable *(note 3(d))*	**54,264**	33,865
	5,313,112	5,106,821

Short-term investments of the Master Trust consist of cash, money market funds, short-term notes and treasury bills totalling $1,671,457 (2018 – $1,380,960), investment-related receivables of $1,414,144 (2018 – $604,534), offset by investment-related payables of $1,379,778 (2018 – $1,086,612) and the net effect of futures and swap contracts of $1,675,981 (2018 – $890,126) that were reclassified to other investment categories.

International equities include developed equity markets in Europe, Australasia and the Far East (“EAFE”) and exclude the United States and Canada. Global equities include all developed equity markets as well as various emerging equity markets. Investments in the “other” category consist mainly of absolute return funds.

Included within the Master Trust's investments are hedge funds, private investments and real assets. These investments have been classified as follows:

	2019						
	Canadian equities	**United States equities**	**International equities**	**Emerging markets equities**	**Government and corporate bonds**	**Global equities and other**	**Total**
Hedge funds		**343,741**		**7,378**	**69,203**	**488,142**	**908,464**
Private investments	**100,382**	**312,629**	**30,985**	**91,505**	**419,494**		**954,995**
Real assets		**8,570**	**9,428**			**8,191**	**26,189**
	100,382	**664,940**	**40,413**	**98,883**	**488,697**	**496,333**	**1,889,648**

	2018						
	Canadian equities	United States equities	International equities	Emerging markets equities	Government and corporate bonds	Global equities and other	Total
Hedge funds		375,412	18,158	102,572	67,826	476,227	1,040,195
Private investments	92,512	224,507	27,988	84,223	326,343		755,573
Real assets	48	14,881	16,911			17,415	49,255
	92,560	614,800	63,057	186,795	394,169	493,642	1,845,023

b) Changes in the Master Trust

The following table shows the components of the net increase in net assets of the Master Trust for the years ended June 30:

	2019	2018
Increase in fair value		
Interest income		
Government and corporate bonds	**50,090**	40,446
Short-term investments	**1,173**	1,318
Dividend income		
Canadian	**5,385**	4,494
Foreign	**27,520**	21,509
Other income	**943**	2,352
	85,111	70,119
Net realized and unrealized gains from investments	**161,945**	364,341
Total increase in fair value of the Master Trust	**247,056**	434,460
Cash received on purchase of Master Trust units by pension plan	**277,583**	276,694
Cash paid on redemption of Master Trust units by pension plan	**(318,348)**	(295,026)
Net increase in net assets of the Master Trust for the year	**206,291**	416,128
Net assets of the Master Trust, beginning of year	**5,106,821**	4,690,693
Net assets of the Master Trust, end of year	**5,313,112**	5,106,821

c) Individually significant investments

The details of investments where the fair value exceeds 1% of the total fair value or cost of the Master Trust in the underlying portfolios are listed below:

	Fair value
Government and corporate bonds	
RP Corporate Index Plus Fund	**280,688**
Canadian equities	
Picton Mahoney 130/30 Alpha Extension Canadian Equity Fund	**140,483**
United States equities	
AQR Offshore Multi-Strategy AlphaPort Fund L.P Class A	**208,843**
AQR Offshore Multi-Strategy AlphaPort Fund L.P Class B	**134,898**
Landsdowne Developed Market Strategic Investment Fund, L.P.	**116,908**
StepStone Maple Opportunities Fund, L.P. Co-Investment Tranche	**86,275**
StepStone Maple Opportunities Fund, L.P. Secondary Tranche	**50,436**
International equities	
Arrowstreet EAFE Alpha Extension Fund II	**252,233**
MW TOPS International Equities Fund Class B1 USD Shares	**245,772**
Artisan International Value Fund Inst. Shares	**177,496**
Emerging markets equities	
RWC Emerging Markets Equity Fund Limited.	**106,096**
Arjuna Offshore Fund L.P.	**56,553**
Springs Maple SP Series 1	**53,120**
Global equities	
FPA Select Maple Fund L.P.	**94,008**
Egerton Investment Partners L.P.	**76,759**
Other	
MW TOPS Composite Funds Class B USD Shares	**78,646**
Bridgewater Pure Alpha Fund	**72,694**
Citadel Global Equity Fund II	**54,666**
CFM Stratus Feeder LLC CL 1.5 USD	**53,565**
Arrowstreet Global Equity Long Short Fund	**52,541**

d) Derivative financial instruments

Description

The Master Trust has entered into equity and fixed income index futures contracts which oblige it to pay the difference between a predetermined amount and the market value when the market value is less than the predetermined amount, or receive the difference when the market value is more than the predetermined amount.

The Master Trust enters into foreign currency forward contracts to minimize exchange rate fluctuations and the resulting uncertainty on future financial results. All outstanding contracts have a remaining term to maturity of less than one year. The Master Trust has significant contracts outstanding held in United States dollars, euros, Japanese yen and British pound sterling.

The Master Trust has entered into total return equity and bond swap contracts to obtain exposure to a security or market without owning such security or investing directly in that market. Total return swaps contracts are agreements for the exchange of cash flows whereby one party commits to making payments based on the total return (income plus capital gains or losses) of an underlying instrument in exchange for fixed or floating rate interest payments. To the extent the total return of the instrument or index underlying the transaction exceeds or falls short of the offsetting interest rate obligation, the Master Trust will receive a payment from or make a payment to the counterparty.

The notional amounts of the derivative financial instruments do not represent amounts exchanged between parties and are not a measure of the Master Trust's exposure resulting from the use of financial instrument contracts. The amounts exchanged are based on the applicable rates applied to the notional amounts.

Risks

The Master Trust is exposed to credit-related losses in the event of non-performance by counterparties to these financial instruments, but it does not expect any counterparties to fail to meet their obligations given their high credit ratings.

Terms and conditions

The foreign currency forward contracts with notional values totalling $1,945,431 (2018 – $1,602,479) as at June 30, 2019 all mature in September 2019. Equity and fixed income futures contracts with notional values of $59,815 (2018 – $116,249) as at June 30, 2019 all mature within one year. Collateral has been provided against these futures contracts as at June 30, 2019 in the form of short-term investments with a fair value of $942 (2018 – $3,394). The total return equity and bond swap contracts with notional values totalling $1,031,267 (2018 – $808,859) as at June 30, 2019 all mature within one year, and a bond swap contract with a notional value of $661,745 (2018 – nil) as at June 30, 2019 matures in December 2025. Under the terms of these contracts, the notional values of the swaps are reset periodically, either on a monthly or quarterly basis.

The notional and fair value amounts of the derivative financial instruments as at June 30 are as follows:

	2019		
	Notional Value[1]	**Fair Value[2]**	
		Receivables	**Payables**
Foreign currency derivatives			
United States dollar forwards	**1,385,440**	**15,468**	**(7,362)**
Euro forwards	**191,793**	**4,275**	**(230)**
Other currency forwards	**368,198**	**4,621**	**(925)**
Equity derivatives			
Futures	**13,241**	**199**	
Swaps	**787,751**	**22,036**	**(373)**
Fixed income derivatives			
Futures	**46,574**	**249**	
Swaps	**905,261**	**16,306**	
Total	**3,698,258**	**63,154**	**(8,890)**

	2018		
	Notional Value[1]	Fair Value[2]	
		Receivables	Payables
Foreign currency derivatives			
United States dollar forwards	1,176,743	12,449	(63)
Euro forwards	216,492	1,951	(49)
Other currency forwards	209,244	3,383	(78)
Equity derivatives			
Futures	46,745	351	(336)
Swaps	524,377	15,880	
Fixed income derivatives			
Futures	69,504	1,230	
Swaps	284,482		(853)
Total	2,527,587	35,244	(1,379)

[1] Notional values represent the contractual amounts to which a rate or price is applied for computing the cash flows to be exchanged, and are therefore not recorded as receivables or payables in these financial statements. Notional values are also the basis on which the fair values of the contracts and the returns are determined. Notional values do not necessarily represent the future cash flows to be exchanged, nor do they indicate the Plan's exposure to market or credit risk.

[2] Contracts with a positive fair value are recorded as investment receivables while contracts with a negative fair value are recorded as investment payables in note 3 (a).

e) Risk management

Risk management relates to the understanding and active management of the risks associated with all areas of the Master Trust’s investments. The investments of the Master Trust are primarily exposed to market risk (which includes foreign currency risk, interest rate risk and other price risk), credit risk and liquidity risk. To manage these risks within reasonable risk tolerances, the Master Trust, through UTAM, has formal policies and procedures in place governing asset mix among equity, fixed income and alternative assets, requiring diversification within categories, and setting limits on the size of exposure to individual investments and counterparties. In addition, derivative instruments are used in the management of these risks (see note 3(d)).

f) Market risk

Market risk is the risk that the value of an investment will fluctuate because of changes in market prices. The Master Trust is exposed to market risk from its investing activities. Market risk encompasses a variety of financial risks, such as foreign currency risk, interest rate risk and other price risk. Significant volatility in interest rates, equity values and the value of the Canadian dollar against the currencies in which the Master Trust investments are held can significantly impact the value of these investments. The Master Trust manages market risk by investing across a wide variety of asset classes according to the approved policy asset mix and hedging strategies established in the University of Toronto Pension Master Trust Statement of Investment Policies and Procedures ("SIPP"). The following are the key components of market risk:

(i) Foreign currency risk

Foreign currency exposure arises from the Master Trust's direct and indirect holdings of investments denominated in currencies other than the Canadian dollar. Fluctuations in the relative value of the Canadian dollar against these foreign currencies can result in a positive or a negative effect on the fair value of investments. To manage foreign currency risk, the currency hedging policy of the benchmark is to hedge 50% of the foreign currency exposure in the US and EAFE equity portfolios and 0% of the currency exposure in the Emerging Markets and Global equity portfolios. The actual unhedged currency exposure for the entire portfolio is allowed to range from 25% to 40% of the fair value of the investment in the Master Trust.

The following table summarizes the Master Trust's foreign currency exposure from directly held investment holdings, including an estimate of the indirect exposure to foreign currency risk within certain directly held investment holdings, the impact of the currency hedging program and the net currency exposure as at June 30:

	2019			2018
	Currency exposure	**Net currency hedge**	**Net currency exposure**	Net currency exposure
United States dollar	**1,501,746**	**(821,951)**	**679,795**	635,909
Chinese renminbi	**210,813**		**210,813**	230,792
Euro	**307,728**	**(153,703)**	**154,025**	152,894
Japanese yen	**228,861**	**(115,170)**	**113,691**	111,078
British pound sterling	**131,979**	**(51,878)**	**80,101**	83,428
South Korean won	**59,731**		**59,731**	74,550
New Taiwan dollar	**52,291**		**52,291**	60,708
Brazilian real	**48,659**		**48,659**	30,141
Swiss franc	**73,143**	**(28,763)**	**44,380**	36,564
Indian rupee	**43,299**		**43,299**	44,909
Australian dollar	**55,957**	**(22,173)**	**33,784**	32,414
South African rand	**28,383**		**28,383**	33,461
Russian ruble	**19,490**		**19,490**	18,561
Hong Kong dollar	**31,373**	**(12,267)**	**19,106**	17,073
Mexican peso	**16,149**		**16,149**	14,707
Swedish krona	**19,628**	**(7,690)**	**11,938**	12,022
Danish krone	**13,498**	**(5,378)**	**8,120**	7,756
Other	**92,865**	**(8,762)**	**84,103**	82,679
Total	**2,935,593**	**(1,227,735)**	**1,707,858**	1,679,646

Since all other variables are held constant in assessing foreign currency risk sensitivity, it is possible to extrapolate a 5% absolute change in foreign exchange rates to any absolute percentage change in foreign exchange rates. A 5% absolute change in foreign exchange rates would have the following impact on the fair value of foreign currency denominated assets, net of the currency hedges, of the Master Trust:

	2019 Change in net investment value	2018 Change in net investment value
United States dollar	**33,990**	31,795
Chinese renminbi	**10,541**	11,540
Euro	**7,701**	7,645
Japanese yen	**5,685**	5,554
British pound sterling	**4,005**	4,171
South Korean won	**2,987**	3,728
Other	**20,484**	19,549
Total	**85,393**	83,982

(ii) Interest rate risk

Interest rate risk refers to the effect on the fair value of the Master Trust's assets and liabilities due to fluctuations in interest rates. This risk primarily arises from fixed income securities held directly by the Master Trust, from fixed income securities held indirectly by the Master Trust (e.g. where there are underlying fixed income investments within a pooled fund) and from the bond swap contracts held by the Master Trust.

The following table summarizes the profile of the Master Trust's directly held fixed income securities which are subject to interest rate risk (indirect holdings within a pooled fund are excluded), based on term to maturity as at June 30:

	2019		2018	
Maturity range	**Fair value**	**Weighted average yield**	Fair value	Weighted average yield
0-5 years	**5,614**	**2.22%**	270,748	2.15%
>5-10 years	**2,899**	**2.46%**	134,574	2.54%
>10 years	**6,246**	**3.30%**	228,021	2.82%
	14,759	**2.72%**	633,343	2.47%

As at June 30, 2019, for every 1% increase (decrease) in prevailing market interest rates, the fair value of the direct fixed income holdings in the Master Trust is estimated to decrease (increase) by approximately $1,039 (2018 – $51,200).

(iii) Other price risk

Other price risk is the risk that the fair value of an investment will fluctuate because of changes in market prices (other than those arising from foreign currency risk or interest rate risk), whether those changes are caused by factors specific to the individual investment, its issuer, or factors affecting all similar securities traded in the market. The Master Trust's exposure to other price risk is primarily due to its public equity investments. These investments include public equity securities held directly by the Master Trust and public equity securities held indirectly by the Master Trust.

The fair value of directly held public equity investments and indirectly held public equity investments (excluding public equity investments within hedge funds, equity swap contracts and private equity funds) subject to other price risk is $1,367,931 (2018 – $1,437,943). Since all other variables are held constant in assessing other price risk sensitivity, it is possible to extrapolate a 10% absolute change in the fair value to any absolute percentage change in fair value. A 10% absolute change in the fair value of these public equity investments which are exposed to other price risk would be $136,793 (2018 – $143,794).

g) Credit risk

Credit risk of financial instruments is the risk of loss arising from the potential failure of a counterparty, debtor or issuer (collectively, the "debtor") to honour its contractual obligations. Credit risk can take the form of an actual default, such as a missed payment of borrowed principal or interest when it comes due, or can be based on an increased likelihood of default, which could result in a credit rating downgrade by credit rating agencies. Both scenarios would result in a decrease in the fair value of the obligations issued by the debtor. The Master Trust's investments in non-government-guaranteed securities are exposed to credit risk. The fair value of these investments and other assets as presented in the statement of financial position represents the maximum credit risk exposure at the date of the financial statements. The use of forward foreign currency contracts to hedge foreign currency risk exposure and swap contracts also exposes the Master Trust to credit risk. In addition to credit risk arising from direct holdings, the Plan also has indirect exposure to credit risk to the extent that the Master Trust's direct holdings have underlying investments in non-government-guaranteed securities.

The following table summarizes the fair value of directly held fixed income securities which were exposed to credit risk (indirect holdings and exposures from forward foreign currency exchange contracts and swap contracts are excluded), by credit rating, as at June 30:

	2019		2018	
Credit rating	**Fair value**	**% of fixed income securities**	Fair value	% of fixed income securities
AAA			332,586	52.51
AA	**3,532**	**23.93**	255,023	40.27
A	**7,149**	**48.44**	40,328	6.37
BAA and other	**4,078**	**27.63**	5,406	0.85
	14,759	**100.00**	633,343	100.00

h) Liquidity risk

Liquidity risk is the risk of the Plan not being able to settle or meet its commitments in a timely manner. These commitments include payment of the Plan's pension obligations and operating expenses, margin requirements associated with synthetic investment strategies, and the Master Trust's future commitments in private investment interests. These liquidity requirements are managed through income and distributions generated from investments, monthly contributions made by the University and Plan members, and having a sufficient amount of assets invested in liquid instruments that can be easily sold and converted to cash.

i) Fair value hierarchy

The Plan is required to disclose, for each class of financial instruments, the methods and, when a valuation technique is used, the assumptions applied in determining fair values, through a three-level hierarchy, as at the financial statement date. The three levels are defined as follows:

Level 1: Fair value is based on quoted market prices in active markets for identical assets or liabilities. Level 1 assets and liabilities generally include equity securities traded in an active exchange market.

Level 2: Fair value is based on observable inputs other than Level 1 prices, such as quoted market prices for similar (but not identical) assets or liabilities in active markets, quoted market prices for identical assets or liabilities in markets that are not active, and other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities. This category generally includes mutual and pooled funds, hedge funds, Government of Canada, provincial and other government bonds, Canadian corporate bonds, and certain derivative contracts.

Level 3: Fair value is based on non-observable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. Financial instruments are classified in this level when the valuation technique is based on at least one significant input that is not observable in the market or due to a lack of liquidity in certain markets. This category generally includes private investment interests (which are comprised of private, externally managed pooled funds with underlying investments in equities, real estate assets and commodities) and securities that have liquidity restrictions.

	2019			
	Level 1	**Level 2**	**Level 3**	**Total**
Short-term investments	**1,705,823**			**1,705,823**
Government and corporate bonds		**331,256**	**452,888**	**784,144**
Canadian equities	**33,413**	**140,483**	**100,382**	**274,278**
United States equities		**466,507**	**321,200**	**787,707**
International equities		**675,502**	**40,413**	**715,915**
Emerging markets equities		**246,904**	**97,002**	**343,906**
Global equities		**150,743**	**102,199**	**252,942**
Absolute return funds		**394,133**		**394,133**
	1,739,236	**2,405,528**	**1,114,084**	**5,258,848**
Derivative-related net receivable *(note 3(d))*	**38,417**	**15,847**		**54,264**
	1,777,653	**2,421,375**	**1,114,084**	**5,313,112**

	2018			
	Level 1	Level 2	Level 3	Total
Short-term investments	897,810	1,072		898,882
Government and corporate bonds		925,728	359,550	1,285,278
Canadian equities	37,857	134,475	92,560	264,892
United States equities		474,746	270,456	745,202
International equities		736,990	44,898	781,888
Emerging markets equities		365,057	89,887	454,944
Global equities		148,227	109,405	257,632
Absolute return funds		375,584	8,654	384,238
	935,667	3,161,879	975,410	5,072,956
Derivative-related net receivable *(note 3(d))*	16,272	17,593		33,865
	951,939	3,179,472	975,410	5,106,821

The following table summarizes the changes in the fair value of financial instruments classified in Level 3 of the Master Trust for the years ended June 30:

	2019	2018
Fair value, beginning of year	**975,410**	998,221
Purchases	**334,284**	257,945
Transfer in from Level 2[1]	**149**	
Sales	**(203,548)**	(313,049)
Total realized gains	**3,053**	13,657
Total unrealized gains	**4,736**	18,636
Fair value, end of year	**1,114,084**	975,410

[1]An Emerging Market security was transferred to Level 3 from Level 2 during 2019 due to a trade suspension by its listing exchange.

j) Hedge funds and private investment interests

The Master Trust invests in certain hedge funds and private investment interests which are comprised of externally managed funds with underlying investments in equities, debt, real estate assets and commodities. Because these investment interests are not readily tradable, their estimated values are subject to uncertainty and therefore may differ from the value that would have been used had a ready market for such interests existed. Sensitivity analysis demonstrates that a 10% absolute change in the fair value of investments in hedge funds and private investment interests would result in a change to the total fair value of these investments of the Master Trust of $188,965 (2018 – $184,502).

k) Uncalled commitments

As at June 30, 2019, approximately 18.5% (2018 – 15.8%) of the Master Trust's investment portfolio is invested in private investment interests managed by third party managers. These private investment interests typically take the form of limited partnerships managed by a General Partner. The legal terms and conditions of these private investment interests, which cover various areas of private equity investments, private credit investments and real asset investments (e.g., real estate and infrastructure), require that investors initially make an unfunded commitment and then remit funds over time (cumulatively up to a maximum of the total committed amount) in response to a series of capital calls issued to the investors by the manager. As at June 30, 2019, the Master Trust had uncalled commitments of approximately $772,003 (2018 – $814,993). The capital committed is called by the manager over a pre-determined investment period, which varies by fund but is generally about three to five years from the date the fund closes. In practice, for a variety of reasons, the total amount committed to a fund is very rarely all called.

4. Employer contributions

The University has made $119,734 (2018 – $116,082) in current service cost contributions and $72,360 (2018 – $78,660) in additional special payments. The special payments were made to fund the unfunded liability, since the actuarial funding valuation as at July 1, 2017 disclosed the present value of pension obligations was in excess of the actuarial value of assets.

5. Refunds and transfers

Refunds and transfers consist of the following:

	2019	2018
Refunds of contributions and other benefit payments:		
Upon termination	**14,309**	12,414
Upon death	**6,264**	6,385
	20,573	18,799
Transfers to other plans upon termination	**24,839**	22,865
	45,412	41,664

6. Fees and expenses

Fees and expenses consist of the following:

	2019	2018
Investment management fees:		
External managers[1,4]	**44,235**	39,748
UTAM[1,2]	**4,208**	3,868
Pension records administration	**1,034**	948
Administration cost – University of Toronto[2]	**732**	695
Actuarial and related fees	**536**	459
Trustee and custodial fees[1]	**282**	187
Transaction fees[1,3]	**128**	259
External audit fees	**56**	55
Other fees	**307**	269
	51,518	46,488

[1] Reflect expenses that are directly charged to the Master Trust and are allocated back to the Plan.
[2] Represent related party transactions.
[3] Transaction fees represent the cost of purchasing and selling investments.
[4] External managers fees exclude performance-based management fees, which are netted against the net realized and unrealized gains from the investments, but include external service provider fees.

7. Pension obligations

Pension obligations are determined by applying best estimate assumptions agreed to by the University and the projected benefits method pro-rated on service. The pension obligations were determined by Aon, a firm of actuaries, using an actuarial funding valuation performed as at July 1, 2018, which was extrapolated to June 30, 2019.

Significant assumptions used in the actuarial valuation are as follows:

	2019	2018
	%	%
Interest rate	**5.55**	5.55
Consumer Price Index	**2.00**	2.00
Salary escalation rate	**4.00**	4.00

8. Capital management

The funding surpluses or deficits determined periodically in funding valuations prepared by an independent actuary are defined as the Plan's capital. The actuary's funding valuation is used to measure the long-term health of the Plan. A funding valuation is required to be filed with the pension regulator at least every three years. The most recently filed valuation for the Plan was as at July 1, 2017, which disclosed unfunded actuarial liabilities of $362,427 on a going concern basis, and a deficit of $864,550 on a solvency basis. The next required actuarial funding valuation to be filed with the regulator will be no later than as of July 1, 2020.

The objective of managing the Plan's capital is to ensure the Plan is funded to fully pay the benefits over the long-term.

The University negotiates with the various employee groups to change member contribution levels to meet the ongoing funding of the Plan and makes special contributions to eliminate any deficits, all subject to meeting regulatory requirements. Contributions to the Plan have complied with all regulatory funding requirements during the reporting periods. No required contributions were past due as at June 30, 2019. More details on member and employer contributions can be found in the statement of changes in net assets available for benefits and in Note 4.

In addition, the SIPP provides guidance with respect to the investment of the Plan's assets in order to assist with the management of any funding surpluses or deficits. This guidance includes return objectives, risk tolerance, asset allocation, benchmarks for the evaluation of performance, and other elements required by regulation. An amended SIPP was approved by the administrator on May 22, 2019, with the more significant change related to incorporating new regulatory funding provision for adverse deviations. A further amendment of the SIPP was approved on September 18, 2019, with the more significant change related to replacing five separate equity categories with one global equity category.

The Master Trust invests across various asset classes and different geographical regions primarily through a number of segregated and pooled investments including third party managers. The Plan's investments through the Master Trust expose it to a variety of risks which are discussed in Notes 3(d) through 3(h) and 3(j). UTAM's manager selection and monitoring processes include a review of each third party pooled fund's risk management guidelines and processes. These reviews are generally based on discussions with the fund's manager and material provided by the manager. Reviews occur prior to making an investment and on an on-going basis thereafter to ensure a good understanding of each pooled fund's investment characteristics.

The Master Trust's policy asset mix is approved by the University's Pension Committee as per the SIPP. The performance of the Master Trust is prepared by UTAM and is reviewed periodically by the Plan's administrator. This review includes an assessment of investment returns, comparison of returns to benchmarks contained within the SIPP, and other risk analyses required or requested by the Pension Committee and the University.

The SIPP permits the following broad categories of assets: Equity, Fixed Income and Other. Performance is measured against a reference portfolio benchmark. This reference portfolio benchmark return is made up of the weighted average of each category's benchmark return using the target allocation of the SIPP to weight the various categories. The reference portfolio represents a shadow portfolio which is believed to be appropriate to the Master Trust's long-term horizon and risk profile. The overall target real return objective of the Master Trust is 4.0% (net of fees) over 10-year periods. The Master Trust's current asset mix targets and ranges, along with the benchmark return indices for each asset category, are as follows:

Asset Categories	Reference Portfolio Benchmark Index	Asset Category Allocation Minimum %	Target %	Maximum %
Equity				
Global	MSCI All Country World Total Return Index (Net)	50.0	60.0	70.0
Fixed Income				
Credit	FTSE TMX Canada All Corporate Bond Total Return Index	10.0	20.0	30.0
Rates	FTSE TMX Canada All Government Bond Total Return Index	10.0	20.0	30.0
Total		**25.0**	**40.0**	**50.0**
Other		0.0	0.0	15.0
			100.0	
Unhedged Currency Exposure		25.0	32.6	40.0

The Master Trust's investments fell within the asset mix category ranges as at June 30, 2019.

9. Jointly Sponsored Pension Plan for Ontario's University Sector

The university administrations, faculty associations, unions and non-represented staff at the University of Toronto, University of Guelph and Queen's University have been working to develop a new jointly sponsored pension plan ("JSPP"), effective January 1, 2020, that would cover employees and retired employees in the existing plans at all three universities, with contributions and accrual of benefits to be effective from a future date. Before this can occur, a highly regulated approval process must take place, which includes a consent process for members and other persons entitled to benefits under the existing plans, and the necessary regulatory approvals. The consent process was completed in June 2019 with the required consent threshold for each of the existing plans being surpassed, enabling the conversion to the JSPP to proceed. Only once the remaining necessary regulatory approvals are obtained will the assets and liabilities of the Plan be transferred to the new JSPP as at the effective date of accrual of benefits under the new plan (anticipated to be July 1, 2021).