Funding Risk and Mitigation

CalPERS Board of Administration

August 18, 2015

CalPERS

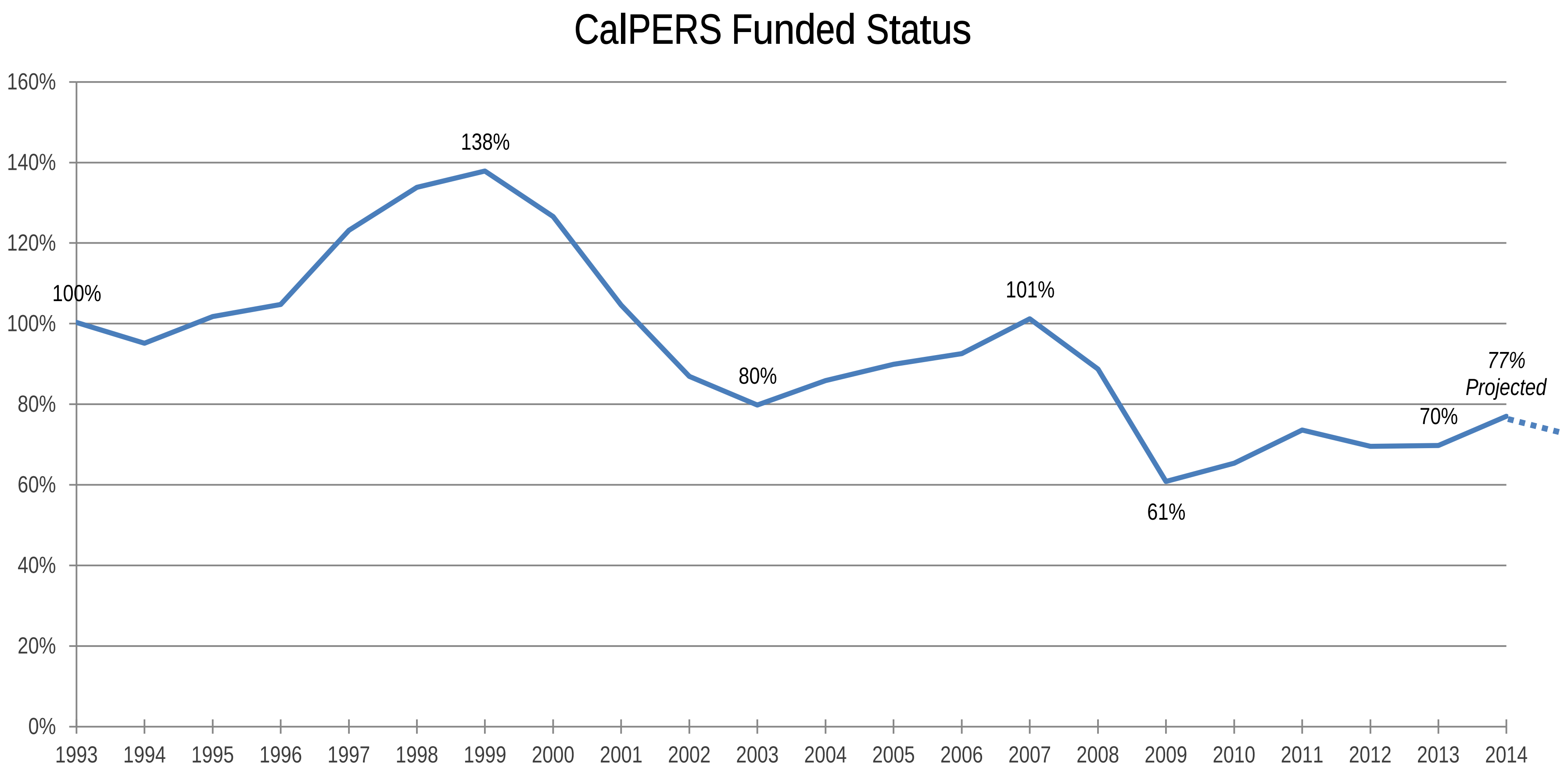
Agenda

- Part I: Recap of Risk Mitigation
- Part II: Risk Mitigation Strategies to help Ensure Sustainability
- Part III: Risk Mitigation Considerations (Wilshire)
- Part IV: What are the Cost Impacts?
- Part V: Summary of Stakeholder Outreach
- Part VI: Public Comment
- Part VII: Board Direction and Feedback

Funding Risk

- Maturity levels are at their highest levels
  - Levels are expected to continue to increase.
  - Contribution rate volatility will continue to increase over the next 20 to 30 years.
  - A poor investment return will impact contribution rates more in 20 years than it will if it happened today.

Funded Status History



Risk Mitigation Will Benefit Employers and Members in the Long Term

- Sustainable fund
- Less volatile investment returns
- More stable contribution rates
- Less likely to have a drastic loss like 2008-09

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Risk Mitigations Strategies Under Consideration

- Flexible Glide Path
  - Reduce funding risk only after great investment year
  - Investment gain to lower ER contribution rate and reduce risk

- Blended Glide Path
  - Similar to Flexible Glide Path
  - Checkpoints where risk mitigation occurs to ensure gradual lowering of risk over time

Comparison of Risk Mitigation Strategies

Flexible

- Simplicity in administering
- No lowering of risk after poor investment years

Blended

- Certainty
  - Risk mitigation will occur
  - Shorter timeframe
- Regular progression toward lower volatility

Thresholds

- Thresholds are defined as the investment return in excess of the discount rate required to trigger a risk mitigation event

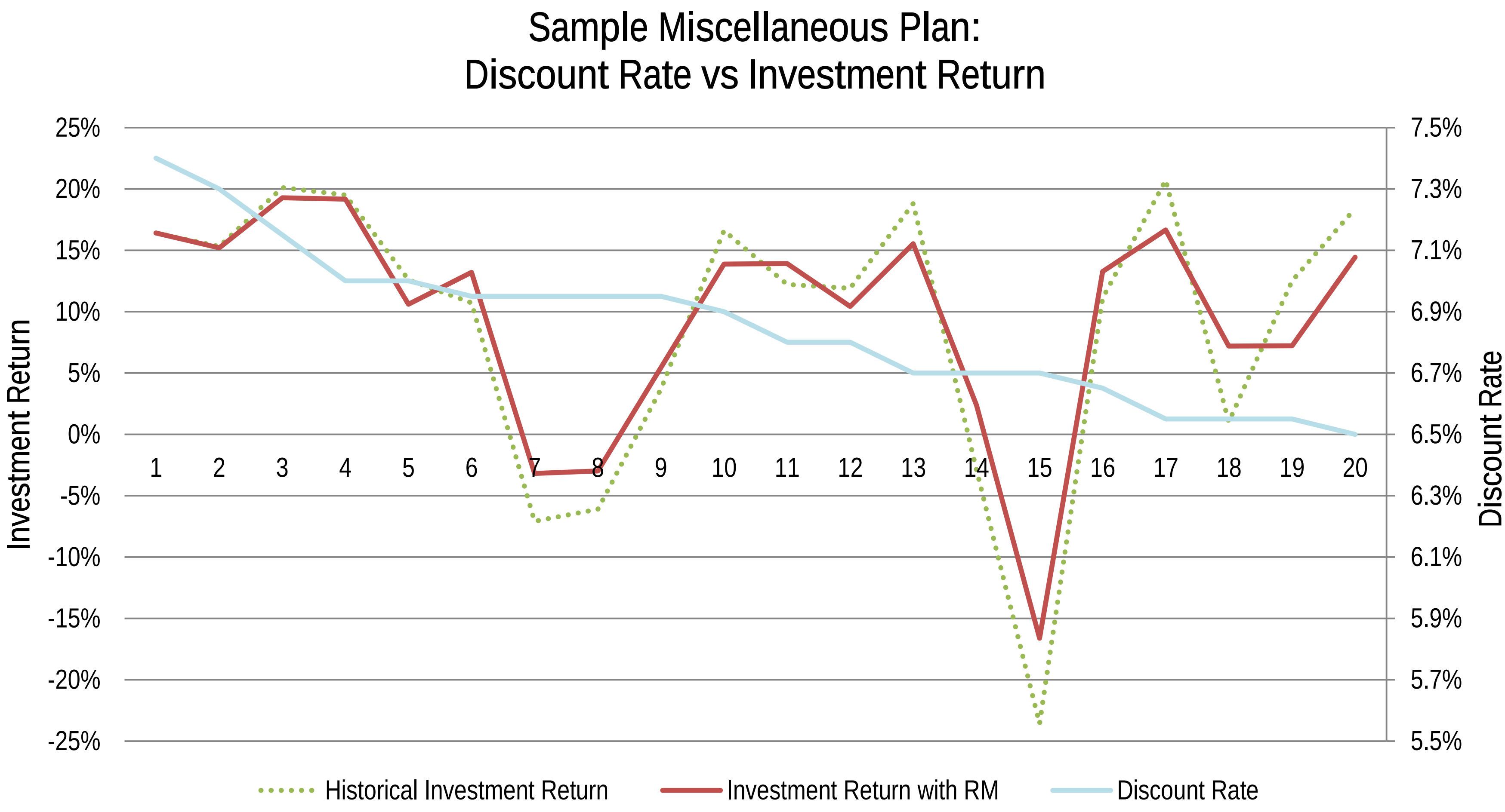
Discount Rate Reduction	Additional Investment Return Required	Total Investment Return Required (Currently)
0.05%	4.0%	11.5%
0.10%	7.0%	14.5%
0.15%	10.0%	17.5%
0.20%	13.0%	20.5%
0.25%	17.0%	24.5%

Risk Mitigation Strategy Parameters

	Flexible	Blended
Volatility Target	10% or 8%	10% or 8%
Incremental Change in Discount Rate	5 basis points	5 basis points
Maximum change in Discount Rate per year	25 basis points	25 basis points
Minimum additional Investment Return (Threshold)	4%	4%
Minimum movement during a 4 year cycle	N/A	15 basis points

*Continuation of ALM process every 4 years to review capital market and economic assumptions, actuarial assumptions and risk mitigation policy.

Example – Next 20 Years using Historical Returns



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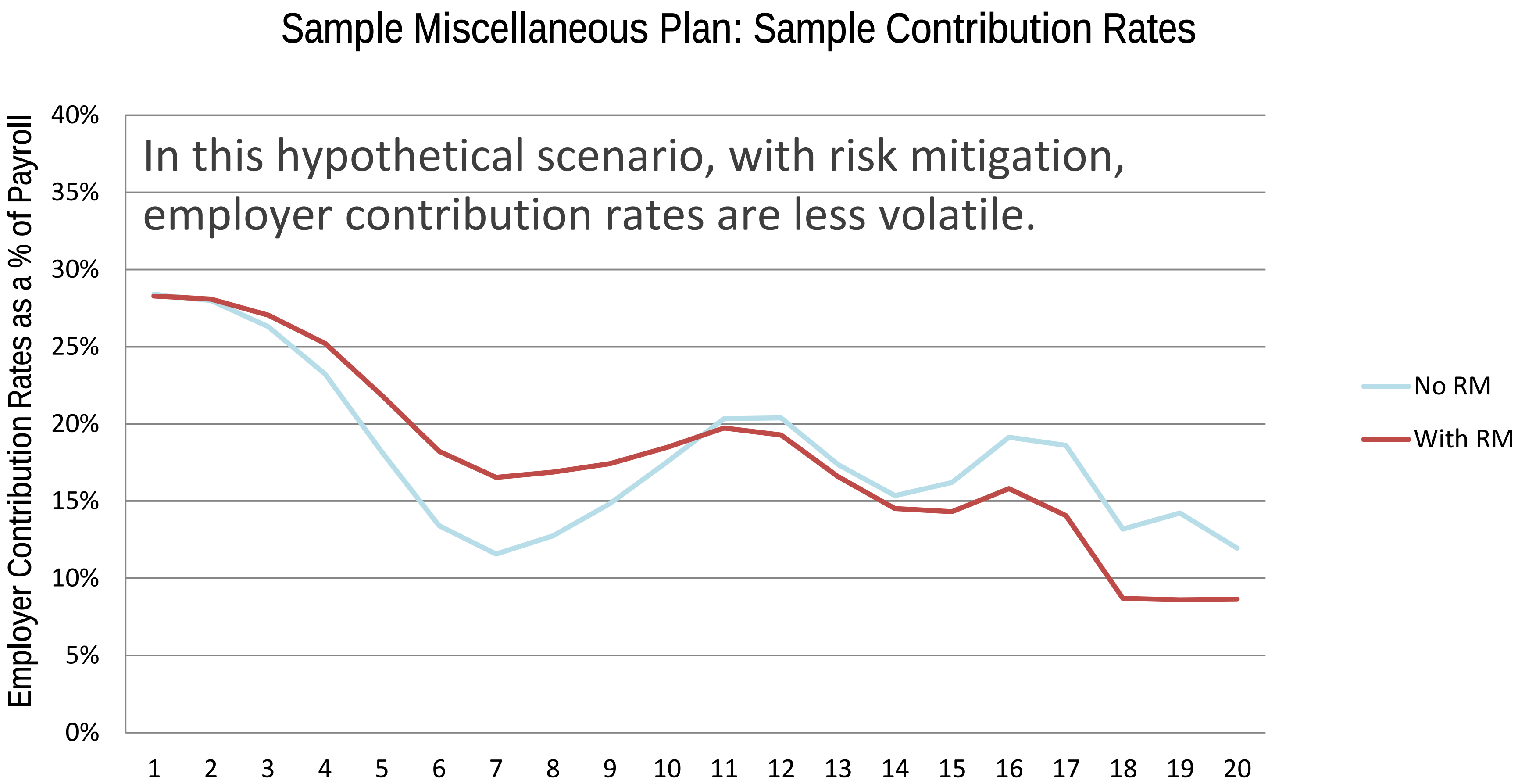
Example – Next 20 Years using Historical Returns



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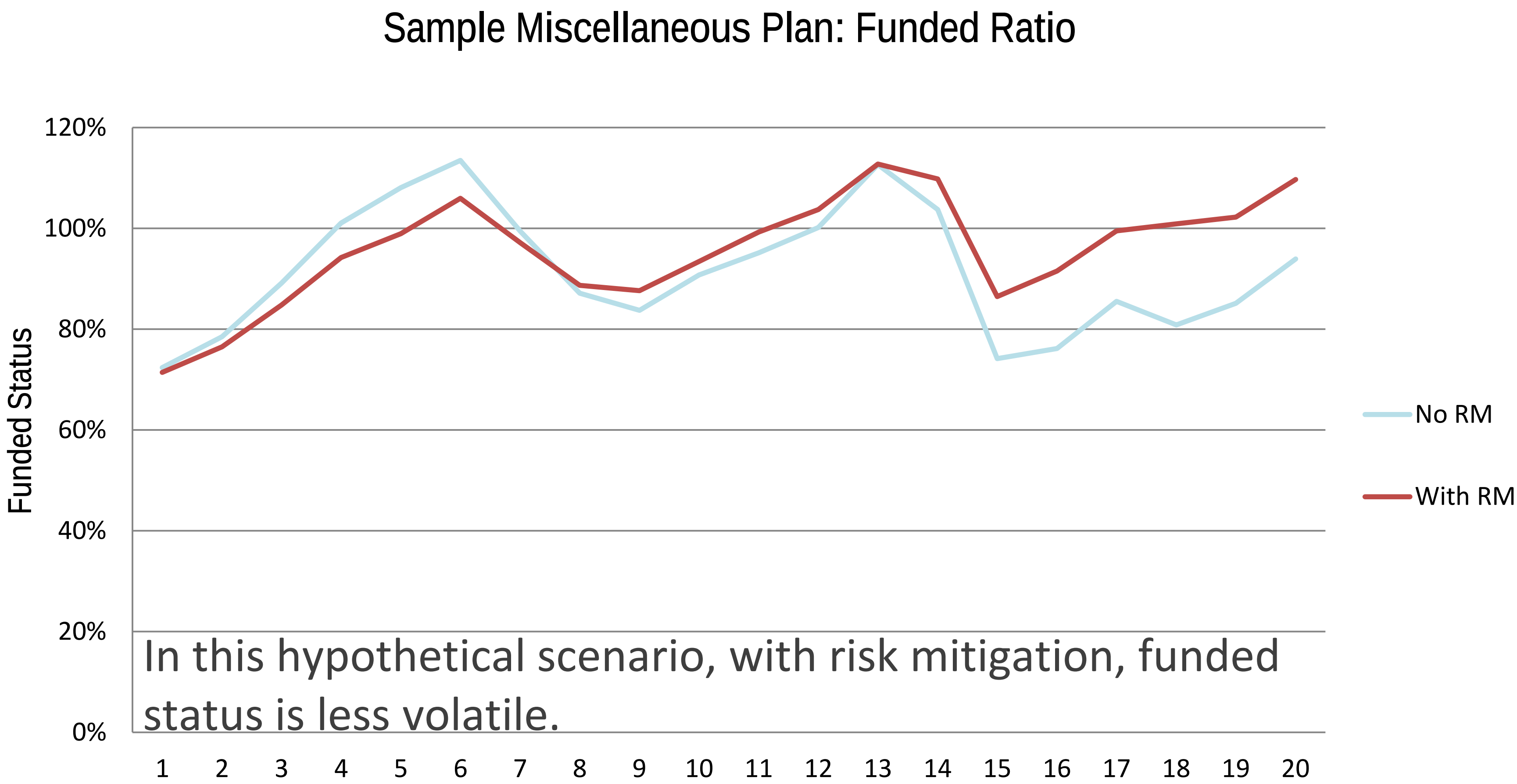
Example – Next 20 Years using Historical Returns



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Risk Mitigation Considerations

Example of Risk Mitigation - Historical

- The next few page examines how a simplified investment risk mitigation strategy might have performed versus a static portfolio
  - Static 60% global equity (MSCI ACWI Index)/ 40% investment grade bonds (Barclays Aggregate); rebalanced at the beginning of each fiscal year
  - “Risk Mitigated” portfolio starts at 60/40 on June 30, 1995, but after years with portfolio returns greater than 10%, 1% is shifted from equities to fixed income during the rebalancing (ending at 53/47)
- Growth of $100 dollars is calculated for each portfolio
- One scenario assumes no cash flows, one assumes net cash outflows begin at 2.5% and dollar value of outflows grows by 10% per year

Example of Risk Mitigation - Historical

	No Cash Flows	
	Start	Grows To
60/40 Static	$ 100	$ 398
Risk Mitigated	$ 100	$ 395

	With Cash Flows	
	Start	Grows To
60/40 Static	$ 100	$ 160
Risk Mitigated	$ 100	$ 160
Cumulative Outflows		$ 158
Year 20 Outflows		$ 17

Forward Looking Example

- What if the next 20 years mirror the past 20? Returns are the same, but in the opposite order with an inflection point of 6/30/2014
- Assume the FY2014 return is repeated in FY2015, FY2013 is repeated in FY2016, FY2012 is repeated in FY 2017, etc.
- Both Static and Risk Mitigation portfolios are created as 60/40 portfolios and are rebalanced as before, but based on the reversed return series
- Cash flows are applied as before

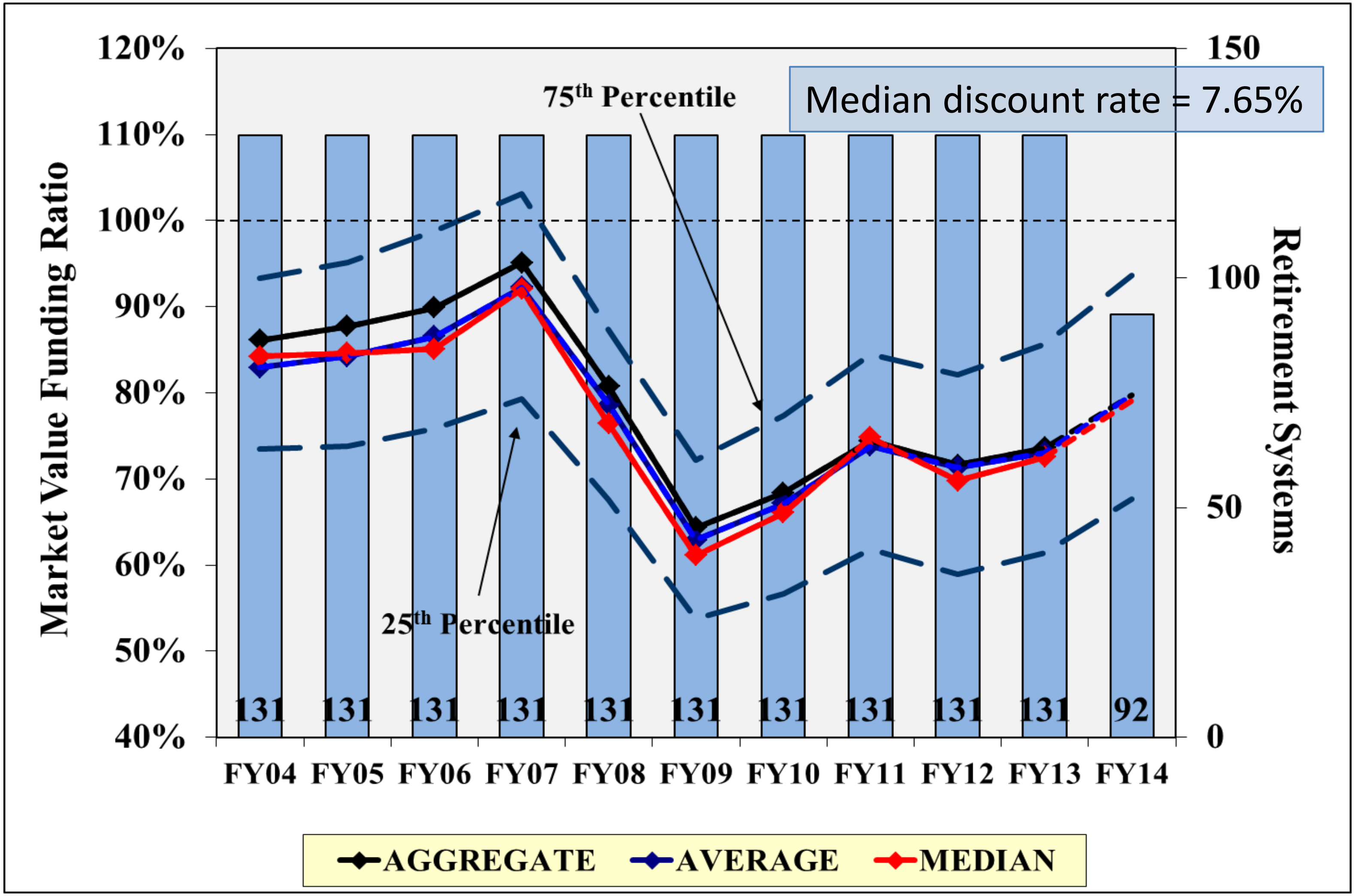
Example – Forward Looking

	No Cash Flows		
	Start		Grows To
60/40 Static	$ 100	→	$ 398
Risk Mitigated	$ 100	→	$ 401

	With Cash Flows		
	Start		Grows To
60/40 Static	$ 100	→	$ 97
Risk Mitigated	$ 100	→	$ 100
Cumulative Outflows			$ 158
Year 20 Outflows			$ 17

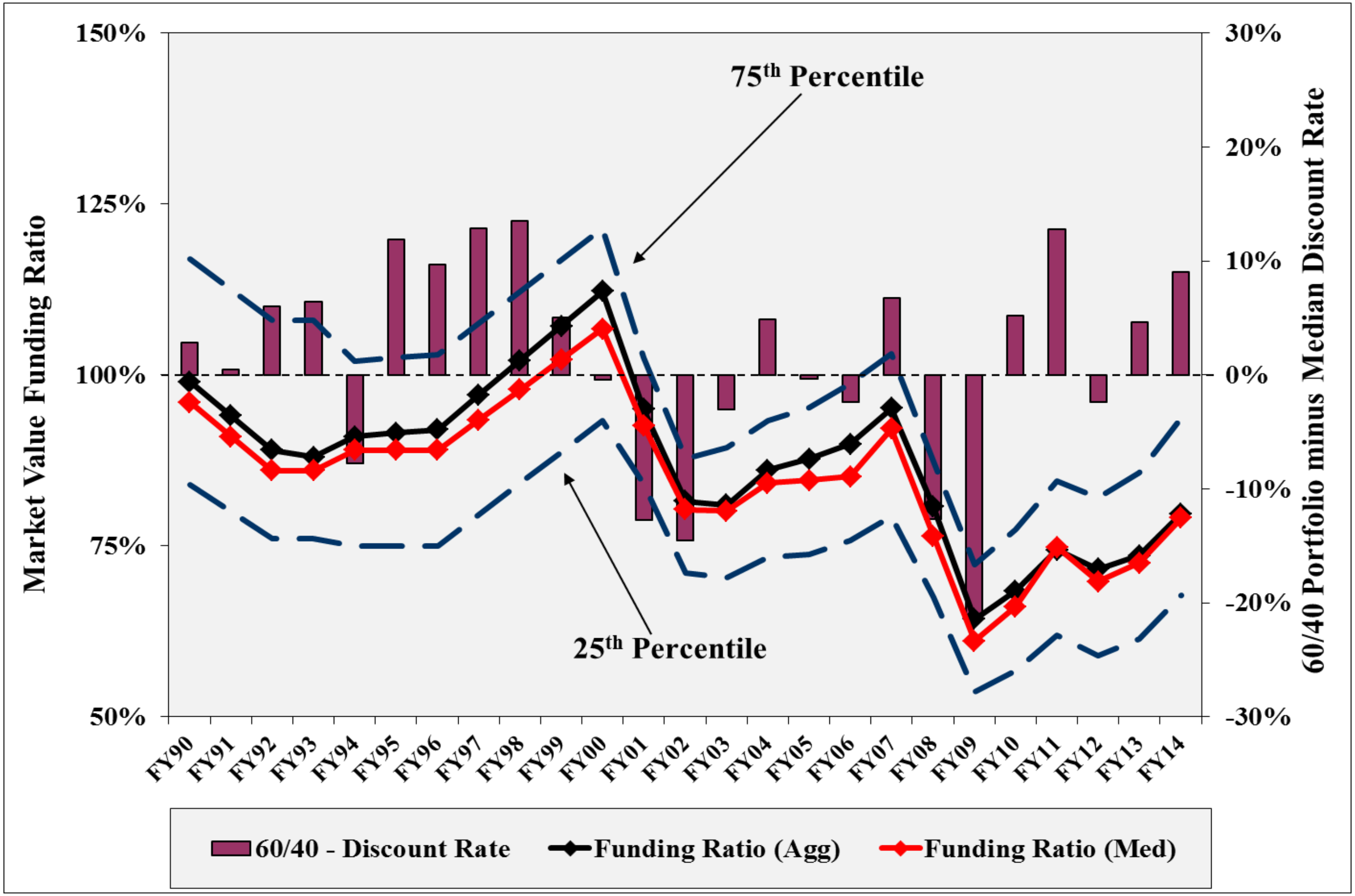
Funding Trends: Market Value of Assets vs. Liabilities – State DB Plans

Wilshire

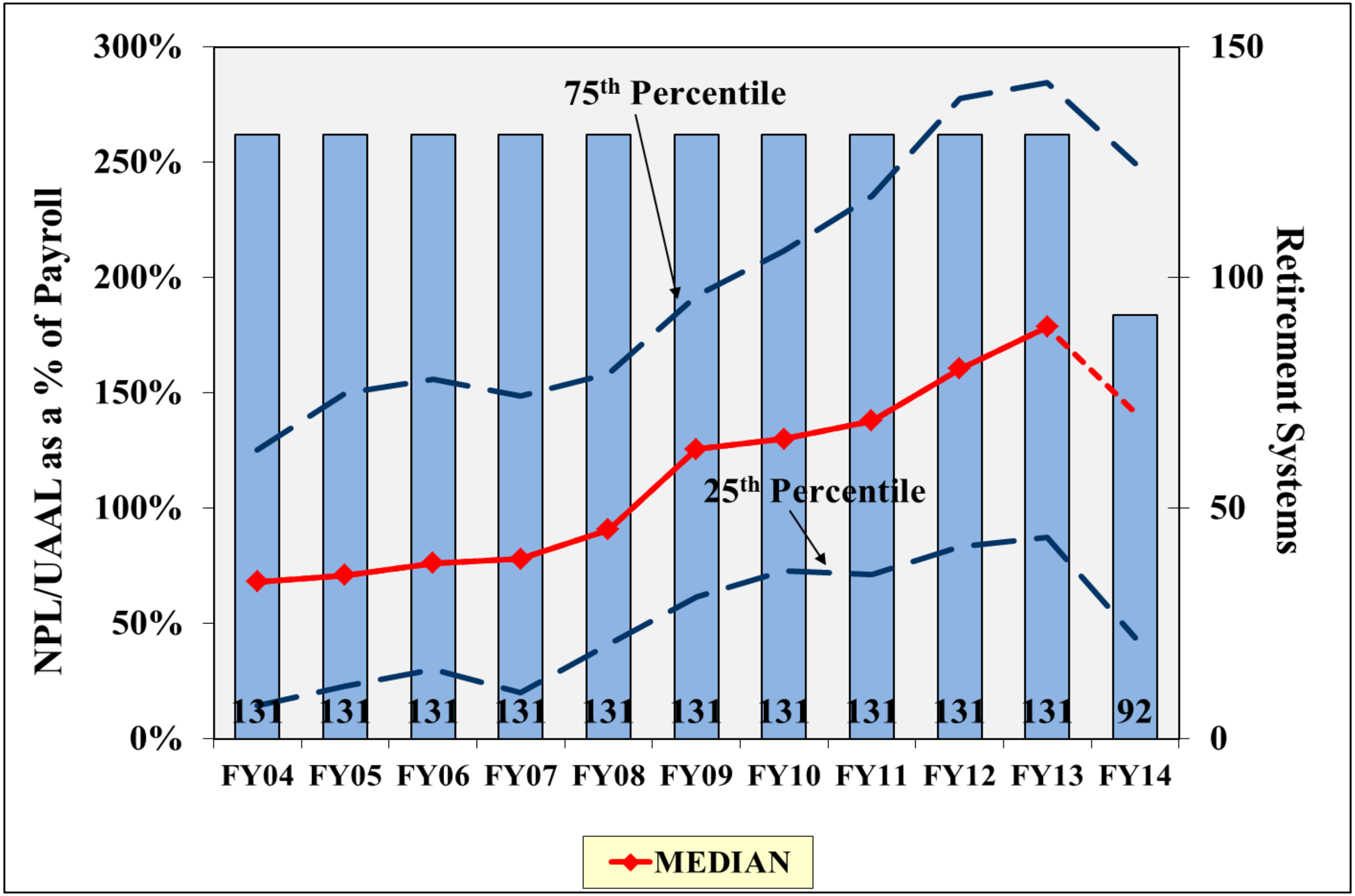


Market Impact on Historical Funding Ratios – State Plans

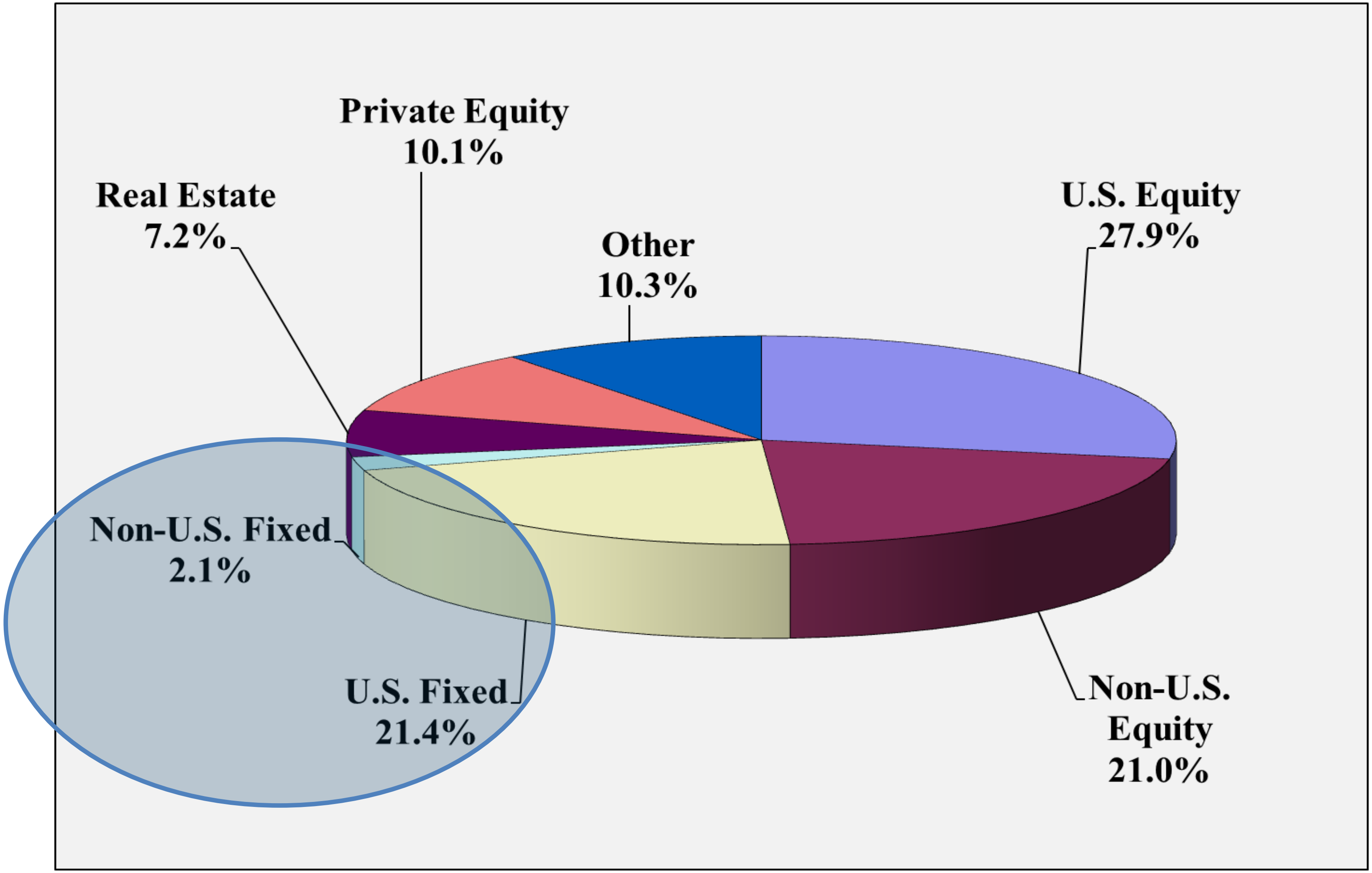
Wilshire



Unfunded Liability as a % of Covered Payroll – State Plans



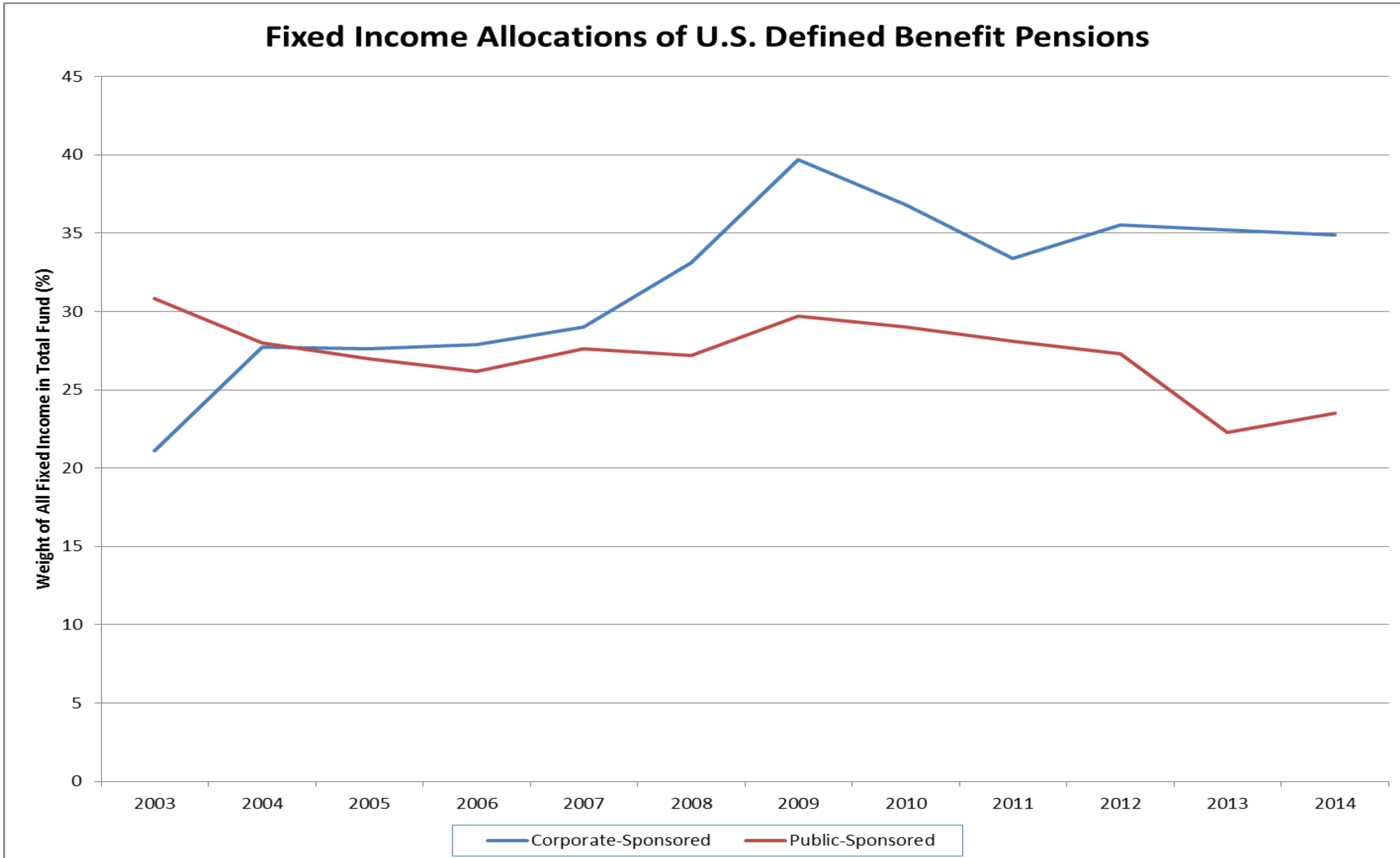
Average Asset Allocation for State Plans



Risk Mitigation – CalPERS Would Be a Leader

- Largely, public DB plans have not embarked on a risk mitigation journey, instead choosing to seek high returns and tolerate attendant volatility
- However, public plans are not homogenous - maturity, cash flow, demographics, funded status
- As plans mature, become cash flow negative, have more retirees and fewer employees, risk mitigation and the path of returns will become far more critical
- Corporate DB plans – while not perfectly identical to public DB plans – have moved significantly into risk mitigation strategies
  - Thus, examples of more successful and less successful strategies exist and can be used as educational paradigms
    - Actuarial
    - Investment
    - Risk management/monitoring

Changes in Asset Allocation Over Time



Source: Greenwich Associates

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Sample PEPRA Miscellaneous Normal Cost Comparison

- Lowering the discount rate increases normal cost, which will increase member contributions under PEPRA for members coming in after January 1, 2013.
- These increases will gradually occur over time as volatility decreases.

Sample Miscellaneous Plan A	Current Plan	10% Volatility	8% Volatility
Employer	6.32%	7.39%	8.14%
Employee	6.50%	7.00%	8.00%
Total	12.82%	14.39%	16.14%

Sample Miscellaneous Plan B	Current Plan	10% Volatility	8% Volatility
Employer	6.84%	7.83%	8.49%
Employee	6.75%	7.25%	8.25%
Total	13.59%	15.08%	16.74%

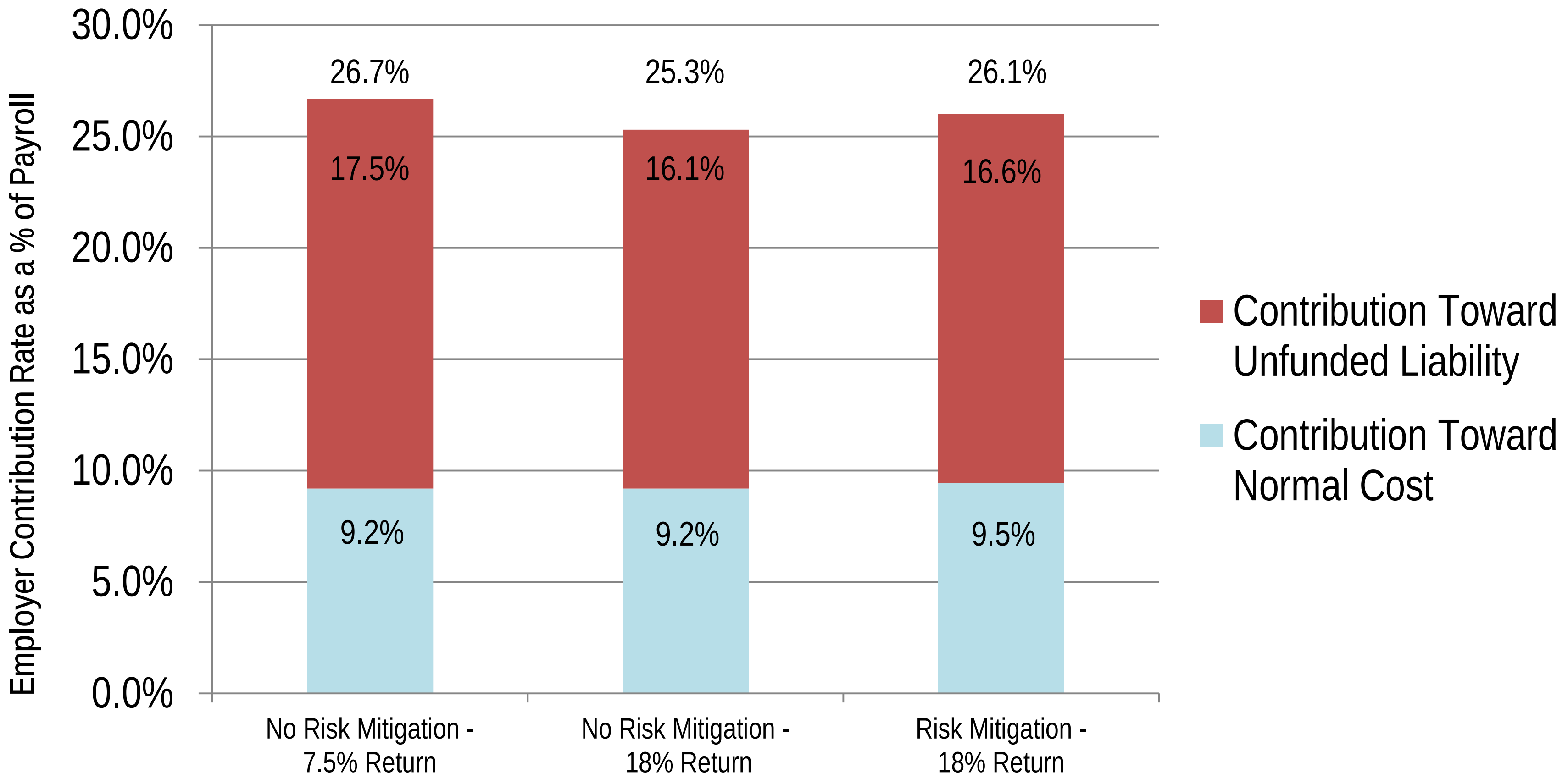
Sample PEPRA Safety Normal Cost Comparison

- Lowering the discount rate increases normal cost, which will increase member contributions under PEPRA for members coming in after January 1, 2013.
- These increases will gradually occur over time as volatility decreases.

Sample Safety Plan A	Current Plan	10% Volatility	8% Volatility
Employer	10.81%	12.47%	14.01%
Employee	10.75%	12.00%	13.75%
Total	21.56%	24.47%	27.76%

Sample Safety Plan B	Current Plan	10% Volatility	8% Volatility
Employer	11.48%	13.01%	14.37%
Employee	11.25%	12.50%	14.25%
Total	22.73%	25.51%	28.62%

Employer Contribution Rate Example



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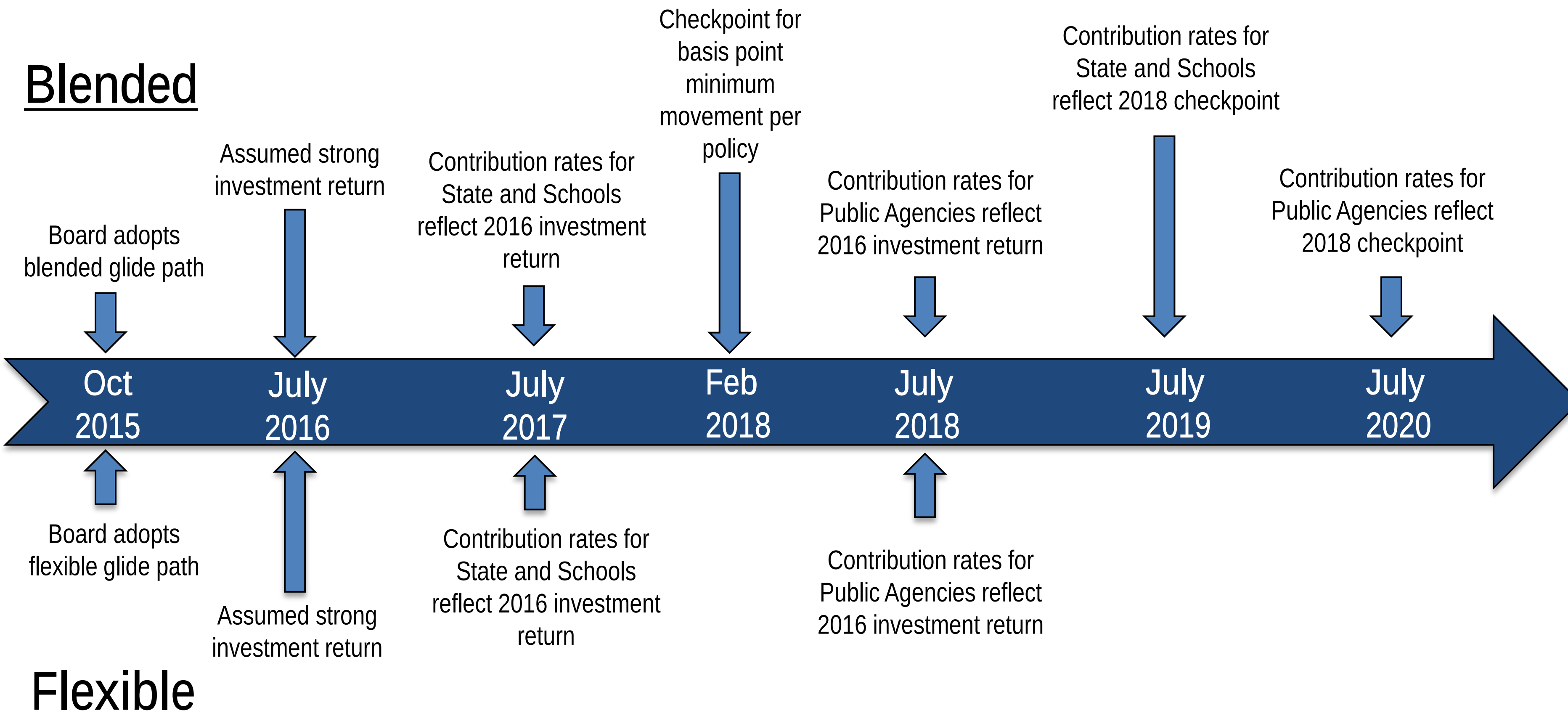
Glide Path Time Lines*



*Continuation of ALM process every 4 years to review capital market and economic assumptions, actuarial assumptions and risk mitigation policy.

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Summary of Stakeholder Outreach

- 12 meetings with Employer and Member Associations
- 4 Stakeholder Briefings
- 5 Educational Webinars with more than 600 participants
- Additional conferences and events

Stakeholder Commentary:

- Understand the need to reduce risk in the fund
- Understand the overall goals and objectives of the strategies
- Feedback has ranged from support for the strategies to concern over future financial impacts:

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Recap

- Maturity levels are at their highest levels
- Risk mitigation will benefit employers and members in the long term
- Reducing risk by reducing investment volatility
  - Gradually increases member and employer contribution over a long period of time.
- No risk mitigation could end up being far more costly.

Board Direction and Feedback

- Select either flexible or blended risk mitigation strategy
- Direct staff to bring back chosen risk mitigation policy for review in October 2015

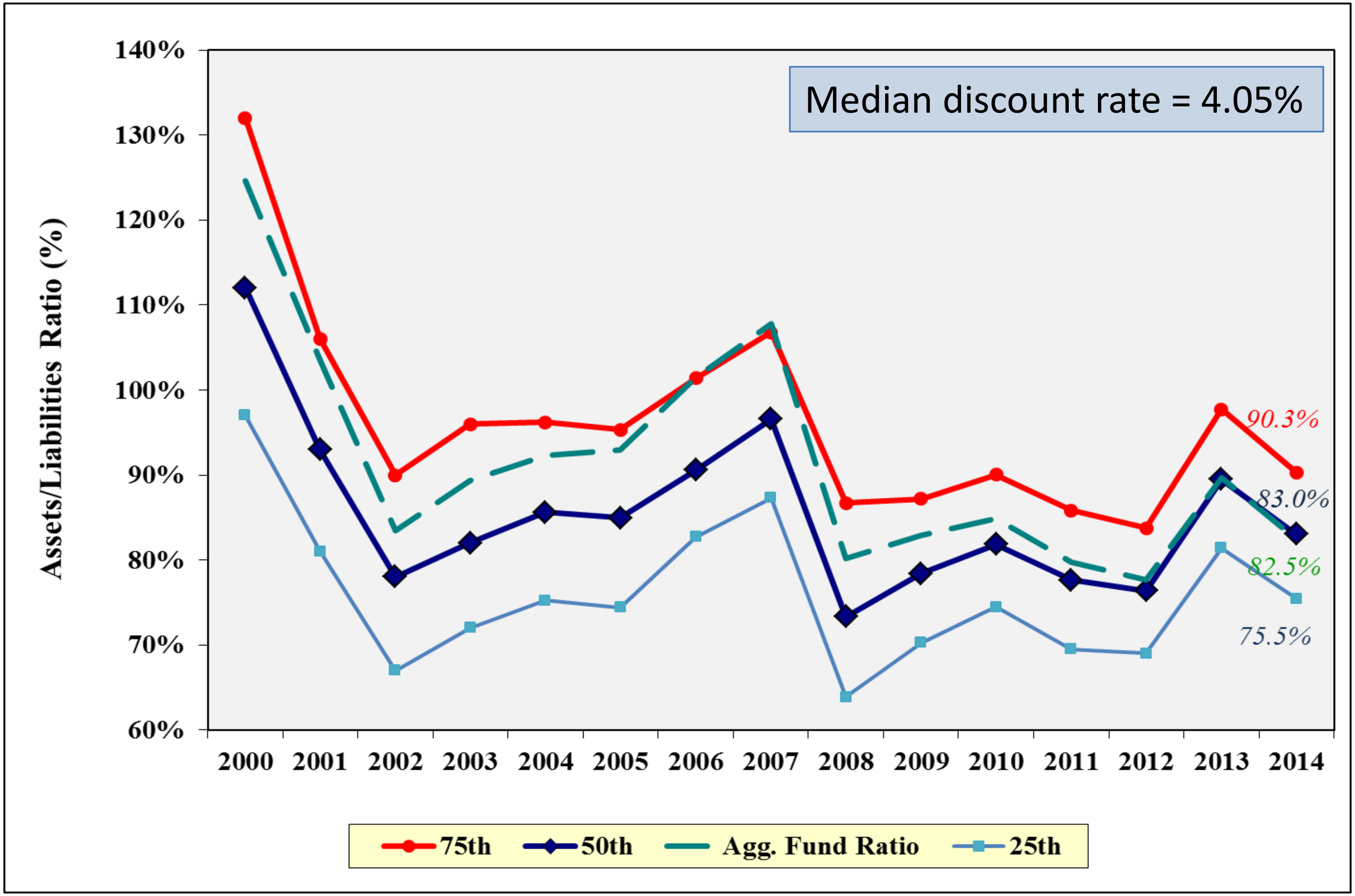
Next Steps

- October 2015 – Proposed 1st Policy Reading
- November 2015 – Proposed 2nd Policy Reading and Board Approval
- Continued communications with stakeholders

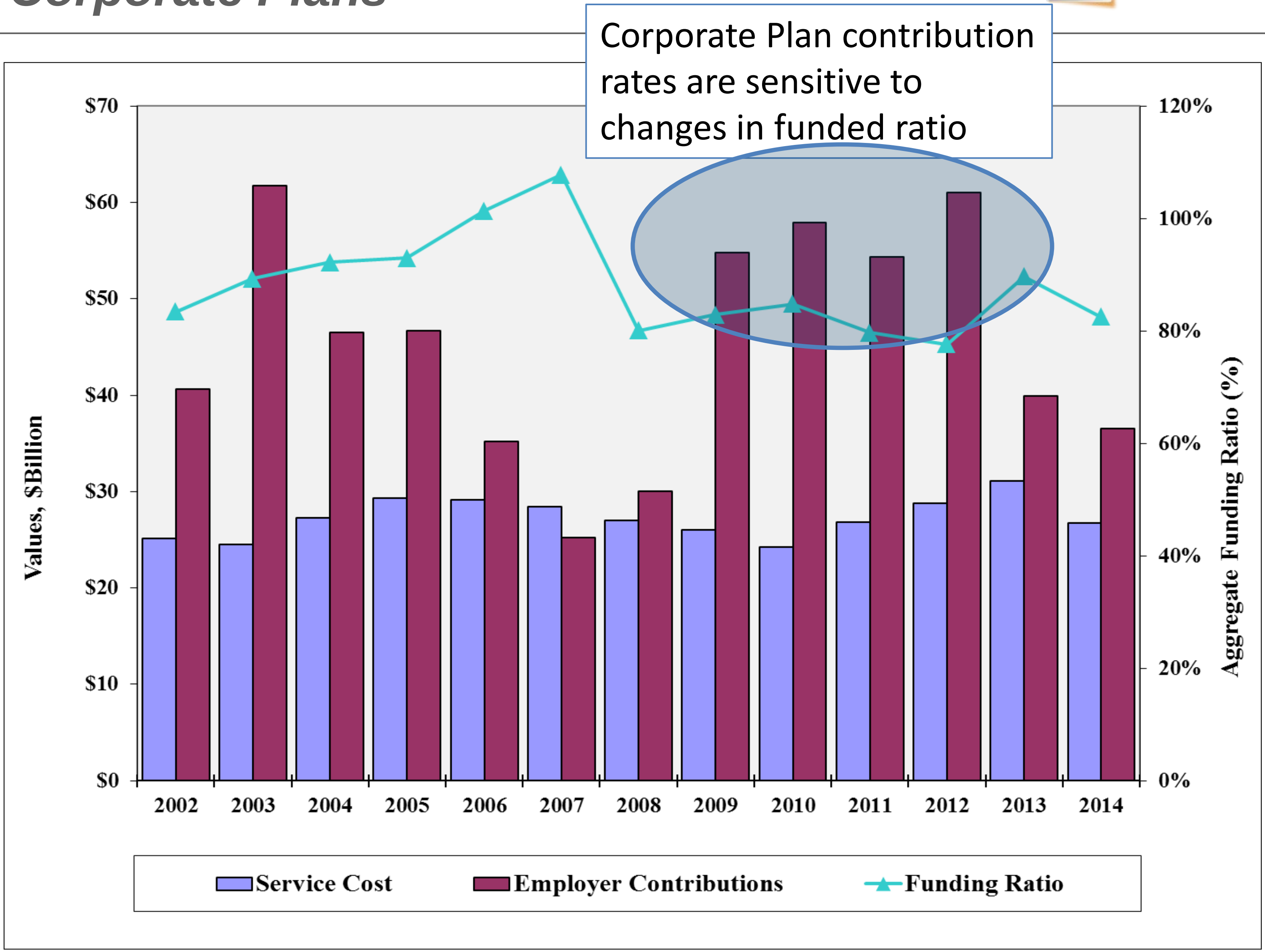
Wilshire

Appendix

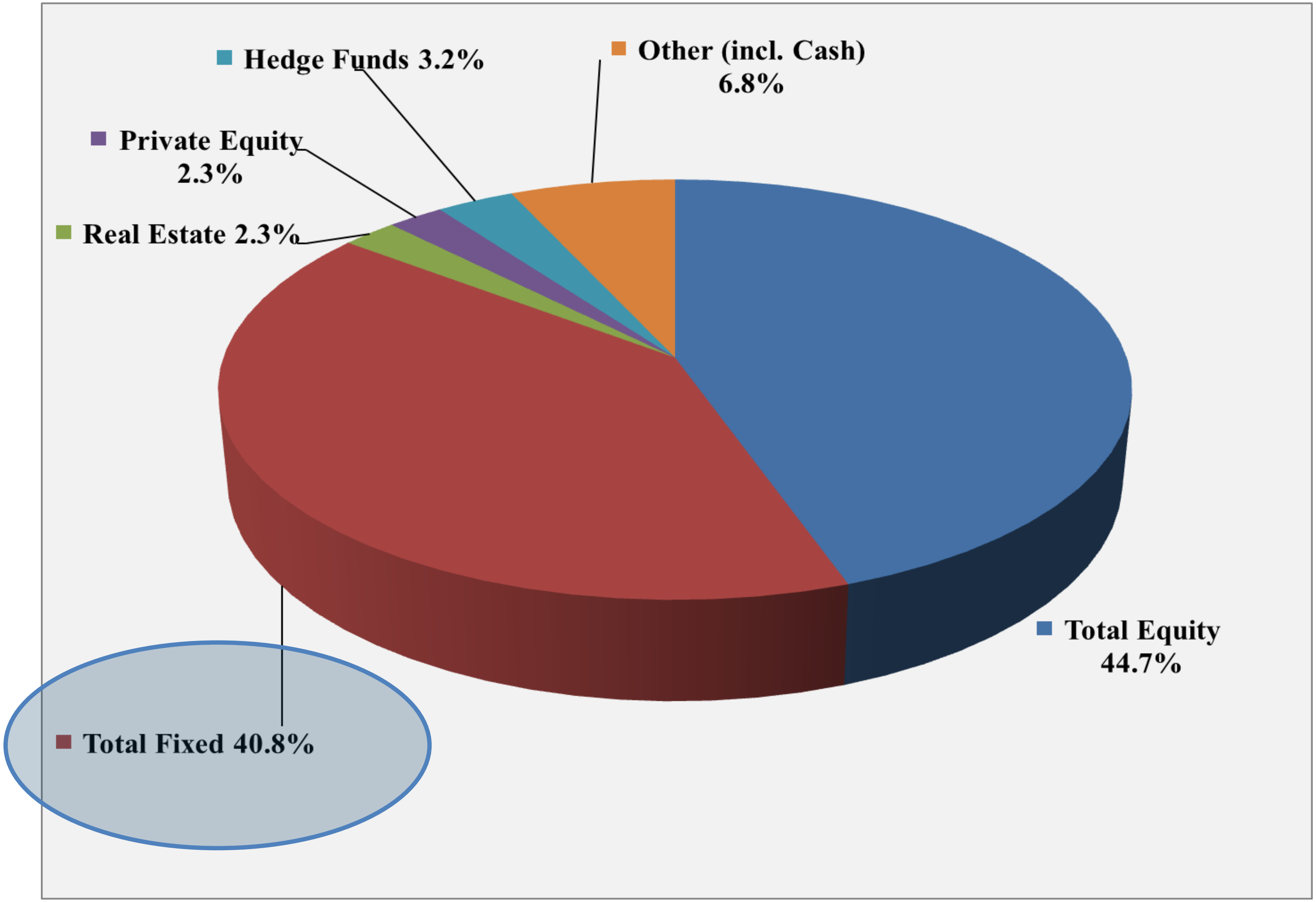
Corporate Plan Funding Ratios



Employer Contributions and Funding Ratio – Corporate Plans



Average Asset Allocation of S&P 500 Corporate DB Plans, 2014



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