



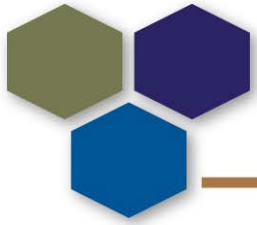
# The Meaning and Implications of Calculating Market Value of Liabilities

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**GRS**

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## Thoughts for the day

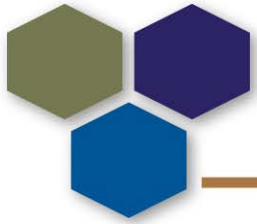
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Progress always involves risks. You can't steal second base and keep your foot on first.

~Frederick B. Wilcox

To win you have to risk loss.

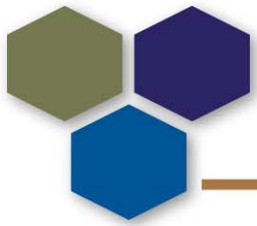
~Jean-Claude Killy



# Overview

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- ◆ What is “Market Value Liability” (MVL)?
- ◆ Corporate Pension History
- ◆ The Public Sector View
- ◆ Where Do We Go From Here?

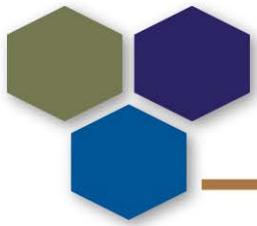


## What is MVL?

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First, some definitions:

- ◆ “Liability” is an obligation for future settlements based on past events  
Q: Is there one number for pension liability?
- ◆ “Financial Risk” is the chance that future earnings may be other than expected (most often: standard deviation of returns)  
Q: Is financial risk always bad?

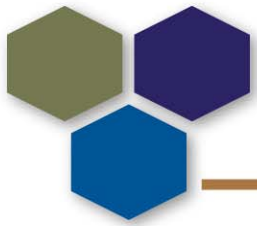


# What is MVL?

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Pension Liability Calculations Depend on

- ◆ Member data
- ◆ Benefit Provisions
- ◆ Assumptions including
  - ▶ Investment return
  - ▶ Salary growth
  - ▶ Demographic assumptions
- ◆ Funding Methods (allocating over time)

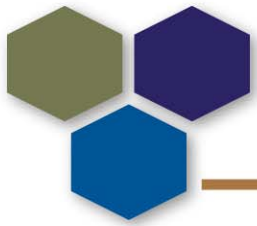


# What is MVL?

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- ◆ Actuarial Liability (AL) =
  1. Discount with expected return on assets
  2. Assume salary growth
  3. Various methods to spread cost over career
- ◆ Market Value of Liability =
  1. Discount with risk-free rates\*
  2. No future salary growth
  3. One method: Value of Accrued Benefits
- ◆ No Smoothing Market Value of Assets

*\*Some flexibility here*

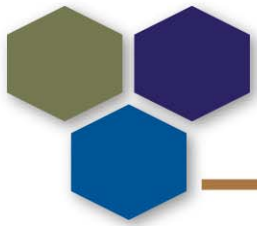


# What is MVL?

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- ◆ Immediate implications about MVL
  - ▶ Lower interest rates = higher MVL
  - ▶ Higher MVL = lower funded percent
  - ▶ Higher MVL = higher cont. rates
  - ▶ Interest rate volatility = volatile MVL\*
  - ▶ Volatile MVL & MVA = volatile funded %\*
  - ▶ Volatile MVL/funded % = volatile cont. rates

*\*Interest rate volatility may be hedged with revised asset allocation*



# What is MVL?

## Why discount with risk-free rates?

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Example:

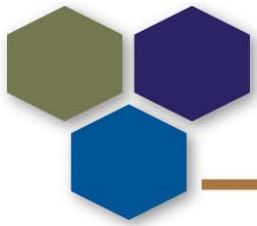
Suppose I owe you \$100 payable in 1 year.

You want to settle today.

At what price would you be willing to settle?

Available assets in market:

- ◆ One-year bond yielding 4%
- ◆ Stock with expected return of 8%



What is MVL?

Why discount with risk-free rates?

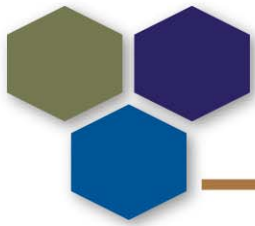
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Example Continued

- ◆ \$93 of stock today => Expect \$100 in 1 year
- ◆ \$96 of bond today => Expect \$100 in 1 year

Which is the market value of the liability?

- ◆ Bond is *certain* to pay \$100
- ◆ Stock is *expected* to pay \$100
  - ▶ Roughly 50% chance stock will be insufficient a year from now.

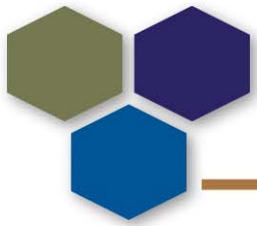


## What is MVL?

### Why discount with risk-free rates?

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- ◆ “Law of One Price” says  $MVL = \$96$
- ◆ No big deal?  
What if \$100 is payable in 10 years?
  - ▶ AL: \$46 of stock  $\Rightarrow$  Expect \$100 in 10 years
  - ▶ MVL: \$68 of bond  $\Rightarrow$  Expect \$100 in 10 years
  - ▶ MVL is almost 50% higher than AL
- ◆ MVL: settle transaction with risk-free rates
  - However, MVL proponents differ on which interest rates: risk-free or corporate bond yields

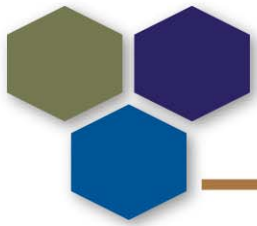


## What is MVL?

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The MVL side:

- ◆ Market price settles today, not 50% chance of more cost next year
- ◆ MVL is a snap-shot value proposition
- ◆ Higher expected return comes with risk
- ◆ Lower AL takes credit today for risk premiums yet to be earned
- ◆ AL creates inter-generational risk transfer

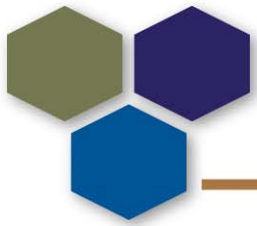


# What is MVL?

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The AL side:

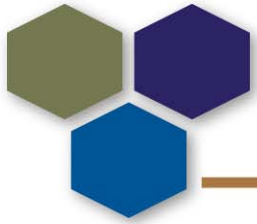
- ◆ MVL is *price of removing investment risk*
- ◆ There is also a 50% chance of *less cost next year* which MVL ignores
- ◆ Intergenerational risk transfer not necessarily the same as intergenerational inequity
- ◆ Financial risk has good and bad outcomes
  - ▶ Current taxpayers benefit from/(pay for) good/(bad) investment experience as do future taxpayers
- ◆ Snap-shot market pricing not the same as financing/funding over time



# Corporate Pension History

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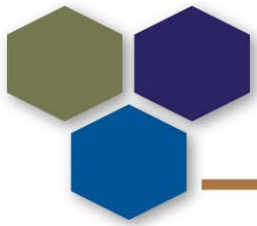
- ◆ Publicly traded companies strive for “transparency”
- ◆ Trading company shares means trading pieces of company pension plan
- ◆ Corporate accounting emphasizes mark-to-market accounting wherever possible
- ◆ Transparency means reporting pension MV Assets – MVL on corp. balance sheet



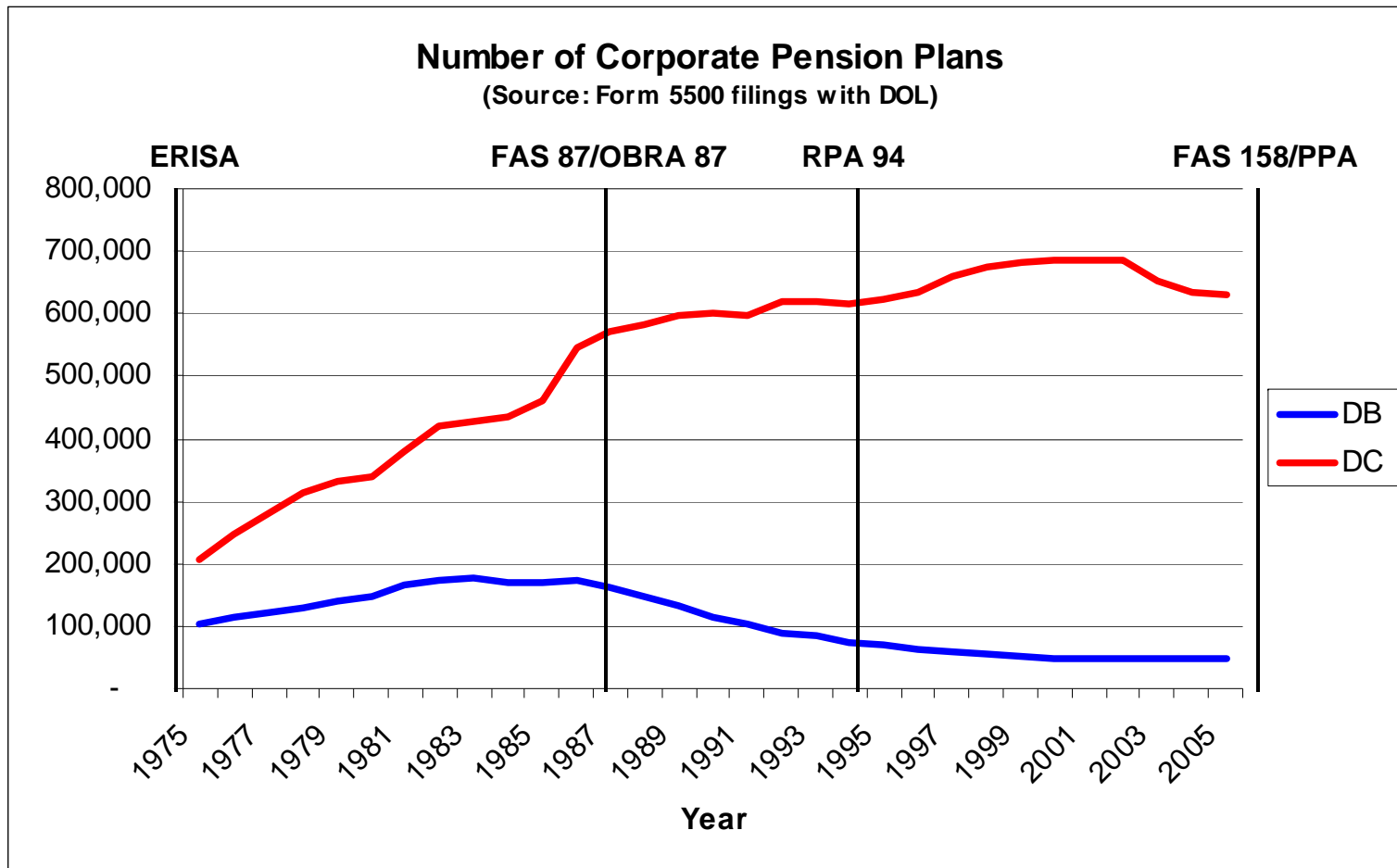
# Corporate Pension History

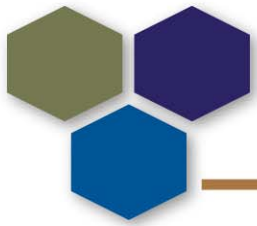
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- ◆ ERISA (1974) funding based on actuarial principles
- ◆ FAS 87 – first foray into MVL (1987)
- ◆ FAS 158 – unfunded on balance sheet (2007)
- ◆ Funding migration to MVL:
  - ▶ OBRA '87 (1987) – MVL rarely kicks in
  - ▶ RPA '94 (1994) – MVL dominates
  - ▶ PPA (2006) – MVL takes over completely



# Corporate Pension History

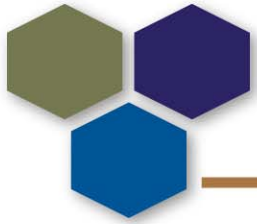




# Corporate Pension History

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- ◆ 2000's Pension crisis worse for corporate plans than public sector plans
  - ▶ Same declining asset values for 60/40 mix
  - ▶ Simultaneous falling interest rates caused increase in MVL
  - ▶ Unhedged plans fared poorly
  - ▶ Some with Liability Driven Investing did OK
    - Boots in UK stayed at or near 100% funded (MVA / MVL) throughout

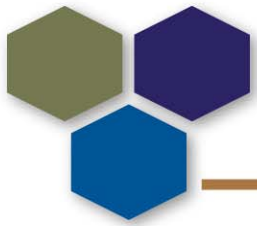


## The Public Sector View

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2006 GASB White Paper: “Why Governmental Accounting and Financial Reporting Is – and Should Be – Different”

- ◆ Needs of users of financial reports differ
- ◆ Need for public accountability
- ◆ Taxpayers are not shareholders
- ◆ Governments have longevity
- ◆ Focus on budgeting accountability rather than equity control

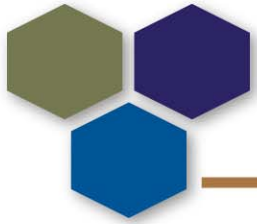


## The Public Sector View

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June 6, 2008 letter to American Academy of Actuaries (AAA) from NCTR, NASRA, NASACT, NEA, AFT, NAPO, AFSCME, SEIU

- ◆ MVL disclosure does not accurately represent dynamics of governmental plans
- ◆ Could lead to investment approaches that limit asset allocation
- ◆ Would create confusion among decision-makers, taxpayers, and media

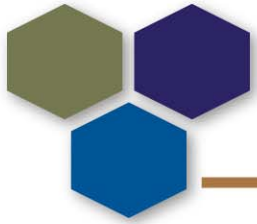


## The Public Sector View

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June 6, 2008 letter to AAA (continued)

- ◆ Cost allocation as percent of payroll central to public sector plans
- ◆ Nature of benefit promises more than just accrued benefits
- ◆ Different measures of funded ratio invite misuse by those with political agendas
- ◆ *AAA process has excluded stakeholders*

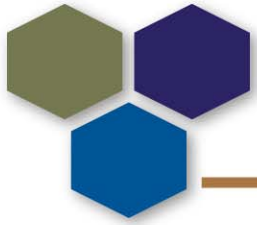


## Where do we go from here?

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The current state has both sides entrenched:

- ◆ Proponents feel MVL will save DB plans
- ◆ Public sector stakeholders oppose MVL disclosure flat out



# Where do we go from here?

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Middle ground?

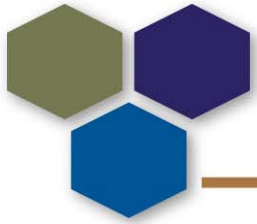
- ◆ MVL proponents:

- ▶ back off required disclosure
- ▶ focus on utility of MVL

- ◆ AL proponents:

- ▶ Consider MVL as additional measure of value
- ▶ Acknowledge AL funds to the 50<sup>th</sup> percentile (think back to first example)

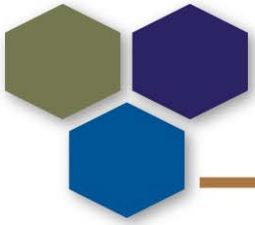
- ◆ Come together with asset/liability modeling



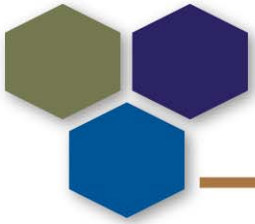
## Where do we go from here?

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- ◆ American Academy of Actuaries (AAA) Request for Comments on Actuarial Standards of Practice (ASOP) including selection of economic assumptions
- ◆ AAA public forum on disclosure of MVL and MVA on September 4, 2008



# Q & A



- ◆ This presentation shall not be construed to provide tax advice, legal advice or investment advice.
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