

# **Investment Return Assumptions and Asset Allocation**

**Los Angeles Fire & Police Pensions  
2010 Board Educational Retreat**

**January 7, 2010**

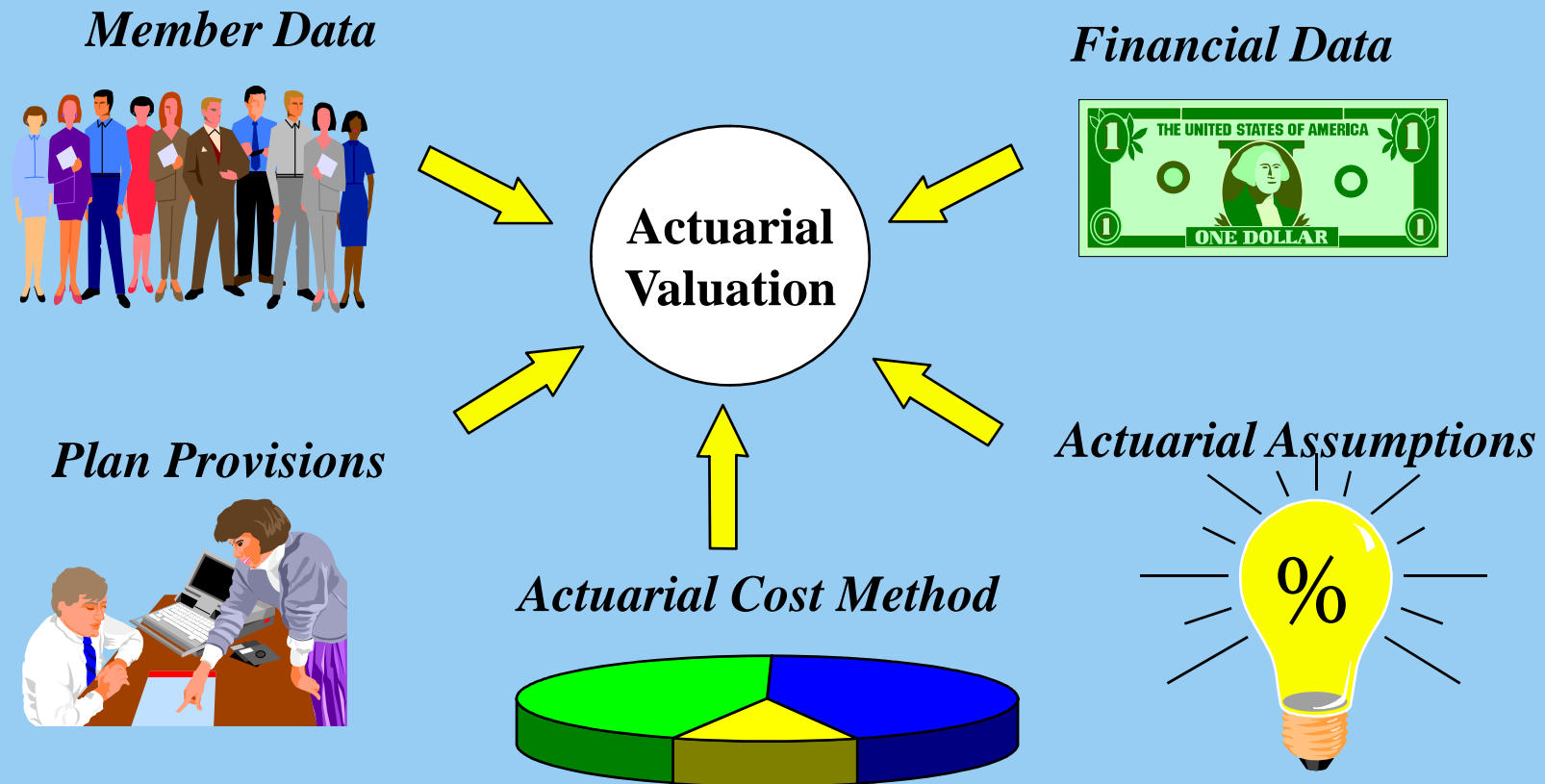
**Paul Angelo, FSA  
The Segal Company  
San Francisco**

**5063658**

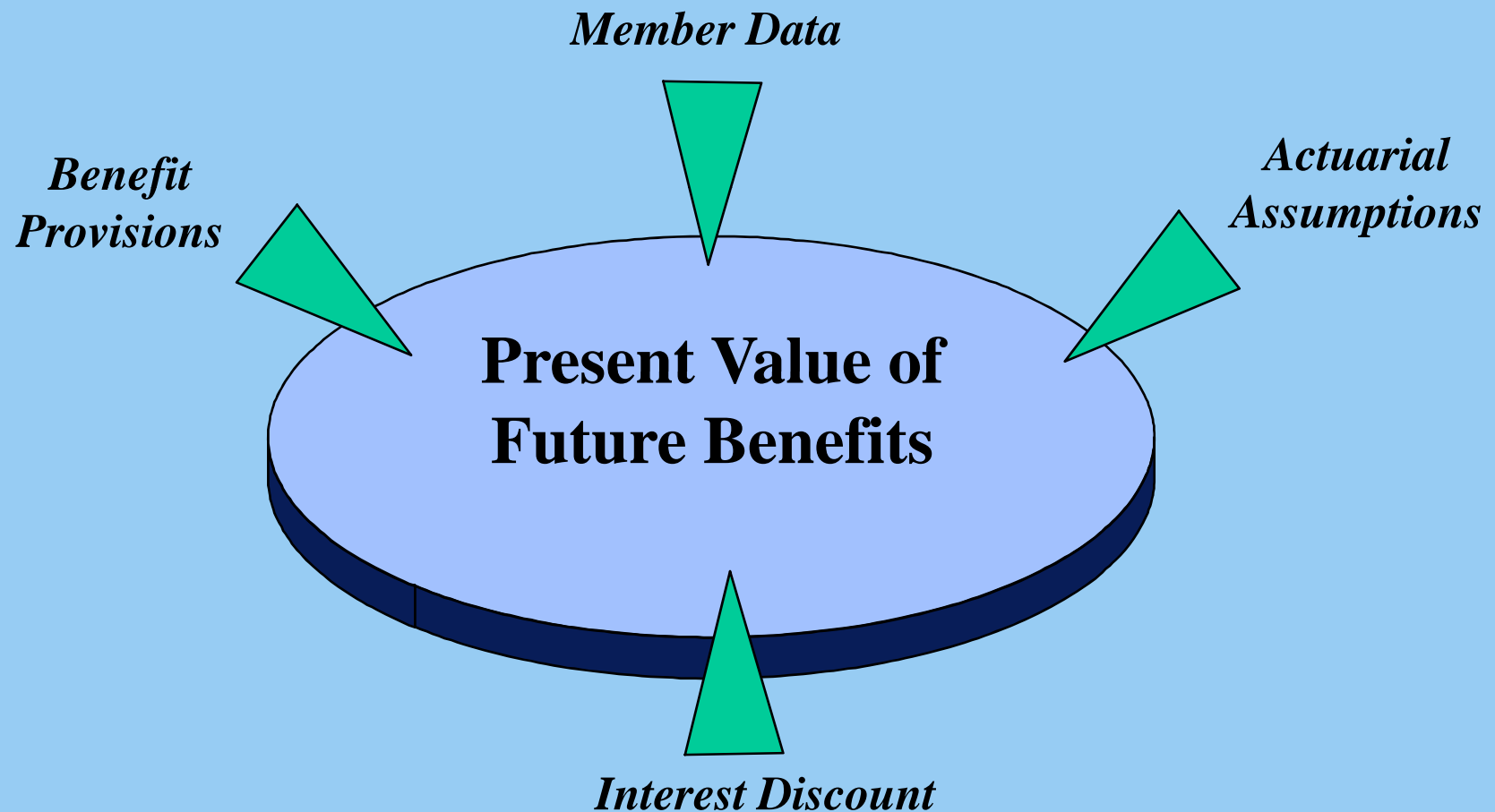
## Outline of Discussion

- Valuation Overview
- Selection and Role of Actuarial Assumptions
- Economic Actuarial Assumptions
  - Reviewed and reset in 2006
- Setting the Investment Earnings Assumption
  - Including relationship to asset allocation

# Valuation Input

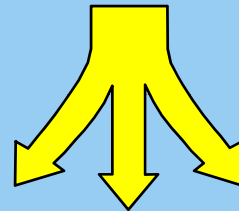


# Present Value of Future Benefits

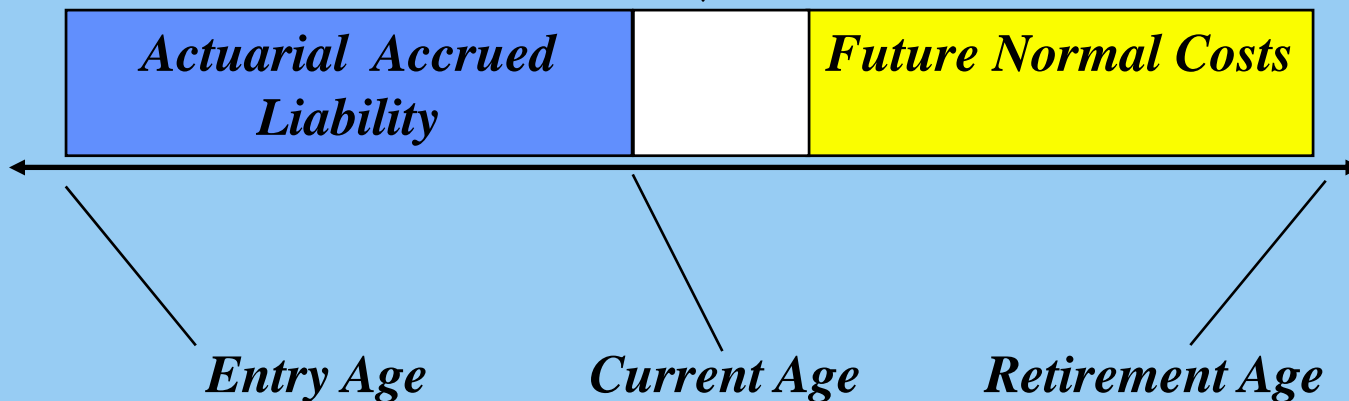


# Actuarial Cost Method

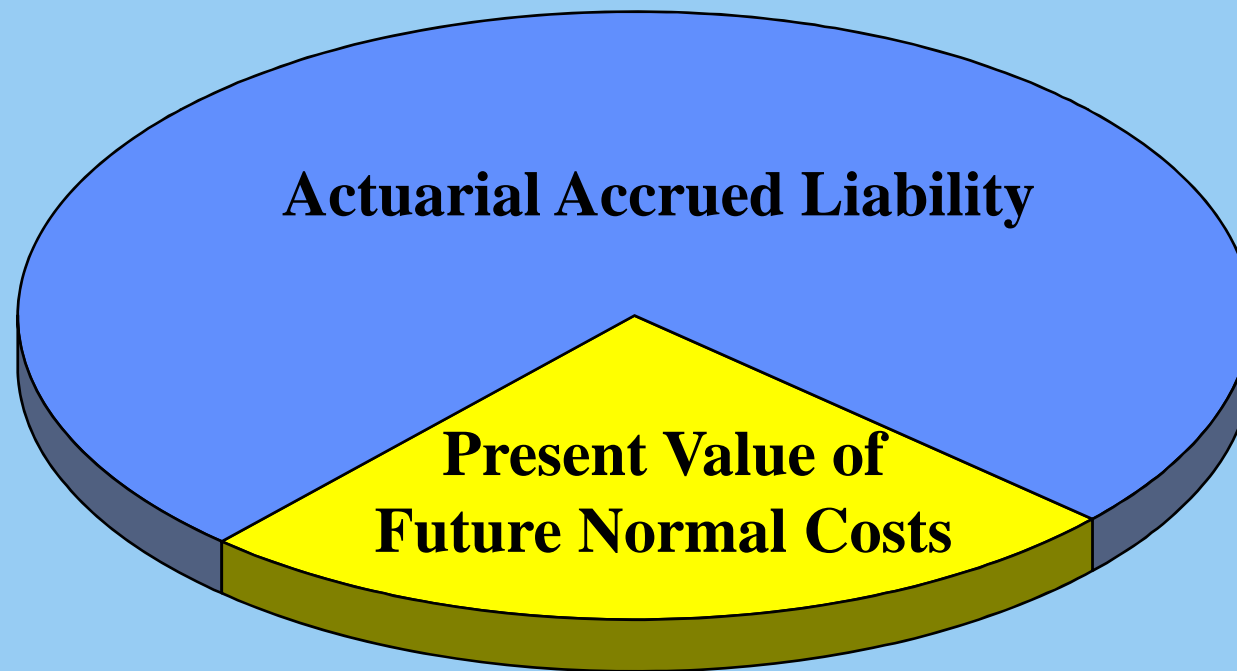
**Present Value of Future Benefits**



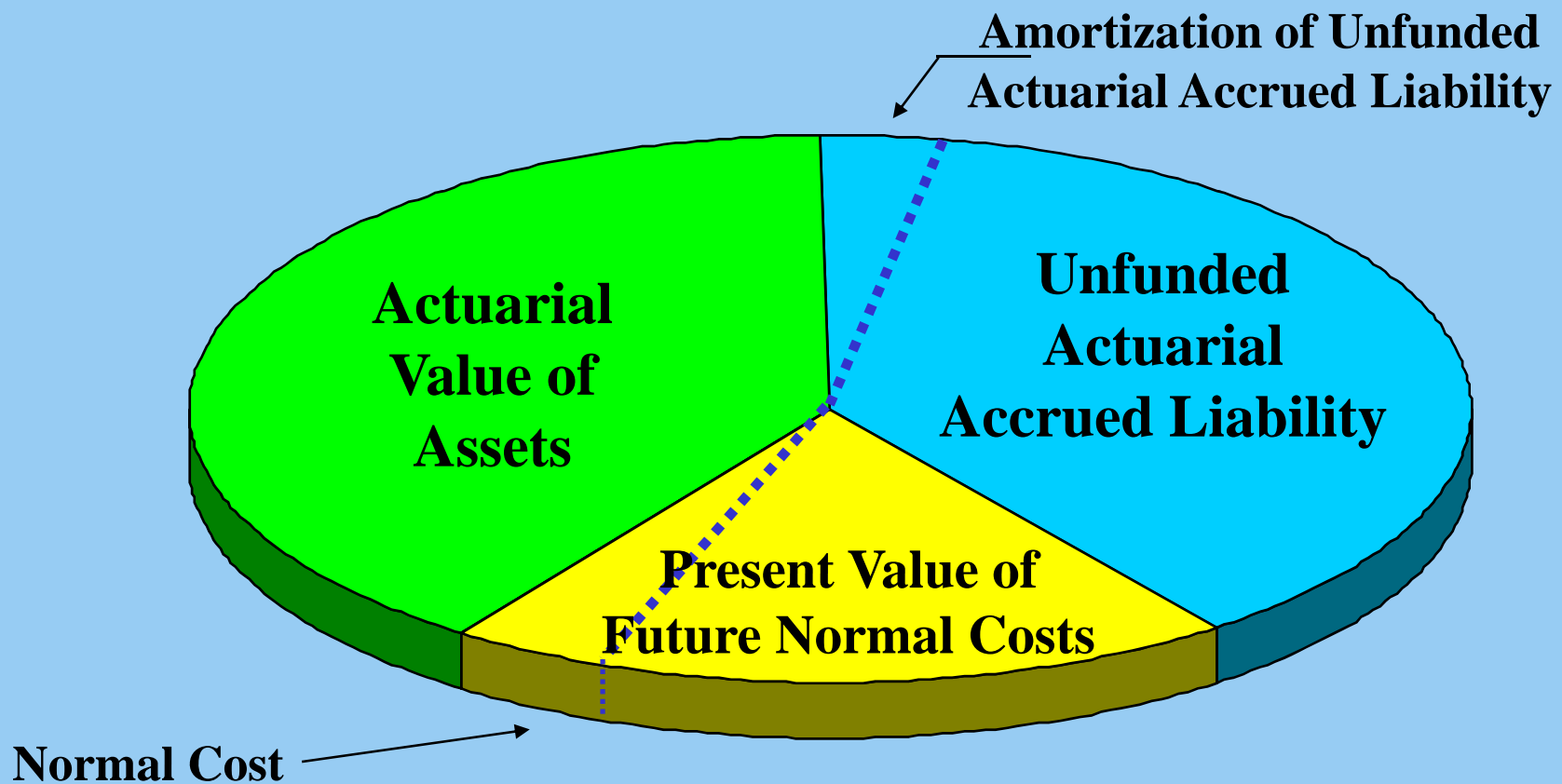
**Current Year Normal Cost**



## Actuarial Accrued Liability



# Current Contribution



## Selection of Actuarial Assumptions

- Objective, long term
- Experience analysis
- Recent experience or future expectations
  - Demographic: recent experience
  - Economic: not necessarily!
- Client specific or not
- Consistency among assumptions
- Desired pattern of cost incidence
  - Beware “results based” assumptions!

## Role of Assumptions (and Methods)

$$C + I = B + E$$

Contributions + Investment 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 or pattern of costs

## Economic Assumptions

- Price Inflation (CPI)
  - COLA, Investment Return, Salary increases
- **Investment Return**
  - Components include price inflation, expenses
  - Generally based on passive returns
- Salary Increases
  - “Across the board” increases
    - Includes price inflation plus real wage growth
  - Merit & Promotion: based on experience

## Economic Assumptions for 6/30/2006

- Price Inflation (CPI)
  - Decrease from 5.00% to 3.75%
- Investment Return (nominal)
  - Decrease from 8.50% to 8.00%
- Salary Increases
  - Decrease “inflation” from 5.00% to 3.75%
  - Add “across the board” increases of 0.50%
  - Merit: increase from 1.50% to 1.75% (avg.)
  - Net result: decrease by 0.50%

## Investment Return and Wage Increases

	<u>Prior</u>		<u>Adopted</u>	
	<u>Return</u>	<u>Pay</u>	<u>Return</u>	<u>Pay</u>
“Inflation”	5.00%	5.00%	3.75%	3.75%
Real Wages	n/a	0.00%	n/a	0.50%
Merit	n/a	1.50%	n/a	1.75%
Net Real Return	3.50%	n/a	4.25%	n/a
Total	8.50%	6.50%	8.00%	6.00%

## Investment Earnings Assumption

- Also called the assumed interest rate
- Used for contribution requirements
- Affects timing of Plan cost
  - Lower assumed rate means higher current cost
  - Ultimately, actual earnings determine cost
  - “Can’t pay benefits with assumed earnings!”

## Setting the Earnings Assumption

- Actuarial Standard of Practice #27 (ASOP 27)
  - “Selection of Economic Assumptions for Measuring Pension Obligations”
  - Issued by the Actuarial Standards Board (ASB)
  - [www.actuarialstandardsboard.org](http://www.actuarialstandardsboard.org)
- Determine best-estimate range
- Select point in the range
  - Multi-employers most conservative, public sector next, corporates most aggressive

## ASOP 27 on Earnings Assumption

- Data to review
  - Current yields on fixed income securities
  - Forecasts of inflation
  - **Forecasts of total returns by asset class**
  - Historical data
    - Inflation and real risk-free returns
    - Real returns by asset class
  - Historical Plan performance
- Do not give “undue weight to recent experience” Slide 15

## ASOP 27 on Earnings Assumption

- Building-Block Method is most common
  - **Determine best-estimate range for future real return for each asset class**
  - Compute weighted-average real return range
  - Combine with expected inflation range
  - Deduct assumed investment expenses
  - Deduct administrative expenses
  - Select point in range, based on risk tolerance
- Note: no add-on for superior managers

## LAFPP Earnings Assumption

<b>Asset Class</b>	<b>Real Return</b>	<b>Percentage Allocation</b>	<b>Weighted Return</b>
<b>Domestic Equity</b>	<b>6.75%</b>	<b>35%</b>	<b>2.36%</b>
<b>Internat'l Equities</b>	<b>7.27%</b>	<b>18%</b>	<b>1.31%</b>
<b>Fixed Income</b>	<b>2.87%</b>	<b>26%</b>	<b>0.75%</b>
<b>Real Estate</b>	<b>4.78%</b>	<b>10%</b>	<b>0.48%</b>
<b>Private Equity</b>	<b>10.50%</b>	<b>10%</b>	<b>1.05%</b>
<b>Cash</b>	<b>1.38%</b>	<b>1%</b>	<b>0.01%</b>
<b>Weighted Real Rate of Return</b>		<b>100%</b>	<b>5.95%</b>
<b>Assumed Inflation</b>			<b>3.75%</b>
<b>Assumed Expenses</b>			<b>(0.35%)</b>
<b>"Confidence level" based Risk Adjustment</b>			<b>(1.35%)</b>
<b>Assumed Investment Return</b>			<b>8.00%</b>

## When to change assumption?

- Easy: change in asset allocation
  - Including cash flow analysis
- **Hard: change in best-estimate future real return for an asset class**
- Source of data:
  - Investment consultants
  - Ibbotson, etc.
- Actuaries are neither economists nor investment consultants

## Should we revisit assumption now?

- Not for 2009 valuation
  - With unprecedented recent turmoil, is this the time to re-evaluate our long term forecast?
  - Reading tea leaves in a hurricane
- Let the investment dust settle
  - With deference to the investment folks
- Next review scheduled with 2007-2010 experience study

## Earnings Assumption is NOT a Target Return

- Earnings assumption depends on:
  - Inflation and expense assumptions
  - Expected real returns by asset class
  - **Asset allocation**
- **Policy pitfalls:**
  - **Setting allocation to “chase” assumed return**
  - Setting allocation to chase recent losses
  - **“Results based” assumption setting**

## Always remember:

$$C + I = B + E$$

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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



**QUESTIONS**