Horizon
Actuarial Services, LLC

UCSB Actuarial Program

Pension Actuaries and the Changing Retirement Landscape

February 20, 2015

Cary Franklin, FSA

Today's Agenda

- **Personal Background**
- **Pension Plan Funding**
- **Multiemployer Plans**
- **Public Policy and Legislative Issues**
- **Wrap Up and Questions**

Personal Background

- **Graduated from UCSB 1975**
  - B.A. in Mathematics and Film Studies
    - There were *no* applied math courses
    - Lots of writing courses
- **FSA, 1981**
- **Enrolled Actuary, 1986**

Work Experience

- **1975-1986: Milliman & Robertson (now Milliman)**
- **1986-1990: Peat Marwick (now KPMG)**
- **1990-2009: The Wyatt Co./Watson Wyatt (now Towers Watson)**
- **2008- Horizon Actuarial Services, LLC**

Entire career has been in pension actuarial consulting

What Do Pension Actuaries Do?

- **Primarily concerned with *defined benefit* pension plans**
  - Benefit design
  - Funding
  - Legal compliance
- **Defined benefit vs. defined contribution plans**

Basic Types of Retirement Plans

- **Defined Benefit (DB)**
  - Plan formula defines the **benefit** at retirement
  - Ultimate benefit is determined by the plan's design
  - Benefit is typically provided as an annuity for life
- **Defined Contribution (DC)**
  - Plan formula defines the **contribution** to an individual account
  - Ultimate benefit depends on contribution rate and investment experience
  - Benefit is typically provided as a lump sum at retirement or separation

DB Plans: Sample Benefit Formulas

- **Unit Benefit Formula:**
  - Example: $150 times Years of Service
    - Sample Participant works 20 years
    - Benefit = 20 x $150 = $3,000/month for life, beginning at age 65
    - May be reduced for earlier retirement
- **Final Average Pay Formula:**
  - Example: 2.0% of final five-year average pay times years of service
    - Sample Participant works 20 years, retires with $5,000 final average monthly pay
    - Benefit = 1.5% x 20 x $5,000 = $1,500/month for life, beginning at age 65
    - May be reduced for earlier retirement

The U.S. Retirement Crisis

- **The retirement <u>income</u> crisis**
  - $6.6 trillion retirement savings shortfall
  - Half of all Americans have less than $10,000 in savings
  - Rise of DC plans, decline of DB plans

Source: Senate HELP Committee report, July 2012

The U.S. Retirement Crisis

- **Almost half of all U.S. workers don't have access to an employer provided retirement plan:**

All U.S. Workers		**157,400,000**
No Retirement Plan		76,600,000
Participating in a Retirement Plan		64,200,000
Eligible, but not Participating		16,600,000

- **Less than 20% of the private sector workforce has access to a Defined Benefit pension plan**

Sources: EBRI Issue Brief, October 2014; Bureau of Labor Statistics, March 2014

The Fundamental Equation

For any retirement plan:

Contributions + Investment Income

=

Benefits + Expenses

C + I = B + E

Key Difference of DB and DC Plans

- **Who has the investment risk?**
  - DB Plans: Plan Sponsor (Employer)
    - Contributions must be adequate to fund the promised benefits
    - Participant receives the benefit regardless of the investment experience
  - DC Plans: Participant (Employee)
    - Employer's obligation is determined by the plan's contribution formula, not by the plan's experience
    - Investment experience directly affects the amount of benefit the participant receives

Two Approaches to Pension Funding

- **Pay-As-You-Go**
  - Contributions pay for benefits as they come due
  - "I" = $0
  - Social Security
- **Pre-funding**
  - Contributions are invested in advance of benefit payments
  - "I" helps reduce "C"

So Why Pre-Fund?

- **Why not fund on a pay-as-you-go basis (like Social Security)?**
  - Tax advantages
  - Benefit security
  - Budgeting
- **Consider the fundamental equation: C + I = B + E**
  - ***Contributions + Investment Income = Benefits + Expenses***
- **Federal law (ERISA) requires pre-funding**

What's An Actuarial Valuation?

- **Means of determining the pre-funding costs for a Defined Benefit pension plan**

What's Needed for an Actuarial Valuation?

As of the first day of each plan year, take a "snapshot" of:

- **Plan Provisions**
  - *What is promised by the Plan?*
- **Participant Data**
  - *To whom is this promise made?*
- **Asset Value**
  - *How much of the promised value has been funded?*

Then we need our budgeting "tools":

- **Actuarial Assumptions**
  - *What are the promised benefits worth today?*
- **Actuarial Cost Method and Funding Policy**
  - *How do we spread the remaining funding over future years?*

Developing the Actuarial Cost

- **Benefit Liabilities are determined by discounting the future benefit payments:**
  - Consider the likelihood of receiving those payments (demographic assumptions)
  - Consider the time value of money (economic assumptions)
- **How much of the benefit liability is already funded?**
- **The unfunded liability is spread over future years to determine the current year's funding cost**

How Do We Value the Benefit Promise?

- **Actuaries make assumptions about future events:**

Demographic	Economic
Turnover	Interest
Mortality	Cost of Living
Retirement	Expenses
Disability	Pay Increases
Work Levels	

- **The ultimate cost of a plan is the actual benefits (and expenses) paid**
- **Actuarial assumptions are a means to budget the costs over time**
- **Assumptions must reasonably anticipate expected experience**

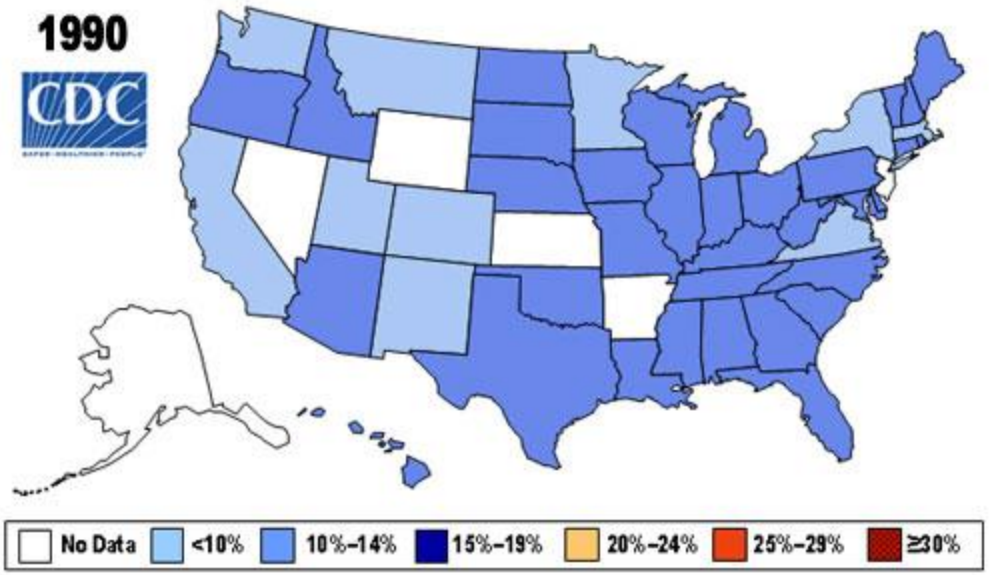
How Do We Select the Assumptions?

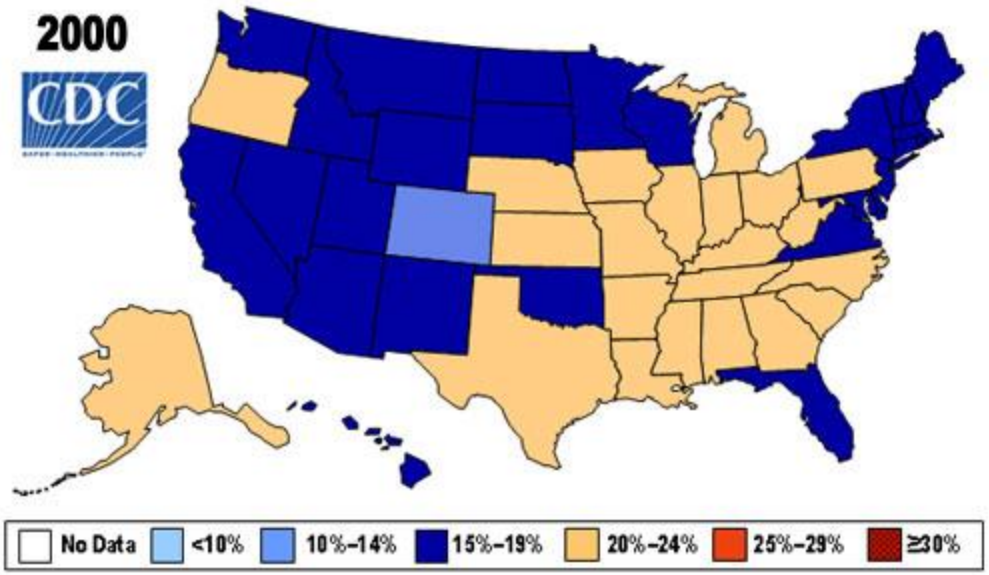
- **Experience studies**
- **Published tables**
- **Investment policy and capital market assumptions**
- **Industry trends**
- **Plan sponsors' (and others') insights**
- **Similar plans**

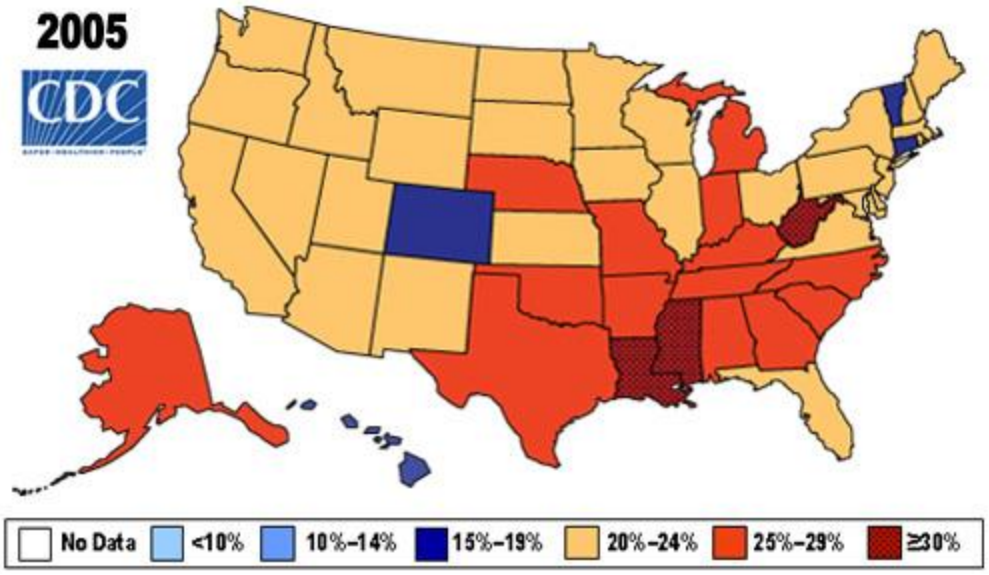
Selecting the Interest Assumption

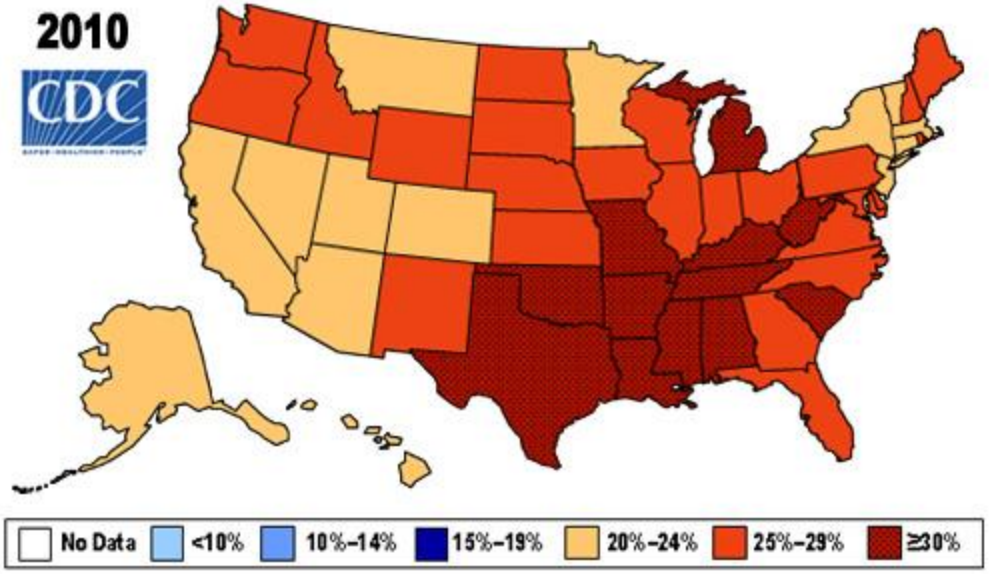
- **Start with the investment consultants' capital market assumptions**
  - Expected future returns for each asset class
  - Volatility for each asset class
  - Correlations between asset classes
- **Develop range of expected returns for target allocation (weighted by allocation to each asset class)**
- **Consider the probability of exceeding the actuarial assumption over a long period (e.g., 20 years)**

Mortality Assumption: Obesity Prevalence



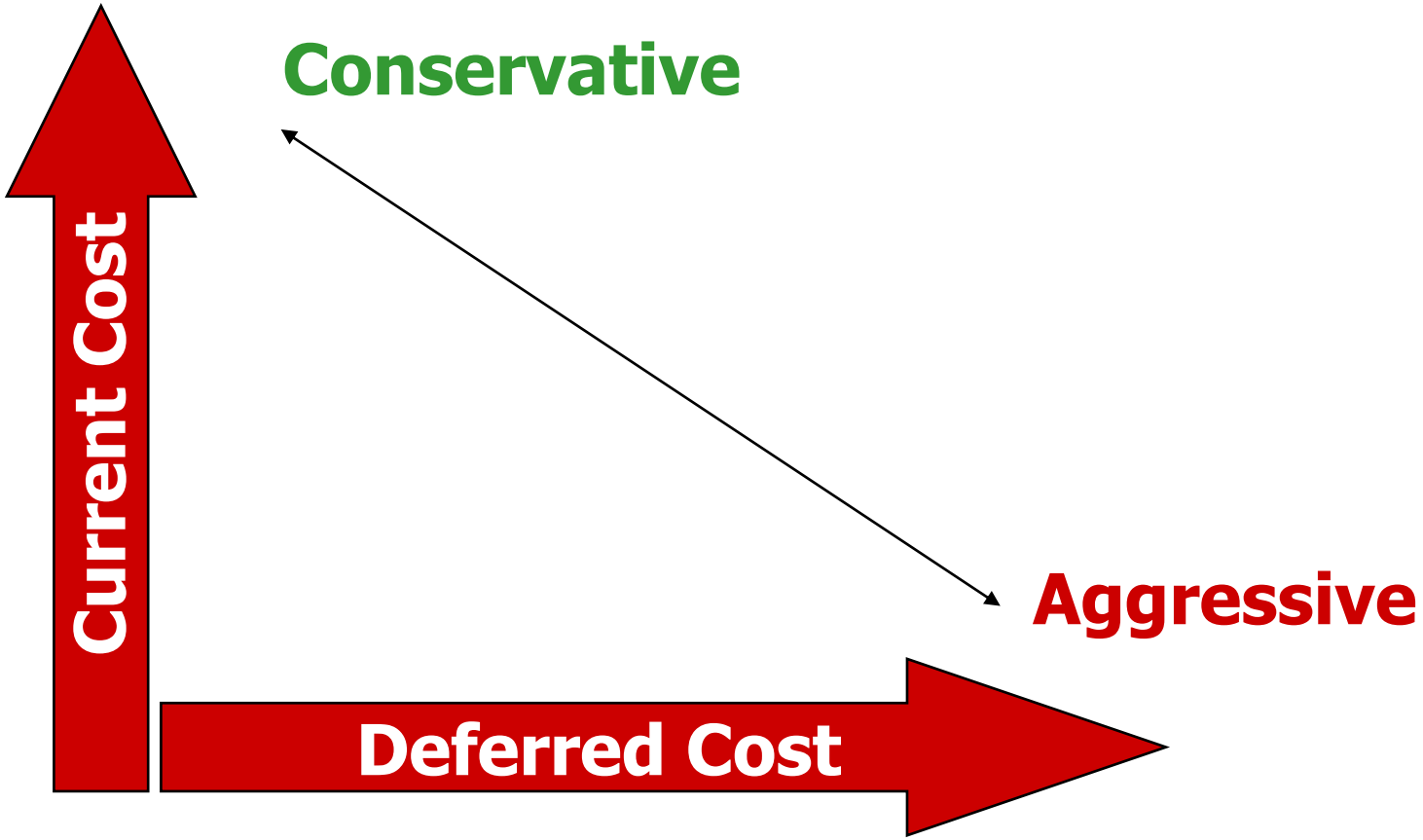






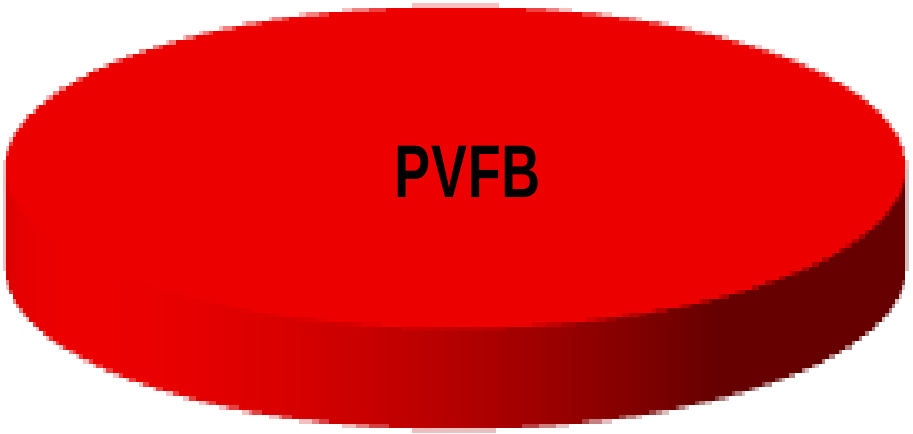
Horizon

The Assumption Range



- There is a range of reasonable assumptions
- Overly aggressive assumptions may cause trouble down the road

The Big Picture – Present Value of Future Benefits



As of 1/1/2014: $1,750 mil.

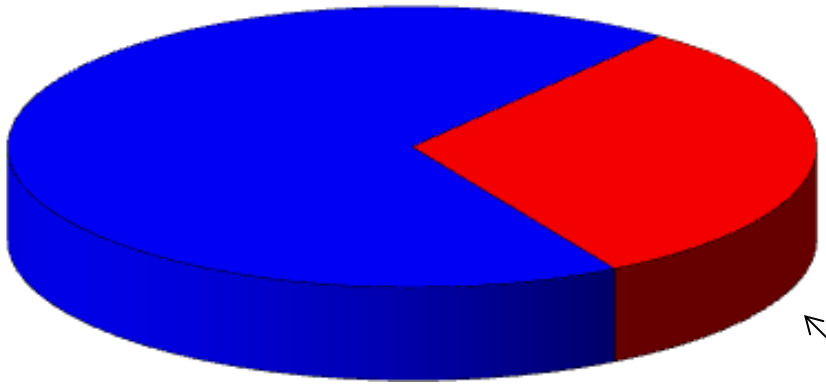
PVFB = Present value of all *accrued and future* benefits:

- First, project expected benefits at assumed termination or retirement ages;
- Then discount the expected benefits for:
  - Probability of receiving the benefits, and
  - The time value of money (interest discount)

Effect of Funding as of January 1, 2014

Actuarial Value of Assets

$1,225 mil.



Contributions pay for the *Unfunded* Present Value of Future Benefits

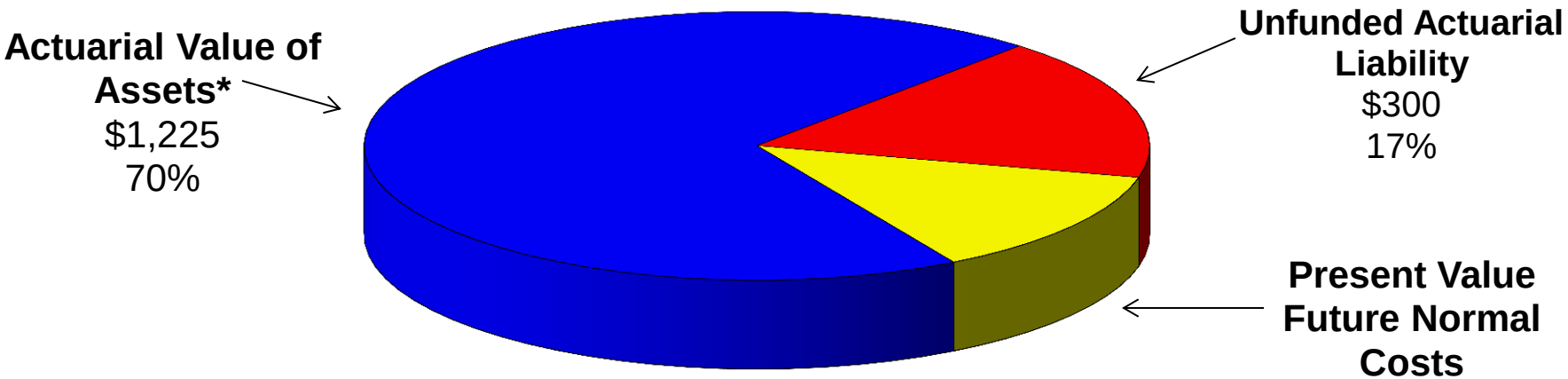
Unfunded Present Value of Future Benefits

$525 mil.

The Unfunded Value: Allocation to Past and Future

The Unfunded Present Value is split into two pieces (effectively "past" and "future"):

1. "Present Value of Future **Normal Costs**" – the value of benefit accruals allocated to future years
2. "**Unfunded Actuarial Liability**" – the remainder of the total benefit liability not covered by the assets

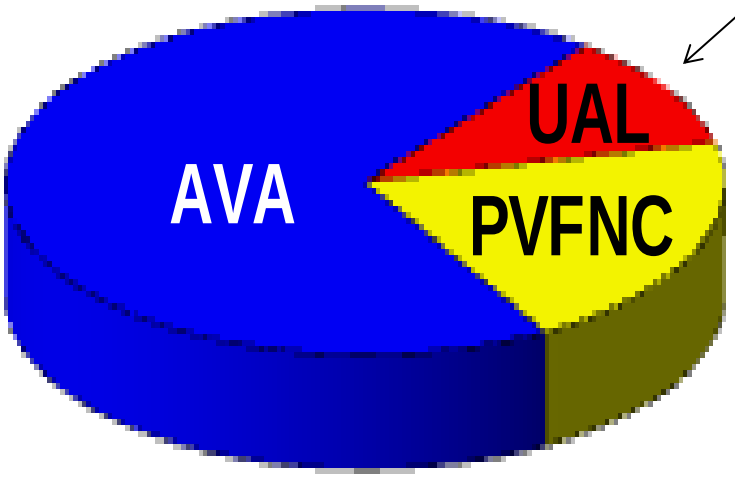


PVFB = Total Benefit Liability: $1,750

Contribution Components

- **Annual contributions serve two distinct purposes:**
  - First, cover the "Normal Cost": the value of benefits earned in the current year (plus assumed operating expenses)
  - Second, amortize the unfunded actuarial liability ("paying down the mortgage")
- **Funding policy and/or law determines how quickly the Unfunded Actuarial Liability should be paid down**

Result: This Year's Contribution



Amortization Payment = $32.9

Normal Cost = $28.1

AVA = Actuarial Value of Assets
PVFNC = Present Value of Future Normal Costs
UAL = Unfunded Actuarial Liability

Summary of Results:

Amort. Pmt.	**$32.9**
NC	**$28.1**
Oper. Exp.	**$ 5.0**
Total Contrib.	**$66.0**

What Does the Valuation Really Tell Us?

- **Will the expected contributions support the promised benefits over the long term?**
- **How much "equity" do we have in our plan?**
- **Do we need to make any changes…**
- **Where is the plan's funding headed?**

Multiemployer Pension Plans

- **AKA Taft-Hartley Plans**
- **Pension Plans covering employees in a specific industry/area**
  - Established through collective bargaining
  - Jointly sponsored by labor and management
  - Boards of Trustees with equal representation of labor and management
  - Board of Trustees is legal sponsor of the plan (not the employers)
  - To operate the plan, the Board of Trustees retains various professionals:
    - Actuary
    - Accountant
    - Attorney(s)
    - Administrator
    - Investment Consultant
- **Professionals serve the plan and its participants, not the employers or the union**

Illustrative Multiemployer Plan Industries

- **Construction**
- **Entertainment and professional sports**
- **Retail Food**
- **Hotel/Restaurant**
- **Transportation and shipping**

- **The U.S. Multiemployer Pension System**
  - 10 million participants
  - $400 billion in assets
  - 1,400 plans

Illustrative Clients

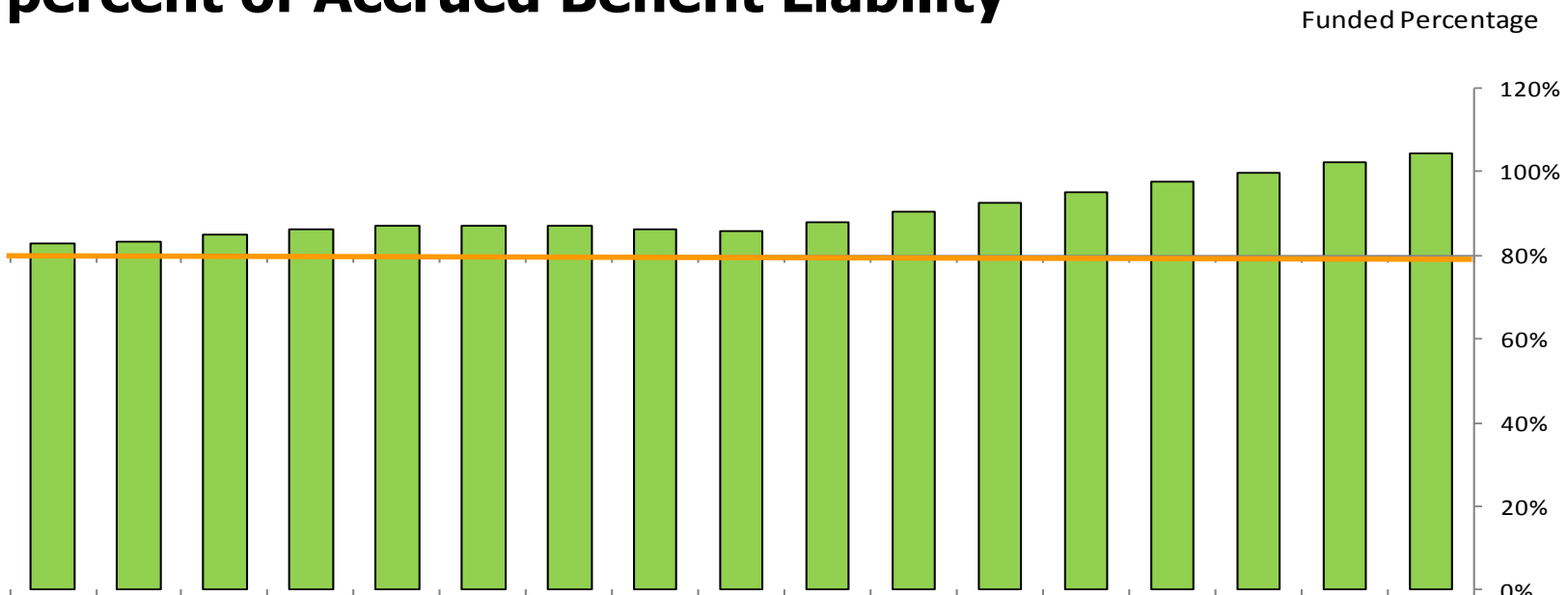
- **Pension Trust Fund for Operating Engineers**
- **So. Cal. Electrical Workers Pension Plan**
- **Screen Actors Guild - Producers Pension Plan**
- **Major League Baseball Players**
- **National Hockey League Players Retirement Plan**

Multiemployer Plan Benefits and Contributions

- **Typically, contributions to the plan are set through the collective bargaining process**
- **Trustees of the Plan, working with the actuary, set the benefit level that can be supported by the negotiated contributions**
- **Example:**
  - Benefit at Retirement = $150 x Years of Service
  - Contribution Rate = $6.00 per hour
  - Will the expected contributions support the promised benefits?
    - Where is the Plan's funding headed?

Illustrative Valuation Forecast #1

Projected Funded Percentage = AVA as a percent of Accrued Benefit Liability

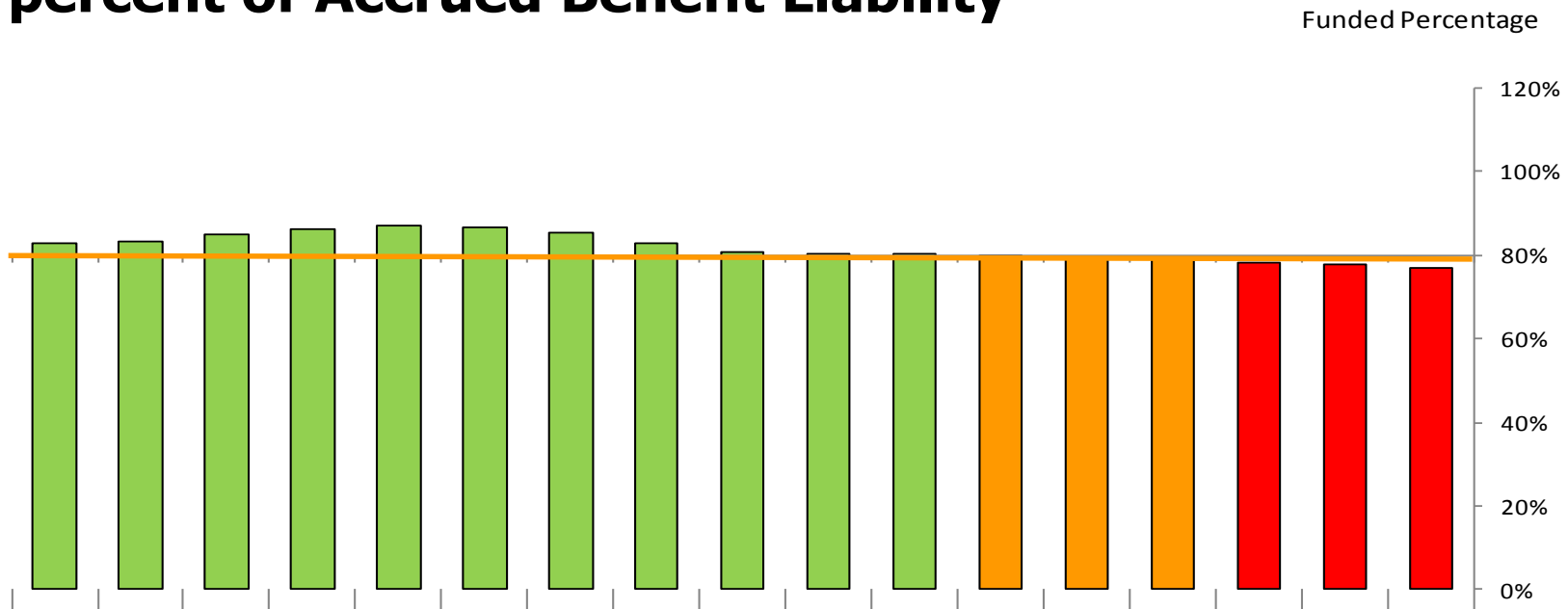


Plan Year beginning 1/1	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Asset Return during Year	10.0%	13.5%	5.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Funded Percentage at 1/1	82.8%	83.3%	85.0%	86.3%	87.3%	87.3%	87.0%	86.1%	85.7%	88.1%	90.4%	92.8%	95.1%	97.5%	99.9%	102.2%	104.6%

Horizon

Illustrative Valuation Forecast #2

Projected Funded Percentage = AVA as a percent of Accrued Benefit Liability



Plan Year beginning 1/1	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Asset Return during Year	10.0%	13.5%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Funded Percentage at 1/1	82.8%	83.3%	85.0%	86.3%	87.3%	86.8%	85.5%	83.1%	80.6%	80.4%	80.2%	79.8%	79.4%	78.9%	78.3%	77.7%	76.9%

Horizon

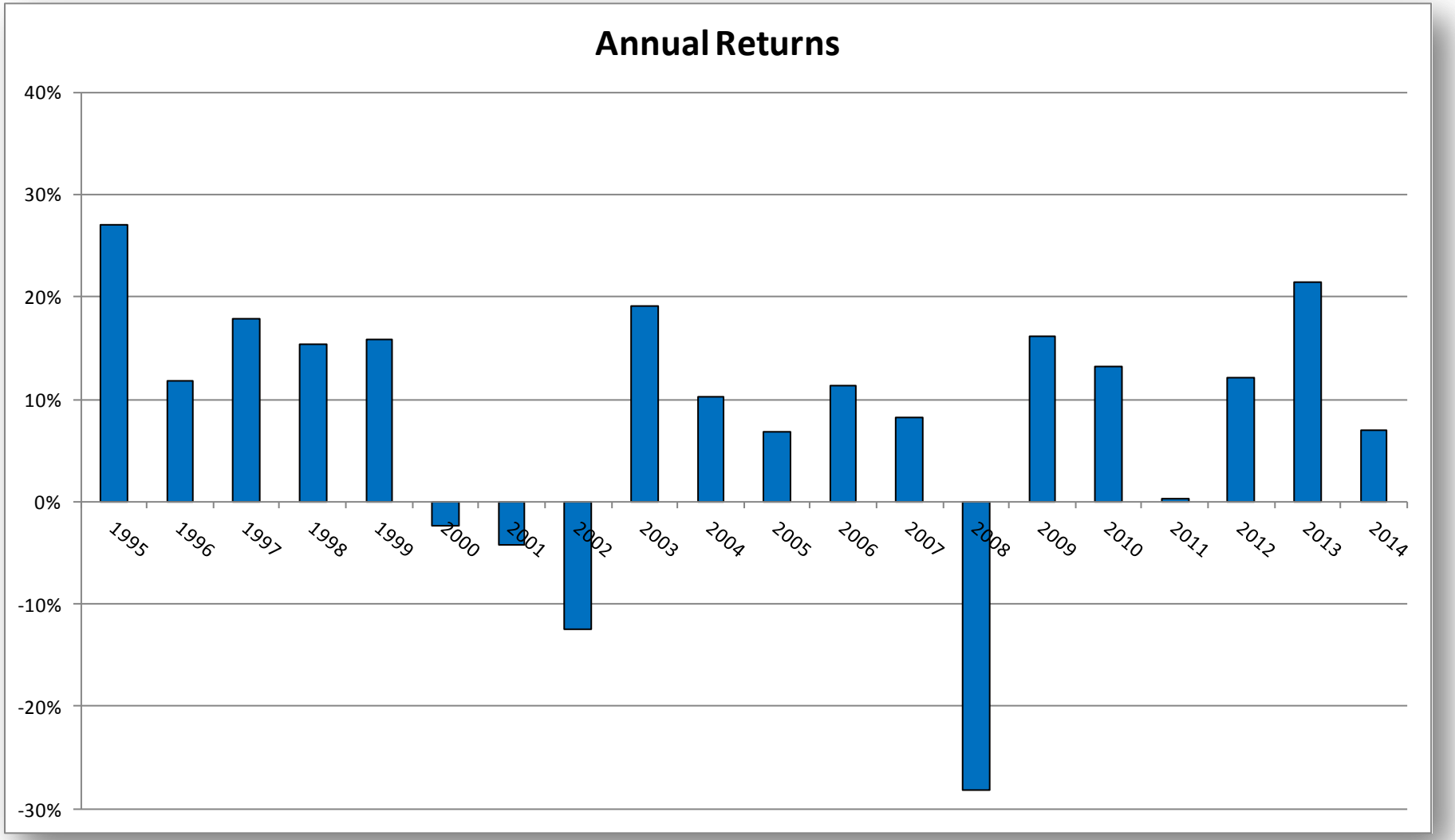
Single vs. Multiemployer Plan Funding

- **Single employer plans:**
  - Benefit formula rarely changes
  - Employer writes a contribution check each year
    - Can vary significantly from year to year, depending on experience
- **Multiemployer plans:**
  - Contributions are essentially stable over the collective bargaining agreement
  - What happens when experience doesn't match the assumptions?
  - Assess the balance between negotiated contributions and promised benefits, and advise the Trustees when changes need to be made
    - Assist with negotiations
    - Develop solutions to keep funding on track

Multiemployer Plan Deficits and Surpluses

- **When promised benefits and expected contributions fall out of alignment, corrective action may involve changes in:**
  - Contributions
  - Benefits
  - Investment Policy
  - Assumptions
  - Legislation

1995-2014: Illustrative Pension Fund Returns



Horizon

What Happened in 2008?

- **Worst investment year in U.S. pension plan history**
  - Typical returns were in the range of -20% to -30%
  - Pension funds were "missing" one-fourth to one-third of assets at the start of 2009
- **Unprecedented loss presented significant problems for Trustees and bargaining parties**
- **Plans needed to take painful corrective action:**
  - Cut benefits?
  - Increase contributions?
  - Both?
  - Needed actions threatened the viability of the system

Genesis of The Pension Relief Act of 2010

- **March 2009 – Request for ideas to provide legislative relief for impact of economic crisis on multiemployer plans**
- **May 2009 – Meet with Senate HELP Committee Senior Pension Advisor**
  - "Refinancing" the unfunded liabilities
  - "Disaster relief" for pension plans
- **June 2010 – Pension Relief Act of 2010 signed into law**
  - Longer "smoothing period" for 2008 losses – 10 years, instead of 5
  - Longer amortization for 2008 losses – 29 years instead of 15
  - Give plans more time to solve the problem and recover – recognizing the long term nature of the pension obligation

Multiemployer Pension Reform Act of 2014

- **Roughly 5-8% of the 1,400 U.S. multiemployer pension plans will not recover from the 2008 crisis**
  - Heading towards inevitable insolvency – no ability to pay benefits
  - Allow these plans to reduce existing benefits (unprecedented)

The Retirement Crisis Revisited

- **Low savings rates**
- **Shift from DB to DC plans**
  - Shift in risk from employers to workers
- **How to turn DC plan balances into retirement income**
  - How much is enough?
  - How long will my money last?
- **We need sources of stable retirement income**

The USA Retirement Plan

- **Concept introduced by Sen. Harkin in 2012**
- **Hybrid design – elements of DB and DC plans**
  - Provide lifetime retirement income – no lump sums
  - Notional account balances "owned" by participants
- **Conservative investment policy – less risky than traditional DB plan**
- **Voluntary for both workers and employers**
  - No employer investment risk
  - Modest worker investment risk

The USA Plan – How It Works

- **Voluntary contributions (employee and/or employer) invested in a common fund**
  - Target return = 6%
- **Individual accounts are credited with return, subject to a 0%-8% "collar"**
  - Excess returns are "banked" for possible future benefit increases
  - Adjust notional accounts if funding falls below 90%
- **Account balance is converted to lifetime annuity at retirement**
  - 5% interest assumption

Overview – Key Features

- **Participation is simple, Plan is easy to understand**
- **Goal: All U.S. workers are eligible**
- **No investment management burden for participants**
- **No budgeting risk for participants**
- **Complete portability for participants**
- **No risk for employers or Federal government**
- **Lifetime retirement income**

USA Retirement Plan - Timeline

- **Sen. Harkin's paper – July 2012**
- **May 2013 – USA Retirement Plan Independent Advisory Committee formed**
- **January 2014 – Meeting with Sen. Harkin, Senate HELP Committee staff, other interested parties**
- **February 2014 – First USA Plan legislation introduced**
- **Fall 2014 – Interest in a pilot program**
- **March 2015 – Meetings with Senate HELP staff, Dept. of Labor**

Being a Multiemployer Actuary

- **What Makes Multiemployer work so interesting:**
  - Dynamic, always changing
  - Focus on the plan (vs. company)
  - Politics and collective bargaining
  - More rational funding rules
  - Role in society

Legislation Is Always Happening

- **Employee Retirement Security Act of 1974 (ERISA)**
- **Multiemployer Pension Plan Amendments Act (1980)**
- **Retirement Equity Act (1985)**
- **Tax Reform Act of 1986**
  -
  -
  -
- **Pension Protection Act (2006)**
- **Pension Relief Act of 2010**
- **Multiemployer Pension Reform Act of 2014**

Career Trajectory of a Pension Actuary

- **Data Processor**
- **Applied Mathematician**
- **"Quasi-Attorney"**
- **Consultant**

- ***Communications is the Key***

Questions