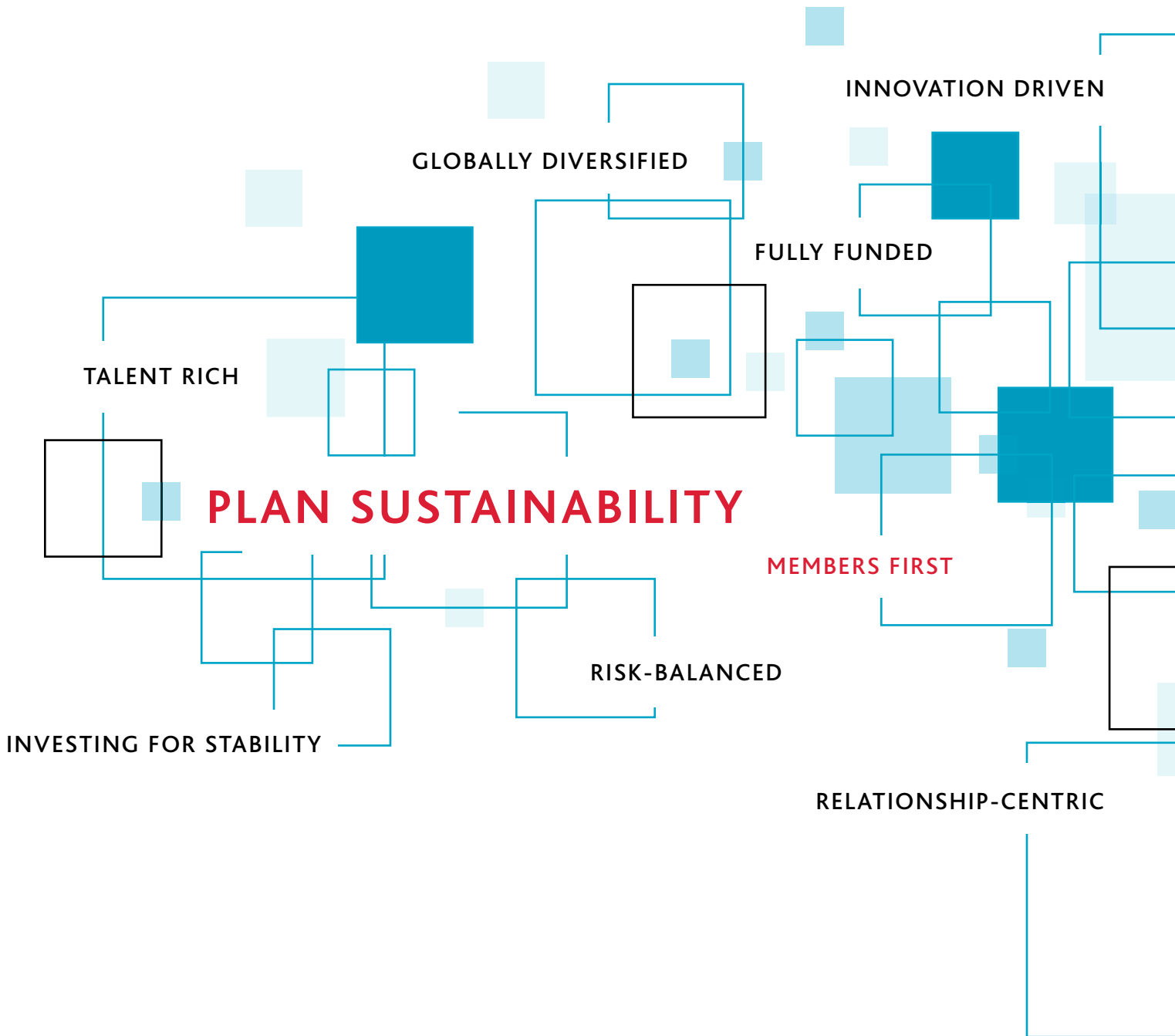




2017 ANNUAL REPORT



**PLAN SUSTAINABILITY**

TALENT RICH

GLOBALLY DIVERSIFIED

FULLY FUNDED

INNOVATION DRIVEN

MEMBERS FIRST

RISK-BALANCED

INVESTING FOR STABILITY

RELATIONSHIP-CENTRIC

---

## FULLY FUNDED STATUS

Ontario Teachers' has been fully funded for five consecutive years, including our latest \$10.3 billion surplus. The innovative lever of conditional inflation protection has contributed to recent surpluses, which have allowed the sponsors to restore full benefits, reduce contributions and save for a rainy day.

**4.8%**  
DISCOUNT RATE

---

## HEADLINE NUMBERS

Net assets grew by \$13.9 billion from the year before. Through its Toronto, London and Hong Kong offices, Ontario Teachers' had a strong flow of global transactions in a year when assets were relatively scarce.

**9.7%**  
TOTAL-FUND NET RETURN

**\$17.0B**  
NET INVESTMENT INCOME

**\$189.5B**  
NET ASSETS

---

## RISK-BALANCED INVESTING

The plan must take an appropriate amount of risk to generate sufficient returns. We carefully evaluate the risks underlying our investments, including environmental, social and governance factors, to ensure our total portfolio has the right risk profile. Our culture and governance structure are aligned accordingly.



---

INNOVATION

**CONDITIONAL  
INFLATION PROTECTION**  
HELPS ALL GENERATIONS OF MEMBERS

**ADVANCEMENTS**  
IN NEW MEMBER SERVICES, RISK AND  
INVESTMENT TECHNOLOGY

---

# PLAN

## SUSTAINABILITY

---

A RESPONSIBLE INVESTING APPROACH

**100**

CORPORATE ENGAGEMENTS  
ON ESG FACTORS

**TOP 25**

BRETTON WOODS II  
LEADERS LIST OF THE MOST  
RESPONSIBLE ASSET ALLOCATORS

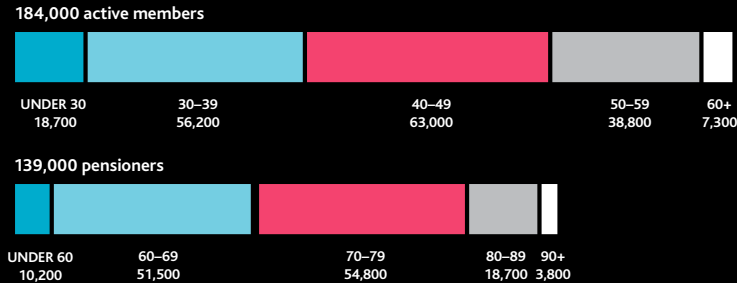
**49**

CYBER ASSESSMENTS COMPLETED  
IN PRIVATE COMPANIES

**12**

EARLY WARNING INDICATORS BEING  
MONITORED TO TRACK CLIMATE  
CHANGE-RELATED DEVELOPMENTS

## SERVING OUR MEMBERS



# 323,000

TOTAL NUMBER OF ACTIVE MEMBERS AND PENSIONERS

ACTIVE MEMBERS AND PENSIONERS As at December 31, 2017

# 8.8/10

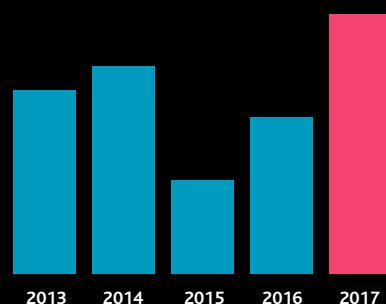
QUALITY SERVICE INDEX  
MEMBER RATING

# 131

PENSIONERS  
OVER 100

## LOCAL RETURN

The risk associated with currency is considered in our overall portfolio construction, and targeted hedging measures mitigated currency impact in 2017.



# 11.9%

TOTAL-FUND  
LOCAL RETURN –  
OUR HIGHEST  
IN FIVE YEARS

## FUNDING

The plan remains financially healthy and is 105% funded. Effective January 1, 2018, the plan sponsors restored full inflation protection for retired teachers and reduced the contribution rate for active members. A contingency reserve will help save for a rainy day – stabilizing contribution rates and benefit levels.

## INVESTMENTS

Investing with a total-fund approach, a global mindset and top talent is core to our OneTeachers' investment strategy. We partner with investors around the world, taking an active approach to bring opportunities to life. 2017 was a very dynamic year during which we bought, sold and reinvested in assets globally.

## MEMBERS

Our approach is clear – to make everything related to our members' pensions as effortless as possible. We simplify complex information with personal service, and use our insight to anticipate and respond to our members' needs across multiple channels.

### TABLE OF CONTENTS

<b>2</b> Report from the Chair	<b>36</b> Plan Governance	<b>92</b> Major Investments
<b>3</b> Report from the CEO	<b>43</b> Report from the Human Resources & Compensation Committee	<b>95</b> Eleven-Year Financial Review
<b>4</b> About the Plan	<b>44</b> Compensation Discussion & Analysis	<b>96</b> Funding Valuation History
<b>5</b> Management's Discussion & Analysis	<b>51</b> Financial Reporting	<b>97</b> Deal Highlights – 2017
<b>7</b> Plan Funding Report	<b>57</b> Consolidated Financial Statements	
<b>14</b> Report from the CIO		
<b>15</b> Investments		
<b>32</b> Member Services		

# REPORT FROM THE CHAIR



"Ontario Teachers' board continued to focus its oversight on the organization, creating value and actively managing risk, to help ensure stable and sustainable pensions for generations to come."

## FUNDED STATUS

The funded status measures the plan's assets against its projected obligation to its members, and for the fifth consecutive year, Ontario Teachers' is fully funded.

This was achieved with a nominal discount rate of 4.8%. The board members are collectively responsible for the discount rate, and we feel it reflects a realistic and prudent outlook.

Recent surpluses have allowed the sponsors to restore benefits and decrease contributions while still saving for the inevitable rainy day.

The sponsors have decided to file the January 1, 2018, valuation and to allocate the surplus to a contingency reserve. This decision essentially recognizes that there can be no assurance of high returns in this complex, rapidly changing and competitive business environment. A contingency reserve is intended to reduce volatility in the funded position of the plan and facilitate stability for members' contributions and benefits.

The plan sponsors, Ontario Teachers' Federation (OTF) and the Ontario government, used a portion of the \$11.5 billion surplus as at January 1, 2017, to restore inflation protection levels to 100% of the Consumer Price Index (CPI) for pension credit earned after 2009.

In addition, the contribution rate for the plan's active members was reduced by 1.1%, effective January 1, 2018. This marked an early end to the special contributions that had been scheduled to finish in 2026.

## APPROPRIATE RISK ACCOUNTABILITY

In 2017, the board implemented changes to the risk governance structure and investment strategy. The impact of these changes was to give management greater responsibility and improved agility for investment decisions.

Management's integrated investment approach combines organization-wide risk management and portfolio construction with a continued focus on returns that add value above the plan's benchmarks. This investment strategy also focuses on volatility management, with a clearly aligned focus on stability of

contribution rates and benefit levels. We believe management's ability to integrate these components will provide stability through a variety of different market conditions. The plan's compensation scheme has been revised accordingly, with an increased weighting on the total-fund absolute return and risk, while keeping a focus on outstanding value creation, operations and service.

## RISK GOVERNANCE

With responsibility for overseeing the management and administration of the pension plan, the board must continually monitor for potential risks, both present and future. We are strongly focused on enterprise risk management to both manage risks and understand opportunities. Some important areas, among others, are crisis management, market trends in information technology, and cybersecurity for considering various potential impacts on investments and safeguarding the plan's own data.

## BOARD COMPOSITION

In 2017, we said goodbye to retiring board member Rod Albert and welcomed Gene Lewis, who officially joined the board in January 2018. Rod served on the board for eight years, and on behalf of the board I would like to thank him for his significant and lasting contributions to Ontario Teachers'.

Gene is a former elementary school teacher and principal who served as General Secretary of the Elementary Teachers' Federation of Ontario for 15 years. He has gained extensive expertise and experience with the plan through these roles and his work on various committees throughout his career. He is a very strong addition to the board, possessing skills that complement those of our existing board members, and will have an important and meaningful impact.

A handwritten signature in black ink that reads "Jean Turmel". The signature is written in a cursive, flowing style.

Jean Turmel, B.Comm., MA  
Chair

# REPORT FROM THE CEO



**"2017 was a successful year during a time of substantial change. We will continue to keep the plan financially healthy through our focus on talent and technology, our global mindset, and a commitment to remaining adaptable."**

2017 was a success for Ontario Teachers' in many ways. We are 105% funded. Inflation protection rose to 100%. Contribution rates went down. Our discount rate is one of the lowest in the industry. And we earned a 9.7% return while we were implementing significant change to be well positioned for the future.

This successful year did not result from a single year's activities. It is the cumulative outcome of a thoughtful and systemic focus on long-term sustainability that is core to Ontario Teachers'.

Sustainability is delivering retirement security to current and future generations of members. Being in the "future business" requires a broad, global vision. It means we think about how long people will live and draw pensions and anticipate how they will receive information and collect their pension payments. We pay attention to environmental, social and governance factors, including the impact of climate change and the transition to a low-carbon economy. The way we live and work is changing, and the impact this has on our investments, employees and operations around the world is taken into constant consideration.

Our employees share our corporate values of integrity, innovation, performance, partnership and humility. They want to use their skills and expertise to contribute to something bigger. Not surprisingly, talent like this is in high demand and short supply. So we must continue to understand what drives and motivates employees, what makes them want to join and stay with us, and what will help them grow.

To do so, we have brought in a new leader of People & Culture, Beth Tyndall. She brings us strategic expertise and a wealth of good ideas. She and her team have launched a new strategy aimed at driving our performance. I am confident their efforts will allow us to continue to focus on diversity, talent attraction and developing the best and brightest people around the world.

Our employees deliver on the pension promise to our members. Our relationship with members is for life, and we want to make everything related to their pensions as easy and stress-free as possible. So we engage with them, and we try to anticipate their needs. We are making a serious commitment to new technology to enable this, which last year included ongoing replacement of legacy systems and upgrades to our contact centre capabilities including online chat.

The way we invest is also directly tied to the needs of our members. We want to stabilize contribution rates and benefit levels as much as possible. To do so, we have made a thoughtful and deliberate shift to our OneTeachers' investment strategy. It is designed to succeed in a variety of market conditions over the long term, while taking the appropriate amount of risk. In the future, this may mean we do not experience the double-digit returns of the past. Instead, we believe it will enable strong performance while also protecting us from the shocks and aftershocks of severe market events.

Finally, there are the people we work with. We have a broad network of relationships with investment partners, investee companies, our industry peers, and others. We want these relationships to be lasting rather than transactional, and focused on quality above quantity. Our best successes are with aligned partners who welcome our active approach. They share a vision for the direction we can take our investments and initiatives together to make them meaningfully better.

I am pleased with our accomplishments in 2017 and with the plan's strong financial health. An established track record; smart, dedicated and diverse people; and a willingness to adapt and innovate are serving us well. But another important part of being sustainable involves never becoming complacent, and that is why we continue to challenge ourselves to keep improving, each and every day.

**Ron Mock, B.A.Sc., MBA**  
President and Chief Executive Officer

# ABOUT THE PLAN

The Ontario Teachers' Pension Plan (Ontario Teachers') was founded in 1990, with a mandate including an investment program designed to deliver funding sustainability for the life of the plan and every member it serves. At inception, it had \$18.5 billion in net assets.

The plan has since grown by approximately 10 times, with \$189.5 billion in net assets diversified across sectors and geographies. We manage investments and administer pension benefits on behalf of 184,000 Ontario school teachers and 139,000 pensioners.

Ontario Teachers' has approximately 1,100 employees in Toronto, London and Hong Kong.

The pension plan is governed by the *Teachers' Pension Act*, the *Ontario Pension Benefits Act*, the federal *Income Tax Act*, and laws in the various jurisdictions in which it invests and operates.

## SPONSORS' ROLE

Ontario Teachers' Federation (OTF) and the Ontario government are the plan's joint sponsors. Together, OTF and the government ensure the plan remains appropriately funded to pay pension benefits. The sponsors jointly decide the contribution rate paid by working teachers (and matched by the government and designated employers); the benefits that members will receive, including inflation protection; and how to address any funding shortfall or apply any surplus. They are also responsible for the contingency reserve.

## BOARD'S ROLE

An 11-member board, appointed by OTF and the government, oversees the management of the pension plan. Board members are required to act independently of both the plan sponsors and management, and to make decisions in the best interests of all plan beneficiaries.

## MANAGEMENT'S ROLE

Management of the pension plan has three main responsibilities:

- invest plan assets to help pay pensions;
- administer the plan and pay pension benefits to members and their survivors;
- report and advise on the plan's funding status and regulatory requirements.

Management sets long-term investment and service strategies that take member demographics, and economic, investment and market risks into account.



# MANAGEMENT'S DISCUSSION & ANALYSIS

Management's Discussion and Analysis (MD&A) presents a view of the pension plan through the eyes of management by interpreting the material trends and uncertainties affecting the results and financial condition of the plan. The MD&A includes historical information and forward-looking statements about management's objectives, outlook and expectations. Such statements involve risks, assumptions and uncertainties, and the plan's actual results will likely differ from those anticipated. The plan's consolidated financial statements should be read in conjunction with the MD&A.

Mission – Outstanding service and retirement security  
for our members – today and tomorrow.



## EXECUTIVE TEAM



(l-r) **Ron Mock**, B.A.Sc., MBA, President and Chief Executive Officer; **Bjarne Graven Larsen**, M.Econ., Executive Vice-President, Investments, and Chief Investment Officer; **Tracy Abel**, BA, MBA, Chief Pension Officer; **David McGraw**, B.Comm., MBA, FCPA, FCA, ICD.D, Chief Financial Officer; **Rosemarie McClean**, BA, MBA, CPA, CMA, ICD.D, Chief Operating Officer; **Barbara Zvan**, M.Math, FSA, FCIA, ICD.D, Chief Risk & Strategy Officer; **Jeff Davis**, BA, LLB, Chief Legal & Corporate Affairs Officer; **Beth Tyndall**, BA, CHRL, Chief People Officer

## PREPARING FOR THE FUTURE

Fulfilling our mission means looking ahead and globally for investment opportunities and the people to make them happen. We do so operating in a rapidly changing, competitive business environment with the guidance of our three-year enterprise plan focused on the priorities of total fund, governance and risk management, member services evolution, talent evolution and technology evolution. Some key initiatives are:

**ESTABLISHING STRONG GLOBAL PARTNERSHIPS...**because capital is no longer a differentiator and we face increasingly strong competition from other institutional investors around the world.

**TAKING AN INNOVATIVE TOTAL-FUND APPROACH INCLUDING THE CONDITIONAL INFLATION PROTECTION LEVER...**because the need for stable returns over the long term in volatile markets could impact the plan's investment risk tolerance and equity between active and retired members.

**PRIORITIZING ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) FACTORS...**because there are numerous risks and opportunities inherent in ESG factors, including the important systemic issue of climate change.

**BUILDING OUR GLOBAL COMPLIANCE CAPABILITIES...**because international markets, laws and regulations are changing swiftly, and the shift of global growth to emerging markets brings new legal challenges and operational complexity.

In 2017, our dedicated teams focused on executing our complementary strategies for investing (OneTeachers') and administering our members' pensions (Clarity). Our goal is to ensure the plan is fully funded in the long term, and that members receive outstanding service throughout the lifetime of our shared relationship.

Investment returns play a core role in our sustainability model. We know that we cannot rely on consistently high investment returns, and must plan for diverse scenarios to future-proof the fund. As such, our model seeks to earn stable returns and reduce funding ratio volatility while employing prudent use of leverage and the appropriate amount of risk.

We also look to the future by actively engaging with our members, to anticipate their needs for simple, personal and insightful service.

We believe this balanced and unified approach positions us well to meet our pension promise to members over the long term regardless of market conditions.

### INVESTING IN FOUNDATIONAL MEMBER SERVICES

**TECHNOLOGY...**because our members' needs are changing. We face expanded service expectations in the wake of instantaneous online services and speed-of-light technological advances. The demand for enhanced digital capabilities and communications is pushing us to adapt and evolve our service delivery model.

**LAUNCHING A NEW PEOPLE AND CULTURE STRATEGY TO FIND THE BEST IN THE MARKET...**because top talent is in high demand and low supply. Our talent is our most valuable asset, and it is increasingly important as we strengthen our presence in select global regions and build internal competencies.

**ADVANCING OUR ENTERPRISE TECHNOLOGY STRATEGY...**because rapid technology advancements will leave behind those without the appropriate infrastructure, skills and resources.

# PLAN FUNDING REPORT

The Ontario Teachers' Pension Plan is designed to deliver pension benefits to its members for life. Jointly sponsored by Ontario Teachers' Federation (OTF) and the Ontario government, it is the largest single-profession plan in Canada.

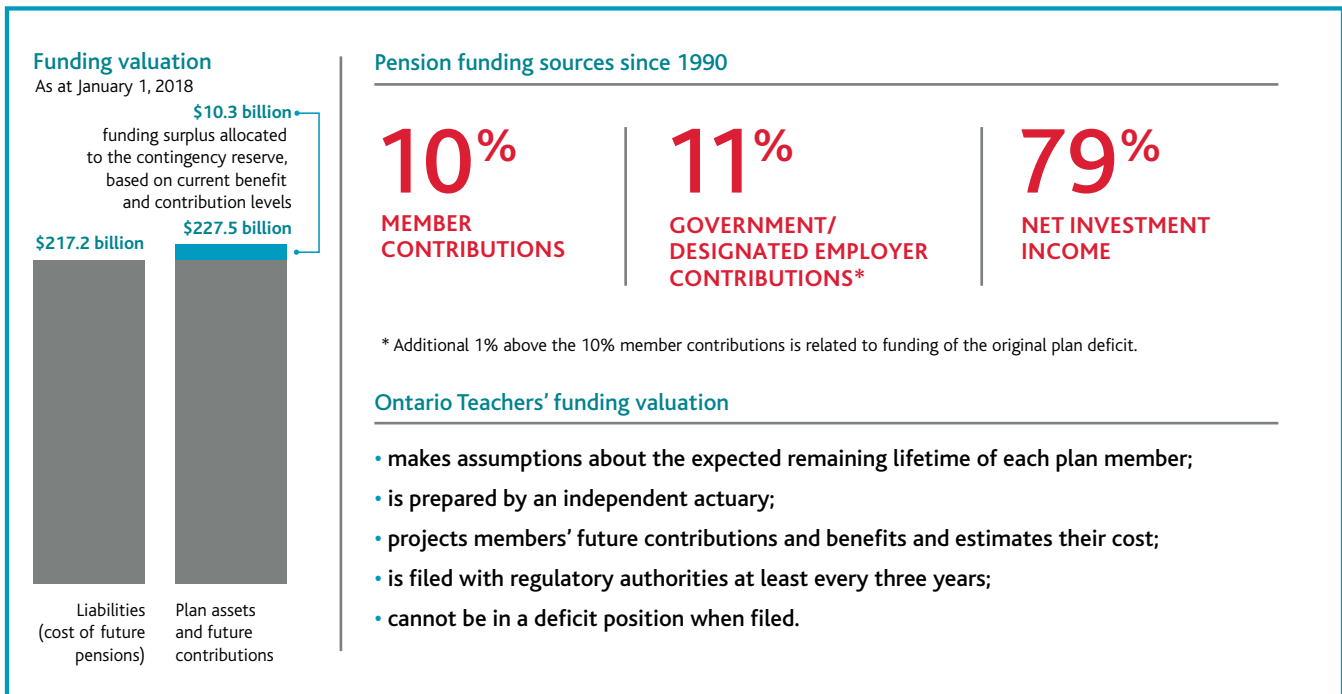
This section provides information on recent funding valuations, assumptions and related demographic and economic considerations that play a role in plan funding discussions. A funding valuation is an assessment of the financial health of a pension plan on a defined date. It determines whether the plan's projected assets are reasonably sufficient to pay all promised pensions in the future.

## Funding status as at January 1, 2018

The plan is fully funded based on current contribution rates and 100% inflation protection being provided on all pensions. This year's surplus has been fully allocated to the contingency reserve.

Details are provided in the Funding Valuation Summary table on page 9.

The sponsors have decided to file the January 1, 2018, valuation with the regulatory authorities and have chosen to allocate the surplus to the contingency reserve (explained in more detail on page 8). This decision is intended to reduce volatility in the funded position of the plan and facilitate stability in members' contributions and benefits.



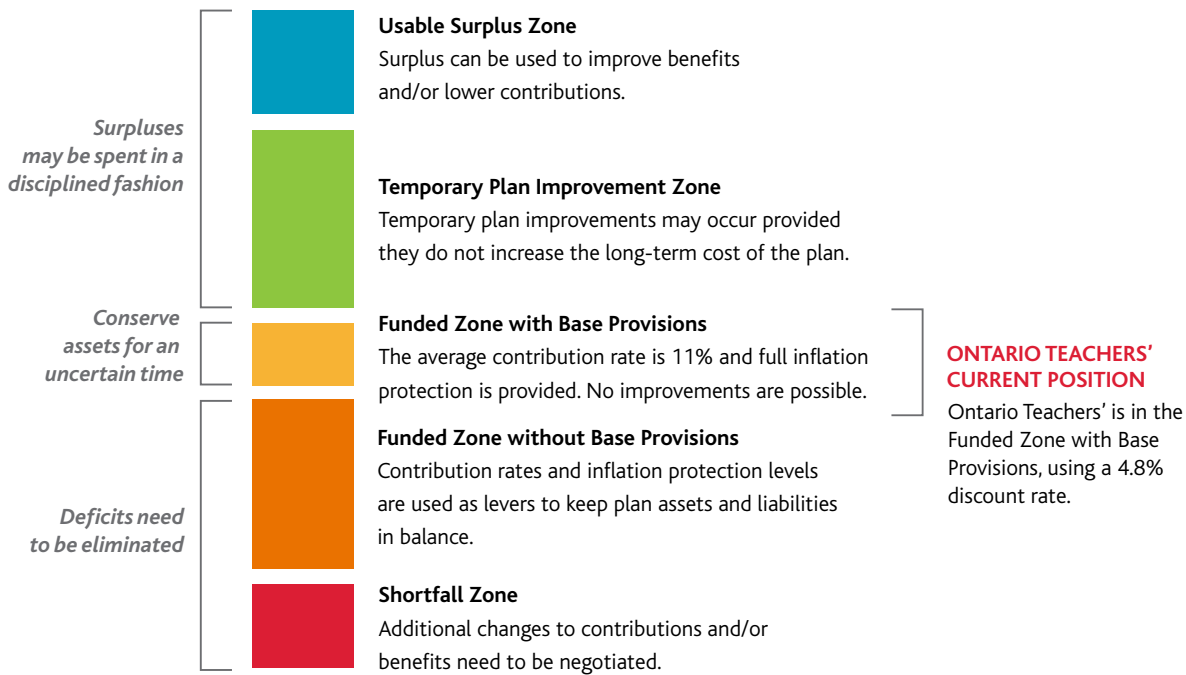
## Funding Management Policy (FMP)

In 2003, the sponsors adopted the Funding Management Policy (FMP) as an appendix to the Partners' Agreement. The Partners' Agreement, in effect since 1992, established the partnership between the sponsors and clearly articulates the roles and responsibilities of the sponsors and the board. The FMP is an important document that provides the sponsors with a guidance framework for decision making when there is a funding surplus or shortfall. A key component in the FMP is the concept of funding zones, each defined by a range. The funding zones provide a point of reference for whether action is required by the sponsors and, if so, guidance is provided on how to use any surplus funds or resolve any shortfall – specifically, answering the question of when it is possible or necessary to increase or decrease benefits, lower or raise contribution rates, or simply conserve assets for an uncertain time. While the FMP outlines preferred mechanisms associated with its various funding zones, it is ultimately the sponsors' responsibility to decide what actions to take.

The FMP has important implications from an investment perspective, adding clarity to our strategic asset allocation decisions with a key focus on the plan's ability to absorb risk. In the absence of the FMP, this level of clarity would be difficult to achieve.

The guidance framework provided in the FMP is robust, transparent and based in strong actuarial and economic principles. These mechanisms have been leveraged by the sponsors for many years, providing guidance in their decisions related to valuation filings. The FMP framework has proven to be very effective and has contributed to the current strong position of the plan.

### FUNDING MANAGEMENT POLICY ZONES



### WHAT IS THE ROLE OF THE CONTINGENCY RESERVE?

In essence, allocating the surplus to a contingency reserve is a way of "saving for a rainy day." Having surplus funds in reserve helps stabilize contribution rates and benefit levels over the long term. It is aimed at keeping the plan fully funded with base provisions – meaning contribution rates at 10.4% of earnings below the Canada Pension Plan (CPP) limit plus 12% of earnings above the CPP limit, and full inflation protection.

## 2017 filed valuation

In 2017, OTF and the Ontario government filed a funding valuation with the regulators, which is detailed in the Funding Valuation Summary table below.

The sponsors used a portion of the \$11.5 billion surplus (as at January 1, 2017) to increase inflation protection levels to 100% of the Consumer Price Index (CPI) for pension credit earned after 2009. Pensioners who retired after 2009 also received a one-time increase to their pensions to restore benefits to the level they would have been had 100% inflation protection been provided on January 1, 2017. In addition, the contribution rate for the plan's active members was reduced by 1.1%, effective January 1, 2018. This marked an early end to the 1.1% "special contributions" that had been scheduled to finish in 2026. As a result, contribution rates are 10.4% of earnings below the Canada Pension Plan (CPP) limit plus 12% of earnings above the CPP limit (or 11% on average).

Under the Funding Management Policy, contributions at this level, combined with full inflation protection, are referred to as the Base Provisions.

### FUNDING VALUATION SUMMARY

As at January 1 (Canadian \$ billions)

	2018	2017
Net assets available for benefits	\$ 189.5	\$ 175.6
Smoothing adjustment	(4.9)	(2.9)
<b>Value of assets</b>	<b>\$ 184.6</b>	<b>\$ 172.7</b>
Future basic contributions	42.9	41.1
Future special contributions <sup>1</sup>	0.0	0.3
<b>Total assets</b>	<b>\$ 227.5</b>	<b>\$ 214.1</b>
Liabilities (cost of future pensions)	(217.2)	(208.7)
<b>Surplus</b>	<b>\$ 10.3</b>	<b>\$ 5.4</b>
Contingency reserve <sup>2</sup>	10.3	–
Surplus after contingency reserve <sup>2</sup>	0.0	–
<b>Assumptions (percent)</b>		
Inflation rate	2.00	2.00
Real discount rate <sup>3</sup>	2.75	2.75
Discount rate	4.80	4.80

<sup>1</sup> Special contributions were introduced in 2011 and were scheduled to end in December 2026. With the decision to file the January 1, 2017, valuation, the sponsors chose to eliminate the special contributions effective January 1, 2018.

<sup>2</sup> The surplus was first allocated to the contingency reserve in 2018, and therefore 2017 comparable numbers are not available.

<sup>3</sup> Real rate shown as the geometric difference between the discount rate and the inflation rate.

## Contingency reserve

In the January 1, 2018, valuation, OTF and the government decided to allocate the surplus to a contingency reserve. This concept is outlined in the Partners' Agreement. Retaining a reserve in the funding valuation is beneficial for plan members because it facilitates greater stability of contribution rates and benefit levels in case a future funding valuation shows a decline in assets or an increase in pension costs.

This decision is consistent with the FMP and with the decisions the sponsors have made over the last several valuation filings – focusing on returning the plan gradually over time to be fully funded with Base Provisions and to reserve surplus funds to facilitate stability in contribution and benefit levels.

## Smoothing adjustment

Smoothing is a common practice in funding valuations that is used to reduce short-term volatility. Ontario Teachers' funding valuations smooth asset gains and losses over a three-year period. By deferring recognition of gains and losses, the plan's funding ratio, contribution rates and benefit levels are less volatile. Without the use of smoothing, the sponsors might have to change contributions and benefits more frequently to achieve funding stability.

There were \$4.9 billion in unrecognized gains in the January 1, 2018, valuation, compared to \$2.9 billion of unrecognized gains in the January 1, 2017, valuation. Although the smoothing adjustment has increased since last year, the margin continues to be notably smaller than it has been in recent years, as shown in the Funding Valuation History table on page 96. Unrecognized gains that are held back act as a positive margin in the valuation results.

## Assumptions

A funding valuation uses a number of assumptions to project the value of future pension plan liabilities and contributions. Assumptions are made about future inflation, salary increases, retirement ages, life expectancy and other variables.

One of the most important assumptions for the board to consider is the discount rate, which is used to calculate the present value of future pension benefits the plan expects to pay to members as well as contributions it anticipates receiving. Plan liabilities are sensitive to changes in the discount rate, with a lower rate resulting in increased liabilities. The discount rate is derived from the expected rate of return on investments and takes into consideration the cost of running the plan and provisions for plan maturity as well as major adverse events, such as the 2008 financial crisis.

The assumption setting process is extremely robust and includes an annual in-depth analysis of plan experience as well as input from the sponsors. If assumptions show a pattern of deviating from actual experience, they are reviewed and may be adjusted. The independent actuary must confirm that the assumptions are appropriate and works closely with board members in the assumption setting exercise. The Canadian Institute of Actuaries (CIA) Standards of Practice require that each assumption is independently reasonable and that assumptions are appropriate in aggregate.

The inflation and discount rate assumptions in the most recent valuations are shown in the Funding Valuation Summary table on page 9.

## PLAN FUNDING CONSIDERATIONS

When making decisions on behalf of all beneficiaries, the plan's management and the sponsors consider ever-changing demographic and economic factors and risks.

The Funding Variables table shows how some important variables have changed over time. It is followed by brief discussions of some key funding considerations. The plan has identified four main funding risks – longevity, interest rates, inflation and asset volatility – and seeks to manage intergenerational equity given these risks.

### FUNDING VARIABLES – PAST AND PRESENT

	2017	1990
Average retirement age	59	58
Average starting pension	\$46,300	\$29,000
Average contributory years at retirement	26	29
Expected years on pension	32	25
Number of pensioners aged 100 or more	131	13
Ratio of active teachers to pensioners	1.3 to 1	4 to 1
Average contribution rate <sup>1</sup>	12.0%	8.0%

<sup>1</sup> Average contribution rate decreased to 11% effective January 1, 2018.

### Longevity risk

Teachers in Ontario live longer than the general Canadian population and their life expectancy continues to increase. It costs more to pay lifetime pensions when members live longer. Members are contributing to the plan for fewer years than in the 1990s, and their retirement periods are longer. Increased longevity can have a significant impact on liabilities.

### Interest rate risk

Subdued economic growth and low inflation have kept interest rates at historically low levels for many years. The 20-year average of long-term real-return bond yields at the end of 2017 was 1.9%. The spot rate, which is the settlement price at a specific point in time, at the end of 2017 was 0.6% – a notable decline over the last two decades. Interest rates affect both assets and liabilities. An increase in rates could reduce the value of plan assets. Long-term interest rates are also an important input to the discount rate decision. The discount rate reflects what the plan's assets can reasonably be expected to earn over the long term, minus a provision for risk. Plan liabilities are sensitive to changes in the discount rate. Assuming a higher discount rate in funding valuations would reduce plan liabilities. The investment program maintains an allocation to a Liability Driven Investment (LDI) program to mitigate the risk of changes in the discount rate as a result of long-term interest rates.

### Inflation risk

The plan seeks to provide retired members with annual pension increases to offset the impact of inflation. Inflation that is higher than assumed in the valuation increases the plan's liabilities, given the plan's inflation protection feature, while inflation that is lower than assumed reduces the plan's liabilities. The annual increase received by retirees on the portion of their pensions earned after 2009 is conditional on the plan's funded status. Inflation in Canada has been stable since 1991, generally remaining within one percentage point of the Bank of Canada's 2% target. During 2017, the annual change in the Consumer Price Index ranged from 1.0% to 2.1%.

## Asset risk

Strong stock market performance in recent years has helped produce positive investment returns for the plan. After many years of gains, there is a risk that equities may be fully priced and a material drop in prices would negatively impact asset values. In 2017, as part of its OneTeachers' investment strategy, management took steps to further improve the plan's asset diversification and risk profile in order to mitigate this risk.

Currency volatility also has an impact on plan assets. Economic trends, commodity prices, market sentiment and other factors affect the value of the Canadian dollar against other currencies. The plan derives income from assets around the world, so global currency movements can affect investment returns positively or negatively. Volatile asset markets can present opportunities for long-term investors such as Ontario Teachers', but they can also lead to investment losses that affect the plan's funded status.

## Our ability to take risk

The design and implementation of an innovative funding risk mitigant, conditional inflation protection (CIP), added additional flexibility to the plan. It essentially counteracts the impact of the changing ratio of active to retired plan members on the plan's funded status. The ability to use this lever broke new ground for the plan, allowing us to maintain our investment risk tolerance, benefitting all generations of plan members, and contributing to plan sustainability.

The plan sponsors proactively adopted CIP in 2010, recognizing that if significant investment losses or a funding shortfall occurred, an increase in contribution rates alone was unlikely to be sufficient, and increases would be borne by active plan members.

Not only is CIP innovative, it allows flexibility in the amount of inflation increase provided to pensioners for benefits earned after 2009. The level of increase is a sponsor decision and is conditional based on the funded status of the plan. Pension credit that members earned before 2010 remains fully indexed to inflation. CIP is an effective lever for mitigating funding risks while also promoting intergenerational equity because, over time, as more active members retire, the risk of significant investment losses or a funding shortfall is distributed more broadly among the membership – that is, risk is shared by more retired members.

As you will see in the graphic on the next page, CIP becomes more powerful over time. The proportion of service that members have earned after 2009 continues to grow, while the proportion of service earned before 2010 (which is fully indexed to inflation) is in decline. These trends mean that, eventually, all pension benefits will be subject to CIP and active and retired plan members will share the risk of a loss.

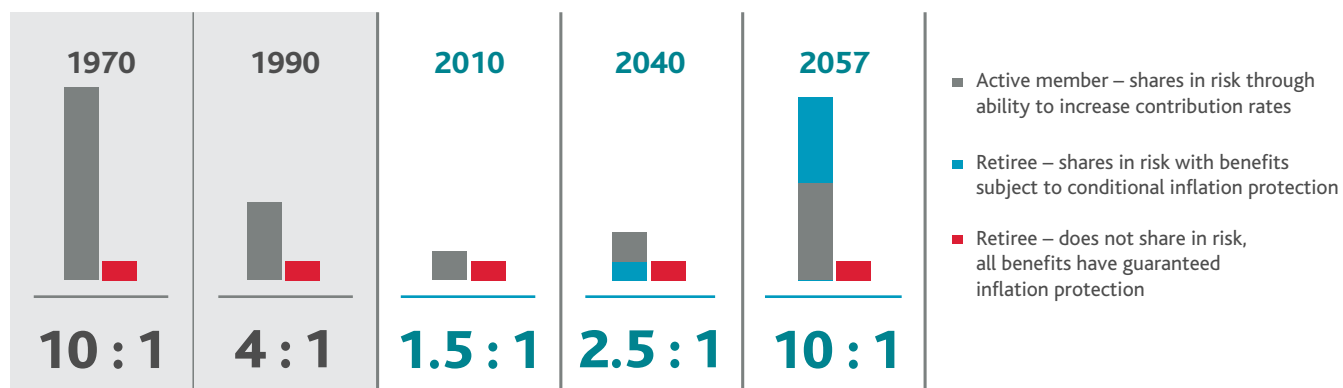
In effect, this has the impact of reversing the plan's demographic profile by improving the ratio of members who share in the plan's risk to those who don't share in risk. When CIP became a feature of the plan in 2010, there were 1.5 active members sharing in the plan's risk for every retiree, who at the time did not share in the plan's risk. By 2057, as the impact of CIP grows, we estimate that there will be 10 members (active and retired) sharing in the plan's risk for each retiree who does not.



## OUR ABILITY TO TAKE RISK

Guaranteed Inflation Protection

Introduction of CIP



### Stress resistant

As CIP applies to more pension beneficiaries, it will be able to absorb a greater loss, making it a more effective risk management tool.

	1990	2017	2027
Increase in contributions required for 10% loss in assets	1.9%	5.1%	5.4%
Decrease in level of CIP required for 10% loss in assets	n/a	34%	23%
Asset loss capable of being absorbed by fully invoked CIP (Canadian \$ billions)	n/a	\$34	\$72

As an example, in the most extreme case, if CIP levels were lowered to 50% on benefits earned during 2010–2013 and 0% on benefits earned after 2013, this funding lever would be powerful enough to absorb a 2027 asset loss of \$72 billion.

# INVESTING FOR A SUSTAINABLE FUTURE

**“Any successful investment program begins with a clear mission. At Ontario Teachers’, we are privileged to come to work every day with a higher purpose – to deliver sustainable pensions for the teachers of Ontario.”**



At the Ontario Teachers’ Pension Plan, we are very fortunate. Our investments bring a secure retirement to people who dedicate their careers to educating young people. This mission helps us bring in the right talent, those who truly believe in our culture and values and who want to make a meaningful contribution. So, before I get into our performance, global economic conditions and the other important things that took place in 2017, I would like to start with our people.

After many changes in 2016, last year was one of action. We made significant progress implementing our OneTeachers’ investment strategy, marked the 10th anniversary of our office in London, and advanced our investment program both there and in Hong Kong. We had a strong flow of global transactions at a time when assets are scarce and many investors are looking to define their competitive advantage. We believe our edge will come largely from continuing to bring in the best and brightest talent from around the world.

Our talent strategy includes a continued focus on diversity and giving our younger employees opportunities to expand their skills and develop into our future leaders. We have embedded our goals into every department’s scorecard, ensuring we are accountable for and measured by our achievements related to talent development and employee engagement.

## 2017 PERFORMANCE

In many ways, 2017 was a year of positive surprises for investors. Global growth exceeded expectations. The world remained politically stable. Equity markets prevailed, and the Canadian economy had an encouraging recovery in business investment. But competition for assets persists and prices keep rising. The investment world is increasingly complex, with technology, markets, laws and regulations changing rapidly. Environmental, social and governance factors, including climate change and the transition to the low-carbon economy, have become essential considerations when investing and managing risk.

In this dynamic market environment, the plan had a total-fund net return of 9.7%. This was driven by strong performance from both public and private investments including equities, private capital and infrastructure. The depth of our portfolio meant there was a positive side to high asset prices, with values rising particularly for large-scale infrastructure assets.

We believe diversification, having aligned partners, and creating enduring value as an asset owner are the fuel for long-term success. These priorities paid off, which is also reflected in our results.

## OneTeachers’ STRATEGY

Our strategy must earn sufficient returns while protecting our assets against risk and volatility. We are a long-term investor and cannot afford to be distracted by the short-term pressures that come with annual and semi-annual reporting or the inevitable comparisons to other investors and specific market indices.

Our strategy is intentionally designed to earn a consistent 4% real rate of return over the long term. We believe this will enable the plan to perform well in a variety of market conditions, protect us against a severe market shock if one occurs, and help ensure stable contribution rates and benefit levels for members. To execute on this, we manage most of our assets actively and in-house, which also allows us to uncover interesting opportunities and capitalize on upside surprises.

## LOOKING AHEAD

As a long-term investor, we are well aware that high returns cannot be counted on indefinitely, and that we must plan for a wide variety of scenarios. Rather than chase the highest returns with high risk, we are investing to sustain the plan and pay pensions for generations to come.

**Bjarne Graven Larsen, M.Econ.**

Executive Vice-President, Investments, and Chief Investment Officer

# INVESTMENTS



(l-r) **Michael Wissell**, MBA, CFA, ICD.D, Senior Managing Director, Portfolio Construction; **Jane Rowe**, MBA, ICD.D, Senior Managing Director, Private Capital; **Nicole Musicco**, HBA, MBA, Senior Managing Director, Public Equities; **John Sullivan**, MBA, President and CEO, Cadillac Fairview; **Ziad Hindo**, M.Sc., CFA, Senior Managing Director, Capital Markets; **Jo Taylor**, MBA, Senior Managing Director, International; **Jonathan Hausman**, M.Sc., MPA, ICD.D, Managing Director, Global Strategic Relationships; **Dale Burgess** was appointed interim head of Infrastructure & Natural Resources in February 2018.

Our mission is to deliver on our pension promise to members, and our people drive our success. We develop, strengthen and retain our intellectual capital so we can remain successful through industry leadership and innovation. Collaboration within and among our asset classes is the key to unlocking our team’s full value.

We invest in liquid and illiquid investments around the world. We take a collaborative approach, through which our five departments invest across six different asset classes that provide diversification and volatility management, and help us focus on both total-fund returns and generating value above our performance benchmarks. In addition, our Global Strategic Relationships team works across the organization to help deepen our relationships with our international partners, and our Portfolio Construction group brings a plan-wide view to our portfolio that helps us invest more effectively and better manage risk.

## ONTARIO TEACHERS’ 2017 RESULTS HIGHLIGHTS

**9.7%**  
TOTAL-FUND  
NET RETURN

**\$189.5<sub>B</sub>**  
NET ASSETS

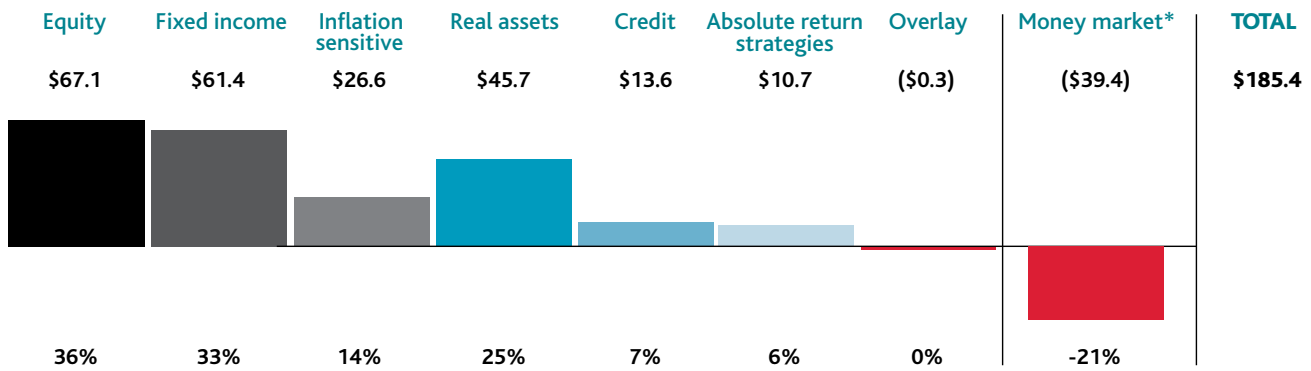
**\$17.0<sub>B</sub>**  
NET INVESTMENT  
INCOME

**1.5%**  
IN VALUE-ADD  
ABOVE BENCHMARK

**11.9%**  
TOTAL-FUND  
LOCAL RETURN

## NET INVESTMENTS

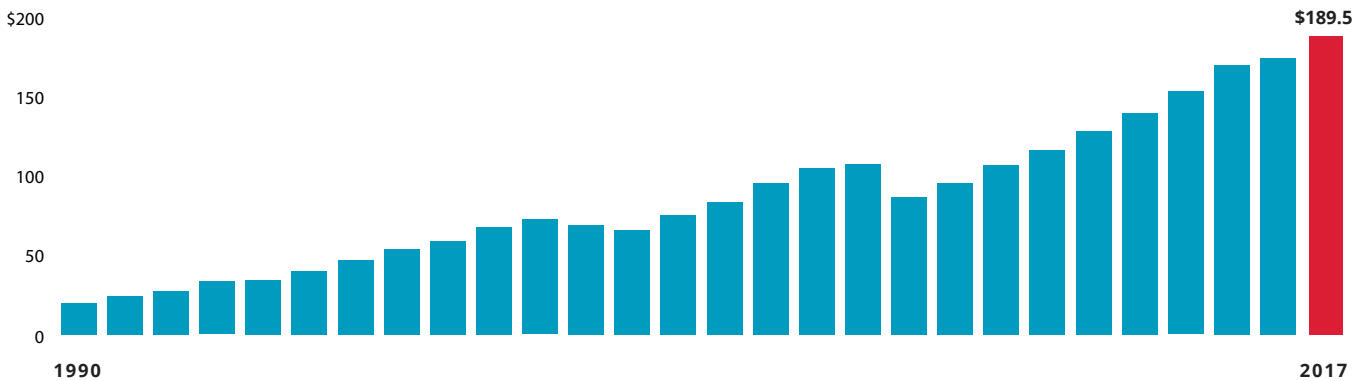
As at December 31, 2017 (Canadian \$ billions)



\* Money market provides funding for investments in other asset classes, including the LDI program.

## NET ASSETS<sup>1</sup>

As at December 31 (Canadian \$ billions)



<sup>1</sup> Net assets include investment assets less investment liabilities (net investments), plus the receivable from the Province of Ontario, and other assets less other liabilities.

## INVESTMENT STRATEGY

Ontario Teachers' investment program exists to pay members' pensions at stable benefit levels and contribution rates over generations. Since Ontario Teachers' inception in 1990, more than three-quarters of the plan's income has come from investment returns, with the remainder from member and government contributions.

Our investment strategy considers our risk profile, our plan assets and our liabilities. Our long investment time horizon supports our primary goal of generating the returns required to fund our members' current and future pensions. We combine our expertise in bottom-up asset selection with a top-down approach to risk and portfolio construction.

In doing so, we aim to deliver on the three objectives of our strategy – stable total-fund returns, value-add above our benchmarks, and volatility management of the funding status. Proactive risk management underpins our investment strategies, including our asset-mix selection, active management of our portfolio to add value, diversification and balance, and our approach to liquidity management including our investment funding strategy. The investment strategy includes a Liability Driven Investment (LDI) program, which is designed to help manage funding ratio volatility by mitigating risk associated with changes to the discount rate of the plan's pension liabilities.

## Proactive risk management

Ontario Teachers' actively manages plan funding and investment risk together. This work is guided by our Strategy & Risk group, which reports to the CEO. Each year, the plan determines the level of total risk that is appropriate to meet its objectives, and then uses risk budgeting to spread active risk across investment departments.

The Investment Committee of the board reviews and approves the risk budget annually, monitors overall investment risk exposure, and reviews and approves risk management policies that affect the total portfolio, as well as sizeable new investments.

Management oversees investment and risk decisions through a two-part Investment Committee composed of senior investment professionals. The Investment Committee – Total Fund is responsible for considerations around the overall investment program, including the ability of the total-fund portfolio to achieve the real-return and volatility targets. The Investment Committee – Global Private and Illiquids is responsible for oversight of major private market or illiquid transactions and the overall private portfolio composition.

Ontario Teachers' has continually advanced its risk culture with sophisticated tools and processes to support risk measurement and management on a coordinated basis across the entire fund, all asset classes and departments, as well as within each portfolio.

The OneRisk system, launched in 2016, is a cornerstone of our risk measurement and risk oversight reporting. OneRisk provides consistent and comprehensive oversight of and deep insight into the fund's risk-taking activities.

The proprietary Asset Liability Model is a key, robust system that enables longer-term analysis, which allows us to assess risk in terms of the impact on contribution ratios and benefit levels.

## Asset-mix selection

Recognizing that asset-mix selection is an important driver of long-term performance, we devote considerable attention to choosing our asset mix and the emphasis we place on each asset class and geography.

With board oversight, the management team manages the asset mix together under our expanded OneTeachers' total-fund strategy. Management determines exposure to each asset class within ranges approved by the board.

As our departments overlap several asset classes, we have provided a matrix illustrating their relationship followed by a chart showing our detailed asset mix.

### MAPPING DEPARTMENTS TO ASSET CLASSES

Asset Classes	Equity	Fixed Income	Inflation Sensitive	Real Assets	Credit	Absolute Return Strategies
Investing Departments						
Public Equities	•					•
Private Capital	•				•	
Capital Markets	•	•	•	•	•	•
Infrastructure & Natural Resources			•	•		
Real Estate				•		

## DETAILED ASSET MIX

As at December 31

	2017		2016	
	Effective Net Investments at Fair Value (Canadian \$ billions)	Asset Mix %	Effective Net Investments at Fair Value (Canadian \$ billions)	Asset Mix %
<b>Equity<sup>1</sup></b>				
Publicly traded	\$ 35.2	19%	\$ 39.0	22%
Non-publicly traded	31.9	17	27.0	16
	<b>67.1</b>	<b>36</b>	<b>66.0</b>	<b>38</b>
<b>Fixed income</b>				
Bonds	41.4	22	43.5	25
Real-rate products	20.0	11	31.7	19
	<b>61.4</b>	<b>33</b>	<b>75.2</b>	<b>44</b>
<b>Inflation sensitive<sup>2</sup></b>				
Commodities	11.1	6	4.2	3
Natural resources	6.6	3	6.3	3
Inflation hedge	8.9	5	–	–
	<b>26.6</b>	<b>14</b>	<b>10.5</b>	<b>6</b>
<b>Real assets</b>				
Real estate	25.5	14	26.5	16
Infrastructure	18.7	10	17.8	10
Real-rate products	1.5	1	–	–
	<b>45.7</b>	<b>25</b>	<b>44.3</b>	<b>26</b>
<b>Credit<sup>3</sup></b>	<b>13.6</b>	<b>7</b>	<b>–</b>	<b>–</b>
<b>Absolute return strategies</b>	<b>10.7</b>	<b>6</b>	<b>13.3</b>	<b>8</b>
<b>Overlay<sup>4</sup></b>	<b>(0.3)</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Money market<sup>4</sup></b>	<b>(39.4)</b>	<b>(21)</b>	<b>(37.2)</b>	<b>(22)</b>
<b>Net investments</b>	<b>\$ 185.4</b>	<b>100%</b>	<b>\$ 172.1</b>	<b>100%</b>

<sup>1</sup> The Equity asset class is comprised of Publicly traded and Non-publicly traded equities. December 31, 2016, comparative figures have been reclassified to reflect these categories.

<sup>2</sup> Beginning January 1, 2017, Natural resources and other securities that provide exposure to inflation form the Inflation sensitive asset class.

<sup>3</sup> Beginning January 1, 2017, corporate and emerging market debt moved into the new Credit asset class.

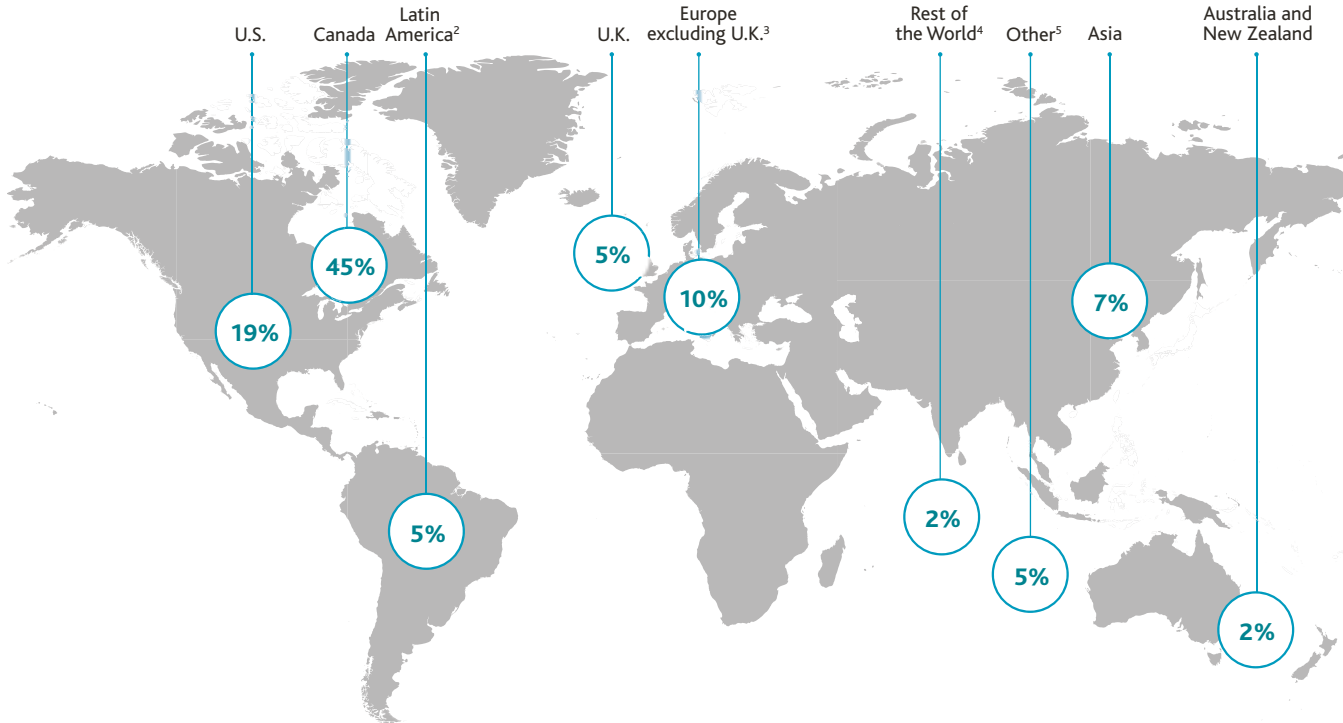
<sup>4</sup> Overlay includes strategies to overweight or underweight certain foreign currency positions. Beginning January 1, 2017, certain index positions formerly presented in the Overlay asset class have moved to Money market. December 31, 2016, comparative figures have been reclassified to reflect the changes.

## Diversification

Total-fund diversification, through effective portfolio construction, is fundamental to the plan's success. Diversification allows us to spread risk across key factors such as time periods, geography and economic outcomes, which reduces the adverse impact of any one investment loss on the fund overall. Exposure to the economies of different countries reduces overall volatility and offers the potential for better returns.

### GEOGRAPHIC EXPOSURE<sup>1</sup>

As at December 31, 2017



<sup>1</sup> Based on country of primary listing, or location of head office or property.

<sup>2</sup> South and Central Americas and Mexico.

<sup>3</sup> Developed countries only.

<sup>4</sup> Countries not otherwise specified above.

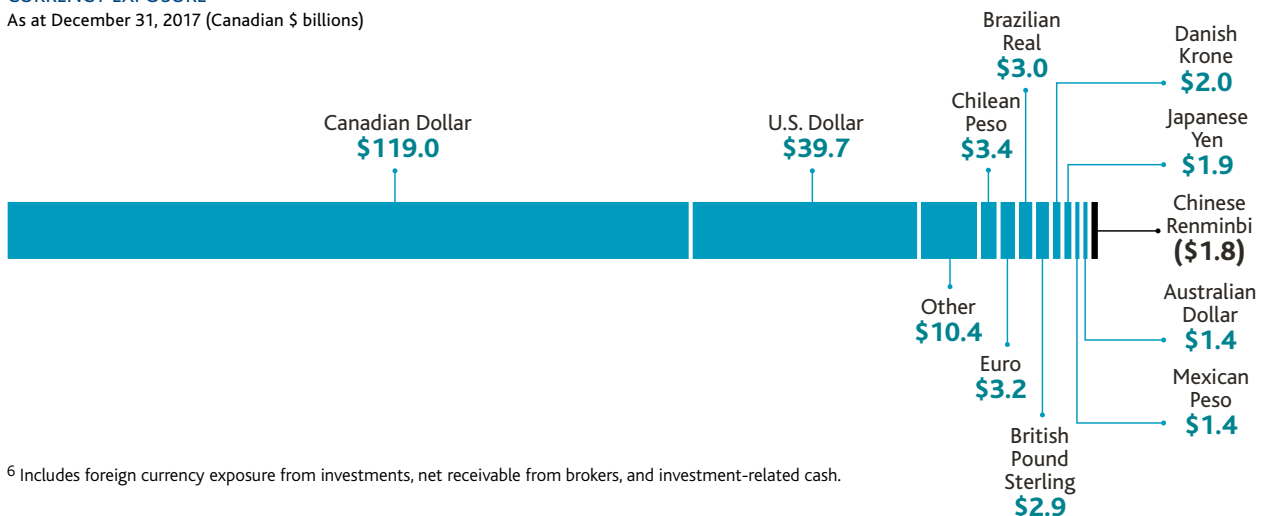
<sup>5</sup> Predominantly alternative investment strategies to which a country exposure has not been assigned.

## A dynamic currency strategy

As a diversified global investor, we take a dynamic approach to managing our foreign currency exposure. We consider the risk associated with currency as part of our overall portfolio construction. In certain circumstances, we will take hedging measures to reduce our exposure to the currency risk that comes from investing globally.

### CURRENCY EXPOSURE<sup>6</sup>

As at December 31, 2017 (Canadian \$ billions)



<sup>6</sup> Includes foreign currency exposure from investments, net receivable from brokers, and investment-related cash.

## 2017 PERFORMANCE

### NET INVESTMENTS AND RATES OF RETURN BY ASSET CLASS

As at December 31

	Net Investments (Canadian \$ billions)	Rates of Return (percent)					
		1-Year		4-Year		5-Year	
		Actual	Benchmark	Actual	Benchmark	Actual	Benchmark
	2017						
<b>Equity</b>		17.6%	15.4%	13.3%	12.0%	16.0%	14.8%
Publicly traded	\$ 35.2	15.9	15.9	10.3	11.4	13.5	13.9
Non-publicly traded	31.9	18.8	14.6	19.1	13.6	20.6	17.4
<b>Fixed income</b>		2.6	2.6	5.2	5.3	2.5	2.5
Bonds	41.4	3.6	3.6	4.0	4.1	2.6	2.6
Real-rate products	20.0	0.6	0.6	6.5	6.5	2.3	2.3
<b>Inflation sensitive</b>		(3.2)	(4.0)	(4.4)	(6.3)	(2.8)	(4.3)
Commodities	11.1	(4.3)	(4.3)	(11.6)	(11.7)	(9.3)	(9.3)
Natural resources	6.6	1.3	(1.4)	11.0	7.2	12.0	8.8
Inflation hedge	8.9	(6.7)	(6.7)	–	–	–	–
<b>Real assets</b>		10.9	7.1	10.7	6.8	11.5	7.6
Real estate	25.5	6.9	7.3	9.6	7.5	10.3	8.4
Infrastructure	18.7	18.2	8.0	12.5	6.3	13.3	7.2
Real-rate products	1.5	–	–	–	–	–	–
<b>Credit</b>	13.6	1.7	1.1	–	–	–	–
<b>Absolute return strategies</b>	10.7						
<b>Overlay</b>	(0.3)						
<b>Money market</b>	(39.4)						
<b>Total-fund net return</b>	\$ 185.4	9.7%	8.2%	9.4%	7.9%	9.6%	8.2%

The total-fund net return is after deducting transaction costs, management fees, and investment administrative costs, and is reported in Canadian dollars for five periods: one, four, five and 10 years, and since the current investment program began in 1990. Asset class and local returns are before deducting investment administrative costs. Local returns are also before the translation to Canadian currency.

The plan produced a one-year total-fund net return of 9.7%, which was driven by strong returns from equities (public and private) and infrastructure. Returns above benchmark were driven by the performance of the private equity and infrastructure portfolios.

The plan compares its performance to a Canadian dollar-denominated composite benchmark, which is calculated by aggregating results from each of the asset-class benchmarks.

### INVESTMENT PERFORMANCE

(percent)

	2017	2016	4-Year	5-Year	10-Year	Since Inception
Total-fund net return	9.7	4.0	9.4	9.6	7.6	9.9
Benchmark return	8.2	3.5	7.9	8.2	6.9	8.0
Return above benchmark	1.5	0.5	1.5	1.4	0.7	1.9



## Benchmarks

Benchmarking is important because it allows board members, plan members and investment professionals to evaluate the effectiveness of the plan's strategies and activities relative to the risks taken. Appropriate benchmarks are established by a committee, chaired by the CEO. Any material or non-technical changes to total plan benchmarks must be approved by Ontario Teachers' board members.

The plan seeks to outperform its respective benchmark rates of return on a total-fund and asset-class basis. This outperformance is described as value-add. A complete list of benchmarks is available at [otpp.com/benchmarks](http://otpp.com/benchmarks).

## Investment cost management

The plan is committed to cost effectiveness and believes costs should be managed and linked to the investment value creation process. The board and management employ various tools to ensure that costs are well managed. Costs are evaluated in the assessment related to target value added, and against peer plans through participation in global benchmarking comparisons.

The amount of invested capital, asset-class weightings and investing style are factors that affect asset management costs. Generally, the absolute costs of management increase as more capital is invested, which can be partly offset by economies of scale.

Extensive reliance on in-house management is a cost-effective means to implement Ontario Teachers' strategies. However, the plan's substantial investments in private assets and commitment to active management result in higher costs than if assets were deployed in lower-cost public securities and passive mandates. The plan also incurs costs to maintain international offices as part of its commitment to identify and participate in global investment opportunities.

The strategic planning process aligns costs with strategy. Annual budgets are reviewed by the Audit & Actuarial Committee of the board. Expense policies are in place to ensure costs incurred are appropriate, and opportunities to improve asset management efficiency are regularly sought out.

In 2017, investment costs, including administrative expenses, management fees and transaction costs, were 63 cents per \$100 of average net assets, compared with 66 cents per \$100 in 2016. Each of these categories is described in detail below.

### Administrative expenses

Investment administrative expenses include staff salaries, incentives and benefits, premises and equipment, professional and consulting services, information services, communication and travel, and custodial, audit and board fees. Ontario Teachers' believes that certain investment programs can be most efficiently delivered using in-house talent. The costs related to employing in-house investment teams and related supporting functions such as legal, operations and finance represent the majority of administrative expenses.

Administrative expenses were \$467 million or 26 cents per \$100 of average net assets in 2017, compared to \$451 million or 27 cents per \$100 in 2016. Administrative expenses increased by 3.5% due to higher salaries, incentives and benefits, premises and equipment, and professional and consulting services.

### Management fees

Ontario Teachers' selectively allocates capital to key external managers in order to access specialized talent and investment opportunities where it is not efficient or practical to maintain the equivalent in-house. Through these relationships, the plan incurs both traditional management fees, which are typically based on the amount of capital allocated, and performance-based fees, which are based on returns above a predetermined threshold and can vary significantly from year to year. The plan attempts to strike the right balance between these fees in order to align the interest of the external managers with the investment objectives they have been engaged to pursue.

In some cases, management and performance fees are incurred by entities in which the plan has invested, rather than directly by the plan. When directly invoiced, or when information is otherwise available from capital notices or other manager communications, management and performance fees are reported as such in the plan's financial statements. Fees related to other externally managed investments are reflected in the plan's unrealized investment income.

In 2017, management fees were \$356 million, down from \$358 million in 2016.

### Transaction costs

Transaction costs are those directly attributable to the acquisition or disposal of investments. Due diligence and advisory costs are the most significant transaction costs that support private asset transactions. In the case of public securities, these costs primarily consist of commissions.

Transaction costs were \$299 million in 2017, the same as in 2016.

## INVESTMENT STRENGTHS

Ontario Teachers' focuses on total-fund performance to sustain assets and meet the pension promise for generations to come. Our relationship-centric approach is focused on true partnerships enduring beyond events or transactions. Our portfolio is globally diversified and designed to withstand volatile times. We are innovation driven, adapting today to shape tomorrow. First and foremost, our success rests on being talent rich, both regarding our existing employees and anticipating our needs for the future.

### Global presence

The plan's investment professionals are based in Toronto, London and Hong Kong, sourcing and managing investments in the Americas, Europe, and the Asia-Pacific region. The Toronto office was established at the plan's inception in 1990 and is the North American hub for investment staff. The London office was established in 2007 and expanded in 2015. From this base, investment professionals manage existing investments and look for opportunities in Europe, the Middle East and Africa (EMEA) and collaborate with colleagues in Toronto and Hong Kong, as well as local partners, to cultivate strategic relationships and pursue investment opportunities. Ontario Teachers' has been investing in the Asia-Pacific region since 1991 and opened its Hong Kong office in 2013 to build even stronger relationships with key players in business and finance throughout the region.

### In-house talent

Approximately 80% of the investment portfolio is managed in-house by highly skilled, specialized teams. As one of Canada's largest pension funds, Ontario Teachers' provides employees with the resources, training and career opportunities needed to achieve the highest professional standards. Talent development is critically important to building and retaining the intellectual capital and in-house expertise required to employ sophisticated and innovative strategies. This is crucial to an active management strategy that leverages our expertise as well as our capital. We work closely with our partners, including leadership at the companies in which we invest, with the goal of creating sustainable value.

### Funds and partnerships

Externally managed investments consist of alternative investments (hedge funds), private equity funds and public equity funds. External hedge fund managers provide access to unique investment approaches that both add to performance and diversify risk. We have strategic investments with many of the world's leading private equity firms, which open up private capital opportunities in markets we cannot easily access directly. We also partner with carefully chosen global and regional managers of public equity funds, who deliver value-added returns and provide local expertise in key global markets.

### Responsible investing

We consider economic as well as environmental, social and governance (ESG) factors in our investment decisions, including risks and opportunities associated with climate change. Ultimately, our responsible investing approach focuses on the long-term sustainability of the pension plan so that we can deliver retirement security to our members.

Ontario Teachers' supports the recommendations of the Task Force on Climate-related Financial Disclosures, which are applicable to organizations across sectors and jurisdictions. As the Task Force noted, large asset owners and asset managers such as pension plans "have an important role to play in influencing the organizations in which they invest to provide better climate-related financial disclosures." We encourage better corporate disclosure of data on ESG factors to help us make better-informed investment decisions for our members.



### GLOBAL STRATEGIC RELATIONSHIPS

Managing strategic relationships around the world is fundamental to our success and is a cornerstone of our unified OneTeachers' strategy. The Global Strategic Relationships (GSR) department was established in late 2016 and has been building out its strategy and activities throughout 2017. GSR connects our investment professionals across asset classes and regions, enabling our teams to work more closely together to cultivate key relationships with institutional investors, major investment banks, prominent families, companies and other organizations for the benefit of the entire fund. Our relationships with high-quality organizations are important: they widen and differentiate our pipeline of opportunities, offer insights and access to networks, and help us make smart decisions globally.

## Climate change governance and risk management

At Ontario Teachers', board members oversee management's implementation of responsible investing principles and approve investment policies and enterprise risk appetite. Management reports to the board at least annually on responsible investing initiatives and results, and this includes discussion of climate-related risks and opportunities.

The CEO, Chief Risk & Strategy Officer and Chief Investment Officer set responsible investing priorities, strategies and guidelines that help manage risk. Senior managing directors in the Investment Division regularly report to the Chief Investment Officer on material ESG exposures. The plan's investment professionals evaluate company-specific risks as well as broader ESG factors that could affect the long-term value of the investment portfolio.

Our 2017 Responsible Investing Report highlights some of our priorities. We began to adopt some of the recommendations of the Task Force on Climate-related Financial Disclosures. We developed climate change scenarios and have published our first carbon footprint. The report also provides more information on our engagements with companies, our voting record, and case studies illustrating how our portfolio companies are integrating ESG factors into their operations. View the full Responsible Investing Report at [otpp.com/responsibleinvesting](http://otpp.com/responsibleinvesting).

## ASSET-CLASS REVIEW

The board sets ranges for allocations to various asset classes. Management determines exposure within the board-approved bands, based on the underlying risk factors in each asset class, expected returns, and the risk balance and other limits in the total-fund portfolio.

Effective January 1, 2017, the asset classes were redefined\* as part of the implementation of the OneTeachers' investment strategy. There are six asset classes compared with five in 2016 – Equity (public and private), Fixed Income, Inflation Sensitive (includes natural resources, commodities and inflation hedge), Real Assets (real estate and infrastructure), Credit (includes corporate and emerging market debt) and Absolute Return Strategies (seeks returns with low correlation to markets; includes hedge funds).

\* Effective January 1, 2017 – Corporate and emerging market debt moved from Fixed Income into the new Credit asset class. Natural resources, commodities and other securities that provide exposure to inflation are included in the Inflation Sensitive asset class.

### A DIVERSE ASSET MIX



#### Equity

Public and private equities aim to deliver long-term investment growth and value-added performance



#### Fixed Income

Provides security and steady income, hedges against interest rate risks inherent in the plan's liabilities and stabilizes total returns



#### Credit

Corporate and emerging market debt investments to capture a set of risk premiums



#### Inflation Sensitive

Contributes to both diversification and protection against unexpectedly high inflation



#### Real Assets

Real estate and infrastructure investments provide a hedge against paying inflation-adjusted pensions



#### Absolute Return Strategies

Internal and external strategies that seek to capitalize on market inefficiencies

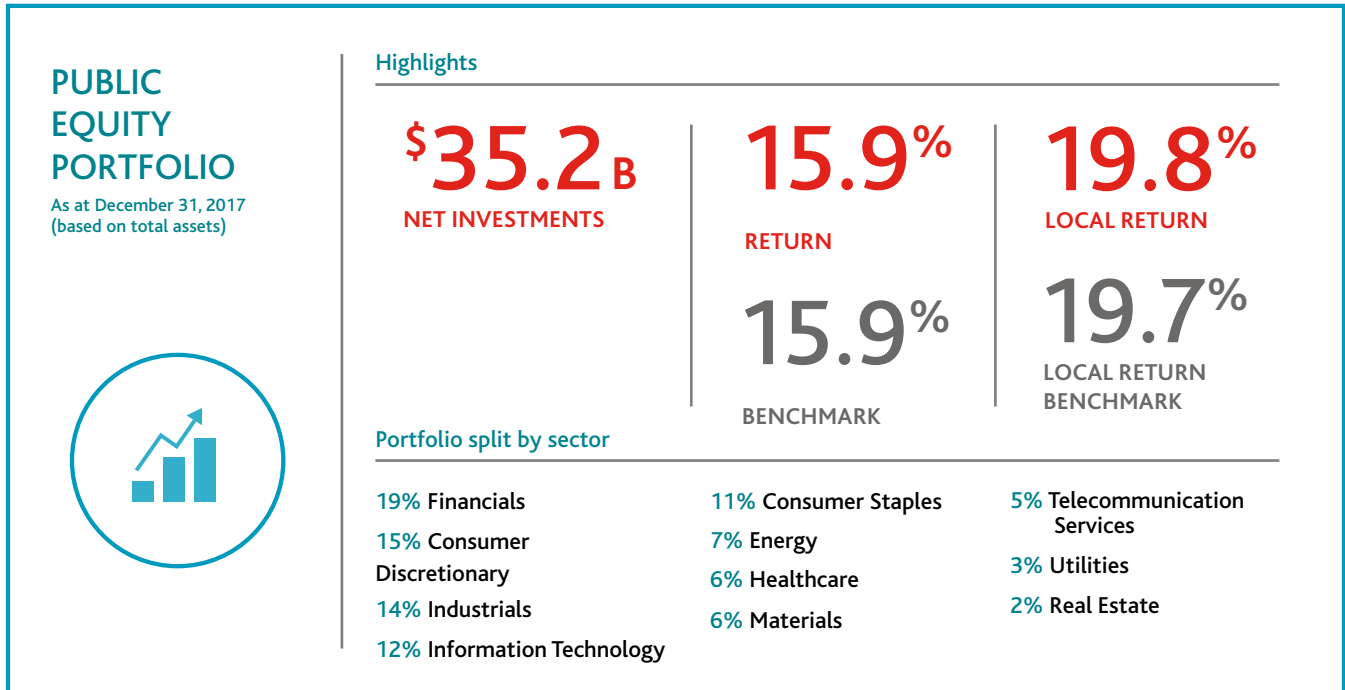


## Equity

This asset class includes publicly traded equities and non-publicly traded equities, managed by the Public Equities and Private Capital groups, respectively. Any capital not in an active program is managed passively by the Capital Markets team to maintain exposure to the equity markets at the weighting outlined in our asset mix.

In 2017, equity markets were broadly higher, posting double-digit gains across most regions on the back of strong earnings growth performance.

The Equity asset class, which is reported as public equity and private equity, had a total return of 17.6% (21.9% local return), compared to its benchmark of 15.4%. The total value of the plan's equities increased slightly to \$67.1 billion at the end of 2017 from \$66.0 billion a year earlier. The four-year annualized rate of return is 13.3%, exceeding the benchmark of 12.0%.



The Public Equities department focuses on fundamental investing in equities primarily traded on Canadian and international exchanges. Its Global Active Equities team of sector-focused internal portfolio managers seeks to outperform relevant benchmarks through bottom-up stock picking. Their efforts are complemented by the department's Global Equity Managers team, which identifies and allocates capital to top-tier external managers.

Our Relationship Investing team looks to opportunistically purchase significant minority equity stakes in public and near-public companies, often in a transformational setting. A team of top-down focused professionals in the Portfolio Strategy group within the department work to manage aggregate portfolio risks. The Corporate Governance team represents the plan's corporate governance issues globally with responsibility for policy development, proxy voting and the public company governance engagement program.

Public equity net investments totalled \$35.2 billion at December 31, 2017, compared to \$39.0 billion at the end of 2016. The portfolio met its benchmark of 15.9% and produced a local return of 19.8%, with the strongest contribution to results coming from its active equity program. The four-year annualized rate of return is 10.3%, compared to a benchmark of 11.4%.

## PRIVATE EQUITY PORTFOLIO

As at December 31, 2017  
(based on total assets)



### Highlights

**\$31.9<sub>B</sub>**

NET INVESTMENTS

**18.8%**

RETURN

**23.5%**

LOCAL RETURN

**14.6%**

BENCHMARK

**19.1%**

LOCAL RETURN  
BENCHMARK

### Portfolio split by sector

29% Consumer and Retail

13% Healthcare

17% Industrials

6% Energy and Power

16% Telecom, Media and  
Technology

3% Venture Capital and  
Growth Equity

16% Financial Services

The Private Capital department invests directly in private companies, either on its own or with partners, and indirectly through private equity funds. It seeks to add value to its portfolio companies by assisting in long-term strategic planning, creating high-performing management teams and boards, and ensuring good governance practices.

Private Capital made its first investments in India and China this year, after having placed a team in Hong Kong in 2013. In Hong Kong, investing alongside fund partner FountainVest Partners, we acquired the Pure Group, Asia's leading wellness brand, which encompasses yoga studios, an online yoga video platform, fitness centres, raw organic healthy eating and performance activewear. The Hong Kong Private Capital team also made its first investment in India, acquiring a stake in Spandana Sphoorty, a leading micro-finance institution, through its investment in private equity firm Kedaara Capital. We also expanded our exposure to the European funeral services sector through investments in Mémora (Spain) and OGF (France) and sold certain portfolio companies where we added value. This included PetVet Care Centers, which during the time of our investment grew into one of the premier veterinary hospital companies in the United States.

Private equity net investments totalled \$31.9 billion at December 31, 2017, compared to \$27.0 billion at the end of 2016. Assets increased through acquisitions, higher asset valuations, and strong performance from direct investments and the long-term equity program.

In 2017, private equity investments generated a return of 18.8% (local return 23.5%) and outperformed the benchmark return of 14.6%. The four-year annualized rate of return of 19.1% exceeds the benchmark return of 13.6%.



## Fixed income

Ontario Teachers' uses fixed income investments to provide security and steady income, hedge against interest rate risks and stabilize total returns.

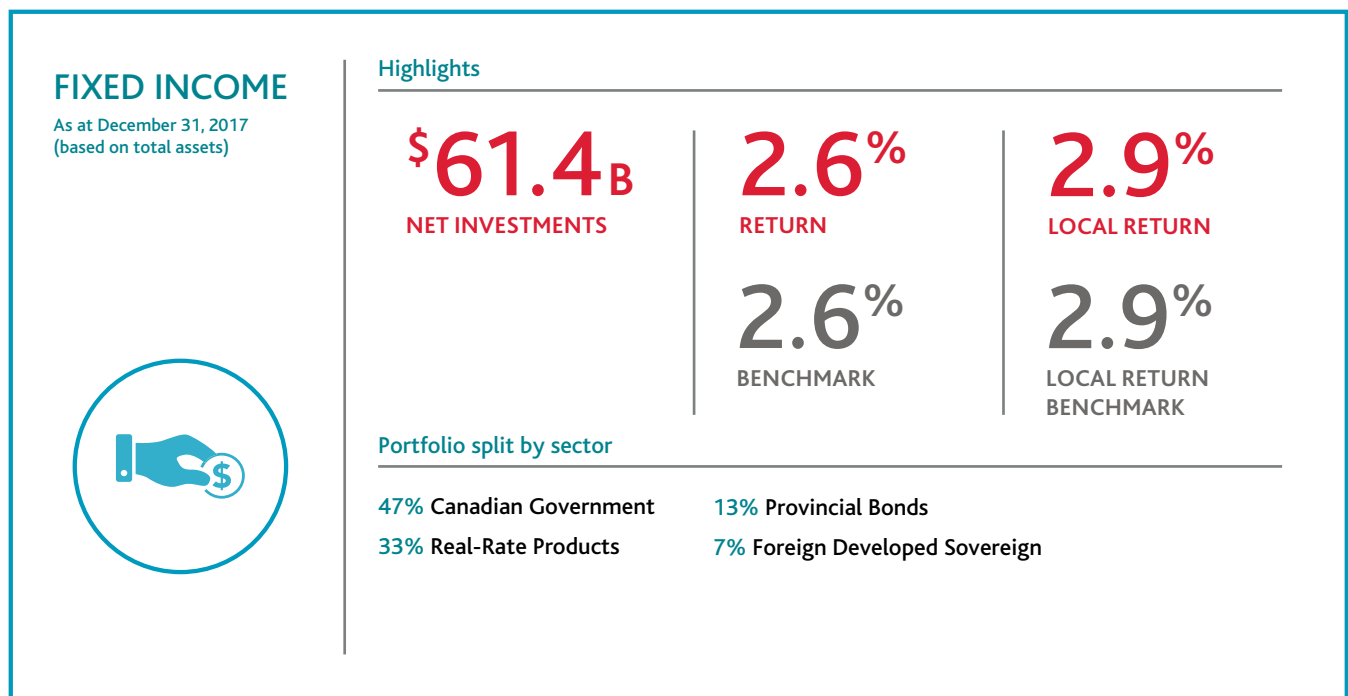
The plan owns a diversified portfolio of government bonds, provincial bonds and real-return bonds. Real-return bonds provide returns that are indexed to inflation, as measured by the Consumer Price Index, and include debt issued primarily by the Canadian and U.S. federal governments.

Fixed income assets totalled \$61.4 billion at the end of 2017, compared to \$75.2 billion a year earlier. The lower amount reflects the separation of credit from the fixed income asset class into its own separate asset class. The diversified bond portfolio met its benchmark return of 2.6% (local return 2.9%). The four-year annualized rate of return of 5.2% compares to a benchmark of 5.3%.

### Liability Driven Investment program

Ontario Teachers' employs a Liability Driven Investment (LDI) program to mitigate the risk of changes in the real discount rate. As long-term real interest rates are an important input in the discount rate decision, an allocation to real-rate products is maintained, and reviewed annually, with the purpose of hedging against changes to the discount rate. This funded program is risk-reducing and supports the OneTeachers' investment objective of managing the plan's funding ratio volatility through a reduction in the plan's exposure to changes in interest rates inherent in the plan's pension liabilities.

The LDI program is mainly funded through the use of bond repurchase agreements. This allows Ontario Teachers' to retain economic exposure to the underlying real-rate bonds in a cost-effective manner.

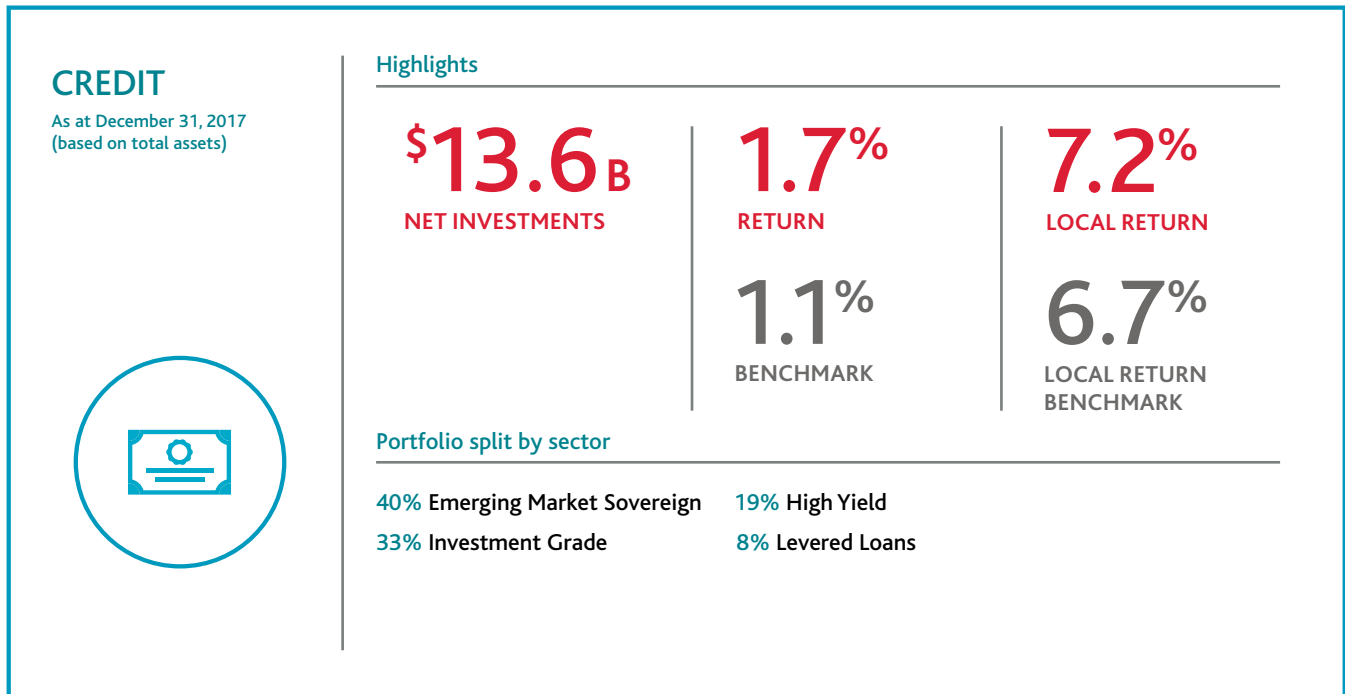




## Credit

This asset class was established January 1, 2017, and includes corporate and emerging market debt. Credit is a component of a company's capital structure which contains characteristics of both equities and fixed income. Investing in credit allows the plan to capture default, liquidity and funding risk premiums.

At December 31, 2017, the total value of credit assets was \$13.6 billion. Total returns for 2017 were 1.7% (local return 7.2%), compared to a benchmark of 1.1%. Credit generated strong local returns, but was negatively impacted by the stronger Canadian dollar relative to the U.S. dollar as well as emerging market currencies. As the asset class was established in 2017, return data is unavailable on a year-earlier and four-year basis.





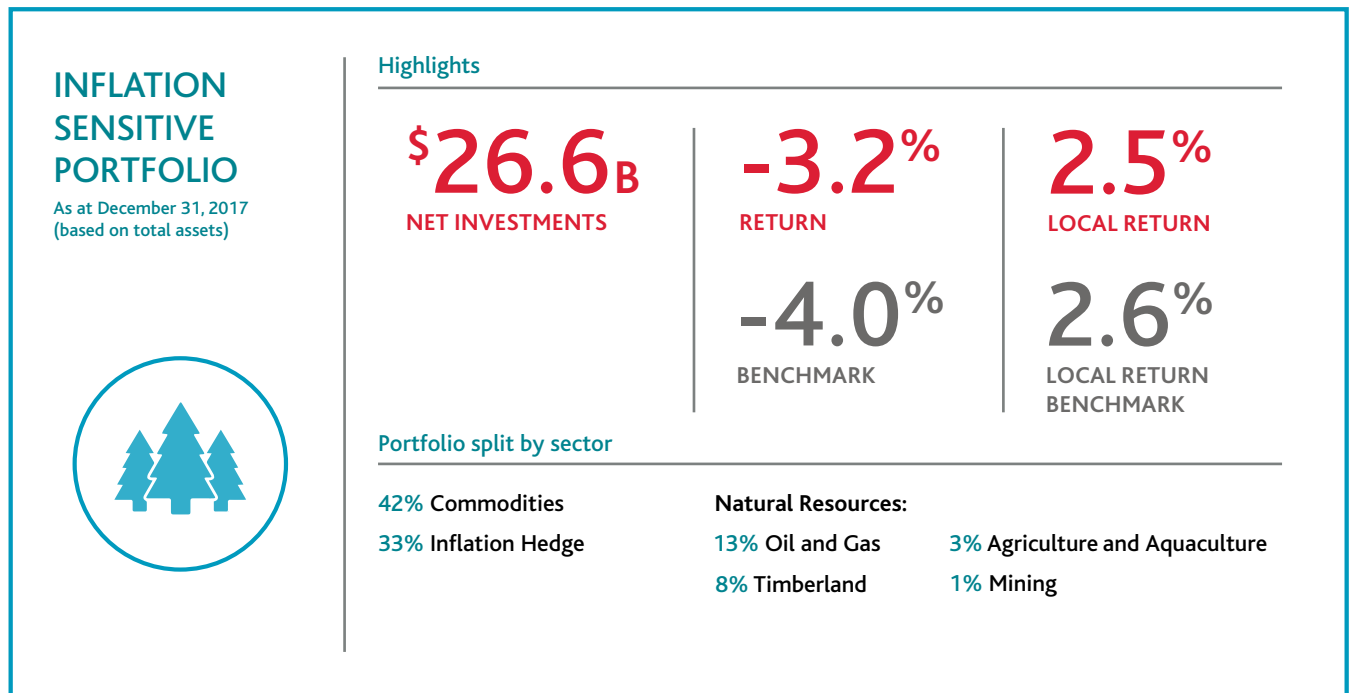
## Inflation sensitive

The former natural resources asset class became the inflation sensitive asset class in 2017. It is now divided into natural resources, commodities, and inflation hedge. These types of assets have been grouped together due to the positive relationship they exhibit with inflation surprises: they can provide stable risk-adjusted returns, diversification and protection against unexpectedly high inflation. This is important because, when the plan is fully funded, members' pension benefits increase with inflation.

Inflation sensitive net assets totalled \$26.6 billion at the end of 2017. The return of -3.2% (2.5% local return) was ahead of the benchmark of -4.0%\*. The positive local return is a reflection of higher prices for commodities, timberlands and strong performance in the oil and gas sector including Heritage Royalty. The negative Canadian dollar return is due to the decline in the U.S. dollar; however, these assets are hedged at the total-fund level. The four-year annualized rate of return of -4.4% exceeds the benchmark return of -6.3%.

Investing in natural resources was a core area of focus in 2017. We made further progress in building our diversified, private program this year through investments in Basecore, a base metals mining royalty partnership with global miner Glencore; in leading Australian avocado producer Busselton Farms; and in Atlantic Aqua Farms, the largest grower of live mussels in North America.

\* As country benchmarks are assigned to each asset, conversion back to Canadian dollars results in a negative benchmark.



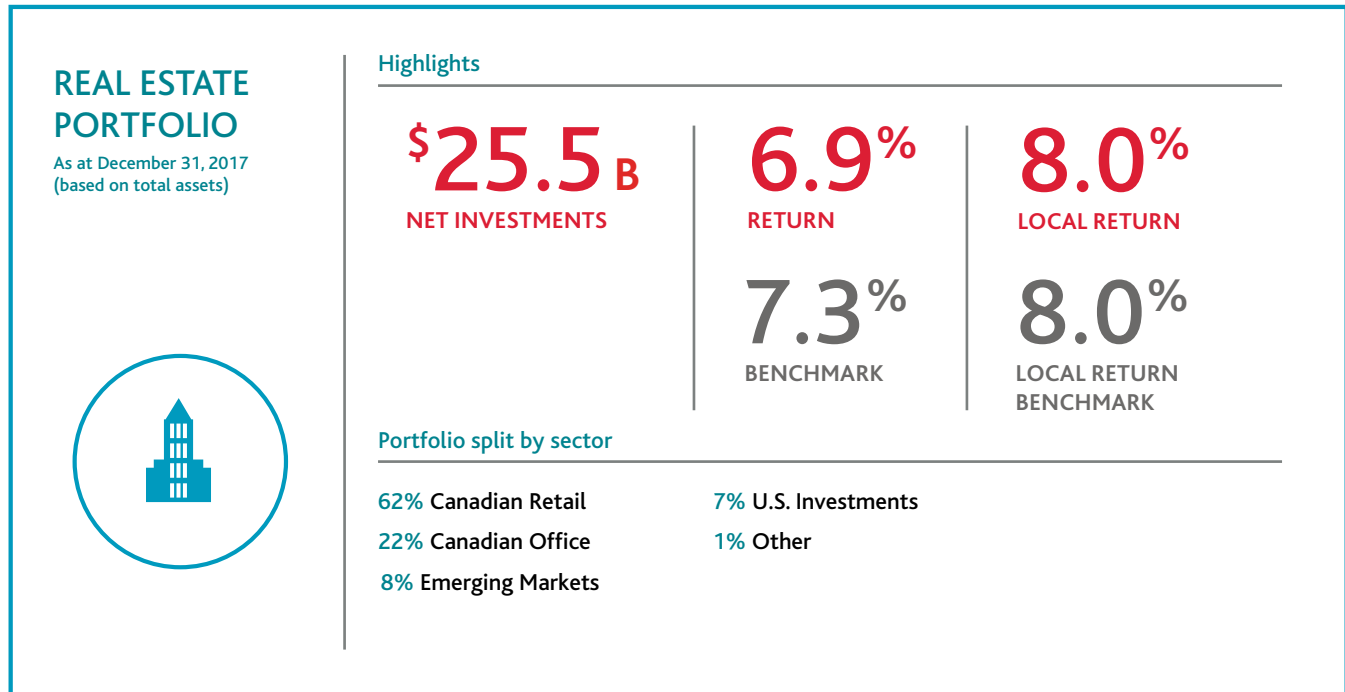




## Real assets

Real assets include real estate and infrastructure investments. Strategically, these assets provide returns that are often related to changes in inflation and therefore hedge against the cost of paying inflation-protected pensions.

At December 31, 2017, the total value of real assets was \$45.7 billion, compared to \$44.3 billion at year-end 2016. Total returns for 2017 were 10.9% (local return 11.3%), compared to a benchmark of 7.1%. The four-year annualized rate of return is 10.7%, above the benchmark of 6.8%.



The real estate portfolio is managed by the plan's wholly owned subsidiary, The Cadillac Fairview Corporation Limited, which maintains a diversified portfolio of high-quality retail and office properties designed to provide dependable cash flows.

The real estate portfolio returned 6.9% (local return 8.0%) compared to a benchmark return of 7.3% for the year ended December 31, 2017. Net asset value of real estate holdings was \$25.5 billion at year-end 2017, compared to \$26.5 billion the previous year. The four-year annualized rate of return is 9.6%, above the benchmark of 7.5%.

The decrease in net asset value in 2017 resulted from the sale of assets, offset by valuation growth in North American properties and in emerging market investments. Canadian properties experienced valuation growth resulting from growth in earnings and capitalization rate declines in the year. Investment in shares of real estate investment trust Macerich declined in value, reflecting concerns over retail real estate fundamentals in the United States. Investment in shopping centre company Multiplan increased in value as underlying fundamentals improved for the real estate sector in Brazil.

Portfolio highlights included the sale of 50% of the non-managed interest in our Vancouver portfolio including Pacific Centre and five other properties, the sale of a regional mall in Toronto, and the commencement of a new office building at 16 York Street in Toronto. Further investment was made in emerging markets in Brazil, Colombia and Mexico. The portfolio also issued US\$1 billion in unsecured debentures through the newly created Ontario Teachers' Cadillac Fairview Properties Trust. The portfolio earned operating income of \$1.2 billion in 2017, compared with \$1.1 billion the year before. The income was earned primarily from Canadian retail and office properties, with the year-over-year increase reflecting higher dividends from investments. Rental revenues and property operating expenses were both lower due to property sales in Vancouver and Toronto. At year end, the retail occupancy rate was 91% (93% in 2016), while the office occupancy rate was 93% (93% in 2016), with the decline in retail due to tenant departures and bankruptcies.

## INFRA- STRUCTURE PORTFOLIO

As at December 31, 2017  
(based on total assets)



### Highlights

**\$18.7<sub>B</sub>**  
NET INVESTMENTS

**18.2%**  
RETURN

**16.8%**  
LOCAL RETURN

**8.0%**  
BENCHMARK

**6.7%**  
LOCAL RETURN  
BENCHMARK

### Portfolio split by sector

58% Transportation  
and Logistics

15% Water and  
Wastewater Treatment

26% Energy

1% Other

The plan's infrastructure assets include investments in toll roads, airports, seaports, conventional and renewable energy, water distribution and wastewater plants. The majority of infrastructure assets are held outside of Canada, principally in the U.K., Europe, Chile, the U.S. and Australia. Overall, Ontario Teachers' seeks to build an infrastructure portfolio that will steadily increase in value, provide predictable cash flow and correlate to inflation.

The net value of the infrastructure portfolio increased to \$18.7 billion at the end of 2017, compared to \$17.8 billion a year earlier. Higher valuations for existing assets drove the increase, during a period in which we also made strategic asset sales and partial sales in favourable markets. Infrastructure assets delivered a one-year return of 18.2% (local return 16.8%), outperforming the benchmark return of 8.0%. The four-year annualized rate of return is 12.5%, exceeding the benchmark of 6.3%.

In 2017, the plan continued to invest in renewable energy, including MapleCo, a U.K.-based meter asset provider, and Anbaric Development Partners, which will develop clean energy infrastructure projects in North America and accelerate a revitalization of aging transmission networks. We are the largest institutional investor in European airports and in 2017 took the opportunity to bring in new investment partners including in the U.K. and Denmark. Due to considerable interest in the asset, we also sold our stake in high-speed rail line HS1, after making investments and adding significant value during the period of our ownership.



### Absolute return strategies

Ontario Teachers' uses absolute return strategies to generate positive returns that have low correlation to other asset returns. Internally managed absolute return strategies generally look to capitalize on market inefficiencies. The plan also uses external hedge fund managers to earn uncorrelated returns, to access unique strategies that augment returns and to diversify risk.

In 2017, assets employed in absolute return strategies totalled \$10.7 billion at year end compared to \$13.3 billion in 2016.

### Overlay

Overlay includes strategies to overweight or underweight certain foreign currency positions.

### Money market

Money-market activity provides funding for the overall investment program, and is comparable to a corporation's treasury department. The funding of the investment program allows Ontario Teachers' to:

- hedge the interest rate risk associated with our pension liabilities;
- achieve the optimal overall risk-return profile for the investment portfolio;
- obtain exposure to certain markets more efficiently;

- increase our holdings of lower-risk asset classes that generate attractive risk-adjusted returns;
- maintain sufficient liquidity.

Derivative contracts and bond repurchase agreements have played a large part in the investment program since the early 1990s. For efficiency reasons, the plan often uses derivatives to gain passive exposure to global equity and commodity indices instead of buying the actual securities. These activities result in a negative net money-market exposure in the asset mix, and the amount is expected to vary from year to year based on the plan's needs.

### **Investment funding strategy**

A complement to liquidity risk management, Ontario Teachers' investment funding strategy is focused on diversifying the sources of investment funding, reducing costs in support of managing portfolio risk and reducing pension liability risk. The investment funding program serves to manage the maturity profile of the plan's financial liabilities, and supports the management of the overall currency exposure of the global investment program.

The plan has used bond repurchase agreements for cash management since the early 1990s because it is cost effective and allows Ontario Teachers' to retain economic exposure to government bonds. In recent years, the investment funding strategy has expanded the sources of funding to include the Ontario Teachers' Finance Trust (OTFT), through which the issuances are fully guaranteed by Ontario Teachers'. It also includes the Ontario Teachers' Cadillac Fairview Properties Trust (OT-CFPT).

In 2015, OTFT began issuing commercial paper in U.S. and Canadian dollars, and had C\$9.0 billion of commercial paper outstanding at December 31, 2017.

In September 2017, OTFT issued US\$1.75 billion in five-year notes. The transaction marked OTFT's first issuance as an SSA (supranational, sovereign and agency) issuer. In the SSA niche of the capital markets, bonds are issued by entities such as government-backed agencies, international development organizations and sub-sovereign issuers. SSA issues are considered high quality and typically yield returns that are between corporate and government debt. OTFT's inaugural offering was highly rated by Moody's (Aaa), Standard & Poor's (AA+), and Dominion Bond Rating Service (AAA). The notes carry a semi-annual coupon of 2.125% and mature in September 2022.

In 2017, OT-CFPT was established to provide further investment funding diversity. This funding vehicle is backed by diversified high-quality Canadian retail and office properties in the real estate portfolio and is non-recourse to Ontario Teachers'. In March 2017, OT-CFPT had its inaugural issuance of US\$500 million in five-year notes and US\$500 million in 10-year notes. OT-CFPT is rated by Moody's (A1), Standard & Poor's (A+), and Dominion Bond Rating Service (AA). The notes carry a semi-annual coupon of 3.125% on the five-year notes, maturing in March 2022, and a semi-annual coupon of 3.857% on the 10-year notes, maturing in March 2027.

### **Liquidity management**

The plan must have sufficient cash on hand to meet current liabilities, and reserves in place in the event of disruptive markets. It must also seek to take advantage of investment opportunities. The liquidity position is therefore managed carefully. Ontario Teachers' has an established liquidity governance framework and reporting requirements. We test the plan's liquidity position regularly through simulations of major market events, and the board's Investment Committee receives regular updates on the plan's liquidity position.

The liquidity position of the plan remained strong in 2017.

Having cash and liquid assets on hand is vital for several reasons. It allows us to:

- avoid selling high-quality long-term assets to meet short-term funding needs at inopportune times;
- adjust our asset mix in response to market movements;
- invest in assets such as real estate, infrastructure, timberland and private equity that cannot be quickly monetized;
- meet short-term, mark-to-market payments embedded in our derivative exposure.

Changing rules and regulations affecting banks are indirectly impacting Ontario Teachers', so we continue to adapt and enhance the way that we manage, oversee, measure and report on liquidity.

Note 2h to the financial statements provides additional details on liquidity risk management, liquid assets and investment-related liabilities.

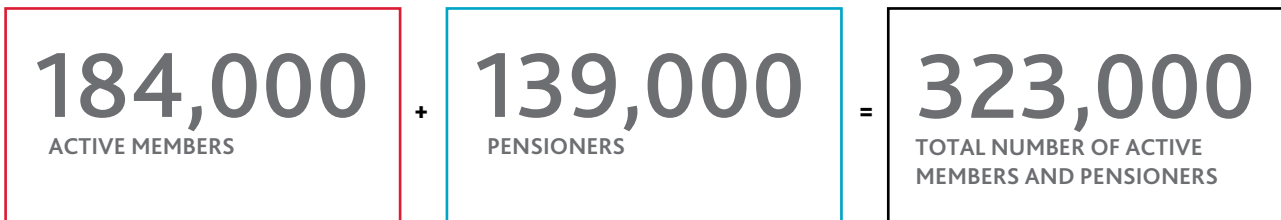
### **List of investments**

The plan publishes an annual list of individual investments that exceeded \$150 million. The list as at December 31, 2017 begins on page 92. News releases on notable transactions are also available on [otpp.com](http://otpp.com).

# MEMBER SERVICES

Outstanding service to members is central to Ontario Teachers' mission. Our plan's membership profile has a number of contributing factors which influence our sustainable service model. Our members live longer than the general Canadian population, and their life expectancy continues to increase. They have a strong commitment to their profession, contributing to their pension for an average of 26 years. The plan delivers service to a broad and changing range of active and retired members.

Demographic changes will bring unprecedented challenges and opportunities to the way we connect with our members. Within 15 years, it is estimated that the population of members born after 1980 will grow bigger than our baby boomer member population and by 2040 these "millennials" will be the majority of members we serve. We are planning, even today, as to how we will keep pace and anticipate the needs and preferences of this digitally connected generation.



Note: 2017 numbers have been updated to include members on a leave of absence.

## SERVING OUR MEMBERS

As our membership changes over time, our sustainable service challenge is to minimize the amount of effort required by members in digital or direct channels related to every aspect of their pension. This leads to an ongoing service philosophy that is simple, personal and insightful.



### SIMPLICITY

Our relationship with members is for life. We strive to find the right balance of being ready in the background to be of service, and actively reaching out at the right times to provide information and translate the complexity of pension administration into clear and straightforward words and actions.

In 2017, we found that members were encountering complexity when they purchased pension service to cover their leaves of absence. We responded with an enhanced engagement program and streamlined internal processes. This helps members see the value available to them, and ensures they do not encounter obstacles or leave valuable long-term benefits on the table. While complexity isn't always avoidable, our talented Pension Benefits Specialists are dedicated to making things as easy and simple as possible.



### PERSONAL

67% of our service interactions with members are completed by members through our digital experience. We find teachers are leaders in digital adoption – no surprise given their classrooms are full of the connected generation – and pensioners are our most contributing user group on Facebook! Members demand real-time, meaningful digital service, and we deliver tailored information for the vast majority of members instantaneously. We partner with their 170 employers, school boards across the province of Ontario, to ensure current, accurate and complete data. When a member goes online, we want to ensure they are able to create a pension calculation or apply for their pension effortlessly.

Personal service means we are investing in the capabilities to create tailored experiences for our members.



### INSIGHTFUL

For us, success means our members are satisfied with the service they receive. Every year, our Quality Service Index gives us insight on what we are doing well and where we can improve. In 2017, despite an 8% increase in demand from members through emails, phone calls and other service requests, we maintained the percentage of satisfied members.

As we move forward, we understand that members will require more tailored service online and through our contact centre, and we're making sure we have the right new channels to do so. 2017 saw us invest in foundational technology for our contact centre and digital teams that should enable us to more precisely anticipate members' needs. A great example of this is our small but growing investment in technology, which allows us to notice when something changes in our members' lives and actively reach out to provide service to aid in decision making or remind them to take action prior to deadlines. In 2018, we are upgrading our contact centre platform to ensure ongoing reliable phone service and to be ready if members want to connect with us via new channels such as online chat.

## THE DIVERSITY OF OUR MEMBERSHIP



**72**  
AVERAGE AGE  
OF PENSIONER

**131**  
PENSIONERS  
OVER 100

**6–110**  
AGE RANGE  
OF PENSIONERS



**13**  
PENSIONERS  
IN PAY FOR MORE  
THAN 50 YEARS

**18%**  
MEMBERS WHO  
ARE CURRENTLY  
OCCASIONAL TEACHERS

### SERVICE PERFORMANCE

Members consistently give the plan very high ratings, and the majority of service requests are completed within one day. Given our evolving membership, we regularly review our service metrics to ensure our service delivery is sustainable.

In previous years, the Quality Service Index (QSI) was our primary performance measurement. It involves an independent company surveying a sample of members throughout the year regarding the quality of our pension service and communications.

A new survey methodology was implemented in 2017 (after piloting in 2016) which streamlined and shortened the questionnaire, added email as a survey channel and expanded the audience selection to include not just those with a recent service experience. In addition, we now measure both the satisfaction score and the percentage satisfied (a measure of those who rate us 7 or above).

In recognition of how important it is to our retired members that we pay pensions accurately and on time, we have introduced a new measure to determine the success of our pension payroll performance. This performance measure tracks activities such as getting new pensioners onto the payroll on time, and how often pensions need to be recalculated. In 2017, we paid 139,000 people more than \$5.7 billion in pension payments. Our team is proud to say that 98.7% of these payments were made accurately and on time.

**2017 QUALITY  
SERVICE INDEX 8.8/10**

Note: New methodology for 2017 expands the number of members reached; therefore, prior-year comparatives are not provided.

Ontario Teachers' service is also measured against leading pension plans worldwide through surveys conducted by CEM Benchmarking Inc., an independent research company that ranks plan performance in various categories.

For 2016, the plan was ranked second for pension service in its peer group and internationally, and has been first or second ranked internationally for the past seven years.

## OUR MEMBERS ARE DIGITALLY CONNECTED

**375,800**

SECURE WEB LOGINS

**38%**

INCREASE  
IN FACEBOOK  
PAGE VIEWS

**10%**

INCREASE IN  
PERSONAL SERVICE EMAIL  
REQUESTS RECEIVED

**42%**

INCREASE IN  
SECURE DOCUMENTS  
VIEWED ONLINE

**1.9M**

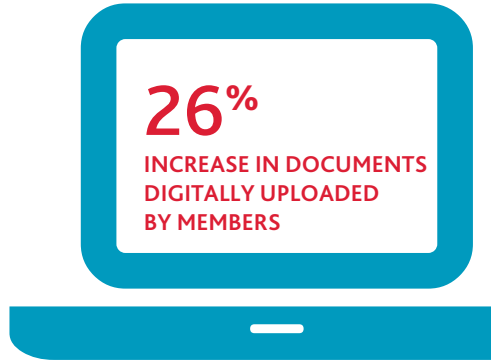
EMAILS SENT  
TO MEMBERS

**55%**

OF OUR EMAILS  
OPENED ON  
A MEMBER'S  
MOBILE DEVICE

**26%**

INCREASE IN DOCUMENTS  
DIGITALLY UPLOADED  
BY MEMBERS



### BENCHMARKING RESULTS – SERVICE LEVEL SCORE COMPARISON

	2016	2015	2014	2013
Ontario Teachers' Pension Plan	94	92	93	93
CEM world average	78	78	76	75
Peer group average	82	82	81	80
Canadian participants – average	78	77	75	74

Note: Scores are rounded and based on fiscal year data using current survey weights.

Source: CEM Benchmarking Inc.

### Strengthening management of risk

As part of the Ontario Teachers' Enterprise Risk Management Framework, there is significant management focus on assessment and management of operational risk inherent in the administration of the pension plan. In 2017, we responded to new rules from our regulator, with whom we are an active partner. We:

- responded to new statutory requirements to prepare annual statements for pensioners and former members;
- reduced legacy risk in our major systems through replacement of our pension payroll systems and administration technology.

Through an actively managed risk management program and a focus on continuous improvement in day-to-day operations, we are able to avoid significant costs and impact to service, which is critical to ensuring we have a sustainable service model.

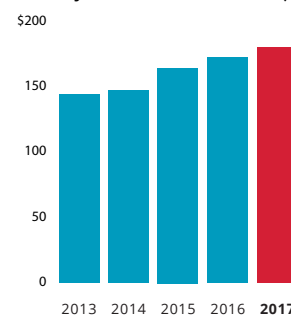
### Service cost

The cost per member was \$177 in 2017, versus \$169 in 2016.

The cost of administering the pension plan has been rising over the past five years. This is in part due to ongoing investments in risk management outlined above. We are halfway through a multi-year program to replace legacy administrative systems and forecast that cost per member will rise significantly over the next four years as technology costs are spread over time.

### SERVICE COST PER MEMBER

For the years ended December 31 (Canadian \$)



# PLAN GOVERNANCE

Ontario Teachers' believes good governance is good business because it helps companies deliver long-term value. As a plan administrator, we measure ourselves against best practices for governance, internal controls, risk management and stewardship because this helps us deliver long-term value to members.

Since its inception, Ontario Teachers' has been overseen by independent, professional board members who are required to make decisions in the best interest of all beneficiaries of the plan. The plan sponsors, the Ontario government and OTF, each appoint five board members and they jointly select the chair. This governance structure plays a crucial role in the plan's success.





## ROLE OF THE BOARD

The board oversees management of the pension fund and administration of the pension plan. Board members are professionals with financial and governance expertise and are typically drawn from the fields of accounting, actuarial science, banking, business, economics, education, information technology and investment management.

Day-to-day investment management and plan administration is delegated to the President and CEO and his team. No member of management is a board member.

Through six committees, board members review progress against management's stated objectives and confirm that management's strategies and decisions are in the best interests of all plan beneficiaries. The committees are Investment, Audit & Actuarial, Governance, Human Resources & Compensation, Operational Risk, and Benefits Adjudication. The Investment Committee includes all board members.

Board members approve strategic plans, budgets, risk appetite, the acceptable range of risk, investment policies, benchmarks, performance, compensation planning and succession plans. They monitor enterprise and operational risks and ensure appropriate mitigation plans are in place. They review and approve the unaudited, mid-year consolidated financial statements and the audited consolidated financial statements.

In addition, the board oversees annual investment objectives and reviews transactions above pre-set limits. The board and management are responsible for investment decisions; the plan sponsors are not involved in such decisions.

The board conducts regular funding valuations to assess the pension plan's long-term financial health. The results of the funding valuations are reported to the plan sponsors. The board works closely with the independent actuary in setting actuarial assumptions for these valuations, including the discount rate, with input from management. The Canadian Institute of Actuaries Standards of Practice require that each assumption is independently reasonable and that assumptions are appropriate in aggregate.

## BOARD MEMBERS

Board and committee meeting attendance was 97.5% in 2017. Please visit [otpp.com](http://otpp.com) for biographies of board members and committee mandates.



**JEAN TURMEL**  
**CHAIR**

Appointed 2007;  
Chair since 2015  
Attendance 100%

President, Perseus Capital Inc.; Board member, Alimentation Couche-Tard Inc.; Former Chair, Montreal Derivatives Exchange; Former President, Financial Markets, Treasury and Investment Bank, National Bank of Canada



**BILL CHINERY**

FSA, FCIA, ICD.D  
Appointed 2015  
Attendance 100%

Former CEO, BlackRock Asset Management; Chair, Salvation Army Investment Committee; Chair, the Independent Review Committee for the Sun Life Investment Management Institutional Pooled Funds

Human Resources & Compensation\* and Audit & Actuarial Committees



**PATTI CROFT**

ICD.D  
Appointed 2016  
Attendance 96%

Former Chief Economist with RBC Global Asset Management; Phillips, Hager and North; Sceptre Investment Counsel; and TD Canada Trust. Vice-Chair, Ontario Pension Board. Past director, founding member, Women in Capital Markets, and past director, International Foundation for Employee Benefit Plans, Canadian Medical Association Holdings Inc. and the Boilermakers' National Pension Plan Canada.

Audit & Actuarial, Governance and Benefits Adjudication\* Committees



**LISE FOURNEL**

Appointed 2016  
Attendance 100%

Former Senior Vice-President and Chief Information Officer at Air Canada; Member of the Technology Committee on the board of l'Université de Montréal; Former board member, l'Université de Montréal, Tourisme Montréal, CIREM and Musée Pointe-à-Callière

Governance and Operational Risk\* Committees



**GENE LEWIS**

Appointed 2018  
Attendance N/A

Former General Secretary, Elementary Teachers' Federation of Ontario; Former President, Ontario Public School Teachers' Federation; Former member, Ontario Teachers' Sustainability Workgroup and Partners' Consultative Committee

Audit & Actuarial and Operational Risk Committees



**STEVE N. MCGIRR**

Appointed 2015  
Attendance 93%

Former Senior EVP and Chief Risk Officer of CIBC; Senior Advisor, Lazard Canada Inc.; Member, Queen's University Cabinet; Director and Investment Committee chair of Wellspring Cancer Support Network

Investment\*\*, Human Resources & Compensation and Governance\* Committees

## 2017 BOARD HIGHLIGHTS

In 2017, the execution of the OneTeachers' strategy and the introduction of mid-year financials were key areas of focus. Also, board members continued to work on board effectiveness initiatives as well as the Portfolio Company Governance Framework.

Board members met nine times in 2017 for board meetings and eight times for Investment Committee meetings. In addition, the Governance Committee met four times, the Human Resources & Compensation Committee met four times, the Audit & Actuarial Committee met six times, the Operational Risk Committee met three times and the Benefits Adjudication Committee held two general meetings and two member appeal hearings.



### JOHN MURRAY

Appointed 2014  
Attendance 100%

Former Deputy Governor, Bank of Canada; Adjunct professor at Queen's University; Former assistant professor and visiting assistant professor, respectively, at the University of British Columbia and the University of North Carolina; Former lecturer, Princeton University

Audit & Actuarial and Human Resources & Compensation Committees



### KATHLEEN O'NEILL

FCPA, FCA, ICD.D  
Appointed 2016  
Attendance 100%

Board member, Finning International Inc. and ARC Resources Ltd.; Former Executive Vice-President, Personal & Commercial Development, and Head of Small Business Banking at BMO Bank of Montreal; Past chair, St. Joseph's Health Centre Foundation and St. Joseph's Health Centre, Toronto

Audit & Actuarial\*\* and Operational Risk Committees



### BARBARA PALK

CFA, FCSI, ICD.D  
Appointed 2012  
Attendance 100%

Board member, TD Asset Management USA Funds Inc.; Director, First National Financial; Member, board of trustees, Crombie REIT; Former Chair of the board of trustees at Queen's University; Former President, TD Asset Management Inc.; Former Governance Chair, Canadian Coalition for Good Governance

Investment\*, Human Resources & Compensation and Governance Committees



### DAVID SMITH

FCPA, FCA, ICD.D  
Appointed 2009  
Attendance 100%

Chair, Government of Canada's Small Departments Audit Committee; Former Chair and Senior Partner, PricewaterhouseCoopers; Former President & CEO, Canadian Institute of Chartered Accountants; Former Chair, Government of Canada's Audit Committee

Audit & Actuarial\* and Operational Risk Committees



### DANIEL SULLIVAN

Appointed 2010  
Attendance 86%

Former Consul General of Canada in New York; Former Deputy Chair, Scotia Capital; Former Chair and Director of the Toronto Stock Exchange; Former board member, Cadillac Fairview

Human Resources & Compensation, Governance and Benefits Adjudication\*\* Committees

\* Committee Chair

\*\* Committee Vice-Chair

## ENTERPRISE RISK MANAGEMENT

Through its regular operations, Ontario Teachers' is exposed to a variety of risks that could negatively affect the plan's ability to pay pensions and invest plan assets on behalf of members. A comprehensive Enterprise Risk Management (ERM) Program and board oversight is in place to manage and mitigate risks.

The board articulates its risk tolerance to management in its Enterprise Risk Appetite Statement. This forms the basis from which management formalizes risk tolerances for identified risks. The board reviews and approves the Enterprise Risk Appetite Statement at least biennially.

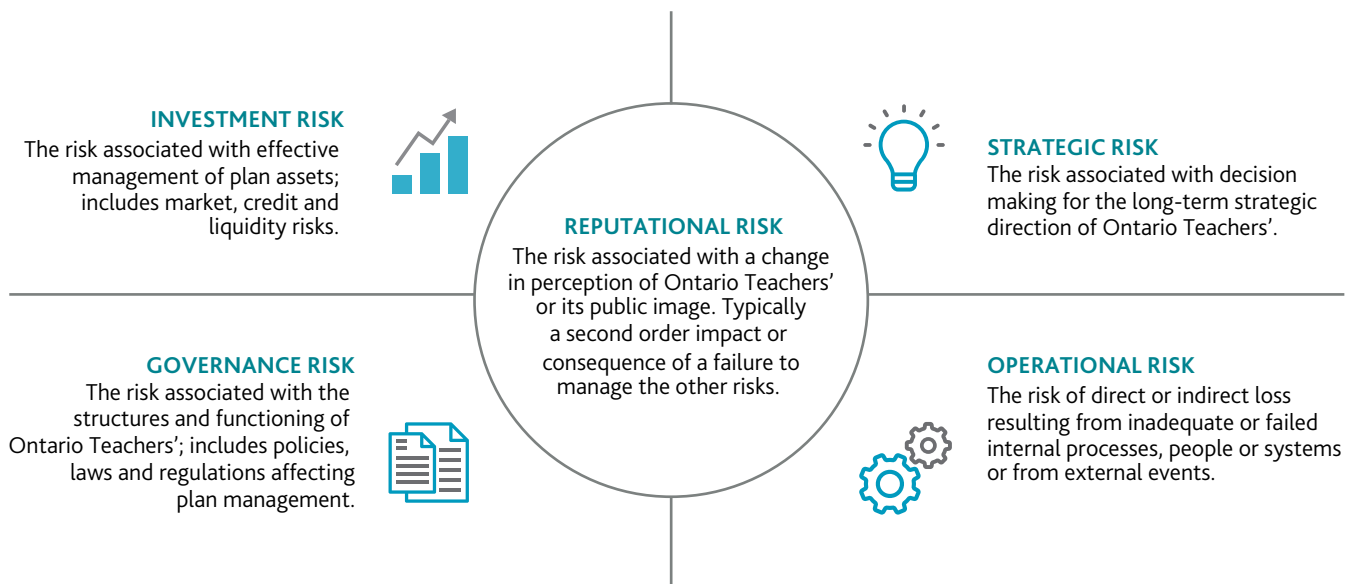
A management ERM Committee oversees the program. The ERM Committee is chaired by the CEO and includes senior representatives from all divisions. It meets regularly and reports to the board semi-annually, and more frequently as necessary.

The executive team is responsible for establishing and implementing risk policies, including the continued identification, assessment, control and mitigation, and monitoring of investment, operational, governance, strategic and reputational risks.

Enterprise risk management has also been integrated within the strategic planning process at Ontario Teachers' to enhance the prioritization of risk management activities and effective allocation of resources. In 2017, the plan shifted the timing of its core ERM reporting to the board to June, to support fall strategic planning initiatives, and took additional steps to improve alignment between ERM and enterprise-wide planning.

### Risk categories

Ontario Teachers' five enterprise risk categories are shown below:



## MANAGEMENT COMMITTEES

Plan governance is further strengthened by a management committee structure. In 2017, a comprehensive review of the structure was completed. At Ontario Teachers', a management committee has an approved mandate, specified oversight and decision-making authority. It is chaired by a senior leader, provides direction or guidance and allocates resources (often across the enterprise). The committees include Portfolio Governance & Oversight, Operations and two CEO-led Risk Committees with oversight of Member Services and Investments.

## LEGISLATIVE AND REGULATORY UPDATE

It was another year of significant regulatory and plan changes in 2017. The regulatory environment is ever-changing, and we have allocated more resources in recent years to ensure compliance with legislation and investment regulations that govern registered pension plans in Ontario. The pension plan also has to comply with various rules and regulations in countries where it invests.

### Regulatory oversight

Ontario appointed the first board of directors for the new Financial Services Regulatory Authority (FSRA) in 2017. FSRA is intended to have regulatory authority across multiple financial sectors and to modernize current regulators, including the Financial Services Commission of Ontario (FSCO), which regulates Ontario Teachers' and other pension plans. The Ontario government introduced additional legislation in November 2017 relating to the mandate and governance structure of FSRA that would provide FSRA with rule-making authority in respect of a number of matters. We continue to monitor developments relating to FSRA.

Pending the transition to FSRA, FSCO has been given the power, effective January 1, 2018, to levy administrative penalties for certain violations of Ontario's *Pension Benefits Act*. While current enforcement tools remain in place, the coming into force of an administrative monetary penalty regime will increase the compliance risk for all plan administrators, including Ontario Teachers'.

### Compliance and advocacy

We interact with regulatory and government officials on a variety of investment and pension administrative matters, advocating for clear and consistent rules and sharing our expertise on public policy issues that are relevant to our mission of providing outstanding service and retirement security for plan members.

### Taxation

The global tax landscape is constantly evolving: tax policies shift and scrutiny by tax authorities is increasing. In response, Ontario Teachers' has adopted a conservative approach to tax risk and planning. We comply with all applicable tax laws and regulations in the countries where we invest, and monitor emerging trends and changes in tax laws to confirm that our investments remain in compliance. As a global investor, we believe it is important for governments to pursue clarity and predictability in tax laws, and we welcome the opportunity to engage in consultations on tax policy matters with authorities and policy-makers worldwide. To learn more about our approach to taxation, please see "Tax Strategy" in the Investment Performance section of [otpp.com](http://otpp.com).



### MANAGING CYBERSECURITY RISK

The board recognizes the importance of cybersecurity and has established a cyber-risk appetite statement.

A dedicated team of cybersecurity professionals, led by the Director and Chief Information Security Officer, manages a comprehensive program to help protect the organization against cybersecurity breaches and other incidents by ensuring appropriate security controls are in place to support the confidentiality, integrity and availability of our information. The program is regularly assessed, and includes around-the-clock monitoring and alerting of potentially suspicious security events and incidents. Additionally, our incident response plans are regularly tested and practised, so that the plan is as ready as possible to manage and recover from cybersecurity or business continuity incidents, should they occur. In addition, key aspects of our member data are encrypted to help ensure the data remain protected.

## Pension plan changes

The plan sponsors, OTF and the Ontario government, make plan changes to implement amendments to the pension plan. The plan was amended in 2017 to:

- provide that, where there is a gap between an eligible member's "ideal start date" (being the later of the date they're entitled to an unreduced lifetime pension and their last date worked) and their pension application date, the member is entitled to a lump-sum payment equal to any monthly pension payments during that gap;
- provide an early retirement factor for all members who cease employment on or after January 1, 2018, were age 50 or older in the month they stopped working, and had a gap between their cessation of employment and their pension inception that is consistent with members who have no gap;
- remove the additional "special" contribution rate of 1.1% of a member's pensionable salary beginning January 1, 2018;
- make various housekeeping amendments, including changes to simplify administration.

## Partners' Agreement changes

The Partners' Agreement, the document which established the partnership between the plan sponsors for the purpose of designing and administering the plan, was amended to clarify that compensation paid to an Ontario Teachers' board or committee member is not limited solely because the person has been appointed to sit on a public body.

## Retirement Compensation Arrangement (RCA) Agreement changes

The RCA Agreement was amended to provide the board with the authority to determine the amount of contributions allocated to the RCA fund, subject to certain limits and upon the advice of the plan's actuary. The RCA was established by the plan sponsors as a supplementary plan to provide certain benefits to some members affected by restrictions in the *Income Tax Act* (Canada).

# REPORT FROM THE HUMAN RESOURCES & COMPENSATION COMMITTEE

The Human Resources & Compensation Committee (HRCC) is pleased to share with you an overview of our 2017 performance and how it aligns with the pay of our employees. Our compensation framework is designed to reward, over the long term, outstanding performance within the bounds of our risk budget. It is primarily focused on:

- paying for performance;
- attracting and retaining top investment, corporate, and member services talent;
- delivering on our pension promise;
- living Ontario Teachers' mission, vision and values.

## NEW COMPENSATION FRAMEWORK

In 2016, Ontario Teachers' engaged in a comprehensive review of its compensation framework to ensure it remains competitive within the market and aligned with the organization's strategy, mission, vision and values.

In adhering to these principles, we updated our 2017 incentive program and refined the measures used to assess our performance. We introduced total-fund return and the path by which we get there, while still encouraging outperformance relative to the investment benchmark and the delivery of value-add. In addition, our program continues to keep our employees focused on operational efficiency and member satisfaction.

To complement our OneTeachers' investment strategy, we aimed to align the organization under a single incentive program with a balance between financial, operational, service quality, departmental and individual performance for all employees.

Further, to promote collaboration and execution of the mission, vision and values of Ontario Teachers', we revised the individual performance assessment to not only reward the achievement of performance objectives, but also assess the way in which our employees go about their day-to-day interactions – in the best interests of each other and the overall objectives of Ontario Teachers'.

## ONTARIO TEACHERS' 2017 PERFORMANCE

In supporting our new compensation framework, the overarching driver is the performance of the total fund. The one-year total-fund return was \$2.8 billion above our benchmark, and our four-year cumulative value-add was \$9.6 billion. Fiscal 2017 was also very strong, with a 9.65% return.

## FISCAL 2017 PAY DECISIONS

Over the past four years, Ontario Teachers' total-fund performance relative to our compensation thresholds has been very strong, resulting in combined total-fund performance exceeding the performance multiplier of 2.0x target. Management and the board assessed Ontario Teachers' overall performance relative to a corporate scorecard and deemed, based on the metrics, that this was also very strong, resulting in a multiplier of 1.85x target. The board assessed Mr. Mock against his individual objectives and determined a multiplier of 2.0x target for 2017. The weighted average of factors resulted in an overall incentive multiplier for Mr. Mock of 1.91x target.

Overall, under the new compensation framework, the HRCC believes the compensation paid for fiscal 2017 is appropriate and aligned with the objectives of Ontario Teachers'.

# COMPENSATION DISCUSSION & ANALYSIS

The Compensation Discussion & Analysis explains Ontario Teachers' approach to compensation, the various elements of our pay programs and the remuneration paid to our named executive officers (NEOs). In fiscal 2017, our NEOs were:

- Ron Mock, President and Chief Executive Officer (CEO);
- David McGraw, Chief Financial Officer (CFO);
- Bjarne Graven Larsen, Executive Vice-President (EVP) and Chief Investment Officer (CIO);
- Jane Rowe, Senior Managing Director (SMD), Private Capital;
- Jo Taylor, SMD, International.

## OUR COMPENSATION FRAMEWORK

### Changes for 2017

In 2016, Ontario Teachers' engaged in a comprehensive review of its compensation framework to ensure it remains competitive with the market and aligned with the organization's strategy, mission, vision and values. As a result, targeted enhancements were made to the incentive plans, including:

Annual Incentive Plan (AIP)	Long-term Incentive Plan (LTIP)
<ul style="list-style-type: none"> <li>• Added absolute total-fund return and risk to the evaluation of Ontario Teachers' performance (in addition to total-fund value-add, member service, and operational excellence)</li> <li>• Added strategic objectives in addition to investment performance in the evaluation of department performance</li> <li>• Added the explicit measurement of "how" employees performed, in addition to "what" they did, in the evaluation of individual performance</li> </ul>	<ul style="list-style-type: none"> <li>• Adjusted the funding mechanism of the pool so that it is based on the assessment of absolute total-fund return and risk, in addition to total-fund value-add</li> <li>• Elongated the historical performance measurement period on which the size of the LTIP pool is based from one year to four years</li> </ul>

### Our compensation philosophy and objectives

Ontario Teachers' compensation framework has been developed on a foundation of pay-for-performance. Our compensation programs consist of base salary, annual incentive, and long-term incentive and are structured to ensure that there is direct alignment between the long-term performance of the fund and the compensation paid to senior management.

Our compensation framework is designed to:

**Align the enterprise** – All employees are part of the same compensation framework, with a focus on total-fund returns and risk, driven by collaboration and innovation across groups and asset classes, as well as service to our members, efficiency, and managing costs.

**Motivate and reward top performance over the long term** – Incentive compensation makes up a significant portion of total compensation, particularly for more senior employees, to align with Ontario Teachers' pay-for-performance culture.

Further, to emphasize performance over the long term, senior employees generally receive more of their incentive compensation in the form of long-term incentives relative to the market.

**Ensure market-competitive pay levels and mix to attract and retain high-calibre employees** – The compensation framework is aligned with the market, considering the various skill sets required to achieve the organization's collective goals.

At expected levels of performance, the framework aims to pay around market median, with the opportunity for employees to earn top-quartile pay in years of exceptional performance.

**Enhance the link between pay and employee behaviours** – In measuring employees' individual performance, there is explicit focus on not only what was accomplished, but how employees' behaviours aligned with Ontario Teachers' mission, vision and values – working in the best interest of the enterprise.



**Balance multiple time horizons** – Investment performance is measured historically over four years to ensure a longer-term focus aligned with plan beneficiaries.

On balance, individual performance, member satisfaction, and the operational and strategic initiatives required to ensure the continuous improvement and success of the organization are measured on an annual basis.

**Align pay with employees' level of accountability** – The compensation framework takes into account employees' potential to impact performance by ensuring evaluations emphasize the areas over which they have most control (e.g., for junior employees, the focus is on individual performance; for senior employees, more emphasis is placed on the performance of Ontario Teachers' as a whole).

**Provide managers with flexibility to make the "right" pay decision** – Structured discretion is embedded in the framework to ensure pay decisions are more than just formulaic outcomes.

Managers have the necessary tools to ensure a holistic assessment of performance drives the ultimate pay package for each employee.

**Align with good governance and ensure our compensation programs do not encourage excessive risk-taking** – The framework is embedded with a number of risk mitigating features (as outlined below) and ensures employees' interests are aligned with those of the members of the Ontario Teachers' Pension Plan.

Further, the LTIP was enhanced to include an explicit measure of total-fund risk, to ensure sufficient focus on this important area.

## INDEPENDENT BENCHMARKING PROCESS

Given the varied employment opportunities at Ontario Teachers', executive and non-executive positions are compared against relevant job groups in like markets. Our objective is to be competitive with those organizations with which we compete directly for talent, including Canadian pension funds, banks, insurance companies and investment managers, depending on role function and responsibilities.

For certain positions in international markets, we also compare to the investment management organizations in the U.K. and Hong Kong regions, respectively.

We generally target our total direct compensation at the median of our peers for expected levels of performance, and at the top quartile of our peers for exceptional performance.

## KEY RISK MITIGATING FEATURES

The key design principle impacting each employee's incentive pay, to varying degrees, is our risk budget. At the beginning of each year, board members approve the active risk allocations for the total fund and each investment department, which in turn establish expected annual dollar value-add performance goals (i.e., dollars earned versus benchmark dollars earned) for the year. Actual investment performance at the total-fund and departmental levels (measured in dollars of value-add) is compared against the expected performance goals. Additional measures used to monitor, assess and mitigate risk in our incentive programs include:

- setting an upper limit on individual annual incentive payments;
- modelling and testing our annual and long-term incentives under multiple performance scenarios in order to ensure that the payouts align with expected performance outcomes;
- comprehensive balanced scorecards that measure progress against strategic objectives at the enterprise level and division/department level, including risk management initiatives;
- clawback provisions stating that employees committing willful acts of dishonesty, fraud or theft shall be required to pay back all amounts paid to the participant under the AIP and/or LTIP.

Our compensation framework meets or exceeds the Principles for Sound Compensation Practices established by the Financial Stability Board and endorsed by the G20 nations.

## INDEPENDENT ADVISORS

In 2017, Ontario Teachers' management engaged Willis Towers Watson to assist with a review and update of the compensation framework.

## ELEMENTS OF OUR COMPENSATION PROGRAM – OVERVIEW

Our compensation program comprises base salary, annual incentives, and long-term incentives for non-bargaining unit employees.

Compensation structures for bargaining unit staff have been negotiated into the collective agreement. The four-year agreement runs through to December 31, 2021.

### Base salary

Base salaries compensate employees for fulfilling their day-to-day responsibilities and are reviewed annually. Each employee at Ontario Teachers' is assigned a job level with a corresponding salary grade that is designed to provide market-competitive pay commensurate with the employee's responsibilities, demonstrated skills, knowledge and track record of performance.

### Annual Incentive Plan

Our AIP rewards employees with cash awards based on business and individual performance results relative to goals.

Weightings for each element vary by level for Investment, Corporate, and Member Services employees.

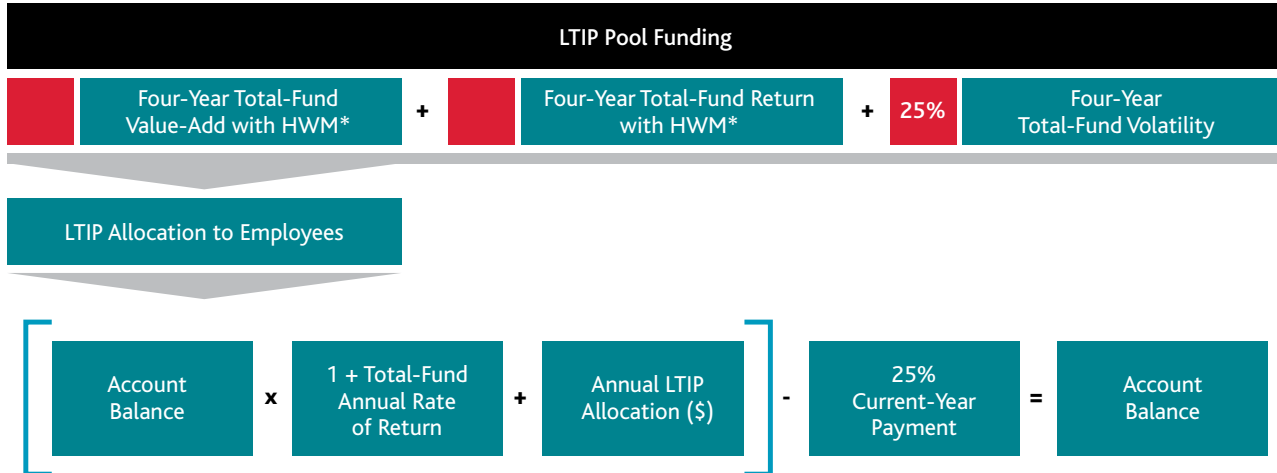
Teachers' Performance (0x–2x)		+	Division/Department Performance (0x–2x)		+	Individual Performance (0x–2.5x)	
20%	Four-Year Total-Fund Real Return			Four-Year Department Value-Add (as applicable)			<i>What</i> – Assessment of performance related to business outcomes
20%	Four-Year Total-Fund Value-Add						
10%	Four-Year Total-Fund Volatility						
15%	Service Excellence Index			Annual Strategic Execution			<i>How</i> – Assessment of how employees accomplished the business outcomes
35%	Annual Operational Metrics						
<b>AIP Payout</b>							
Note: Employees may allocate up to 100% of AIP to the total-fund plan, private capital plan (save for the Finance Division), or a combination of the two plans for up to two years.							

Note: Value-add is after deducting management fees, transaction costs and administrative costs allocated to the Active programs (includes annual incentives, but does not include long-term incentives).

## Long-Term Incentive Plan

Our LTIP rewards employees with cash awards on the basis of total-fund performance and in consideration of their personal performance and potential. The cash awards are allocated at year end to a notional account, which is drawn down at a rate of 25% per year.

LTIP eligible employees include Investment employees at the principal level and above; and Corporate and Member Services employees at the director level and above.



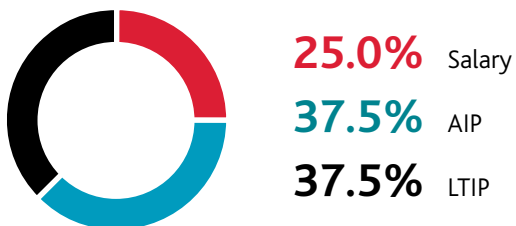
\* HWM = high water mark: positive performance required to offset any negative performance.

## Mix of pay

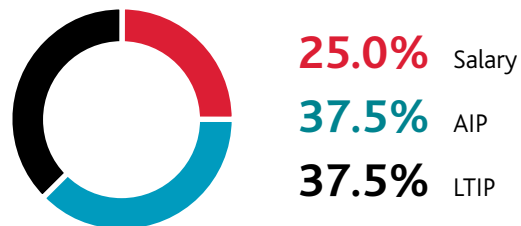
Investment, Corporate, and Member Services employees have different percentages of their compensation tied to our variable pay programs. Recognizing their direct influence on investment results, investment professionals, including our CEO, have a greater percentage of their total direct compensation (base salary, annual incentive and long-term incentive) tied to our variable pay programs. Detailed below is the target total direct compensation mix for our NEOs. The actual pay mix realized may be different depending upon Ontario Teachers', divisional, and investment performance and the NEOs' individual performance.

### TARGET PAY MIX

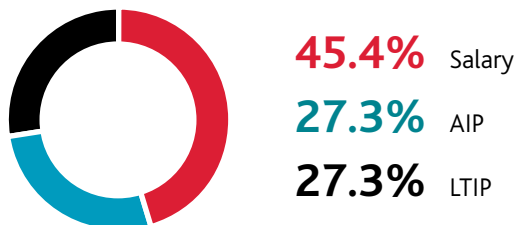
#### PRESIDENT AND CEO



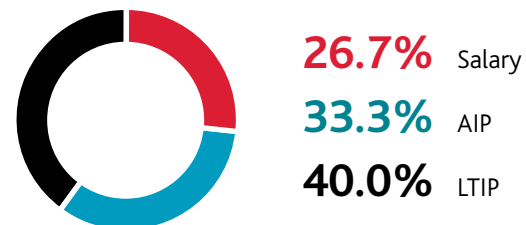
#### EVP AND CIO



#### CHIEF FINANCIAL OFFICER



#### SMD, INVESTMENTS



## Benefits and other compensation

Ontario Teachers' provides a competitive benefit program that includes life insurance, disability, health and dental benefits, vacation and other leave policies and an Employee Assistance Program. Ontario Teachers' retirement benefit for employees is a defined benefit pension plan, described on page 49. Employees based outside of Canada are eligible to participate in local contributory pension plans based on local regulations and market practices.

## Executive employment contracts

There are no executive employment contracts or severance guarantees in place.

## COMPENSATION DECISIONS MADE IN 2018 REFLECTING 2017

### How decisions are made

Annually, the board members and the CEO agree on the key objectives comprising the CEO's individual performance measures. At the end of the year, the board members evaluate the CEO's performance relative to the annual objectives and responsibilities and assign an overall performance rating. The CEO's individual performance rating, Ontario Teachers' performance and total-fund performance are all considered when the board determines the CEO's total direct compensation.

Similar to the CEO, senior officers establish individual performance goals annually, and at year end they are evaluated relative to these goals. The outcome of individual goals and other performance measures, as previously noted, informs the total direct compensation recommendations for senior officers which are presented to board members for approval.

## 2017 PERFORMANCE RESULTS

### Ontario Teachers' performance

To ensure we stay focused on our mission to provide outstanding service and retirement security to our members today and tomorrow, we prepare an enterprise scorecard comprising goals and measures for four categories (total-fund return, value-add, quality service, and operational performance). The scorecard ensures a balanced view of key areas that will drive employees to achieve our short-, medium-, and long-term goals.

At the end of the year, the scorecard is evaluated and the results are presented to board members for approval. In 2017, employees delivered exceptional performance with a multiplier of 1.85 out of 2.0.

### Total-fund performance

The table below summarizes, at the total-fund level, the performance for 2014 through to 2017 relative to the targets as approved by the board. Over the four-year cumulative period, staff outperformed target total-fund value-add, resulting in the maximum performance multiplier of 2.0x target.

Year	Total-Fund Value-Add	Total-Fund Real Return	Total-Fund Volatility
2014 to 2017	Above target	Above target	Above target

### Division/department performance

The table below summarizes performance in terms of value-add earned relative to the return required on the four-year risk allocation for each of the respective investment departments listed below:

Year	Public Equities	Private Capital	Infrastructure & Natural Resources	Capital Markets
2014 to 2017	Below target	Above target	Significantly exceeded	Above target

We also assess the strategic execution of each of our divisions and departments across the organization against their respective annual objectives. Overall, employees delivered performance above target, with an average multiplier of 1.68 out of 2.0.

## EXECUTIVE COMPENSATION

The compensation table represents disclosure of base salary, annual incentive, long-term incentive and other compensation earned in 2015, 2016 and 2017 by the CEO, the CFO and the three other most highly compensated executives, excluding subsidiary companies.

Name and Principal Position	Year	Base Salary A	Annual Incentive B	Long-Term Incentive Allocation C	Total Direct Compensation <sup>1</sup> A+B+C	Long-Term Incentive Paid D	Other <sup>2</sup> E	Change in Pension Value <sup>3</sup> F	Total Compensation <sup>4</sup> A+B+D+E
Ron Mock President and CEO	2017	\$543,077	\$1,575,800	\$2,722,500	\$4,841,377	\$2,496,400	\$1,177	\$1,324,400	\$4,616,454
	2016	514,615	1,364,200	1,287,000	3,165,815	2,208,000	1,159		4,087,974
	2015	500,000	1,425,000	3,000,000	4,925,000	2,412,600	1,160		4,338,760
David McGraw CFO	2017	374,894	436,700	800,000	1,611,594	738,500	810	600,900	1,550,904
	2016	367,615	374,200	345,000	1,086,815	654,800	828		1,397,443
	2015	360,769	383,700	670,000	1,414,469	727,200	6,300		1,477,969
Bjarne Graven Larsen EVP and CIO	2017	449,519	1,276,400	2,450,000	4,175,919	1,021,300	972	118,200	2,748,191
	2016	384,135	1,036,300	1,050,000	2,470,435	497,000	1,236,293		3,153,728
Jane Rowe SMD, Private Capital	2017	364,635	849,100	1,780,000	2,993,735	1,643,200	788	248,600	2,857,723
	2016	342,769	793,900	490,400	1,627,069	1,456,900	772		2,594,341
	2015	334,000	842,800	2,600,000	3,776,800	1,706,700	775		2,884,275
Jo Taylor SMD, International <i>All amounts are reported in GBP</i>	2017	313,539	801,100	1,884,000	2,998,639	942,600		25,083 <sup>5</sup>	2,057,239
	2016	290,000	549,300	326,900	1,166,200	531,900			1,371,200
	2015	290,000	581,800	1,050,000	1,921,800	575,700			1,447,500

<sup>1</sup> When making compensation decisions, the board and management focus on Total Direct Compensation (TDC), which reflects base salary, annual incentive and long-term incentive allocation.

<sup>2</sup> Other compensation includes one or more of the following: group term life insurance, accidental death & dismemberment, unused vacation cashout, sign-on bonus and one-time relocation allowance.

<sup>3</sup> The change in pension value reflects changes to the Supplemental Employee Retirement Plan (SERP) effective January 1, 2019. See below for additional details.

<sup>4</sup> Change in pension value and long-term incentive allocation are not included in total compensation.

<sup>5</sup> Received employer pension contributions as cash-in-lieu.

## Notional account balances

The table below outlines the notional account balances for each NEO.

### Notional Account Activity

Name and Principal Position	Opening Balance	2017 Rate of Return	January 1, 2018 Allocation	2018 Payment	Balance
Ron Mock President and CEO	\$6,623,805	9.65%	\$2,722,500	\$2,496,400	\$7,489,155
David McGraw CFO	1,964,556	9.65%	800,000	738,500	2,215,651
Bjarne Graven Larsen EVP and CIO	1,491,184	9.65%	2,450,000	1,021,300	3,063,796
Jane Rowe SMD, Private Capital	4,370,888	9.65%	1,780,000	1,643,200	4,929,513
Jo Taylor SMD, International <i>All amounts are reported in GBP</i>	1,720,513	9.65%	1,884,000	942,600	2,827,956

## Retirement benefits

Ontario Teachers' employees participate in the Public Service Pension Plan (PSPP) and Public Service Supplementary Plan (PSSP), or the OPSEU Pension Plan, all of which are defined benefit plans. Employees based outside of Canada are eligible to participate in local contributory pension plans based on local regulations and market practices.

Employees with pensionable earnings in excess of *Income Tax Act* (ITA) regulations also participate in a non-registered, unfunded Supplemental Employee Retirement Plan (SERP). For roles at the managing director level or above, a portion of their annual incentive may be included as pensionable earnings.

During the past year, Ontario Teachers' reviewed its SERP design. Effective January 1, 2019, annual incentive payments will no longer be included as pensionable earnings. This change will not affect earnings prior to 2019. In order to continue to provide a competitive total rewards package, employees' annual and long-term incentive targets will increase effective January 1, 2019.

The table below outlines the estimated present value of the total pension from all sources (PSPP, PSSP and SERP) and estimated annual pension benefits at age 65 for the CEO, the CFO and the three other most highly compensated executives, excluding subsidiary companies.

Name and Principal Position	Projected Years of Service at Age 65	Estimated Total Annual Pension Benefit at Age 65	Present Value of Total Pension January 1, 2017	2017 Compensatory <sup>1</sup> Annual Change in Pension Value	2017 Non-Compensatory <sup>2</sup> Annual Change in Pension Value	Present Value of Total Pension December 31, 2017
Ron Mock President and CEO	17	\$408,700	\$5,946,300	\$714,900	\$609,500	\$7,270,700
David McGraw CFO	17	179,600	1,805,500	233,500	367,400	2,406,400
Bjarne Graven Larsen EVP and CIO	13	151,300	174,300	197,900	-79,700	292,500
Jane Rowe SMD, Private Capital	13	158,000	1,138,600	275,500	-26,900	1,387,200

<sup>1</sup> Includes the impact of the elimination of annual incentive from pensionable earnings effective January 1, 2019.

<sup>2</sup> Includes interest on liabilities and impact of any assumption changes.

The values shown above are estimated based on assumptions and represent entitlements that may change over time.

## BOARD AND COMMITTEE MEMBER REMUNERATION

The Governance Committee of the board is responsible for making recommendations with respect to board and committee member remuneration.

Annual Retainer – Chair of the Board	\$190,000
Annual Retainer – Board Member	\$90,000
Additional Committee Chair Retainer	\$15,000
Committee Member Retainer (if on more than three committees)	\$5,000

Board members are reimbursed for normal expenses for travel, meals and accommodation, as required. For 2017, these expenses totalled \$228,500.

Board Member	Board Meetings	Committee Meetings	2017 Total Remuneration
Jean Turmel Chair of the Board	9	24	\$190,000
Rod Albert Chair, Benefits Adjudication Committee	9	20	110,000
Bill Chinery Chair, Human Resources & Compensation Committee	9	21	110,000
Patti Croft	8	17	90,000
Lise Fournel Chair, Operational Risk Committee	9	17	105,000
Steve McGirr Chair, Governance Committee and Vice-Chair, Investment Committee	9	18	110,000
John Murray	9	17	90,000
Kathleen O'Neill	9	18	90,000
Barbara Palk Chair, Investment Committee	9	18	105,000
David Smith Chair, Audit & Actuarial Committee	9	17	110,000
Daniel Sullivan Vice-Chair, Benefits Adjudication Committee	8	20	110,000

## FINANCIAL REPORTING

The Financial Reporting section highlights sections of the financial statements that management views as key to understanding the financial position of the plan.

Included in the pages preceding the consolidated financial statements are three letters that describe the responsibility of management, the auditors and the actuaries:

- Management's Responsibility for Financial Reporting – identifies that management is responsible for preparation of the financial statements. The financial statements are prepared according to Canadian accounting standards for pension plans. The board, which is independent from management, has ultimate responsibility for the financial statements and is assisted in its responsibility by the Audit & Actuarial Committee.
- Auditor's Report to the Administrator – the formal opinion issued by an external auditor on the consolidated financial statements.
- Actuaries' Opinion – identifies that valuation methods are appropriate, data is sufficient and reliable and the assumptions are in accordance with accepted actuarial practices. The actuarial valuation is based on membership data, actuarial and accounting standards, and long-term interest rates.

## FINANCIAL STATEMENT VALUATION

The financial statement valuation measures the fair value of the plan's net assets available for benefits and pension liabilities at a point in time. The financial statement valuation provides a snapshot of the financial health of the plan as it does not assume any future contributions and does not project the cost of benefits that current members have not yet earned. The financial statement valuation is therefore not considered an indicator of the long-term sustainability of the plan and not used by the plan sponsors to set contribution rates and benefit levels.

### Methods and assumptions used for the financial statement valuation

The financial statement valuation is prepared in accordance with guidance from Chartered Professional Accountants of Canada (CPA Canada). The pension liabilities, prepared by an independent actuary, take into account pension credit earned to date by all plan members and contributions already received by the plan. Valuation techniques, estimates and pension liabilities are described further in the notes to the consolidated financial statements.

The actuarial assumptions used in determining the pension liabilities reflect best estimates of future economic and non-economic factors proposed by management and approved by the plan's board. Actual experience typically differs from these assumptions, and the differences are recognized as experience gains and losses in future years.

The discount rate for the financial statements is based on market rates, as at the valuation date, of bonds issued by the Province of Ontario, which have characteristics similar to the Plan's liabilities. The discount rate is determined by using a cash flow-based estimation methodology which applies a weighted average discount rate that reflects the estimated timing and amount of benefit payments. The discount rate used is 2.95% (3.25% in 2016). Further details on the methods and assumptions used can be found in note 4 of the plan's consolidated financial statements.

## FINANCIAL POSITION AS AT DECEMBER 31, 2017

The plan ended 2017 with a financial statement deficit of \$14.8 billion, up from the deficit of \$13.8 billion at the end of 2016. The deficit represents the difference between net assets available for benefits of \$189.5 billion and accrued pension benefits of \$204.3 billion at year end.

### YEAR-END FINANCIAL POSITION

As at December 31 (Canadian \$ millions)	2017	2016
Net assets available for benefits	\$ 189,478	\$ 175,570
Accrued pension benefits	204,322	189,397
Deficit	\$ (14,844)	\$ (13,827)

During 2017, net assets available for benefits increased by \$13.9 billion. Net investment income of \$17.0 billion and contributions of \$3.4 billion increased net assets available for benefits, while benefits of \$5.9 billion and administrative expenses of \$0.5 billion decreased the net assets available. Net investment income of \$17.0 billion was due to gains across all asset classes with the largest gains from equities (public and private) and infrastructure (investment returns are discussed in the Investments section of the MD&A).

### NET ASSETS AVAILABLE FOR BENEFITS

As at December 31 (Canadian \$ millions)	2017	2016
Net assets available for benefits, beginning of year	\$ 175,570	\$ 171,440
Net investment income	16,980	6,998
Contributions	3,385	3,363
Benefits	(5,932)	(5,725)
Administrative expenses	(525)	(506)
Increase in net assets available for benefits	13,908	4,130
Net assets available for benefits, end of year	\$ 189,478	\$ 175,570

Accrued pension benefits increased by \$14.9 billion during the year to \$204.3 billion. Changes in actuarial assumptions and methods increased the accrued pension benefits amount by \$6.7 billion. Benefits paid during 2017 of \$5.9 billion include the addition of 5,128 retirement and disability pensions and 1,017 survivor pensions during 2017, as well as a 1.3% cost-of-living increase.

### ACCRUED PENSION BENEFITS

As at December 31 (Canadian \$ millions)	2017	2016
Accrued pension benefits, beginning of year	\$ 189,397	\$ 173,266
Interest on accrued pension benefits	6,156	5,679
Benefits accrued	6,268	5,303
Benefits paid	(5,927)	(5,725)
Changes in actuarial assumptions and methods	6,653	9,394
Changes in level of conditional indexing	1,207	1,674
Experience losses/(gains)	568	(194)
Net increase in accrued pension benefits	14,925	16,131
Accrued pension benefits, end of year	\$ 204,322	\$ 189,397

### FAIR VALUE HIERARCHY

The plan's investments and investment-related liabilities are stated at fair value. The objective of fair value determination is to estimate an exit price at which an orderly transaction to sell the asset or to transfer the liability would take place between market participants. Valuation techniques are employed in order to measure fair value. As described in note 1c of the plan's consolidated financial statements, these techniques utilize inputs such as prices for market transactions, discount rates, contractual or expected future cash flows and other relevant factors that impact the assessment of fair value.

As required under Canadian accounting standards, the plan has classified and disclosed its fair value measurements into one of three categories based upon the degree of observable inputs used in their determination. Level 1 inputs consist of quoted prices in active markets for identical assets or liabilities; Level 2 inputs are derived from observable prices but do not meet the Level 1 criteria, while Level 3 inputs are unobservable. If different levels of inputs are used to measure the fair value of an investment, the classification within the hierarchy is based upon the lowest level input that is significant to the fair value measurement.

Level 1 net investments comprise the majority of the plan's government bonds and publicly traded equities, including these securities that are sold but not yet purchased, which are valued using quoted prices. Examples of Level 2 net investments include marketable corporate bonds that are valued using quoted prices from less actively traded markets and securities purchased under agreements to resell and securities sold under agreements to repurchase, which are valued using discounted cash flows and observable market yields. Examples of Level 3 investments include real assets such as real estate and infrastructure, non-publicly traded equities, and natural resource investments, which are valued using appropriate techniques



that involve the use of significant unobservable inputs such as forecasted cash flows or other information that is specific to the entity.

The table below shows the plan's net investments based on the fair value hierarchy. Further details of each category can be found in note 2a of the plan's consolidated financial statements.

As at December 31, 2017 (Canadian \$ millions)	Level 1	Level 2	Level 3	Total
Equity	\$ 24,536	\$ 158	\$ 34,864	\$ 59,558
Fixed income	87,868	9,612	14,390	111,870
Inflation sensitive	—	—	6,553	6,553
Real assets	3,083	329	45,305	48,717
Investment-related receivables	2,396	27,932	97	30,425
Investment-related liabilities	(14,136)	(55,805)	(1,830)	(71,771)
Net investments	\$ 103,747	\$ (17,774)	\$ 99,379	\$ 185,352

## EFFECTIVE OVERSIGHT AND CONTROLS

### Disclosure and financial reporting controls

We take guidance from National Instrument 52-109, Certification of Disclosure in Issuers' Annual and Interim Filings, issued by the Canadian Securities Administrators, as part of our commitment to good governance practices. The President and CEO, and the Chief Financial Officer are responsible for establishing and maintaining disclosure controls and procedures, and internal control over financial reporting.

We have designed disclosure controls and procedures to provide reasonable assurance that material information related to the plan is gathered and reported to management in order to allow timely decisions regarding public disclosure. We evaluated our disclosure controls and procedures and concluded as at December 31, 2017, that they are effective.

We have also designed internal control over financial reporting, using the Integrated Framework issued in 2013 by the Treadway Commission's Committee of Sponsoring Organizations (the COSO Framework), to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with Canadian Generally Accepted Accounting Principles. We have evaluated the effectiveness of the plan's internal control over financial reporting and concluded they are effective as at year-end.

### Protecting audit quality and integrity

A key oversight activity of audit committees is annually assessing the effectiveness of the external auditor. This helps audit committees meet their responsibility to make informed recommendations to the board on whether or not to reappoint the external auditor. Ontario Teachers' has conducted assessments annually. Ontario Teachers' Audit & Actuarial Committee recommended, and the board approved, the reappointment of the external auditor for 2017.

Ontario Teachers' and other corporate governance advocates have expressed concern over the years about accounting firms that audit public companies and also earn substantial revenue from those companies for non-audit consulting services. We believe that such consulting fees can compromise, or appear to compromise, the integrity of the audit function.

We strive to minimize our own use of consulting services involving the plan's auditor and we disclose the total amount paid for such services. In 2017, fees paid to Deloitte Touche Tohmatsu Limited (of which the Canadian firm is the plan's auditor) totalled \$14.2 million (\$11.1 million in 2016), of which \$13.6 million was for audit activities and \$585,000 was for non-audit services. Of the \$585,000 paid for non-audit services, approximately \$405,000 related to the plan, \$75,000 related to subsidiaries audited by Deloitte and the balance of \$105,000 was for subsidiaries not audited by Deloitte. Of the \$75,000 paid by the subsidiaries, \$10,000 was paid to Deloitte (Canada) and \$65,000 was paid to Deloitte firms outside of Canada, which are considered to have lower risk of impairing the independence of the plan's auditor.

## MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL REPORTING

The consolidated financial statements of the Ontario Teachers' Pension Plan have been prepared by management, which is responsible for the integrity and fairness of the data presented, including the many amounts which must, of necessity, be based on estimates and judgments. The accounting policies followed in the preparation of these consolidated financial statements conform to Canadian accounting standards for pension plans. Financial information presented throughout the annual report is consistent with the consolidated financial statements.

Systems of internal control and supporting procedures are maintained to provide assurance that transactions are authorized, assets safeguarded and proper records maintained. These controls include quality standards in hiring and training of employees, a code of conduct, the establishment of an organizational structure that provides a well-defined division of responsibilities and accountability for performance, and the communication of policies and guidelines through the organization.

Ultimate responsibility for the consolidated financial statements rests with the members of the Board. The Board is assisted in its responsibilities by the Audit & Actuarial Committee (the Committee), consisting of seven Board members who are not officers or employees of the Plan Administrator. In addition, the Committee reviews the recommendations of the internal and external auditors for improvements in internal control and the action of management to implement such recommendations. In carrying out its duties and responsibilities, the Committee meets regularly with management and with both the external and internal auditors to review the scope and timing of their respective audits, to review their findings and to satisfy itself that their responsibilities have been properly discharged. This Committee reviews the consolidated financial statements and recommends them for approval by the Board.

The Plan's external auditor, Deloitte LLP, is directly accountable to the Audit & Actuarial Committee and has full and unrestricted access to the Committee. They discuss with the Committee their audit and related findings as to the integrity of the Plan's financial reporting and the adequacy of internal control systems. The Plan's external auditor has conducted an independent examination of the consolidated financial statements in accordance with Canadian generally accepted auditing standards, performing such tests and other procedures as they consider necessary to express the opinion in their Report to the Administrator.



**Ron Mock**

President and Chief Executive Officer

March 1, 2018



**David McGraw**

Chief Financial Officer

## AUDITOR'S REPORT TO THE ADMINISTRATOR

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

### MANAGEMENT'S RESPONSIBILITY FOR THE CONSOLIDATED 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.

### AUDITOR'S 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 auditor's 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 auditor considers 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 Ontario Teachers' Pension Plan Board as at December 31, 2017, and the changes in its net assets available for benefits, changes in accrued pension benefits and changes in deficit for the year then ended in accordance with Canadian accounting standards for pension plans.

The image shows the signature of Deloitte LLP in a cursive, handwritten style.

**Chartered Professional Accountants**

Licensed Public Accountants

Toronto, Canada

March 1, 2018

## ACTUARIES' OPINION

Mercer (Canada) Limited was retained by the Ontario Teachers' Pension Plan Board (the Board) to perform an actuarial valuation of the going concern liabilities of the Ontario Teachers' Pension Plan (the Plan) as at December 31, 2017, for inclusion in the Plan's consolidated financial statements. As part of the valuation, we examined the Plan's recent experience with respect to the non-economic assumptions and presented our findings to the Board.

The valuation of the Plan's actuarial liabilities was based on:

- membership data provided by the Ontario Teachers' Pension Plan Board as at August 31, 2017;
- methods prescribed by Section 4600 of the Chartered Professional Accountants Canada Handbook for pension plan financial statements;
- real and nominal interest rates on long-term bonds at the end of 2017;
- assumptions about future events (for example, future rates of inflation and future retirement rates) which have been communicated to us as the Board's best estimate of these events; and
- information obtained from the Ontario Ministry of Labour and other published data, where applicable, on wage rate changes.

The objective of the consolidated financial statements is to fairly present the financial position of the Plan on December 31, 2017, as a going concern. This is different from the statutory valuation (the actuarial valuation required by the Pension Benefits Act (Ontario)), which establishes a prudent level for future contributions.

While the actuarial assumptions used to estimate liabilities for the Plan's consolidated financial statements represent the Board's best estimate of future events and market conditions at the end of 2017, and while in our opinion these assumptions are reasonable, the Plan's future experience will inevitably differ, perhaps significantly, from the actuarial assumptions. Any differences between the actuarial assumptions and future experience will emerge as gains or losses in future valuations, and will affect the financial position of the Plan at that time.

We have tested the data for reasonableness and consistency, and we believe it to be sufficient and reliable for the purposes of the valuation. We also believe that the methods employed in the valuation are appropriate for the purposes of the valuation, and that the assumptions used in the valuation are in accordance with accepted actuarial practice. Our opinions have been given, and our valuation has been performed, in accordance with accepted actuarial practice in Canada.



Scott Clausen, F.C.I.A., F.S.A.

March 1, 2018



Lise Houle, F.C.I.A., F.S.A.


## CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

As at December 31 (Canadian \$ millions)	2017	2016
<b>Net assets available for benefits</b>		
<b>ASSETS</b>		
Cash	\$ 515	\$ 241
Receivable from the Province of Ontario (note 3)	3,314	3,273
Receivable from brokers	1,001	907
Investments (note 2)	257,123	255,716
Premises and equipment	65	57
	<b>262,018</b>	<b>260,194</b>
<b>LIABILITIES</b>		
Accounts payable and accrued liabilities	420	382
Due to brokers	349	608
Investment-related liabilities (note 2)	71,771	83,634
	<b>72,540</b>	<b>84,624</b>
<b>Net assets available for benefits</b>	<b>\$ 189,478</b>	<b>\$ 175,570</b>
<b>Accrued pension benefits and deficit</b>		
Accrued pension benefits (note 4)	\$ 204,322	\$ 189,397
Deficit	(14,844)	(13,827)
<b>Accrued pension benefits and deficit</b>	<b>\$ 189,478</b>	<b>\$ 175,570</b>

On behalf of the Plan administrator:



Chair



Board Member

## CONSOLIDATED STATEMENTS OF CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS

For the year ended December 31 (Canadian \$ millions)	2017	2016
<b>Net assets available for benefits, beginning of year</b>	<b>\$ 175,570</b>	<b>\$ 171,440</b>
<b>Investment operations</b>		
Net investment income (note 6)	16,980	6,998
Administrative expenses (note 11a)	(467)	(451)
Net investment operations	16,513	6,547
<b>Member service operations</b>		
Contributions (note 9)	3,385	3,363
Benefits (note 10)	(5,932)	(5,725)
Administrative expenses (note 11b)	(58)	(55)
Net member service operations	(2,605)	(2,417)
<b>Increase in net assets available for benefits</b>	<b>13,908</b>	<b>4,130</b>
<b>Net assets available for benefits, end of year</b>	<b>\$ 189,478</b>	<b>\$ 175,570</b>

## CONSOLIDATED STATEMENTS OF CHANGES IN ACCRUED PENSION BENEFITS

For the year ended December 31 (Canadian \$ millions)	2017	2016
<b>Accrued pension benefits, beginning of year</b>	<b>\$ 189,397</b>	<b>\$ 173,266</b>
<b>Increase in accrued pension benefits</b>		
Interest on accrued pension benefits	6,156	5,679
Benefits accrued	6,268	5,303
Changes in actuarial assumptions and methods (note 4a)	6,653	9,394
Changes in level of conditional indexing (note 4b)	1,207	1,674
Experience losses (note 4c)	568	—
	<b>20,852</b>	<b>22,050</b>
<b>Decrease in accrued pension benefits</b>		
Benefits paid (note 10)	5,927	5,725
Experience gains (note 4c)	—	194
	<b>5,927</b>	<b>5,919</b>
<b>Net increase in accrued pension benefits</b>	<b>14,925</b>	<b>16,131</b>
<b>Accrued pension benefits, end of year</b>	<b>\$ 204,322</b>	<b>\$ 189,397</b>

## CONSOLIDATED STATEMENTS OF CHANGES IN DEFICIT

For the year ended December 31 (Canadian \$ millions)	2017	2016
<b>Deficit, beginning of year</b>	<b>\$ (13,827)</b>	<b>\$ (1,826)</b>
Increase in net assets available for benefits	13,908	4,130
Net increase in accrued pension benefits	(14,925)	(16,131)
<b>Deficit, end of year</b>	<b>\$ (14,844)</b>	<b>\$ (13,827)</b>

# NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

For the year ended December 31, 2017

## DESCRIPTION OF PLAN

The following description of the Ontario Teachers' Pension Plan (the Plan) is a summary only. For more complete information, reference should be made to the *Teachers' Pension Act (Ontario)* (the TPA) as amended.

### (a) General

The Plan is governed by the TPA. It is a contributory defined benefit pension plan co-sponsored by the Province of Ontario (the Province) and Plan members, represented by Ontario Teachers' Federation (OTF) (the co-sponsors). The terms of the Plan are set out in Schedule 1 to the TPA.

The Plan is registered with the Financial Services Commission of Ontario (FSCO) and under the *Income Tax Act (Canada)* (the ITA) (registration number 0345785) as a Registered Pension Plan which is not subject to income taxes in Canada. The Plan may be liable for taxes in other jurisdictions where full tax exemptions are not available.

The Plan is administered and the investments are managed by the Ontario Teachers' Pension Plan Board (the Board). Under the TPA, the Board is constituted as a corporation without share capital to which the *Corporations Act (Ontario)* does not apply.

### (b) Funding

Plan benefits are funded by contributions and investment earnings. Contributions are made by active members of the Plan and are matched by either the Province or designated employers. The determination of the value of the accrued pension benefits and required contributions is made on the basis of periodic actuarial valuations.

### (c) Retirement pensions

A retirement pension is available based on the number of years of credited service, the average of the best five annual salaries and the age of the member at retirement. A member is eligible for a reduced retirement pension from age 50. An unreduced retirement pension is available at either age 65 or when the sum of a member's age and qualifying service equals 85.

### (d) Disability pensions

A disability pension is available at any age to a disabled member with a minimum of 10 years of qualifying service. The type of disability pension is determined by the extent of the disability.

### (e) Death benefits

Death benefits are available on the death of an active member and may be available on the death of a retired member. The benefit may take the form of a survivor pension, lump-sum payment or both.

### (f) Escalation of benefits

Pension benefits are adjusted in January each year for inflation, subject to an upper limit of 8% and a lower limit of 0% in any one year with any excess above or below those limits carried forward. For credited service earned up to December 31, 2009, inflation protection is 100% of the change in the Consumer Price Index. Credited service earned after December 31, 2009, is subject to conditional inflation protection. For credited service earned between January 1, 2010, and December 31, 2013, the minimum indexation level is set at 50% of the change in the Consumer Price Index. There is no minimum level of inflation protection for credited service earned after 2013. The indexation level stated in the most recent funding valuation filing remains in effect until a subsequent filing updates the amount. Inflation protection of up to 100% for credited service earned after 2009 can be restored on a go-forward basis, depending on the Plan's funded status.

### (g) Retirement Compensation Arrangement

Restrictions in the ITA and its regulations on the payment of certain benefits from the registered pension plan for periods of service after 1991 may impact some Plan members. To address affected members, the Retirement Compensation Arrangement (the RCA) was established by agreement between the co-sponsors as a supplementary plan to provide for these benefits.

Examples of these benefits include: (1) members of the Plan who retired with average earnings above \$157,755 (CPP-exempt members \$145,722) in 2017 and \$156,299 (CPP-exempt members \$144,500) in 2016; and (2) members whose pensions would require a larger reduction for early retirement to comply with the ITA limitations than the Plan would impose. Because the RCA



is a separate trust, the net assets available for benefits and accrued benefits and deficit of the RCA are not included in these consolidated financial statements.

## **NOTE 1.**

### **SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

#### **(a) Basis of presentation**

These consolidated financial statements are prepared in Canadian dollars, the Plan's functional currency, in accordance with the accounting standards for pension plans in Part IV of the Chartered Professional Accountants (CPA) Canada Handbook (Section 4600). Section 4600 provides specific accounting guidance on investments and pension obligations. For accounting policies that do not relate to either investments or pension obligations, the Plan must consistently comply with either International Financial Reporting Standards (IFRS) in Part I or accounting for private enterprises in Part II of the CPA Canada Handbook. The Plan has elected to comply with IFRS in Part I of the CPA Canada Handbook. To the extent that IFRS in Part I is inconsistent with Section 4600, Section 4600 takes precedence.

The Plan's real estate investments are either owned or managed on behalf of the Plan by The Cadillac Fairview Corporation Limited (CFCL), a wholly owned subsidiary that is consolidated. The Plan also consolidates Ontario Teachers' Finance Trust (OTFT) and Ontario Teachers' Cadillac Fairview Properties Trust (CFPT), two special purpose entities created to support the Plan's financing activities, and wholly owned investment holding companies managed by either the Plan or CFCL. Investment holding companies that are managed by external parties are recognized as the Plan's investment assets. Under Section 4600, investment assets, including those over which the Plan has control or significant influence, are measured at fair value and presented on a non-consolidated basis.

The consolidated financial statements for the year ended December 31, 2017 were authorized for issue through a resolution of the Board on March 1, 2018.

#### **(b) Future changes in accounting policies**

The relevant new guidance issued by the International Accounting Standards Board not yet adopted by the Plan includes:

- IFRS 9, Financial Instruments. The new standard will replace IAS 39, Financial Instruments: Recognition and Measurement and includes guidance on recognition and derecognition of financial assets and financial liabilities, impairment and hedge accounting. The new standard will come into effect January 1, 2018, with early application permitted.

Management does not expect any significant impact on either the Plan's financial position or its investment income upon adoption of the new standard.

#### **(c) Investments**

##### **Valuation of investments**

Investments are either directly or indirectly owned by the Plan. Investment-related liabilities are incurred by the Plan directly. Details of investments and investment-related liabilities are presented in note 2a and are stated at fair value. Fair value is the price that would either be received to sell an asset or be paid to transfer a liability in an orderly transaction (i.e., an exit price) between market participants at the measurement date. In an active market, fair value is best evidenced by an independent quoted market price. In the absence of an active market, fair value is determined by valuation techniques that make maximum use of inputs observed from markets.

Fair values of investments are determined as follows:

- a. Short-term investments and commercial paper are valued using either quoted closing mid-market prices or discounted cash flows based on current market yields, when quoted closing mid-market prices are unavailable.
- b. Bonds, including both nominal and real return, are valued on the basis of quoted closing mid-market prices. If quoted closing mid-market prices are not available, estimated values are calculated using discounted cash flows based on current market yields and comparable securities, as appropriate.
- c. Securities sold under agreements to repurchase and securities purchased under agreements to resell are valued using discounted cash flows based on current market yields.
- d. Public equities are valued at quoted closing mid-market prices. When the market for a public equity is not active, management assesses whether the quoted prices represent fair value. If not, management adjusts the quoted prices or estimates the fair value by using appropriate techniques including valuation models.
- e. Real estate, private equities, infrastructure, timberland, and natural resources are valued based on estimated fair values determined by using appropriate techniques and best estimates by either management, appraisers, or both. Where external appraisers are engaged to perform the valuation, management ensures the appraisers are independent and compares the assumptions used by the appraisers with management's expectations based on current market conditions and industry practice to ensure the valuation captures the business and economic conditions specific to the investment. At least 70% of the value of the rental property portfolio covering all product types and geographic regions is independently appraised annually. Properties with a value of over \$250 million will be valued independently every year. Private equity funds are recorded at fair value based on net asset values obtained from each of the funds' administrators. These net asset values are reviewed by management.
- f. Derivative financial instruments are recorded at fair value using market prices where available. Where quoted market values are not readily available, appropriate alternative valuation techniques are used to determine fair value. In determining fair value, consideration is also given to the credit risk of the counterparty through the calculation of a credit valuation adjustment.
- g. Alternative investments, comprised primarily of hedge funds and managed futures accounts, are recorded at fair value based on net asset values obtained from each of the funds' administrators. These net asset values are reviewed by management.

The Plan uses a number of valuation techniques to determine the fair value of investments for which observable prices in active markets for identical investments are not available. These techniques include: valuation methodologies based on observable prices for similar investments; present-value approaches where future cash flows generated by the investment are estimated and then discounted using a risk-adjusted interest rate; and option-pricing models. The principal inputs to these valuation techniques are listed below. Values between and beyond available data points may be obtained by interpolation and extrapolation.

- Bond prices – quoted prices are generally available for government bonds, certain corporate bonds and some other debt-related products.
- Credit spreads – where available, credit spreads are derived from prices of credit default swaps or other credit-based instruments, such as debt securities. For others, credit spreads are obtained from pricing services.
- Interest rates – principally derived from benchmark interest rates such as quoted interest rates from central banks and in swap, bond and futures markets. Benchmark interest rates are considered when determining discount rates used in the present-value approaches.
- Foreign currency exchange rates – there are observable markets, both spot and forward, and in futures in all major currencies.
- Public equity and equity index prices – quoted prices are generally readily available for equity shares listed on the stock exchanges and for indices on such shares.
- Commodity prices – many commodities are actively traded in spot, forward and futures markets.
- Price volatilities and correlations – volatility is a measure of the tendency of a specific price to change over time. Correlation measures the degree to which two or more prices or other variables are observed to have moved together historically. Volatility is an input in valuing options and certain products such as derivatives with more than one underlying variable that is correlation-dependent. Volatility and correlation values are either obtained from broker quotations, from pricing services, or are derived from quoted option prices.
- Forecasts on operating cash flows of real estate, private equities, infrastructure, and natural resources – forecasts include assumptions on revenue, revenue growth, expenses, capital expenditures, and capital structure. They are generally provided by either management of the companies in which the Plan invests or external managers. Additional assumptions from external parties, for example, external appraisers, may also be used in the forecast.

The Plan refines and modifies its valuation techniques as markets and products develop and the pricing for individual products becomes more transparent.

While the Plan believes its valuation techniques are appropriate and consistent with other market participants, the use of different techniques or assumptions could result in different estimates of fair value at the balance sheet date. Management has assessed and determined that using possible alternative assumptions will not result in significantly different fair values.

### **Fair value hierarchy**

Investment assets and investment-related liabilities are classified and disclosed in one of the following categories reflecting the significance of inputs used in making the fair value measurement:

- Level 1 – quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2 – inputs other than quoted prices included within Level 1 that are observable for the assets or liabilities, either directly or indirectly; and
- Level 3 – unobservable inputs.

If different levels of inputs are used to measure the fair value of an investment, the classification within the hierarchy is based on the lowest level input that is significant to the fair value measurement.

### **Trade-date reporting**

Purchases and sales of investments and derivative contracts are recorded as of the trade date.

### **Net investment income**

Dividend income is recognized based on the ex-dividend date, and interest income and real estate income are recognized on the accrual basis as earned. Net investment income also includes both realized and unrealized gains and losses. Unrealized gains and losses are recognized only when the fair value of the investment is based on a quoted market price in an active market or a valuation using appropriate valuation techniques is performed and approved by management.

### **Transaction costs**

Transaction costs are incremental costs directly attributable to the acquisition, issue or disposal of a financial asset or financial liability. Transaction costs are expensed as incurred. Any transaction amounts received by the Plan that are directly attributable to the acquisition of an investment are netted against transaction costs paid.

### **Management fees**

Management and performance fees for external investment managers and administrators are expensed as incurred when directly invoiced or information is otherwise available from capital notices or other manager communications. Fees related to other externally managed investments are offset against investment income.

### **(d) Foreign currency translation**

Assets and liabilities denominated in foreign currencies are translated into Canadian dollars at the exchange rates prevailing on the year-end date. Income and expenses are translated into Canadian dollars at the exchange rates prevailing on the dates of the transactions. The realized and unrealized gains and losses arising from these translations are included within net realized and unrealized gains on investments in investment income.

### **(e) Accrued pension benefits**

The value of accrued pension benefits and changes therein during the year are based on an actuarial valuation prepared by Mercer (Canada) Limited, an independent firm of actuaries. The valuation is performed annually as at August 31 and then extrapolated to year end. It uses the projected benefit method pro-rated on service and management's best estimate, as at the valuation date, of various economic and non-economic assumptions.

As described in paragraph (f) of the Description of Plan note, the inflation protection level for credited service earned after December 31, 2009 is conditional, depending on the Plan's funded status. For the financial statement valuations, future pension payments are indexed at the levels stated in the most recent funding valuation filing.

### **(f) Contributions**

Contributions from the members, the Province and designated employers are recorded on an accrual basis. Cash received from members for credited service and cash transfers from other pension plans are recorded when received.

**(g) Benefits**

Benefit payments to members and others, commuted value payments and refunds to former members, and transfer payments to other plans are recorded in the period in which they are paid. Any benefit payment accruals not paid are reflected in accrued pension benefits.

**(h) Premises and equipment**

Premises and equipment are recorded at cost and amortized on a straight-line basis over their estimated useful lives.

**(i) Use of estimates**

In preparing these consolidated financial statements, management uses estimates and assumptions that primarily affect the reported values of assets and liabilities, and related income and expenses. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable and relevant under the circumstances. The effect of a change in an estimate or assumption is recognized in the period in which the estimate or assumption is revised. Significant estimates and assumptions are used primarily in the determination of accrued pension benefits and the fair value of investments and investment-related receivables and liabilities. Note 4 explains how estimates and assumptions are used in determining accrued pension benefits and note 1c explains how estimates and assumptions are used to derive the fair value of investments and investment-related receivables and liabilities.

**(j) Contingencies**

A contingent liability is a possible obligation that depends on the occurrence or non-occurrence of one or more future events not controlled by the Plan. Contingent liabilities are not recognized but the nature and extent are disclosed in the notes to the consolidated financial statements. A provision for a present obligation is recognized when a reliable estimate can be determined and the settlement of the obligation is probable.

## NOTE 2. INVESTMENTS

The Plan invests, directly or through derivatives, in equities, fixed income, inflation sensitive and real asset investments in accordance with the Board's policy of asset diversification.

### (a) Investments<sup>1</sup> before allocating the effect of derivative contracts

The schedule below summarizes the Plan's investments and investment-related liabilities, including net accrued interest and dividends of \$626 million (2016 – \$527 million, before allocating the effect of derivative contracts):

As at December 31 (Canadian \$ millions)	2017		2016	
	Fair Value	Cost	Fair Value	Cost
<b>Equity</b>				
Publicly traded				
Canadian	\$ 2,233	\$ 2,134	\$ 2,075	\$ 2,053
Non-Canadian	23,849	17,809	27,423	22,081
Non-publicly traded				
Canadian	3,676	2,527	2,786	2,480
Non-Canadian	29,800	22,605	25,110	19,704
	59,558	45,075	57,394	46,318
<b>Fixed income</b>				
Bonds	57,187	56,273	52,355	51,050
Short-term investments	7,813	7,809	9,521	9,504
Alternative investments <sup>2</sup>	12,665	10,648	11,727	8,862
Canadian real-rate products	19,570	14,804	20,381	14,993
Non-Canadian real-rate products	14,635	12,310	16,011	12,866
	111,870	101,844	109,995	97,275
<b>Inflation sensitive</b>				
Timberland	2,250	1,301	2,442	1,356
Natural resources	4,303	4,286	3,831	3,802
	6,553	5,587	6,273	5,158
<b>Real assets</b>				
Real estate (note 5)	29,982	18,613	30,923	19,064
Infrastructure	18,735	13,384	17,826	13,832
	48,717	31,997	48,749	32,896
	226,698	184,503	222,411	181,647
<b>Investment-related receivables</b>				
Securities purchased under agreements to resell	24,633	24,792	27,910	27,621
Cash collateral deposited under securities borrowing arrangements	2,239	2,239	1,967	1,967
Cash collateral paid under credit support annexes	59	59	121	121
Derivative-related, net	3,494	1,662	3,307	1,761
	30,425	28,752	33,305	31,470
<b>Investments</b>	\$ 257,123	\$ 213,255	\$ 255,716	\$ 213,117

<sup>1</sup> For additional details, refer to the Major Investments on page 92.

<sup>2</sup> Comprised primarily of hedge funds and managed futures accounts.

As at December 31 (Canadian \$ millions)	2017		2016	
	Fair Value	Cost	Fair Value	Cost
<b>Investment-related liabilities</b>				
Securities sold under agreements to repurchase	\$ (38,842)	\$ (39,164)	\$ (47,422)	\$ (47,131)
Securities sold but not yet purchased				
Equities	(2,230)	(2,128)	(1,947)	(1,752)
Fixed income	(11,177)	(10,569)	(19,108)	(17,656)
Real estate (note 5)	(4,432)	(4,171)	(3,196)	(2,876)
Commercial paper	(8,938)	(9,014)	(9,120)	(8,935)
Term debt	(2,167)	(2,134)	—	—
Cash collateral received under credit support annexes	(419)	(419)	(163)	(163)
Derivative-related, net	(3,566)	(959)	(2,678)	(845)
	<b>(71,771)</b>	<b>(68,558)</b>	<b>(83,634)</b>	<b>(79,358)</b>
<b>Net investments (note 2d)</b>	<b>\$ 185,352</b>	<b>\$ 144,697</b>	<b>\$ 172,082</b>	<b>\$ 133,759</b>

### (b) Fair value hierarchy

The schedule below presents the Plan's investments and investment-related liabilities within the fair value hierarchy as outlined in note 1c:

(Canadian \$ millions)	December 31, 2017			
	Level 1	Level 2	Level 3	Total
Equity	\$ 24,536	\$ 158	\$ 34,864	\$ 59,558
Fixed income	87,868	9,612	14,390	111,870
Inflation sensitive	—	—	6,553	6,553
Real assets	3,083	329	45,305	48,717
Investment-related receivables	2,396	27,932	97	30,425
Investment-related liabilities	(14,136)	(55,805)	(1,830)	(71,771)
<b>Net investments</b>	<b>\$ 103,747</b>	<b>\$ (17,774)</b>	<b>\$ 99,379</b>	<b>\$ 185,352</b>

(Canadian \$ millions)	December 31, 2016			
	Level 1	Level 2	Level 3	Total
Equity	\$ 27,785	\$ 248	\$ 29,361	\$ 57,394
Fixed income	83,706	12,051	14,238	109,995
Inflation sensitive	—	—	6,273	6,273
Real assets	3,271	295	45,183	48,749
Investment-related receivables	2,146	30,922	237	33,305
Investment-related liabilities	(21,343)	(60,284)	(2,007)	(83,634)
<b>Net investments</b>	<b>\$ 95,565</b>	<b>\$ (16,768)</b>	<b>\$ 93,285</b>	<b>\$ 172,082</b>

The schedule below presents a reconciliation of investments and net investment-related receivables/(liabilities) measured at fair value using significant unobservable inputs (Level 3) during the year. Realized and unrealized gains/(losses) are included in investment income.

							2017
(Canadian \$ millions)	Equity	Fixed Income	Inflation Sensitive	Real Assets	Investment-Related Receivables	Investment-Related Liabilities	Total
Balance, beginning of year	\$ 29,361	\$ 14,238	\$ 6,273	\$ 45,183	\$ 237	\$ (2,007)	\$ 93,285
Purchases	6,033	4,912	504	5,269	48	98	16,864
Sales	(5,001)	(4,555)	(76)	(8,219)	(40)	(99)	(17,990)
Transfers in <sup>3</sup>	—	—	—	—	(5)	3	(2)
Transfers out <sup>3</sup>	—	—	—	—	(38)	32	(6)
Gains/(losses) included in investment income							
Realized	1,798	814	1	1,999	(122)	98	4,588
Unrealized	2,673	(1,019)	(149)	1,073	17	45	2,640
<b>Balance, end of year</b>	<b>\$ 34,864</b>	<b>\$ 14,390</b>	<b>\$ 6,553</b>	<b>\$ 45,305</b>	<b>\$ 97</b>	<b>\$ (1,830)</b>	<b>\$ 99,379</b>

							2016
(Canadian \$ millions)	Equity	Fixed Income	Inflation sensitive	Real Assets	Investment-Related Receivables <sup>4</sup>	Investment-Related Liabilities <sup>4</sup>	Total
Balance, beginning of year	\$ 30,596	\$ 16,031	\$ 6,252	\$ 41,209	\$ 197	\$ (2,095)	\$ 92,190
Purchases	7,294	5,228	289	7,714	941	768	22,234
Sales	(9,188)	(6,937)	(375)	(4,008)	(937)	(780)	(22,225)
Transfers in <sup>3</sup>	—	206	—	—	12	(77)	141
Transfers out <sup>3</sup>	—	—	—	—	(24)	131	107
Gains/(losses) included in investment income							
Realized	2,231	1,118	71	507	49	32	4,008
Unrealized	(1,572)	(1,408)	36	(239)	(1)	14	(3,170)
<b>Balance, end of year</b>	<b>\$ 29,361</b>	<b>\$ 14,238</b>	<b>\$ 6,273</b>	<b>\$ 45,183</b>	<b>\$ 237</b>	<b>\$ (2,007)</b>	<b>\$ 93,285</b>

<sup>3</sup> Transfers in and transfers out of Level 3 are due to the change in the availability of observable inputs used for fair value measurement of investment assets or related liabilities. Similarly, the transfers between Level 2 and Level 1 in 2017 of \$nil million (2016 - \$330 million) are due to the change in the applicability of non-observable inputs. See note 1c Fair Value Hierarchy.

<sup>4</sup> The purchases and sales balances associated with investment related receivables and liabilities have been reclassified to more appropriately reflect the nature of the underlying transactions. The restatement has no impact on the balance of Level 3 investment related receivables or liabilities as at December 31 2016.

### (c) Derivative contracts

Derivative contracts are financial contracts, the value of which is derived from the value of underlying assets, commodities, indices, interest rates or currency rates. Derivative contracts are transacted either in the over-the-counter (OTC) market or on regulated exchanges.

Notional amounts of derivative contracts represent the contractual amount to which a rate or price is applied for computing the cash to be paid or received. Notional amounts are the basis upon which the returns from, and the fair value of, the contracts are determined. They do not necessarily indicate the amounts of future cash flow involved or the current fair value of the derivative contracts and, therefore, do not indicate the Plan's exposure to credit or market risks. The derivative contracts become favourable (assets) or unfavourable (liabilities) as a result of fluctuations in either market rates or prices relative to their terms. The aggregate notional amounts and fair values of derivative contracts can fluctuate significantly.

Derivative contracts, transacted either in the OTC market or on regulated exchanges, include:

## Swaps

Swaps are OTC contracts in which two counterparties exchange a series of cash flows based on agreed upon rates to a notional amount. The various swap agreements that the Plan enters into are as follows:

Equity and commodity swaps are contracts in which one counterparty agrees to either pay or receive from the other cash flows based on changes in the value of either an equity or commodity index, a basket of stocks or commodities, or a single stock or commodity.

Interest rate swaps are agreements where two counterparties exchange a series of payments based on different interest rates applied to a notional amount. Certain interest rate swaps traded with U.S. counterparties in the OTC market are centrally cleared at regulated clearing houses.

Currency swaps involve the exchange of fixed payments in one currency for the receipt of fixed payments in another currency.

## Forwards and futures

Futures are standardized contracts traded on regulated future exchanges, whereas forward contracts are negotiated agreements that are transacted between counterparties in the OTC market. Examples of futures and forwards are described below:

Equity and commodity futures are contractual obligations to either buy or sell at a fixed value (the contracted price) of an equity or commodity index, a basket of stocks, a single stock or commodities at a predetermined future date.

Interest rate futures are contractual obligations to either buy or sell an interest rate sensitive financial instrument on a predetermined future date at a specified price.

Currency forwards and futures are contractual obligations to exchange one currency for another at a specified price or settlement at a predetermined future date.

## Options

Options may be either acquired in standardized amounts on regulated exchanges or customized and acquired in the OTC market. They are contractual agreements under which the seller (writer) grants the purchaser the right, but not the obligation, either to buy (call option) or sell (put option), a security, exchange rate, interest rate, or other financial instrument or commodity at a predetermined price, at or by a specified future date. The seller (writer) of an option can also settle the contract by paying the cash settlement value of the purchaser's right. The seller (writer) receives a premium from the purchaser for this right. The various option agreements that the Plan enters into include equity and commodity options, interest rate options, and foreign currency options.

## Credit derivatives

Credit derivatives are OTC contracts that transfer credit risk related to an underlying financial instrument (referenced asset) from one counterparty to another. Examples of credit derivatives include credit default swaps, total return swaps, and loan participations.

Credit default swaps provide protection against the decline in value of the referenced asset as a result of specified events such as payment default or insolvency. These swaps are similar in structure to an option whereby the purchaser pays a premium to the seller of the credit default swap in return for payment related to the deterioration in the value of the referenced asset. The referenced asset for credit default swaps is a debt instrument. Certain credit default swaps traded with U.S. counterparties in the OTC market are centrally cleared at regulated clearing houses.

Total return swaps are contracts in which one counterparty agrees to pay or receive from the other cash flows based on changes in the value of the referenced asset.

## Other derivative products

The Plan also transacts in other derivative products including statistic swaps and dividend swaps in the OTC market. An investor may trade the statistic swaps with the objective of adding value or hedging for risks associated with the magnitude of movement, i.e., volatility, variance, correlation, covariance of some underlying products, such as exchange rates, or stock indexes. Dividend swaps are OTC contracts where an investor agrees to match all dividends paid out by an underlying stock or index over a specified time period. In return, the dividend payer receives a fixed amount at expiry called the dividend swap rate.



The following schedule summarizes the notional amounts and fair value of the Plan's derivative contracts held as at December 31:

(Canadian \$ millions)	2017		2016	
	Notional	Fair Value	Notional	Fair Value
<b>Equity and commodity derivatives</b>				
Swaps	\$ 39,107	\$ 189	\$ 21,454	\$ 402
Futures	15,160	206	5,572	14
Options: Listed				
– purchased	968	10	350	21
– written	542	(16)	669	(28)
OTC				
– purchased	14,733	144	14,114	730
– written	3,708	(161)	3,125	(195)
	<b>74,218</b>	<b>372</b>	<b>45,284</b>	<b>944</b>
<b>Interest rate derivatives</b>				
Swaps	143,020	70	90,105	29
Futures	477,070	84	103,444	(10)
Options: Listed				
– purchased	48,610	19	11,318	5
– written	11,965	(12)	10,673	(6)
OTC				
– purchased	41,907	21	30,398	115
– written	33,870	(34)	42,699	(110)
	<b>756,442</b>	<b>148</b>	<b>288,637</b>	<b>23</b>
<b>Currency derivatives</b>				
Swaps	20,601	(3)	11,215	(70)
Forwards <sup>5</sup>	77,208	(227)	70,956	(119)
Options: OTC				
– purchased	9,404	52	8,299	121
– written	7,187	(52)	7,839	(111)
	<b>114,400</b>	<b>(230)</b>	<b>98,309</b>	<b>(179)</b>
<b>Credit derivatives</b>				
Credit default swaps				
– purchased	16,276	(380)	16,099	(286)
– written	17,308	249	19,793	140
	<b>33,584</b>	<b>(131)</b>	<b>35,892</b>	<b>(146)</b>
<b>Other derivatives</b>				
Statistic swaps	5,584	14	5,061	(19)
Dividend swaps	600	(23)	254	(21)
	<b>6,184</b>	<b>(9)</b>	<b>5,315</b>	<b>(40)</b>
	<b>984,828</b>	<b>150</b>	<b>473,437</b>	<b>602</b>
Net cash collateral (received)/paid under derivative contracts	—	(222)	—	27
<b>Notional and net fair value of derivative contracts</b>	<b>\$ 984,828</b>	<b>\$ (72)</b>	<b>\$ 473,437</b>	<b>\$ 629</b>

<sup>5</sup> Excludes currency forwards related to Real Estate assets as disclosed in note 5.

The net fair value of derivative contracts as at December 31 in the previous table is represented by:

(Canadian \$ millions)	2017	2016
Derivative-related receivables	\$ 2,851	\$ 2,678
Cash collateral paid under derivative contracts	21	31
Derivative-related liabilities	(2,701)	(2,076)
Cash collateral received under derivative contracts	(243)	(4)
	<b>\$ (72)</b>	<b>\$ 629</b>

#### (d) Investment asset mix

Direct investments, derivative contracts, and investment-related receivables and liabilities are classified by asset mix category based on the intent of the investment strategies of the underlying portfolios of the Plan. The Plan's net investments are summarized in Canadian dollars below as at December 31:

	2017		2016	
	Effective Net Investments at Fair Value (\$ millions)	Asset Mix %	Effective Net Investments at Fair Value (\$ millions)	Asset Mix %
<b>Equity<sup>6</sup></b>				
Publicly traded	\$ 35,132	19%	\$ 38,973	22%
Non-publicly traded	31,936	17	26,981	16
	<b>67,068</b>	<b>36</b>	65,954	38
<b>Fixed income</b>				
Bonds	41,413	22	43,529	25
Real-rate products	19,959	11	31,725	19
	<b>61,372</b>	<b>33</b>	75,254	44
<b>Inflation sensitive<sup>7</sup></b>				
Commodities	11,083	6	4,184	3
Natural resources	6,553	3	6,273	3
Inflation hedge	8,918	5	—	—
	<b>26,554</b>	<b>14</b>	10,457	6
<b>Real assets</b>				
Real estate	25,512	14	26,470	16
Infrastructure	18,735	10	17,826	10
Real-rate products	1,451	1	—	—
	<b>45,698</b>	<b>25</b>	44,296	26
<b>Credit<sup>8</sup></b>	<b>13,575</b>	<b>7</b>	—	—
<b>Absolute return strategies</b>	<b>10,730</b>	<b>6</b>	13,278	8
<b>Overlay<sup>9</sup></b>	<b>(270)</b>	—	9	—
<b>Money market<sup>9</sup></b>	<b>(39,375)</b>	<b>(21)</b>	(37,166)	(22)
<b>Net investments</b>	<b>\$ 185,352</b>	<b>100%</b>	\$ 172,082	100%

<sup>6</sup> The Equity asset class is comprised of Publicly traded and Non-publicly traded equities. December 31, 2016 comparative figures have been reclassified to reflect these categories.

<sup>7</sup> Beginning January 1, 2017, Natural resources and other securities that provide exposure to inflation form the Inflation sensitive asset class.

<sup>8</sup> Beginning January 1, 2017, corporate and emerging market debt moved into the new Credit asset class.

<sup>9</sup> Overlay includes strategies to overweight or underweight certain foreign currency positions. Beginning January 1, 2017, certain index positions formerly presented in the Overlay asset class have moved to Money market. December 31, 2016 comparative figures have been reclassified to reflect the changes.

## (e) Risk management

### Objectives

The Plan's primary long-term risk is that the Plan's assets will fall short of its liabilities (i.e., benefits owed to members). Therefore, the objective of investment risk management is to achieve a diversifying of risks and returns in a fashion that minimizes the likelihood of an overall reduction in total fund value and maximizes the opportunity for gains over the entire portfolio. This is achieved through asset diversification so that the market and credit exposure to any single issuer and to any single component of the capital markets is reduced to an acceptable level.

The Plan also manages its liquidity risk so that there is sufficient liquidity to enable the Plan to meet all of its future obligations as they become payable, which includes meeting short-term mark-to-market payments resulting from the Plan's derivative exposure and to give the Plan the ability to adjust the asset mix in response to the changes in market conditions.

### Policies

To apply risk management to investments in a consistent manner, the Plan has a number of policies, for example:

- Statement of Investment Policies and Procedures – The statement addresses the manner in which the fund shall be invested. The statement is subject to the Board's review at least annually. The long-term rate of return goal is set at the actuarial assumed discount rate contained in the funding valuation using the going-concern basis. The Plan's investments are selected and held in accordance with the criteria and limitations set forth in the statement and in accordance with all relevant legislation. The statement effective for the year ended December 31, 2017 was last amended November 17, 2016 and includes the following asset allocation ranges:

Exposure	Minimum	Maximum
Equities	32%	42%
Fixed income	20%	45%
Inflation sensitive	8%	18%
Real assets	21%	31%
Credit	2%	12%
Absolute return strategies	1%	11%
Money market <sup>10</sup>	(59)%	0%

<sup>10</sup> The money market asset class provides funding for investments in other asset classes.

- Board Investment Policy – This policy applies to the total-fund and aggregate asset classes. The policy addresses the risks that are relevant and material at the total-fund level. The policy sets ranges for allocations to the asset classes and foreign currency. Management determines exposure within these approved ranges. The policy also specifies the risk budget allocation and lists investment constraints such as maximum exposures permitted for a single issuer, liquidity requirements, and currency management. The Board approves this policy and reviews it regularly.
- Investment Division Policy – This policy addresses the manner in which the Investment Division is organized for the purpose of undertaking the investment and risk management of the fund and for day-to-day operations management. This policy specifies the oversight role of the CEO, CIO and senior management committees within the Investment Division.
- Portfolio policies for each investment department – These policies are developed to apply to the individual portfolios within each asset class managed by the Investment Division. Portfolio policies include the departments' investment strategies, operating procedures, trading limits and approval requirements, risk factors and a description of how the risks will be managed and reporting requirements for each portfolio manager, particularly relating to reporting deviations from the approved portfolio policy. All portfolio policies are reviewed annually and approved by the CIO and the senior managing director responsible for the department.
- Trade Authorization and Execution Operation Policy – This policy provides guidance on trading with authorized counterparties.
- Investment Division Counterparty Credit Policy – This policy applies to investments with credit risk exposure that arises from entering into certain counterparty agreements. The policy provides constraints on counterparty credit exposure and procedures for obtaining authorization to trade with a new counterparty.
- Pre-Investment Approval Policy – This policy formalizes the procedures to ensure the data needed for trade capture, pricing, risk management, and accounting is accurate, complete, and can be entered into the Plan's systems of record on a timely basis prior to commencement of trading.

## Processes

The Plan uses risk budgeting to allocate risk across the investment asset classes. The risk budget is presented to the Board annually for review and approval. Each investment department is responsible for managing the investment risks associated with the investments they manage within the risk budget allocated to them. Each department is subject to compliance with the Statement of Investment Policies and Procedures, the Board Investment Policy (which includes the risk budget allocated to them), Investment Division Policy, Trade Authorization and Execution Operation Policy, Pre-Investment Approval Policy and the applicable portfolio policies. In addition, the Capital Markets department is responsible for maintaining the liquidity positions in accordance with the Plan's policies on liquidity and for compliance with the Investment Division Counterparty Credit Policy. The Finance Division independently measures the investment risk exposure and the liquidity position of the Plan and provides the information to the Investment Division and the Investment Committee of the Board.

Each investment department has an investment committee, or an equivalent, which meets regularly to assess the investment risks associated with the portfolios it manages and determines action plans, if required. Individual managers in each investment department receive limited authority to invest from the Board by sub-delegation from senior management. Trading limits and approval requirements are set out in the portfolio policies for the department, the Investment Division Policy and the Board Investment Policy. For investments not traded on exchanges, such as alternative investments and private equity investments, the investment departments conduct due diligence before acquisition and use it as a tool to monitor the investments after acquisition. The objective is to obtain as much transparency as possible for the departments to assess the risk exposure arising from these private and alternative investments.

The senior representatives from each investment department are members of one or both of the Investment Committee - Total Fund (IC - TF) and Investment Committee - Global Privates & Illiquids (IC - GPI). The IC-TF is responsible for considerations around the overall investment program with a focus on managing investment risks at a total-fund level. This committee brings together the experience, investment and operational business judgment required for assessing and managing market, credit and liquidity risks on a regular basis. It monitors the currency positions, interest rate risk and liquidity risk at the total-fund level. Chaired by the Chief Investment Officer, the IC-GPI is responsible for the oversight of private market or illiquid transactions and the overall private portfolio composition. The Chief Risk & Strategy Officer is a member of both Committees. The Chief Legal & Corporate Affairs Officer or a delegate attends the IC-GPI meetings in an advisory capacity. The committees meet at least every other week.

The CEO chairs the Enterprise Risk Management Committee, the CEO-Led Risk Committee and the CEO-Led Risk Committee (Member Services). The Enterprise Risk Management Committee oversees the enterprise risk management program of the Plan and includes senior representatives from all divisions. The Enterprise Risk Management Committee meets regularly and reports to the Board semi-annually and more frequently as necessary. The CEO-Led Risk Committee oversees the alignment of the investment program with the risk appetite and mission, vision and values of the Plan including policies, committee mandates, significant operational risks and external developments that could have a material impact on the investment program. This committee includes senior representatives from Investments, Strategy & Risk, Finance, Enterprise Operations and the General Counsel's Office and meets quarterly and more frequently as necessary. The CEO-Led Risk Committee (Member Services) oversees the alignment of the Member Services division with the Board's Enterprise Risk Appetite Statement and Ontario Teachers' mission, vision and values. This Committee includes senior members from Strategy and Risk, Member Services and Legal and Compliance.

### (f) Credit risk

The Plan is exposed to the risk that a counterparty defaults or becomes insolvent. Credit risk is the risk of loss associated with a counterparty's inability to fulfill its payment obligations. Credit risk may arise directly from an obligor, an issuer of securities, or indirectly from a guarantor of a credit obligation.

#### Credit risk management

The Plan actively manages its credit exposures. When over exposures are detected – either in individual exposures or in groups of exposures – the Plan takes action to mitigate the risks. Such actions may include reducing the exposures and using credit derivatives.

Except for debt issued or guaranteed without significant conditions by the Government of Canada, by the government of a province or territory of Canada (with an investment grade credit rating), or by the Government of the United States of America, the Plan's total investment in securities of a single issuer across all asset classes shall not exceed 3% of the market value of the total fund without the approval of the Board. Debt exposure to a single issuer or with a single guarantor shall not exceed 2% of the market value of the Plan without approval of the Board. Further, not more than 10% of the market value of the Plan may be made up of non-investment grade or unrated investments.

The Plan enters into agreements with counterparties to limit its exposure to credit losses. An International Swaps and Derivatives Association (ISDA) Master Agreement is executed with most OTC derivative counterparties, which allows both parties to settle obligations on a net basis when termination or other predetermined events occur. The Plan also negotiates collateral agreements known as credit support annexes (CSAs) with key counterparties to further mitigate counterparty credit risk. A CSA gives the Plan the power to realize collateral posted by counterparties in the event of a default by such counterparties.

Since collateral is an important mitigant of counterparty credit risk, the Plan routinely obtains collateral from its counterparties, not only under OTC derivative contracts but also under reverse repurchase agreements. Note 2i provides further details on collateral pledged and received.

The Plan has a credit risk assessment process to approve prospective new counterparties and to monitor authorized counterparties for derivative contracts, repurchase and reverse repurchase agreements, securities borrowing agreements, prime broker relationships and futures and options clearing. The Plan deals primarily with counterparties that have an investment grade credit rating. Policies are in place to limit the maximum exposures to any individual counterparty for derivative contracts or repurchase and reverse repurchase agreements, prime broker relationships and futures and options clearing.

### Maximum exposure to credit risk before collateral held

The Plan assumes credit risk exposure through debt investments and amounts receivable from the Province of Ontario and brokers. The maximum exposure to credit risk related to these financial instruments is their fair value as presented in the consolidated statements of financial position and note 2a. The Plan is also exposed to credit risk of counterparties to its OTC derivative transactions. Counterparty credit risk exposure for OTC derivatives is measured as the net positive fair value of the contractual obligations with the counterparties.

To monitor credit risk, the Plan produces, on a quarterly basis, a concentration report by credit rating of all credit sensitive financial securities.

Counterparties are assigned a credit rating as determined by the Plan's internal credit risk management function. Counterparty credit ratings are also compared to their external ratings as provided by recognized credit rating agencies on a daily basis.

The credit risk exposure of debt investments and OTC derivatives, by credit rating category, without taking account of any collateral held or other credit enhancements as at December 31 is as follows:

	<b>2017</b>				
Credit rating (Canadian \$ millions)	Bonds and Short-term investments	Real-rate products	Securities purchased under agreements to resell	Loans and Private debt	OTC Derivatives
AAA/R-1 (high)	\$ 39,290	\$ 31,068	\$ —	\$ —	\$ —
AA/R-1 (mid)	2,360	75	2,331	—	39
A/R-1 (low)	12,687	2,983	15,876	—	633
BBB/R-2	5,630	—	352	—	—
Below BBB/R-2	2,573	—	—	—	—
Unrated <sup>11</sup>	2,460	79	6,074	12,356	—
	<b>\$ 65,000</b>	<b>\$ 34,205</b>	<b>\$ 24,633</b>	<b>\$ 12,356</b>	<b>\$ 672</b>

Credit rating (Canadian \$ millions)	Bonds and Short-term investments	Real-rate products	Securities purchased under agreements to resell	Loans and Private debt	OTC Derivatives
AAA/R-1 (high)	\$ 41,168	\$ 32,697	\$ —	\$ —	\$ —
AA/R-1 (mid)	2,502	—	5,990	—	83
A/R-1 (low)	9,376	3,482	21,006	—	891
BBB/R-2	5,259	—	—	—	—
Below BBB/R-2	2,123	—	—	—	—
Unrated <sup>11</sup>	1,448	213	914	12,243	—
	\$ 61,876	\$ 36,392	\$ 27,910	\$ 12,243	\$ 974

<sup>11</sup> Unrated comprises securities that are either privately held, managed externally, or not rated by the rating agencies.

The Plan is also exposed to credit risk through off-balance sheet arrangements. For off-balance sheet guarantees, the maximum exposure to credit risk is the maximum amount that the Plan would have to pay if the guarantees were to be called upon. For loan commitments, the maximum exposure is the committed amount under the agreements. For credit derivatives, the maximum exposure is the notional amount of written credit derivatives as presented in note 2c.

As at December 31 (Canadian \$ millions)	2017	2016
Guarantees	\$ 359	\$ 314
Loan commitments	63	133
Notional amount of written credit derivatives	17,308	19,793
<b>Total off balance sheet credit risk exposure</b>	<b>\$ 17,730</b>	<b>\$ 20,240</b>

While the Plan's maximum exposure to credit risk is the carrying value of the assets, or, in the case of off-balance sheet items, the amount guaranteed or committed, in most cases the likely exposure is far less due to collateral, credit enhancements (e.g., guarantees in favour of the Plan) and other actions taken to mitigate the Plan's exposure, as described previously.

### Credit risk concentrations

As at December 31, 2017, the Plan has a significant concentration of credit risk with the Government of Canada, the Province of Ontario and the U.S Treasury. This concentration relates primarily to holding Government of Canada issued securities of \$45.4 billion (2016 – \$51.0 billion), U.S. Treasury issued securities of \$13.0 billion (2016 – \$0.2 billion), Province of Ontario bonds of \$6.7 billion (2016 – \$5.0 billion), receivable from the Province of Ontario (see note 3) of \$3.3 billion (2016 – \$3.3 billion) and future provincial funding requirements of the Plan.

### (g) Market risk

Market risk is the risk of loss that results from fluctuations in various market factors such as equity and commodity prices, interest and foreign exchange rates, and credit spreads. The Plan is exposed to market risk through its investing activities. The level of market risk to which the Plan is exposed varies depending on considerations such as market conditions, expectations of future price movements, the occurrence of certain catastrophic events (e.g., hurricanes and earthquakes) affecting the prices of insurance linked securities, expectations of future yield movements and the composition of the asset mix.

### Market risk management

The Plan manages market risk primarily through diversifying the investments across industry sectors, investment strategies and on a global basis. A variety of derivative contracts are also utilized to manage the Plan's market risk exposures.

### Market and credit risk measurement

The Plan uses a statistical Value-at-Risk (VaR)-type approach, the expected tail loss (ETL) methodology, to measure investment risk comprising of market and credit risk over a one-year horizon at a 99% confidence level. The ETL methodology captures more of the effect of extreme loss events than VaR for the same confidence level as it is the average of all the losses in the tail.

Total Asset Risk is prepared using the ETL methodology which captures the investment risk exposure by asset class and reflects the risk of potential losses in net assets due to both market and credit risk factors. Statistically, the Plan would expect to see losses approximate to the risk exposure on the report only 1% of the time over a one year period, subject to certain assumptions and limitations discussed below.

The ETL methodology is a statistical approach that accounts for market volatility and credit risk as well as risk diversification achieved by investing in various products and markets. Risks are measured consistently across all markets and products and can be aggregated to arrive at a single risk number. The one-year 99% ETL number used by the Plan is generated using a historical simulation and bootstrap sampling approach that reflects the expected annual return on the portfolio in the worst 1% of the cases. When sufficient historical data is not available, proxies and statistical methods are used to complete the data series.

There are limitations to the ETL methodology in use. For example, historical data may not provide the best estimate of future changes. It may fail to capture the correlation in asset returns in extreme adverse market movements which have not occurred in the historical window. However, the sampling approach and long historical window mitigate this limitation to some extent by enabling the generation of a set of scenarios that include extreme adverse events. Another limitation is that the Plan computes the risk relative to asset positions at the close of the business day. Positions may change substantially during the course of a trading day. These limitations and the nature of the ETL measure mean that the Plan's losses may exceed the risk exposure amounts indicated in any risk reports.

The Plan continuously monitors and enhances the risk calculation methodology, striving for better estimation of risk exposure. A number of initiatives were completed in the past year that significantly improved the accuracy of calculated risk measures. Existing risk methodologies were modified to incorporate more accurate risk models and more reliable risk data.

The table below shows Total Asset Risk ETL of the Plan.

(Canadian \$ billions) <sup>12</sup>	2017	2016
<b>Equity<sup>13</sup></b>		
Publicly traded	\$ 11.0	\$ 12.0
Non-publicly traded	14.0	12.5
<b>Fixed income</b>		
Bonds	7.0	4.5
Real-rate products	4.5	6.5
<b>Inflation sensitive<sup>14</sup></b>		
Commodities	3.5	2.0
Natural resources	1.5	1.5
Inflation hedge	3.0	—
<b>Real assets</b>		
Real estate	4.5	4.0
Infrastructure	3.5	3.0
Real-rate products	0.5	—
<b>Credit<sup>15</sup></b>	2.0	—
<b>Absolute return strategies<sup>16</sup></b>	3.0	2.5
<b>Overlay<sup>16</sup></b>	3.5	1.5
<b>Money market<sup>16</sup></b>	10.5	6.5
<b>Total Asset Risk ETL Exposure<sup>17</sup></b>	<b>\$ 42.0</b>	<b>\$ 37.5</b>

<sup>12</sup> Rounded to the nearest \$0.5 billion.

<sup>13</sup> The Equity asset class is comprised of Publicly traded and Non-publicly traded equities. December 31, 2016 comparative figures have been reclassified to reflect these categories.

<sup>14</sup> Beginning January 1, 2017, Natural resources and other securities that provide exposure to inflation form the Inflation sensitive asset class.

<sup>15</sup> Beginning January 1, 2017, corporate and emerging market debt moved into the new Credit asset class.

<sup>16</sup> Overlay includes strategies to overweight or underweight certain foreign currency positions. Beginning January 1, 2017, certain index positions formerly presented in the Overlay asset class have moved to Money market and certain foreign currency positions formerly presented in the Absolute return strategies asset class have moved to Overlay. December 31, 2016 comparative figures have been reclassified to reflect the changes.

<sup>17</sup> Total Asset Risk ETL Exposure does not equal the sum of ETL exposure for each asset class because diversification reduces total risk exposure.

## Interest rate risk

Interest rate risk refers to the effect on the market value of the Plan's assets and liabilities due to fluctuations in interest rates. The value of the Plan's assets is affected by short-term changes in nominal and real interest rates. Pension liabilities are exposed to fluctuations in long-term interest rates as well as expectations for salary escalation.

The Plan measures interest rate risk of relevant asset classes in its asset mix (note 2d). The Plan measures the sensitivity to changes in nominal interest rates of bonds and derivative contracts included in its Fixed Income and Credit asset classes - a 1% increase in nominal interest rates would result in a decline in the value of these investments of \$6.5 billion (2016 – \$3.4 billion). Similarly, the Plan measures the sensitivity to changes in real interest rates of real-rate products and derivative contracts included in its Fixed Income and Real Assets asset classes - a 1% increase in real interest rates would result in a decline in the value of these investments of \$3.1 billion (2016 – \$5.1 billion).

The Plan also measures the sensitivity of nominal and real-rate securities and derivative contracts that are included in the Inflation hedge category of the Plan's Inflation sensitive asset class to changes in market-implied inflation. A 1% increase in the market-implied rate of inflation would result in an increase in the value of these investments of \$1.6 billion.

As at December 31, 2017, holding the inflation and salary escalation assumptions constant, a 1% decrease in the assumed long-term real rates of return would result in an increase in the pension liabilities of approximately 22% or \$45.3 billion (2016 – 22% or \$40.8 billion).

## Foreign currency risk

Foreign currency exposure arises from the Plan's holdings of foreign currency-denominated investments and related derivative contracts.

As at December 31, the Plan had foreign currency exposure, measured in Canadian dollars, from investments, net receivable from brokers, and investment related cash as follows:

(Canadian \$ millions)	2017	2016
Currency	Net Exposure	Net Exposure
United States Dollar	\$ 39,660	\$ 49,553
Chilean Peso	3,455	3,108
Euro	3,230	7,774
Brazilian Real	3,010	2,673
British Pound Sterling	2,857	4,505
Danish Krone	1,977	1,175
Japanese Yen	1,945	3,275
Chinese Renminbi	(1,827)	1,307
Australian Dollar	1,419	1,944
Mexican Peso	1,357	838
Other	10,419	7,955
	<b>\$ 67,502</b>	<b>\$ 84,107</b>



As at December 31, with all other variables and underlying values held constant, a 5% increase/decrease in the value of the Canadian dollar against major foreign currencies would result in an approximate decrease/increase in the value of net investments as follows:

(Canadian \$ millions)	2017	2016
Currency	Change in Net Investment Value	Change in Net Investment Value
United States Dollar	\$ 1,983	\$ 2,478
Chilean Peso	173	155
Euro	161	389
Brazilian Real	151	134
Other	907	1,050
	<b>\$ 3,375</b>	<b>\$ 4,206</b>

#### (h) Liquidity risk

Liquidity risk refers to the risk that the Plan does not have sufficient cash to meet its current payment liabilities and acquire investments in a timely and cost-effective manner. Liquidity risk is inherent in the Plan's operations and can be impacted by a range of situation specific and market-wide events including, but not limited to, credit events and significant movements in the market.

#### Liquidity risk management

The liquidity position of the Plan is analyzed daily to ensure the Plan maintains at least 2.0% of its assets in unencumbered Canadian treasury bills. The Plan also manages its liquidity by holding additional unencumbered Government of Canada securities (bonds, treasury bills and real-rate bonds) and U.S. Government securities that are available for repurchase agreements so that the Plan is able to withstand the liquidity effects of a market stress event and pay its contractual cash flows and projected cash requirements over a one-year horizon with a 99% probability. The Plan's liquidity position is periodically tested by simulations of major events such as significant movements in the market.

#### Liquid assets

The Plan maintains a portfolio of highly marketable assets including Canadian and U.S. government bonds that can be sold or funded on a secured basis as protection against any unforeseen interruption to cash flow. The fair value of the Canadian and U.S. government bonds is \$58,435 million as at December 31, 2017 (2016 – \$51,208 million). The Plan also has publicly traded equities of \$23,852 million net of short positions (2016 – \$27,551 million) which are listed on major recognized stock exchanges. These securities are readily realizable and convertible to cash.

#### Contractual maturity

The Plan's liabilities include accrued pension benefits, investment-related liabilities, due to brokers, accounts payable and accrued liabilities. Due to brokers, accounts payable and accrued liabilities are all due within one year. As the Plan may settle securities sold but not yet purchased, cash collateral received under credit support annexes and derivatives at fair value before contractual maturity, they are considered to mature within one year.

The Plan's investment-related liabilities by maturity as at December 31 are as follows:

(Canadian \$ millions)	2017			
	Within One Year	One to Five Years	Over Five Years	Total
Securities sold under agreements to repurchase	\$ (31,829)	\$ (7,013)	\$ —	\$ (38,842)
Securities sold but not yet purchased				
Equities	(2,230)	—	—	(2,230)
Fixed income	(11,177)	—	—	(11,177)
Real estate	(1,384)	(2,102)	(946)	(4,432)
Commercial Paper	(8,938)	—	—	(8,938)
Term debt	—	(2,167)	—	(2,167)
Cash collateral received under credit support annexes	(419)	—	—	(419)
Derivative-related, net	(3,566)	—	—	(3,566)
	<b>\$ (59,543)</b>	<b>\$ (11,282)</b>	<b>\$ (946)</b>	<b>\$ (71,771)</b>

(Canadian \$ millions)	2016			
	Within One Year	One to Five Years	Over Five Years	Total
Securities sold under agreements to repurchase	\$ (39,736)	\$ (7,686)	\$ —	\$ (47,422)
Securities sold but not yet purchased				
Equities	(1,947)	—	—	(1,947)
Fixed Income	(19,108)	—	—	(19,108)
Real estate	(920)	(1,929)	(347)	(3,196)
Commercial Paper	(9,120)	—	—	(9,120)
Term debt	—	—	—	—
Cash collateral received under credit support annexes	(163)	—	—	(163)
Derivative-related, net	(2,678)	—	—	(2,678)
	<b>\$ (73,672)</b>	<b>\$ (9,615)</b>	<b>\$ (347)</b>	<b>\$ (83,634)</b>

### (i) Collateral pledged and received

The Plan pledges and receives cash and security collateral in the ordinary course of managing net investments. Security collateral consists primarily of Canadian and U.S. government securities. Generally, additional collateral is provided if the value of the securities falls below a predetermined level. The securities transferred are recognized as assets when the Plan retains substantially all risks and rewards, including credit risk, settlement risk and market risk. The Plan is not allowed to either pledge the same securities with other financial institutions or to sell them to another entity unless the Plan substitutes such securities with other eligible securities. The Plan holds the collateral received as long as the Plan is not a defaulting party or an affected party in connection with a specified condition listed on the contractual agreements and there is no early termination of the contractual agreement. The Plan is permitted to either sell or repledge the collateral in the absence of default by the owner of the collateral. The fair value of collateral sold or repledged as at December 31, 2017 is \$nil (2016 - \$20 million).

The Plan engages in securities borrowing transactions and pledges associated collateral. The Plan does not recognize any securities borrowed as its investment assets because the risks and rewards of the borrowed securities remain with the lenders.

The fair value of collateral pledged and received, as well as the securities purchased under agreements to resell and sold under agreements to repurchase and securities borrowed as at December 31 are as follows:

(Canadian \$ millions)	2017	2016
<b>Securities purchased under agreements to resell and sold under agreements to repurchase</b>		
Securities purchased under agreements to resell	\$ 24,633	\$ 27,910
Collateral held	24,815	27,749
Securities sold under agreements to repurchase	38,842	47,422
Collateral pledged	39,080	47,438
<b>Securities borrowing</b>		
Securities borrowed	3,827	4,979
Collateral pledged <sup>18</sup>	4,242	5,382
<b>Derivative-related</b>		
Collateral received <sup>19</sup>	737	1,003
Collateral pledged <sup>20</sup>	1,949	1,175

<sup>18</sup> Includes cash collateral of \$2,239 (2016 - \$1,967)

<sup>19</sup> Includes cash collateral of \$419 (2016 - \$163)

<sup>20</sup> Includes cash collateral of \$59 (2016 - \$121)

#### (j) Offsetting financial assets and financial liabilities

The Plan enters into agreements with counterparties such as ISDA Master Agreements and Global Master Repurchase Agreements (GMRA's) in order to mitigate its exposure to credit losses (see note 2f). These agreements provide rights to allow the parties to settle obligations on a net basis when certain predetermined events occur. As these rights of offset are conditional, the related amounts are not netted in the Consolidated Statements of Financial Position.

The impact of these arrangements as at December 31 is presented in the following table:

(Canadian \$ millions)	2017			
	Gross amount presented in note 2a	Amounts subject to netting agreements	Securities and cash collateral <sup>21</sup>	Net Exposure
<b>Financial assets</b>				
Securities purchased under agreements to resell	\$ 24,633	\$ (23,288)	\$ (1,345)	\$ —
Derivative-related receivables	3,494	(1,879)	(580)	1,035
	\$ 28,127	\$ (25,167)	\$ (1,925)	\$ 1,035
<b>Financial liabilities</b>				
Securities sold under agreements to repurchase	\$ (38,842)	\$ 23,288	\$ 15,533	\$ (21)
Derivative-related liabilities	(3,566)	1,879	1,631	(56)
	\$ (42,408)	\$ 25,167	\$ 17,164	\$ (77)

(Canadian \$ millions)	2016			
	Gross amount presented in note 2a	Amounts subject to netting agreements	Securities and cash collateral <sup>21</sup>	Net Exposure
<b>Financial assets</b>				
Securities purchased under agreements to resell	\$ 27,910	\$ (18,753)	\$ (9,154)	\$ 3
Derivative-related receivables	3,307	(1,699)	(927)	681
	<b>\$ 31,217</b>	<b>\$ (20,452)</b>	<b>\$ (10,081)</b>	<b>\$ 684</b>
<b>Financial liabilities</b>				
Securities sold under agreements to repurchase	\$ (47,422)	\$ 18,753	\$ 28,666	\$ (3)
Derivative-related liabilities	(2,678)	1,699	967	(12)
	<b>\$ (50,100)</b>	<b>\$ 20,452</b>	<b>\$ 29,633</b>	<b>\$ (15)</b>

<sup>21</sup> Securities and cash collateral exclude over-collateralization and collateral in transit. See note 2i for the total amount of collateral.

### **NOTE 3. RECEIVABLE FROM THE PROVINCE OF ONTARIO**

The receivable from the Province consists of required matching contributions and interest thereon.

As at December 31 (Canadian \$ millions)	2017	2016
Contributions receivable	\$ 3,269	\$ 3,224
Accrued interest receivable	45	49
	<b>\$ 3,314</b>	<b>\$ 3,273</b>

The receivable as at December 31, 2017, from the Province of Ontario consists of \$1,660 million, which was received in January 2018, and an estimated \$1,654 million to be received with interest in January 2019. The receivable as at December 31, 2016, from the Province consisted of \$1,635 million, which was received in January 2017, and an initial estimate of \$1,638 million to be received in January 2018. The difference between the initial estimates and the actual amount received was due to interest.

## NOTE 4. ACCRUED PENSION BENEFITS

### (a) Actuarial assumptions

The actuarial assumptions used in determining the value of accrued pension benefits of \$204,322 million (2016 – \$189,397 million) reflect management’s best estimate of future economic events and involve both economic and non-economic assumptions. The non-economic assumptions include considerations such as mortality as well as withdrawal and retirement rates. The primary economic assumptions include the discount rate, the salary escalation rate and the inflation rate. The discount rate is based on market rates, as at the valuation date, of bonds issued by the Province of Ontario, which have characteristics similar to the Plan’s liabilities. The discount rate was determined by applying a weighted average discount rate that reflects the estimated timing and amount of benefit payments. The inflation rate is the geometric difference between the yield on Government of Canada long-term nominal bonds and Government of Canada real-return bonds. The salary escalation rate incorporates the inflation rate assumption and long-term expectation of growth in real wages.

A summary of the primary economic assumptions is as follows:

As at December 31	2017	2016
Discount rate	2.95%	3.25%
Salary escalation rate	2.70%	2.80%
Inflation rate	1.70%	1.80%
Real rate <sup>1</sup>	1.25%	1.40%

<sup>1</sup> Real rates shown as the geometric difference between the discount rate and the inflation rate.

The primary economic assumptions were changed as a result of changes in capital markets during 2017 and the new salary agreements reached in 2017 noted below. These changes in economic assumptions resulted in a net increase in the value of accrued pension benefits of \$6,508 million (2016 – \$9,281 million increase).

The primary economic assumptions incorporated the two-year salary contracts as announced by the Ministry of Education on April 12, 2017, for school years beginning September 1, 2017 and September 1, 2018.

There were no material changes adopted in 2017 to the non-economic assumptions, however, there were refinements to the ratio of credited service to qualifying service assumed for future pension accruals as well as the retirement assumptions. Both of these changes were as a result of a study performed focused on the longer period of time required for members to reach full-time employment. There was a small refinement in 2016 to the assumed retirement age for inactive members. The change in non-economic assumptions increased the accrued pension benefits by \$145 million (2016 - \$113 million increase). The changes in economic and non-economic assumptions resulted in a net increase in the value of accrued pension benefits of \$6,653 million (2016 - \$9,394 million increase).

### (b) Indexation levels

Credited service earned after December 31, 2009 is subject to conditional inflation protection as described in paragraph (f) of the Description of Plan note. Indexation levels vary between 50% and 100% of the change in the Consumer Price Index (CPI) for credited service earned between January 1, 2010, and December 31, 2013, and vary between 0% and 100% of the change in the CPI for credited service earned after 2013. Conditional inflation protection can only be invoked and changes to indexation levels can only be made when a funding valuation is filed. The Ontario government and designated employers participating in the Plan will make extra contributions to the Plan to match the inflation protection benefits members forego up to a maximum foregone inflation of 50% of CPI.

For the financial statement valuation, future pension payments are indexed at the levels stated in the most recent funding valuation filing. As a result, the December 31, 2017 accrued pension benefits reflect the indexation levels as stated in the January 1, 2017 funding valuation report; and the December 31, 2016 accrued pension benefits reflect the indexation levels as stated in the January 1, 2016 funding valuation report.

As noted in the filed January 1, 2017 funding valuation, indexation levels will be increased to 100% of CPI for all periods of credited service effective January 1, 2018. Also, effective January 1, 2018, pensioners who retired after 2009 will receive a one-time increase to their pensions to prospectively restore benefits to the level they would have been had 100% inflation protection been provided on January 1, 2017. This level will remain in effect until the next actuarial valuation is filed with the regulatory authorities at which time the level may be reduced depending on the funded status of the Plan. The change in the indexation level resulted in an increase in accrued pension benefits of \$1,207 million in 2017.

The filed January 1, 2016 funding valuation increased indexation levels from 70% to 90% of CPI for all periods of credited service effective January 1, 2017. Also, effective January 1, 2017, pensioners who retired after 2009 received a one-time increase to their pensions to prospectively restore benefits to the level they would have been had 100% inflation protection been provided on January 1, 2016. This level remained in effect until the January 1, 2017 funding valuation was filed with the regulatory authorities. The change in the indexation level resulted in an increase in accrued pension benefits of \$1,674 million in 2016.

The indexation levels reflected in accrued pension benefits as at December 31 are as follows:

	2017	2016
Credited service	Inflation protection level	Inflation protection level
Earned before 2010	<b>100% of CPI</b>	100% of CPI
Earned during 2010 – 2013	<b>100% of CPI</b>	90% of CPI
Earned after 2013	<b>100% of CPI</b>	90% of CPI

### (c) Experience gains and losses

Experience losses on the accrued pension benefits of \$568 million (2016 – gains \$194 million) arose from differences between the actuarial assumptions and actual results.

## NOTE 5. INVESTMENT IN REAL ESTATE

The Plan's real estate portfolio is comprised of real estate-related investments that are either owned or managed on behalf of the Plan by The Cadillac Fairview Corporation Limited (CFCL), a wholly owned subsidiary. The Plan consolidates the fair value of the assets and liabilities of CFCL and the investment holding companies managed by CFCL. Investment holding companies and investment entities, including the joint ventures, managed by external parties, are recognized as the Plan's investments measured at fair value and presented on a non-consolidated basis.

The tables below provide information on the real estate portfolio. Intercompany transactions and balances are eliminated upon consolidation. The first table presents major components of the net investment in real estate. The second table presents major components of net real-estate income:

As at December 31 (Canadian \$ millions)	2017		2016	
	Fair Value	Cost	Fair Value	Cost
<b>Assets<sup>1,2</sup></b>				
Real estate properties	\$ 25,410	\$ 15,017	\$ 26,506	\$ 15,695
Investments	4,284	3,315	4,159	3,113
Other assets	288	281	258	256
<b>Total assets</b>	<b>29,982</b>	<b>18,613</b>	<b>30,923</b>	<b>19,064</b>
<b>Liabilities<sup>1,2</sup></b>				
Long-term debt	3,551	3,548	2,324	2,196
Other liabilities	881	623	872	680
<b>Total liabilities</b>	<b>4,432</b>	<b>4,171</b>	<b>3,196</b>	<b>2,876</b>
<b>Net investment in real estate</b>	<b>\$ 25,550</b>	<b>\$ 14,442</b>	<b>\$ 27,727</b>	<b>\$ 16,188</b>

<sup>1</sup> U.S. Dollar, Mexican Pesos and Colombian Pesos net assets have been hedged by way of foreign currency forward contracts for a notional amount of \$1,463 million (2016 – \$1,423 million) with a combined fair value of \$3 million (2016 – (\$8) million).

<sup>2</sup> Joint ventures managed by external parties hold real estate properties and have liabilities. The net asset value of these joint ventures is included in investments, representing assets of \$1,097 million (2016 – \$708 million) and liabilities of \$383 million (2016 - \$305 million).

(Canadian \$ millions)	2017	2016
<b>Revenue</b>		
Rental	\$ 1,925	\$ 1,949
Investment and other	112	92
	<b>2,037</b>	<b>2,041</b>
<b>Expenses</b>		
Property operating	800	850
General and administrative	58	36
Other	23	15
	<b>881</b>	<b>901</b>
Operating income	<b>1,156</b>	<b>1,140</b>
Interest expense	<b>(121)</b>	<b>(90)</b>
Income (note 6)	<b>1,035</b>	<b>1,050</b>
Net investment gain	<b>661</b>	<b>906</b>
<b>Net real estate income</b>	<b>\$ 1,696</b>	<b>\$ 1,956</b>

## NOTE 6. NET INVESTMENT INCOME

Net investment income/(loss) after allocating net realized and unrealized gains on investments, management fees and transaction costs to asset classes

Net investment income is reported net of management fees, transaction costs, and is grouped by asset class. Net investment income, after giving effect to derivative contracts, for the year ended December 31, is as follows:

Net Investment Income							2017
(Canadian \$ millions)	Income <sup>1</sup>	Realized <sup>2</sup>	Unrealized <sup>2,3</sup>	Investment Income	Management Fees	Transaction Costs	Net Investment Income
<b>Equity</b>							
Publicly traded							
Canadian	\$ 20	\$ (5)	\$ 47	\$ 62	\$ —	\$ (3)	\$ 59
Non-Canadian	451	5,017	(180)	5,288	(61)	(49)	5,178
Non-publicly traded							
Canadian	134	(31)	841	944	(7)	(18)	919
Non-Canadian	947	1,611	1,794	4,352	(239)	(89)	4,024
	1,552	6,592	2,502	10,646	(307)	(159)	10,180
<b>Fixed income</b>							
Bonds	1,214	(971)	499	742	(6)	(21)	715
Short-term investments	(15)	198	248	431	—	—	431
Alternative investments <sup>4</sup>	87	853	(616)	324	(20)	(1)	303
Canadian real-rate products	455	356	(622)	189	—	(14)	175
Non-Canadian real-rate products	189	499	(855)	(167)	—	—	(167)
	1,930	935	(1,346)	1,519	(26)	(36)	1,457
<b>Inflation sensitive</b>							
Commodities	(86)	204	399	517	—	(5)	512
Timberland	73	—	(137)	(64)	—	—	(64)
Natural resources	191	1	(12)	180	(1)	(20)	159
	178	205	250	633	(1)	(25)	607
<b>Real assets</b>							
Real estate (note 5)	1,057	1,092	(431)	1,718	—	(22)	1,696
Infrastructure	814	948	1,357	3,119	(22)	(57)	3,040
	1,871	2,040	926	4,837	(22)	(79)	4,736
	\$ 5,531	\$ 9,772	\$ 2,332	\$ 17,635	\$ (356)	\$ (299)	\$ 16,980

<sup>1</sup> Income includes interest, dividends, real estate operating income (net of interest expense), and other investment-related income and expenses.

<sup>2</sup> Includes net foreign currency losses of \$454 million (both realized and unrealized).

<sup>3</sup> Net of certain management and performance fees.

<sup>4</sup> Comprised primarily of hedge funds and managed futures accounts.



## Net Investment Income

2016

(Canadian \$ millions)	Income <sup>5</sup>	Realized <sup>6</sup>	Unrealized <sup>6,7</sup>	Investment Income	Management Fees	Transaction Costs	Net Investment Income
<b>Equity</b>							
Publicly traded							
Canadian	\$ 34	\$ (137)	\$ 545	\$ 442	\$ (1)	\$ (10)	\$ 431
Non-Canadian	534	3,197	(2,355)	1,376	(44)	(43)	1,289
Non-publicly traded							
Canadian	50	(84)	278	244	(10)	(33)	201
Non-Canadian	746	2,084	(1,903)	927	(242)	(117)	568
	1,364	5,060	(3,435)	2,989	(297)	(203)	2,489
<b>Fixed income</b>							
Bonds	800	(540)	(1,040)	(780)	(3)	(16)	(799)
Short-term investments	(7)	502	(154)	341	—	—	341
Alternative investments <sup>8</sup>	173	1,077	(769)	481	(25)	(2)	454
Canadian real-rate products	482	177	40	699	(2)	(5)	692
Non-Canadian real-rate products	208	137	48	393	—	—	393
	1,656	1,353	(1,875)	1,134	(30)	(23)	1,081
<b>Inflation sensitive</b>							
Commodities	(24)	(110)	791	657	—	(3)	654
Timberland	153	70	(182)	41	—	—	41
Natural resources	186	1	227	414	(20)	(3)	391
	315	(39)	836	1,112	(20)	(6)	1,086
<b>Real assets</b>							
Real estate (note 5)	1,065	371	535	1,971	(1)	(14)	1,956
Infrastructure	896	58	(505)	449	(10)	(53)	386
	1,961	429	30	2,420	(11)	(67)	2,342
	\$ 5,296	\$ 6,803	\$ (4,444)	\$ 7,655	\$ (358)	\$ (299)	\$ 6,998

<sup>5</sup> Income includes interest, dividends, real estate operating income (net of interest expense), and other investment-related income and expenses.

<sup>6</sup> Includes net foreign currency losses of \$209 million (both realized and unrealized).

<sup>7</sup> Net of certain management and performance fees.

<sup>8</sup> Comprised primarily of hedge funds and managed futures accounts.

## NOTE 7.

### INVESTMENT RETURNS AND RELATED BENCHMARK RETURNS

Investment returns and related benchmark returns by investment asset class for the year ended December 31 are as follows:

(percent)	2017		2016	
	Investment Returns	Investment Benchmark Returns	Investment Returns	Investment Benchmark Returns
Equity <sup>1,4</sup>	17.6%	15.4%	4.8%	4.9%
Fixed income <sup>4</sup>	2.6	2.6	0.8	1.0
Inflation sensitive <sup>2,4</sup>	(3.2)	(4.0)	8.3	6.7
Real assets <sup>4</sup>	10.9	7.1	5.3	3.4
Credit <sup>3,4</sup>	1.7	1.1	—	—
Total fund net return <sup>5,6</sup>	9.7%	8.2%	4.0%	3.5%

<sup>1</sup> The Equity asset class is comprised of Publicly traded and Non-publicly traded equities. December 31, 2016 comparative figures have been reclassified to reflect these categories.

<sup>2</sup> Beginning January 1, 2017, Natural resources and other securities that provide exposure to inflation form the Inflation sensitive asset class.

<sup>3</sup> Beginning January 1, 2017, corporate and emerging market debt moved into the new Credit asset class.

<sup>4</sup> Net of transaction costs and management fees but before Ontario Teachers' investment administration expenses.

<sup>5</sup> Absolute return strategies, Overlay and Money market are included in the total fund net return and not shown separately.

<sup>6</sup> The total fund net return includes Ontario Teachers' investment administrative expenses. December 31, 2016 comparative figure has been changed to reflect the presentation of total-fund return on a net basis.

Investment returns have been calculated using a time-weighted rate of return methodology.

The Plan identifies benchmarks to evaluate the investment management performance. The performance of each asset class is measured against benchmarks that simulate the results based on the asset class.

The total fund net return is measured against a Canadian dollar-denominated composite benchmark produced by aggregating returns from each of the policy asset-class benchmarks.

## NOTE 8.

### FUNDING VALUATIONS

Funding valuations are prepared annually and must be filed at least once every three years with the regulatory authorities. These valuations are used to determine the funding requirements of the Plan. When filing the January 1, 2017 funding valuation, the co-sponsors eliminated the special contributions of 1.1% of pay effective January 1, 2018. For 2017, active members were required to contribute 11.50% of the portion of their salaries covered by the CPP and 13.10% of salaries above this level. Effective January 1, 2018, the required contribution will be reduced to 10.40% of the portion of salaries covered by the CPP and 12.0% of salaries above this level. Member contributions are matched by the Province and designated employers. The Funding Management Policy established by the co-sponsors provides guidance for the co-sponsors in determining contribution and benefit levels.

Under an agreement between the co-sponsors, contribution rates are as follows:

(percent)	Contribution Rate	
	Covered by CPP	Not covered by CPP
2011	10.40%	12.00%
2012	10.80%	12.40%
2013	11.15%	12.75%
2014 to 2017	11.50%	13.10%
2018 onwards	10.40%	12.00%

The actuarial methods used to prepare funding valuations are different than those used to prepare a financial statement valuation and the amounts included in these consolidated financial statements. The funding valuations use an actuarial valuation method which takes into account future benefits to be earned and future contributions to be made by members of the Plan as at the valuation date.

The most recent funding valuation that has been filed with regulatory authorities was prepared as at January 1, 2017, by Mercer (Canada) Limited and disclosed a funding surplus of \$5,430 million, after increasing indexation levels to 100% for credited service earned after 2009, as well as eliminating the special contributions of 1.1% of salary - both measures being effective January 1, 2018.

The sponsors have decided to file the January 1, 2018 valuation with the regulatory authorities and have chosen to allocate the surplus to a contingency reserve.

## NOTE 9. CONTRIBUTIONS

(Canadian \$ millions)	2017	2016
<b>Members</b>		
Current service <sup>1</sup>	\$ 1,625	\$ 1,619
Optional credit	37	34
	<b>1,662</b>	1,653
<b>Province of Ontario</b>		
Current service	1,610	1,596
Interest	32	36
Optional credit	34	31
	<b>1,676</b>	1,663
Designated employers	36	34
Transfers from other pension plans	11	13
	<b>47</b>	47
	<b>\$ 3,385</b>	\$ 3,363

<sup>1</sup> Contributions past due are less than \$1 million in 2017 and 2016.

## NOTE 10. BENEFITS

(Canadian \$ millions)	2017	2016
Retirement pensions	\$ 5,407	\$ 5,227
Death benefits	380	376
Disability pensions	26	26
Commuted value transfers	74	64
Family law transfers	32	24
Transfers to other plans	8	8
Benefits paid	\$ 5,927	\$ 5,725
Other payments <sup>1</sup>	5	—
	<b>\$ 5,932</b>	\$ 5,725

<sup>1</sup> Settlement or other claim-related payments to certain current and former beneficiaries determined on a case-by-case basis. Such payments do not reduce the accrued pension benefits.

## NOTE 11. ADMINISTRATIVE EXPENSES

### (a) Investment expenses

(Canadian \$ millions)	2017	2016
Salaries, incentives and benefits	\$ 296.7	\$ 290.1
Premises and equipment	52.0	49.4
Professional and consulting services	53.0	50.1
Information services	27.2	28.7
Communication and travel	18.6	16.4
Custodial fees	8.7	7.3
Statutory audit fees	2.7	2.3
Board and committee remuneration	1.1	0.9
Other	7.1	6.0
	<b>\$ 467.1</b>	<b>\$ 451.2</b>

### (b) Member services expenses

(Canadian \$ millions)	2017	2016
Salaries, incentives and benefits	\$ 38.1	\$ 37.4
Premises and equipment	13.5	10.6
Professional and consulting services	4.0	4.8
Communication and travel	1.2	1.2
Statutory audit fees	0.1	0.1
Board and committee remuneration	0.2	0.1
Other	1.0	0.8
	<b>\$ 58.1</b>	<b>\$ 55.0</b>

### (c) Compensation of key management personnel

Key management personnel are defined as those persons having authority and responsibility for planning, directing and controlling the activities of the Plan, being the Board members, the executive team and the senior managing directors of the Investment Division.

The compensation of the key management personnel is included in the administrative expenses of the Plan. There are no other related party transactions between the key management personnel and the Plan.

The compensation of the key management personnel<sup>1</sup> as at December 31 is summarized below:

(Canadian \$ millions)	2017	2016
Short-term employee benefits	\$ 16.8	\$ 14.6
Post-employment benefits	(0.6)	2.4
Termination benefits	—	3.5
Other long-term benefits	14.8	12.6
	<b>\$ 31.0</b>	<b>\$ 33.1</b>

<sup>1</sup>The table does not include compensation of either officers or directors of The Cadillac Fairview Corporation Limited.

### (d) Employees' post-employment benefits

The employees of the Plan are members of the defined benefit plans, of either the Ontario Public Service Employees Union (OPSEU) Pension Plan or Public Service Pension Plan (PSPP). The expected contributions from the Plan in 2018 are approximately \$11.9 million. Some employees are also members of the Public Service Supplementary Plan (PSSP). These three

pension plans are sponsored by the Province of Ontario and information is available on [www.optrust.com](http://www.optrust.com) and [www.opb.ca](http://www.opb.ca). As the employer, the Plan matches the employees' contributions to these pension plans. Some senior management employees also participate in a non-registered, unfunded Supplemental Employee Retirement Plan (SERP) managed by the Plan to provide the employees non-indexed retirement benefits equal to 2% of the employee's pensionable earnings times the number of years of service, less the initial annual pension to which the employee is entitled under the PSPP and PSSP, combined. The contributions expensed by the Plan during the year were \$7.9 million (2016 – \$12.5 million). Contributions are included in the salaries, incentives and benefits expenses.

## **NOTE 12. CAPITAL**

Funding valuation surpluses or deficits as determined by an independent actuary are considered the Plan's capital for the purposes of the consolidated financial statements. See note 8 for an explanation of the difference between the funding valuation and the financial statement valuation.

The funding valuation is used to measure the long-term health of the Plan assessing the Plan's ability to meet its obligations to all current members and their survivors. The objective of managing the Plan's capital is to ensure the Plan is sufficiently funded to pay benefits over the long term.

One of the most important assumptions in the funding valuation is the discount rate (set by the Board) which is used to calculate the present value of future pension benefits the Plan expects to pay to members as well as contributions it anticipates receiving. The discount rate is derived from the expected rate of return on investments and takes into consideration the cost of running the Plan and provisions for plan maturity as well as major adverse events, such as the 2008 financial crisis.

Preliminary funding valuation surpluses or deficits are determined annually. At least once every three years, a formal funding valuation report is required to be filed with the regulatory authorities. As stated in the Partners' Agreement<sup>1</sup>, the Plan cannot be in a deficit position when such reports are filed<sup>2</sup>. As a result, the formal report must include adjustments to benefit and / or contribution levels as necessary to eliminate any preliminary valuation deficit. Any required adjustments are determined by the co-sponsors with guidance from the Funding Management Policy (Appendix A to the Partners' Agreement).

<sup>1</sup> The Partners' Agreement is the document which establishes the partnership between the co-sponsors and outlines the roles of the board and co-sponsors.

<sup>2</sup> The formal funding valuation report must be actuarially balanced such that the sum of the funding liabilities (present value of future pension benefits), the present value of the reduction in cost due to providing indexation levels below 100% and any contingency reserve is equal to the sum of the Plan's market value of assets, asset smoothing adjustment (if applicable), present value of future contributions and present value of future matching of foregone inflation adjustments.

## **NOTE 13. RETIREMENT COMPENSATION ARRANGEMENT (RCA)**

Restrictions in the ITA on the payment of certain benefits from a registered plan for periods of service after 1991 may impact some Plan members. To address affected members, the RCA was established by agreement between the co-sponsors as a supplementary plan to provide these benefits.

The RCA is administered under a trust separate from the assets of the Plan. The Board has been appointed by the co-sponsors to act as the trustee of the RCA.

Because the RCA is a separate trust and the Plan does not control the RCA, the net assets available for benefits and the value of accrued benefits and deficit, referred to below, have not been included in the consolidated financial statements of the Plan.

The RCA is funded on a pay-as-you-go basis from a portion of the contributions made to the Plan by members, the Province and designated employers. The portion is based on a limit on contributions to the Plan with contributions above the limit being remitted to the RCA. The limit is determined annually by the Plan's independent actuary and historically was determined such that the RCA contributions were expected to be sufficient to pay the benefits over the next 12 months.

In 2017, the RCA was amended by the co-sponsors to empower the Board to determine the amount of contributions allocated to the RCA fund. The amendment requires that the Board seeks the advice of the Plan actuary in making this determination. In addition, the amendment limits the funding to amounts sufficient to pay for benefits for a period of no more than 10 years following each valuation date.

At the beginning of 2018, the actuary determined that the limit should remain at \$14,500. Due to the funding policy adopted by the co-sponsors, the net assets available for benefits will continue to be substantially less than the accrued benefits.

The RCA financial statements are in compliance with Section 4600 and IFRS. A summary of the financial statements for the RCA, is as follows:

As at December 31 (Canadian \$ thousands)	<b>2017</b>	2016
<b>Statements of financial position</b>		
<b>NET ASSETS AVAILABLE FOR BENEFITS</b>		
Assets	\$ 48,928	\$ 41,619
Liabilities	(3,787)	(5,382)
	<b>\$ 45,141</b>	<b>\$ 36,237</b>
<b>ACCRUED PENSION BENEFITS AND DEFICIT</b>		
Accrued pension benefits	\$ 382,176	\$ 335,040
Deficit	(337,035)	(298,803)
	<b>\$ 45,141</b>	<b>\$ 36,237</b>
<b>Statements of changes in net assets available for benefits</b>		
Contributions	\$ 17,887	\$ 20,662
Investment income	107	138
	<b>17,994</b>	<b>20,800</b>
Benefits paid	8,957	9,524
Expenses	133	165
	<b>9,090</b>	<b>9,689</b>
Increase in net assets available for benefits	<b>\$ 8,904</b>	<b>\$ 11,111</b>

The actuarial assumptions used in determining the value of accrued benefits are consistent with the Plan except that the assumed discount rate has been adjusted to reflect the effect of the 50% refundable tax under the RCA.

The estimate of the value of accrued benefits is highly sensitive to salary increases, both actual and assumed. Any changes to the salary assumptions will have a significant effect on the liabilities for future benefits. In addition, significant uncertainty exists in projecting the liabilities of the RCA due to changes in the number of future participants as well as changes to the income tax regulations relating to pensions.

## **NOTE 14. COMMITMENTS**

The Plan has committed to enter into investment and other transactions, which may be funded over the next several years in accordance with the terms and conditions agreed to. As at December 31, 2017, these commitments totalled \$11,909 million (2016 – \$10,597 million).

## NOTE 15. GUARANTEES AND INDEMNIFICATIONS

### Guarantees

The Plan provides guarantees to third parties related to certain companies the Plan invests in and will be called upon to satisfy the guarantees if the companies fail to meet their obligations. The Plan expects most guarantees to expire unused. No payments have been made by the Plan in either 2017 or 2016 under these guarantees.

The Plan guarantees loan and credit agreements which will expire by 2020. The Plan's maximum exposure is \$52 million as at December 31, 2017 (2016 – \$nil million). The companies have drawn \$11 million under the agreements (2016 – \$nil million).

The Plan guarantees lease agreements for a subsidiary with expiry dates ranging from 2029 to 2059. The Plan's maximum exposure is \$85 million as at December 31, 2017 (2016 – \$96 million). There were no default lease payments in either 2017 or 2016.

The Plan also guarantees the ability of certain investee companies to settle certain financial obligations. The Plan's maximum exposure is \$91 million as at December 31, 2017 (2016 - \$67 million).

The Cadillac Fairview Corporation Limited manages the real estate investments and has provided guarantees relating to the completion of the construction of certain residential developments. The term of these guarantees spans the lives of the development projects, which range from one to five years. The maximum exposure cannot be determined because the projects are not yet complete. These guarantees amounted to \$131 million as at December 31, 2017 (2016 – \$151 million) and have not been recognized in the real estate liabilities.

The Plan guarantees the debentures issued by a real estate trust it consolidates. No payments have been made by the Plan into the real estate trust or related to the debentures. The debentures are comprised of \$0.75 billion 4.31% Series B Debentures maturing on January 25, 2021 and \$0.6 billion 3.64% Series C Debentures maturing on May 9, 2018. The debentures, included in the Plan's real estate investment-related liabilities, may be redeemed by the issuer at any time prior to maturity.

The Plan also guarantees commercial paper and term debt consisting of US\$1.75 billion 2.125% senior notes issued by Ontario Teachers' Finance Trust which the Plan consolidates. The senior notes, maturing in September 2022, are not redeemable prior to maturity at the option of the trust or the Plan except as described in the Offering Memorandum dated September 12, 2017. The trust and its affiliates may at any time and from time to time purchase the senior notes in the open market or otherwise. The commercial paper is not redeemable prior to maturity or subject to voluntary prepayment, except as described in the U.S. Commercial Paper Private Placement Memorandum dated June 2017. The maturity terms for the commercial paper outstanding as at December 31, 2017 are up to 270 days from the date of issue in the U.S. and up to 364 days in Canada. The maximum aggregate principal amounts of the commercial paper outstanding at any one time do not exceed \$10 billion. As at December 31, 2017, commercial paper issued amounted to \$8,968 million (2016 - \$9,127 million). The fair values of these guarantees are included in the Plan's investment-related liabilities.

### Indemnifications

The Plan provides that Board members, employees and certain others are to be indemnified in relation to certain proceedings that may be commenced against them. In addition, in the normal course of operations, the Plan may, in certain circumstances, agree to indemnify a counterparty. Under these agreements, the Plan, its subsidiaries and joint ventures may be required to compensate counterparties for costs incurred as a result of various contingencies such as legal claims or changes in laws and regulations. The number of such agreements, the variety of indemnifications and their contingent character prevents the Plan from making a reasonable estimate of the maximum amount that would be required to pay all such counterparties.

# MAJOR INVESTMENTS

As at December 31, 2017

## FIXED INCOME AND SHORT-TERM INVESTMENTS OVER \$150 MILLION

Type (Canadian \$ millions)	Maturity	Coupon (%)	Fair Value	Cost
Government of Canada bonds	2018–2064	0.50–9.00	\$24,682	\$23,687
Securities purchased under agreements to resell	2018–2019	-1.00–1.94	24,633	24,792
Provincial bonds	2018–2049	0.00–8.50	10,164	9,662
International corporate bonds	2018–2053	0.00–13.00	6,142	6,300
International sovereign debt	2018–2068	0.00–23.38	5,908	6,106
Canada treasury bills	2018–2018	0.00–0.00	4,265	4,261
Bank notes	2018–2059	0.00–1.30	2,236	2,238
Commercial paper	2018–2018	0.00–1.67	1,312	1,310
Canadian corporate bonds	2018–2040	0.00–14.00	533	516
U.S. treasury bonds	2019–2047	1.25–6.25	(1,158)	(318)
Term debt issued	2022–2022	2.13–2.13	(2,167)	(2,134)
Commercial paper issued	2018–2018	0.00–1.70	(8,938)	(9,014)
Securities sold under agreements to repurchase	2018–2020	-0.92–2.25	(38,842)	(39,164)

## REAL-RETURN INVESTMENTS OVER \$150 MILLION

Type (Canadian \$ millions)	Maturity	Coupon (%)	Fair Value	Cost
Real-return Canada bonds	2021–2050	0.50–4.25	\$16,508	\$13,031
U.S. treasury inflation protection	2018–2047	0.13–3.88	14,138	11,817
Real-return provincial bonds	2021–2036	2.00–4.50	1,920	1,243
Real-return Canada corporate bonds	2021–2039	0.00–5.33	1,062	458



## CORPORATE SHARES/UNITS OVER \$150 MILLION

As at December 31, 2017 (millions)

Security Name	Shares	Fair Value	Security Name	Shares	Fair Value
The Macerich Company	23.3	\$1,916.3	TMX Group Limited	2.8	\$200.3
Multiplan Empreendimentos Imobiliarios S.A.	54.8	1,431.4	Lloyds Banking Group plc	163.3	188.4
Alphabet Inc.	0.3	421.1	SiteOne Landscape Supply, Inc.	1.9	179.6
Samsung Electronics Co., Ltd.	0.1	388.1	EXOR N.V.	2.3	176.2
Sprint Corporation	46.1	340.1	Intact Financial Corporation	1.6	170.1
XPO Logistics, Inc.	2.6	294.0	Visa Inc.	1.2	165.3
Hudson's Bay Company	23.0	260.0	Daimler AG	1.5	164.2
Aircastle Limited	7.9	231.1	Citigroup Inc.	1.8	163.6
Tencent Holdings Limited	3.3	216.0	SoftBank Group Corp.	1.6	156.9
CenturyLink, Inc.	10.1	211.5	BlackBerry Limited	10.8	151.0
Facebook, Inc.	0.9	204.9	LafargeHolcim Ltd.	2.1	150.8

## REAL ESTATE PROPERTIES OVER \$150 MILLION

As at December 31, 2017

Property	Total Square Footage (in thousands)	Effective % Ownership	Property	Total Square Footage (in thousands)	Effective % Ownership
<b>Canadian Regional Shopping Centres</b>			<b>Canadian Office Properties</b>		
Champlain Place, Dieppe	847	100%	City Centre Office, Calgary	850	100%
Chinook Centre, Calgary	1,412	100%	Deloitte Tower, Montreal	515	100%
Fairview Mall, Toronto	875	50%	Granville Square, Vancouver	402	50%
Fairview Park Mall, Kitchener	838	100%	Pacific Centre Office Complex, Vancouver	1,819	50%
Fairview Pointe Claire, Montreal	1,172	50%	RBC Centre, Toronto	1,223	50%
Le Carrefour Laval, Montreal	1,426	100%	Shell Centre, Calgary	693	100%
Les Galeries D'Anjou, Montreal	1,305	50%	Toronto-Dominion Centre Office Complex, Toronto	4,412	70%
Les Promenades St. Bruno, Montreal	1,142	100%	Toronto Eaton Centre Office Complex, Toronto	1,845	100%
Lime Ridge Mall, Hamilton	807	100%	Waterfront Centre, Vancouver	401	50%
Market Mall, Calgary	926	50%	Yonge Corporate Centre, Toronto	668	100%
Markville Shopping Centre, Markham	1,016	100%			
Masonville Place, London	651	100%			
Pacific Centre, Vancouver	1,070	50%			
Polo Park Mall, Winnipeg	1,417	100%			
Richmond Centre, Richmond	797	50%			
Rideau Centre, Ottawa	1,413	100%			
Sherway Gardens, Toronto	1,269	100%			
Shops at Don Mills, Toronto	466	100%			
Toronto-Dominion Centre, Toronto	158	70%			
Toronto Eaton Centre, Toronto	2,924	100%			

## PRIVATE COMPANIES AND PARTNERSHIPS OVER \$150 MILLION

As at December 31, 2017

24 Hour Fitness Worldwide Inc.	Exal International Limited	Outdoor Holdings, LLC
Actera Partners II L.P.	FAPS Holdings, Inc.	PAG Asia I LP
AEA Investors Fund V LP	Fifth Cinven Fund (No.6) Limited Partnership	PAG Asia II LP
Aethon Energy Management LLC	Flexera Holdings, L.P.	Pershing Square VI International, L.P.
Apollo Overseas Partners (Delaware 892) VIII, L.P.	Flynn Restaurant Group LLC	PetVet Care Centers, Inc.
Apollo Special Situations Fund, L.P.	FMAP CIM Limited	Phynet Dermatology LLC
AQR Offshore Multi-Strategy Fund VII Ltd.	FMAP PCM Limited	Polar Multi-Strategy Fund (Legacy)
Ares Corporate Opportunities Fund III, L.P.	FMAP WMC Limited	Providence Equity Partners VI L.P.
Ares Corporate Opportunities Fund IV, L.P.	Fondo de Capital Privado Terranum	Providence Equity Partners VII-A L.P.
Aroona Farms SA Pty Ltd.	FountainVest China Growth Fund II, L.P.	Pure International Holdings (BVI) Limited
Arterra Wines Canada, Inc.	FountainVest China Growth Fund, L.P.	Quinte Limited
Asia Opportunity Fund III, L.P.	GCT Global Container Terminals Inc.	RedBird Capital Partners Platform L.P.
Automobile Protection Corporation	Hancock Timber Resource Group	Resource Management Service Inc.
Autopista Arco Norte, S.A. de CV	Hawkwood Energy, LLC	Riverbed Technology, Inc.
Baldr Fund Inc.	Heartland Dental Care, Inc.	SCI PH Inc.
BaseCore Metals LP	Helly Hansen Group AS	Scotia Gas Networks plc
Baybridge Seniors Housing Inc.	Heritage Royalty Limited Partnership	SeaCube Container Leasing Ltd.
BDCM Offshore Opportunity Fund II, Ltd.	Hudson Catastrophe Fund, Ltd.	Serta Simmons Holdings, LLC
Birmingham International Airport	Imperial Parking Corporation	Shearer's Foods, Inc.
BluEarth Renewables Inc.	Infiltrator Systems, Inc.	Silver Lake Partners IV, L.P.
Bristol Airport Limited	Intercos S.p.A.	Skyway Concession Company LLC
BroadStreet Capital Partners, Inc.	InterGen N.V.	Sociedad Austral de Electricidad S.A.
Busy Bees Benefits Holdings Limited	Irish National Lottery	Solus Offshore Opportunities Fund 5 L.P.
Camelot Group plc	Kedaara Capital I Limited	Storapod Holding Company, Inc.
Canada Guaranty Mortgage Insurance Company	Koole Tankstorage Zaandam B.V.	Sydney Desalination Plant Pty Limited
Canbriam Energy, Inc.	Kyobo Life Insurance Co., Ltd.	Synlab Limited
Catalina Holdings (Bermuda) Ltd.	LMAP 903 Limited	TDR Capital II 'B' L.P.
Catterton Partners VII, L.P.	LMAP 904 Limited	The Brussels Airport Company
CIBanco, S.A. CIB/477	LMAP 909	Thoma Bravo Fund XI-A, L.P.
Copenhagen Airport A/S	LMAP 910	Thoma Bravo Fund XII-A, L.P.
Coway Holdings, Inc.	LMAP Chi Limited	TierPoint, LLC
CPG International Inc.	London City Airport	TP Partners Fund, L.P.
CSC ServiceWorks Holdings, Inc.	Lowell Group Limited	TPG Asia VI, L.P.
Cubico Sustainable Investments Limited	MBK Partners III, L.P.	Traeger Pellet Grills Holdings LLC
DaVinciRe Holdings Ltd.	Mémora Servicios Funerarios, S.L.U.	Triam Partners Co-Investment Opportunities Fund, L.P.
DTZ Jersey Holdings Ltd.	Metronode Group Pty Ltd	Triam Partners, Ltd.
EdgeMarc Energy Holdings, LLC	MR Argent Offshore Fund AB L.P.	Univision Communications Inc.
Empresa de Servicios Sanitarios del Bio-Bio S.A.	MSB Capital Limited	ValueAct Capital International Fund A, L.P.
Esva S.A.	Munchkin, Inc.	ValueAct Capital International III, L.P.
Euclid Fund	Nuevosur, S.A.	Westerleigh Group Holdings Limited
EWP PA Fund, Ltd.	NXT Capital Holdings, L.P.	
	OGF SA	
	OLE Media Management L.P.	
	Orbis Institutional Global Equity L.P.	

# ELEVEN-YEAR FINANCIAL REVIEW

(Canadian \$ billions)	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
<b>CHANGE IN NET ASSETS</b>											
<b>Income</b>											
Investment income	\$16.98	\$7.00	\$19.67	\$16.26	\$13.72	\$14.75	\$11.74	\$13.27	\$10.89	\$(19.03)	\$4.68
Contributions											
Members/transfers	1.71	1.70	1.67	1.63	1.55	1.48	1.41	1.35	1.29	1.13	1.06
Province of Ontario	1.68	1.66	1.64	1.59	1.53	1.46	1.41	1.35	1.43	1.18	1.08
<b>Total income</b>	<b>20.37</b>	<b>10.36</b>	<b>22.98</b>	<b>19.48</b>	<b>16.80</b>	<b>17.69</b>	<b>14.56</b>	<b>15.97</b>	<b>13.61</b>	<b>(16.72)</b>	<b>6.82</b>
<b>Expenditures</b>											
Benefits paid	5.93	5.72	5.54	5.31	5.15	4.92	4.66	4.50	4.39	4.20	4.02
Investment expenses	0.47	0.45	0.43	0.41	0.36	0.30	0.29	0.29	0.21	0.15	0.23
Member Services expenses	0.06	0.06	0.05	0.05	0.05	0.04	0.05	0.05	0.04	0.04	0.04
<b>Total expenditures</b>	<b>6.46</b>	<b>6.23</b>	<b>6.02</b>	<b>5.77</b>	<b>5.56</b>	<b>5.26</b>	<b>5.00</b>	<b>4.84</b>	<b>4.64</b>	<b>4.39</b>	<b>4.29</b>
<b>Increase/(decrease) in net assets</b>	<b>\$13.91</b>	<b>\$4.13</b>	<b>\$16.96</b>	<b>\$13.71</b>	<b>\$11.24</b>	<b>\$12.43</b>	<b>\$9.56</b>	<b>\$11.13</b>	<b>\$8.97</b>	<b>\$(21.11)</b>	<b>\$2.53</b>
<b>NET ASSETS</b>											
<b>Investments</b>											
Equity											
Publicly traded	\$35.13	\$38.97	\$49.85	\$48.27	\$47.62	\$48.43	\$40.35	\$36.74	\$32.86	\$26.74	\$42.38
Non-publicly traded	31.94	26.98	27.69	20.58	14.27	11.08	11.32	10.75	8.32	8.19	7.66
Fixed income											
Bonds	41.41	43.53	37.98	35.19	30.53	28.87	26.50	22.73	15.46	14.22	22.91
Real-rate products	19.96	31.72	31.13	30.36	26.37	31.14	29.29	23.24	19.88	17.41	11.06
Inflation sensitive											
Commodities	11.08	4.18	4.00	9.03	8.21	6.97	5.64	5.22	1.94	1.25	3.02
Natural resources	6.55	6.28	6.25	2.87	2.62	2.17	2.17	2.22	2.34	2.80	2.12
Inflation hedge	8.92	–	–	–	–	–	–	–	–	–	–
Real assets											
Real estate	25.51	26.47	24.86	22.09	19.24	16.86	14.96	16.86	14.21	13.48	13.41
Infrastructure	18.74	17.83	15.66	12.66	11.68	9.65	8.71	7.07	5.57	7.23	6.72
Real-rate products	1.45	–	–	–	–	–	–	–	–	–	–
Credit	13.58	–	–	–	–	–	–	–	–	–	–
Absolute return strategies	10.73	13.28	17.76	15.84	12.20	12.27	12.33	11.38	11.67	14.75	12.30
Overlay	(0.27)	0.51	–	–	–	–	–	–	–	–	–
Money market	(39.38)	(37.67)	(46.93)	(44.50)	(33.84)	(40.18)	(35.01)	(31.49)	(18.74)	(20.97)	(13.58)
<b>Net investments</b>	<b>185.35</b>	<b>172.08</b>	<b>168.25</b>	<b>152.39</b>	<b>138.90</b>	<b>127.26</b>	<b>116.26</b>	<b>104.72</b>	<b>93.51</b>	<b>85.10</b>	<b>108.00</b>
Receivable from Province of Ontario	3.31	3.27	3.21	3.10	2.97	2.83	2.72	2.63	2.52	2.19	1.84
Other assets	1.59	1.21	0.44	0.22	0.14	0.50	0.51	0.57	0.63	0.40	0.36
Other liabilities	(0.77)	(0.99)	(0.46)	(1.23)	(1.25)	(1.07)	(2.39)	(0.39)	(0.26)	(0.25)	(1.65)
<b>Net assets</b>	<b>189.48</b>	<b>175.57</b>	<b>171.44</b>	<b>154.48</b>	<b>140.76</b>	<b>129.52</b>	<b>117.10</b>	<b>107.53</b>	<b>96.40</b>	<b>87.44</b>	<b>108.55</b>
Accrued pension benefits	204.32	189.40	173.27	172.73	148.57	166.01	162.59	146.89	131.86	118.14	115.46
<b>Deficit</b>	<b>\$(14.84)</b>	<b>\$(13.83)</b>	<b>\$(1.83)</b>	<b>\$(18.25)</b>	<b>\$(7.81)</b>	<b>\$(36.49)</b>	<b>\$(45.49)</b>	<b>\$(39.36)</b>	<b>\$(35.46)</b>	<b>\$(30.70)</b>	<b>\$(6.91)</b>
<b>PERFORMANCE (percent)</b>											
Total-fund net return	9.7	4.0	12.7	11.5	10.6	12.7	10.9	14.0	12.7	(18.1)	4.3
Benchmark	8.2	3.5	10.1	10.1	9.3	11.0	9.8	9.8	8.8	(9.6)	2.3
<b>ASSUMPTIONS USED FOR FINANCIAL STATEMENT VALUATION</b>											
As at December 31 (percent)											
Discount rate	2.95	3.25	3.25	3.35	4.20	3.40	3.40	4.05	4.60	4.00	4.65
Salary escalation rate	2.70	2.80	2.50	2.70	3.00	3.00	3.05	3.40	3.55	2.35	3.20
Inflation rate	1.70	1.80	1.50	1.70	2.00	2.00	2.05	2.40	2.55	1.35	2.20
Real rate <sup>1</sup>	1.25	1.40	1.70	1.65	2.20	1.40	1.35	1.65	2.05	2.65	2.45

<sup>1</sup> Effective December 31, 2015, real rate shown as the geometric difference between the discount rate and the inflation rate. Previously, the real rate shown was based on the arithmetic difference between the discount rate and the inflation rate.

# FUNDING VALUATION HISTORY

Funding valuations must be filed with pension regulatory authorities at least every three years. Valuation dates and voluntary filings are determined by OTF and the Ontario government. Filings must show the plan has sufficient assets to pay all future benefits to current plan members. The 10 most recent filed funding valuations and the assumptions used for each are summarized in the table below. Details on plan changes from funding decisions are available in the Plan Funding section at [otpp.com](http://otpp.com).

The sponsors used a portion of the \$11.5 billion surplus (as of January 1, 2017) to increase inflation protection levels to 100% of the Consumer Price Index (CPI) for pension credit earned after 2009. Pensioners who retired after 2009 also received a one-time increase to their pensions to restore benefits to the level they would have been had 100% inflation protection been provided on January 1, 2017. In addition, the contribution rate for the plan's active members was reduced by 1.1%, effective January 1, 2018. This marked an early end to the 1.1% "special contributions" that had been scheduled to finish in 2026.

## FILED FUNDING VALUATIONS<sup>1</sup>

As at January 1 (Canadian \$ billions)	2017	2016	2015	2014	2012	2011	2009	2008	2005	2003
Net assets available for benefits	\$175.6	\$171.4	\$154.5	\$140.8	\$117.1	\$107.5	\$87.4	\$108.5	\$84.3	\$66.2
Smoothing adjustment	(2.9)	(10.8)	(8.2)	(7.2)	(3.0)	3.3	19.5	(3.6)	(1.5)	9.7
Value of assets	172.7	160.6	146.3	133.6	114.1	110.8	106.9	104.9	82.8	75.9
Future basic contributions	41.1	41.5	38.8	37.5	35.4	33.8	25.9	23.6	16.7	14.7
Future special contributions	0.3	3.1	3.5	3.5	3.3	3.8	5.5	5.6	6.2	–
Future matching of CIP benefit reduction	–	2.3	5.9	7.4	7.3	5.1	–	–	–	–
Total assets	214.1	207.5	194.5	182.0	160.1	153.5	138.3	134.1	105.7	90.6
Cost of future pensions <sup>2</sup>	(208.7)	(205.3)	(197.3)	(188.2)	(167.6)	(158.4)	(137.5)	(134.1)	(105.6)	(89.1)
Reduction in cost due to less than 100% indexing	–	2.3	5.9	7.4	7.7	5.1	–	–	–	–
Surplus	\$5.4	\$4.5	\$3.1	\$1.2	\$0.2	\$0.2	\$0.8	\$0.0	\$0.1	\$1.5

## ASSUMPTIONS USED FOR FILED VALUATIONS

As at January 1 (percent)	2017	2016	2015	2014	2012	2011	2009	2008	2005	2003
Inflation rate	2.00	2.00	2.00	2.10	2.20	2.15	1.35	2.20	2.750	2.05
Real discount rate <sup>3</sup>	2.75	2.75	2.85	2.85	3.10	3.25	3.65	3.45	3.725	4.35
Discount rate	4.80	4.80	4.85	4.95	5.30	5.40	5.00	5.65	6.475	6.40

<sup>1</sup> Valuation filing dates determined by the plan sponsors.

<sup>2</sup> Includes value of 100% inflation protection.

<sup>3</sup> Effective January 1, 2016, real rate shown as the geometric difference between the discount rate and the inflation rate. Previously, the real rate shown was based on the arithmetic difference between the discount rate and the inflation rate.

## CONTRIBUTION<sup>1</sup> AND INDEXATION LEVELS<sup>2</sup>

Conditional Inflation Protection (CIP) Level	2017 <sup>3</sup>	2016	2015	2014	2012	2011	2009	2008	2005	2003
Indexation level (Post-2009–Pre-2014 benefits)	100.0	90.0	70.0	60.0	50.0	60.0	100.0	n/a	n/a	n/a
Indexation level (Post-2013 benefits)	100.0	90.0	70.0	60.0	45.0	60.0	100.0	n/a	n/a	n/a
Contribution level above the YMPE	13.1	13.1	13.1	13.1	12.4	12.0	12.0	11.2	8.9	8.9
Contribution level below the YMPE	11.5	11.5	11.5	11.5	10.8	10.4	10.4	9.6	7.3	7.3

<sup>1</sup> Contribution levels are those that were in effect in the calendar year of the valuation.

<sup>2</sup> Indexation levels are effective the January 1 following the valuation date.

<sup>3</sup> With the decision to file the January 1, 2017, valuation, the sponsors eliminated the 1.1% special contributions effective January 1, 2018. Therefore, contribution rates for 2018 are 10.4% of earnings below the YMPE plus 12% of earnings above the YMPE.

# DEAL HIGHLIGHTS – 2017



**Anbaric** – Ontario Teachers' and Anbaric formed a partnership to develop clean energy infrastructure projects in North America. The investment taps into the sector's exciting and growing potential, and will allow the plan to participate in the transition to a low-carbon economy.



**Atlantic Aqua Farms** A bet on the world's growing demand for healthy and sustainable protein saw Ontario Teachers' acquire this Prince Edward Island-based company, North America's largest grower of live mussels.



**Basecore** – Ontario Teachers' entered a 50-50 joint venture with global miner Glencore to create base metals streaming and royalty company Basecore, which will work with some of the world's best managed mines.



**High Speed 1 (HS1)** – Ontario Teachers' agreed to sell its interest in high-speed rail line HS1. The investment saw significant regeneration in many areas along the route, reinforcing the ongoing attractiveness of investing in the U.K.



**Intercos** A partnership struck by our Relationship Investing team gave Ontario Teachers' a minority stake in Italy's Intercos, a global leader in the creation, development and contract manufacturing of make-up, cosmetics and skin care.



**MapleCo** – Ontario Teachers' invested in MapleCo, a newly formed smart meter provider contributing to Great Britain's move to more efficient and affordable energy supplies by funding the purchase and installation of smart gas and electricity meters.



**Mémora** This investment in Spain's leading funeral services provider expanded Ontario Teachers' footprint in the European funeral services sector, with a focus on continued growth and best-in-class customer relations.



**Metronode** – Ontario Teachers' agreed to sell Metronode, an Australian data centre provider, after building its fitted capacity four-fold on the back of booming demand from government, wholesale and enterprise customers.



**OGF** – Ontario Teachers' became the majority shareholder in France's leading funeral services provider, OGF, underscoring a mandate to invest in companies with stable long-term growth and proven track records.



**PetVet Care Centers** After helping to grow it into one of the premier veterinary hospital companies in the United States, Ontario Teachers' sold its stake in PetVet Care Centers to KKR.



**Pure Fitness** The joint venture investment to acquire Asia's leading wellness brand also marked Ontario Teachers' first direct investment alongside FountainVest Partners, a long-time business partner in Hong Kong and the broader Asia market.



**Spandana Sphoorty** – Ontario Teachers' Hong Kong Private Capital team made its first direct investment in India with the acquisition of a stake in Spandana Sphoorty, a leading micro-finance institution offering loans to women of low-income households.



### CONTACT US

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### ANNUAL MEETING

April 12, 2018, at 4:45 p.m. ET  
The Carlu  
444 Yonge Street, 7th floor  
Toronto, Ontario, Canada

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