Overview Of State Actuary's Recommendation On Long-Term Economic Assumptions

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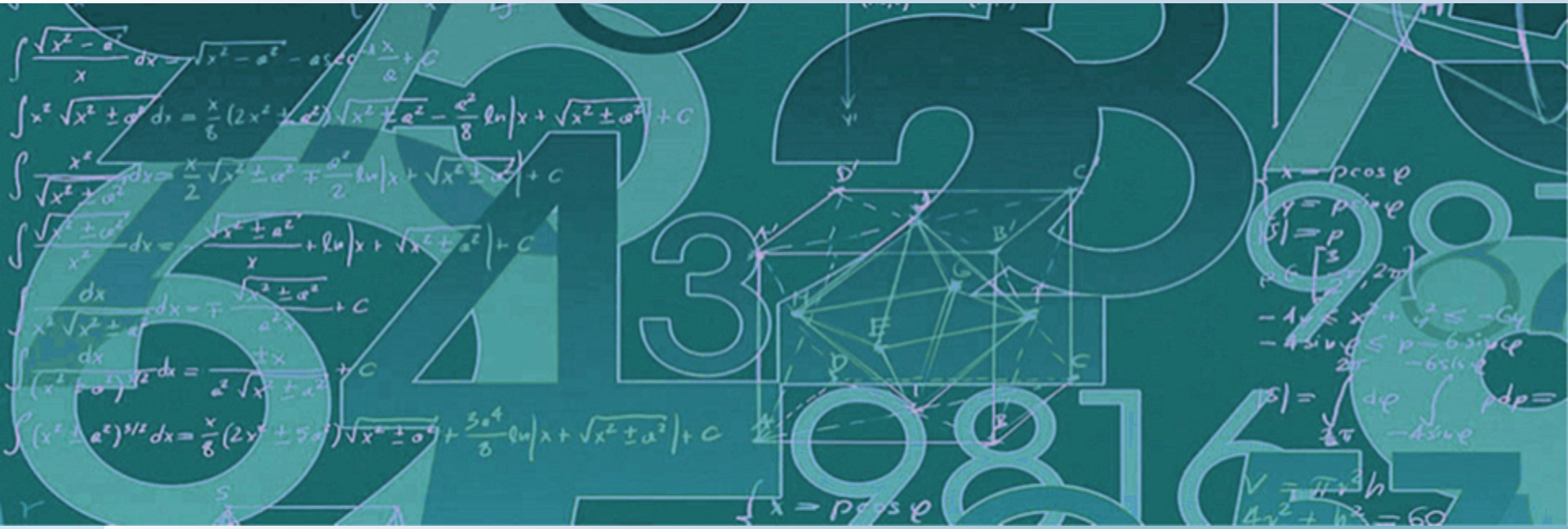
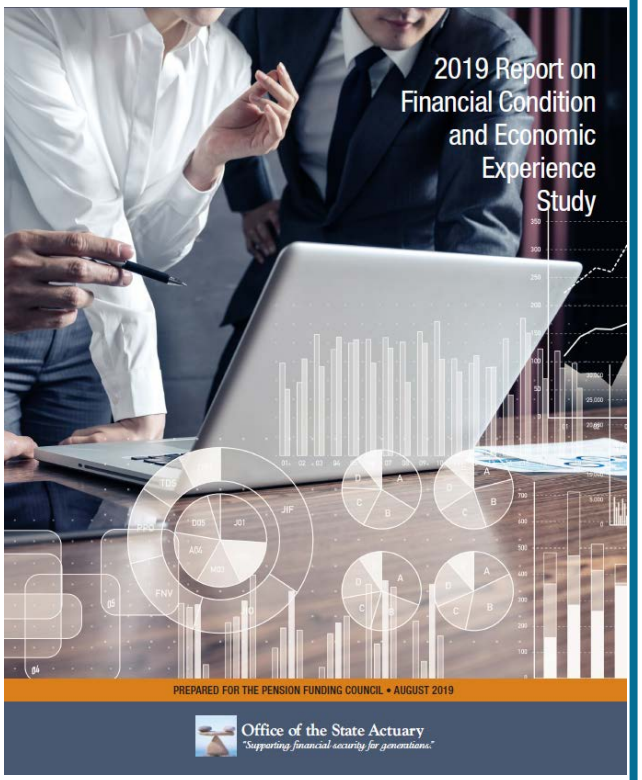
State Actuary

Presentation to: Pension Funding Council



Today's Presentation

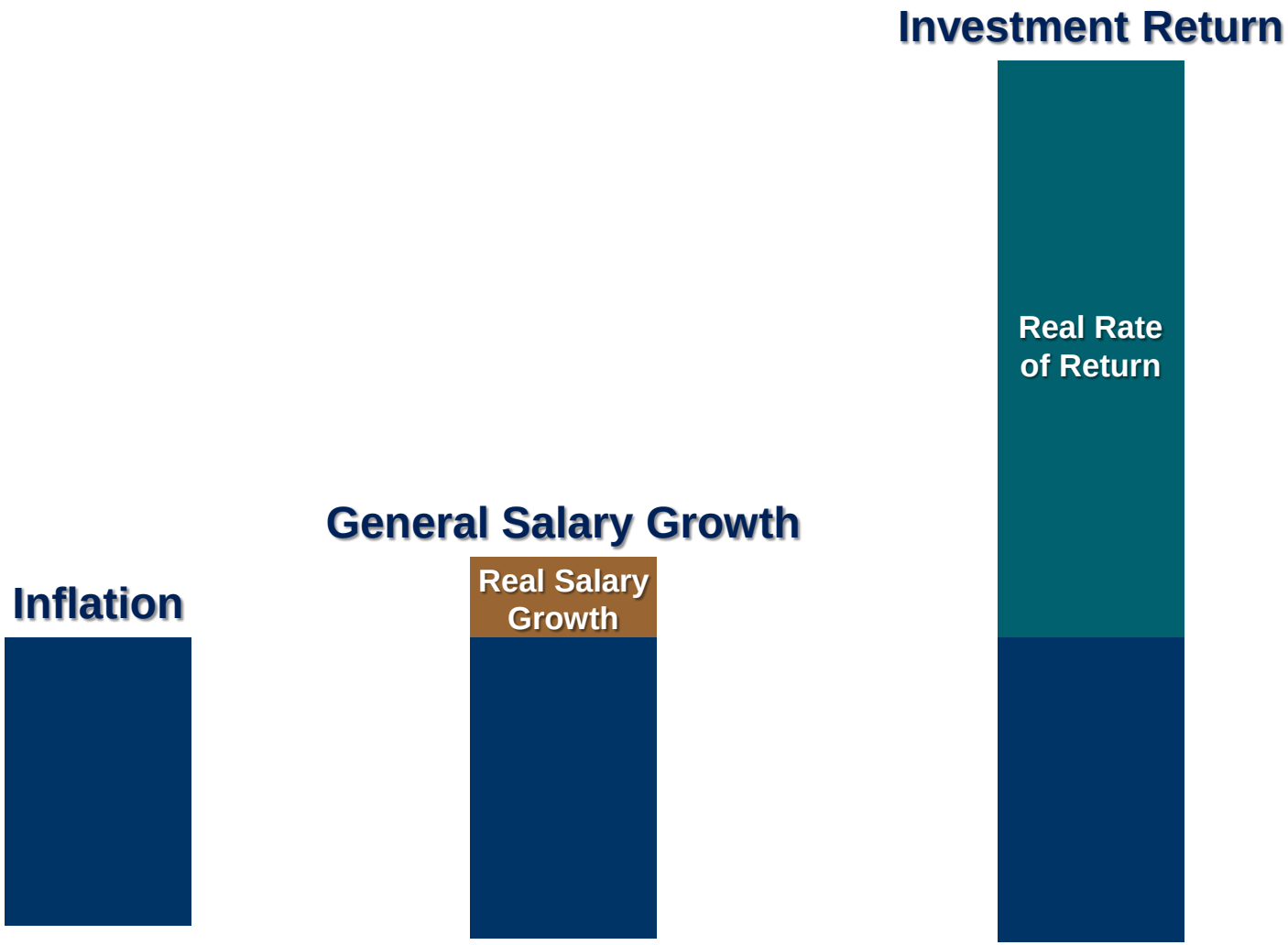
- Highlights of *Economic Experience Study*
- Full report included in meeting materials
- Published jointly with the *Report on Financial Condition*



What Are The Assumptions In This Study?

Assumption	Use of Assumption
Inflation	Model post-retirement COLAs based on changes in Consumer Price Index (CPI) for Seattle, Tacoma, Bellevue Building block for other assumptions
General Salary Growth	Project salaries to determine future retirement benefits and contribution rates as a percentage of payroll
Investment Return	Determine today's value of future benefit payments and salaries
Growth in System Membership	Determine amortization payments for Plan 1 UAAL Plan 1 UAAL amortized over a rolling 10-year period as a percentage of system payrolls

It All Starts With Inflation



Inflation (1 Of 4)

Historical Data

Inflation has remained low for the past few decades.

Inflation in Seattle-Tacoma-Bellevue (STB) has consistently outpaced national inflation.

Forecasts

Short-term national inflation forecasts remain low.

Long-term forecasts typically higher due to uncertainty over longer forecasting period.

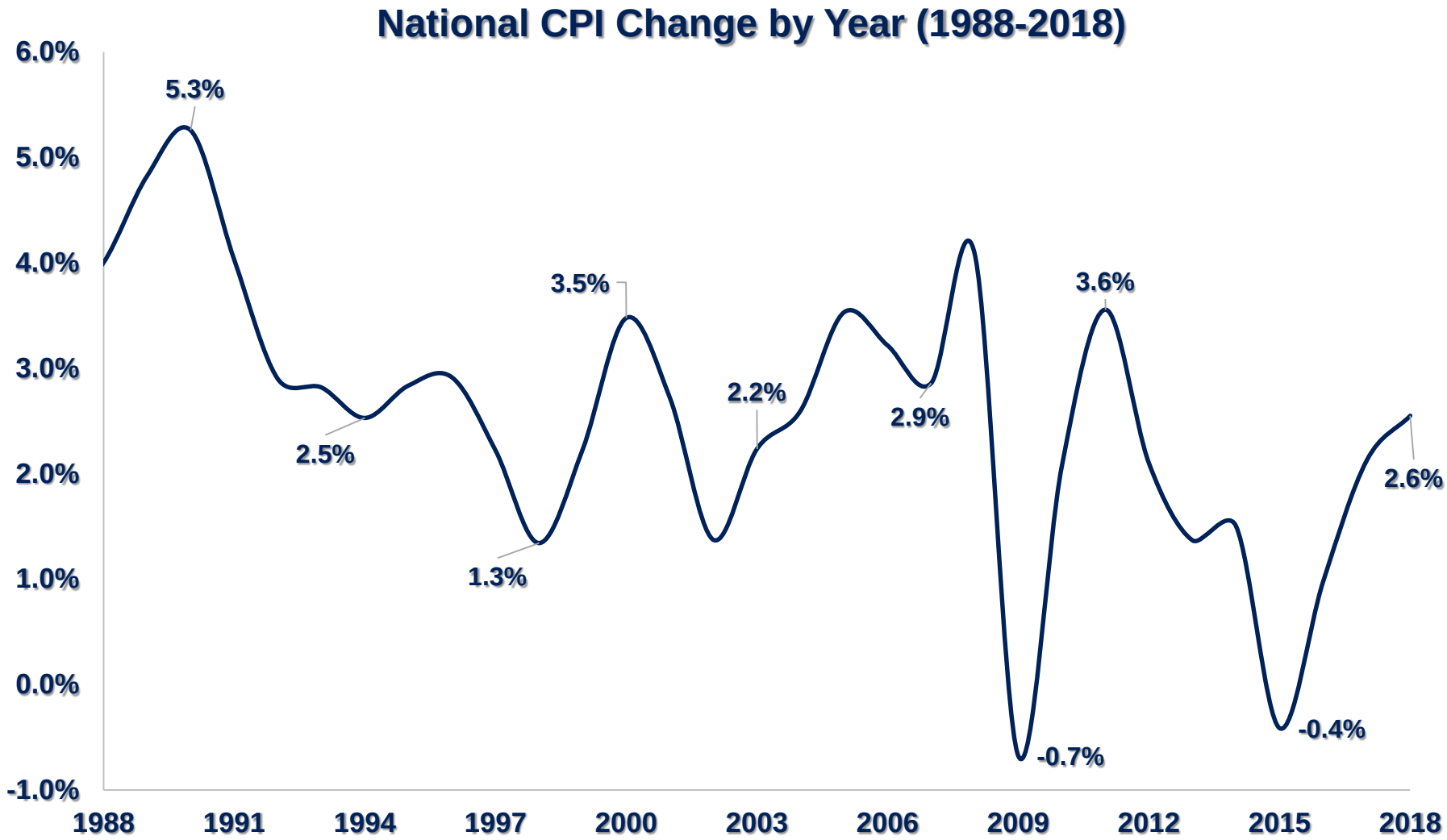
Recommendation

No change to total inflation assumption of 2.75%.

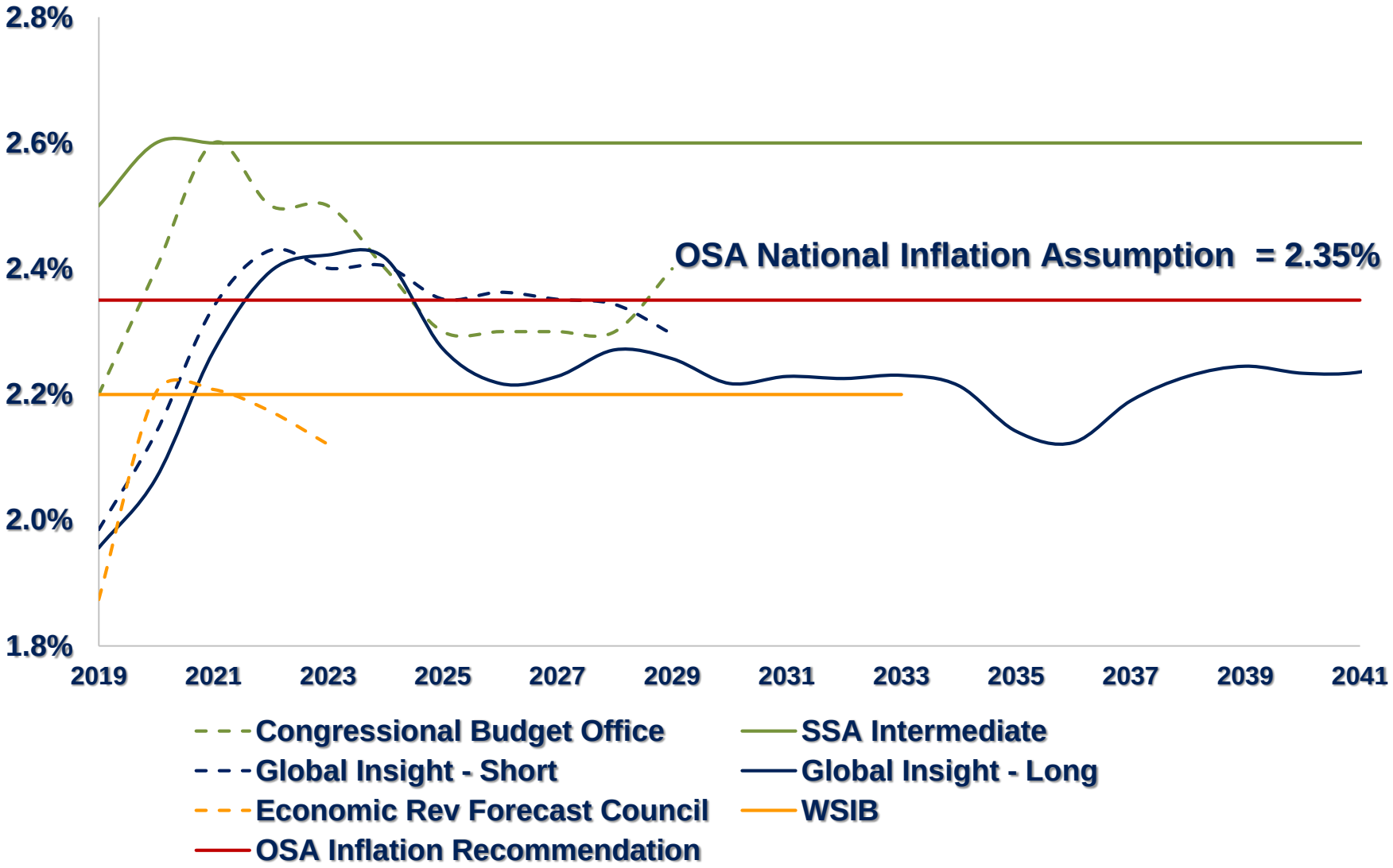
2.75% = 2.35% (national) + 0.40% (regional adjustment).

Decrease to national component; increase to regional adjustment since last study.

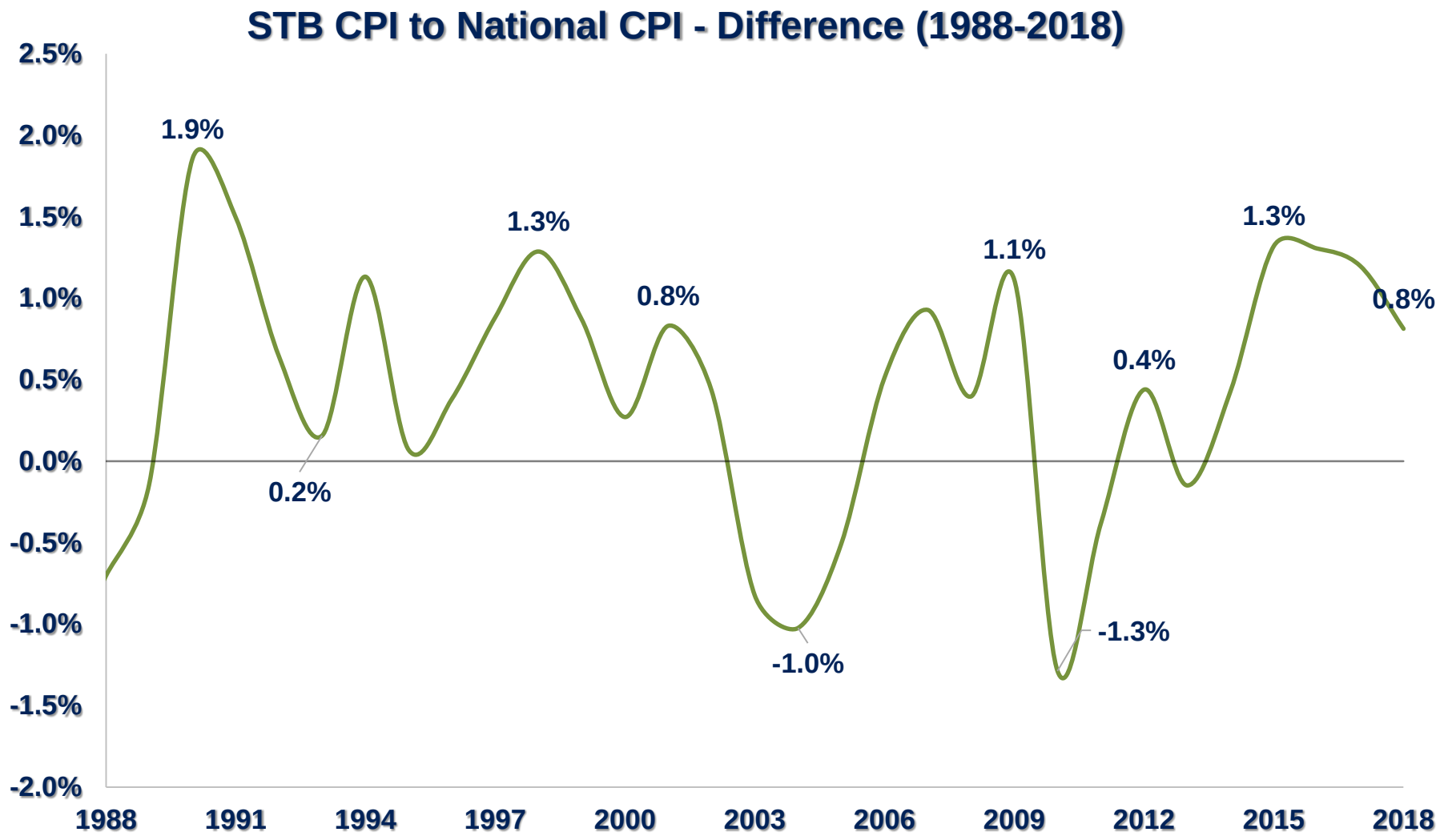
Low National Inflation Persists



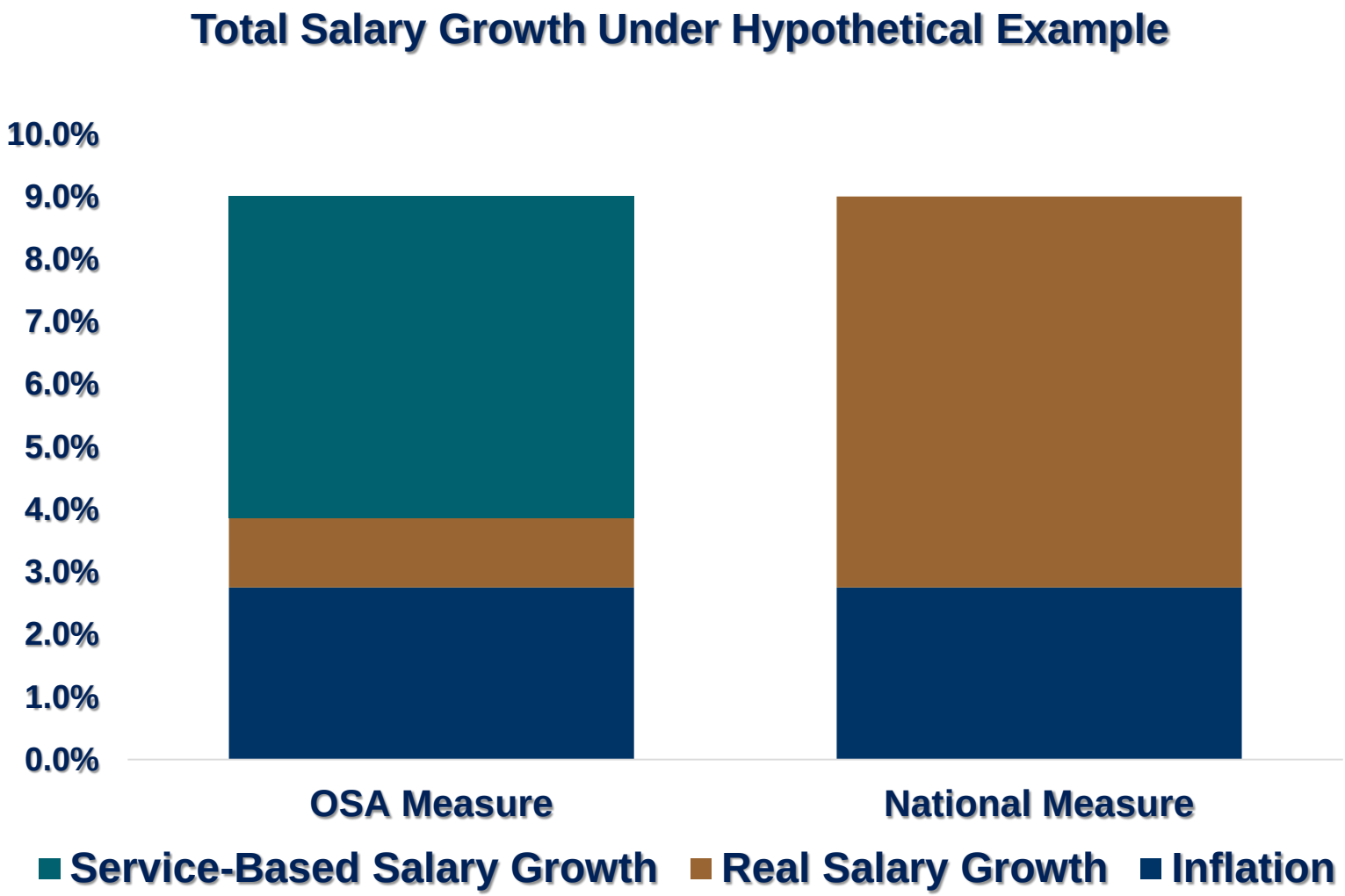
Recommendation For National CPI Consistent With Forecasts



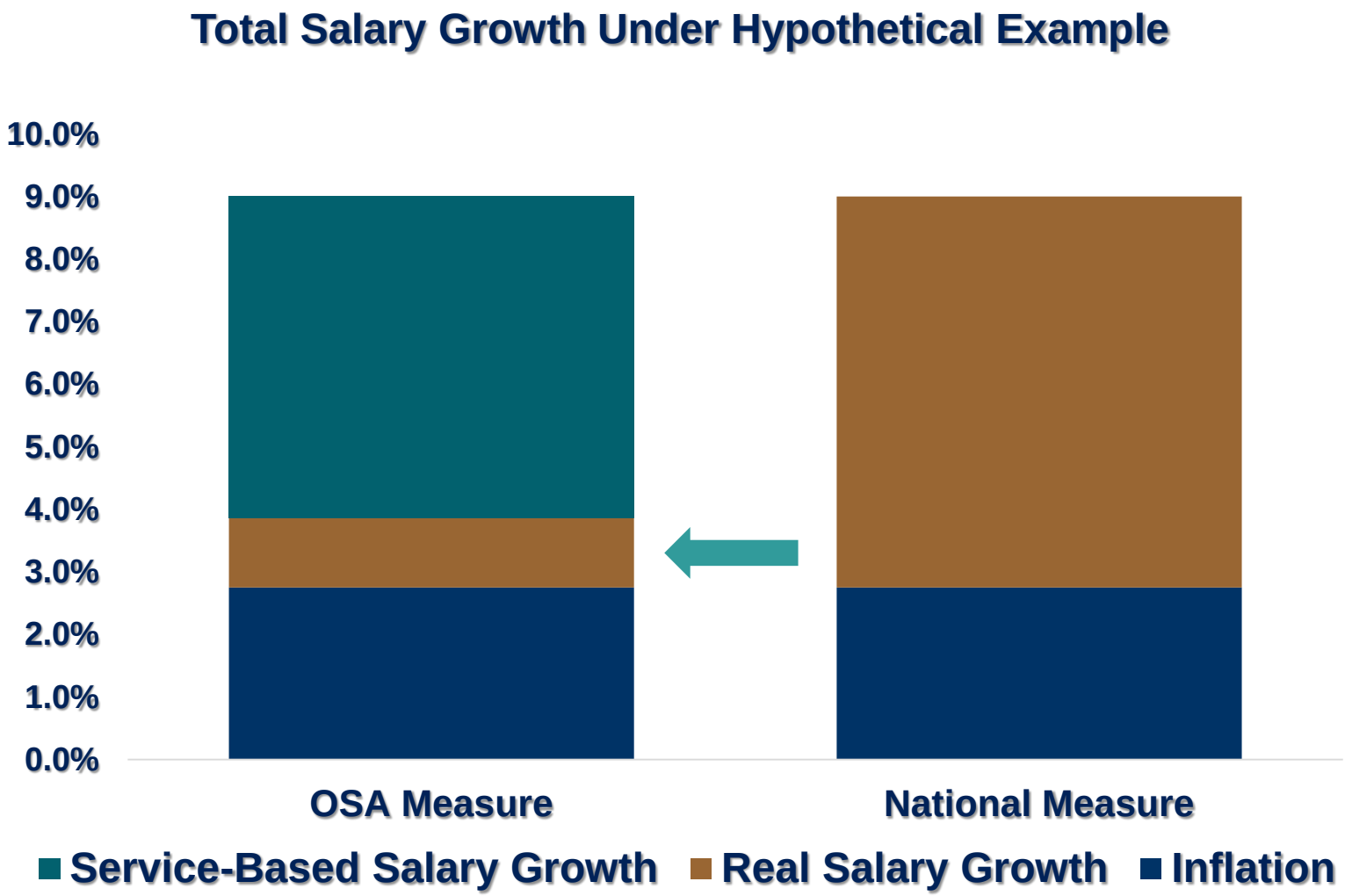
STB Has Outpaced National Inflation



OSA Models Total Salary Growth With Economic And Demographic Assumptions



Focusing On Economic Assumption Today



Real Salary Growth – Salary Growth Above Inflation (2 Of 4)

Historical Data

Consistent with current assumption after considering impact of outliers.

We isolated economic growth factors in Plan 2/3 data.

Forecasts

National forecasts include both economic and demographic growth factors; virtually unchanged from 2 years ago.

Short-term: CBO projects 1.1% for next 10 years.

Long-term: SSA projects 1.2% for next 75 years.

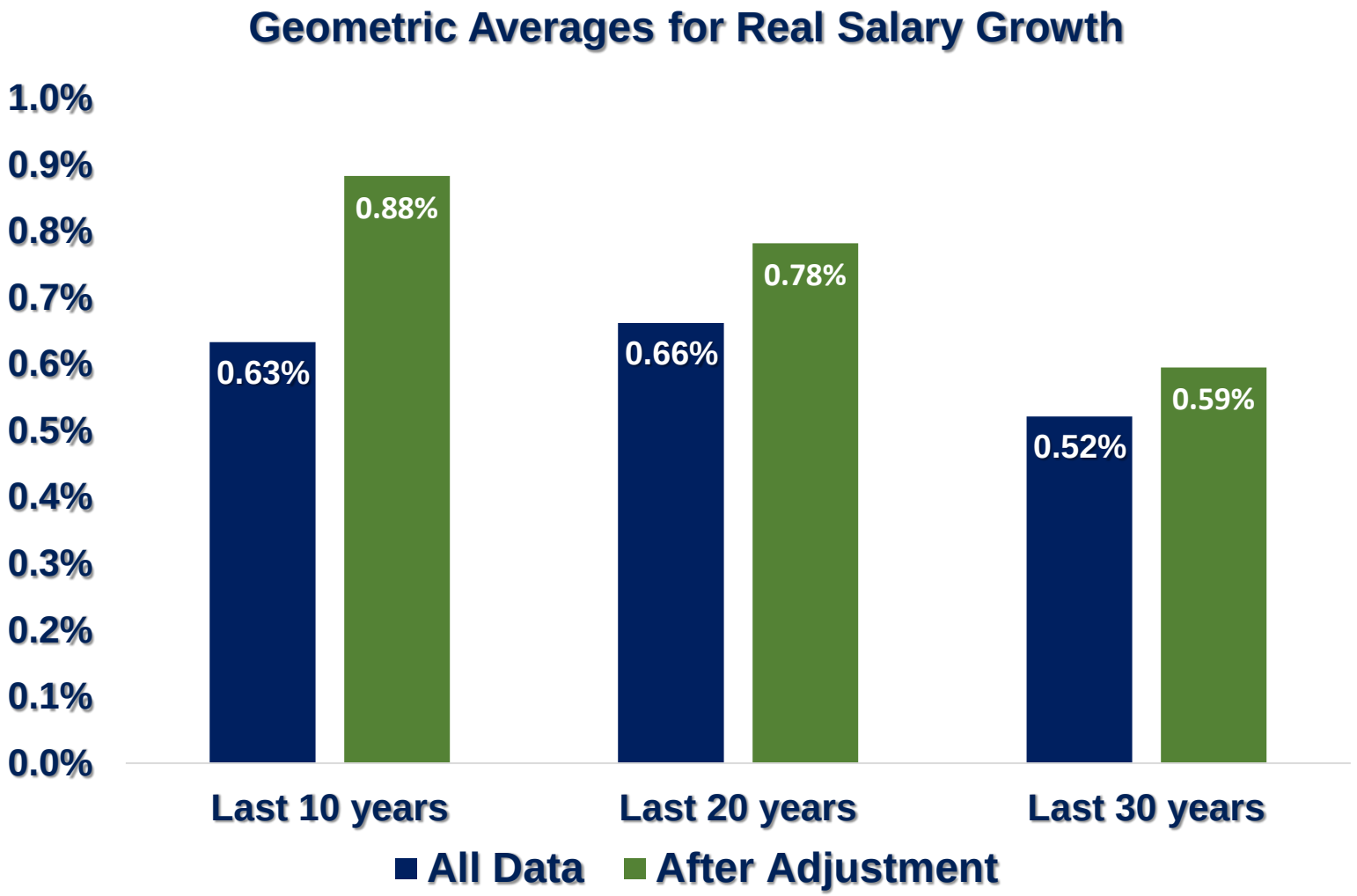
Recommendation

No change to real salary growth assumption.

No change to general salary growth assumption.

3.50% = 2.75% (inflation) + 0.75% (real wage growth).

Plan 2/3 Real Salary Growth Consistent With Current Assumption After Adjusting For Outliers



Investment Return (3 Of 4)

Historical Data

Average returns generally at or above assumed depending on the period selected.

Forecasts

Based on new Capital Market Assumptions and asset allocation, WSIB expects the same median 15-year return as 2 years ago.

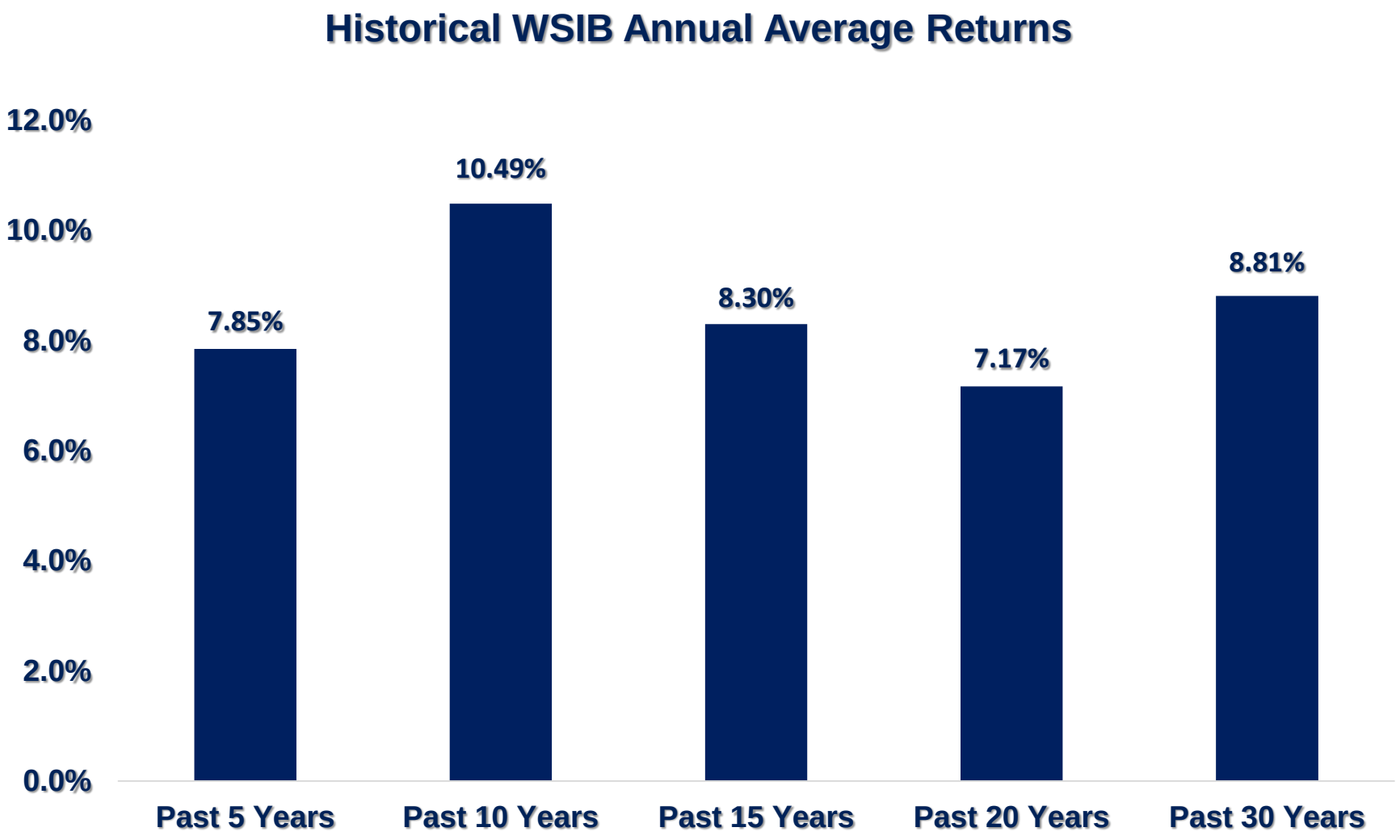
We applied our professional judgment to extend WSIB's return expectations beyond 15 years. We also made adjustments to ensure consistency within our set of assumptions.

Recommendation

Lower from 7.50% (current law assumption) to 7.40%.

7.40% = 2.35% (national inflation) + 5.05% (real ROR).

Historical Data - Average Annual Returns Generally At Or Above Assumed Depending On The Period



Interpreting Historical Returns

- The period selected matters
- A complete market cycle includes a bear market, recovery, and bull market
- Returns over the past 10 years (and shorter) do not represent a complete market cycle
- Returns over the past 20 years closer to a complete cycle, but significantly influenced by the Great Recession
- When reviewing historical returns, consider historical conditions and whether those conditions exist now or will in the future
- Historical returns are often not considered a good predictor for the future

Historical "Risk-Free" 10-Year Returns

10-Year Treasury yields. Source: Macrotrends.net

Simulated Future Returns - No Change In WSIB's Median Return From Two Years Ago

2017 and 2019 Simulated Future Investment Returns*			
	2019	2017	Difference
Median Return	7.36%	7.36%	0.00%

**Simulated returns over 25 and 30-year periods for 2019 and 2017, respectively.*

- No change to the median return
- Half the simulated returns fall below (or above) "Median Return"
- We focus on the median when setting this assumption

OSA Adjustments To WSIB Simulated Returns

Inflation Adjustment

WSIB assumes lower national inflation for a shorter, 15-year time horizon.

OSA assumes higher national inflation for longer horizon.

Adjustment of 0.15 percentage points ensures our assumption set remains consistent.

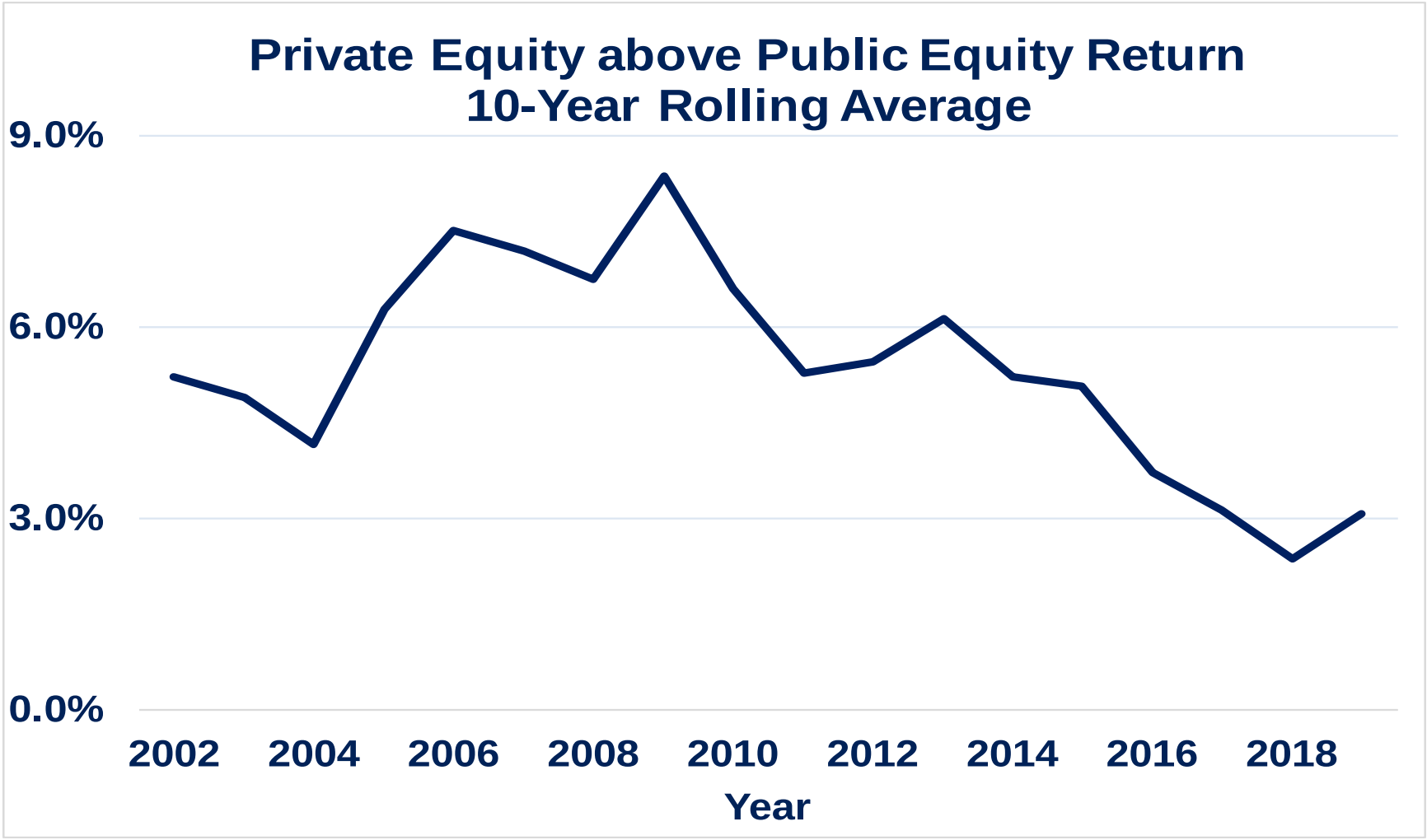
Private Equity (PE) Adjustment

WSIB assumes PE returns will exceed global equity returns by 300 percentage points over the next 15 years.

Reasonable assumption for the next 15 years.

We expect lower PE returns beyond the next 15 years due to increased efficiency and competition, and the general continued evolution of the PE market.

Historical Private Equity Premium



Pulling It All Together

7.36% Median 25-Year Return
+ 0.15% for ↑ Inflation
− 0.10% for ↓ PE Returns
= 7.41%

- Inflation adjustment increases simulated 25-year median return from 7.36% to 7.51%
- Private equity adjustment lowers inflation-adjusted median return from 7.51% to 7.41%
- Recommend long-term rate of return assumption of 7.40%

Growth In System Membership (4 Of 4)

Historical Data

Lower than expected system growth after Great Recession.

Followed by higher than expected growth.

Forecasts

Expect system growth to return to historical levels in PERS and TRS.

We consulted with OFM and reviewed OFM state population forecasts.

Recommendation

No change in PERS 1 assumption of 0.95%.

Reduction in TRS 1 assumption from 1.25% to 0.95%.

We do not expect assumption change to impact contribution rates in 2021-23.

Summary Of Report On Long-Term Economic Assumptions

Assumption	Current	Recommended
Inflation	2.75%	2.75%
General Salary Growth	3.50%	3.50%
Annual Investment Return	7.50%	7.40%
Growth in System Membership	0.95% (PERS), 1.25% (TRS)	0.95% (PERS), 0.95% (TRS)

Note: Excludes LEOFF 2. The LEOFF 2 Board adopts assumptions for LEOFF 2.

- We developed these assumptions as a consistent set of economic assumptions and recommend reviewing them as a set of assumptions
- Adopting recommendation will improve long-term system health measures, but weaken short-term affordability
- Estimated budget impacts that follow do not include the impacts of planned assumption changes from the demographic experience study

2021-23 Estimated Budget Impact

Increase in Contributions from Adopting Full Recommendation*							
(Dollars in Millions)	PERS	TRS	SERS	PSERS	LEOFF	WSPRS	Total
2021-2023							
General Fund	$16.4	$43.6	$9.8	$1.5	$0.0	$0.3	$71.6
Non-General Fund	24.7	0.0	0.0	0.2	0.0	4.1	28.9
Total State	**$41.1**	**$43.6**	**$9.8**	**$1.7**	**$0.0**	**$4.4**	**$100.5**
Local Government	46.7	8.9	6.3	1.8	0.0	0.0	63.7
Total Employer	**$87.7**	**$52.5**	**$16.1**	**$3.5**	**$0.0**	**$4.4**	**$164.2**
Total Employee	**$67.5**	**$14.1**	**$7.2**	**$3.5**	**$0.0**	**$0.0**	**$92.2**

Totals may not agree due to rounding.

**In current law, we assume 7.5% rate of return for the 2021-23 Biennium. This table displays the cost in the 2021-23 Biennium from lowering the assumed rate of return from 7.5% to 7.4%. Short-term costs would continue beyond 2021-23 and ultimately become a long-term savings. We estimated the 2021-23 impact by applying the change in contribution rates from the 2017 AVR to projected payroll. Actual impacts may vary from this estimate.*

2023-25 Estimated Budget Impact

Increase in Contributions from Adopting Full Recommendation*							
(Dollars in Millions)	PERS	TRS	SERS	PSERS	LEOFF	WSPRS	Total
2023-2025							
General Fund	$16.0	$45.1	$9.4	$1.5	$0.0	$0.3	$72.3
Non-General Fund	24.0	0.0	0.0	0.2	0.0	4.0	28.2
Total State	**$39.9**	**$45.1**	**$9.4**	**$1.8**	**$0.0**	**$4.3**	**$100.4**
Local Government	45.4	9.2	6.0	1.9	0.0	0.0	62.6
Total Employer	**$85.4**	**$54.3**	**$15.4**	**$3.7**	**$0.0**	**$4.3**	**$163.0**
Total Employee	**$65.0**	**$15.6**	**$7.0**	**$3.7**	**$0.0**	**$0.0**	**$91.2**

Totals may not agree due to rounding.

**In current law, we assume 7.5% rate of return for the 2023-25 Biennium. This table displays the cost in the 2023-25 Biennium from lowering the assumed rate of return from 7.5% to 7.4%. Short-term costs would continue beyond 2023-25 and ultimately become a long-term savings. We estimated the 2023-25 impact by applying the change in contribution rates from the 2017 AVR to projected payroll. Actual impacts may vary from this estimate.*

Concluding Remarks

- Budget impacts represent short-term contribution increases required to offset lower expected long-term investment returns
- Longer-term pension costs will depend on actual experience
- Based on this study, and my professional judgment, adopting the best estimate assumptions improves the stability of future pension costs
- Based on the *2017 Actuarial Valuation Report*, all the current economic assumptions are reasonable

Questions?

Appendix

- Estimated 2021-23 Contribution Rate Impacts
- Other States' Economic Assumptions

Estimated 2021-23 Contribution Rate Impact

Increase in Contribution Rates from Adopting Full Recommendation* (Effective 7/1/2021)						
	PERS	TRS	SERS	PSERS	LEOFF	WSPRS
Employee (Plan 2)	**0.45%**	**0.43%**	**0.42%**	**0.38%**	**0.00%**	**0.00%**
Employer						
Current Annual Cost	0.45%	0.43%	0.42%	0.38%	0.00%	2.05%
Plan 1 Past Cost	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Employer	**0.45%**	**0.43%**	**0.42%**	**0.38%**	**0.00%**	**2.05%**

**In current law, we assume a 7.5% rate of return. This table displays the rate impacts from lowering the assumed rate of return from 7.5% to 7.4%. Short-term impacts would continue beyond 2021-23 and ultimately become a long-term savings. We estimated the impact with the change in contribution rates from the 2017 AVR to projected payroll. Actual impacts may vary from this estimate.*

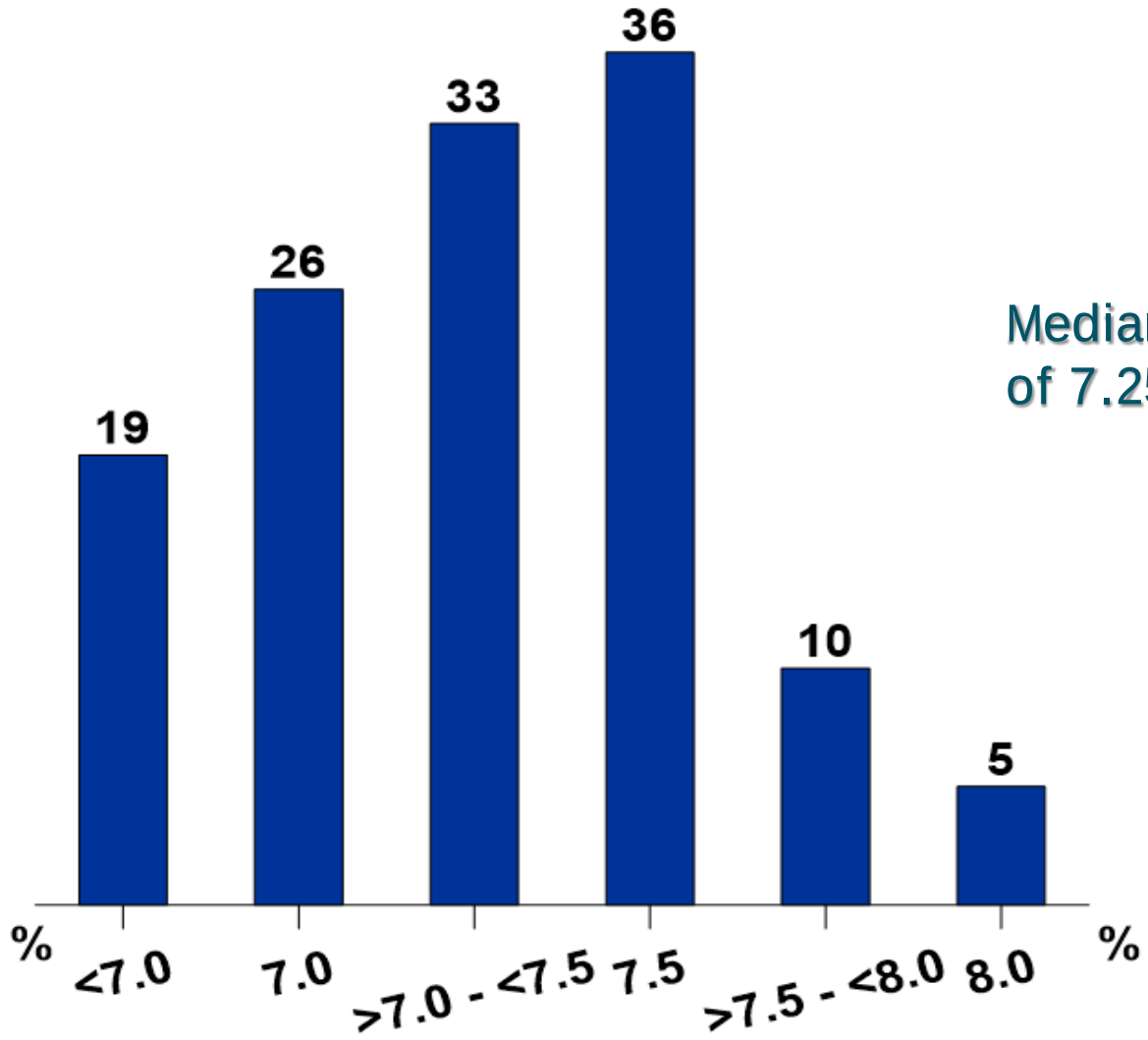
Other States' Economic Assumptions

Economic Assumptions for Selected Plans Outside Washington[1]				
Plan Name[2]	Investment Return	General Salary Growth	Real Salary Growth	Inflation
WA 2019 Economic Experience Study Recommendation	**7.40**	**3.50**	**0.75**	**2.75**
Alaska PERS	8.00	3.62	0.50	3.12
Alaska Teachers	8.00	3.62	0.50	3.12
California PERS	7.00	2.75	0.25	2.50
California Teachers	7.00	3.50	0.75	2.75
Colorado PERA	7.25	3.50	1.10	2.40
Florida Retirement System	7.40	3.25	0.65	2.60
Idaho PERS	7.00	3.75	0.75	3.00
Iowa PERS	7.00	3.25	0.65	2.60
Missouri State Employees	7.10	2.75	0.25	2.50
Ohio PERS	7.20	3.25	0.75	2.50
Oregon PERS	7.20	3.50	1.00	2.50
Wisconsin Retirement System	7.00	3.20	0.50	2.70
Selected Public Plans Outside WA - Average	**7.26**	**3.33**	**0.64**	**2.69**
Selected Public Plans Outside WA - Minimum	**7.00**	**2.75**	**0.25**	**2.40**
Selected Public Plans Outside WA - Maximum	**8.00**	**3.75**	**1.10**	**3.12**

[1] Data gathered from NASRA, the Public Plans Database maintained by the Center for Retirement Research, and individual system Comprehensive Annual Financial Reports or Actuarial Valuations. Where more recent updates was available (e.g., via press release issued after the last report), that information was used. For systems having multiple benefit tiers with different assumptions, the largest was used.

[2] For comparison to our economic assumptions, we assumed Real Salary Growth was the difference between General Salary Growth and Inflation.

Distribution Of Return Assumptions



Median return of 7.25%.

Source: NASRA 2019 Public Fund Survey.