Actuaries’ Opinion to the Directors of the Ontario Pension Board

Aon Hewitt was retained by the Ontario Pension Board (“OPB”) to prepare the following actuarial valuations of the Public Service Pension Plan (“PSPP”):

- An actuarial valuation prepared on a funding basis as at December 31, 2016, as described in Note 6 of these financial statements, prepared in accordance with the *Public Service Pension Act* and applicable pension legislation.
- The actuarial valuation prepared on a funding basis as at December 31, 2016 was then rolled forward to December 31, 2017 to determine the pension obligations as at December 31, 2017 for financial statement purposes.

The actuarial valuation of the PSPP prepared on a funding basis as at December 31, 2016 was based on membership data provided by OPB as at December 31, 2016.

We have prepared a valuation of the liabilities as of December 31, 2016 on the basis of the accounting methodology required by the Chartered Professional Accountants of Canada Handbook, Section 4600, as disclosed in Note 6, and extrapolated the liabilities to December 31, 2017. The valuation as at December 31, 2017 was based on assumptions that reflect OPB’s best estimates of future events such as future rates of inflation, future retirement rates and future rates of return on the pension fund. The amounts are set out in the statement of changes in pension obligations.

We hereby certify that, in our opinion:

- The data provided to us by OPB as of December 31, 2016 are sufficient and reliable;
- The actuarial assumptions used are appropriate for the purposes of each valuation; emerging experience differing from the assumptions will result in gains or losses which will be revealed in future valuations; and
- The methods used are appropriate for purposes of each valuation and are consistent with the applicable regulatory requirements.

Our valuations have been prepared, and our opinions given, in accordance with accepted actuarial practice.

AON HEWITT

Allan H. Shapira
Fellow of the Canadian Institute of Actuaries

Andrew Hamilton
Fellow of the Canadian Institute of Actuaries

March 2, 2018

Management's Responsibility for Financial Reporting

The financial statements of the Ontario Pension Board ("OPB") have been prepared by management, which is responsible for the integrity and fairness of the data presented. The accounting policies followed in the preparation of these financial statements are in accordance with Canadian accounting standards for pension plans. Of necessity, many amounts in the financial statements must be based on the best estimates and judgment of management with appropriate consideration as to materiality. Financial information presented throughout this annual report is consistent with the financial statements.

Systems of internal control and supporting procedures are maintained to provide assurance that transactions are authorized, assets are safeguarded against unauthorized use or disposition, and proper records are maintained. The system includes careful hiring and training of staff, the establishment of an organizational structure that provides for a well-defined division of responsibilities and the communication of policies and guidelines of business conduct throughout OPB.

The Board of Directors (the "Board") is ultimately responsible for the financial statements of OPB. OPB's Audit Committee assists in this responsibility by reviewing the financial statements in detail with management and the external auditors before such statements are recommended to the Board for approval. The Audit Committee meets regularly with management and the external auditors to review the scope and timing of audits, to review their findings and suggestions for improvements in internal control, and to satisfy themselves that their responsibilities and those of management have been properly discharged.

Mark J. Fuller
President & CEO

Armand de Kemp
Vice President, Finance

March 2, 2018

Independent Auditors' Report to the Directors of the Ontario Pension Board

We have audited the accompanying financial statements of the Ontario Pension Board, which comprise the statement of financial position as at December 31, 2017, and the statements of changes in net assets available for benefits and changes in pension obligations for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these 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.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.

An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of the Ontario Pension Board as at December 31, 2017, and the changes in its net assets available for benefits and changes in its pension obligations for the year then ended in accordance with Canadian accounting standards for pension plans.

Ernst & Young LLP

Chartered Professional Accountants
Licensed Public Accountants

Toronto, Canada
March 2, 2018

Statement of Financial Position

As at December 31 (in thousands of dollars)	2017	2016
Assets		
Investments (Note 4)	$ 26,398,104	$ 24,309,550
Investment-related assets (Note 4)	80,629	84,164
Contributions receivable		
Members	23,378	23,581
Employers	57,124	51,810
Capital assets (Note 5)	1,111	1,564
Total assets	26,560,346	24,470,669
Liabilities		
Investment-related liabilities (Note 4)	29,924	44,661
Accounts payable and accrued charges	47,775	43,489
Contributions payable	763	1,434
Total liabilities	78,462	89,584
Net assets available for benefits	26,481,884	24,381,085
Pension obligations (Note 6)	27,219,906	25,176,603
Deficit (Note 7)	$ (738,022)	$ (795,518)

See accompanying notes

On behalf of the Board:

Geri Markvoort
Chair

Lynne Clark
Chair, Audit Committee

Statement of Changes in Net Assets Available for Benefits

For the year ended December 31 (in thousands of dollars)	2017	2016
Increase in net assets		
Net investment income (Note 8)	**$ 2,530,601**	$ 1,750,984
Contributions (Note 9)		
Members	**348,145**	339,393
Employers and sponsor	**456,008**	426,013
Transfer of service from other plans	**137,509**	85,441
Increase in net assets	**3,472,263**	2,601,831
Decrease in net assets		
Retirement pension payments	**1,175,117**	1,098,805
Termination and other benefits	**147,889**	145,810
Operating expenses (Note 10)	**48,458**	51,326
Decrease in net assets	**1,371,464**	1,295,941
Net increase in net assets for the year	**2,100,799**	1,305,890
Net assets, at beginning of year	**24,381,085**	23,075,195
Net assets, at end of year	**$ 26,481,884**	$ 24,381,085

See accompanying notes

Statement of Changes in Pension Obligations

For the year ended December 31 (in thousands of dollars)	**2017**	2016
Pension obligations, at beginning of year	**$ 25,176,603**	$ 23,509,215
Increase in pension obligations		
Interest on pension obligations	**1,421,852**	1,384,322
Benefits accrued		
Service accrual	**679,342**	630,137
Transfer of service from other plans	**137,509**	85,441
Past service buybacks	**42,491**	42,402
Changes in actuarial assumptions (Note 6)	**778,079**	516,624
Experience losses	**307,036**	253,077
Total increase	**3,366,309**	2,912,003
Decrease in pension obligations		
Benefits paid	**1,323,006**	1,244,615
Total decrease	**1,323,006**	1,244,615
Net increase in pension obligations	**2,043,303**	1,667,388
Pension obligations, at end of year	**$ 27,219,906**	$ 25,176,603

See accompanying notes

Notes to the Financial Statements

Note 1: *Public Service Pension Act*

Effective January 1, 1990, the Province of Ontario (the "Province") enacted the *Public Service Pension Act* ("*PSPAct*"), 1990 to continue the pension plan for the employees of the Province and certain of its agencies. The terms of the Public Service Pension Plan ("PSPP" or the "Plan") are stated in Schedule 1 to the *PSPAct*. Ontario Pension Board ("OPB") is the administrator of the PSPP.

Note 2: Description of PSPP

The following is a brief description of the PSPP. For more complete information, reference should be made to the *PSPAct*.

a) General

The PSPP is a contributory defined benefit pension plan. Membership is mandatory for persons or classes of persons who satisfy the eligibility requirements provided in the *PSPAct*. Persons who are entitled, but not required, to join the Plan, including Deputy Ministers and contract employees, may elect to participate. Under the PSPP, both the members and the employers make contributions. The PSPP is registered with the Financial Services Commission of Ontario and the Canada Revenue Agency (Registration Number 0208777) as a registered pension plan not subject to income taxes.

In 2015, the *Investment Management Corporation of Ontario Act* was proclaimed by the Province, creating the Investment Management Corporation of Ontario ("IMCO"), a new investment management entity that will provide the day-to-day investment management and advisory services to participating organizations in Ontario's broader public sector with the ownership of the investment assets remaining with the participants. OPB and Workplace Safety and Insurance Board are IMCO's founding members and IMCO became fully operational in 2017, at which time IMCO assumed responsibility for OPB's day-to-day investment management functions. OPB retains responsibility for setting the Strategic Asset Allocation ("SAA") and for oversight of IMCO.

b) Contributions

The PSPP is integrated with the Canada Pension Plan ("CPP"). Contribution rates are 6.4% of the salary on which contributions are made up to the Year's Maximum Pensionable Earnings ("YMPE") and 9.5% of the salary above the YMPE. Employers contribute matching amounts.

Ontario Provincial Police ("OPP") officers are required to contribute an additional 2% of salary, which is matched by the employer. These additional contributions are used to fund an unreduced early retirement provision available to OPP officers meeting a minimum 50 years of age and 30 years of service. The contribution rates for OPP officers, inclusive of the additional 2% of salary, are 9.2% of the salary on which contributions are made up to the YMPE, and 12.3% of the salary above the YMPE. The contribution rates for OPP civilians are 6.775% of the salary on which contributions are made up to the YMPE, and 9.875% of the salary above the YMPE.

Contributions from members and employers are remitted to OPB. The portion of these contributions that exceeds *Income Tax Act* (Canada) limits is transferred to the Province's Public Service Supplementary Benefits Account ("PSSBA").

c) Pensions

A pension is payable at age 65 based on the number of years of credit in the PSPP multiplied by 2% of the average salary during the best consecutive 60-month period, less an offset for integration with the CPP at age 65. An unreduced pension can be received before age 65 if the member's age and years of credit total 90 ("Factor 90") or when the member reaches age 60 and has 20 or more years of credit.

OPP officers are eligible for a pension payable based on the average salary during the best 36-month period. OPP civilians are eligible for a pension payable based on the average salary during the best 48-month period. In addition, OPP officers are eligible for an unreduced pension after attaining age 50 with 30 years of credit.

d) Death Benefits

Upon the death of a member or pensioner, benefits may be payable to a surviving eligible spouse, eligible children, a designated beneficiary or the member's or retired member's estate.

e) Disability Pensions

Based on meeting all eligibility criteria, a disability pension may be available to members with a minimum of 10 years of credit in the PSPP. The amount of the disability pension is dependent on years of credit and average salary.

f) Termination Payments

Members terminating employment before age 55 who are eligible for a deferred pension may be entitled to transfer the commuted value of the pension to a locked-in registered retirement savings arrangement, to transfer to another pension plan, or to purchase a life annuity.

g) Escalation of Benefits

Current pensions and deferred pension benefits are increased for inflation based on the Consumer Price Index to a maximum of 8% in any one year. Any inflation above 8% in any one year is applied to increase the pension in subsequent years when the adjustment is less than 8%.

Note 3: Summary of Significant Accounting Policies

Basis of Presentation

The financial statements are prepared in accordance with Canadian accounting standards for pension plans and present the position of the PSPP as a separate entity independent of the employers and Plan members.

In accordance with Section 4600, Pension Plans, of the Chartered Professional Accountants of Canada ("CPA Canada") Handbook, 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.

All of the entities that OPB has an ownership interest in, regardless of whether OPB can control or exercise significant influence, are considered to be investment assets and are presented on a non-consolidated basis.

a) Use of Estimates

The preparation of financial statements in conformity with Canadian accounting standards for pension plans requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts on the statements of changes in net assets available for benefits and changes in pension obligations during the reporting period. Actual results could differ from those estimates. The most significant estimates affecting the financial statements relate to the determination of the pension obligations and the fair values of the Plan's Level 3 investments.

b) Investments and Related Liabilities

Investments are stated at fair value, including accrued income. Fair value is the amount of consideration that would be agreed upon in an arm's length transaction between knowledgeable, willing parties who are under no compulsion to act.

Fair value of financial instruments is determined as follows:

i. Short-term investments are recorded at cost, which, together with accrued interest or discount earned, approximates fair value.

ii. Bonds and OPB Finance Trust debentures are valued at quoted market prices, where available. For those debt instruments for which quoted market prices are not available, estimated values are calculated using discounted cash flows based on current market yields and comparable securities, as appropriate.

iii. Equities are valued at quoted market prices at closing where available. Where quoted market prices are not available, other industry pricing conventions that are used by market participants, such as ask price, are used to estimate the values.

iv. Pooled fund values for publicly traded securities are supplied by the fund managers based upon fair value quotations.

v. Derivative financial instruments such as foreign exchange and bond forwards, equity and fixed income futures contracts, credit default swaps and options are recorded at fair value using year-end market prices where available. For those instruments for which market prices are not available, estimated fair values are determined using appropriate valuation models based on industry-recognized methodologies.

vi. Real estate, consisting primarily of income-producing properties, and participating mortgages are valued at estimated fair value determined by independent appraisals. The cost of properties acquired during the year may be used as an approximation of their fair value where there has been no significant change in fair value. Non-operating real estate investments such as vacant land and real estate assets under construction are carried at their latest independently appraised values, plus any additional development costs.

vii. Private market and alternative investments, which include infrastructure, private equity, private debt and real estate funds and limited partnerships, are valued using the most recently available financial information provided by the fund managers and general partners and adjusted for any transactions during the interim period up to the reporting date of these financial statements.

viii. Mortgages and private debt are valued using discounted future cash flows based on year-end market yields and comparable securities, as appropriate.

c) Revenue Recognition

Investment transactions are recorded on trade date. Interest is recognized on an accrual basis when earned. Dividend income is recognized on the ex-dividend date. Distributions from investments in pooled funds and limited partnerships are recognized when declared by the fund managers and general partners. Since real estate is valued on a fair value basis, depreciation and amortization are not recorded. Interest on participating mortgages is accrued at the rate stated in the instrument, and any participation income is accrued based on an estimate of OPB's participation in the increased value of the properties. Transaction costs are expensed as incurred.

Net investment income also includes fair value changes. Fair value changes represent both realized and unrealized gains and losses. Realized gains or losses are recognized when OPB has transferred to the purchaser the significant risks and rewards of ownership of the investment, the purchaser has made a substantial commitment demonstrating its intent to honour its obligation, and the collection of any additional consideration is reasonably assured.

d) 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 benefit cost method pro-rated on service and management's best estimate of various economic and non-economic assumptions.

e) Contributions

Contributions due to the PSPP at year-end are recorded as receivable. Transfers into the Plan and purchases of prior service are recorded after cash is received and the transfer or purchase transaction is completed.

f) Capital Assets

Capital assets are carried at cost less accumulated depreciation. Depreciation is provided on a straight-line basis over the estimated useful lives of the capital assets as follows:

Computer equipment	3 years
Leasehold improvements	Remaining term of lease
Furniture and fixtures	10 years

g) Foreign Currency Translation

Foreign currency transactions are translated into Canadian dollars at the rates of exchange prevailing at the dates of the transactions. The fair values of investments and cash balances denominated in foreign currencies are translated at the rates in effect at year-end.

Note 4: Investments

Investments before allocating the effect of derivative contracts consist of the following:

As at December 31 (in thousands of dollars)	2017	2016
Cash and short-term investments		
Canada	$ 694,554	$ 1,054,549
Foreign	185,345	121,938
	879,899	1,176,487
Bonds and private debt		
Canada	5,739,300	5,738,077
Foreign	538,915	516,459
	6,278,215	6,254,536
Equities		
Canada	2,817,111	2,262,940
Foreign	8,879,873	8,053,841
	11,696,984	10,316,781
Real estate (net of financing, Note 4(h))	4,653,996	4,375,431
Infrastructure	1,434,710	1,238,661
Private equity	1,454,300	947,654
Total investments	26,398,104	24,309,550
Investment-related assets		
Pending trades	13,524	8,547
Derivatives receivable (Note 4(d))	67,105	75,617
Total investment-related assets	80,629	84,164
Investment-related liabilities		
Pending trades	13,988	9,568
Derivatives payable (Note 4(d))	15,936	35,093
Total investment-related liabilities	29,924	44,661
Total net investments	$ 26,448,809	$ 24,349,053

a) Investment Asset Mix

The Plan's actual and target investment asset mix is summarized below as at December 31:

	2017		2016		
	Asset Allocation %		Asset Allocation %		
	Total Plan	**Target**	Total Plan	Target	SIP&P Range
Asset categories[1]					
Fixed income	**26.6%**	**30.0%**	25.4%	31.0%	10%–45%
Equity	**50.3%**	**45.0%**	51.5%	45.5%	13%–70%
Real assets	**23.1%**	**25.0%**	23.1%	23.5%	20%–47%
Total investments	**100.0%**	**100.0%**	100.0%	100.0%	

1 The asset categories in this Asset Mix table are adjusted to reflect the market exposures after allocating derivatives positions to the asset classes to which they relate, offset by an adjustment to cash and equivalents, included in the fixed income category.

The Plan adopted an updated SAA on June 1, 2017, which is summarized in the Statement of Investment Policies and Procedures ("SIP&P") amended and approved on December 13, 2017. There were no significant changes as a result of that amendment. The transition plan is being phased in over a multi-year period. During this period, the asset mix of the Plan's investments may not fall within the SIP&P ranges. However, the ultimate goal of the Plan is to achieve the specified SIP&P ranges of each asset category by the end of the phase-in period.

For purposes of assessing the investment asset mix of the Plan for SIP&P purposes, the investment asset categories reflect the impact of derivative contracts, and investment-related receivables and liabilities. As at December 31, 2017, the asset mix of the Plan's investments was within the acceptable ranges as specified in the SIP&P effective as at the financial statements date.

b) Financial Instruments Risk

The Plan is subject to financial risks as a result of its investing activities that could impact its cash flows, income, and assets available to meet benefit obligations. These risks include market risk (including interest rate risk, foreign currency risk and other price risk), credit risk and liquidity risk. OPB manages these risks in accordance with its SIP&P, which prescribes the asset mix policy, diversification requirements, performance expectations, limits on individual investments, valuation standards, and guidelines for the management of the Plan.

Market Risk – Market risk is the risk that the fair value or future cash flows of an investment will fluctuate because of changes in market factors. Market risk comprises the following:

(i) Interest Rate Risk – Interest rate risk refers to the effect on the fair value of the Plan's assets and liabilities due to fluctuations in market interest rates. The value of the Plan's investments is affected by changes in nominal and real interest rates. Pension liabilities are exposed to fluctuations in long-term interest rates and inflation. The Plan has established an asset mix policy that balances interest-rate-sensitive investments with other investments. OPB's fixed income investments have the most significant exposure to interest rate risk. Duration and weighting for the fixed income portfolio are actively managed. Modified duration is a measure of the sensitivity of the price of a fixed income instrument to a change in interest rates. Given the Plan's modified duration of 9 years at December 31, 2017 (2016 – 8 years), a parallel shift in the yield curve of +/-1% would result in an approximate impact of $620 million (2016 – $503 million) on net investments with all other variables held constant. In practice, actual results may differ materially from this sensitivity analysis. See the schedule of fixed income maturities for further information.

(ii) Foreign Currency Risk – Foreign currency exposure arises from the Plan holding foreign currency denominated investments and entering into contracts that provide exposure to currencies other than the Canadian dollar. Fluctuations in the value of the Canadian dollar against these foreign currencies can have an impact on the fair value of investments. In addition to passively hedging a portion of its foreign currency exposure, the Plan also has an active currency hedging strategy in place through the use of foreign exchange forward contracts, which are accounted for at fair value. The total currency exposure, the impact of foreign exchange forward contracts and the net currency exposure are as follows:

As at December 31, 2017 (in thousands of dollars)	Gross Exposure	Foreign Exchange Contracts Receivable	Foreign Exchange Contracts Payable	Net Exposure
U.S. Dollar	$ 5,413,600	$ 43,141	$ (2,877,822)	$ 2,578,919
Hong Kong Dollar	775,598	67,839	(87,399)	756,038
Chinese Yuan Renminbi	703,603	4,451	(1,399)	706,655
Indian Rupee	518,317	–	(37)	518,280
South Korean Won	446,252	139	–	446,391
Japanese Yen	167,983	249,130	(61,925)	355,188
New Taiwan Dollar	236,635	–	–	236,635
Other	2,627,698	216,110	(1,917,474)	926,334
Total foreign	10,889,686	580,810	(4,946,056)	6,524,440
Canadian Dollar	15,507,325	4,979,387	(562,343)	19,924,369
	$ 26,397,011	$ 5,560,197	$ (5,508,399)	$ 26,448,809

As at December 31, 2016 (in thousands of dollars)	Gross Exposure	Foreign Exchange Contracts Receivable	Foreign Exchange Contracts Payable	Net Exposure
U.S. Dollar	$ 5,164,440	$ 773,927	$ (2,771,247)	$ 3,167,120
Hong Kong Dollar	582,987	86,970	(104,600)	565,357
Euro	684,302	368,450	(1,457,110)	(404,358)
Indian Rupee	401,745	2,355	(58)	404,042
South Korean Won	323,312	107	(242)	323,177
Japanese Yen	197,375	226,462	(115,492)	308,345
Chinese Yuan Renminbi	303,015	–	–	303,015
Other	2,230,402	407,051	(1,079,126)	1,558,327
Total foreign	9,887,578	1,865,322	(5,527,875)	6,225,025
Canadian Dollar	14,428,841	5,424,639	(1,729,452)	18,124,028
	$ 24,316,419	$ 7,289,961	$ (7,257,327)	$ 24,349,053

The impact of a 5% absolute change in foreign exchange rates compared to the Canadian dollar, holding all other variables constant, is 5% of the net exposure of the impacted currency, as follows:

		Change in Net Assets Available for Benefits as of	
	Change in Exchange Rates	**December 31, 2017 (in thousands of dollars)**	December 31, 2016 (in thousands of dollars)
U.S. Dollar	+/- 5%	**+/- $ 128,946**	+/- $ 158,356
Hong Kong Dollar	+/- 5%	**+/- 37,802**	+/- 28,268
Chinese Yuan Renminbi	+/- 5%	**+/- 35,333**	+/- 15,151
Indian Rupee	+/- 5%	**+/- 25,914**	+/- 20,202
South Korean Won	+/- 5%	**+/- 22,320**	+/- 16,159
Japanese Yen	+/- 5%	**+/- 17,759**	+/- 15,417
New Taiwan Dollar	+/- 5%	**+/- 11,832**	+/- 11,608
Other	+/- 5%	**+/- 46,317**	+/- 46,091
Total		**+/- $ 326,223**	+/- $ 311,252

(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 or interest rate risk, whether those changes are caused by factors specific to the individual investment or factors affecting all securities traded in the market. An absolute change in the fair value of OPB's investments that are exposed to other price risk will have a direct proportional impact on the fair value of the investments. OPB's investments in equities have the most significant exposure to other price risk. The impact of a 10% absolute change in the price of an investment, holding all other variables constant, is 10% of the net exposure of the impacted investment, as follows:

			Change in Net Assets as of	
Equities	Stock Market Benchmark	Change in Price Index	**December 31, 2017 (in millions of dollars)**	December 31, 2016 (in millions of dollars)
Canadian	S&P/TSX Composite Index	+/- 10%	**+/- $ 281**	+/- $ 285
Foreign	MSCI World (C$)	+/- 10%	**+/- 480**	+/- 499
Emerging	MSCI Emerging Equity Index (C$)	+/- 10%	**+/- 425**	+/- 376
			+/- $ 1,186	+/- $ 1,160

The sensitivity analysis is performed using the investment asset mix weights summarized in Note 4(a).

Credit Risk – The Plan is exposed to the risk of loss through over-the-counter ("OTC") derivative transactions, arising from a default or insolvency of a counterparty. This risk is significantly mitigated by the fact that for any counterparties where the Plan transacts in OTC derivatives of greater than one year in duration, an International Swaps and Derivatives Association ("ISDA") master agreement must be in place accompanied by a Credit Support Annex ("CSA"), which forms part of the ISDA. Under these agreements, collateral is exchanged with counterparties on a daily basis to manage the credit risk arising from any existing OTC derivative contracts with that counterparty. In addition, under the ISDA master agreement for OTC derivatives, the Plan has the right to settle obligations on a net basis in the event of default, insolvency, bankruptcy or other early termination event.

The Plan assumes credit risk exposure through bonds and private debt investments. As at December 31, 2017, the Plan's greatest credit exposure to a securities issuer is with the Government of Canada in the form of interest-bearing securities for $1.6 billion (2016 – with the Government of Canada for $1.4 billion). The credit ratings of the Plan's fixed income and bond investments are as follows:

Credit Rating as of December 31, 2017 (in thousands of dollars)

AAA	**AA**	**A**	**BBB**	**BB**	**B**	**CCC**	**Not rated**	**Total**
$1,823,697	**$1,925,795**	**$706,133**	**$547,703**	**$130,647**	**$71,615**	**$14,708**	**$1,057,917**	**$6,278,215**

Credit Rating as of December 31, 2016 (in thousands of dollars)

AAA	AA	A	BBB	BB	B	CCC	Not rated	Total
$1,812,196	$1,852,846	$766,512	$639,644	$198,928	$94,038	$4,135	$886,237	$6,254,536

The "not rated" classification in the table above is comprised of fixed income pooled fund and private debt investments as well as any bonds with no rating.

Liquidity Risk – Liquidity risk is the risk that the Plan has insufficient cash flows to meet its pension obligations and operating expenses as they become due. The typical cash requirements of the Plan are in the form of monthly retirement benefit payments as well as periodic termination and other benefit payments and expenses. The Plan also has financial liabilities in the form of derivatives that generally mature within one year. The cash requirements and the fulfillment of any financial liabilities are typically met through cash sources such as investment income, proceeds from the sales of investments, and member and employer contributions. The majority of the Plan's assets are also invested in securities that are traded in active markets and can be divested on a timely basis. The largest sources of cash during the year were the member, employer and sponsor contributions. The maturities of the Plan's fixed income and bond investments are as follows:

Fixed Income Maturities as of December 31, 2017 (in thousands of dollars)

< 1 year	≥ 1–5 years	≥ 5–10 years	≥ 10 years	Funds	Total
$ 90,552	**$ 736,533**	**$ 1,765,760**	**$ 3,209,936**	**$ 475,434**	**$ 6,278,215**

Fixed Income Maturities as of December 31, 2016 (in thousands of dollars)

< 1 year	≥ 1–5 years	≥ 5–10 years	≥ 10 years	Funds	Total
$ 214,830	$ 1,731,323	$ 1,295,498	$ 2,558,146	$ 454,739	$ 6,254,536

c) Cash and Short-Term Investments

As at December 31 (in thousands of dollars)	**2017**	2016
Canada		
Cash	**$ 49,413**	$ 99,183
Short-term notes and treasury funds	**616,516**	942,205
Term deposits	**27,691**	12,719
Accrued interest	**934**	442
	$ 694,554	$ 1,054,549
Foreign		
Cash	**$ 142,518**	$ 85,308
Short-term notes and treasury funds	**42,825**	36,628
Accrued interest	**2**	2
	$ 185,345	$ 121,938

d) Derivative Contracts

Derivative contracts are financial contracts whose values change as a result of changes in the values of an underlying asset, index, yield curve or foreign exchange rate.

OPB uses derivatives, either directly with counterparties in the OTC market or on regulated exchanges, to facilitate asset allocation, alter the overall risk-return profile of the Plan, and manage or hedge risk. The Plan utilizes the following types of derivative contracts:

Futures Contracts

Futures contracts are standardized agreements that can be purchased or sold on a futures exchange market at a predetermined future date and price specified at origination of the contract, in accordance with terms specified by the regulated futures exchange, and are subject to daily cash margining. These types of derivatives are used to efficiently modify exposures without actually purchasing or selling the underlying assets.

Forward Contracts

Foreign exchange forward contracts are negotiated agreements between two parties to exchange a notional amount of one currency for another at an exchange rate specified at origination of the contract, with settlement at a specified future date. Foreign exchange forward contracts are used by OPB to modify currency exposure for both passive and active hedging.

A bond forward is a contractual obligation to either buy or sell an interest-rate-sensitive financial instrument on a predetermined future date at a specified price. Bond forward contracts are used to modify OPB's exposure to interest rate risk, such as hedging a potential new debenture issue.

Credit Derivatives

Credit default swaps are a type of credit derivative used to transfer credit risk of an underlying financial instrument or group of securities from one party to another. In a credit default swap, the buyer of the swap pays a regular premium to the seller in return for protection against any loss of the notional amount of the underlying securities if a credit event, such as a default, occurs.

Options

Options are contractual agreements under which the buyer has the right, but not the obligation, either to buy (call option) or sell (put option) an underlying asset at a predetermined price on or before a specified future date.

The following schedule summarizes the notional amounts and fair values of the Plan's derivative contracts held on the indicated dates:

As at December 31, 2017 (in thousands of dollars)	Notional Value	Fair Value Assets	Liabilities
Currency derivatives			
Forwards	**$ 5,566,963**	**$ 67,105**	**$ (15,307)**
Equity derivatives			
Futures	**388,001**	**–**	**(78)**
Fixed income derivatives			
Futures	**25,039**	**–**	**(42)**
Credit derivatives			
Credit default swaps	**4,481**	**–**	**(509)**
Value of derivative contracts	**$ 5,984,484**	**$ 67,105**	**$ (15,936)**

As at December 31, 2016 (in thousands of dollars)	Notional Value	Fair Value Assets	Liabilities
Currency derivatives			
Forwards	$ 7,301,648	$ 67,625	$ (34,991)
Equity derivatives			
Futures	1,278,932	7,992	–
Credit derivatives			
Credit default swaps	1,100	–	(102)
Value of derivative contracts	$ 8,581,680	$ 75,617	$ (35,093)

The credit default swaps will mature in 2022 and all the other derivative contracts have remaining maturities of less than one year as at December 31, 2017.

e) Securities Lending

At year-end, $74 million (2016 – $865 million) of OPB's securities were on loan to third parties. Pursuant to a securities lending agreement, OPB's custodian arranges the loans and OPB earns a fee. The custodian follows strict lending criteria and over-collateralizes the loans with securities that have credit ratings equal to or better than the securities loaned. OPB does not employ cash collateral in its securities lending program. Securities under lending arrangements continue to be recognized as OPB's investments as OPB retains the rewards and risks associated with these securities. At year-end, $78 million (2016 – $910 million) of securities were held as collateral, providing a 5.4% (2016 – 5.1%) cushion against the potential credit risk associated with these securities lending activities.

f) Fair Values

Canadian accounting standards for pension plans require disclosure of a three-level hierarchy for fair value measurements based on the transparency of inputs to the valuation of an asset or liability as of 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. Level 2 assets and liabilities include debt securities with quoted prices that are traded less frequently than exchange-traded instruments and derivative contracts whose value is determined using a pricing model with inputs that are observable in the market or can be derived principally from or corroborated by observable market data. 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. This category generally includes investments in underlying real estate properties, private equity investments and securities that have liquidity restrictions.

The following tables present the level within the fair value hierarchy for investments and derivatives, excluding pending trades.

As at December 31, 2017 (in thousands of dollars)	Level 1	Level 2	Level 3	Total Fair Value
Financial assets				
Cash and short-term investments				
Canada	$ 49,413	$ 645,141	$ –	$ 694,554
Foreign	142,517	42,828	–	185,345
Bonds and private debt				
Canada	–	5,394,919	344,381	5,739,300
Foreign	–	433,941	104,974	538,915
Equities				
Canada	2,817,111	–	–	2,817,111
Foreign	8,879,873	–	–	8,879,873
Real estate	–	–	4,653,996	4,653,996
Infrastructure	–	–	1,434,710	1,434,710
Private equity	–	–	1,454,300	1,454,300
Forwards	–	67,105	–	67,105
	$ 11,888,914	$ 6,583,934	$ 7,992,361	$ 26,465,209
Financial liabilities				
Forwards	$ –	$ 15,307	$ –	$ 15,307
Credit default swaps	–	509	–	509
Futures	120	–	–	120
	$ 120	$ 15,816	$ –	$ 15,936

As at December 31, 2016 (in thousands of dollars)	Level 1	Level 2	Level 3	Total Fair Value
Financial assets				
Cash and short-term investments				
Canada	$ 99,183	$ 955,366	$ –	$ 1,054,549
Foreign	85,308	36,630	–	121,938
Bonds and private debt				
Canada	–	5,347,555	390,522	5,738,077
Foreign	–	449,669	66,790	516,459
Equities				
Canada	2,262,940	–	–	2,262,940
Foreign	8,053,841	–	–	8,053,841
Real estate	–	–	4,375,431	4,375,431
Infrastructure	–	–	1,238,661	1,238,661
Private equity	–	–	947,654	947,654
Forwards	–	67,625	–	67,625
Futures	7,992	–	–	7,992
	$ 10,509,264	$ 6,856,845	$ 7,019,058	$ 24,385,167
Financial liabilities				
Forwards	$ –	$ (34,991)	$ –	$ (34,991)
Credit default swaps	–	(102)	–	(102)
	$ –	$ (35,093)	$ –	$ (35,093)

There were no significant transfers between Levels 1, 2 or 3 during the years ended December 31, 2017 and 2016.

The following tables present a reconciliation of all Level 3 assets and liabilities measured at fair value for the years ended December 31, 2017 and 2016.

(in thousands of dollars)	**Fair Value as at January 1, 2017**	**Acquisitions**	**Dispositions**	**Issuance of Debt**	**Fair Value Changes**	**Fair Value as at December 31, 2017**
Financial assets						
Private debt						
Canada	**$ 390,522**	**$ 57,140**	**$ (95,442)**	**$ –**	**$ (7,839)**	**$ 344,381**
Foreign	**66,790**	**41,846**	**(3,584)**	**–**	**(78)**	**104,974**
Real estate	**4,375,431**	**1,325,203**	**(80,676)**	**(750,000)**	**(215,962)**	**4,653,996**
Infrastructure	**1,238,661**	**269,274**	**(73,957)**	**–**	**732**	**1,434,710**
Private equity	**947,654**	**612,082**	**(113,248)**	**–**	**7,812**	**1,454,300**
	$7,019,058	**$2,305,545**	**$ (366,907)**	**$ (750,000)**	**$ (215,335)**	**$7,992,361**

(in thousands of dollars)	Fair Value as at January 1, 2016	Acquisitions	Dispositions	Issuance of Debt	Fair Value Changes	Fair Value as at December 31, 2016
Financial assets						
Private debt						
Canada	$ 363,294	$ 91,410	$ (68,053)	$ –	$ 3,871	$ 390,522
Foreign	27,072	44,069	–	–	(4,351)	66,790
Real estate	4,247,082	362,193	(103,736)	(250,000)	119,892	4,375,431
Infrastructure	1,167,558	133,159	(15,131)	–	(46,925)	1,238,661
Private equity	562,587	406,412	(107,631)	–	86,286	947,654
	$ 6,367,593	$ 1,037,243	$ (294,551)	$ (250,000)	$ 158,773	$ 7,019,058

g) Commitments and Guarantees

As at December 31, 2017, OPB has unfunded commitments for certain investments of $1,891 million (2016 – $2,064 million).

OPB has provided a guarantee for the payment of principal and interest on $2,250 million in debentures that were issued by OPB Finance Trust, a trust established for the benefit of OPB and its related entities. Six series of debentures have been issued as at December 31, 2017:

1. $350 million, Series A, 30-year debentures due 2042, with a 3.89% coupon payable semi-annually.
2. $150 million, Series B, 50-year debentures due 2062, with a 3.87% coupon payable semi-annually.
3. $250 million, Series C, 10-year debentures due 2023, with a 2.90% coupon payable semi-annually.
4. $500 million, Series D, 7-year debentures due 2022, with a 1.88% coupon payable semi-annually.
5. $250 million, Series E, 10-year debentures due 2026, with a 2.95% coupon payable semi-annually.
6. $750 million, Series F, 10-year debentures due 2027, with a 2.98% coupon payable semi-annually.

The proceeds from the issuance of the Series A, B, D, E and F debentures were loaned to a number of OPB real estate subsidiaries. In turn, these real estate companies used the proceeds to repay amounts owed to OPB and/or to acquire real estate investments.

The proceeds from the issuance of the Series C debentures were loaned to a real estate trust established for the benefit of OPB.

OPB's real estate investments are shown net of the OPB Finance Trust debentures and any other financings specifically assumed by these real estate entities.

In addition to the guarantee on the debentures, $16 million of letters of credit are guaranteed by OPB as at December 31, 2017.

h) Real Estate

The following table provides a breakdown of the real estate portfolio by its major components.

As at December 31 (in thousands of dollars)	2017	2016
Assets		
Real estate[1]	$ 2,175,158	$ 2,337,800
Investments[2]	4,814,870	3,576,786
Total assets	6,990,028	5,914,586
Liabilities		
Debentures[3]	2,334,870	1,534,660
Other liabilities, net	1,162	4,495
Total liabilities	2,336,032	1,539,155
Net investment in real estate	$ 4,653,996	$ 4,375,431

1 Real estate investments that are 100% directly owned and held in single-purpose subsidiaries.

2 Investments held through partially owned non-controlling co-ownerships, funds, or similar investment vehicles consist of real estate properties, any related assets and liabilities and participating mortgages. These assets and liabilities are presented on a net basis.

3 The debentures represent securities issued by OPB Finance Trust and are guaranteed by OPB (see Note 4(g)).

Note 5: Capital Assets

As at December 31, 2017 (in thousands of dollars)	Cost	Accumulated Depreciation	Net Book Value
Computer equipment	$ 5,137	$ (4,661)	$ 476
Furniture and fixtures	1,993	(1,780)	213
Leasehold improvements	1,758	(1,336)	422
Total capital assets	$ 8,888	$ (7,777)	$ 1,111

As at December 31, 2016 (in thousands of dollars)	Cost	Accumulated Depreciation	Net Book Value
Computer equipment	$ 4,866	$ (4,341)	$ 525
Furniture and fixtures	2,491	(2,032)	459
Leasehold improvements	1,732	(1,152)	580
Total capital assets	$ 9,089	$ (7,525)	$ 1,564

Note 6: Pension Obligations

An actuarial valuation prepared for funding purposes ("funding valuation") is used as the basis for funding, Plan design decisions and the periodic determination of the Plan's pension obligations. This funding valuation is based on methods required under the *PSPAct* and the *Pension Benefits Act* (Ontario) ("*PBA*"). The *PBA* and the *Income Tax Act* (Canada) require that a funding valuation of the PSPP be completed and filed with the regulatory authorities at least every three years.

The most recent regulatory filing of a funding valuation was as at an effective date of December 31, 2016, which disclosed a funding shortfall of $943 million on a going-concern basis. The funding valuation was prepared by Aon Hewitt. The next required funding valuation to be filed with the regulatory authorities will have an effective date no later than December 31, 2019.

For the purposes of these financial statements, Aon Hewitt used the funding valuation as at December 31, 2016 and rolled it forward in order to determine the Plan's pension obligations as at December 31, 2017. The pension obligations as at December 31, 2017 are $27.2 billion (2016 – $25.2 billion).

Actuarial Assumptions – The actuarial assumptions used in determining the value of the pension obligations reflect management's best estimate of future economic and non-economic events. The primary economic assumptions as at December 31 are:

	2017	2016
Investment return	**5.6%**	5.7%
Inflation	**2.0%**	2.0%
Real rate of return	**3.6%**	3.7%
Salary increases		
2017	**2.0% + promotional scale**	1.5% + promotional scale
2018	**2.0% + promotional scale**	2.0% + promotional scale
2019	**2.0% + promotional scale**	2.5% + promotional scale
2020	**2.25% + promotional scale**	3.0% + promotional scale
2021	**2.5% + promotional scale**	3.0% + promotional scale
2022 and thereafter	**2.75% + promotional scale**	3.0% + promotional scale

The non-economic assumptions include mortality, withdrawal and retirement rates. During 2017, changes in actuarial assumptions related to mortality, the real rate of return and total investment return resulted in an increase of $778 million (2016 – $517 million) in the Plan's pension obligations. The annual expected real rate of return has been lowered based on the long-term investment mix policy, and expected returns and volatility for each of the asset classes. Mortality tables have been updated to reflect improved longevity assumptions.

Note 7: Deficit

In these financial statements, the amount by which net assets available for benefits is less than the pension obligations is represented by the deficit, which as at December 31, 2017 was $738 million (2016 – $796 million).

Note 8: Net Investment Income

For the year ended December 31

(in thousands of dollars)	**Investment Income[1]**	**Fair Value Changes**	**2017 Total**	Investment Income[1]	Fair Value Changes	2016 Total
Cash and short-term investments						
Canada	**$ 8,294**	**$ (184)**	**$ 8,110**	$ 10,681	$ 1,974	$ 12,655
Foreign[2]	**527**	**48,606**	**49,133**	452	241,044	241,496
	8,821	**48,422**	**57,243**	11,133	243,018	254,151
Bonds and private debt						
Canada	**213,610**	**6,990**	**220,600**	234,414	(12,349)	222,065
Foreign	**39,456**	**(21,640)**	**17,816**	40,739	(6,230)	34,509
	253,066	**(14,650)**	**238,416**	275,153	(18,579)	256,574
Equities						
Canada	**63,317**	**186,164**	**249,481**	54,370	480,344	534,714
Foreign	**179,815**	**1,658,018**	**1,837,833**	171,683	173,331	345,014
	243,132	**1,844,182**	**2,087,314**	226,053	653,675	879,728
Real estate	**237,718**	**(228,159)**	**9,559**	208,336	112,441	320,777
Infrastructure	**74,381**	**3,753**	**78,134**	50,308	(62,642)	(12,334)
Private equity	**144,288**	**7,527**	**151,815**	40,880	86,070	126,950
Total investment income	**$ 961,406**	**$1,661,075**	**$2,622,481**	$ 811,863	$1,013,983	$1,825,846
Investment management and related fees (Note 8(b))			**(91,880)**			(74,862)
Net investment income			**$2,530,601**			$1,750,984

1 Investment income includes interest on cash and short-term investments, fixed income and participating mortgages, dividend income on equities, and distributions from pooled funds and limited partnerships.

2 Fair value changes on cash and short-term investments include gains (losses) on foreign exchange contracts.

a) Interest Income

For the year ended December 31 (in thousands of dollars)		2017		2016
Cash and short-term investments				
Canada				
Cash	**$**	**1,303**	$	7,201
Short-term notes and treasury funds		**6,979**		3,441
Term deposits		**12**		39
	$	**8,294**	$	10,681
Foreign				
Cash	**$**	**413**	$	429
Short-term notes and treasury funds		**114**		23
	$	**527**	$	452

Earnings from pooled short-term investment funds are included with short-term notes and treasury funds.

b) Investment Management and Related Fees

For the year ended December 31 (in thousands of dollars)		2017		2016
Portfolio fund management fees	**$**	**61,702**	$	60,363
IMCO management fees		**14,396**		–
Transaction costs		**8,594**		8,303
Custodial fees		**6,758**		5,425
Private market expenses		**430**		771
	$	**91,880**	$	74,862

Transaction costs include commissions and fees on trades. IMCO management fees represent OPB's share of the operating expenses incurred by IMCO which are charged back to its respective clients on a cost-recovery basis. Subsequent to IMCO becoming operational in 2017, the portfolio fund management fees, custodial fees, and private market expenses were paid by IMCO on behalf of OPB, and reimbursed by OPB.

Note 9: Contributions

For the year ended December 31 (in thousands of dollars)	2017	2016
Members		
Current service required	$ 309,752	$ 301,627
Prior service	38,393	37,766
Total contributions from members	348,145	339,393
Employers		
Current service		
Regular contributions	309,598	301,833
PSSBA transfer	(12,863)	(14,634)
For members receiving Long Term Income Protection benefits	12,878	12,791
Prior service	4,098	4,636
	313,711	304,626
Sponsor payments		
Special payments	98,989	98,989
Additional current service	43,308	22,398
	142,297	121,387
Total contributions from employers and sponsor	456,008	426,013
Total contributions	$ 804,153	$ 765,406

The contribution requirements are set out in the *PSPAct* and summarized in Note 2(b).

Members who are receiving benefits on Long Term Income Protection have their contributions to the PSPP paid by their employers.

The Province, as sponsor of the Plan, contributed $99 million (2016 – $99 million) in Special Payments in 2017 towards the funding shortfall identified in the filed funding valuation as at December 31, 2016. In 2017, the Province made $43 million (2016 – $22 million) in additional employer current service contributions.

For 2017 and 2016, the contributions to the Plan were made in accordance with the funding requirements as specified by the most recently filed actuarial funding valuation.

There were no required contributions past due as at December 31, 2017 and 2016.

Note 10: Operating Expenses

For the year ended December 31 (in thousands of dollars)		2017		2016
Staffing	$	25,370	$	29,383
IT and project management		7,786		8,792
Office premises and operations		5,709		5,992
IMCO set-up costs		5,048		2,362
Professional services		2,328		2,789
Depreciation		697		738
Staff development and support		545		337
Communications		436		440
Audit		352		364
Board remuneration		187		129
	$	48,458	$	51,326

IMCO Set-up Costs

On July 27, 2016, IMCO entered into a funding agreement with OPB and WSIB to provide funding for IMCO's initial set-up costs incurred from the date of the funding agreement to December 31, 2017. As at June 30, 2017, the entire outstanding loan receivable balance, including accrued interest, from IMCO was settled under this agreement (2016 – $0).

During 2017, IMCO charged $3 million (2016 – $1 million) to OPB, its portion of IMCO's initial set-up costs such as legal and other costs for entering into contracts with service providers. Other set-up costs related to IMCO of $2 million (2016 – $1 million), such as legal and consulting expenses, were also incurred by OPB during the year.

Included in the above operating expenses are:

External Audit Services

For the year ended December 31 (in thousands of dollars)		2017		2016
External audit and related services provided to Ontario Pension Board	$	240	$	205
External audit and related services provided to and recorded by subsidiary operations		299		272
Total fees	$	539	$	477

Actuarial Services

For the year ended December 31 (in thousands of dollars)		2017		2016
Actuarial services provided to Ontario Pension Board	$	564	$	457

Note 11: Capital Management

The funding surpluses or deficits determined periodically through the funding valuations prepared by the 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. The last filed actuarial valuation report for funding purposes was prepared by Aon Hewitt as of December 31, 2016, which disclosed a funding shortfall of $943 million on a going-concern basis and a deficit of $3.7 billion on a solvency basis.

The objective of managing the Plan's capital is to ensure the Plan is funded to fully pay out the Plan's benefits. The funding valuation determines the annual minimum contribution levels to eliminate any shortfalls. The Plan's SIP&P also provides guidance with respect to the investment of the Plan's assets (see Note 4(a)) in order to assist with the management of any funding excesses or shortfalls. The Plan's rate of return expectation has been set in the SIP&P at a 3.70% real rate of return, net of fees.

Note 12: Comparative Financial Statements

Certain amounts in the comparative financial statements have been reclassified to conform to the presentation of the 2017 financial statements.