Development of the Province's Economic Assumptions for the 2017 Budget

Income Security and Pension Policy Division / BPS Pensions Branch

December 12, 2016

Purpose

- Explain the differences and similarities between the funding basis and accounting basis of pensions
- Explain the role of BPS Pensions and other branches in the development of pension expense estimates
- Outline the proposed assumptions for the 2017 Budget and provide the rationale

Comparison of Funding vs. Accounting Basis

- The funding valuation and accounting valuation are used for different purposes and are alternative ways of estimating the cost of providing pension benefits:
  - **Funding valuation**
    - Determines the required cash contributions to secure benefits
    - Governed by the *Pension Benefits Act* (PBA) and actuarial standards
    - A funding valuation will often contain an element of conservatism in its assumptions
  - **Accounting valuation**
    - Determines the pension expense and the impact on the fiscal plan
    - Based on accounting principles as recommended by the Public Sector Accounting Board (PSAB)
    - Purpose is to allow for the comparability of distinct entities
    - Does not represent a cash payment of any kind
    - Includes best estimates as required by PSAB
- Regardless of the method used, the cost estimates would converge to the actual cost over the long term.

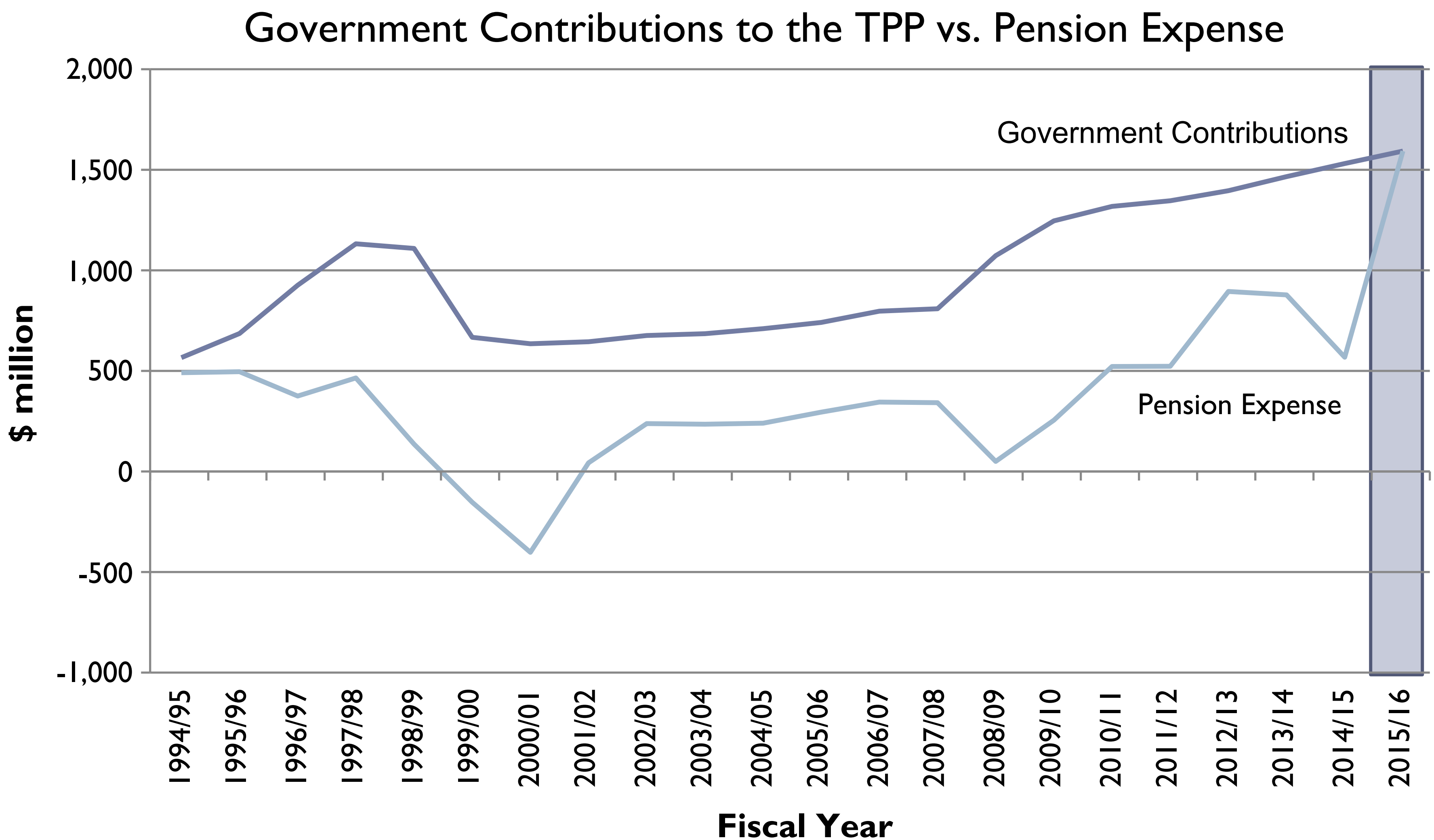
Introduction to Accounting Valuations

- The purpose of an accounting valuation is to measure and report the pension benefit obligations and to attribute the cost of the obligations to the period in which the related services are rendered.

- Currently, all pension expenses are recorded on an accrual basis. However, prior to 1993-94, it was done on a cash basis.

- Pension expense is determined by applying PSAB standards to accounting valuations. For this reason the pension expense is likely to be different from cash contributions at any point in time. See, for example, the comparison of the cash contributions and the pension expense on slide 5, for the Teachers' Pension Plan (TPP).

How the Funding and Expense Amounts Differ



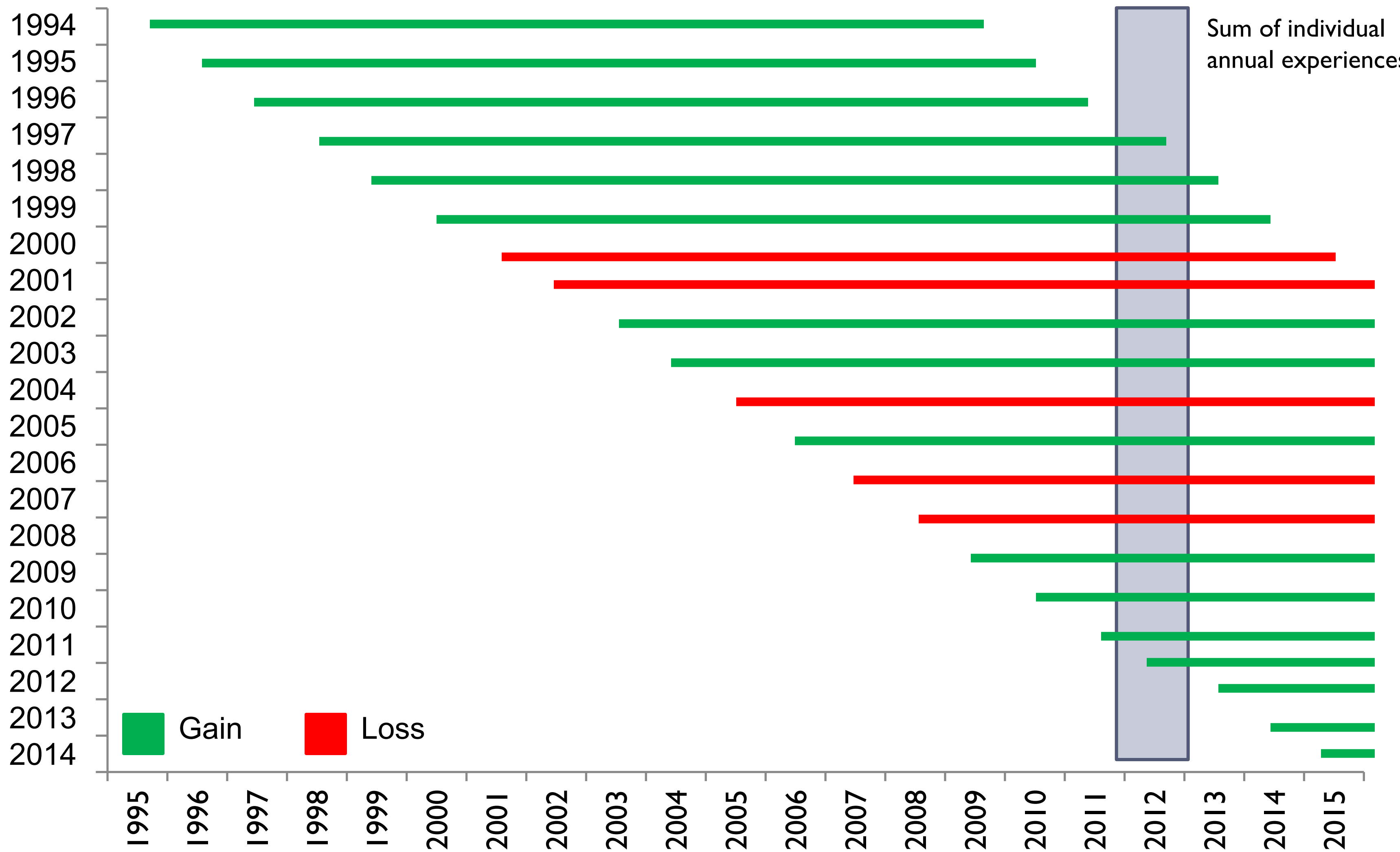
Drivers of the Pension Expense

- **Service cost** (PV of benefits earned in the current period by employees)
  - Discount rate, which determines the present value of the benefits earned in the current period
  - Growth in the number of employees
  - Salary increases
  - Benefit enhancements
- **Interest**
  - On the net plan surplus or deficit
- **Amortization of Net Actuarial Gains/Losses**
  - At each valuation, assumptions are compared to the plan's actual experience.
  - Actuarial gains or losses are due to:
    - actual return on fund investments being different from what was assumed (i.e. the discount rate).
    - actual wage growth or inflation being different from what was assumed.
    - changes in actuarial assumptions on rate of return, wage growth or inflation.
  - Any differences are amortized over the expected average remaining service life of the membership.
  - Each year pension expense includes the impact of prior year amortization schedules (see example on slide 7).
- **Cost of Plan Amendment**
  - Changes in benefits granted related to years of past service

Drivers of the Pension Expense (cont'd)

Variable	Effect on Pension Expense
↑ Discount Rate	↓
↑ Inflation	↑
↑ Salary Escalation Rate	↑
Amortization of past gains	↓
Amortization of past losses	↑

How Investment Returns Impact the Pension Expense



MOF’s Role in the Process

- Accounting valuations must be prepared for the following five plans that are consolidated in the Province’s financial statements:
  - Ontario Teachers’ Pension Plan (OTPP), Public Service Pension Plan (PSPP), Ontario Public Service Employees’ Union Pension Plan (OPSEUPP), Healthcare of Ontario Pension Plan (HOOPP) & the Colleges of Applied Arts and Technology Pension Plan (CAATPP)

- While the valuations are prepared by each pension board, the assumptions used in the valuations are determined by BPS Pensions Branch (MOF) staff.
  - PSAB requires that key economic assumptions should be government’s best estimate of those future events that have an effect on pension liabilities.

- Each fall, MOF staff complete a well-established process to evaluate past assumptions and to develop assumptions to be used in upcoming accounting valuations. This includes the:
  - discount rates (i.e. expected returns on plan assets);
  - future inflation rate; and
  - future salary escalation rates.

- MOF staff collect and review data from each of the consolidated pension plans as well as independent sources available at the time the assumptions are set.
  - If a change in the long-term trend in any of the assumptions is found, then assumptions are adjusted.

MOF's Role in the Process (cont'd)

- MOF staff recommend the basis to be used and develop a number of scenarios (normally 4) for sensitivity analysis purposes.

- Once the assumptions are finalized, a letter is sent to each plan administrator in mid-December outlining MOF's request. Each administrator is requested to prepare an accounting valuation based on these scenarios and submit the results by the end of January.

- Once they receive the request, plan administrators will start preparing programs based on the scenarios. However, they cannot begin the valuation process and other calculations until after December 31st, as this work requires the input of year-end information (e.g. finalizing asset values and membership data).

- In February, staff at the Office of the Provincial Controller Division (OPCD) use the valuation results to calculate the pension expense for each plan based on PSAB requirements.

- Following the Budget, MOF staff prepare documentation that provides a rationale for the assumptions for the Office of the Auditor General of Ontario (AG).

- The AG has retained its own actuary on two previous occasions to review the assumptions. The assumptions were confirmed to be within a reasonable range on both occasions.

2017 Approach

- During the 2015-16 Public Accounts audit, the AG raised concerns regarding Ontario's accounting practices related to pension expense for the OPSEUPP and OTPP, and questioned the Province's salary escalation rate for HOOPP.
  - The AG raised concerns that the salary estimate published by HOOPP in 2016 was lower than the rate developed by the Province for the 2016 Budget.
  - Despite the fact the HOOPP estimate was not available when 2016 assumptions were developed, the AG office continues to note the issue on its outstanding items list.
- As a result, MOF staff enhanced this year's process, as follows:
  - Staff engaged expertise in other areas of the government in developing its economic assumptions.
    - BPS staff consulted with the Office of Economic Policy (OEP) on the inflation assumption and the Labour Relations Policy and Strategic Initiatives Branch at the Treasury Board Secretariat (TBS) on recent collective agreement outcomes.
  - MOF staff undertook a more thorough review of the assumptions and developed more scenarios for sensitivity analysis purposes.
  - On behalf of OPCD, MOF staff requested additional data to enable the government to determine the asset ceiling for each of the plans.
- The following slides provide MOF staff's analysis and recommendations on each of the economic assumptions.

Proposed 2017 Assumptions: Discount Rate

Recommendation

- MOF staff recommend the following changes to the Province's 2017 real discount rate to reflect changes in market conditions and the long-term outlook:

(%)	OTPP	PSPP	OPSEUPP	HOOPP	CAATPP
Current discount rate	4.25	4.00	4.25	3.75	4.00
Proposed discount rate	4.00	3.75	3.90*	3.75	3.75
Change	-0.25	-0.25	-0.35	0.00	-0.25

*The asset mix of the OPSEUPP has become similar to that of the PSPP. For this reason, MOF staff recommend that the discount rate be reduced over two years (this year and next year) with the expectation that the real discount rate of the two plans will be the same for the 2018 Budget.

Implication

- Lowering the discount rate would increase the pension expense, all else the same.
  - A lower discount rate is an acknowledgement that the fund is expected to earn less over time.

Proposed 2017 Assumptions: Discount Rate (cont'd)

<u>Rationale</u>

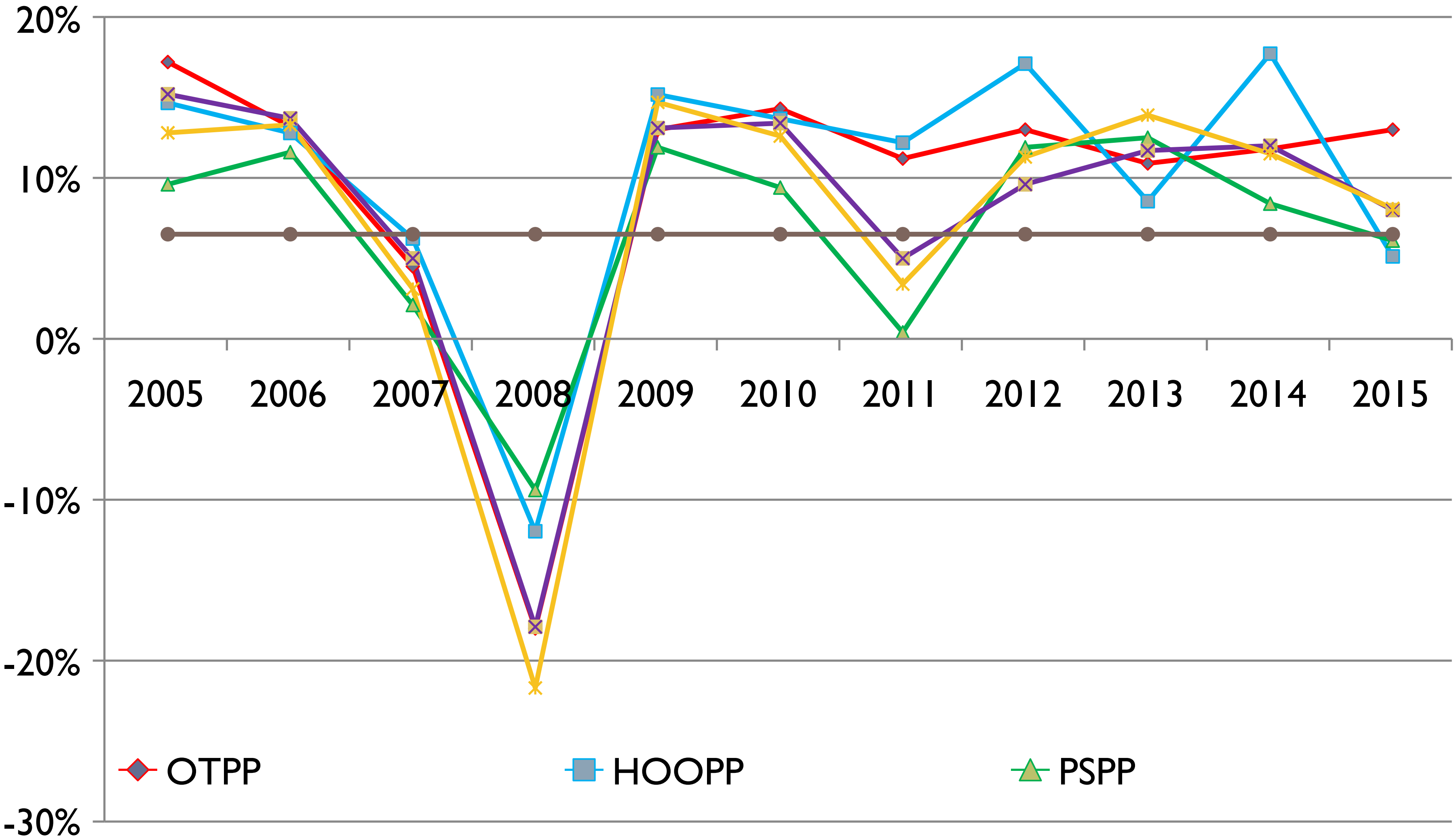
- Following PSAB requirements, the discount rate assumption is developed based on the target/policy asset allocation of each of the plans and the expected return for each of the asset classes over the long term.

- The actual return in most instances has exceeded the Province's return assumption (see slide 14), providing evidence that the assumptions are within a reasonable range.

- Future returns are expected to be lower than in recent years.
  - This is demonstrated in the trend in the consolidated plans' own return expectations, as revealed in their funding discount rates (see slide 15).
  - As well, information contained in FSCO's annual *Report on the Funding of Defined Benefit Pension Plans in Ontario* shows that the majority of the plans that filed their funding valuations during the period of 2013 – 2015 used a nominal discount rate lower than 6%.

Proposed 2017 Assumptions:

Historical Actual Performance vs. Province's Discount Rate for Consolidated Plans



Proposed 2017 Assumptions: Discount Rate (cont'd)

- Staff also considered discount rates used by each plan in their three most recently filed funding valuations:

Discount Rate Assumptions Used by the Pension Boards (%)															
	OTPP			PSPP*			OPSEUPP			HOOPP			CAATPP		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Nominal	4.95	4.85	4.80	5.95	-	-	6.15	5.85	5.55	6.25	5.85	5.65	5.80	5.80	5.70
Inflation	2.10	2.00	2.00	2.10	-	-	2.25	2.00	2.00	2.25	2.25	2.00	2.00	2.00	2.00
Real**	2.85	2.85	2.75	3.85	-	-	3.90	3.85	3.55	4.00	3.60	3.65	3.80	3.80	3.70
Province's Discount Rate Assumptions (%)															
Nominal	6.75	6.50	6.25	6.50	6.25	6.00	6.75	6.50	6.25	6.25	6.00	5.75	6.50	6.25	6.00
Real	4.25	4.25	4.25	4.00	4.00	4.00	4.25	4.25	4.25	3.75	3.75	3.75	4.00	4.00	4.00
2017 Real			4.00			3.75			3.90			3.75			3.75

*PSPP has not filed a funding valuation since December 31, 2013. The actuary has indicated that the discount rate for the 2017 filing would be lowered by 20-25bp with a small margin.
**Most of the plans include a provision for adverse deviation (PfAD) of approximately 50bp in their discount rate. The implicit discount rate is therefore higher than the stated discount rate.

Proposed 2017 Assumptions: Inflation

Recommendation

- MOF staff recommend maintaining the Province's inflation assumption at 2%.

Implication

- No fiscal impact.

Rationale

- This rate is consistent with the Office of Economic Policy's long-term economic outlook, projecting 1.9% from 2015 to 2017 and 2% thereafter. In addition, staff considered long-term inflation assumptions from the following sources:

CPP Board	2%
QPP Board	2% from 2016 to 2022, 2.1% for 2023 and 2.2% thereafter
Conference Board of Canada	2%
University of Toronto	2%
Bank of Canada Inflation Rate Target	2% (mid-point of the 1% to 3% range)

Proposed 2017 Assumptions: Inflation (cont'd)

- Among private sector organizations*, short-term inflation is expected, on average, to be 1.8% in 2016 and 2% from 2017 to 2019.
- Staff also considered inflation rates used by each plan in both their funding and financial statement valuation:

Inflation Assumptions Used by the Pension Boards (%)		
	Funding Valuation	Financial Statement Valuation
PSPP	2.1	2.1
OPSEUPP	2.0	2.0
OTPP	2.0	1.5
HOOPP	2.0	2.0
CAATPP	2.0	2.0

*Includes forecasts from the Conference Board, Global Insight, C_4SE, University of Toronto, RBC Financial Group, TD Bank, Desjardins, BMO Capital Markets, Central 1, Laurentian Securities and National Bank.

Proposed 2017 Assumptions: Inflation (cont'd)

<u>Summary of Province's Recent Inflation Rate Assumptions</u>

Year	2014	2015	2016
(%)	2.50	2.25	2.00

- Note that inflation is important to pension cost as plans are indexed.
- Inflation is added to the real discount rate to calculate the nominal discount rate.

Proposed 2017 Assumptions: Salary Escalation Rate

Recommendation

- MOF staff recommend the following with respect to the Province's real salary escalation rate assumption:

(%)	OTPP	PSPP	OPSEUPP	HOOPP	CAATPP
Current salary rate	1.00	1.00	1.00	2.25	1.00
Proposed salary rate	0.75	0.75	0.75	2.00	1.25
Change	-0.25	-0.25	-0.25	-0.25	+0.25

Implication

- Lowering the salary escalation rate would decrease the pension expense, all else the same.

Proposed 2017 Assumptions: Salary Escalation Rate (cont'd)

<u>Rationale</u>

To assess the appropriateness of the salary escalation assumptions, MOF staff reviewed recent increases in the annual YMPE as well as salary assumptions used in the plans' funding valuations.

- The annual rate of YMPE increase has been between 2% to 3% for the last decade until 2016. The annual increase from 2016 to 2017 has been only 0.7% (from $54,900 to $55,300).
- This is consistent with the Ontario Average Industrial Wage growth rate which was about 0.9% from 2015 to 2016.
- Although the Province's salary assumptions are in line with those used by the pension plans in their funding valuations, the rates used by the plans are trending down.
  - HOOPP has reduced their real rate by 0.50% over the last 3 annual filings.
  - The PSPP actuary has indicated that the salary rate for the next valuation will likely be adjusted downward as well.

Based on these findings, MOF staff propose to reduce the salary escalation rates by 0.25% for all of the plans, with the exception of CAATPP.

Proposed 2017 Assumptions: Salary Escalation Rate (cont'd)

CAATPP:

- The valuation for each of the three plans that are directly sponsored by the Province, OTPP, PSPP and OPSEUPP, includes a separate promotional scale. This means that the valuation assumes that plan members receive salary increases at the assumed rate plus increases as a result of seniority and promotions.

- The valuation for the CAATPP, however, does not include a promotional scale, which means that future salary increases are likely understated in the valuation.

- MOF staff propose to increase the Province's salary escalation rate assumption for CAATPP by 0.25% to account for seniority and promotional increases.

Special note for HOOPP:

- The Province's salary escalation rate assumption for HOOPP has been higher than the other consolidated plans because:
  - 1. Similar to CAATPP, the valuation does not include a promotional scale.
  - 2. It is expected that the healthcare sector is likely to experience significant expansion in the future because of the aging population.

Proposed 2017 Assumptions: Salary Escalation Rate (cont'd)

- Staff also considered salary escalation rates used by each plan in their funding valuation:

Salary Escalation Rate Assumptions Used by the Pension Boards (%)															
	OTPP			PSPP*			OPSEUPP			HOOPP**			CAATPP		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Nominal	3.10	3.00	3.00	3.10	-	-	3.00	2.75	2.75	4.25	3.75	3.50	3.75	3.75	3.75
Inflation	2.10	2.00	2.00	2.10	-	-	2.25	2.00	2.00	2.25	2.25	2.00	2.00	2.00	2.00
Real	1.00	1.00	1.00	1.00	-	-	0.75	0.75	0.75	2.00	1.50	1.50	1.75	1.75	1.75
Province's Salary Escalation Rate Assumptions (%)															
Nominal	3.50	3.25	3.00	3.50	3.25	3.00	3.50	3.25	3.00	4.75	4.50	4.25	3.50	3.25	3.00
Real	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.25	2.25	2.25	1.00	1.00	1.00
2017 Real			0.75			0.75			0.75			2.00			1.25

*PSPP has not filed a funding valuation since December 31, 2013. The actuary has indicated that the salary escalation rate for the 2017 filing would be lowered by 20-25bp.
**HOOPP develops their assumptions based on the entire plan membership while the Province includes only hospital employees in its financial statements. As a result, the Province's assumptions are based on the expected salary growth for only these members, which is expected to be higher than the general plan membership.

Summary & Next Steps

Summary

- In Chapter 4 of the AG's 2016 Annual Report, the AG notes that the historical performance of the pension plans' assets supports the discount rates that the Province has used to calculate its net pension obligations.
- This year, MOF staff undertook a more thorough review of the economic assumptions for the 2017 Budget. As such, staff are confident that their proposed assumptions reflect both expected long-term trends as well as short-term forecasts.
- In addition to sensitivity scenarios, staff have exercised due diligence by seeking additional data to enable the government to determine the asset ceiling for each of the plans.
- OPCD will share the proposed economic assumptions will be shared with the AG.

Next Steps

- Finalize scenarios for sensitivity analysis
- Send out letters to the plans by December 16
  - Deadline for plans to submit accounting valuation results to OPCD is January 26