CalPERS Update and Path Forward

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February 13, 2018

City of San Leandro | City Council Work Session

CalPERS

Facts & Figures

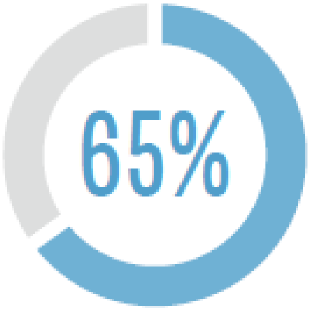
CalPERS Retirement Benefits

State members
578,470 / 31%

Public Agency members
575,138 / 31%

School members
705,946 / 38%

19.8 yrs	Average years of service, all retirees
$2,794	Average monthly allowance, all retirees
$3,120	Average monthly allowance, all new retirees



< $3,000 a month

Percentage of all CalPERS service retirees receiving less than $3,000 a month

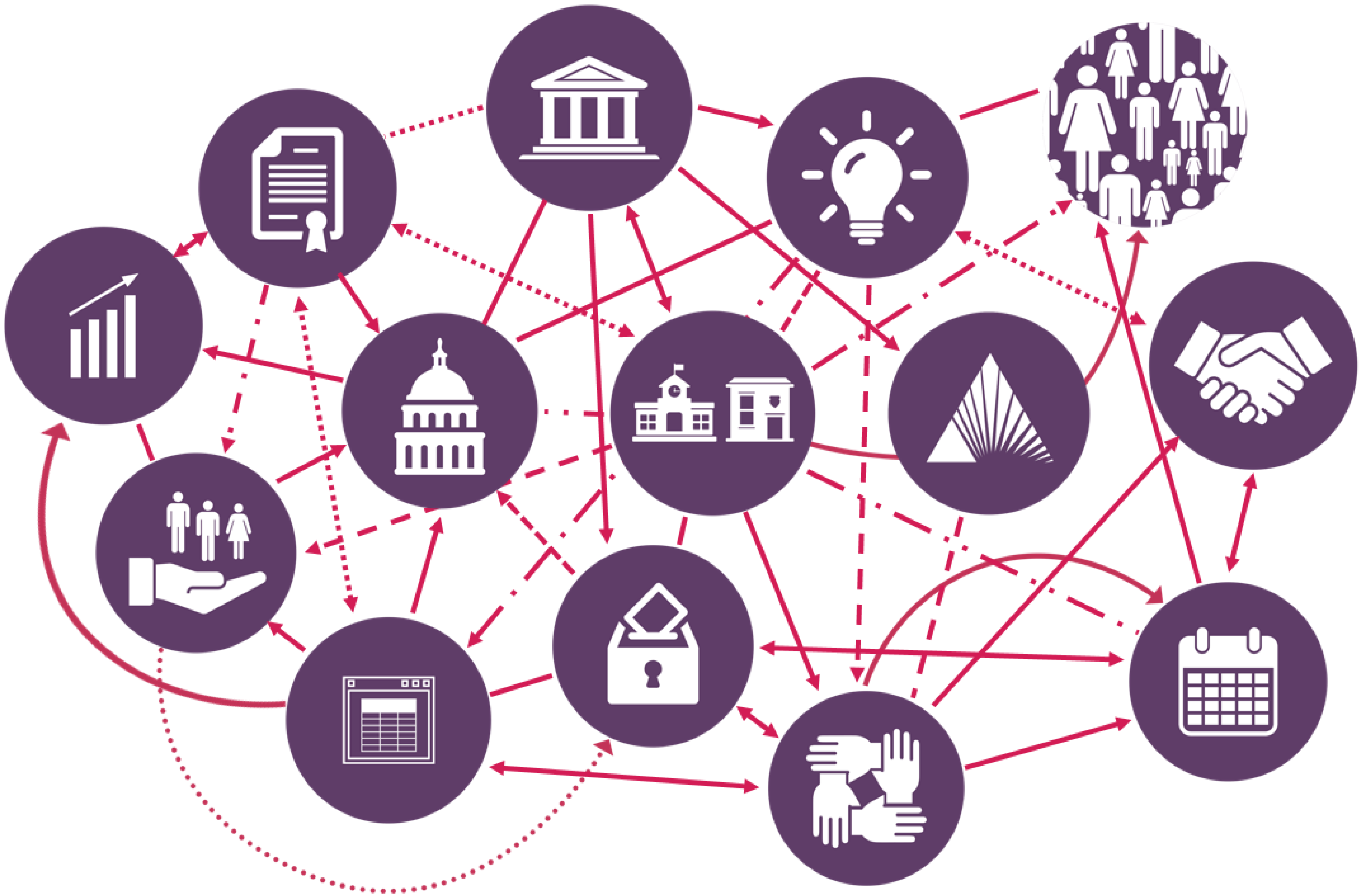
Financial Highlights

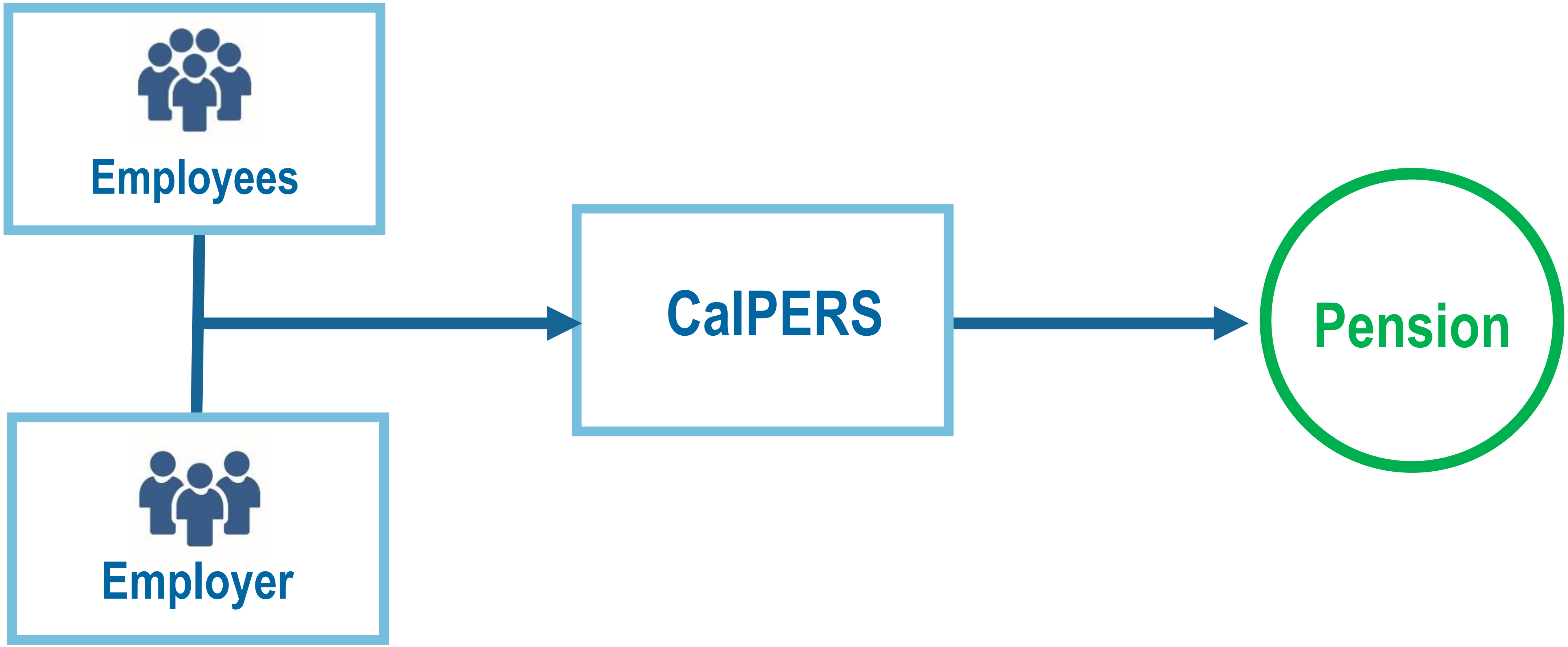
Current Value $360 billion

11.20%	8.83%	4.39%	6.60%	8.40%
2016/17 Portfolio Return	5-yr Annualized Return	10-yr Annualized Return	20-yr Annualized Return	Annualized Return Since 1988

How are CalPERS Retirement Benefits Funded?

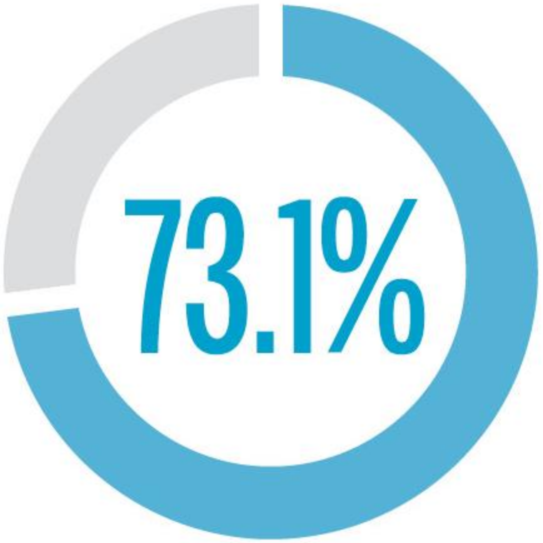
Role Clarity




Employees
Employer
CalPERS
Pension

Past and Present

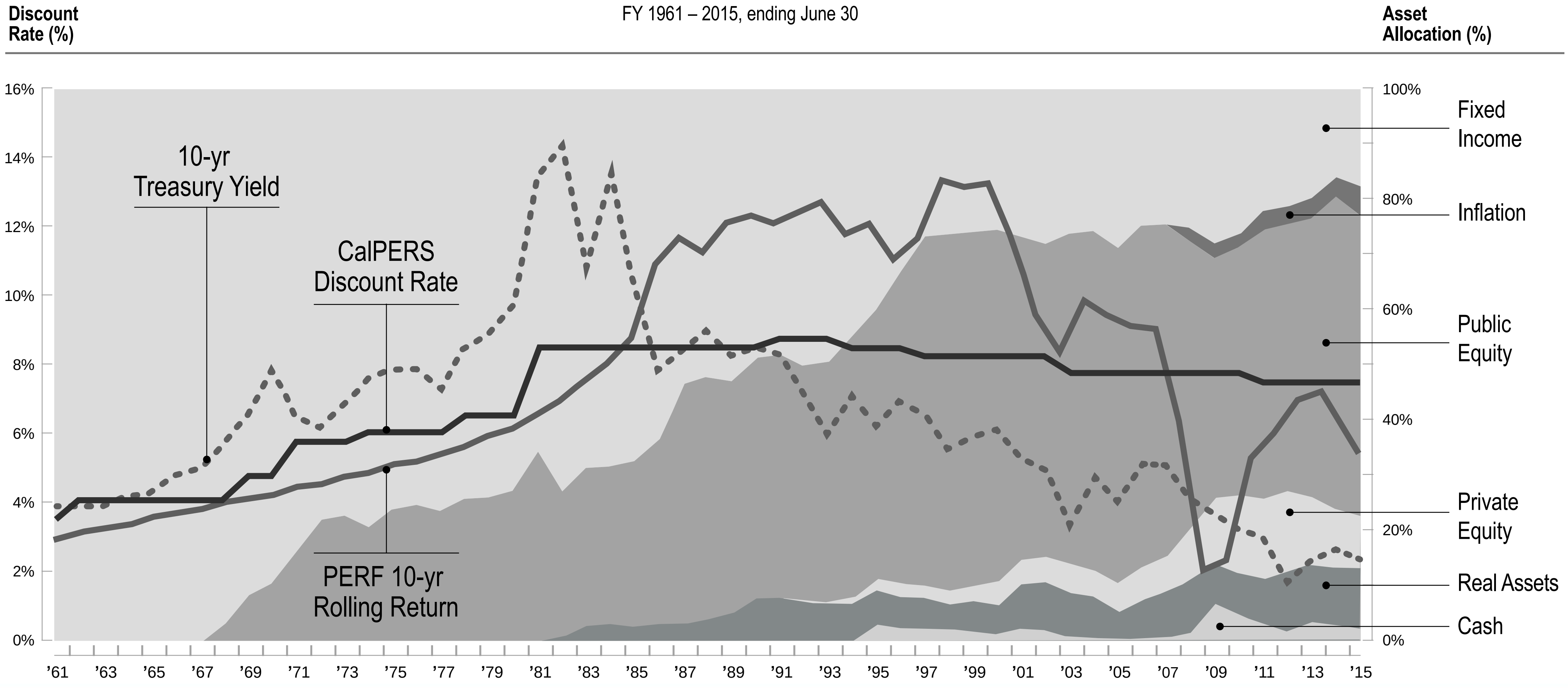
Funded Status



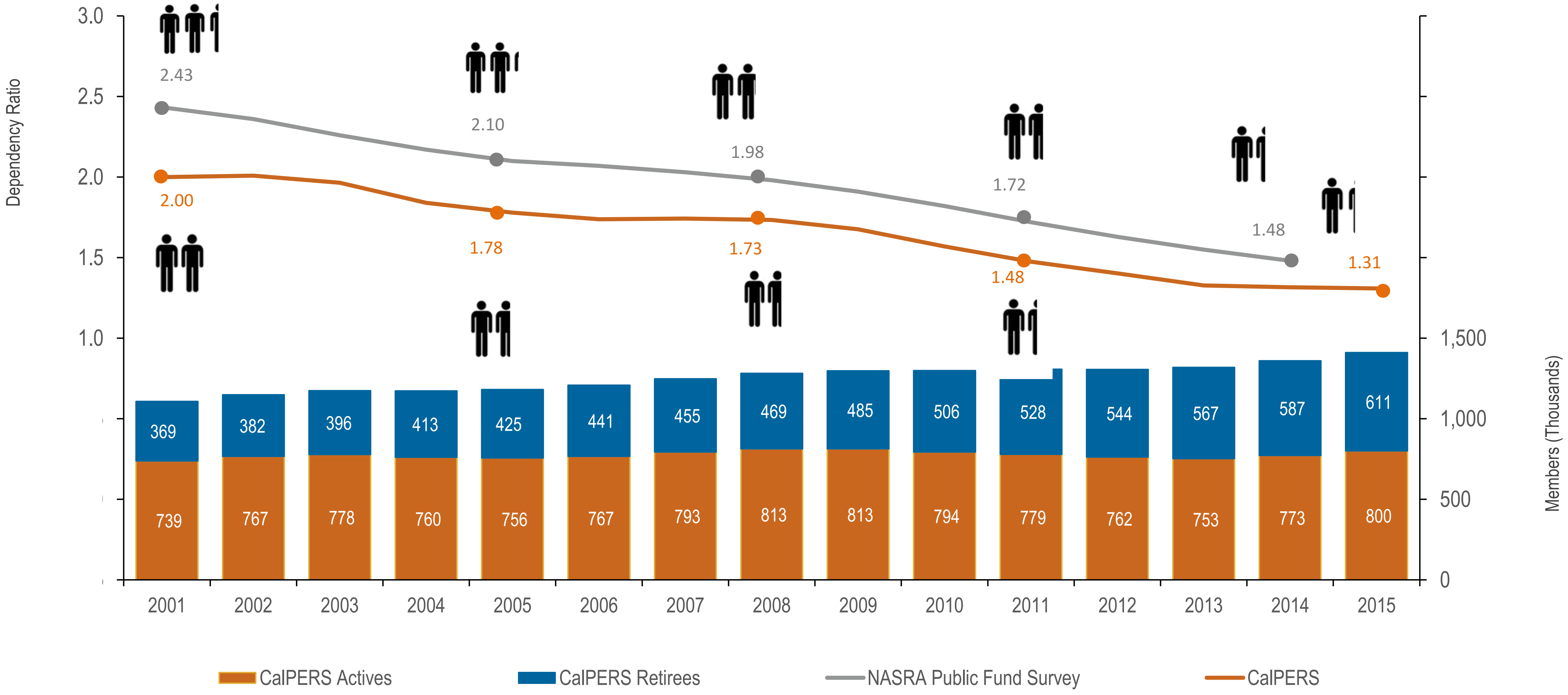
FY 2014-15

FY 2016-17 estimate

CalPERS Historic Asset Allocation

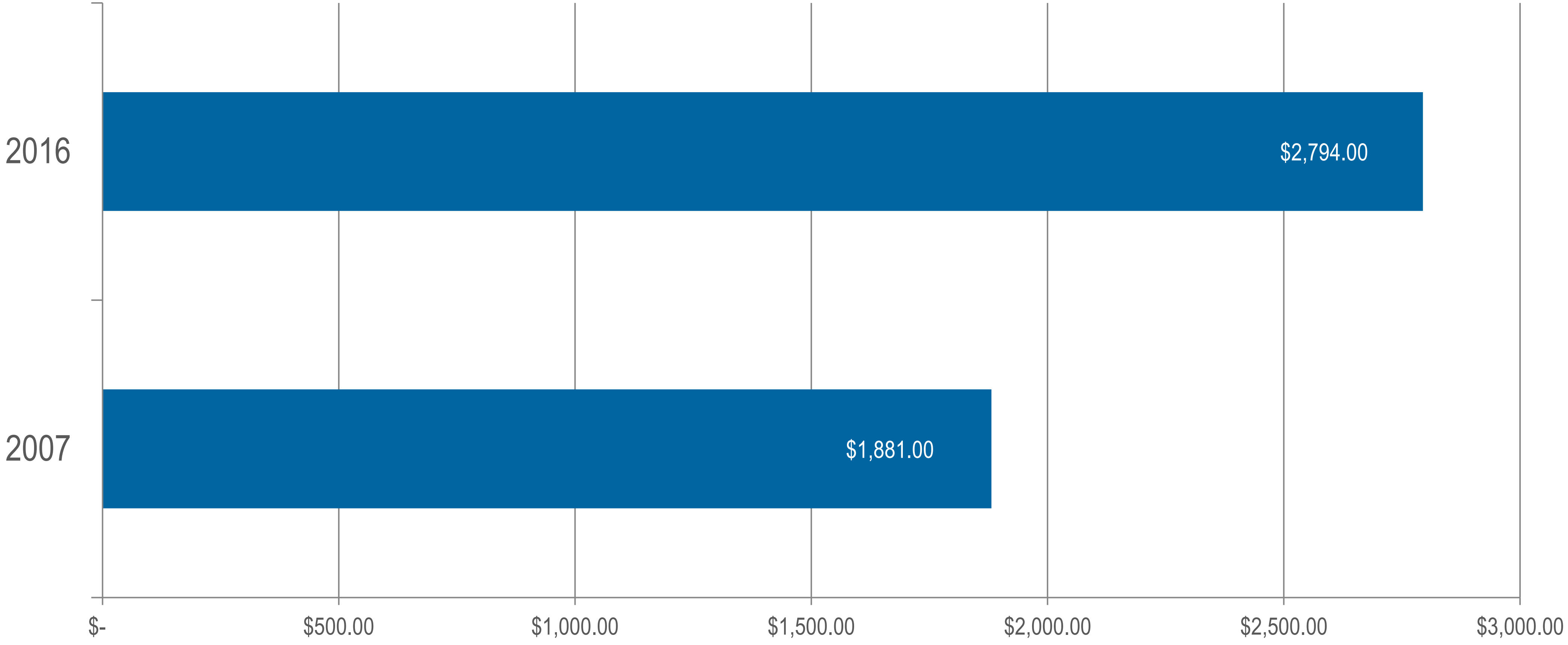


Ratio of Actives to Retirees

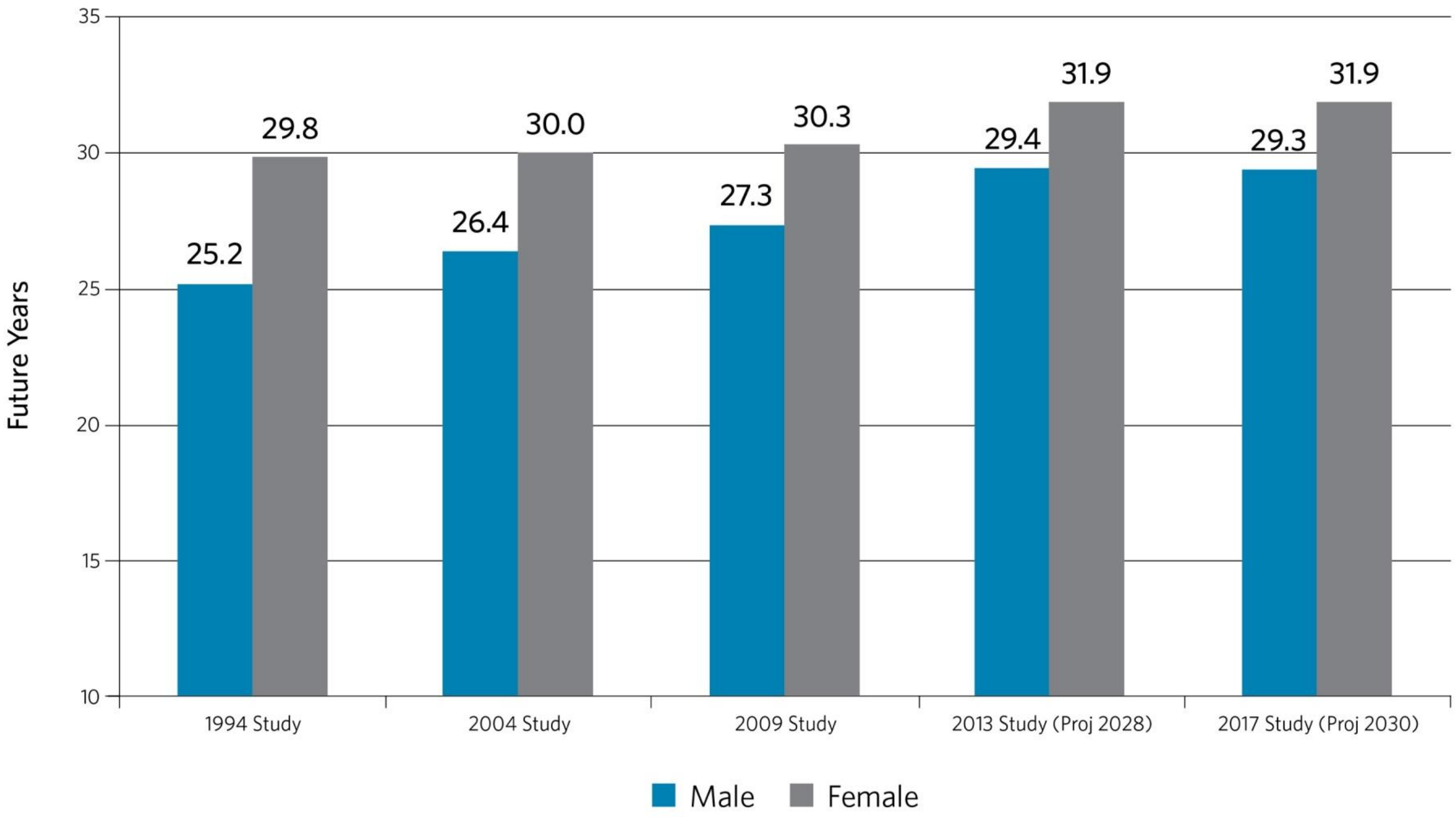


CalPERS

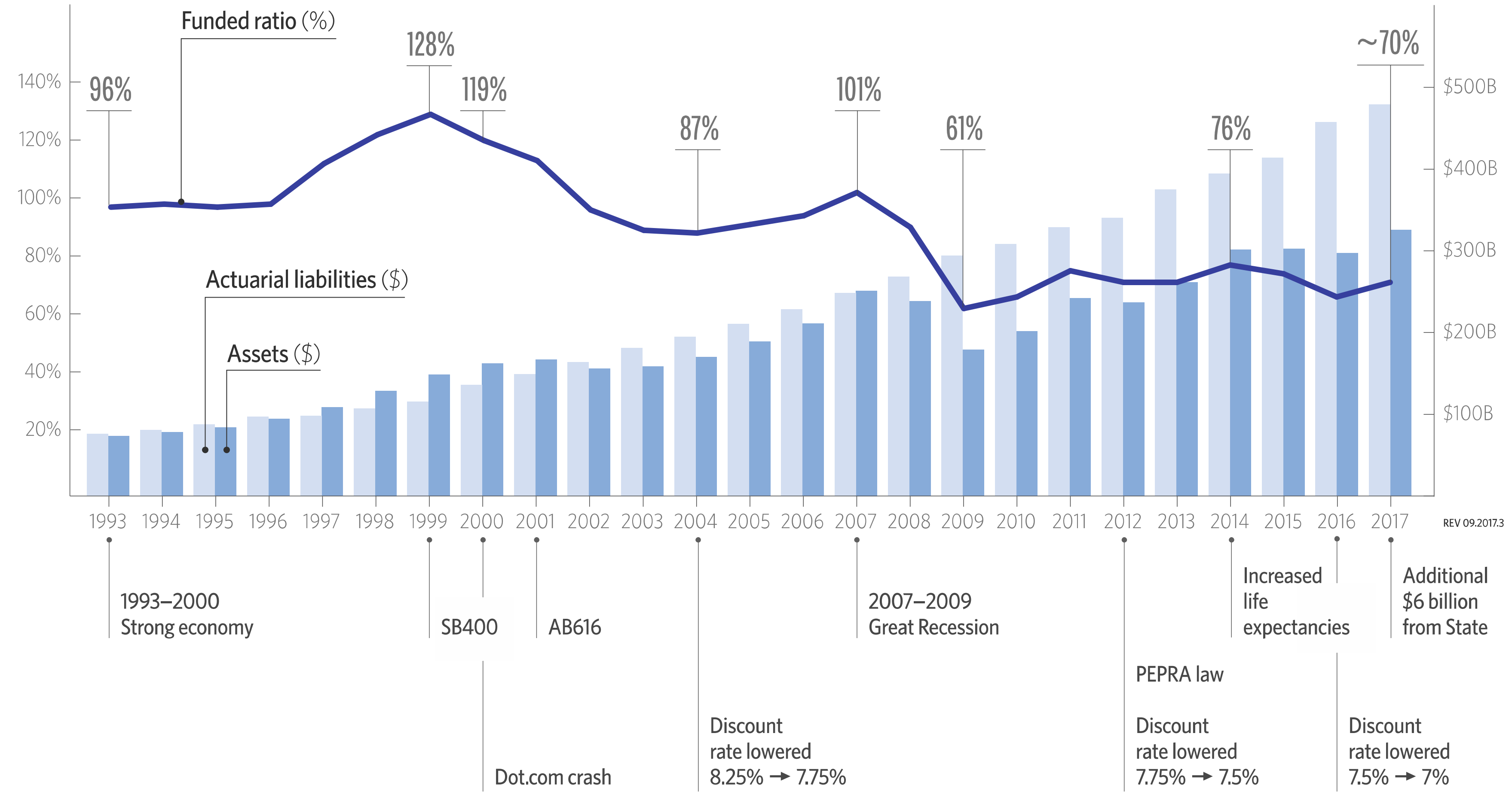
Average Monthly Pension Benefits



Male and Female Life Expectancy at Age 55 for Healthy Recipients



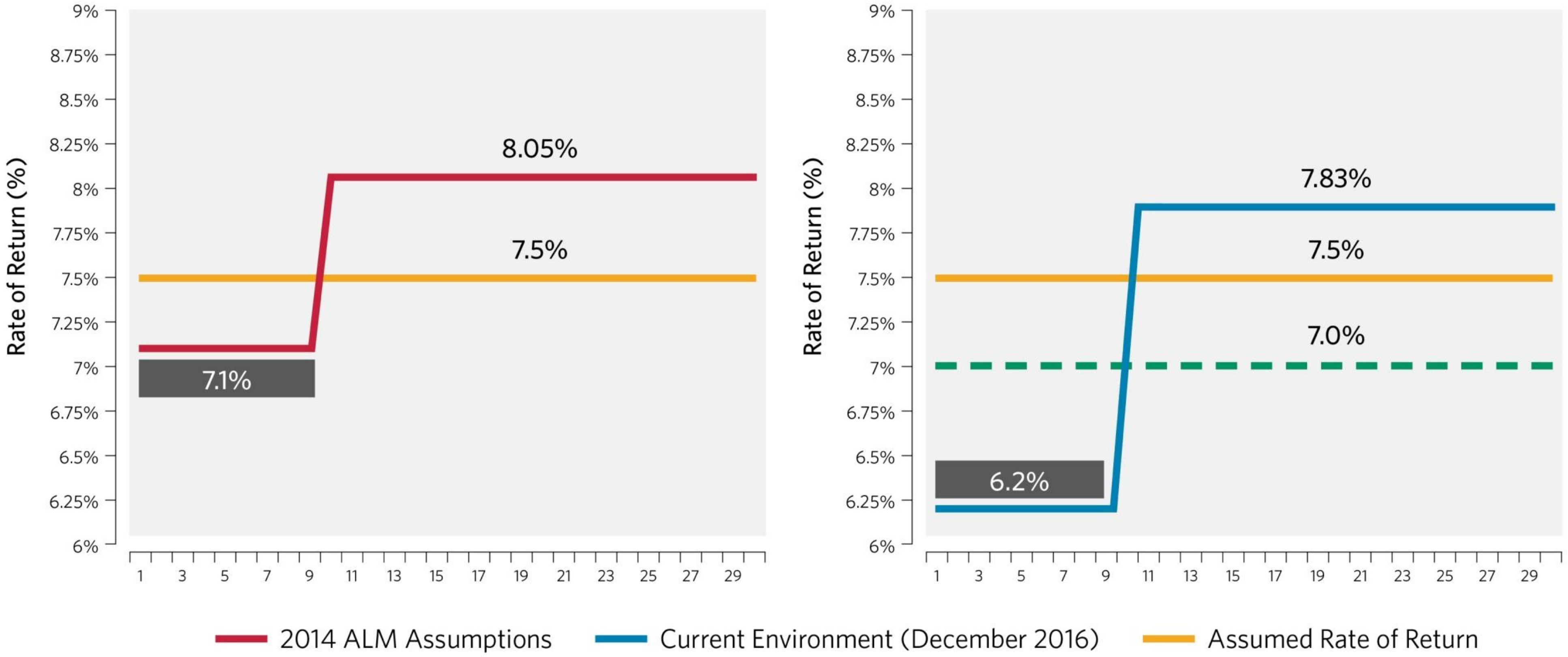
Historical Factors Impact Funded Status (1993-2017)



CalPERS

Future

2014 vs Current Capital Market Assumptions



CalPERS

2017 Capital Market Assumptions by Asset Class

Asset Class	60 Year Projected Returns
Global Equity	8.14%
Private Equity	11.26%
Fixed Income	3.21%
Real Assets	6.49%
Inflation Assets	3.08%
Liquidity	2.0%

Employer Contribution Costs

Normal Cost

Unfunded Accrued Liability (UAL)

Total Employer Contribution

Public Agency Contribution Increases

	Normal Cost		UAL Payments	
FY Impact	Misc. Plans	Safety Plans	Misc. Plans	Safety Plans
2018-19	0.25% - 0.75%	0.5% - 1.25%	2% - 3%	2% - 3%
2019-20	0.5% - 1.5%	1.0% - 2.5%	4% - 6%	4% - 6%
2020-21	1.0% - 3.0%	2.0% - 5.0%	10% - 15%	10% - 15%
2021-22	1.0% - 3.0%	2.0% - 5.0%	15% - 20%	15% - 20%
2022-23	1.0% - 3.0%	2.0% - 5.0%	20% - 25%	20% - 25%
2023-24	1.0% - 3.0%	2.0% - 5.0%	25% - 30%	25% - 30%
2024-25	1.0% - 3.0%	2.0% - 5.0%	30% - 40%	30% - 40%

Sample Actuarial Valuation: Safety Plan for Large City

	Required Contribution	Projected Future Employer Contributions (Assumes 7.375% Return for Fiscal Year 2016-17)					
Fiscal Year	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**
Normal Cost %	20.436%	21.4%	23.2%	23.2%	23.2%	23.2%	23.2%
UAL Payment	15,606,152	19,342,000	22,124,000	25,684,000	28,837,000	30,929,000	30,918,000
*Total as a % of Payroll**	*41.9%*	*47.2%*	*51.9%*	*55.5%*	*58.5%*	*59.9%*	*58.9%*
Projected Payroll	*72,627,842*	*74,806,678*	*77,050,878*	*79,362,404*	*81,743,276*	*84,195,574*	*86,721,441*

Future Relief – PEPRA Impacts

- 31% of all public employees have been hired since January 1, 2013
- Pension savings of $29–$38 billion over next 30 years
- Pensionable compensation caps on salary:
  - $118,775 for Social Security participants
  - $142,530 for non-Social Security participants

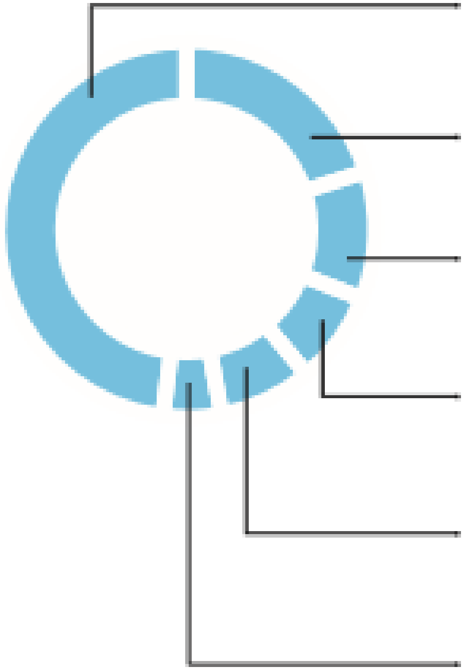
Policy Decisions

Candidate Portfolios

Asset Allocation of Preliminary Candidate Portfolios					Allocation 9/30/2017	Interim Policy 9/30/2016	ALM Policy 2013
Asset Class Component	Candidate A ○	Candidate B ○	Candidate C ○	Candidate D ○	□	□	□
Global Equity	34%	42%	50%	59%	50%	46%	47%
Private Equity	8%	8%	8%	8%	8%	8%	12%
Fixed Income	44%	36%	28%	19%	19%	20%	19%
Real Assets	13%	13%	13%	13%	—	—	—
Real Estate	—	—	—	—	9%	11%	11%
Infrastructure/Forestland	—	—	—	—	2%	2%	3%
Inflation Assets	0%	0%	0%	0%	8%	9%	6%
Liquidity	1%	1%	1%	1%	4%	4%	2%
Expected Compound Return (1-10 yrs.)	**5.6%**	**5.8%**	**6.1%**	**6.4%**	**6.0%**	**5.9%**	**6.2%**
Long Term Expected Return (11-60 yrs.)	**7.8%**	**8.0%**	**8.3%**	**8.5%**	**8.1%**	**8.0%**	**8.3%**
Blended Return (1-60 yrs.)	**6.50%**	**6.75%**	**7.00%**	**7.25%**	**6.85%**	**6.77%**	**7.09%**
Expected Volatility	**9.1%**	**10.2%**	**11.4%**	**12.8%**	**11.5%**	**11.0%**	**12.0%**
Cash Yield	**3.1%**	**3.0%**	**2.9%**	**2.7%**	—	—	—

- With the 2013 Capital Market Assumptions, the Current Policy Portfolio had an expected compound return of 7.15% for years 1 through 10, expected compound return of 8.39% for the long term (i.e., years greater than 10), blended return of 7.56%, and expected volatility of 11.76%.
- Blended Return is the weighted expected compound rate of return of years 1 though 10 and the long term, minus 15 bps for admin fees.
- Symbols (circles, squares) correspond to Candidate Portfolios illustrated on pages 6 and 7.

Current Asset Allocation



48.3%	Global Equity
19.4%	Global Fixed Income
11.2%	Real Assets
8.0%	Private Equity
7.8%	Inflation Assets
5.3%	Other:
4.8%	Liquidity
0.5%	Total Plan Level

Proposed Amortization Policy Change

- Decision occurring February 13 at CalPERS Board meeting
- Future gains and losses would be amortized over shorter period 30
- The “ramp-down” on gains and losses would be eliminated
- Use a level dollar amount for calculating employer contributions, instead of using a level percentage of payroll
- Save employers money overtime by reducing total amount of unfunded liability
  - Ex: 15 year mortgage vs 30 year mortgage
- Aligns with best industry standards
- Addresses ‘intergenerational equity’ issue

Asset Liability Management (ALM) Process

Jan. 2017
Educational Workshop:
Public Access

Apr. 2017
Educational Workshop:
Private Assets

Jun. 2017
Approval of Capital
Market & Economic
Assumptions

Jul. 2017
Fiscal Year Investment Returns
Announced & Educational
Workshop: Leverage

Oct. 2017
CalPERS
Educational Forum

Nov. 2017
Experience Study &
Educational Workshop:
Candidate Portfolios

Dec. 2017
Board to Adopt
ALM Changes

Feb. 2018
Board to decide on
Amortization policy

Jul. 2018
Implementation
of Board Decisions

CalPERS

Considerations

- Pension prefunding options for employers
- Vested Rights issue in County Retirement Systems and Firefighter cases with State Supreme Court
- Stakeholder engagement with Board and executive team
- No pension reform ballot measure
- Public policy efforts and debate likely forthcoming
- Balancing ESG priorities wit fiduciary obligations

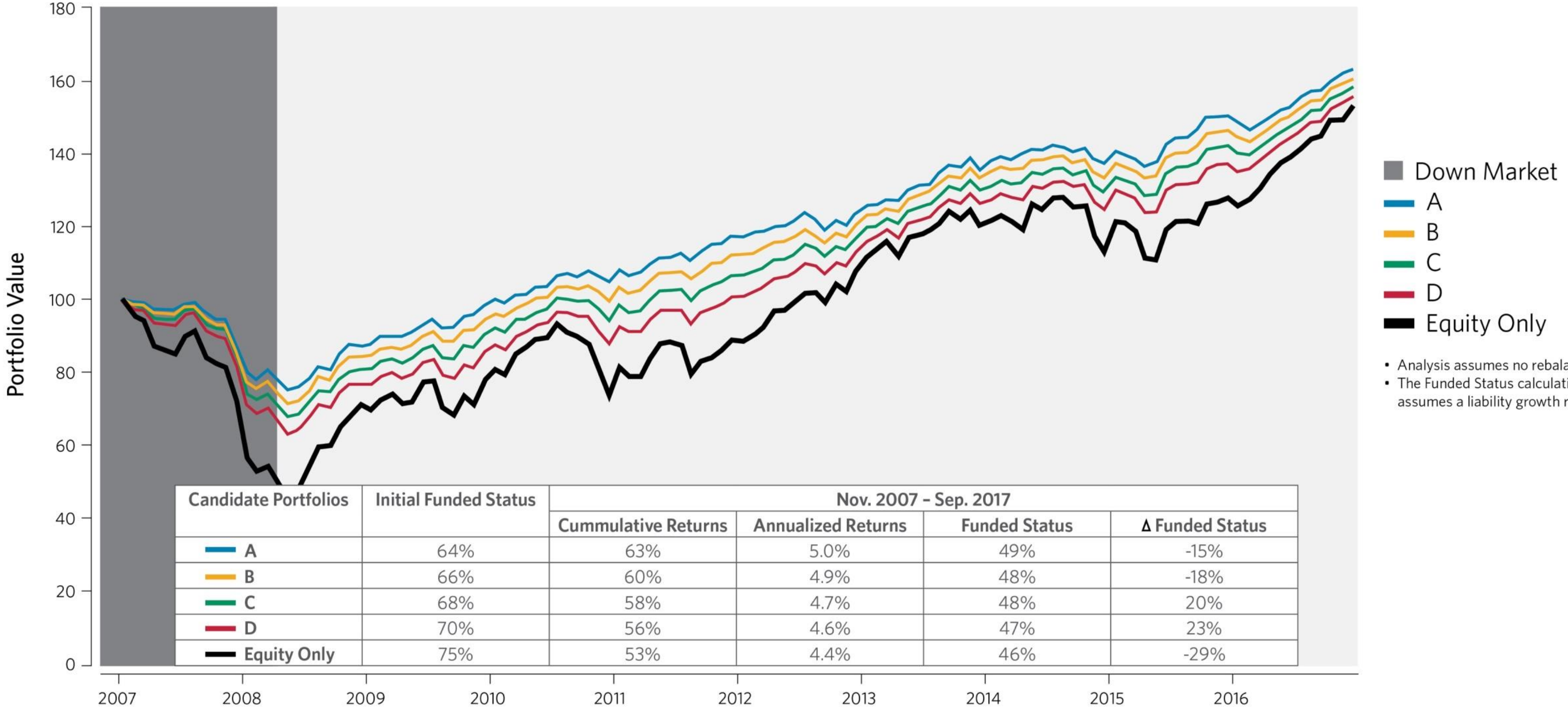
- Sound Investing
- Reducing Complexity & Costs
- Stakeholder Engagement
- Managing Risks
- Best Practice Leader
- Pension Prefunding
- Safeguarding Defined Benefit Plans
- Technical Expert and Partner

Appendix

2017 Capital Market Assumptions

Asset Class	Arithmetic Return	Compound Return	Volatility (Std. Dev)	Correlation						Constraints (%)	
				Global Equity	Private Equity	Fixed Income	Real Asset	Inflation Asset	Liquidity	Floor	Cap
Global Equity	8.14%	6.80%	17.00%	1.00	0.81	0.01	0.59	0.39	0.00	0%	100%
Private Equity	11.26%	8.30%	25.50%	0.81	1.00	0.00	0.48	0.33	0.00	5%	8%
Fixed Income	3.21%	3.00%	6.58%	0.01	0.00	1.00	0.09	0.40	0.31	15%	100%
Real Assets	6.49%	5.75%	12.55%	0.59	0.48	0.09	1.00	0.21	0.00	9%	13%
Inflation Asset	3.08%	2.77%	8.00%	0.39	0.33	0.40	0.21	1.00	0.08	0%	12%
Liquidity	2.00%	2.00%	1.00%	0.00	0.00	0.31	0.00	0.08	1.00	1%	100%
U.S. Inflation Assumption: 2:00%											

Scenario Analysis (Global Financial Crisis & Recovery)



Candidate Portfolios	Initial Funded Status	Nov. 2007 – Sep. 2017			
		Cummulative Returns	Annualized Returns	Funded Status	∆ Funded Status
A	64%	63%	5.0%	49%	-15%
B	66%	60%	4.9%	48%	-18%
C	68%	58%	4.7%	48%	20%
D	70%	56%	4.6%	47%	23%
Equity Only	75%	53%	4.4%	46%	-29%

- Analysis assumes no rebalancing.
- The Funded Status calculation assumes a liability growth rate of 7.9%.

Amortization Policy - 30 Year (Current)

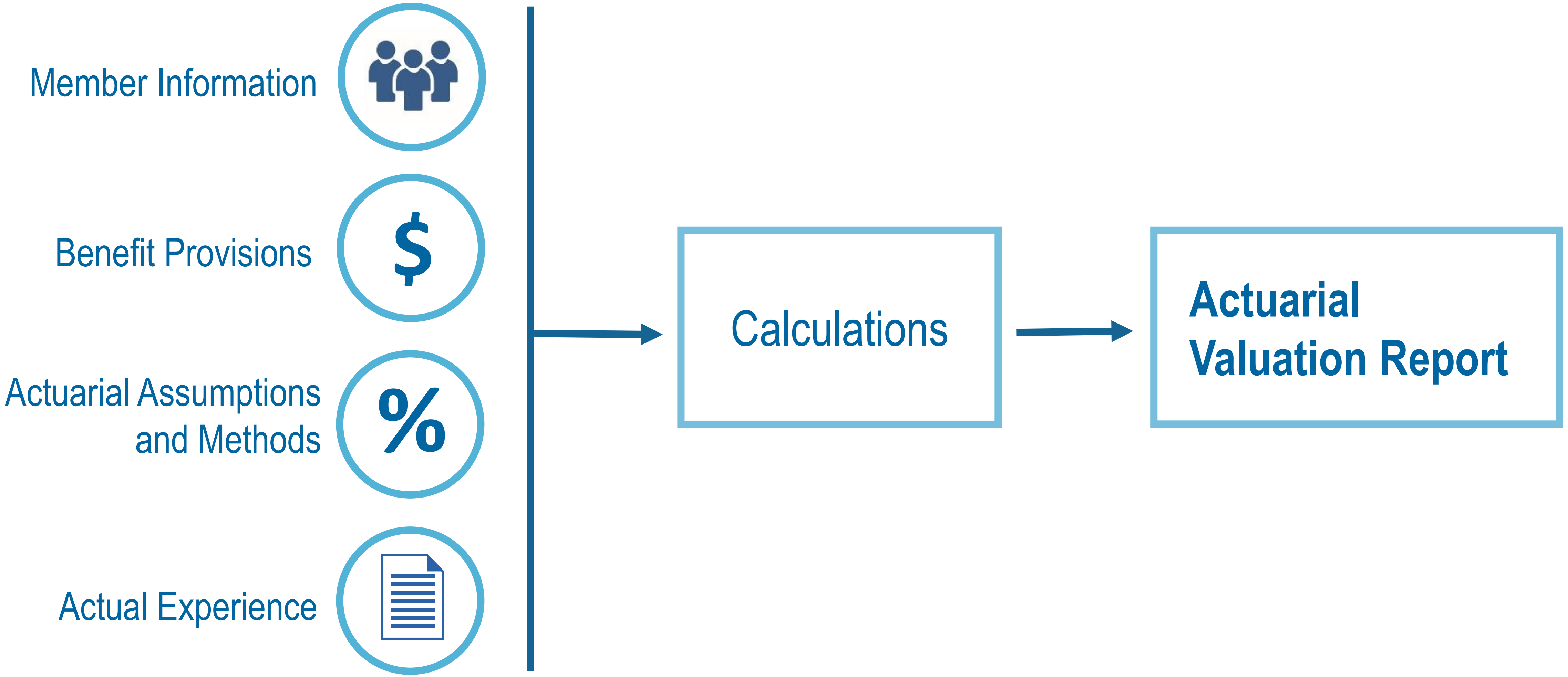
Driver	Source				
	(Gain)/Loss		Assumption/ Method Change	Benefit Change	Golden Handshake
	Investment	Non-Investment			
Amortization Period	30 Years	30 Years	20 Years	20 Years	5 Years
Escalation Rate – Active Plans – Inactive Plans	Payroll (3%) 0%	3% 0%	3% 0%	3% 0%	3% 0%
Ramp Up	5	5	5	0	0
Ramp Down	5	5	5	0	0

CalPERS

Proposed Actuarial Amortization Policy: 20 Years For Gains & Losses

Driver	Source				
	(Gain)/Loss		Assumption/ Method Change	Benefit Change	Golden Handshake
	Investment	Non-Investment			
Amortization Period – Active Agencies – Inactive Agencies	20 Years Closed Period (15 years or less)	20 Years Closed Period (15 years or less)	20 Years	20 Years	5 Years
Escalation Rate	0%	0%	0%	0%	0%
Ramp Up	5	0	0	0	0
Ramp Down	0	0	0	0	0

What Goes into Employer Contribution Rates



Definitions

- **Asset Liability Management (ALM) —** An integrated look at our assets and liabilities to determine the right mix of investments for our portfolio, specifically designed to achieve a sound and sustainable fund. Done on a rolling 4-year cycle.
- **Discount Rate —** Also known as the "assumed rate of return". It is what we assume our $304 billion in investments will return in a typical fiscal year, July 1 to June 30.
- **Normal Cost —** The annual cost of service accrual for the upcoming fiscal year for active employees. The normal cost should be viewed as the long term contribution rate.
- **Risk Mitigation Policy —** A mechanism that triggers adjustments to strategic asset allocations and reduces discount rate by a set amount when returns exceed a certain threshold. Temporarily suspended.
- **Unfunded Liability / Unfunded Actuarial Accrued Liability (UAL) —** When a plan or pool's Market Value of Assets is less than its Accrued Liability, the difference is the plan or pool's Unfunded Liability. If the Unfunded Liability is positive, the plan or pool will have to pay contributions exceeding the Normal Cost.