Development of the Province's Economic Assumptions for the 2018 Budget

BPS Pensions Branch
Ministry of Finance
November 2017

Ontario

PURPOSE

PART I

- Explain the differences and similarities between the funding basis and accounting basis for public sector pensions

- Explain the role of BPS Pensions and other branches/Ministries in the development of pension expense estimates

PART II

- Outline the assumptions and rationale for the 2018 Budget for the following five plans that are consolidated in the Province's financial statements:
  1. Ontario Teachers' Pension Plan (OTPP),
  2. Public Service Pension Plan (PSPP),
  3. Ontario Public Service Employees' Union Pension Plan (OPSEUPP),
  4. Healthcare of Ontario Pension Plan (HOOPP), and
  5. Colleges of Applied Arts and Technology Pension Plan (CAATPP).

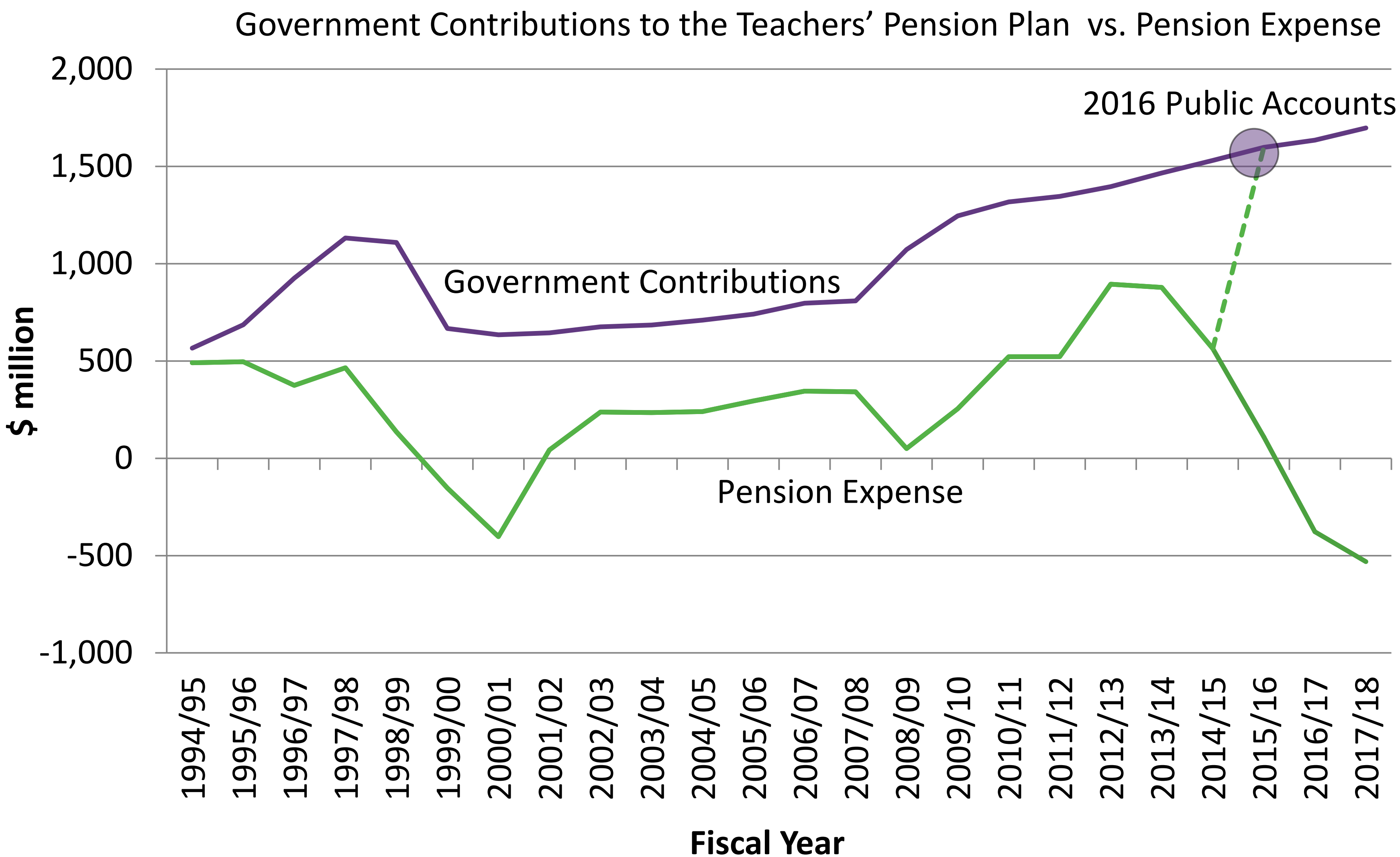
PART I: COMPARISON OF FUNDING VS. ACCOUNTING BASIS

- The funding valuation and accounting valuation are alternatives for estimating the cost of providing pension benefits:

Funding Valuation	Accounting Valuation
• Determines the required cash contributions that, combined with income earned by the plan, will secure benefits	• Determines the fiscal expense of the pension benefit • Does not represent a cash payment of any kind • Attributes the cost of the pension benefit obligation to the period in which the related service is rendered • Purpose is to allow for the comparability of distinct entities
• Governed by the Pension Benefits Act (PBA) and actuarial standards	• Based on accounting principles as recommended by the Public Sector Accounting Board (PSAB)
• A funding valuation will often contain an element of conservatism	• Includes best estimates as required by PSAB (i.e. no conservatism)
Regardless of the method used, both methods converge to the actual cost over the long term.	

PART I: HOW THE FUNDING AND EXPENSE AMOUNTS DIFFER

- Since pension expense is determined by applying PSAB standards to accounting valuations, it is likely to be different from cash contributions at any point in time:



PART I: THE FOUR COMPONENTS OF THE PENSION EXPENSE

1. **Service cost**
   - Discount rate, which is used to calculate the present value of the benefits earned in the current period
   - Growth in the number of employees
   - Salary increases
   - Benefit enhancements

2. **Interest**
   - On the net plan surplus or deficit (a notional amount, for fiscal purpose)

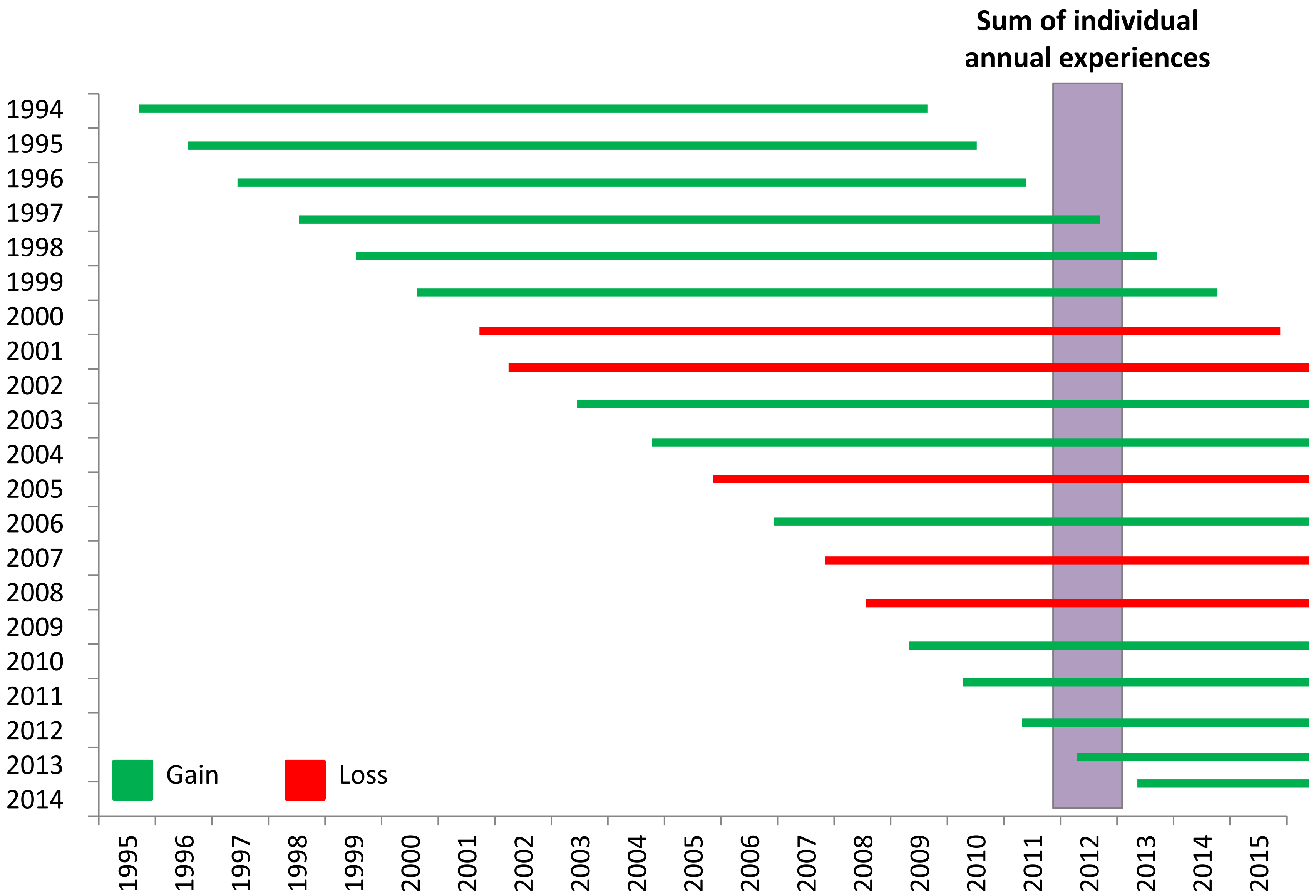
3. **Amortization of Net Actuarial Gains/Losses**
   - At each valuation, assumptions are compared to the plan's actual experience.
   - Actuarial gains or losses are due to:
     - actual return on investments being different from the assumed discount rate.
     - actual wage growth or inflation being 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 for the specific plan.
   - Each year pension expense includes the impact of prior year amortization schedules (see example on slide 7).

4. **Cost of Plan Amendment**
   - Changes in benefits granted related to years of past service

PART I: 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	↑

PART I: HOW INVESTMENT RETURNS IMPACT THE PENSION EXPENSE



PART I: MOF'S ROLE IN THE PROCESS

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- While the accounting valuations are prepared by each pension board, the economic assumptions used in the valuations are determined by MOF (BPS Pensions Branch).
  - 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 completes 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 over the long term);
  - future inflation rate; and
  - future salary escalation rates.

PART I: MOF’S ROLE IN THE PROCESS (CONT’D)

- 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.
    - Staff also engage expertise in other areas of the government in developing its economic assumptions.
        - BPS staff consult 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 collective agreement outcomes.

- If a change in the long-term trend in any of the assumptions is found, then assumptions are adjusted.

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

- Once the assumptions are finalized, they are provided to each plan administrator in mid-December. Each administrator is requested to prepare an accounting valuation based on these scenarios and submit the results by late January.

PART I: TIMELINE

- On receipt of the assumptions, 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.

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

- The following slides provide MOF staff's analysis and recommendations on each of the economic assumptions.

PART II: 2018 ASSUMPTIONS: DISCOUNT RATE

Recommendation

- MOF staff recommend the following changes to the Province’s 2018 real discount rate to reflect changes in market conditions and the long-term outlook:

(%)	OTPP	PSPP	OPSEUPP	HOOPP	CAATPP
Current discount rate	4.00	3.75	3.90	3.75	3.75
Proposed discount rate	4.00	3.75	3.75*	3.75	3.75
Change	0.00	0.00	-0.15	0.00	0.00

*The asset mix of the OPSEUPP has become similar to that of the PSPP. For this reason, MOF staff reduced the discount rate last year and recommend reducing it again this year.

Implication

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

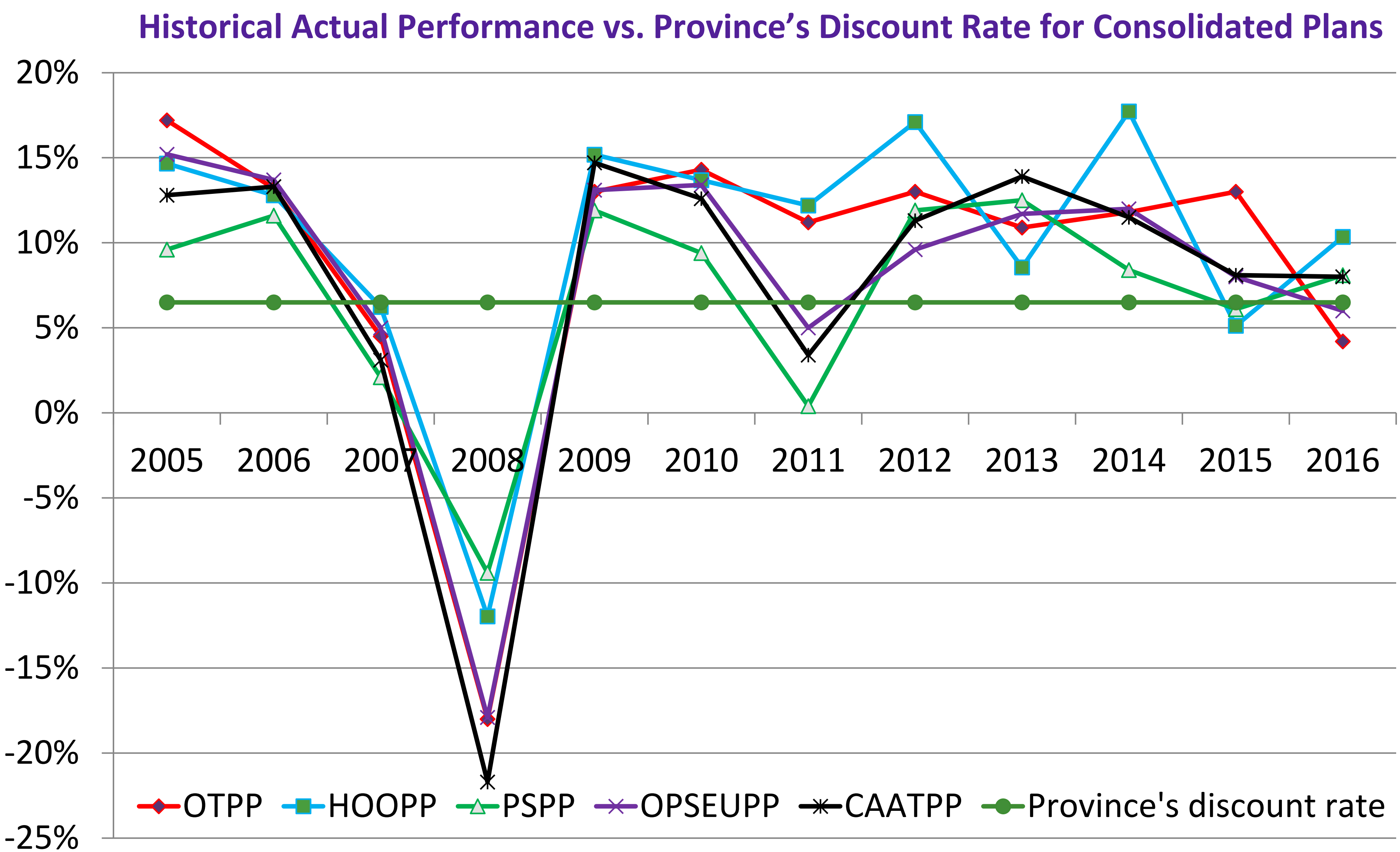
PART II: 2018 ASSUMPTIONS: DISCOUNT RATE (CONT'D)

Rationale for Recommendation

- 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.

- Although the actual annual return in most instances has exceeded the Province's return assumptions in recent years, the average return has been consistent with the Province's assumptions. This provides evidence that the assumptions are within a reasonable range.

PART II: 2018 ASSUMPTIONS: DISCOUNT RATE (CONT'D)



PART II: 2018 ASSUMPTIONS: DISCOUNT RATE (CONT'D)

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

Discount Rate Assumptions Used by the Pension Boards (%)

	OTPP			PSPP*			OPSEUPP			HOOPP			CAATPP		
	2015	2016	2017	2014	2015 /16	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
Nominal	4.85	4.80	4.80	5.95	-	-	5.85	5.55	5.40	5.85	5.65	5.45	5.80	5.70	5.60
Real	2.85	2.80	2.80	3.85	-	-	3.85	3.55	3.40	3.60	3.65	3.45	3.80	3.70	3.60

Province's Discount Rate Assumptions (%)

Nominal	6.50	6.25	6.00	6.25	6.00	5.75	6.50	6.25	5.90	6.00	5.75	5.75	6.25	6.00	5.75
Real	4.25	4.25	4.00	4.00	4.00	3.75	4.25	4.25	3.90	3.75	3.75	3.75	4.00	4.00	3.75
2018 Real			4.00			3.75			3.75			3.75			3.75

*PSPP has not filed a funding valuation since Dec. 31, 2013. Once its application to Stage 2 of the Temporary Solvency Funding Relief program is approved, a new valuation is expected for Dec. 31, 2017.

PART II: 2018 ASSUMPTIONS: INFLATION

Recommendation

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

Year	2016	2017	2018
(%)	2.00	2.00	2.00

Implication

- No fiscal impact as no change to the assumption.
  - Inflation is important to pension expense as plans are indexed.

Rationale

- This rate is consistent with the Office of Economic Policy's long-term economic outlook, projecting 2.0% (2026+). In addition, staff considered long-term inflation assumptions from the following sources:

CPP Board	2%
QPP Board	2.2%
Conference Board of Canada	2%
Bank of Canada Inflation Rate Target	2% (mid-point of the 1% to 3% range)

PART II: 2018 ASSUMPTIONS: INFLATION (CONT'D)

- Among private sector organizations*, short-term inflation is expected, on average, to be 1.7% in 2017 and will increase from 1.9% to 2.1% from 2018 to 2020.
- 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	2.0
OPSEUPP	2.0	2.0
OTPP	2.0	1.8
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.

PART II: 2018 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	0.75	0.75	0.75	2.00	1.25
Proposed salary rate	0.75	0.75	0.75	2.00*	1.25
Change	0.00	0.00	0.00	0.00	0.00

*Last year, the Auditor General noted that the Province's salary assumption for HOOPP was high compared to the assumption used in HOOPP's financial statements. However, in a letter from HOOPP to MOF, the Board indicated that the Province's salary assumption is close to the actual plan experience.

Implication

- No impact on pension expense.

PART II: 2018 ASSUMPTIONS: SALARY ESCALATION RATE (CONT'D)

Rationale for Recommendation

- 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 nominal rate of YMPE increase has been between 2% to 3% for the last decade until 2016. The annual increase from 2017 to 2018 has been only 1.1% (from $55,300 to $55,900).
    - This is consistent with the Ontario Average Industrial Nominal Wage growth rate which was about 1.1% from August 2016 to August 2017.

PART II: 2018 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		
	2015	2016	2017	2014	2015 /16	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
Nominal	3.00	3.00	3.00	3.10	-	-	2.75	2.75	2.75	3.75	3.50	3.50	3.75	3.75	3.75
Real	1.00	1.00	1.00	1.00	-	-	0.75	0.75	0.75	1.50	1.50	1.50	1.75	1.75	1.75
Province's Salary Escalation Rate Assumptions (%)															
Nominal	3.25	3.00	2.75	3.25	3.00	2.75	3.25	3.00	2.75	4.50	4.25	4.00	3.25	3.00	3.25
Real	1.00	1.00	0.75	1.00	1.00	0.75	1.00	1.00	0.75	2.25	2.25	2.00	1.00	1.00	1.25
2018 Real			0.75			0.75			0.75			2.00			1.25

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**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

- MOF staff are proposing one change to the Province’s economic assumptions:
  - Reduce the OPSEU discount rate by 0.15%
  - No change to the inflation rate
  - No change to salary escalation assumptions across all plans
- No significant fiscal impact is expected as a result of a change in the economic assumptions.

NEXT STEPS

- Finalize assumptions and scenarios for sensitivity analysis, prepare the letters to the plans and send out by late November.
- Deadline to submit accounting valuation results to OPCD is January 26, 2018.

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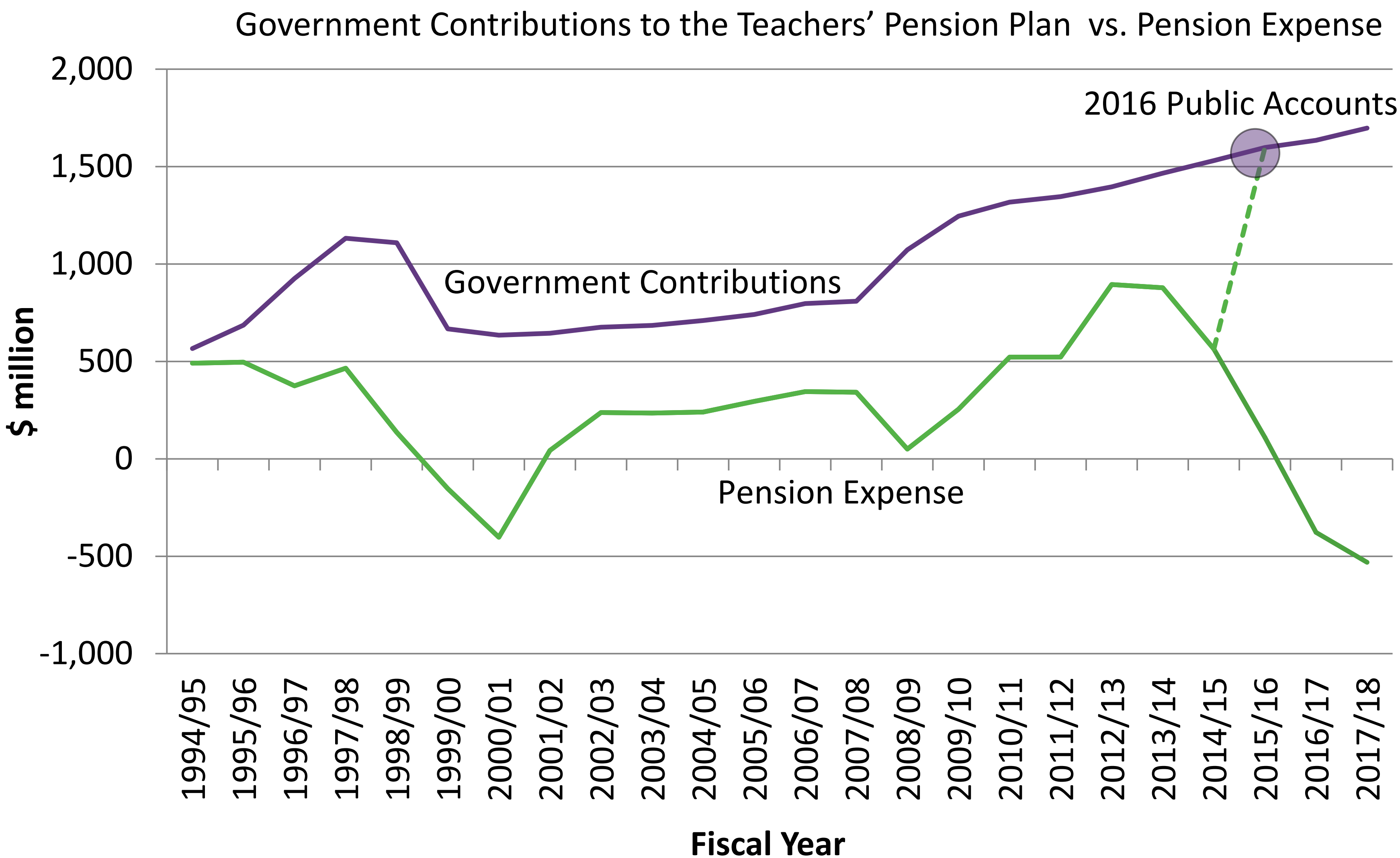

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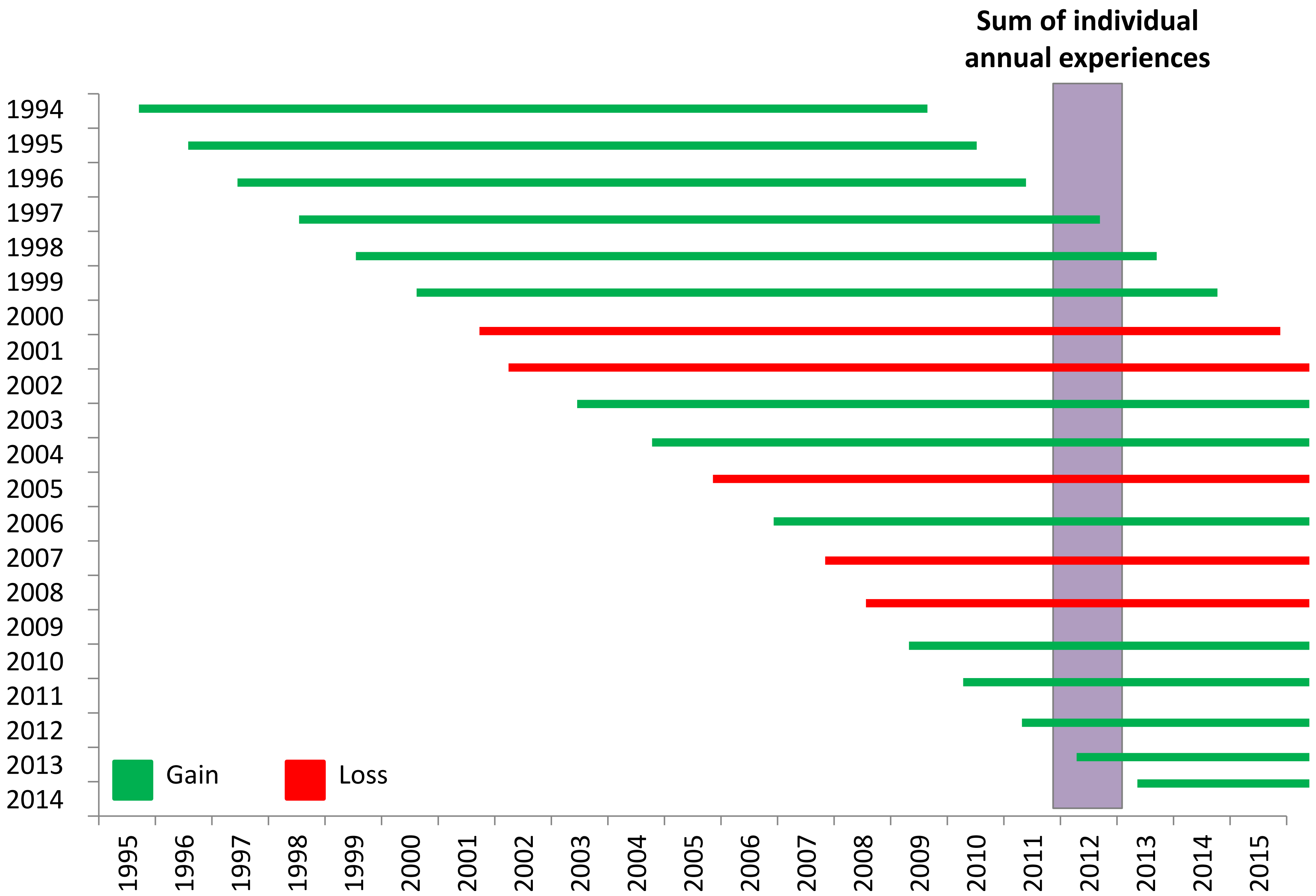

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Rationale for Recommendation

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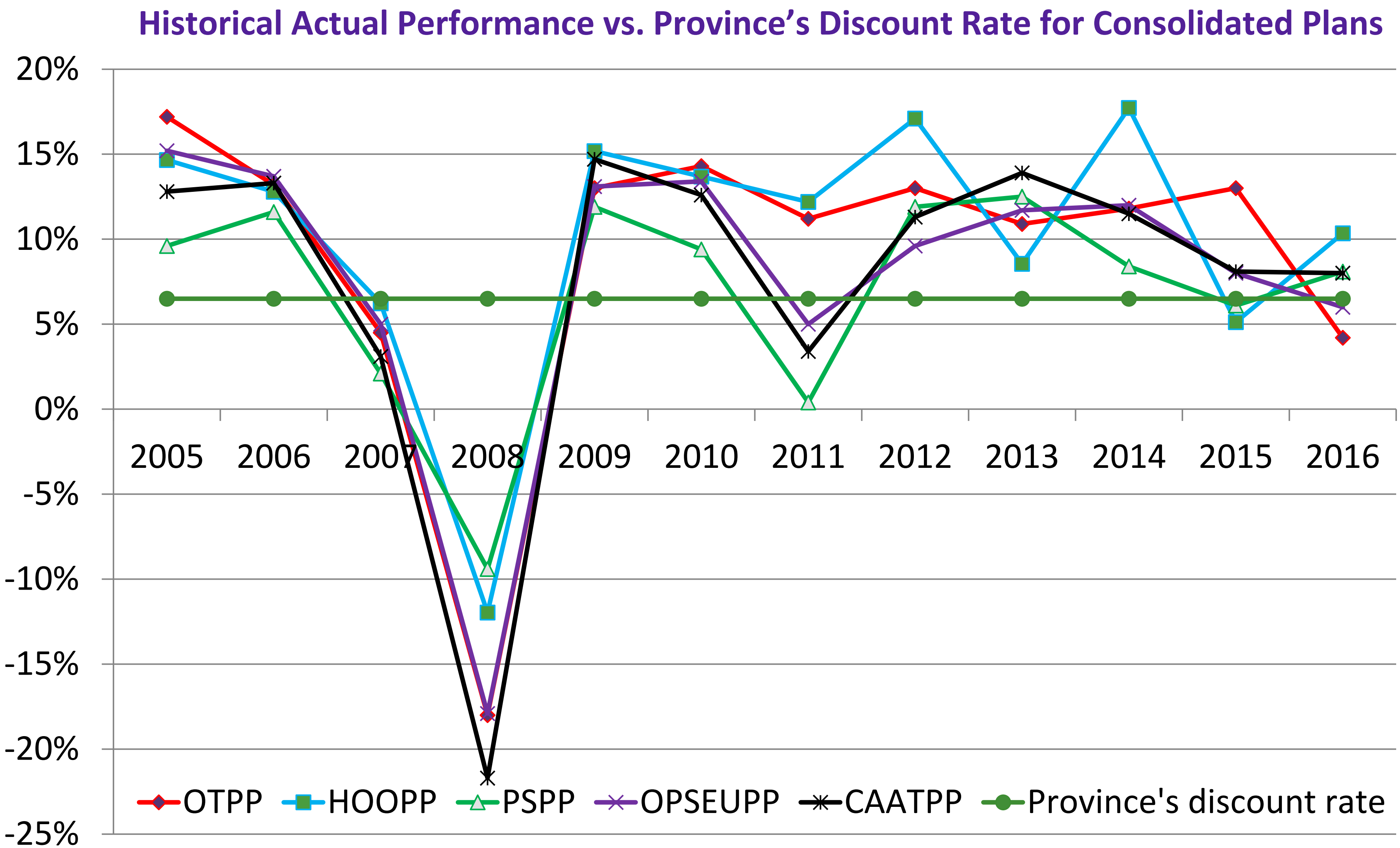

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Real	2.85	2.80	2.80	3.85	-	-	3.85	3.55	3.40	3.60	3.65	3.45	3.80	3.70	3.60

Province's Discount Rate Assumptions (%)

Nominal	6.50	6.25	6.00	6.25	6.00	5.75	6.50	6.25	5.90	6.00	5.75	5.75	6.25	6.00	5.75
Real	4.25	4.25	4.00	4.00	4.00	3.75	4.25	4.25	3.90	3.75	3.75	3.75	4.00	4.00	3.75
2018 Real			4.00			3.75			3.75			3.75			3.75

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Recommendation

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

Year	2016	2017	2018
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Implication

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Rationale

- This rate is consistent with the Office of Economic Policy's long-term economic outlook, projecting 2.0% (2026+). In addition, staff considered long-term inflation assumptions from the following sources:

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Bank of Canada Inflation Rate Target	2% (mid-point of the 1% to 3% range)

PART II: 2018 ASSUMPTIONS: INFLATION (CONT'D)

- Among private sector organizations*, short-term inflation is expected, on average, to be 1.7% in 2017 and will increase from 1.9% to 2.1% from 2018 to 2020.
- 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	2.0
OPSEUPP	2.0	2.0
OTPP	2.0	1.8
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.

PART II: 2018 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	0.75	0.75	0.75	2.00	1.25
Proposed salary rate	0.75	0.75	0.75	2.00*	1.25
Change	0.00	0.00	0.00	0.00	0.00

*Last year, the Auditor General noted that the Province's salary assumption for HOOPP was high compared to the assumption used in HOOPP's financial statements. However, in a letter from HOOPP to MOF, the Board indicated that the Province's salary assumption is close to the actual plan experience.

Implication

- No impact on pension expense.

PART II: 2018 ASSUMPTIONS: SALARY ESCALATION RATE (CONT'D)

Rationale for Recommendation

- 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 nominal rate of YMPE increase has been between 2% to 3% for the last decade until 2016. The annual increase from 2017 to 2018 has been only 1.1% (from $55,300 to $55,900).
    - This is consistent with the Ontario Average Industrial Nominal Wage growth rate which was about 1.1% from August 2016 to August 2017.

PART II: 2018 ASSUMPTIONS: SALARY ESCALATION RATE (CONT'D)

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

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	OTPP			PSPP*			OPSEUPP			HOOPP**			CAATPP		
	2015	2016	2017	2014	2015 /16	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
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Real	1.00	1.00	1.00	1.00	-	-	0.75	0.75	0.75	1.50	1.50	1.50	1.75	1.75	1.75
Province's Salary Escalation Rate Assumptions (%)															
Nominal	3.25	3.00	2.75	3.25	3.00	2.75	3.25	3.00	2.75	4.50	4.25	4.00	3.25	3.00	3.25
Real	1.00	1.00	0.75	1.00	1.00	0.75	1.00	1.00	0.75	2.25	2.25	2.00	1.00	1.00	1.25
2018 Real			0.75			0.75			0.75			2.00			1.25

*PSPP has not filed a funding valuation since Dec. 31, 2013. Once its application to Stage 2 of the Temporary Solvency Funding Relief program is approved, a new valuation is expected for Dec. 31, 2017.
**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

- MOF staff are proposing one change to the Province's economic assumptions:
  - Reduce the OPSEU discount rate by 0.15%
  - No change to the inflation rate
  - No change to salary escalation assumptions across all plans
- No significant fiscal impact is expected as a result of a change in the economic assumptions.

NEXT STEPS

- Finalize assumptions and scenarios for sensitivity analysis, prepare the letters to the plans and send out by late November.
- Deadline to submit accounting valuation results to OPCD is January 26, 2018.

TBS

Office of the Provincial Controller Division

Pension and Fiscal Planning

September 28, 2016

Confidential – For Internal Discussion Purposes

Summary of pensions in the 2016 Budget

($ Millions)	2016-17 Plan	2017-18 outlook	2018-19 outlook	2019-20 outlook	2020-21 outlook	Plan and 2017-18 outlook Ref# to Budget 2016
***Forecast for 2016 Budget** (updated: January 30th, 2016)*						
Teachers' Pension Plan	**-452**	**-820**	**-1,110**	**-1,110**	**-1,110**	pg. 284 -table 3.23
Public Service Pension Plan	524	447	403	403	403	pg. 284 -table 3.23
Public Service Supplementary Plan (PSSP)	23	23	23	23	23	pg. 284 -table 3.23
OPSEU Pension Plan	135	98	89	89	89	pg. 284 -table 3.23
Consolidation Adjustment - Enterprises Pension Expense	-30	-30	-30	-30	-30	pg. 284 -table 3.23
OPS - Other Retirement Benefits	350	361	373	385	414	pg. 284 -table 3.23
Sub-Total OPS Pension & Retirement Benefits Plans	**1,002**	**899**	**858**	**870**	**899**	
Healthcare of Ontario Pension Plan	**631**	**548**	**537**	**537**	**537**	pg. 283 -table 3.22
Colleges of Applied Arts and Technology Pension Plan	**187**	**172**	**166**	**166**	**166**	pg. 283 -table 3.22
Total Pension and Other Employee Future Benefits	**1,368**	**799**	**451**	**463**	**492**	pg. 283 and 284

Reconciliation to 2016 Budget

Where Pension expense included in the fiscal tables and plan (2016 Budget):

- Teacher’s pension plan, under EDU (Other Programs) – pg. 284 (table 3.23)
- OPSEU and PSPP pension plans, under TBS Employee and Pensioner Benefits (Other Programs) – pg. 284 (table 3.23)
- HOOPP pension plans under MOHLTC (Health Sector) – pg. 283 (table 3.22)
- CAATPP pension plans under TCU (Post Secondary and Training Sector)– pg. 283 (table 3.22)

Potential impact on Plan, FES and Budget

($ Millions) **2015-16**	**Budget 2015 Plan**	**Actual Expected per PSAB**	**Legislated Accounting Adjustment**	**Actual per Legislated Accounting**
EDU-Teachers’ Pension plan Expense	71	110	1,480	1,590
TBS- Employee and Pension Benefit (OPSEUPP)	1,289	987	34	1,021

	Legislated Accounting
Impact on FES/Budget	Fiscal plan will reverse out 15-16 treatment; possible to discuss treatment for 16-17 Public Accounts well in advance of 17-18 budget

Impact of Legislated Accounting on 2015-16 Public Accounts

($ Millions)	**Expected Balance per PSAB**	**Legislated Accounting Adjustment**	**Balance per Legislated Accounting**
Consolidated Statement of Operations			
Education - Expense	25,108	1,480	26,588
General Government and Other - Expense	4,400	34	4,434
Total Expenses	131,892	1,514	133,406
Annual Deficit	(3,515)	(1,514)	(5,029)
Consolidated Statement of Financial Position			
Pensions and Other Employee Future Benefits	1,439	10,668	12,107
Total Liabilities	378,042	10,668	388,710
Net Debt	(294,565)	(10,668)	(305,233)
Accumulated Deficit	(192,029)	(10,668)	(202,697)

Potential Impact of Continued Legislated Accounting in Future Years

TBS

Impact on Fiscal Plan if Pension Asset are written off
For Internal Discussion Only

($ millions)	2015-16 Actual	2016-17 Plan	2017-18 outlook	2018-19 outlook	2019-20 outlook
Forecasted as part of 2016 Budget					
Teachers' Pension Plan Expense (Surplus)	110	(452)	(820)	(1,110)	(1,110)
OPSEU Pension Plan Expense	177	135	98	89	89
Healthcare of Ontario Pension Plan (HOOPP)	747	631	548	537	537
Colleges of Applied Arts and Technology Pension Plan (CAATPP)	190	187	172	166	166
Revised forecast if pension assets are written off					
Teachers' Pension Plan Expense	1,590	1,672	1,738	1,800	1,866
OPSEU Pension Plan Expense	211	229	234	241	248
Healthcare of Ontario Pension Plan (HOOPP)	747	631	1,058	1,120	1,186
Colleges of Applied Arts and Technology Pension Plan (CAATPP)	190	224	242	262	284
Pressure on Fiscal Plan					
Teachers' Pension Plan Expense	1,480	2,124	2,558	2,910	2,976
OPSEU Pension Plan Expense	34	94	136	152	159
Healthcare of Ontario Pension Plan (HOOPP)	-	-	510	583	649
Colleges of Applied Arts and Technology Pension Plan (CAATPP)	-	37	70	96	118
Total pressure on the Fiscal Plan	**1,514**	**2,255**	**3,274**	**3,742**	**3,902**

Note:
Healthcare of Ontario Pension Plan is forecasted to hit the asset position by 2017-18
Colleges of Applied Arts and Technology Pension Plan is forecasted to hit the asset position by 2016-17

Explanation of Variances in Teachers' Pension Plan (TPP) Expense
2017-18 PRRT

TPP Expense ($M)	2015-16 Actual	2016-17 Interim[1]	2017-18 Outlook[1]	2018-19** Outlook[1]	2019-20** Outlook[1]	2020-21** Outlook[1]
2017 Budget Estimate	110	(502)	(531)	(778)	(995)	(995)
2016 Budget Estimate	NA	(452)	(820)	(1,110)	(1,110)*	(1,110)*
Fiscal Impact Pressure/(Savings)	NA	(50)	289	332	115	115

* 2018-19 pension expense for 2016 Budget comparison is a flat-lined from 2018-19
**Note fiscal forecast for 2017 Budget Estimate beyond 2019-20 should be flat-lined based on 2019-20 figures.

Variance Explanation:

<u>2017 Budget versus 2016 Budget Variances</u>

For the 2016-17 interim, a savings of $50M is projected from what was forecasted in 2016 Budget. The savings is due to lower active members in the plan than originally forecasted.

TPP fiscal pressure in the 2017 Budget for the outlook years (i.e. 2017-18 to 2019-20) are primarily due to:

- A lower than projected investment return[2] in 2016. Actual investment return in 2016 was 3.8% while the assumed rate of return projected in 2016 Budget was 6.25%;
- A reduction in the discount rate assumption[3] ; and
- An update of demographic assumptions by the actuary.

The fiscal pressure is partially offset by:

- Lower than expected inflation[4]. 1.3% compared to the original long-term assumption of 2.00%.

[1] The negative expense is due to the recognition of the cumulative impact of investment gains over the past several years and other experience gains (i.e. salary) brought into expense in the year is higher than the current service cost for that year. <u>This does not represent a reduction in the Province's annual cash contributions to the pension plan</u>.
[2]Amortization of 2016 investment loss starts in 2017-18 including the corresponding impact on interest revenue on pension assets.
[3] The discount rate assumption is based on the long-term expected rate of return on pension assets (nominal return on investment). Under the direction of Income security and Pension Policy Division, the Province's long-term expected rate of return on OTPP pension assets has now been reduced from previously of 6.25% to 6.00%, as a result of the reduction of the real return rate assumption from 4.25% to 4.00%. The impact of the loss on change of assumption starts in 2017-18.
[4] Impact of experience gains on inflation starts in 2017-18.

- A reduction in long-term salary escalation expectations[5]; and
- Teachers' actual salary increases were lower than expected[6].

The difference between the TPP expense forecast in the 2016 Budget and the revised projections in the 2017 Budget is expected to increase in each of the plan years due to actuarial smoothing of the lower than projected investment returns in 2016. Note for 2019-20, 2016 Budget numbers were flat-lined from 2018-19, while 2017 Budget numbers represent actual forecast.

Year over Year Variances

The TPP negative expense for the 2016-17 interim ($-502 million) is expected to decrease by $612 million compared to the 2015-16 actual ($110 million) due to:

- The increased impact of investment gains earned by plan assets from 2009 to 2015 on pension expense as more of the investment gains from this period is included in pension fund assets.
- Prior year's salary escalation assumption reduction (i.e. from 3.25% to 3.00%); and is
- Partially offset by the impact of a prior year's revised lower discount rate (i.e. from 6.50% to 6.25%).

TPP expense in 2017-18 of negative expense $531 million is projected to increase by $29M compared to the 2016-17 interim forecasts of negative expense of $502 million due to:

- The increased impact of investment gains from 2009 to 2015 on pension expense as more of the investment gains from this period are included in pension fund assets offset by lower than expected returns in 2016;
- The impact of 2016 revised salary escalation expectation (i.e. from 3.00% to 2.75%) starting in 2017-18;
- Impact of forecasted increase in active members based on recent experience and;
- The increase in negative expense is partially offset by impact of a lower discount.

Year over year increase in TPP negative expense anticipated for 2018-19 to 2019-20 is due to the same reasons as the 2017-18.

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[5] Per direction from Income Security and Pension Policy Division, the Province's long term salary escalation assumption has been reduced from 3.00% to 2.75% (including a short term assumption salary escalation of 2.00% for the period 2016-17 through 2018-19). The impact of the gain of the change in assumption starts in 2017-18.

[6] The negotiated salary increase by 1% at September 1, 2016 plus another 0.5% increase on the 98th day of the 2016-17 school year are lower than Province's long term salary escalation assumption.

Background

As a general practice, the Province smoothes the difference between the actual return on equity investments and the long-term expected rate of return assumption over 5 years.

TPP had experienced lower than expected investment returns between the years 2000 to 2002, resulting in a total experience loss of $15.9 billion subject to smoothing (provincial share being 50%). These actuarial losses were fully incorporated in the pension fund assets at the end of 2006-07 and consequently their impact on pension expense (increase in pension expense) ended in 2007-08.

TPP incurred significant investment gains between 2003 and 2006 (a total of $21.3 billion subject to smoothing, provincial share being 50%).

TPP incurred significant investment losses in 2007 and 2008 (a total of $30.1 billion subject to smoothing, provincial share being 50%). These actuarial losses will be fully incorporated in pension fund assets at the end of 2012-13. Their increasing impact on pension expense will end in 2013-14.

TPP incurred significant investment gains between 2009 and 2015 (a total of $37.8 billion subject to smoothing, Province share is 50%). TPP incurred investment gains in 2015 (a total of $9.2 billion subject to smoothing, provincial share being 50%).

TPP incurred investment loss subject to smoothing of 4,120 billion in 2016. As actual returns was lower than expected. The Province's share is 50%.

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