57th Annual Employee Benefits Conference

# The Future of Define Benefit Plans


**David S. Blitzstein**
Special Assistant for Multiemployer Funds
UFCW Collective Bargaining Department
UFCW International Union
Washington D.C.

**Gene M. Kalwarski**
**FSA, EA, MAAA**
President and CEO
Cheiron, Inc.
Washington D.C.

**Mark C. Olleman**
**FSA, MAAA, EA**
Consulting Actuary and Principal
Milliman, Inc.
Seattle, Washington

**Jonathan Waite**
**F.S.A., E.A.**
Director, Investment Management Advice and Chief Actuary
SEI Institutional Group
Oaks, Pennsylvania

# Session Outline

- Opening Comments and the current state of affairs
- New Defined Benefit Strategies
- Society of Actuaries Guiding Principals
- Variable Defined Benefit Plan
- Public sector hybrid plan
- Implications for investments

## Introduction

# Retirement 20/20

### (Society of Actuaries Retirement System Design Project )

**Six themes, retirement systems should:**

1. **be designed to self-adjust.**
2. **align stakeholders' skills with their roles.**
3. **consider new norms for work and retirement and the role of the normative retirement age.**
4. **be better aligned with the markets.**
5. **clarify the role of the employer.**
6. **Retirement systems will not succeed without improvements in the health and long-term care systems.**

# VDB Outline

- The General Concepts
- The Details
- Examples
- Investment Strategy
- Modeling
- Governance Issues
- Mandatory VDB Policies

# The General Concept

## Variable Defined Benefit (VDB)

- Like a Defined Benefit (DB) Plan
  - Retirement and Longevity Risks are Pooled Amongst All Plan Members
  - All Monies are Pooled and Managed Professionally (i.e. No Individual Accounts)

- Unlike a DB Plan, Good and Bad Investment Performance is Shared Between the Employer and Plan Participants
  - Investment Strategy Will Be Less Risky
  - At Retirement VDB Pension Will Be Locked Up (e.g. Immunized)

# The General Concept

The VDB is the Greater of Two Benefits

– Floor Defined Benefit

– Variable Benefit

# The Floor Benefit

- Floor Benefit is “Traditional”
  - Dollars Per Month Per Year of Service
- Accrual Rate Based on a Low Risk Rate of Return
  - Lower than typically used by actuaries
  - Investment program is consistent with assumed rate of return
  - This is referred to as the “Floor Rate”

# The Variable Benefit

- Variable Benefit Varies Depending Upon Actual Investment Performance
  - If Above Floor Rate, the Benefit Increases
  - If Below Floor Rate, the Benefit Reduces
  - If Above a Capped Rate, reserve created

# Summary of How it Works

- Contribution Levels Are Bargained (FT/PT)
- Floor Benefit ($ accrual) is Determined Using
  - Low Risk Investment Assumption
  - Demographics and Other Plan Features
- Variable Benefit Accrues In Units
  - Unit Values are Established and Adjusted Based on Actual Investment Returns
- The Variable Benefit is Equal To The Number of Units Times the Unit Value
- Final VDB Benefit is the Greater of Floor or Variable Benefit

# Determine the Floor Accrual

Example

| | |
|---|---|
| • Bargain Contributions | $1 per hour |
| • Set a Floor Rate of Return | 5% |
| • Set a Cap Rate of Return | 10% |
| • Decide on Plan Features | |
| – Retirement Eligibility | Age 65 |
| – Death and Disability | None |
| • Collect membership census data | |
| • Actuary determines a Floor Accrual | $600 per year |

*Floor Accrual Does Not Change Due To Plan Investment Experience*

# Elements of Conservatism

- Significantly lower discount rate = significantly lower starting benefit accrual
- Conservative investment strategy minimizes risk of loss
- Establishing a Cap Rate on returns provides source for building a contingency reserve
- Minimal or no subsidized ancillary benefits
- Forced immunization at retirement removes one of the primary risks facing DB plans today

# Determine Variable Benefit

## Example—Units and Unit Values

- At Plan start-up Unit Value is set, e.g. $10

- *Every year* the Units earned

  = Floor Accrual divided by Unit Value at start of year

- Units earned in year 1 = $600 ÷ $10 = 60 Units

# Variable Benefit—End of Year 1

- If investments earn 8% in the first year
  - Return over Floor Rate is 3%
    (8%–5%)
  - Unit Value becomes $10.30
    ($10 x 1.03)
  - Variable Benefit end of first year is $620

(60 x $10.3)

# Second Year Variable Units Earned

- Unit Value is now $10.30
- Annual Floor Benefit always $600 per year
- Second year accrual is 58.25 Units

  $600 ÷ $10.30 = 58.25 Units
- Total Units credited is 118.25 Units

  60 Units ( yr 1) + 58.25 Units (yr 2)

# Variable Benefit—End of Year 2

- If investments earn 2% in the second year:
  - Return below Floor Rate is 3% (5%–2%)
  - Unit Value becomes $9.99
    ($10.30 x 0.97)
  - Variable Benefit end of second year is $1,181
    (118.25 x $9.99)

# VDB Pension End Of Second Year

- Floor Benefit is $1,200 per year

  ($600 x 2)

- Variable Benefit is $1,181 per year

  (118.25 x $9.99)

*VDB Pension is $1,200—Greater of $1,200 and $1,181*

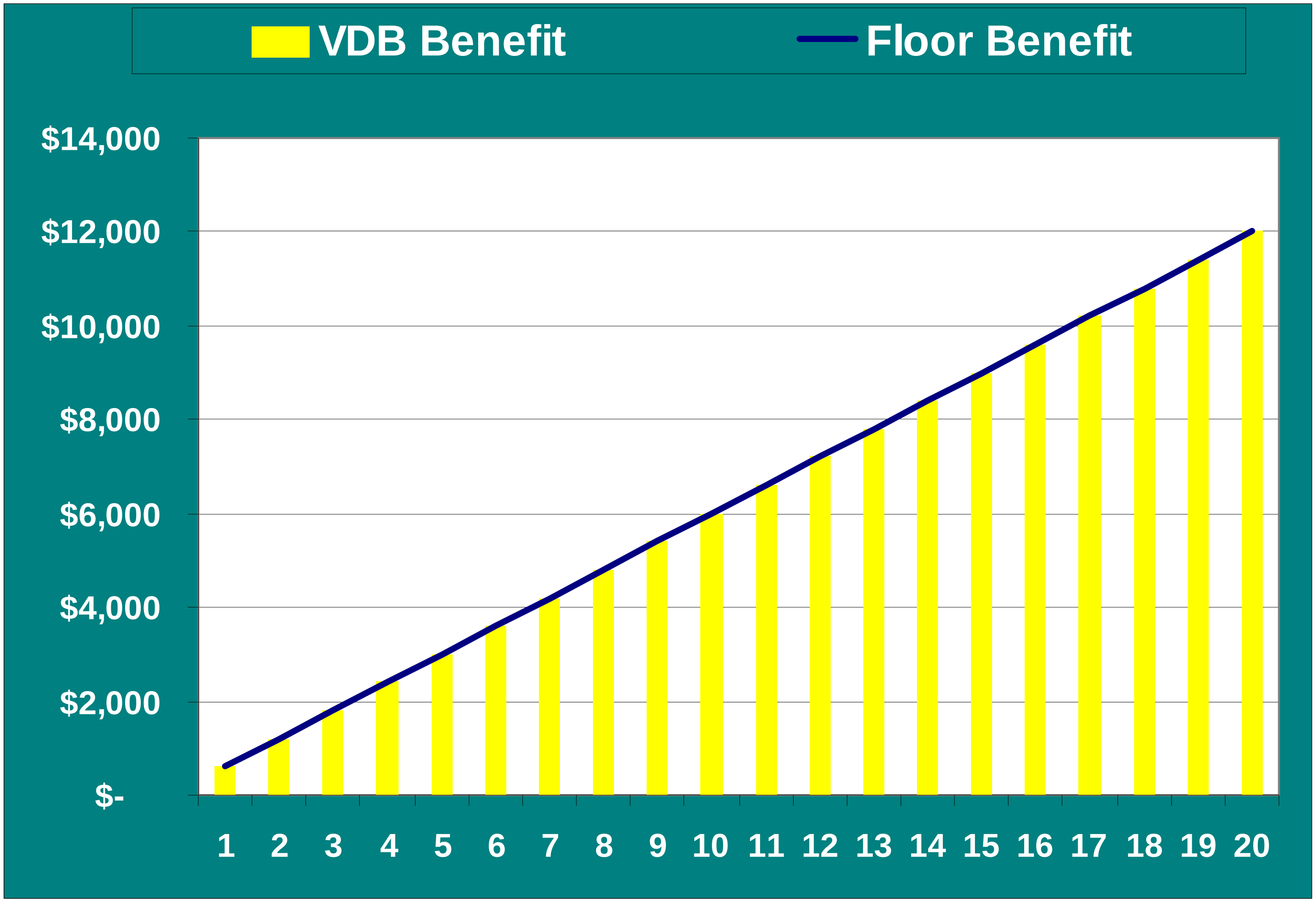
# Variable Defined Benefit Dynamics

## When Earnings Fluctuate

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Floor Return | 5.0% | | | Cap Return | 10.0% | | | | | |
| | At Start of Year | | | | | At End of Year | | | | | | | |
| Year | Annual Floor Accrual | Unit Value | Unit # | Cumula-tive Unit # | Actual Return | Excess Return | Annual Benefit 2012 | Annual Benefit 2013 | Annual Benefit 2014 | Annual Benefit 2015 | Annual Benefit 2016 | FLOOR | VDB |
| 2012 | $600 | $10.00 | 60.0 | 60.0 | 8.00% | 3.0% | $618 | | | | | $600 | $618 |
| 2013 | $600 | $10.30 | 58.3 | 118.3 | 2.00% | -3.0% | $599 | $582 | | | | $1,200 | $1,181 |
| 2014 | $600 | $9.99 | 60.1 | 178.3 | 7.50% | 2.5% | $614 | $597 | $615 | | | $1,800 | $1,826 |
| 2015 | $600 | $10.24 | 58.6 | 236.9 | 4.50% | -0.5% | $611 | $594 | $612 | $597 | | $2,400 | $2,414 |
| 2016 | $600 | $10.19 | 58.9 | 295.8 | 7.00% | 2.0% | $624 | $605 | $624 | $609 | $612 | $3,000 | $3,074 |
| 2017 | | $10.39 | | | | | | | | | | | |

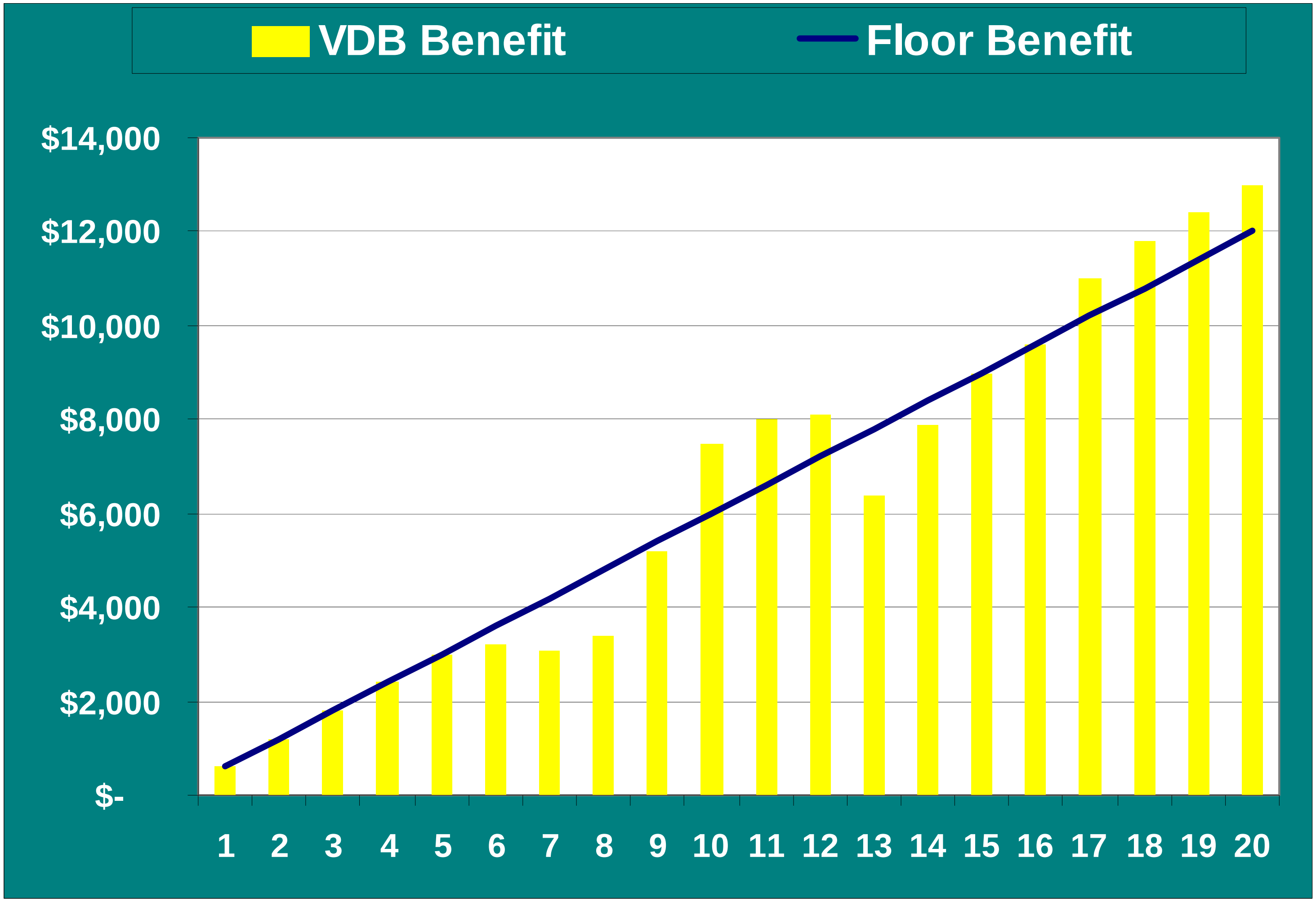
# Individual's Benefit Over a Career

## Earnings Exactly As Assumed



# Individual's Benefit Over a Career

## Up and Down Markets



# Minimal Risk of Unfunded Liabilities Under VDB

- Floor accrual established at low discount rate
- Floor accrual periodically recalibrated based on evolving demographics
- Funding reserve available from having set a cap rate for returns
- Immunizing retirees substantially reduces risk of unfunded liabilities
- In the event an unfunded would arise, the size would be manageable due to low floor accrual and no possibility of an unfunded retiree liability

# Investment Strategy

- Developed in conjunction with several investment consulting and management firms
- Desire for a low risk portfolio with a LDI strategy overlay

| Historical Return/Risk Data | |
|---|---|
| **Asset** | **Portfolio 2** |
| Barclays Capital - Aggregate Bond Index | 36% |
| Barclays Capital - High Yield Index | 8% |
| Barclays Capital - U.S. Tips Index | 15% |
| Credit Suisse - Credit Suisse/ Tremont Hedge Fund Index | 25% |
| Dow Jones - UBS Commodity Index (Total Return) | 1% |
| Merrill Lynch - 91 Day T-Bill Index | 5% |
| NCREIF Property - NCREIF Property Index | 10% |
| **Return** | **6.83** |
| **Risk** | **3.54** |
| Yield | |
| * Compound Annual Returns Trailing 10 yr Period | |

# Historical Performance for Portfolio #2

| 12 Month Period Ending | Total Portfolio (% return) |
|---|---|
| 12/31/1998 | 5.37% |
| 12/31/1999 | 7.70% |
| 12/31/2000 | 8.82% |
| 12/31/2001 | 6.44% |
| 12/31/2002 | 7.87% |
| 12/31/2003 | 9.82% |
| 12/31/2004 | 7.63% |
| 12/31/2005 | 5.77% |
| 12/31/2006 | 7.84% |
| 12/31/2007 | 9.52% |
| 12/31/2008 | -5.96% |
| 12/31/2009 | 9.88% |
| Average | 6.64% |

Note: Barclays US TIPS Index has the shortest history with an inception of 9/1997

# Mandatory Policies for VDB

- Low Discount Rate
- Investment Strategy will be significantly more conservative than typically seen today
- At retirement pension must be locked up with some form of immunization / dedication
- Periodically experience reviews needed to maintain sufficient balance between floor benefit and plan contributions
- Ancillary benefits can be included (but will serve to reduce the floor benefit)
- Valuation of unit values and recalibration of investment mix under the LDI+ Strategy must be done at least annually
- Establish cap rate on returns to provide funding source for a contingency reserve

# Variable Defined Benefit Plan

- Fairly Prices Benefits
- Aligns Risk Sharing Between Stake Holders
- High Probability of Delivering Floor Benefit at Bargained Contribution
- High Probability of Being Fully Funded
- Will Meet Regulatory Hurdles
- Provides Benefit for Life

# Part 5—Case Studies
# Wisconsin: Designed to "Self Adjust?"


- **Modest Floor Benefit = Greater of**
  - **1.6% × pay × service, or**
  - **Money Purchase Benefit**

  **(lower guarantee?)**
- **Contribution increases are divided evenly between employers and employees**

  **(risk sharing?)**
- **Active benefits may adjust to low investment returns**
  - **Lower interest on member accounts can dampen liability growth.**

  **(risk sharing?)**
- **Retiree benefits are funded conservatively and COLAs are not guaranteed (better aligned with markets?)**

**Additional detail available in February 2010 Article "Pension Sustainability – The Wisconsin Example" included with CAPPP materials**

# Part 5—Case Studies
# Wisconsin: Designed to “Self Adjust?”

- **Retiree Benefits Funded Conservatively**
  - At retirement amounts are transferred to core and variable annuity reserves assuming future earnings = 5%.
  - Conservative assumption intended to provide for COLAs “dividends.” Dividends are not limited by CPI, but the <u>dividends are not guaranteed.</u>
  - Each year interest based on investment earnings is credited to core and variable reserves.  Adjustment may be made based on difference between reserves and benefit liabilities.

# Part 5—Case Studies
# Wisconsin: Designed to "Self Adjust?"

- **Retiree benefits can go down**

| | Annuity Adjustments | |
|---|---|---|
| | Core Fund | Variable Fund |
| May 1, 2009 | - 2.1% | - 42.0% |
| May 1, 2010 | - 1.3% | +22.0% |
| May 1, 2011 | - 1.2% | +11.0% |

- May 1, 2009 is the first-ever decrease to core.
- Core return based on five year smoothing. Variable return has no smoothing.
- Core can not be reduced below original retirement amount. There is no limit on variable reduction.
- Core Fund is broadly diversified. Variable Fund is all stock.
- Variable participation is optional. If elected, then 50% of future contributions go into the Variable Fund.

# Part 5—Case Studies
# Wisconsin: Designed to "Self Adjust?"

| | Annuity Adjustments | |
|---|---|---|
| | Core Fund | Variable Fund |
| 1987 | 7.6% | 8.0% |
| 1988 | 6.7% | -6.0% |
| 1989 | 4.1% | 14.0% |
| 1990 | 11.3% | 16.0% |
| 1991 | 3.6% | -14.0% |
| 1992 | 6.3% | 18.0% |
| 1993 | 4.4% | 5.0% |
| 1994 | 4.9% | 11.0% |
| 1995 | 2.8% | -4.0% |
| 1996 | 5.6% | 19.0% |
| 1997 | 6.6% | 14.0% |
| 1998 | 7.7% | 18.0% |
| 1999 | 7.2% | 12.0% |

| | Annuity Adjustments | |
|---|---|---|
| | Core Fund | Variable Fund |
| 2000 | 17.1% | 21.0% |
| 2001 | 5.7% | -11.0% |
| 2002 | 3.3% | -14.0% |
| 2003 | 0.0% | -27.0% |
| 2004 | 1.4% | 25.0% |
| 2005 | 2.6% | 7.0% |
| 2006 | 0.8% | 3.0% |
| 2007 | 3.0% | 10.0% |
| 2008 | 6.6% | 0.0% |
| 2009 | - 2.1% | -42.0% |
| 2010 | - 1.3% | 22.0% |
| 2011 | - 1.2% | 11.0% |

Employers, Active Members and Retirees
**ALL** share in the risk as well as the rewards.

# Near Term Outlook is Slower and Bumpy

**Our Long Range Investing Outlook Is Not Bright: Great Depression 2.0?**

**Fund Warns That Financial Risks Are Rising**

**Dismal Outlook for Europe's Economy**

**World markets in major sell-off**

**Investors watch $500 billion slip away in one day**

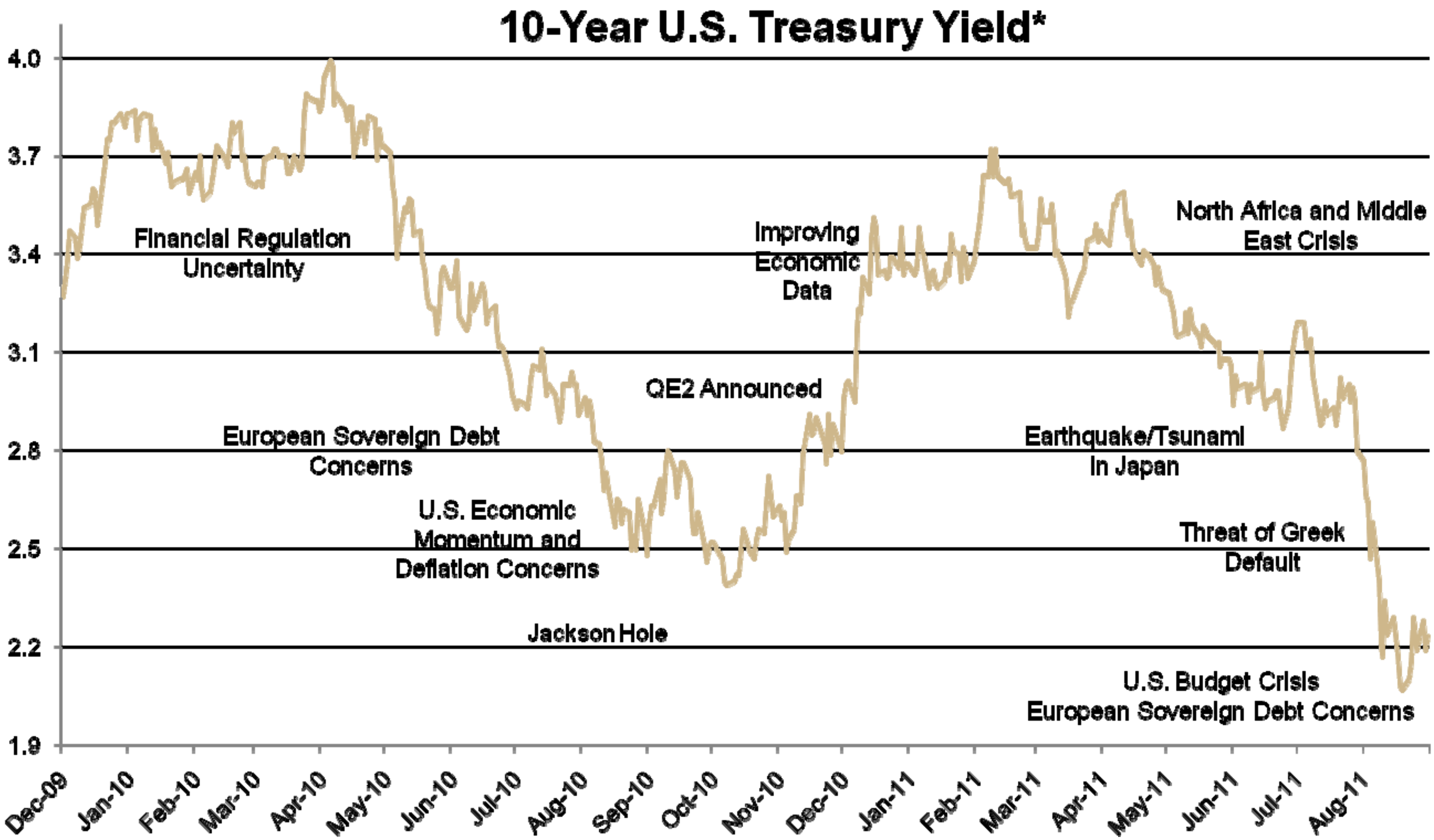
**Money markets continue to flee Europe's banks**

**Moody's downgrades Greek banks**

**Signals point to a slowdown**

# 10-Year Treasury Yield

## Bad News Drives Yields Lower



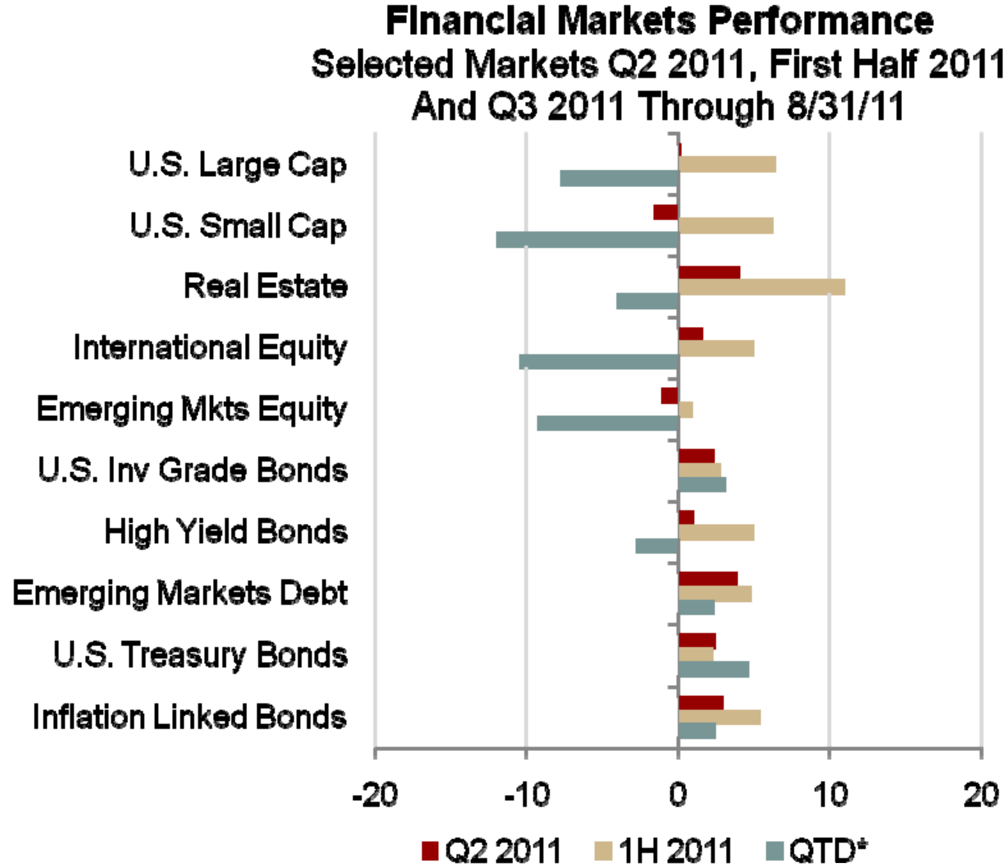

*As of August 31, 2011

# Global Market Review

## Economic Soft Patch Causes Capital-Market Volatility

- Market volatility continued as investors reacted to weak economic data and sovereign debt concerns.

- This was a quarter of modest absolute and relative returns. Bonds outperformed stocks in a "risk-off" trade.



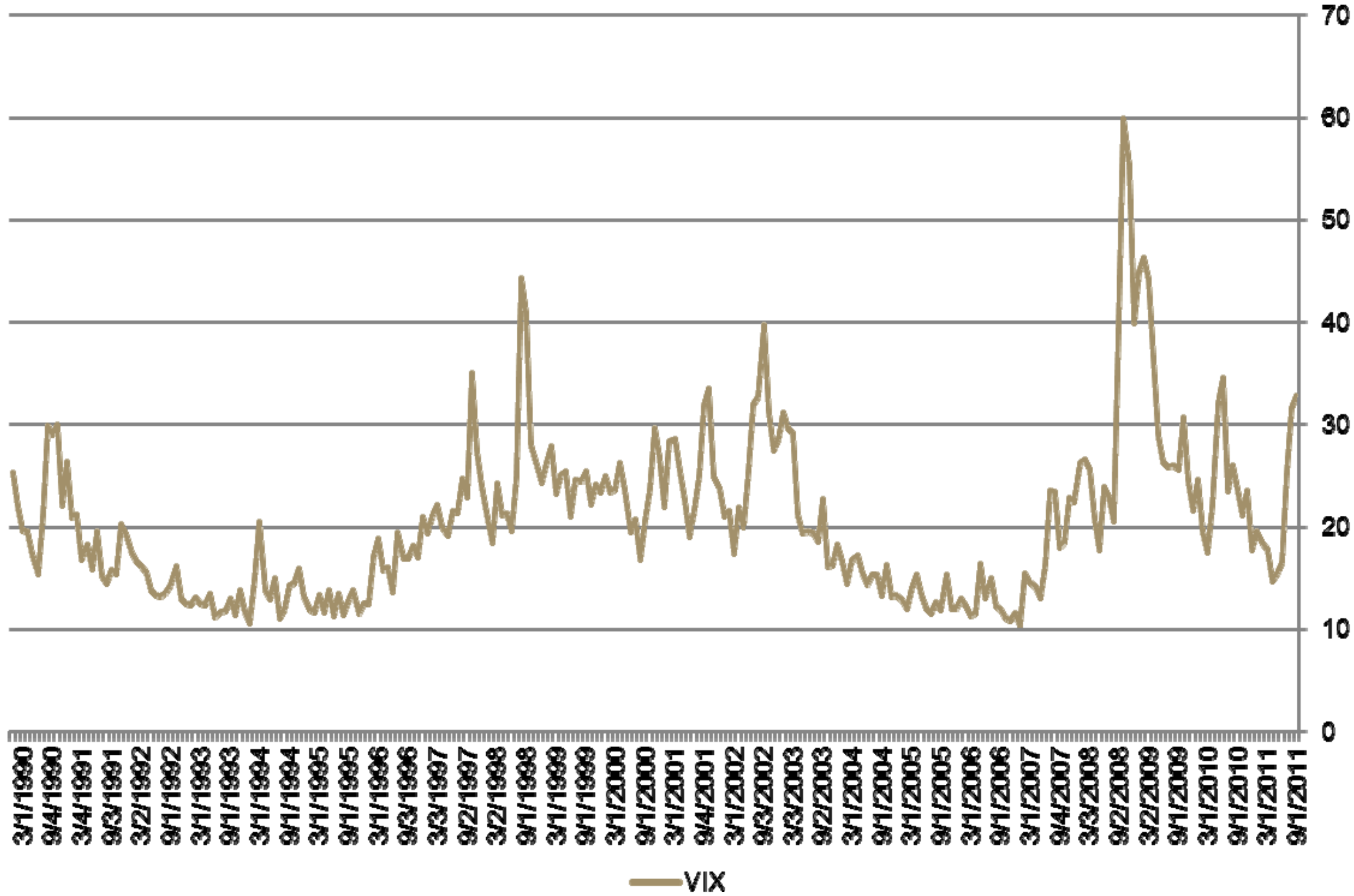

* Through 8/31/11

U.S. Large Cap = Russell 1000, U.S. Small Cap = Russell 2000, Real Estate = Wilshire RESI Index, International Equity = MSCI EAFE, Emerging Markets Equity = MSCI EME, U.S. Investment Grade Bonds = Barclays Capital U.S. Aggregate, High Yield = BofA ML Master II HY Constrained, Emerging Markets Debt = JP Morgan EMBI Global Diversified, Treasury = Treasury component of the Barclays U.S. Aggregate, Inflation Linked = Barclays 1-10 Year TIPS

Source: SEI, Factset

# VIX Index

## Implied volatility of S&P 500 index options



# Why is volatility a challenge?

**Optics**

**Expectations**

**Down years hurt more than up years**

- -20% loss require +25% to break even (vice versa, a 25% gain can be eliminated with a 20% loss)
- Remember that fund valuation already assumes a return

# Investing is changing

**Long term horizon historically**

| **Now it is long term horizon with short term modifications** |
|---|
| Equity vs fixed income |
| US vs international |
| Developed vs emerging economies |
| Highly rated vs poorly rated |
| Corporate vs governmental |
| Rebalancing efficiencies |
| Inflation: when, how fast |

| **Drivers** |
|---|
| Market globalization & gyrations |
| PPA |
| Accounting |

## How are investment practices changing in response?

- Dynamic asset management
- Customization
- Diversification

# Dynamic Asset Allocation

**Big money managers get dynamic in managing investment risk**

**Using Dynamic Asset Allocation and ETFs to Control Risks**

**Investment outsourcers get jolt of new business**

Institutions Lose Faith in Buy-and-Hold

**Dynamic investment policies gaining favor**

**Pensions Worry More about Risk than Returns**

**Pension plans lean toward dynamic investing, survey claims**

# What is Dynamic Asset Management?

## Markets tend to be long-term efficient but short-term inefficient

Opportunities to add value across and within asset classes

## Why dynamic asset management?

To capture excess return and manage risk

## Why give discretion over asset class weights?

Traditional committee-based decision process does not support timely implementations of active decisions.

# Plan Considerations Help Drive Customization

| **Traditional Plan Designs** |
| --- |
| Dollar per year, Final average pay, Percent of contribution |

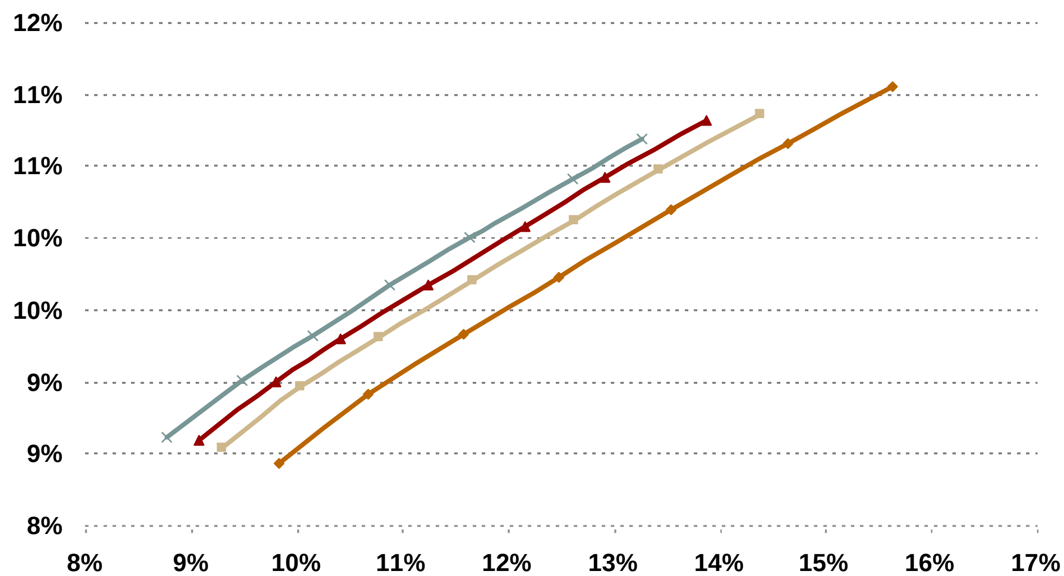
| **New Plan Designs** |
| --- |
| Variable Defined Benefit (VDB), Account based plans |
| Start-up vs conversion |

| **Demographics** |
| --- |
| Relative size of retiree to active population and expected changes |

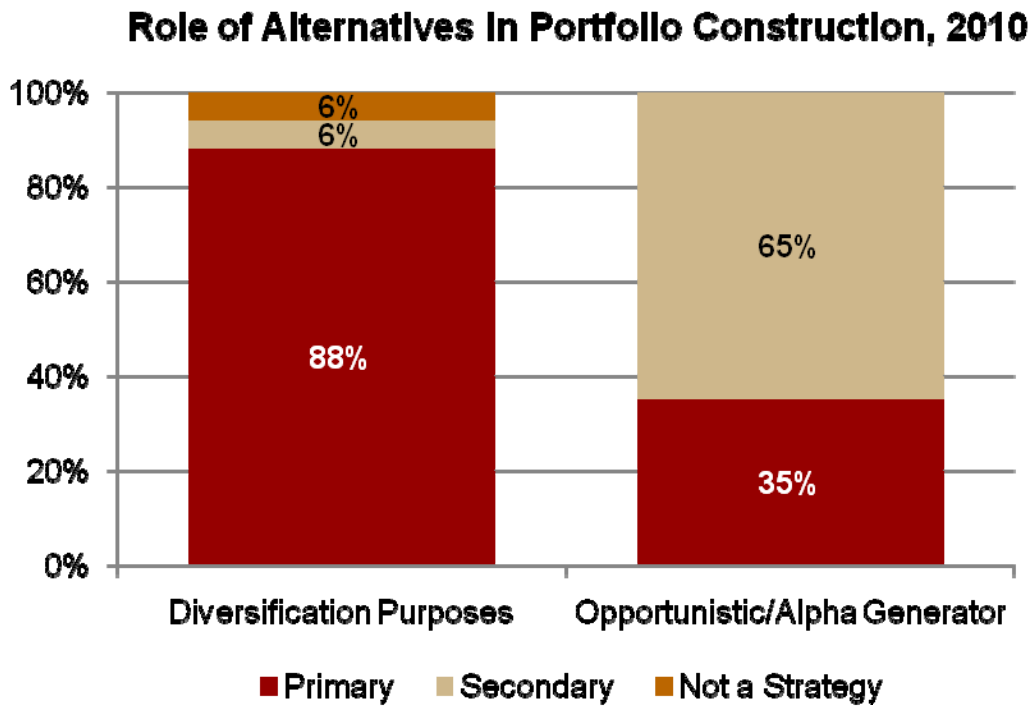
| **Financial** |
| --- |
| Funded status |
| Contribution level, benefit payout level |

# Diversification

- Asset Classes
  - Traditional equity and fixed income
  - High yield and emerging market debt
  - Alternatives: hedge, bank loans, private equity, real estate, commodities
- Optimizes portfolio (efficient frontier expands)
  - Lower risk for given level of return
  - Higher return for a given level of risk
- Within asset classes too
  - Single manager risks
  - Across strategies for alts
- New expertise may be needed
  - Particularly in alternatives
  - Liquidity for portfolio
  - Lack of regulatory oversight



# Alternatives Play an Important Diversification Role




- **According to Cerulli Associates, most asset managers are positioning alternatives primarily as portfolio diversifiers rather than alpha generators**

# In Summary

- Expectations different than in recent years—investment practices are changing accordingly
- Outlook of institutional investors is changing to incorporate short term opportunities—requires new frame of mind
- Diversification still critical
- Fund specifics more important than ever

# 2012 Educational Programs

## –Pension–

### Investments Institute

April 23-25, 2012

White Sulphur Springs, West Virginia

www.ifebp.org/investments

### Wharton School Investment Courses

Portfolio Concepts
and Management
May 21-24, 2012
Philadelphia, Pennsylvania

Hedge Funds, Real Estate
and Other Alternative
Investments
July 16-18, 2012
San Francisco, California

www.ifebp.org/wharton

Related Reading
Available in the Bookstore:

*Trustee Handbook: A Guide to Labor-Management Employee Benefit Plans*
Item #7068