ONTARIO TEACHERS’ PENSION PLAN

HOW AND WHY PENSION PLANS USE LEVERAGE

ICPM, JUNE 2018
About Ontario Teachers’

$189.5 billion in net assets

10% annualized total return since inception

80%+ of assets managed in-house

Independent, professional board

1,100 employees across our Toronto, London and Hong Kong offices

We invest to provide retirement security for 323,000 current and retired school teachers in a fully-funded defined benefit plan.

As at December 31, 2017

Canada’s largest single-profession pension plan
About Ontario Teachers’

NET ASSETS
At December 31, 2017 (Canadian $billion)

- Fully Funded, 4.8% real discount rate

FUNDING VALUATION
At January 1, 2018

- $10.3B funding surplus in contingency reserve, based on current benefit and contribution levels

$227.5 billion
$217.2 billion

$189.5 billion

Liabilities (cost of future pensions)
Plan assets and future contributions

100% Debentures, $7.8B unfunded Liability
$19.7 billion

At December 31, 2017 (Canadian $billion)
Key Member Statistics

Demographics drive focus on risk and portfolio construction.

184,000 ACTIVE MEMBERS

139,000 PENSIONERS

26
TYPICAL YEARS OF CREDIT AT RETIREMENT

32
AVG YEARS RETIREES EXPECTED TO COLLECT

59
AVG RETIREMENT AGE

131
PENSIONERS OVER 100

Ratio of active to retired members decreasing

1990 4:1
2017 1.3:1
Challenges of a Mature Pension Plan

**CHALLENGE #1: Achieving our ambition of intergenerational fairness**

**OTPP’s Solution:** Conditional Inflation Protection (CIP), which enables risk sharing with actives and retirees

**CHALLENGE #2: Managing drawdowns**

**OTPP’s Solution:** A risk-balanced portfolio (which includes leverage) combined with a robust liquidity risk governance and framework
Conditional Inflation Protection (CIP)

- *Balanced* valuation must be filed with regulators every 3 years
- CIP – a flexible risk mitigation tool adopted in 2010
  - Alleviates pressure on contribution rate increases, as allows for retirees to “contribute” if needed (improving intergenerational equity!)
  - Chosen for its innovation, flexibility and fit within the plan’s legislative framework
  - Impact will continue to grow-in over time, adding increasing benefit
  - CIP and contribution rates are OTPP’s two key funding levers

By 2030, CIP will be able to absorb a deficit equal to 30% of the liability.
Plan Funding

- **10%** 
  - Member Contributions

- **11%** 
  - Government/Designated Employer Contributions

- **79%** 
  - Net Investment Income

Investment income comprises the bulk of the pension payments.
Plan started with 100% non-marketable Ontario debentures

1990 ($21.0 b)

2000 ($71.3 b)

2010 ($104.7 b)

2017 ($189.5 b)

Equity decreased (reducing portfolio risk) to increase exposure to Real Estate, Infrastructure & Natural Resources

Diversified across asset classes, sectors, geographies
Goals of the Investment Program

1) Deliver a Sustainable Pension Promise (to present and future generations)

Net of all contributions and benefits (plan design, demographics, wage assumptions) = \textbf{4\%} required real rate of return

2) Minimize Funding Volatility (to support a balanced funding valuation)

Strategy execution guided by the risk tolerance of our Board and Plan Sponsors, with understanding that we must take risk to earn sufficient returns.
Acknowledging leverage as a key tool in achieving our mission, we use a framework for evaluating its role and use in the portfolio.

It starts with two fundamental questions:

1) What are the odds of being fully funded in 10 years for the various investment portfolios/asset mix alternatives under considerations?

2) What are the odds of depleting our funding levers over that same period?

OTPP’s Funding levers: Acceptable level of contribution rates, CIP
A simple **2-asset class portfolio** is dominated by equity risk. Diversification reduces the equity risk factor and thus the odds of running out of funding levers. It does not improve the odds of being fully funded over 10 years.
Adding leverage increases both likelihood of being fully funded and likelihood of having no funding levers.

Adding leverage to a **less diversified portfolio** leads to a more linear trade-off (equity risk factor overwhelms) while a **more diversified portfolio** has a smaller marginal risk impact.
Framework and Options for Adding Leverage

At a high level, leverage can be added two ways:

1) On-Balance Sheet
   From raising wholesale market liabilities

2) Off-Balance Sheet
   From derivatives, such as total return swaps, where one uses a counterparty’s balance sheet (usually a bank)

Wholesale alternatives used at OTPP:
- Long & Short Term Secured
- Unsecured Commercial Paper – USD
- Medium Term Notes

Fundamental decision factors:
- Robustness of asset allocation process
- Capacity, diversification of sources
- Relative cost
- Appetite for financial/economic leverage
- Appetite for liquidity and funding risks
- Liquidity governance framework and reporting quality/frequency
- Operational capabilities
Leverage and Funding/Liquidity

- **Synthetic and Off-Balance Sheet funding**
  - Primarily creates **liquidity risks**
  - Examples: Derivatives such as Futures, Total Return Swaps, etc.

- **On-Balance Sheet funding**
  - Primarily creates **funding risks, some liquidity risk**
  - Examples: Repo, Commercial Paper, Term Issuance, Collateral, etc.

- **Balance Sheet of net investment assets and net pension liabilities**
  - Requirement to meet pension payments, day-to-day operating cashflow and funding of new investments
Holistic Framework

Governance and Oversight

- Desired asset mix
- Leverage constraints
- Funding risk appetite
- Liquidity risk appetite

Contingency Funding Plan
Governance Model

**BOARD**
- overall risk
- appetite for leverage and liquidity risk

**INVESTMENT TEAM**
- strategic approach to leverage/liquidity, adherence to board policies

**TREASURY**
- develop/oversee daily funding and liquidity strategy, lead major initiatives

**RISK**
- establish/oversee risk management, compliance and monitoring frameworks
Measuring Liquidity Risk

Liquidity Coverage Ratio =

- Potential inflows of cash and collateral
- Unexpected cash and collateral outflows under stress

Impact of Capital Planning
Asset as sources of liquidity
- Sovereign bonds
- Equities
- Investment Grade Credit

- Derivative collateral/cash calls
- Funding and roll-over risks
- Initial margin contingency
- Draws from private assets
- Dry powder for investments

- Suite of liquidity tools analyzed daily
- Stress tested periodically using liquidity zones (green, yellow, red) to ensure sufficient reserves in extreme events
- Limit on illiquid assets
- Robust collateral management
Integrated Capital and Liquidity Management

- Capital Planning informed by **existing fund commitments** and **long term strategic investment plan**
- **Establishes planned sources of funding** such as repo, unsecured commercial paper or medium term debt issuance
- Long-term nature of the analysis enables strategic planning/discussion across multiples perspectives:
  - Expected funding profile and costs
  - Expected levels of leverage
  - Footprint in various funding markets, such as repo
  - Expected levels of liquidity risks
THANK YOU

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