

**Fresno County Employees'
Retirement Association**

Results of the June 30, 2016 Actuarial Valuation

March 23, 2017

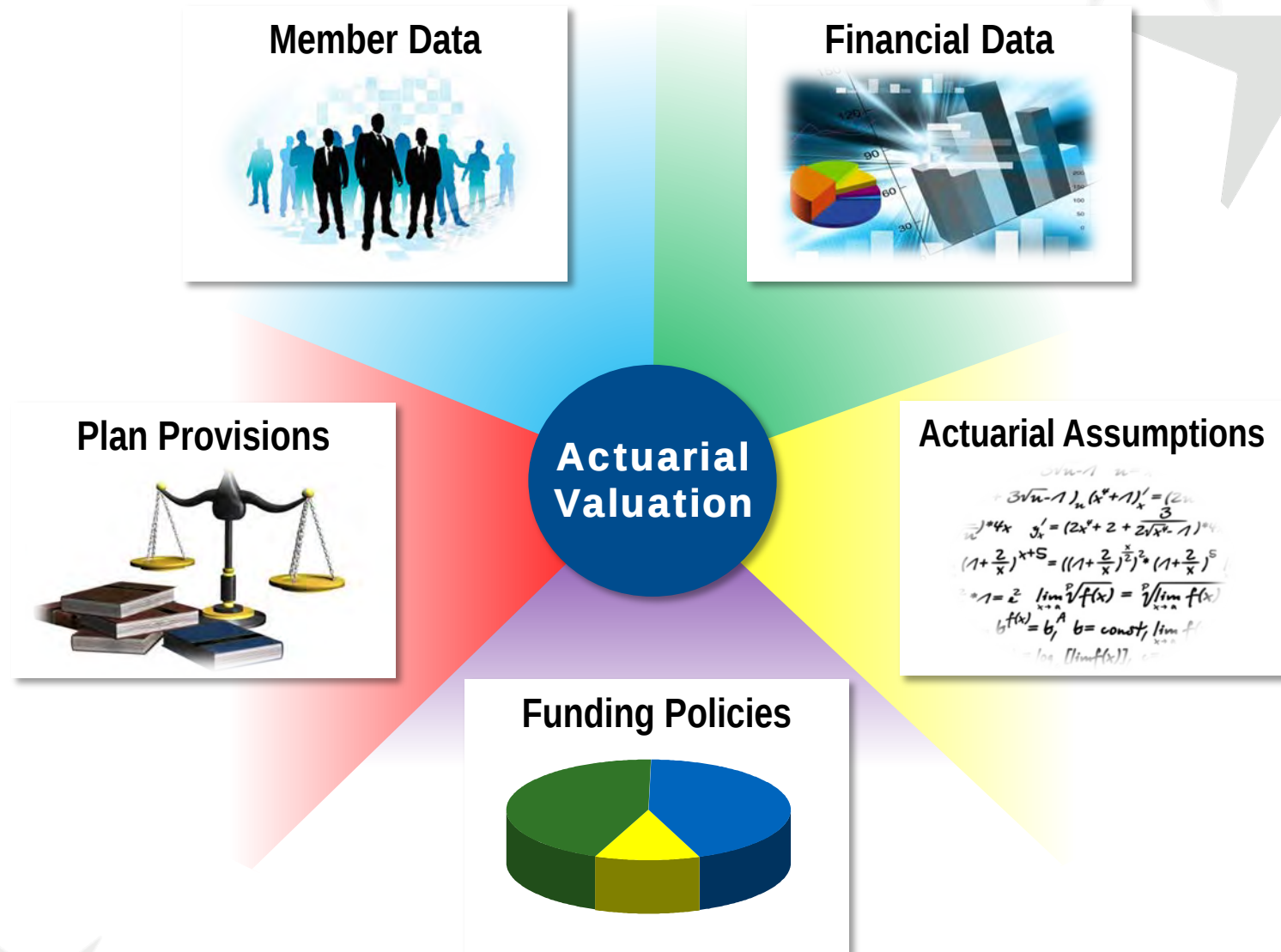
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Purpose of the Actuarial Valuation

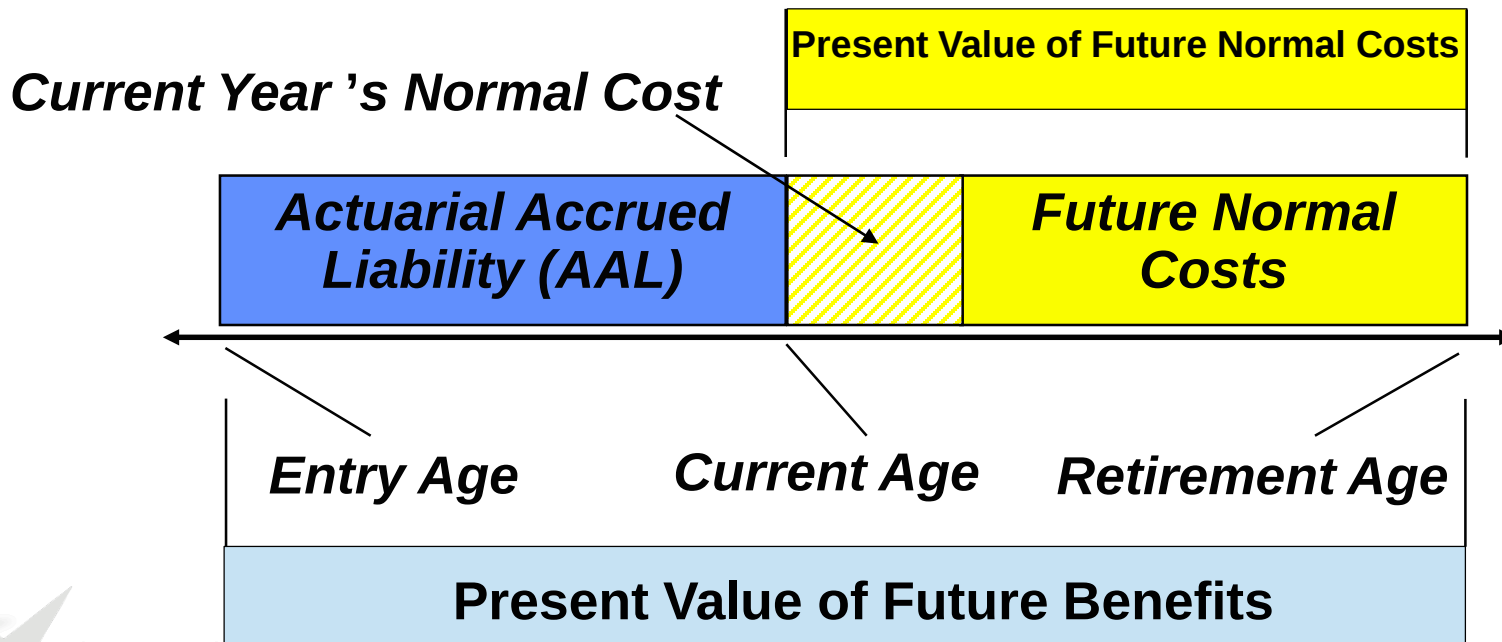
- Summarizes the actuarial data used in the valuation
- Analyzes the preceding year's experience
- Determines the funded status as of the end of a fiscal year, in this case June 30, 2016
- Establishes funding requirements for the following fiscal year, in this case FY 2017/2018

What goes into an Actuarial Valuation?



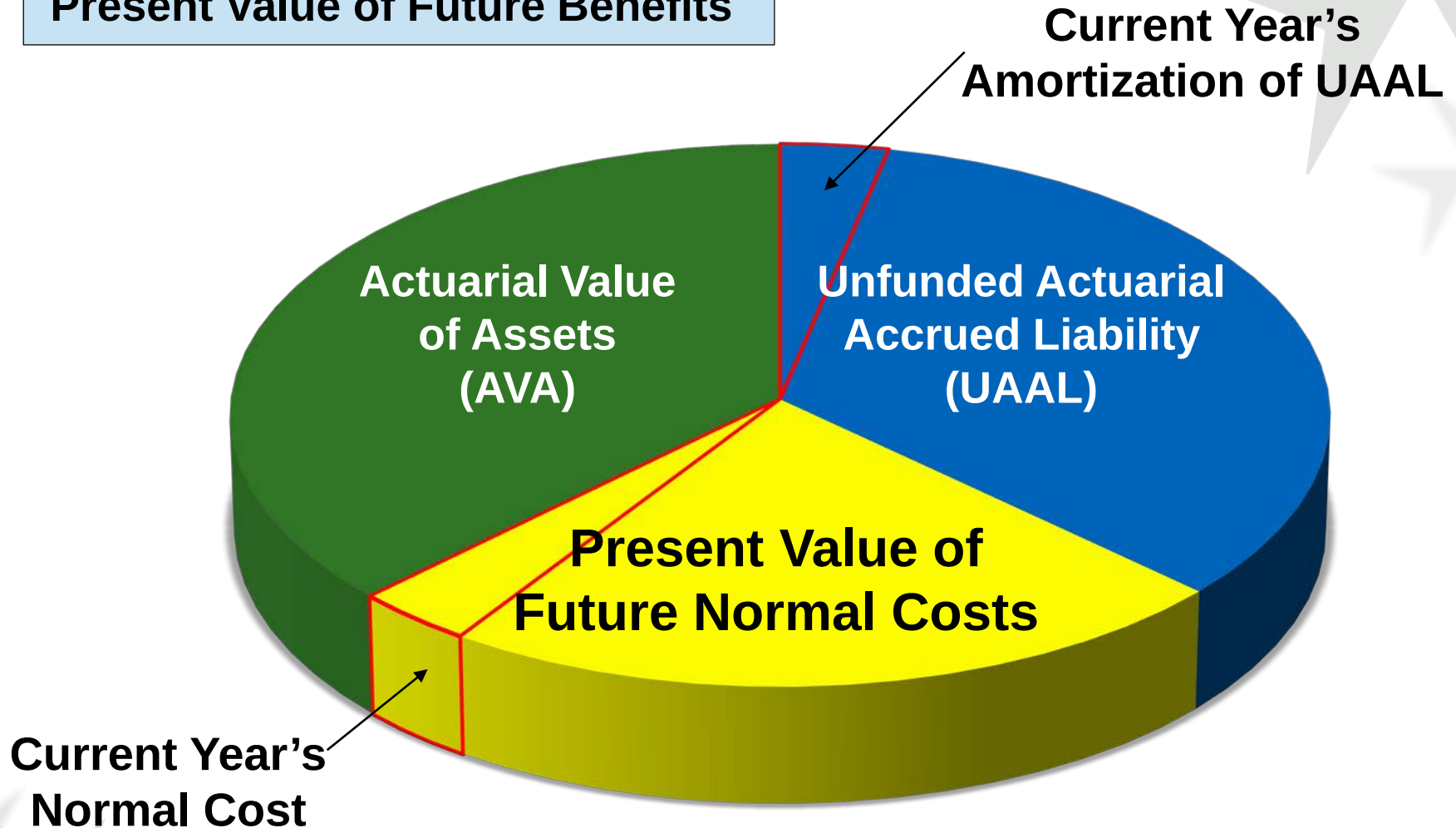
Funding Retirement Benefits—Cost Elements

- **The Normal Cost is the portion of the long term cost allocated to a year of service**—only active members have a current year Normal Cost
- **The Actuarial Accrued Liability (AAL) measures the Normal Costs from past years**—for retired members, the AAL is the entire present value of their benefit



Funding Retirement Benefits—Cost Elements

Present Value of Future Benefits



Current Funding Policy

- **Last updated by the Board in 2014**
- **Actuarial cost method:** Allocates costs to time periods, past vs. future
 - Entry Age method
 - Most stable contribution rate as a percent of payroll
- **Asset smoothing method:** Assigns a value to assets for determining contribution requirements
 - Five-year smoothing: Market value gains and losses recognized over 10 six-month interest crediting periods
 - 30% “market value corridor” means smoothed value must be between 70% and 130% of market value
 - Association is currently deferring a \$268.7M loss (versus a deferred \$61.3M loss last year)
 - Deferred losses will be recognized (i.e., included in the UAAL) over the next five valuations

Current Funding Policy (continued)

- **UAAL amortization policy:** How, and how long to fund difference between liabilities and assets
 - UAAL from June 30, 2003 valuation is being funded over a declining period with 17 years remaining as of June 30, 2016
 - Changes in UAAL after June 30, 2003 due to actuarial gains/losses or changes in assumptions/methods are amortized over separate decreasing 15-year periods – “layered” amortization
 - Amortization schedule in actuarial report shows outstanding balance, remaining period and current payment for each UAAL amortization layer

Current Funding Policy (continued)

➤ Amortization Schedule:

Total	Source	Initial Amount	Outstanding Balance	Years Remaining	Payment
June 30, 2003	Restart Amortization ⁽¹⁾	N/A ⁽²⁾	\$249,927,657	17	\$19,636,316
June 30, 2004	Actuarial Loss/POB Proceeds ⁽³⁾	N/A ⁽²⁾	(47,027,647)	3	(16,803,966)
June 30, 2005	Actuarial Loss	\$196,901,281	96,323,331	4	26,238,188
June 30, 2006	Actuarial Loss	125,646,782	72,516,613	5	16,060,907
June 30, 2006	Plan Provision Change	333,000	378,967	20	26,468
June 30, 2007	Actuarial Loss	21,825,461	14,323,923	6	2,686,681
June 30, 2007	Assumption Change	108,905,000	71,473,709	6	13,406,038
June 30, 2008	Actuarial Loss	79,070,820	57,176,908	7	9,340,876
June 30, 2009	Actuarial Loss	158,438,069	123,670,544	8	17,962,406
June 30, 2010	Actuarial Loss	52,949,672	43,922,198	9	5,761,187
June 30, 2010	Assumption Change	269,946,000	223,922,479	9	29,371,463
June 30, 2011	Actuarial Loss	29,526,959	25,734,684	10	3,086,258
June 30, 2012	Actuarial Gain	(62,323,352)	(56,508,060)	11	(6,257,986)
June 30, 2013	Actuarial Gain	(96,548,872)	(90,324,937)	12	(9,313,313)
June 30, 2013	Assumption Change	252,161,000	235,905,436	12	24,323,972
June 30, 2014	Actuarial Gain	(65,995,284)	(63,480,291)	13	(6,136,196)
June 30, 2015	Actuarial Gain	(23,583,538)	(23,187,984)	14	(2,113,584)
June 30, 2016	Actuarial Loss	25,694,470	25,694,470	15	2,219,617
June 30, 2016	Assumption Change	233,706,000 ⁽⁴⁾	<u>233,706,000</u>	15	<u>20,188,692</u>
	Total		\$1,194,148,000		\$149,684,024

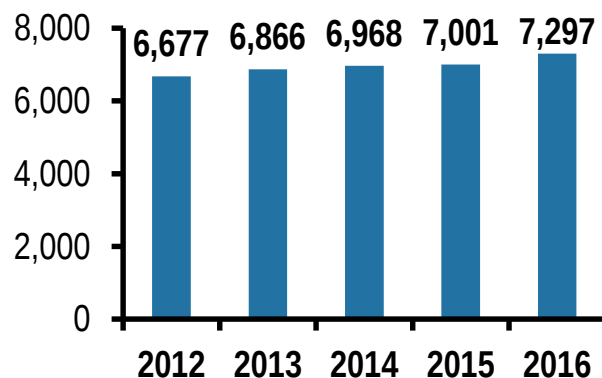
⁽¹⁾ The outstanding balance includes the full Section 8 UAAL and Section 9 UAAL. This also includes \$7,066,000 for the full Section 8 UAAL and the full Section 9 UAAL due to change in actuarial assumption as of June 30, 2016.

⁽²⁾ The initial amounts are only available for periods based on prior audit and valuation results reviewed or prepared by Segal.

⁽³⁾ It appears that the proceeds from the Pension Obligation Bonds issued by the County were used to offset the actuarial losses in the June 30, 2004 valuation.

⁽⁴⁾ This amount together with the \$7,066,000 in footnote 1 equals to \$240,772,000, which is the total UAAL due to change in actuarial assumptions as shown on page 47.

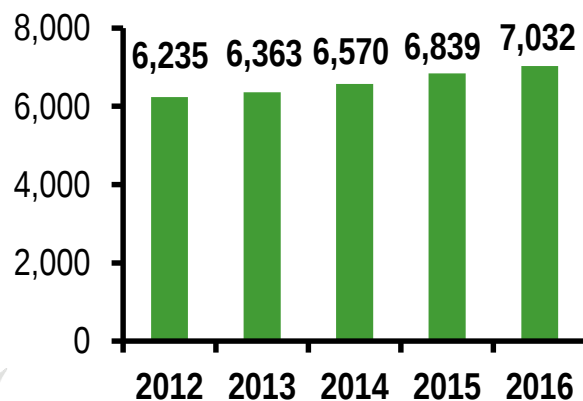
Membership Demographics (as of June 30)



Active Members

- Average Age
- Average Service
- Average Compensation

	2016	2015
	7,297	7,001
• Average Age	43.2	43.5
• Average Service	10.5	10.9
• Average Compensation	\$55,164	\$54,817



Retired Members and Beneficiaries

- Average Age
- Average Annual Benefit

	2016	2015
	7,032	6,839
• Average Age	69.2	68.9
• Average Annual Benefit	\$34,261	\$33,881

Terminated Vested Members

	2016	2015
	3,289	3,163

Valuation Results (*\$ in thousands*)

	06/30/2016	06/30/2015
Actuarial Accrued Liability (AAL) ⁽¹⁾	\$5,472,149	\$5,074,333
Valuation (Smoothed) Value of Assets (VVA) ⁽²⁾	\$4,278,001	\$4,092,647
Market Value of Assets (MVA) ⁽²⁾	\$4,009,337	\$4,031,390
Funded Percentage on VVA Basis	78.2%	80.7%
Funded Percentage with Recognition of Deferred Losses (i.e., on MVA Basis)	73.3%	79.4%
Unfunded AAL on VVA Basis	\$1,194,148	\$981,686
Unfunded AAL on MVA Basis	\$1,462,812	\$1,042,943

⁽¹⁾ Excludes liabilities for non-vested supplemental benefits.

⁽²⁾ Excludes non-valuation reserves.

Valuation Results (*\$ in thousands*)

	<u>06/30/2016</u>	<u>06/30/2015</u>
Employer Contributions:		
Aggregate General Contribution Rate (% of payroll)	52.61%	47.32%
General Estimated Annual Contribution*	<u>\$176,662</u>	<u>\$158,902</u>
Aggregate Safety Contribution Rate (% of payroll)	77.52%	71.70%
Safety Estimated Annual Contribution*	<u>\$51,723</u>	<u>\$47,838</u>
Aggregate Total Contribution Rate (% of payroll)	56.74%	51.36%
Total Estimated Annual Contribution*	<u>\$228,385</u>	<u>\$206,740</u>

* Based on June 30, 2016 projected annual compensation.

Experience During the Year

- Investment Experience for year ending June 30, 2016
 - Market Value of Assets earned -0.11%, which is less than the assumed rate of return of 7.25%
 - Valuation (smoothed) Value of Assets earned 4.97% (less than 7.25%)
 - Primarily due to the deferral of most of the current year market losses
 - Association is currently deferring a \$268.7M loss (versus a deferred \$61.3M loss last year)
 - Deferred losses will be recognized (i.e., included in the UAAL) over the next five valuations

Experience During the Year (continued)

- Plan funded ratio on Valuation Value of Assets (VVA) basis decreased from 80.7% to 78.2%
 - On a market value of assets basis, funded ratio decreased from 79.4% to 73.3%
- Aggregate employer contribution rate increased from 51.36% to 56.74% of payroll
- If the \$268.7M in deferred losses were recognized immediately:
 - Funded ratio would decrease from 78.2% to 73.3%
 - Aggregate employer contribution rate would increase from 56.74% to about 62.5% of payroll
 - Increase of about \$23.2M based on payroll of \$402.5M as of June 30, 2016

Development of Unfunded Actuarial Accrued Liability

(Amounts in Thousands)

1. Unfunded actuarial accrued liability at beginning of year	\$981,686
2. Total normal cost at middle of year	109,353
3. Expected administrative expenses	4,224
4. Expected employer and member contributions	-235,761
5. Interest	68,180
6. Expected unfunded actuarial accrued liability at end of year	<u>\$927,682</u>
7. Actuarial (gain)/loss due to all changes:	
<u>Experience (gain)/loss</u>	
a. Loss from investment return on valuation value of assets	\$92,984
b. Loss from actual contributions less than expected	9,341
c. Gain from lower than expected salary increases	-8,130
d. Gain from lower than expected COLA increases	-72,001
e. Other experience	3,500
f. Subtotal	<u>\$25,694</u>
<u>Other changes</u>	
g. Change in actuarial assumptions	<u>\$240,772</u>
h. Subtotal	<u>\$240,772</u>
7. Unfunded actuarial accrued liability at end of year	<u>\$1,194,148</u>

Change in Aggregate Employer Contribution Rates

	Contribution Rate (% of pay)	Estimated Annual Dollar Cost ⁽¹⁾ (\$000)
Aggregate Employer Contribution Rate as of June 30, 2015	51.36%	\$206,740
Effect of investment loss on valuation value of assets	2.00%	8,051
Effect of difference between actual and expected contributions	0.20%	805
Effect of salary increases less than expected during 2015/2016	-0.17%	-684
Effect of decrease in UAAL rate due to higher than expected increase in total payroll	-0.38%	-1,530
Effect of COLA increases less than expected	-1.55%	-6,239
Effect of change in explicit administrative expense load	0.01%	40
Effect of changes in actuarial assumptions	5.52%	22,220
Effect of other experience gains	<u>-0.25%</u>	<u>-1,018</u>
Total Change	5.38%	\$21,645
Aggregate Employer Contribution Rate as of June 30, 2016	56.74%	\$228,385

⁽¹⁾ Based on June 30, 2016 projected compensation.

Experience Analysis

- Changing assumptions reflects a revised estimate of future experience
 - Greater effect on current contribution requirements than waiting to recognize future gains or losses as they occur
 - Produces more stable contribution rates going forward
- Two kinds of actuarial assumptions: demographic and economic
 - Objective, long-term
 - Based on triennial experience analysis
 - Consistency among assumptions, especially economic
- Recent experience and/or future expectations
 - Demographic assumptions: recent experience
 - Economic assumptions: more forward looking and macroeconomic

Experience Analysis (continued)

➤ Client specific or not

- For Segal and FCERA, all assumptions are client specific except for price inflation

➤ Desired long-term cost pattern

- Good assumptions produce level costs, equity among different generations of tax payers
- Beware of “results based” assumption setting

Role of Assumptions and Methods

$$\mathbf{C + I = B + E}$$

**Contributions + Interest Income
equals**

Benefit Payments + Expenses

- Actuarial valuation determines the current or “measured” cost, not the ultimate cost
- Assumptions and funding methods affect only the timing of costs
- Good assumptions produce level costs

Results of Recent Experience Analysis

- Three year period July 2012 – June 2015 for demographic data
- Two most significant assumption changes
 - Investment return reduced from 7.25% to 7.00%
 - Inflation component reduced from 3.25% to 3.00%
 - Mortality table changed to reflect longer life expectancies
 - Increased margin for future mortality improvement
- Impact of all adopted assumption changes on 2016 valuation
 - Increase in Actuarial Accrued Liability: +\$240.8M
 - Total increase in average employer rate: +5.52% of payroll
 - Total increase in average member rate: +0.32% of payroll

Phase-in of Impact on Employer Contribution Rates

- Three year phase-in of the cost impact of all changes in actuarial assumptions (employer rates only)

2016/2017 Employer Contribution Rate (Aggregate)	51.36%
2017/2018 Employer Contribution Rate <u>before</u> Changes in Actuarial Assumptions	51.22%
2017/2018 Employer Contribution Rate <u>after</u> Changes in Actuarial Assumptions (Without Phase-in)	56.74%
Phase-in of Cost Impact of All Changes in Actuarial Assumptions	
2017/2018 Employer Contribution Rate after Changes in Actuarial Assumptions (First Year of a Three Year Phase-in)	53.05%

Three Year Phase-in of Rate Increases		
Fiscal Year	Without Phase-in	With Three-Year Phase-in
2017/2018	5.52%	1.83%
2018/2019	5.52%	3.99%
2019/2020 and later	5.52%	5.98%

Impact of Assumption Changes on Development of UAAL

- As of June 30, 2006, the UAAL was \$405,536,000
 - This was the first valuation completed by Segal
- As of June 30, 2016, the UAAL was \$1,194,148,000
- 2006 – 2016 increase in UAAL includes \$889,698,000 in increases due to assumption changes
 - \$108,905,000 increase in June 30, 2007 valuation
 - Investment return assumption decreased from 8.16% to 8.00%
 - \$281,108,000 increase in June 30, 2010 valuation
 - Investment return assumption decreased from 8.00% to 7.75%
 - \$258,913,000 increase in June 30, 2013 valuation
 - Investment return assumption decreased from 7.75% to 7.25%
 - \$240,772,000 increase in June 30, 2016 valuation
 - Investment return assumption decreased from 7.25% to 7.00%
 - Note these UAAL increases are for all assumption changes

