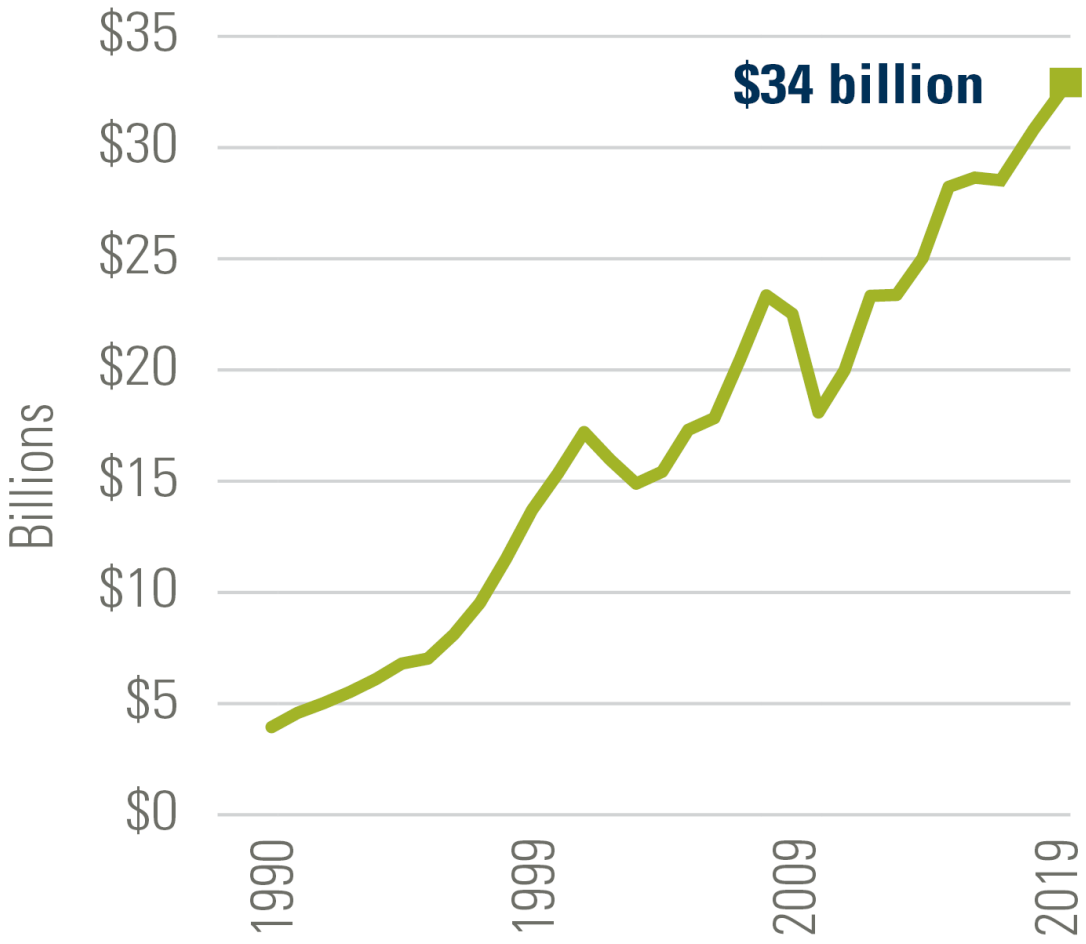
Donna M. Mueller, CEO
IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
December 11, 2019
Presented to the Public Retirement Systems Committee

IOWA PERS®

Trust Fund Growth

This year, the Trust Fund grew to almost $34 billion; that's after more than $2 billion in benefit payments.



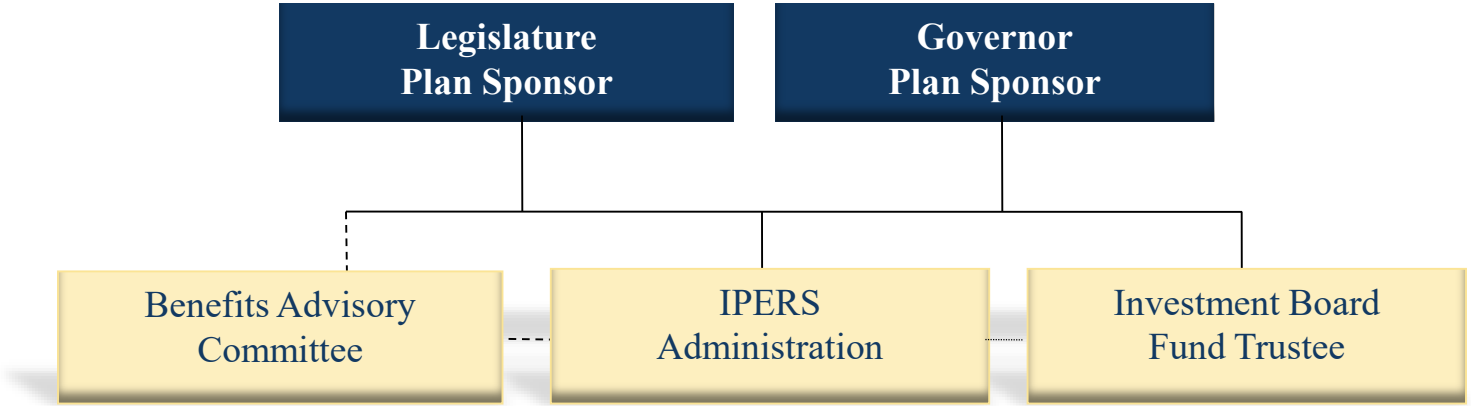
IPERS

Mission

Administer a cost-efficient retirement plan that provides lifetime pension payments to public employees and serves to attract and retain a quality workforce

Established in 1953

Governance



Plan Sponsors' role:

- Creates plan
- Determines participation
- Determines benefits
- Establishes funding
- Monitors performance against plan goals

IPERS

Defined Benefit Plan

Paid as a lifetime, monthly annuity

Amount based on a formula

Contributions from employee and employer

Pooled contributions are invested

IPERS Benefit Calculation

Average Salary
× Multiplier
– Reduction, If Any*

Annual IPERS Benefit

*Early-retirement reduction applies only to the benefits of Regular members who retire before normal retirement age.

IPERS

Core Elements

- Mandatory participation
- Pooled investment risk
- Pooled longevity risk
- Employer/employee cost-sharing
- Lifetime annuity
- Works with Social Security and personal savings

Membership Groups

Total members: 368,292

IPERS

IPERS Members

Membership by Status

172,304
Active

72,207
Inactive

112,973
Retired

10,808
Retired Reemployed

Membership by Employer Type

90,955
Education

23,578
City

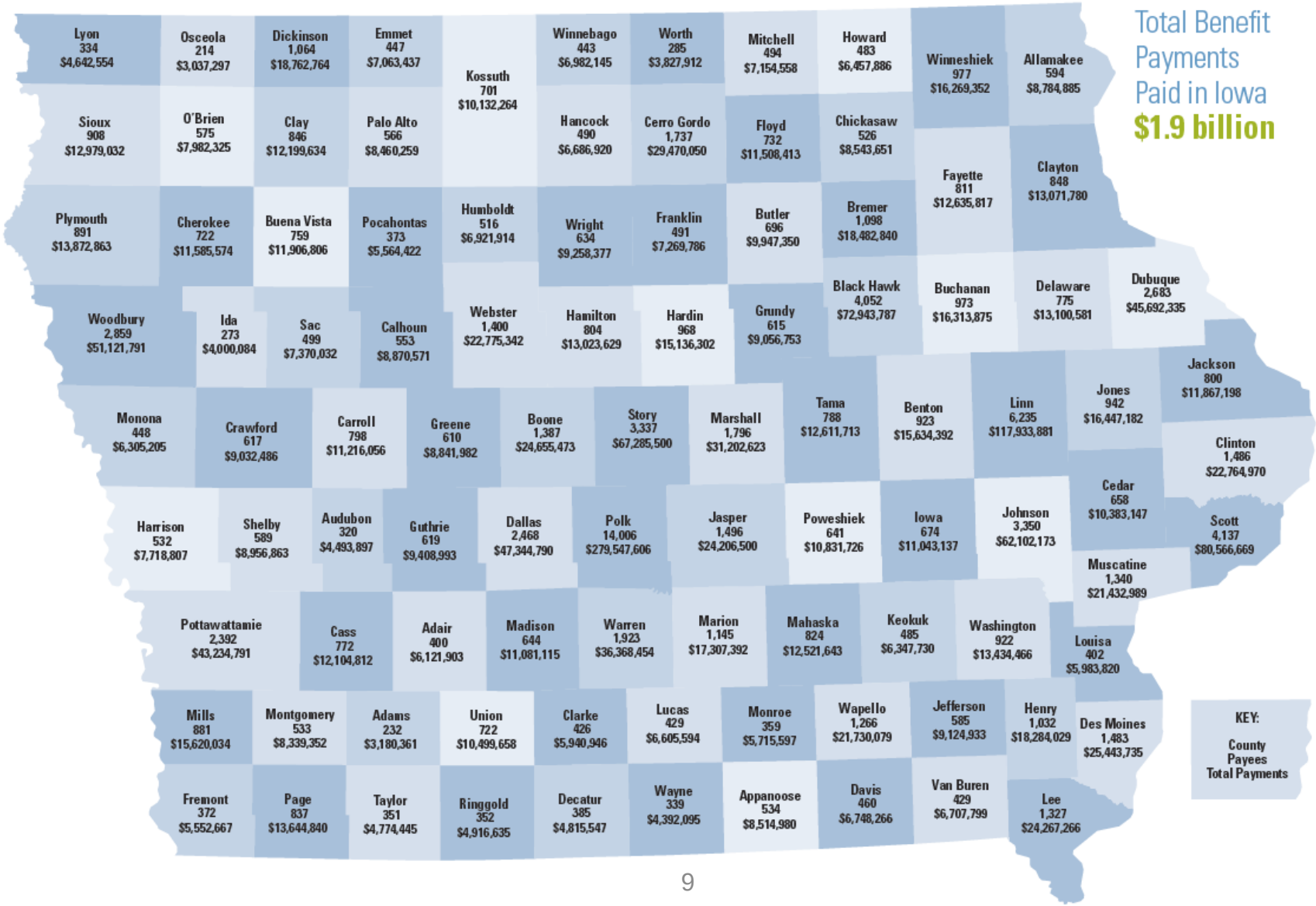
27,166
County

5,641
Other

24,964
State

IPERS

Benefit Payments



2019 Actuarial Valuation

Presented by

Patrice A. Beckham, FSA, EA, FCA, MAAA

Cavanaugh Macdonald Consulting

- Independent actuarial consulting firm
- Practicing entirely in the public sector
- Lead actuarial consultant to IPERS for many years

Key Assumption Used in Valuation

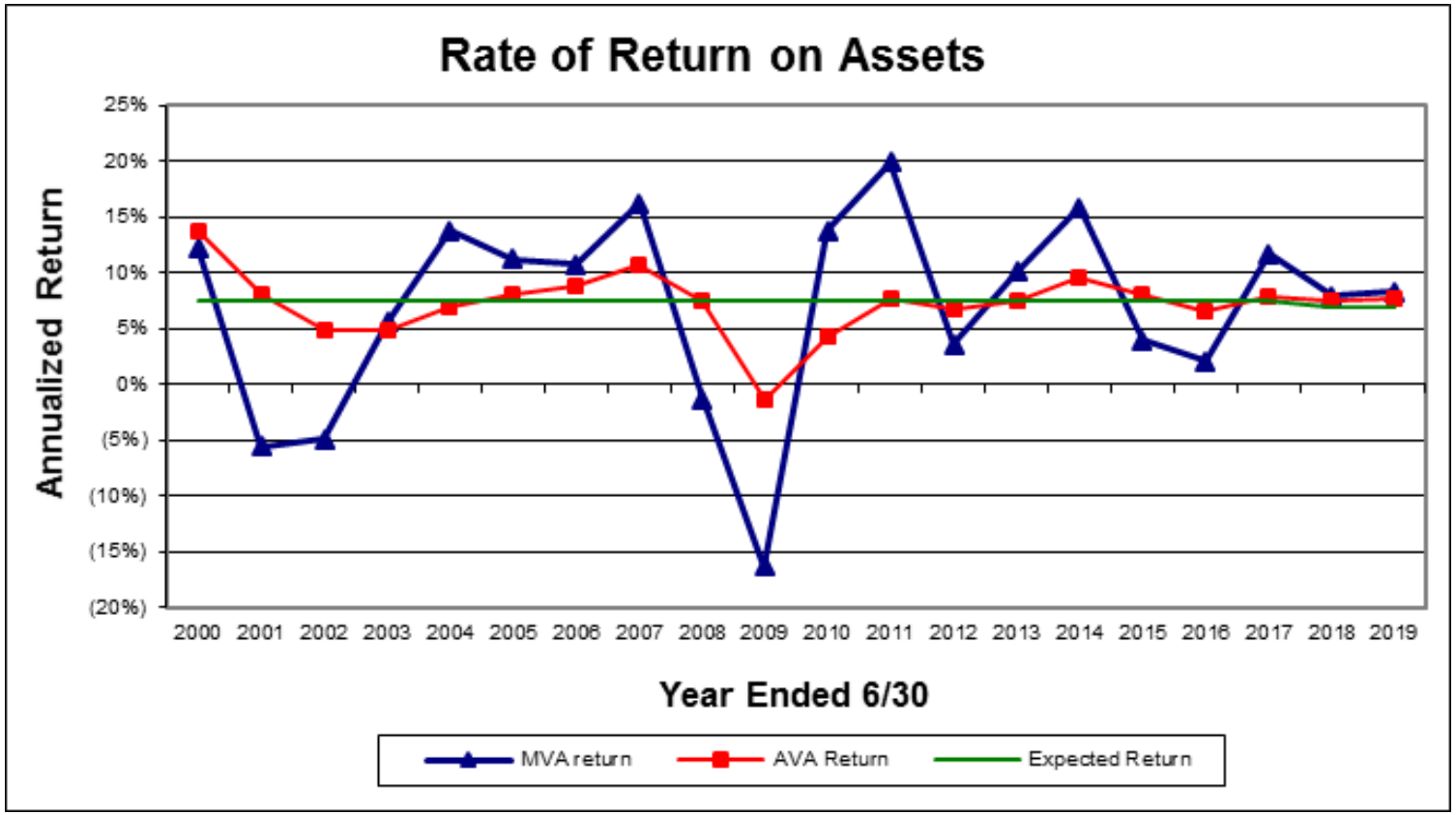
Actuarial assumptions are used to estimate what will happen in the future

- Investment return assumption: 7.0% (lowered from 7.50% in the 2017 valuation)
- General wage increase assumption: 3.25%
- Mortality assumption: RP-2014 Mortality Table with various age adjustments and scaling to better match actual experience
- Other demographic assumptions reviewed in 2018 and adjustments made as necessary

Actuarial Value of Assets

- Market value not used directly in valuation
- Asset valuation method is used to smooth the effect of market fluctuations
- Resulting value of assets is called the "actuarial value" and is used in the valuation process
- Market-related value
- Mechanism in place to ensure it does not vary too far from actual market value
- Difference between actuarial and market
- value of assets is the deferred investment experience

Historical Asset Returns



Expected return is 7.5% for all years through 2017 and 7.0% thereafter.

Funded Status

	As of June 30, 2019		
	Regular	Sheriffs & Deputies	Protection Occupation
1. Actuarial Liability (AL)	$37,324	$731	$1,746
2. Actuarial Value of Assets	30,860	724	1,740
3. Unfunded AL (UAL): (1)-(2)	$ 6,464	$ 7	$ 6
Funded Ratio: (2)/(1)	82.7%	99.0%	99.7%

$ in millions
Note: Numbers may not add due to rounding.

Unfunded Actuarial Liability

UAL June 30, 2018	$6,815
– Contributions above actuarial rate	0
– Expected increase from amortization	43
– Investment experience	(229)
– Liability experience	(133)
– Other	(19)
UAL June 30, 2019	$6,477

$ in million
Note: This represents the total System.

FY19 Key Funding Measures

Ratio of actuarial assets to actuarial liabilities **83.7%** (up from 82.4%)

Unfunded actuarial liability (UAL) decreased by **$338 million**, largely due to the impact of favorable experience

Deferred investment gain of **$686 million**

Contribution Rates

Components

- Normal Cost (ongoing cost for active members)
- Amortization of UAL

UAL Amortization Policy

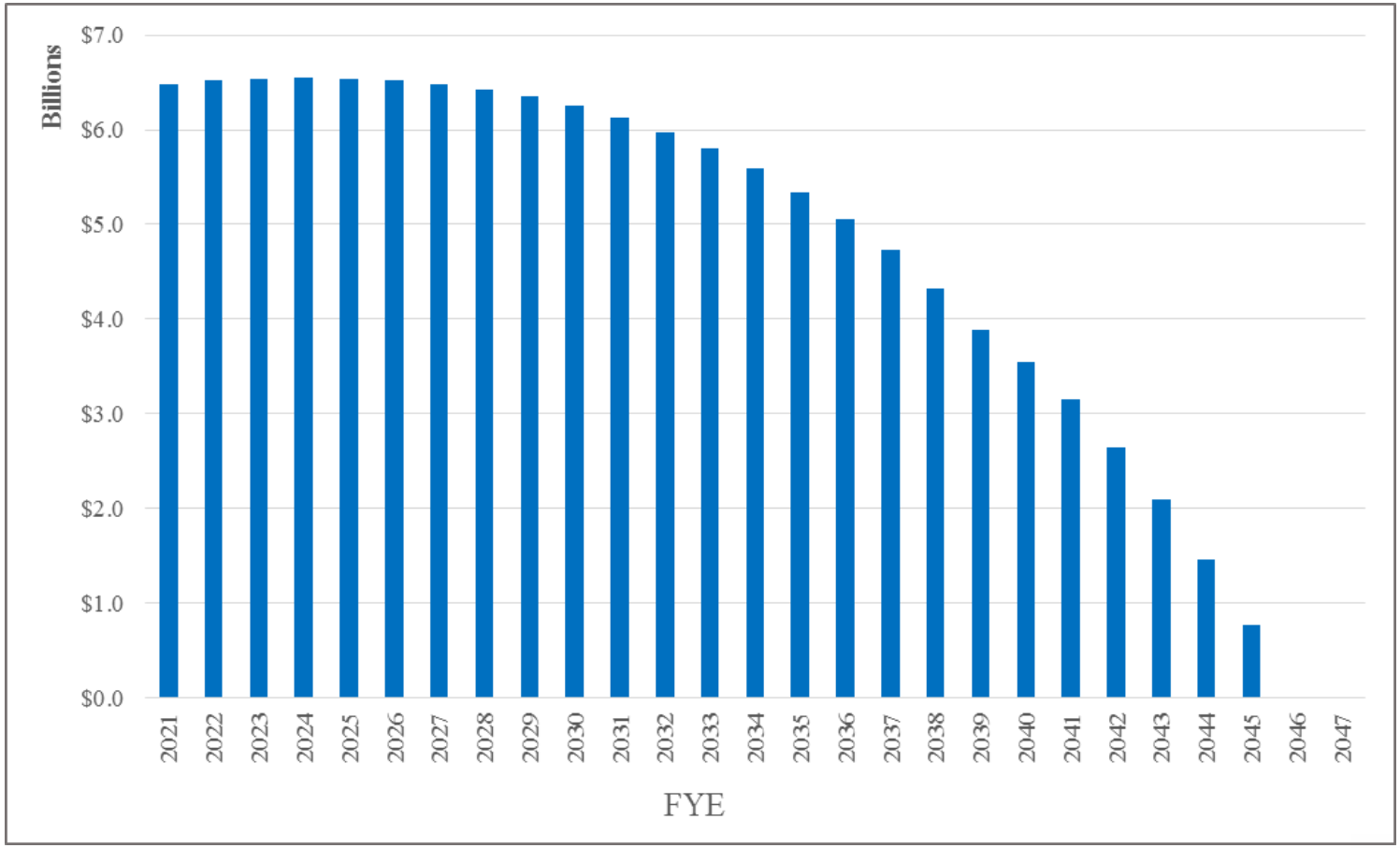
- June 30, 2014 base is amortized over a closed 30-year period (25 years remaining as of 2019 valuation).
- New pieces of UAL that arise in each valuation are amortized over separate closed 20-year periods. ("layered amortization")
- Once a group becomes fully funded, all outstanding bases are eliminated and the surplus is amortized over an open 30-year period.

UAL Amortization Bases

Amortization Bases	Original Amount ($M)	Remaining Payments	Annual Payment* ($M)
2014 Initial UAL	$5,592	25	$ 369
2015 Experience	(194)	16	(16)
2016 Experience	22	17	2
2017 Experience	(158)	18	(12)
2017 Assumption Changes	1,436	18	109
2018 Experience	(310)	19	(23)
2018 Assumption Changes	75	19	6
2019 Experience	(385)	20	(27)
Total			$ 407

* Payment amounts increase 3.25% with the assumed increase in payroll growth.

Expected UAL Amortization



Projections assume current contribution rates remain in place and all actuarial assumptions are met in the future.

Contribution Rate Funding Policy

Compares Required Contribution Rate (RCR) from prior year to Actuarial Contribution Rate (ACR) in current year

- If ACR < previous RCR, then:
  - If difference is < 0.50%, RCR is unchanged
  - If difference is > 0.50%, RCR is lowered by 0.50% provided funded ratio is 95% or higher
- If ACR > previous RCR, then current RCR shall be increased to ACR, except no more than 1% change for Regular members

FY21 Contribution Rates

Unchanged

Decreased 0.50%

Decreased 0.50%

IPERS

Contribution Rates

Regular Members	Valuation Date Rates for FY2021/FY2020	
	June 30, 2019	June 30, 2018
Normal Cost Rate	10.51%	10.49%
UAL Rate	4.93%	5.21%
Actuarial Contribution Rate	15.44%	15.70%
Required Contribution Rate	**15.73%**	**15.73%**
Shortfall/(Margin)	(0.29%)	(0.03%)
Employee Contribution Rate	6.29%	6.29%
Employer Contribution Rate	9.44%	9.44%

The Actuarial Contribution Rate is less than the prior year's Required Contribution Rate by less than 0.50 percent, so the Required Contribution Rate is unchanged.

Contribution Rates

Sheriffs & Deputies	Valuation Date Rates for FY2021/FY2020	
	June 30, 2019	June 30, 2018
Normal Cost Rate	16.87%	16.85%
UAL Rate	0.01%	0.46%
Actuarial Contribution Rate	16.88%	17.31%
Required Contribution Rate	**18.52%**	**19.02%**
Shortfall/(Margin)	(1.64%)	(1.71%)
Employee Contribution Rate	9.26%	9.51%
Employer Contribution Rate	9.26%	9.51%

The Actuarial Contribution Rate is less than the prior year's Required Contribution Rate by more than 0.50%, and the funded ratio exceeds 95%, so the Required Contribution Rate was decreased by 0.50%.

Contribution Rates

Protection Occupation	Valuation Date Rates for FY2021/FY2020	
	June 30, 2019	June 30, 2018
Normal Cost Rate	15.28%	15.22%
UAL Rate	0.07%	0.39%
Actuarial Contribution Rate	15.35%	15.61%
Required Contribution Rate	**16.02%**	**16.52%**
Shortfall/(Margin)	(0.67%)	(0.91%)
Employee Contribution Rate	6.41%	6.61%
Employer Contribution Rate	9.61%	9.91%

The Actuarial Contribution Rate is less than the prior year's Required Contribution Rate by more than 0.50% and the funded ratio exceeds 95%, so the Required Contribution Rate was decreased by 0.50%.

Asset Volatility Ratio

Defined as the ratio of system assets to covered payroll. A higher ratio indicates greater contribution risk (volatility)

- Regular members: 4.11
- Sheriffs and Deputies: 6.29
- Protection Occupation: 4.86
- Impact of an investment return 10% lower than expected or -3.00% (about one standard deviation)

	As Percent of Payroll*	Amortized over 20 Years*	Current Contribution Margin
Regular members	41%	2.92%	0.29%
Sheriffs/Deputies	63%	4.47%	1.64%
Protection Occupation	49%	3.45%	0.67%

*With no asset smoothing

GASB 67 Sensitivity Analysis

Terminology

Total Pension Liability (TPL)

- For IPERS, same as Actuarial Accrued Liability in funding valuation

Fiduciary Net Position (FNP)

- The market value of assets

Net Pension Liability (NPL)

- NPL = TPL – FNP

Essentially the UAL on market value basis

GASB 67 Sensitivity Analysis

	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
TPL	$ 44.639	$ 39.801	$ 35.744
FNP	34.011	34.011	34.011
NPL	$ 10.628	$ 5.791	$ 1.734
FNP/TPL	76.19%	85.45%	95.15%

Dollar amounts are shown in billions. Numbers may not add due to rounding.

Note: Because the TPL and the FNP are of similar magnitude, the NPL is significantly smaller than the TPL. When the TPL changes due to the discount rate change, the NPL changes by the same dollar amount, but it is a much larger proportionate amount.

Unfunded Actuarial Liability

More than a decade of insufficient contributions

Recessions in 2001 and 2009

Changed assumptions

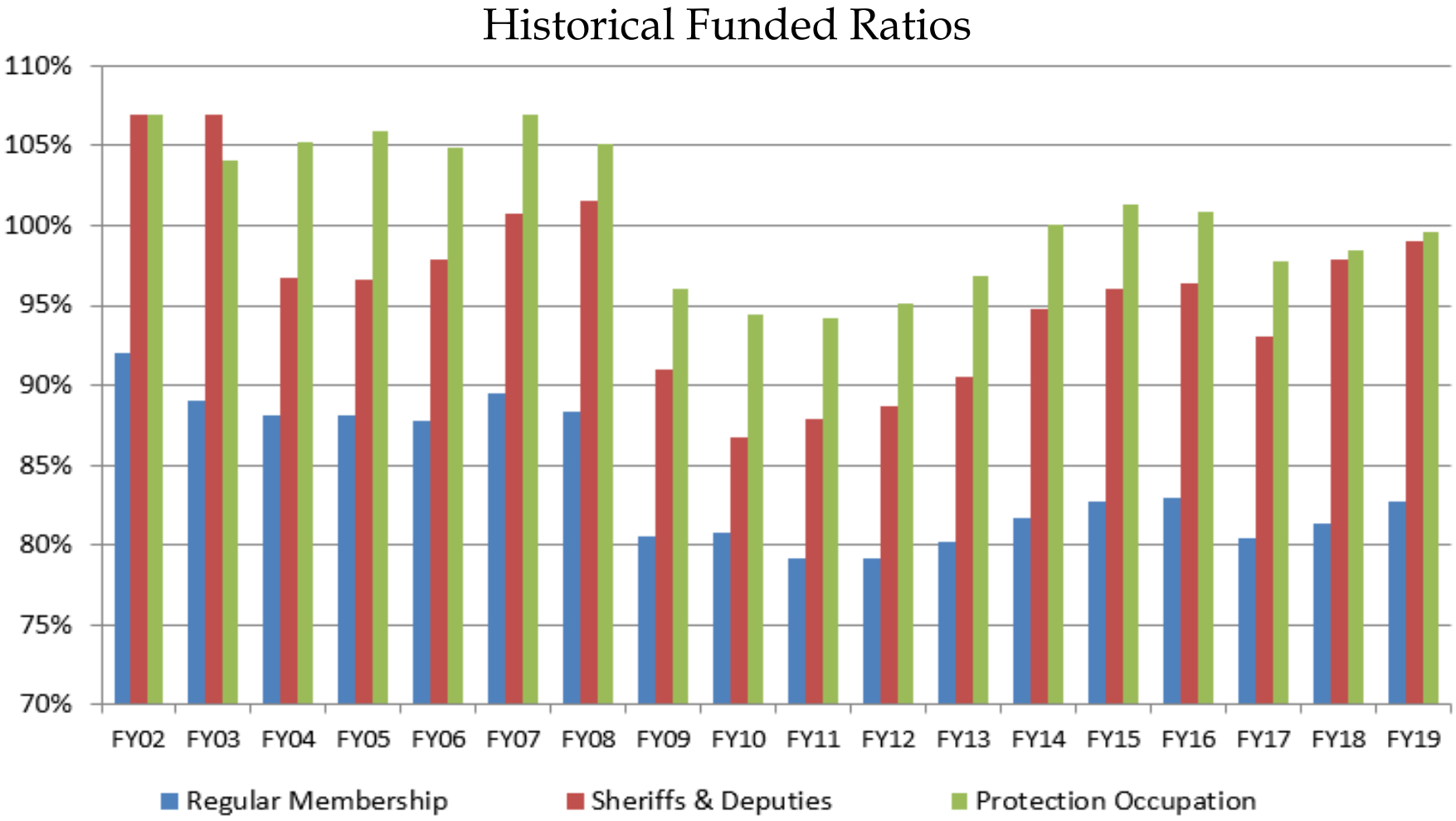
- Updated mortality tables
- Reduced investment return assumption

Unfunded benefit enhancements

- FED payments

IPERS

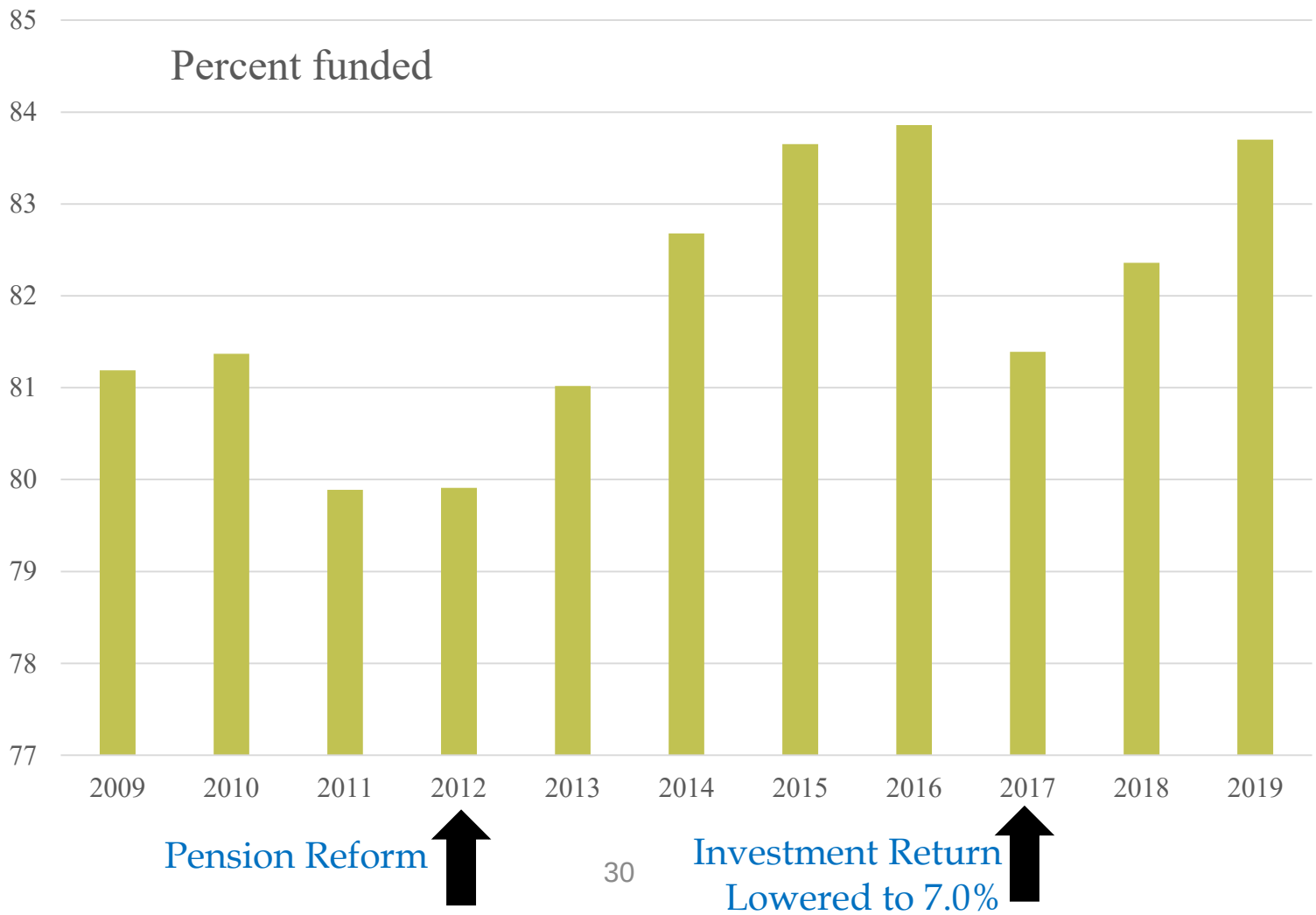
Case study within IPERS



IPERS

Closing the Shortfall

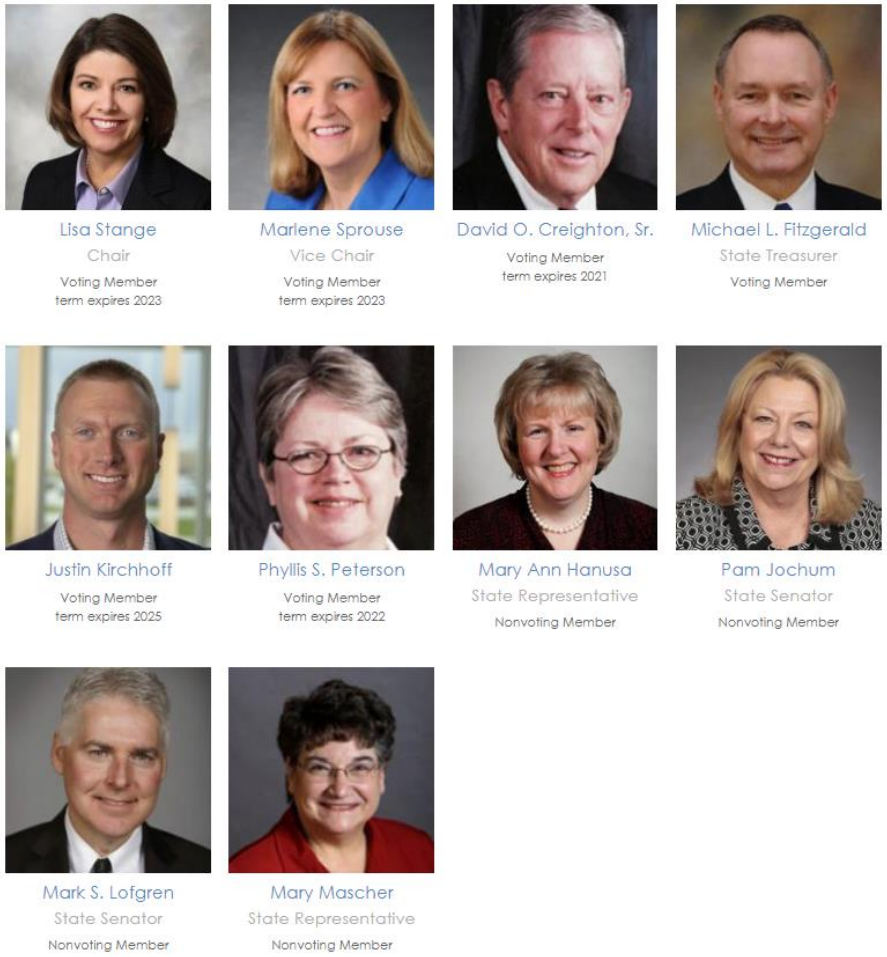
Contributions + Investments = Benefits + Expenses



IPERS Investment Board

Trustee: A fiduciary with a legal duty to act:

- ✓ Solely in the interest of the participants and beneficiaries
- ✓ For the exclusive purpose of providing benefits to participants and beneficiaries in a cost efficient manner



IPERS®

IPERS Investment Board

Role and Responsibilities

- Establish the investment policy and risk tolerance of the investment program
- Set asset allocation & diversification policy
- Hire investment managers, actuaries and consultants
- Review investment performance, investment management expenses and IPERS' administrative budget
- Adopt actuarial methods, mortality tables and assumptions for the actuary to prepare the annual valuation of assets and liabilities

IPERS®

IPERS Investment Board

Internal Investment Management: ***After considerable study, the Board recommends establishment of ability to internally manage assets***

- Provides significant cost savings
  - Estimated savings of at least $8 million annually on fees
  - WI and CO estimate annual savings of $75 million and $45 million, respectively
  - Every dollar saved on fees brings IPERS closer to fully funded
- Most funds of IPERS' size see at least partial internal management of assets as a best practice
  - Better alignment of interests: one client (IPERS) vs. many
  - Internal expertise improves oversight of existing managers
- Good paying jobs for Iowans

IPERS

IPERS Investment Board

Next Steps:

✓ Governance Reform Required

✓ Empower trustees to determine:

- Number of investment professionals
- Qualifications
- Compensation Structure

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Resolution of Support

- Internal investment management has the support of Investment Trustees, Benefits Advisory Committee and IPERS staff
- Investment Board: Passed Resolution of Support in 2017, **reaffirmed 2019**
- BAC: Passed Resolution of Support in 2019

Resolution outlines necessary legislative and administrative action

Investment Staff

Chief Investment Officer

- Reports to Investment Board and CEO
- Five investment officers oversee $34 billion global portfolio
- Key responsibilities:
  - Implement the Board's investment policies
  - Manage investment risk within risk budgets set by the Board
  - Add value – earn more than the Board's strategic asset allocation
  - Advise Board on investment issues; make recommendations for asset allocation and implementation
  - Oversee and evaluate investment managers and recommend retention or removal; administer competitive bidding processes, divestment mandates
  - Make limited tactical allocation calls

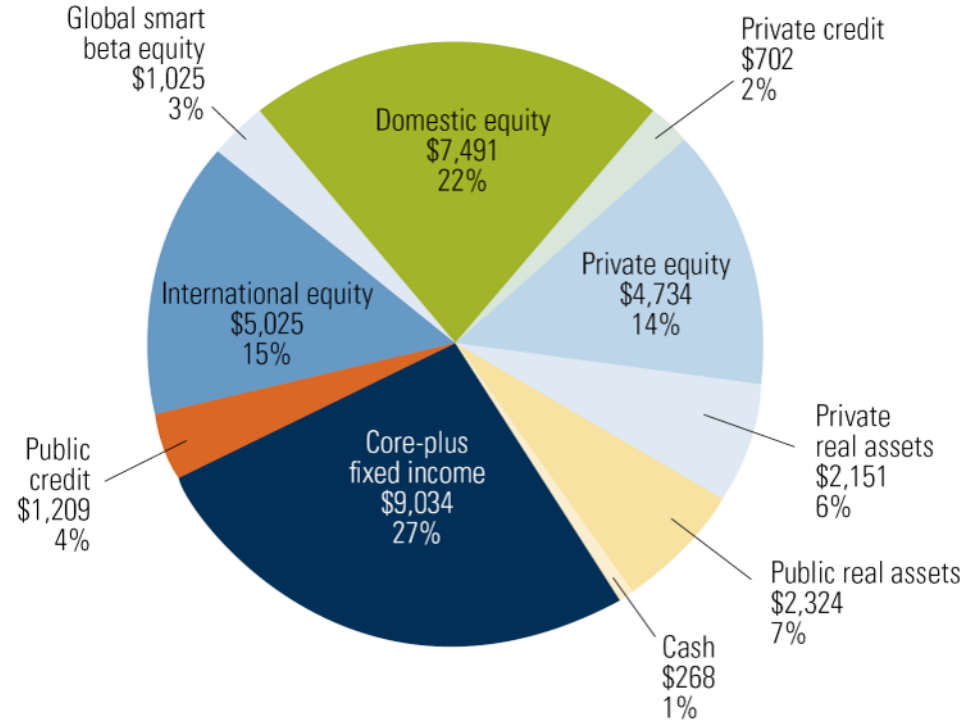
Asset Allocation

Investment Board annually reviews & periodically adjusts

Most important policy decision – drives 90% of total return

How much risk is prudent

- Long-date liabilities allow for long investment horizon
- Can afford to take more equity and illiquidity risk
- Cash flows must be monitored diligently



(Fair Values in Millions) As of June 30, 2019

IPERS

FY2019 Recap

IPERS Fund earned 8.35% net of fees

- Exceeded 7.0% investment return assumption
- Slightly underperformed Policy Benchmark return of 8.64%
- Return ranked in top 13th percentile of large public funds reporting to the Wilshire Trust Universe Comparison Service

Investment management expenses were 0.20%

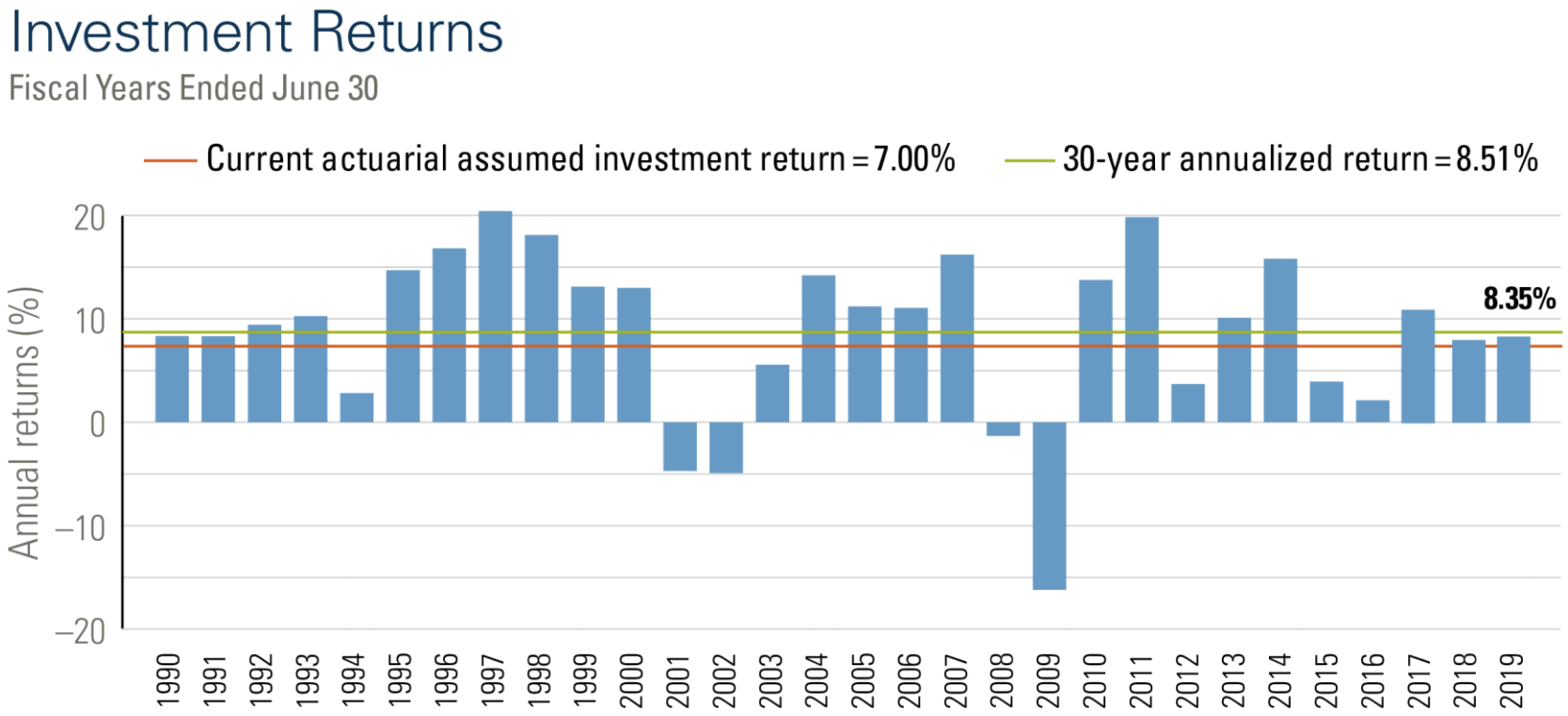
- Based on average quarterly market value of $32.7 billion
- Fees paid to external investment managers were $53.7 million (0.164%)

IPERS significantly reduced active management in its U.S. stock portfolio

IPERS' investment program was rated as a low-cost program by CEM Benchmarking, Inc. with added value in line with peer pension funds

IPERS®

Investment Performance



IPERS

Investment Performance

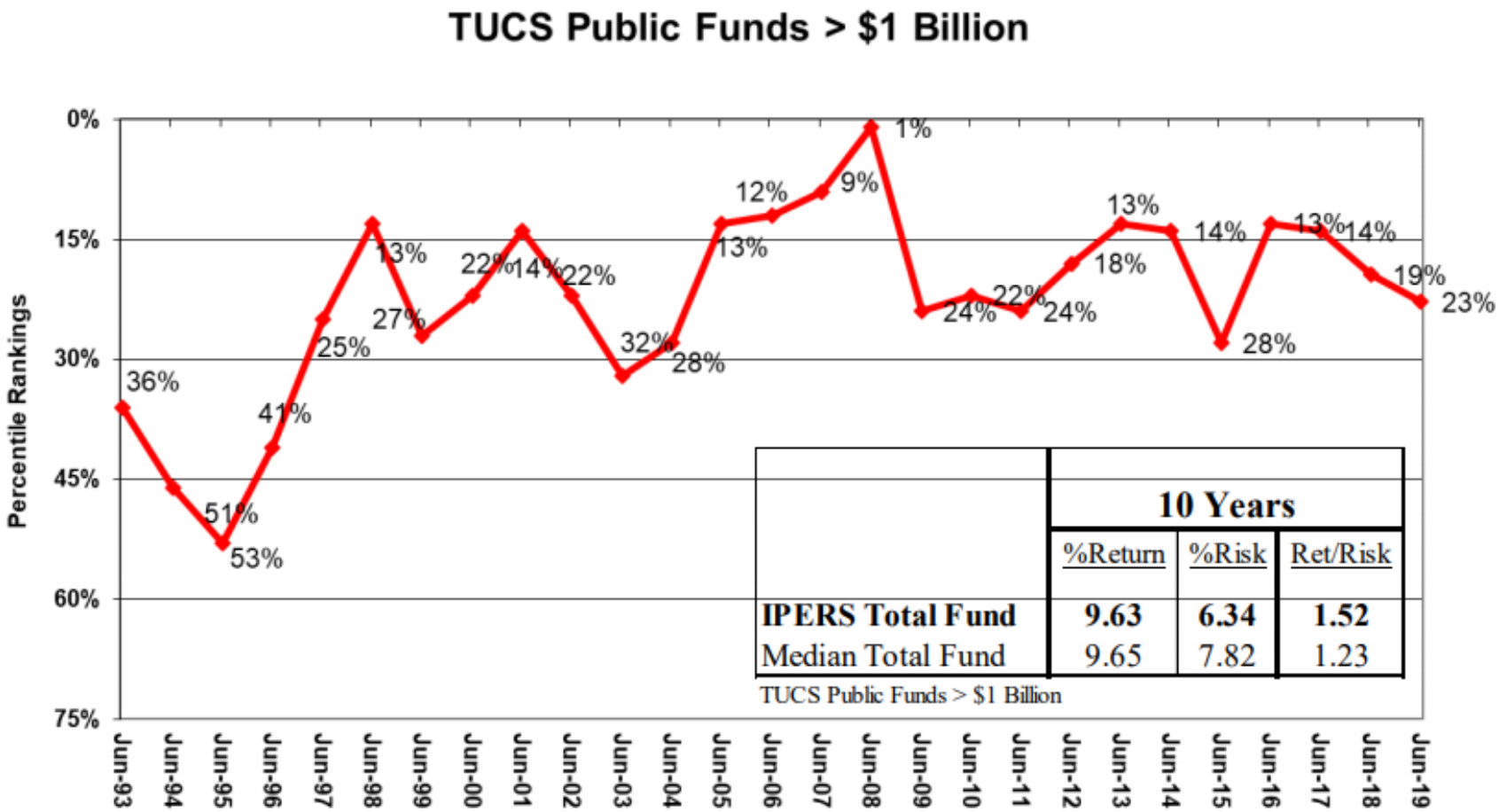
*A benchmark composed of market indexes with weightings reflective of IPERS' asset allocation targets.

**Trust Universe Comparison Service (TUCS) Public Funds with Total Market Value > $1 Billion Index.

Note: 10-, 20-, and 30-year results are annualized returns.

IPERS®

Risk-Adjusted Returns



	10 Years		
	%Return	%Risk	Ret/Risk
IPERS Total Fund	**9.63**	**6.34**	**1.52**
Median Total Fund	9.65	7.82	1.23

TUCS Public Funds > $1 Billion

IPERS' rolling 3-year risk vs. return ratio maintained top-quartile ranking as of June 30, 2019, relative to other large public funds with assets greater than $1 billion.

Source: Wilshire Associates; Trust Universe Comparison Services (TUCS)

PRESENTER BACKGROUND

Ali Kazemi

Managing Director, Sr. Consultant and Head of Risk Management for Wilshire Consulting at Wilshire Associates

Ali Kazemi is a Managing Director with Wilshire Associates and a member of Wilshire Consulting where he is the head of Risk Management. Mr. Kazemi works in Wilshire's Santa Monica, California office and provides investment and risk management consulting services to public and corporate pension plans, foundations and endowments, and insurance companies since 2009. He is also a member of Wilshire Consulting's Multi-Asset/Risk Parity Asset Class Committee.

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ASSET ALLOCATION DECISION MAKING

Goal: Select a diversified mix of suitable asset classes that **maximizes return for a given level of risk**

- The appropriate asset allocation policy is determined by an investor's **risk tolerance** and **return expectation** requirements.

- Each investor's risk tolerance and return requirements should be viewed in the context of the **liabilities** that the assets are supporting.

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TIME HORIZON

- 10 year forward-looking horizon return assumptions
  - ✓ Long enough to reflect investment performance over a market cycle
  - ✓ Short enough to reflect sensitivity to current market pricing
  - ✓ Best information for making strategic asset allocation policy and set return and risk tradeoffs driven by different asset class weightings

- 30 year forward-looking horizon return assumptions
  - ✓ Equilibrium assumptions that assume no reflection of current market conditions
  - ✓ Uses ultra long term cash return assumptions and inflation as building blocks, upon which historical risk premium are layered on
  - ✓ Equities uses equilibrium dividend yield as main driver of risk premium over the entire stock market history
  - ✓ Fixed income uses equilibrium duration / credit premium and roll return

- Risk and correlation assumptions are same across the two horizons
  - ✓ Always reflects relationships across market cycles

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CAPITAL MARKETS ASSUMPTIONS (AS OF JUNE 30, 2019)

	U.S. Equity	International Equity	Private Equity	Global Smart Beta	Core (Plus) Fixed Income	Public Credit	Private Credit	Public Real Assets	Private Real Assets	TIPS	Private Infrastructure	Cash
Return - 10-Year (%)	6.00	6.75	8.35	6.45	3.05	4.55	5.15	3.60	5.90	2.00	6.55	1.90
Return - 30-Year (%)	7.35	7.75	10.05	7.65	4.55	6.60	5.60	5.50	6.75	4.20	7.50	2.80
Risk (%)	17.00	18.80	28.00	17.05	5.15	8.95	6.00	6.90	10.80	6.00	14.00	1.25
Correlations												
U.S. Equity	1.00											
International Equity	0.83	1.00										
Private Equity	0.74	0.67	1.00									
Global Smart Beta	0.94	0.94	0.74	1.00								
Core (Plus) Fixed Income	0.28	0.09	0.31	0.20	1.00							
Public Credit	0.58	0.59	0.43	0.60	0.33	1.00						
Private Credit	0.50	0.46	0.22	0.50	0.05	0.64	1.00					
Public Real Assets	0.41	0.41	0.39	0.43	0.48	0.60	0.43	1.00				
Private Real Assets	0.53	0.48	0.50	0.52	0.17	0.59	0.55	0.68	1.00			
TIPS	-0.05	0.05	-0.03	0.00	0.60	0.22	0.00	0.70	0.15	1.00		
Private Infrastructure	0.67	0.75	0.61	0.74	0.12	0.61	0.55	0.55	0.51	0.10	1.00	
Cash	-0.05	-0.08	0.00	-0.07	0.19	-0.08	-0.07	0.09	-0.06	0.20	-0.05	1.00

- Wilshire's asset class return, risk and correlation assumptions are developed on 10- and 30-year forward looking expected rates of return and historical risk and correlation, adjusted to incorporate recent trends.
- Return expectations for asset classes with an investable benchmark represent a passive investment in the asset class (beta). They do not reflect value added from active management (alpha).

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IPERS ASSET ALLOCATION

- *Eliminated Public Real Assets and re-allocated those asset to other public market asset classes*
- *International equities increased from 15% to 17.5%*
- *Global Smart Beta increased from 3% to 6%*
- *Core Fixed Income increased from 27% to 28%*
- *Public credit increased from 3% to 3.5%*

Asset Class	Existing Policy	Sept 2019 Approved Policy
U.S. Equity	22.0%	22.0%
International Equity	15.0%	17.5%
Private Equity	11.0%	11.0%
Global Smart Beta	3.0%	6.0%
Total Growth Assets	**51.0%**	**56.5%**
Core (Plus) Fixed Income	27.0%	28.0%
Total Interest Rate Assets	**27.0%**	**28.0%**
Public Credit	3.5%	4.0%
Private Credit	3.0%	3.0%
Total Credit Assets	**6.5%**	**7.0%**
Public Real Assets (TIPS, REITS, MLPs)	7.0%	0.0%
Private Real Assets	7.5%	7.5%
Total Inflation Hedging Assets	**14.5%**	**7.5%**
Cash	1.0%	1.0%
Total Liquidity Assets	**1.0%**	**1.0%**
Total Assets	**100.0%**	**100.0%**
Expected Return (10-Year)	**5.80%**	**5.96%**
Expected Return (30-Year)	**7.16%**	**7.28%**
Standard Deviation of Return	**10.77%**	**11.45%**
Sharpe Ratio (10 yr)	**0.54**	**0.52**

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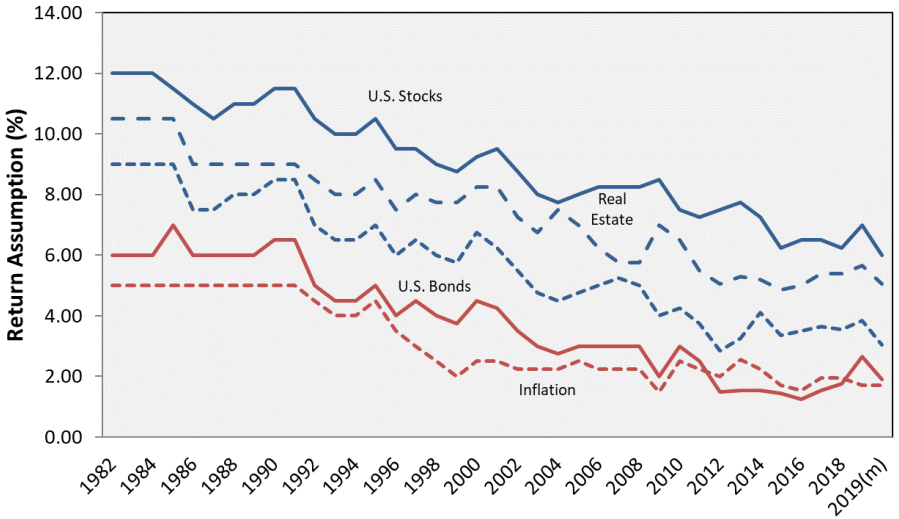
WILSHIRE FORECASTS THROUGH TIME

- Return prospects have been declining for decades, following the downward trend in interest rates
- Real cash rate acts as an anchor for all asset classes

FORECASTS (JUNE 2019)		
	10-Year	30-Year
U.S. Equity	6.00%	7.35%
Real Assets (public)	3.60%	5.50%
U.S. Core Bonds(plus)	3.05%	4.55%
Cash	1.90%	2.80%
Inflation	1.70%	2.50%



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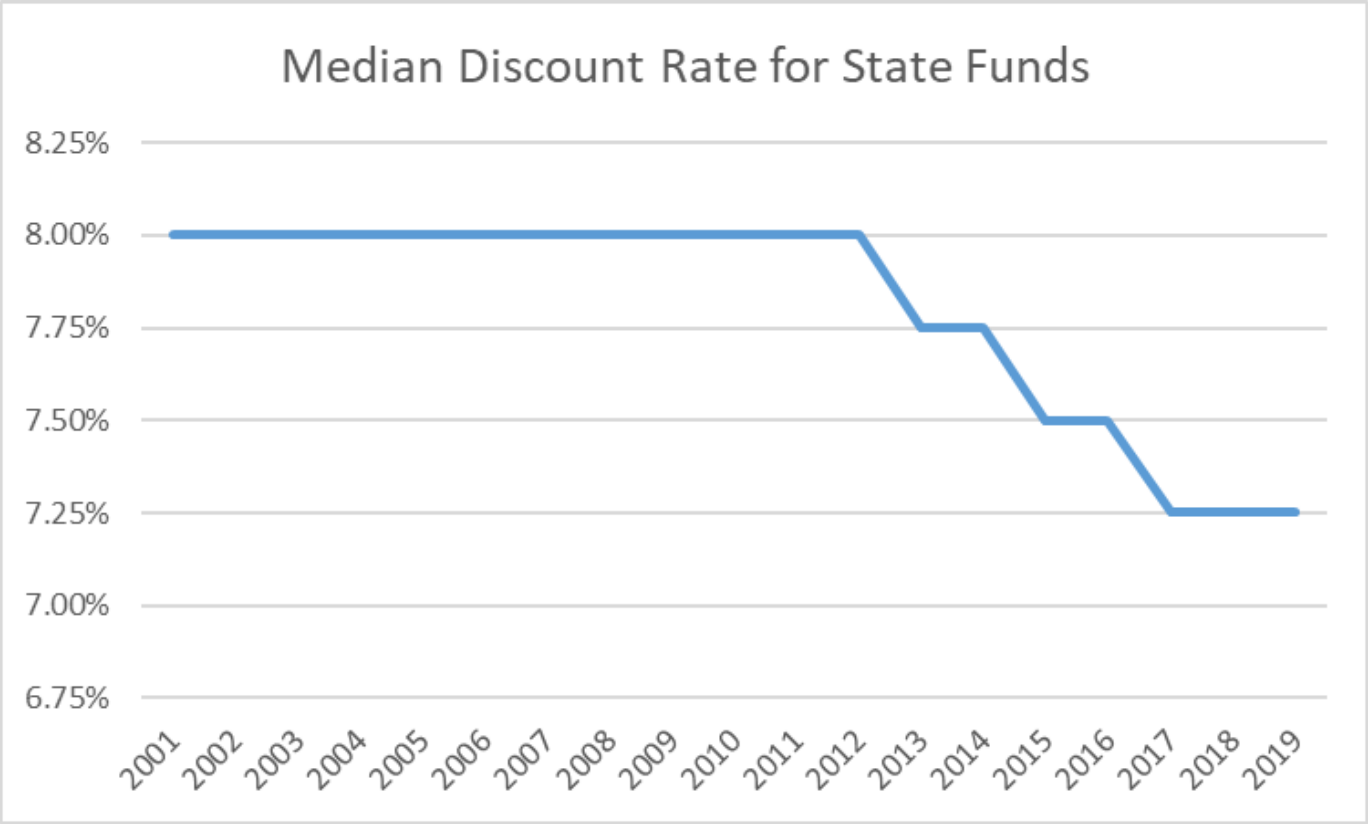
Source: Wilshire Consulting

DISCOUNT RATE TREND

As return prospects decline, discount rates for public funds have seen a decreasing trend as well, especially since the GFC.



Source: Wilshire Consulting & NASRA (2019)

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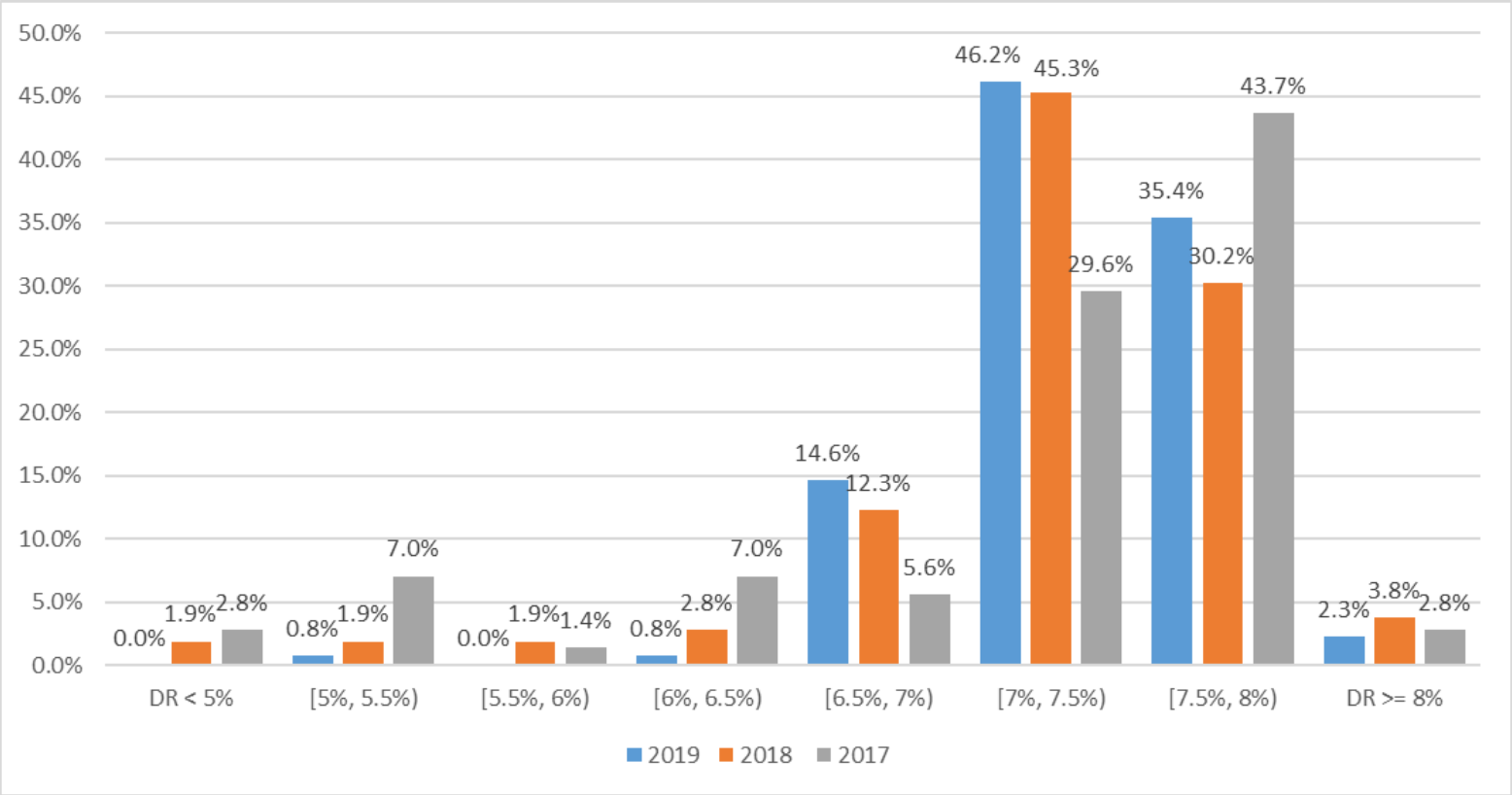
DISTRIBUTION OF DISCOUNT RATES

As of 2019, over 75% of the state retirement systems had a discount rate between 7%-8%



Source: Wilshire Consulting (2017 & 2018), NASRA (2019)

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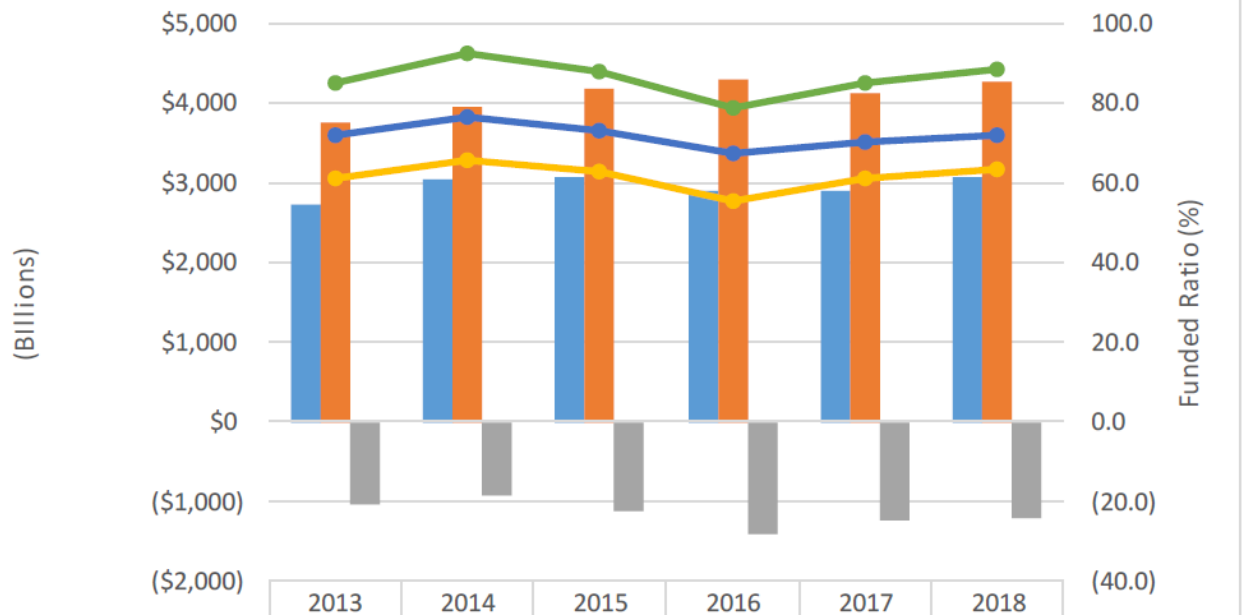
Wilshire Consulting

AGGREGATE FUNDED STATUS AND PLAN ASSET / LIABILITY



	2013	2014	2015	2016	2017	2018
Assets	2,731	3,041	3,075	2,902	2,918	3,088
Liability	3,775	3,951	4,188	4,304	4,141	4,278
Deficit	(1,044)	(910)	(1,113)	(1,402)	(1,223)	(1,190)
25th Percentile	61.1	66.0	62.7	55.8	61.3	63.6
Aggregate	72.4	77.0	73.4	67.4	70.5	72.2
75th Percentile	85.3	92.6	88.1	79.2	85.4	88.5

Source: Wilshire Consulting

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Benefits Advisory Committee

Represents member, employer and retiree associations

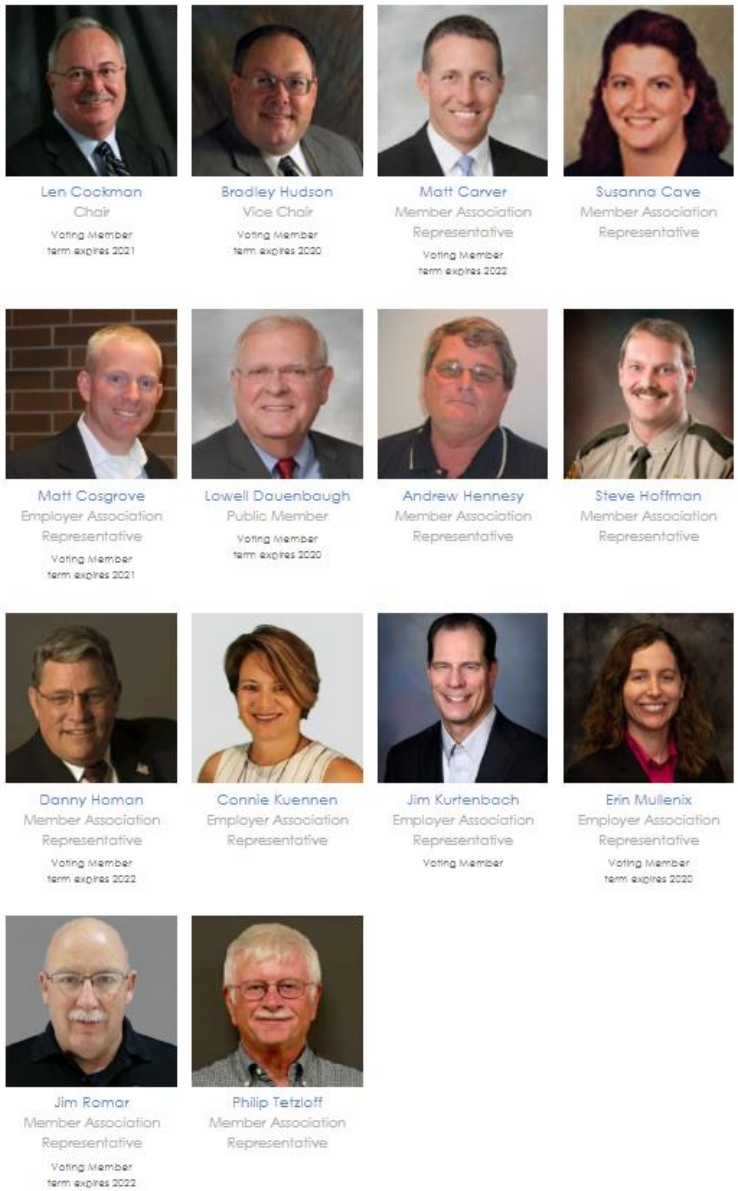
Important communication link between members, administrators and legislators

Associations choose BAC representatives

- Nine voting members
- Public member and DAS director

Studies issues and makes plan recommendations to IPERS and Legislature

Ensures IPERS meets member and employer needs



BAC-Supported Initiatives

Internal investment management

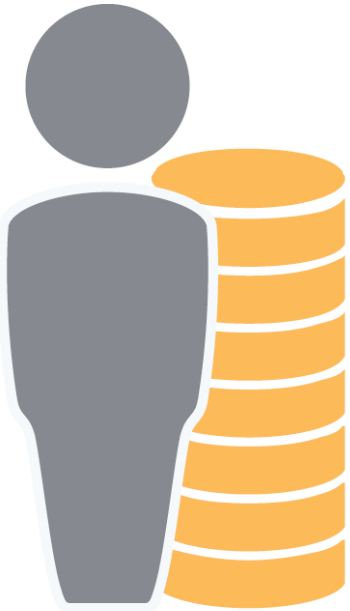
Actuarially determined contribution rates

Anti-spiking rules/Exclusion of bonus and allowances from covered wages

2012 pension reform of benefits

Administration Costs

IPERS' pension administration costs per member are significantly less than its peers.



Peer average cost $96

IPERS' cost $51

Source: CEM Benchmarking Inc., FY19

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