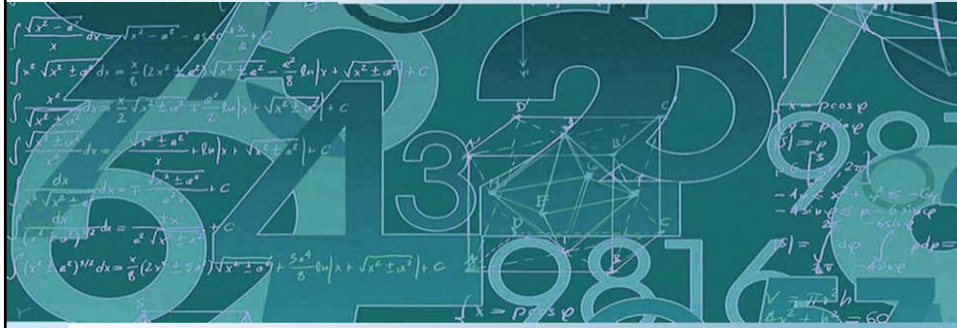


# State Actuary's Recommendation On Long-Term Economic Assumptions

Matthew M. Smith, FCA, EA, MAAA  
State Actuary

Mitch DeCamp  
Actuarial Analyst

Presentation to: LEOFF 2 Retirement Board



Office of the State Actuary  
"Supporting financial security for generations."

September 25, 2019

## Today's Presentation

- Highlights of Economic Experience Study
- Link to the full report included in meeting materials



O:\SCPP\2019\09.17-Full\State.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

Office of the State Actuary

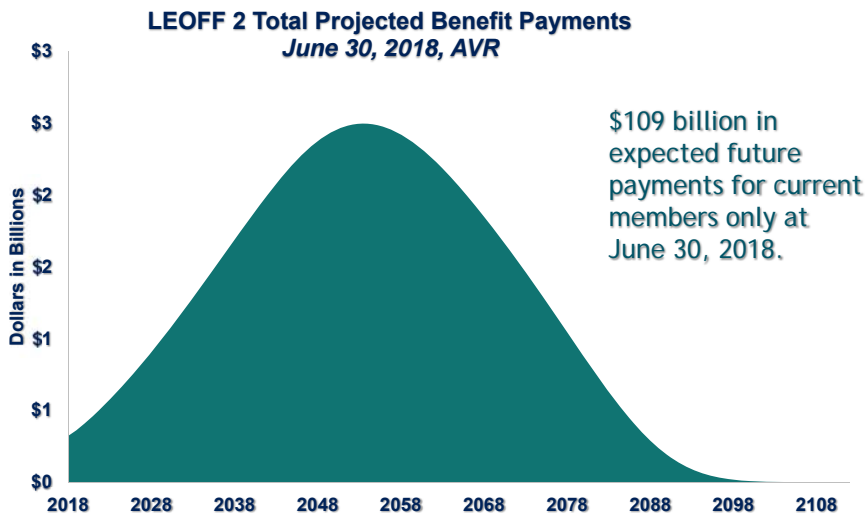
1

## Economic Assumptions: Purpose And Measurement Period

- Before we dive in, let's first clarify two things
- Purpose of the assumptions
  - Assumptions are set consistent with the purpose of the measurement
  - Used to determine the on-going funding requirements of the plans consistent with the state's funding policy in [Chapter 41.45 RCW](#)
- Measurement (or forecasting) period
  - Varies by assumption, but most are long-term assumptions
- Have a different measurement or period in mind? Use different assumptions!

O:\SCPP\2019\09.17-FullState.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

## We're Setting Economic Assumptions To Fund This...



O:\SCPP\2019\09.17-FullState.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

## What Are The Assumptions In This Study?

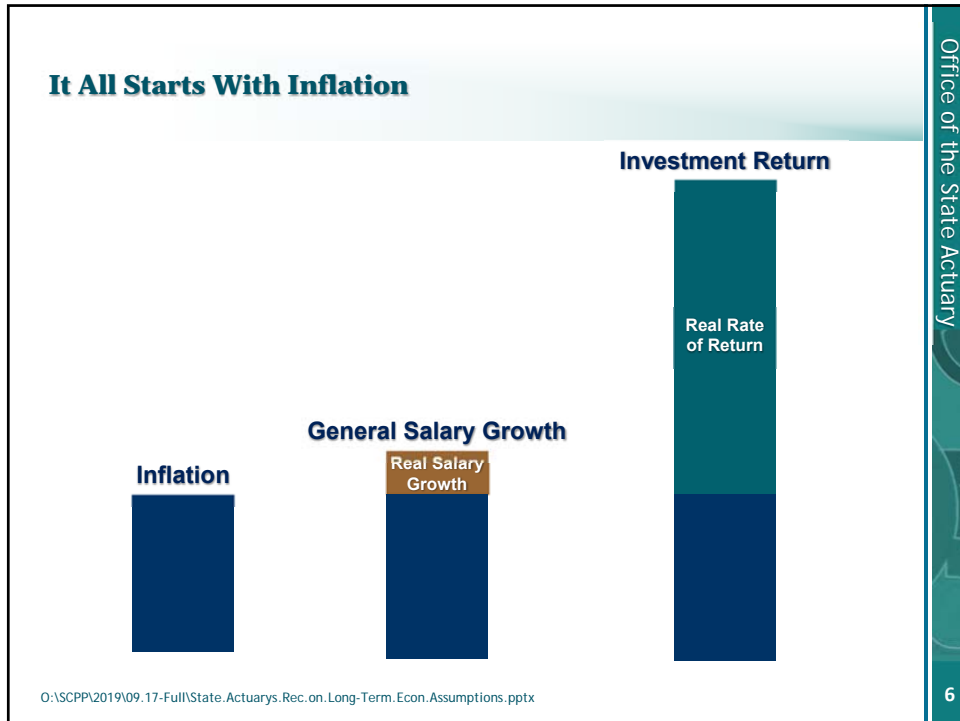
Assumption	Use of Assumption
<b>Inflation</b>	Model post-retirement COLAs based on changes in Consumer Price Index (CPI) for Seattle, Tacoma, Bellevue Building block for other assumptions
<b>General Salary Growth</b>	Project salaries to determine future retirement benefits and contribution rates as a percentage of payroll
<b>Investment Return</b>	Determine today's value of future benefit payments and salaries

O:\SCPP\2019\09.17-Full\State.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

## Wait, One More Thing!

- We developed these assumptions as a consistent set of economic assumptions and recommend reviewing them as a set of assumptions
- No cherry picking please!

O:\SCPP\2019\09.17-Full\State.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx



### Inflation (1 Of 3)

**Historical Data**

Inflation has remained low for the past few decades. Inflation in Seattle-Tacoma-Bellevue (STB) has consistently outpaced national inflation.

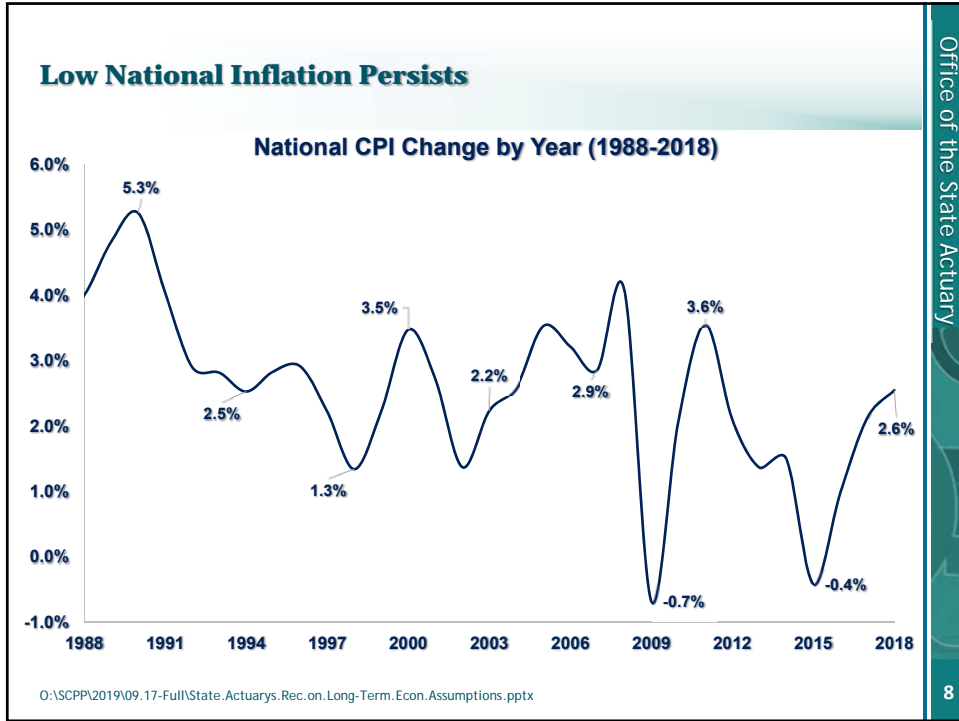
**Forecasts**

Short-term national inflation forecasts remain low. Long-term forecasts typically higher due to uncertainty over longer forecasting period.

**Recommendation**

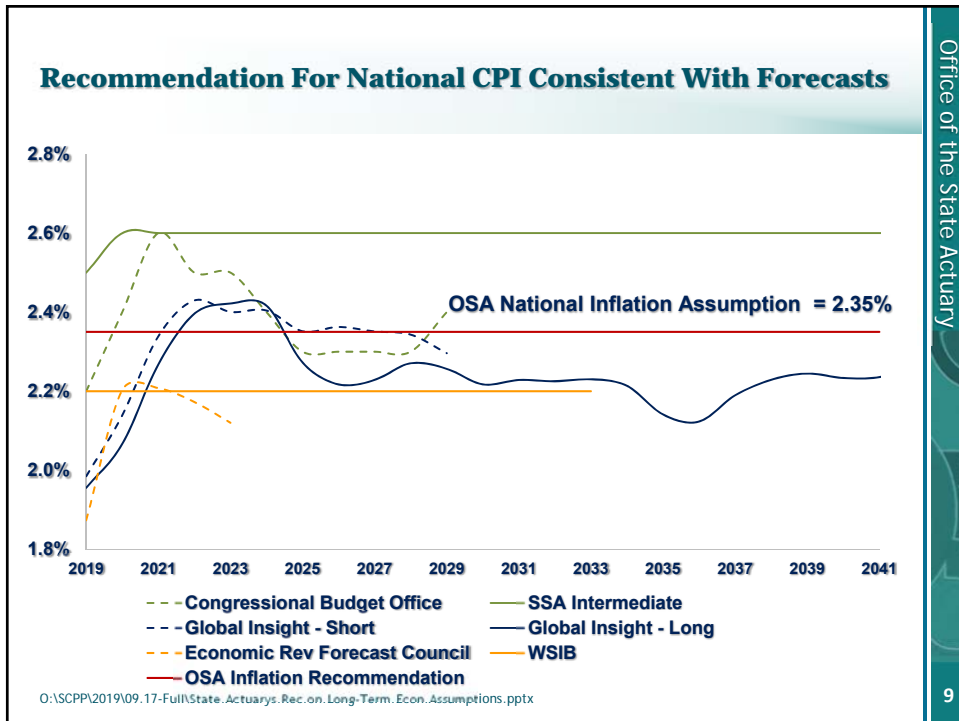
No change to total inflation assumption of 2.75%.  
 $2.75\% = 2.35\% \text{ (national)} + 0.40\% \text{ (regional adjustment)}$ .  
 Decrease to national component; increase to regional adjustment since last study.

O:\SCPP\2019\09.17-Full\State.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx



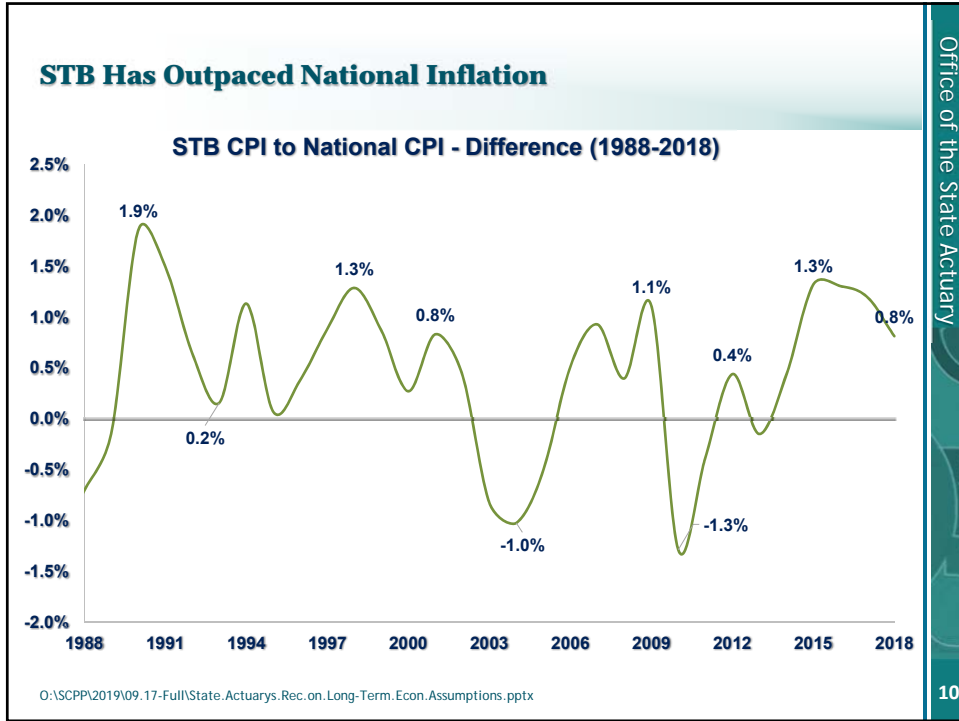
Office of the State Actuary

8



Office of the State Actuary

9



### Real Salary Growth – Salary Growth Above Inflation (2 Of 3)

**Historical Data**

Consistent with current assumption after considering impact of outliers.  
We isolated economic growth factors in Plan 2/3 data.

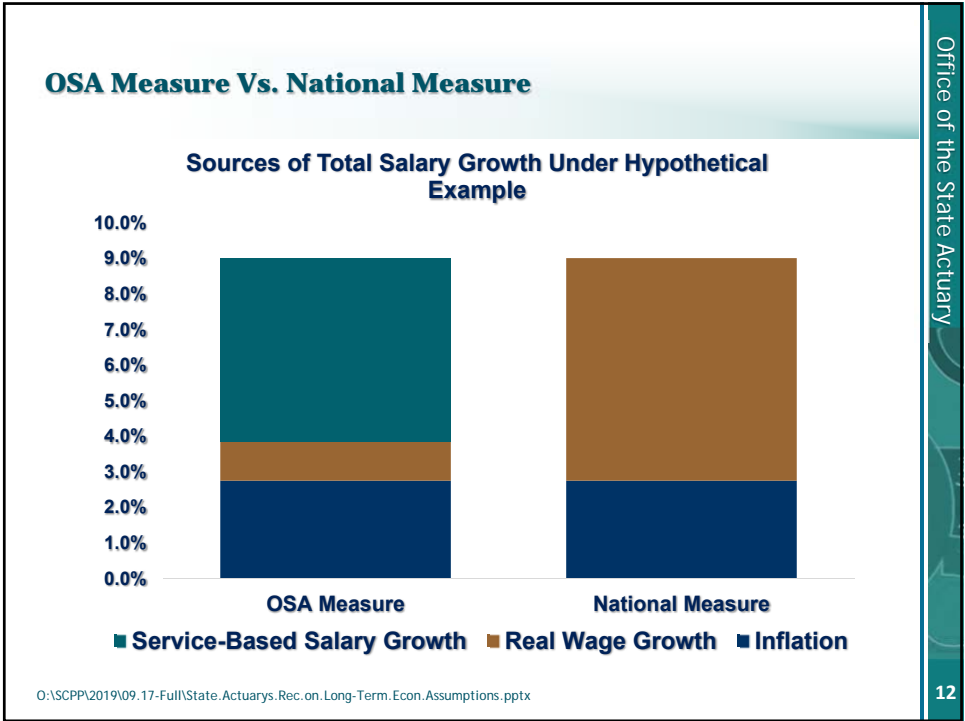
**Forecasts**

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.

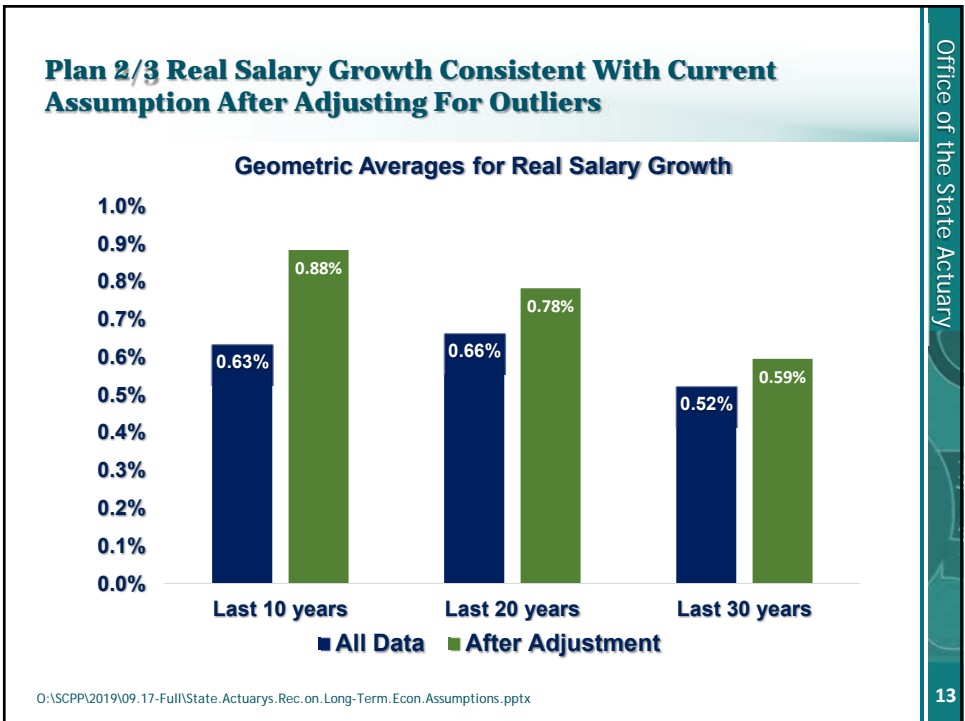
**Recommendation**

No change to real salary growth assumption.  
No change to general salary growth assumption.  
 $3.50\% = 2.75\% \text{ (inflation)} + 0.75\% \text{ (real wage growth)}$ .

O:\SCPPP\2019\09.17-Full\State.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx



Office of the State Actuary



Office of the State Actuary

### Investment Return (3 Of 3)

**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.

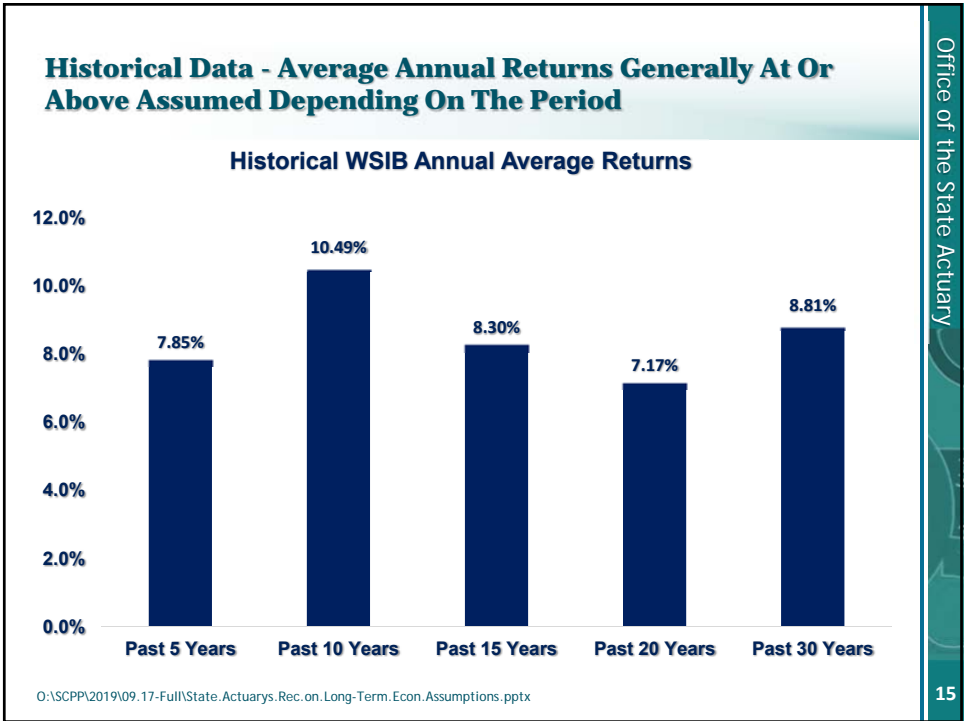
**Recommendation**

No change to current assumption of 7.40%.  
 $7.40\% = 2.35\% \text{ (national inflation)} + 5.05\% \text{ (real ROR)}$ .

O:\SCPP\2019\09.17-Full\State.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

Office of the State Actuary

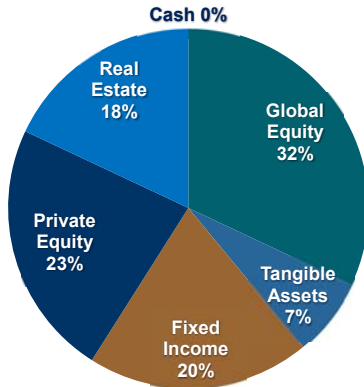
14





### Asset Allocation Matters

#### Target Asset Allocation



- Public pension plans don't all invest the same way and most invest in private market investments
- WSIB invests a higher allocation to private market investments than peers
- This higher allocation typically leads to higher returns and higher standard deviation of returns

O:\SCPP\2019\09.17-FullState.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

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

2017 and 2019 Simulated Future Investment Returns*			
	2019	2017	Difference
<b>Median Return</b>	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

O:\SCPP\2019\09.17-FullState.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

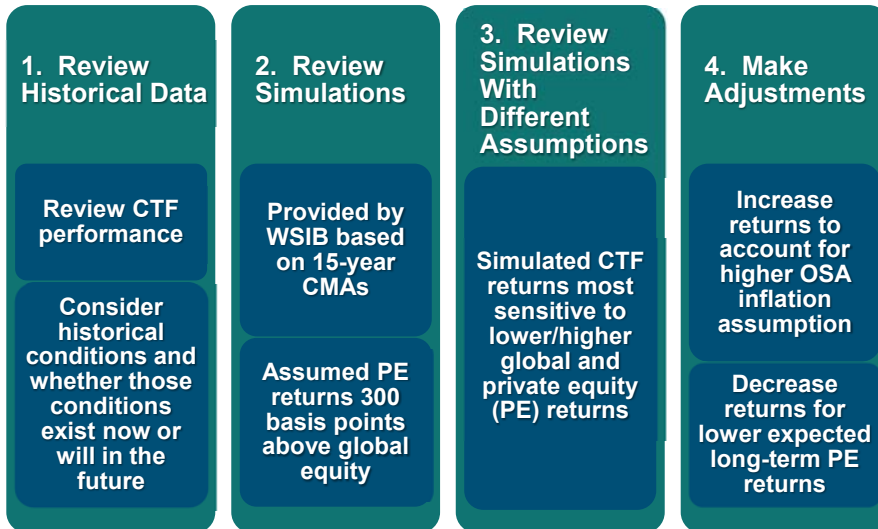
### Simulated Returns Change With Different Assumptions

25-Year Estimated Median Return					
		Private Equity Expected Return		Global Equity Expected Return	
WSIB Simulated Return		-1%	+1%	-1%	1%
Median Return	7.36%	7.1%	7.6%	7.0%	7.7%

- Private and global equity represent the two largest asset classes
  - 23% private equity and 32% global equity target allocations
- Private equity investments include securities that are not listed on a public exchange and are not easily accessible to most individuals
  - These investments range from initial capital in start-up enterprises to leveraged buyouts of mature corporations
- Global equity investments represent shares of U.S. and non-U.S. corporations that trade on public exchanges or “over-the-counter”

O:\SCPP\2019\09.17-Full\State.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

### Landing On The Return Recommendation



O:\SCPP\2019\09.17-Full\State.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

## Wait... Tell Me More About Those Adjustments

**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.

O:\SCPP\2019\09.17-Full\State.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

Office of the State Actuary

20

## 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%

O:\SCPP\2019\09.17-Full\State.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

Office of the State Actuary

21

## 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	7.40%	7.40%

- We developed these assumptions as a consistent set of economic assumptions and recommend reviewing them as a set of assumptions
- All current assumptions match recommendations developed in this study

O:\SCPPP\2019\09.17-Full\State.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

## Other States' Economic Assumptions

- Analysis included in the **Appendix** of this presentation
- Systems continue to lower return assumptions
- According to NASRAs latest *Public Fund Survey*, the median return assumption was 7.25%

O:\SCPPP\2019\09.17-Full\State.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

## Questions?



O:\SCPP\2019\09.17-FullState.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

## Appendix

- Estimated 2021-23 contribution rate impacts
- Other states' economic assumptions



O:\SCPP\2019\09.17-FullState.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

## Other States' Economic Assumptions

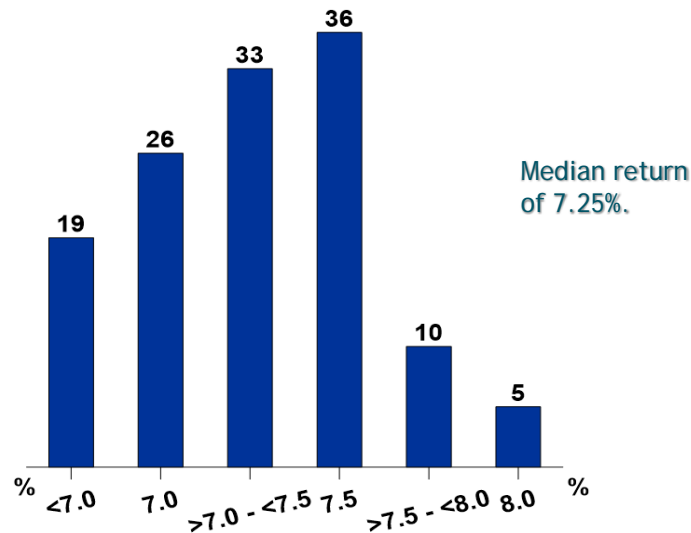
Economic Assumptions for Selected Plans Outside Washington <sup>1</sup>				
Plan Name <sup>2</sup>	Investment Return	General Salary Growth	Real Salary Growth	Inflation
<b>WA 2019 Economic Experience Study Recommendation</b>	<b>7.40</b>	<b>3.50</b>	<b>0.75</b>	<b>2.75</b>
Alaska PERS	8.00	3.62	0.50	3.12
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
<b>Selected Public Plans Outside WA - Average</b>	<b>7.26</b>	<b>3.33</b>	<b>0.64</b>	<b>2.69</b>
<b>Selected Public Plans Outside WA - Minimum</b>	<b>7.00</b>	<b>2.75</b>	<b>0.25</b>	<b>2.40</b>
<b>Selected Public Plans Outside WA - Maximum</b>	<b>8.00</b>	<b>3.75</b>	<b>1.10</b>	<b>3.12</b>

<sup>1</sup> 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.

<sup>2</sup> For comparison to our economic assumptions, we assumed Real Salary Growth was the difference between General Salary Growth and Inflation.

O:\SCPP\2019\09.17-Full\State.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx

## Distribution Of Return Assumptions



Source:  
NASRA 2019  
Public Fund  
Survey.

O:\SCPP\2019\09.17-Full\State.Actuaries.Rec.on.Long-Term.Econ.Assumptions.pptx