P-Solve Cassidy | *Performance Matters*

Getting a DB Plan Out of Neutral

April 18, 2013

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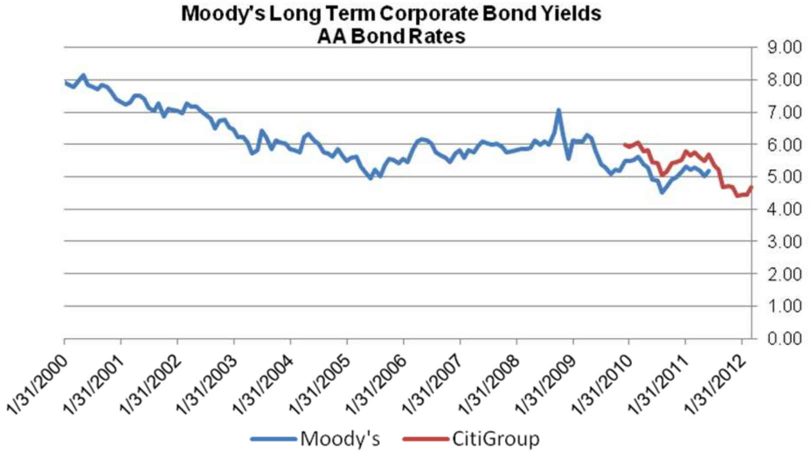
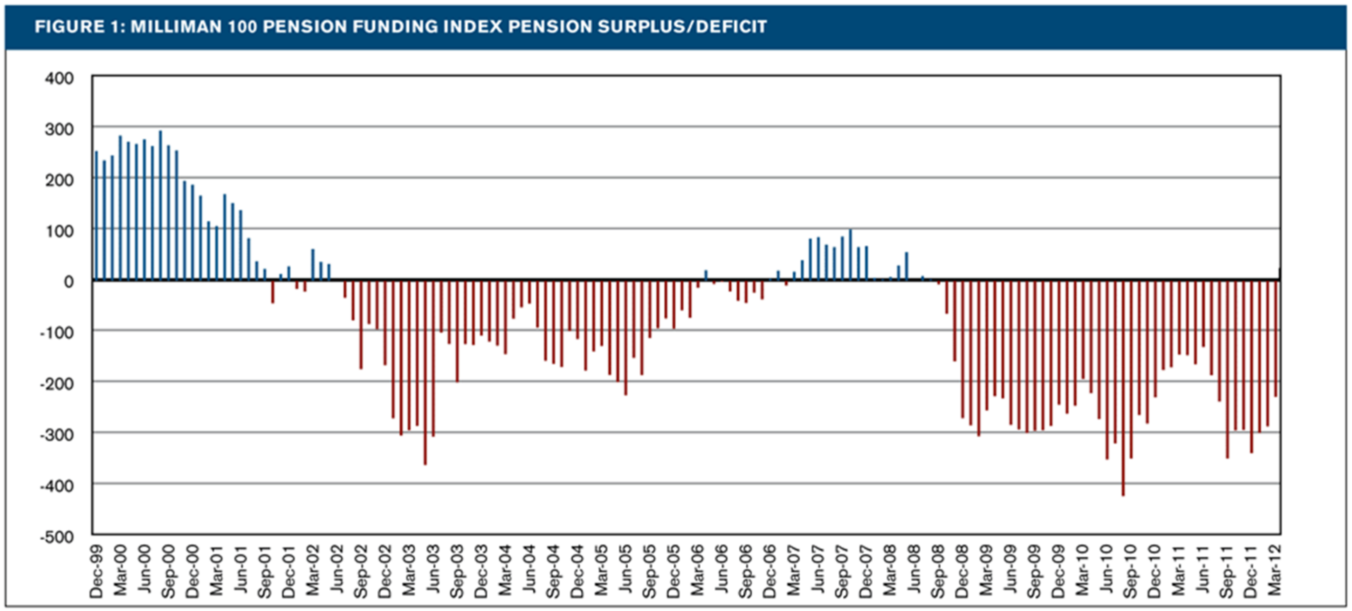
Agenda

- Funding and actuarial perspective
  - How we got here
  - What we have learned
  - How we go forward
- Investment perspective
  - Articulating the plan sponsor’s goal
  - “New School” vs. “Old School” governance
  - Building liability matching portfolios
  - Issues to consider

Funding and Actuarial Issues

How We Got Here





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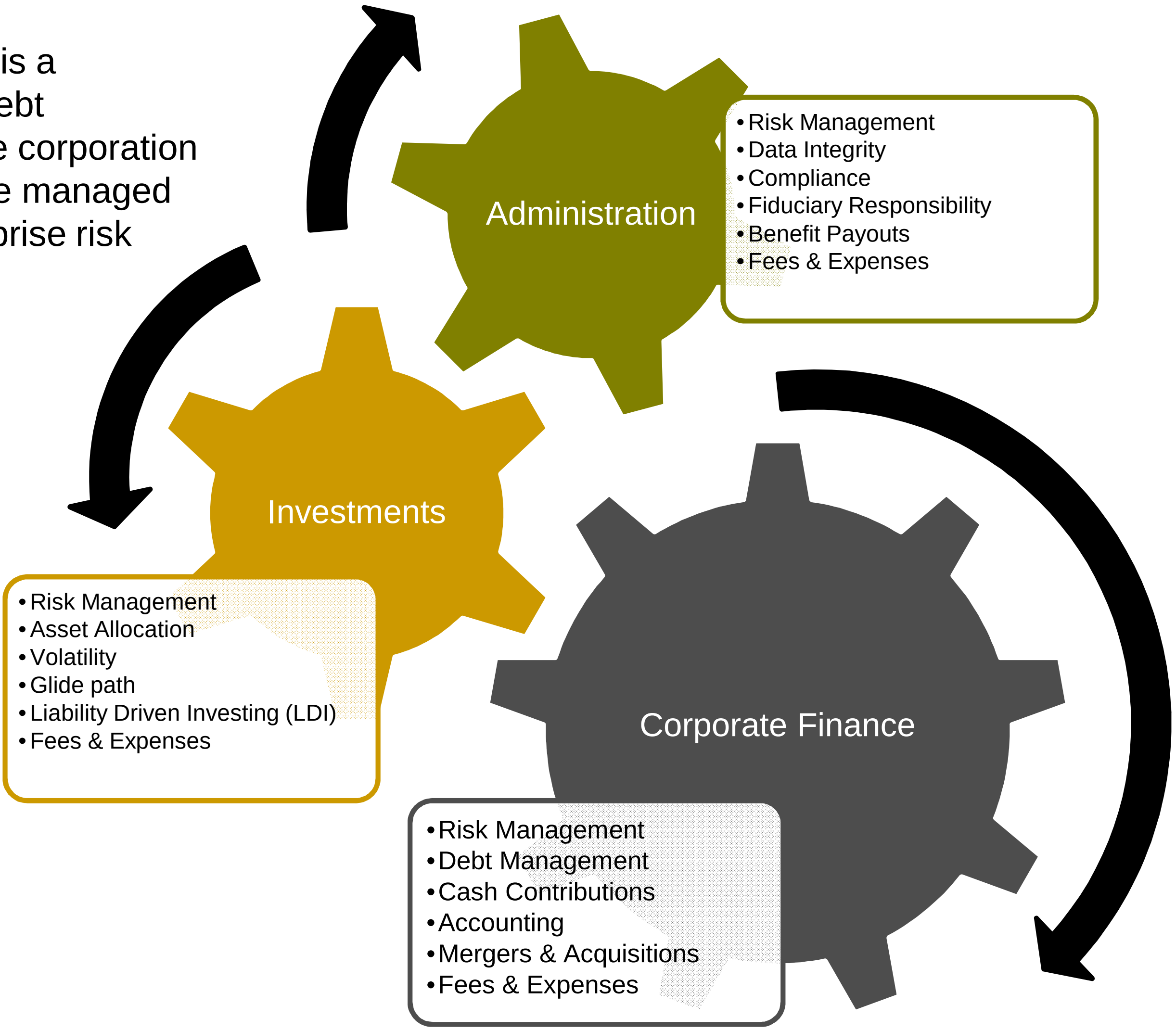
What We Have Learned

- Funded status can change quickly
  - Interest rates are volatile
  - Investment market is volatile
- The bigger the plan, relative to the size of the company, the bigger the risk
- Defined benefit plan liabilities are a collateralized debt obligation of the sponsor
- Pension plan should be managed within an enterprise risk framework

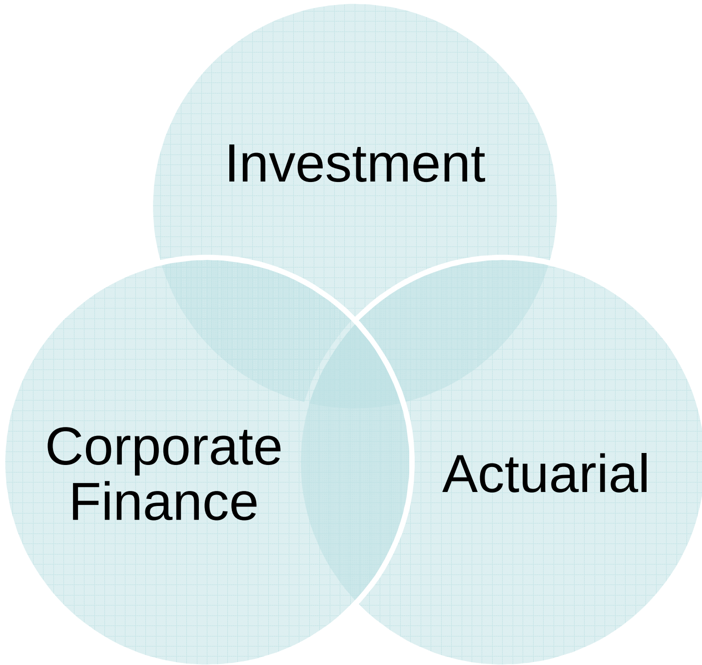
What We Have Learned – Strategic Pension Management

A pension plan is a collateralized debt obligation of the corporation and needs to be managed within an enterprise risk framework.



What We Have Learned - New Governance Paradigm

- Decisions facing pension committees today need:
  - Integration of investment, actuarial and corporate finance
  - Timely information – market dynamics (investment, annuity)



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What We Have Learned – Traditional DB Investment Management

- 60% Equity/40% Fixed Income
  - Focus is only on assets
    - Benchmark – peer group/asset-only indices
    - Model – mean/variance optimization
    - Diversification – among asset classes
  - Views pension plan in isolation from overall enterprise
    - Doubles down on “beta”
      - Increases overall risk of enterprise
      - Subjects balance sheet/income statement to significant volatility
    - Increases risks to participants, government and taxpayers

What We Have Learned – Liability Driven Investing (“LDI”)

- Recognizes the nature of plan liabilities
- Liability benchmark
  - Multiple measures of liabilities
    - Funding – PPA
    - PBGC
    - Accounting
    - Termination (Economic)
- Asset allocation
  - Hedging Assets – fixed income securities with similar duration, cash flows
  - Riskier Assets – diversified alpha-seeking assets (any assets not specifically targeted as hedging assets; may include all asset classes)

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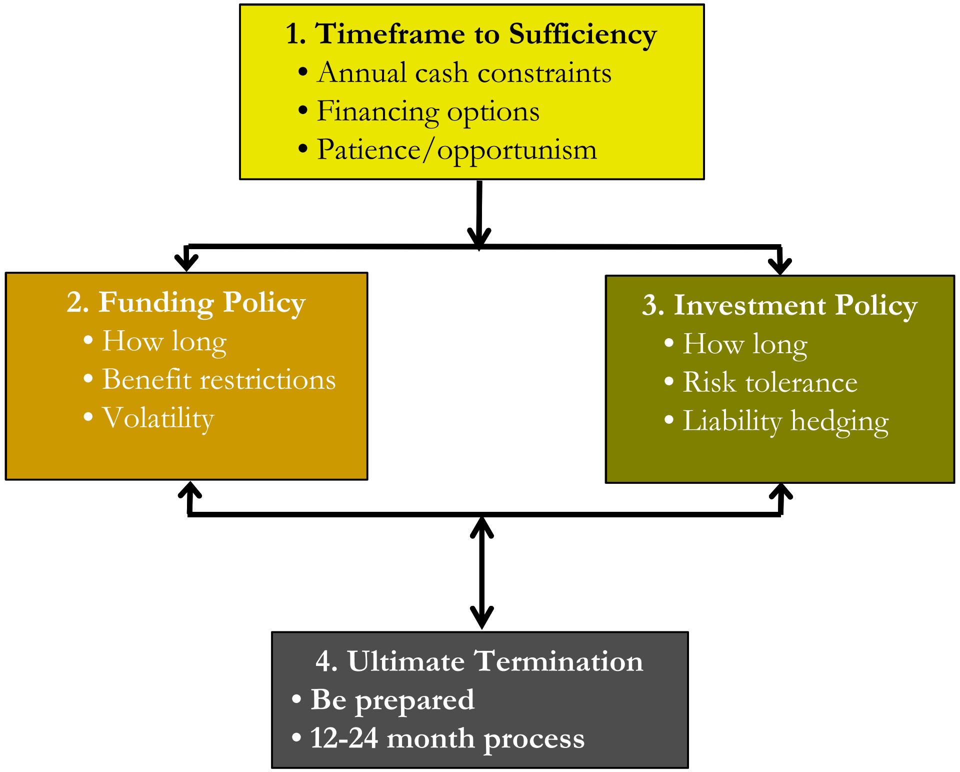
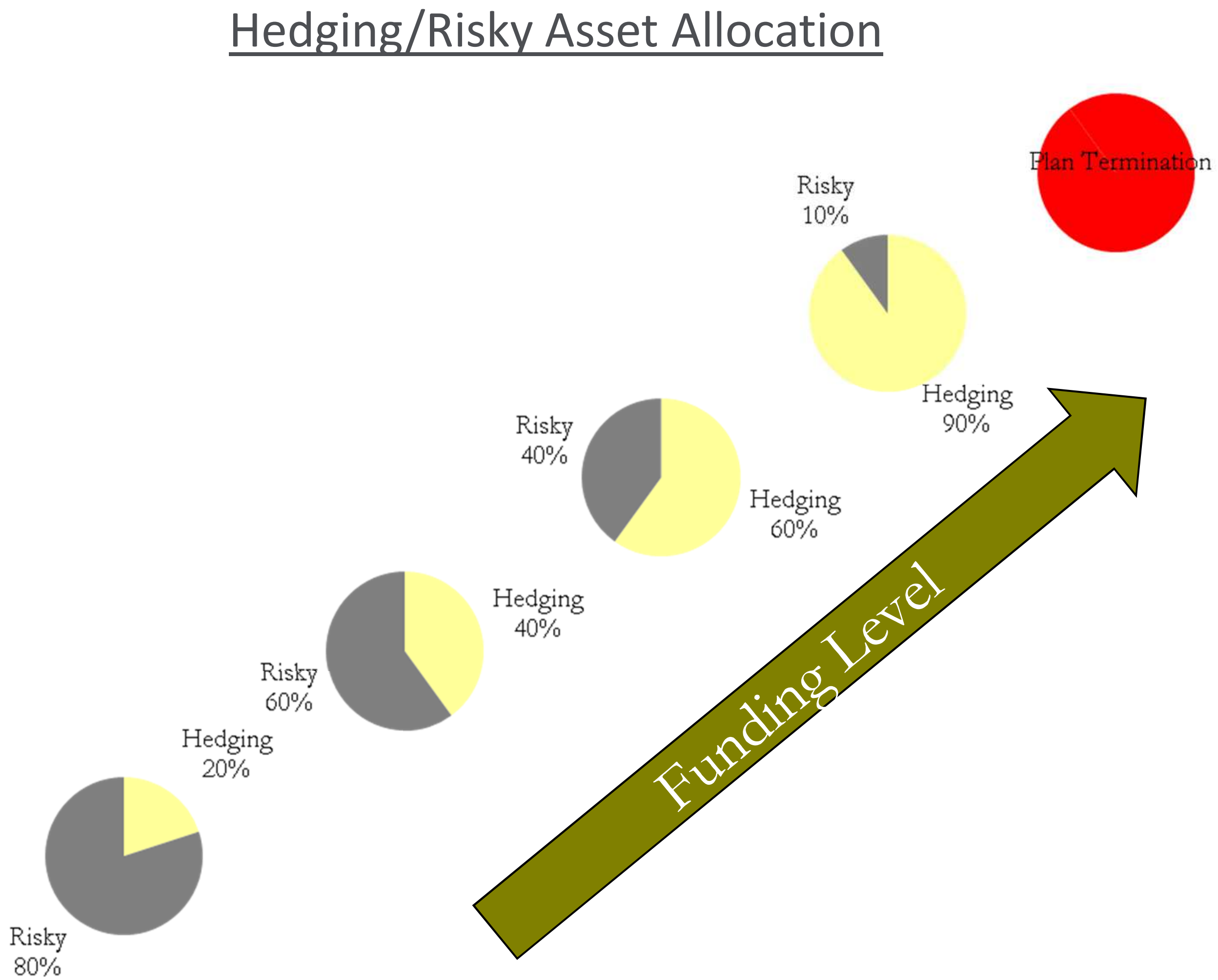
How We Go Forward – Road Map to Funding Sufficiency

A Game Plan for
<u>Greater Certainty</u>

- Coordinated investment and funding policies
- Hedge portion of liabilities
  - Set alpha seeking goals
  - Establish cash funding
- Contribute annually greater of :
  - Minimum required
  - Funding policy
- Continue to administer plan
- Monitor funded status closely
  - Interest rate environment
  - Contribution levels
  - Threshold for exit



How We Go Forward – Asset Allocation Glide Path



How We Go Forward – Why De-Risk?

- Past service liability
  - Sunk cost
  - Viewed as debt
  - Affects balance sheet
- Limit traditional plan risks
  - Investment
  - Interest rate
  - Mortality risk
- Lower volatility – smaller pool
- Low Discount Rates = Low Borrowing Costs
- Lower administrative costs and PBGC premiums
  - PBGC premiums are set to increase substantially in future – nearly 2% of deficit
- Prepare for ultimate plan termination

De-Risking Strategy Options

#	Scenario	Summary
1	Extend Duration	Small first step to better sync assets to liabilities
2	Add to Hedged Portfolio	Continue along ALM path – done together with #1
3	Increase Annual Funding	Along with #1 & #2, eats into deficit more rapidly
4a	Borrow to Eliminate Deficit	Utilize low borrowing rates to fully fund Plan (with #1-#3)
4b	Borrow to Eliminate Deficit & Freeze	#4a with plan freeze
5	Cash out Terminated Vested Participants (TVs)	Independent of prior steps, removes liability (and assets) for all terminated vested participants
6	Annuitize Retirees	Independent of prior steps, removes liability (and assets) for all current retirees (purchase annuity contracts via insurance co.)
7	Cash-Out TVs & Annuitize Retirees	Independent of prior steps, removes liability (and assets) for all inactive participants
8	Plan Termination	Process can last >1 year, ends plan completely
Alt	Freeze Plan	Stops benefit accruals, can be combined with any of above

Asset Solutions

Corporate Finance Solutions

Pension Risk Transfer Solutions

Plan Design

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"Shrink the Ball" – Possible Strategies

- Increase lump sum threshold
  - Allows terminated vested participants to settle liabilities prior to formal termination process
  - Lump sum rates closer to target liability and accounting basis starting in 2012
- Purchase annuities
  - Can settle retiree liabilities prior to plan termination
  - Purchase annuities when the time and cost is "right"

How We Go Forward – Preparing a Frozen Plan for Termination

- Make sure plans are in compliance
  - Plan document
  - Administrative forms
    - Optional forms of payment - review, eliminate, simplify
- Make sure data is complete
  - Plan information
  - Personal information (spousal data, addresses)
- Calculate all accrued benefits as soon as possible
- Develop investment and funding policy
- Determine threshold for exit

How We Go Forward – Accounting Considerations

- Curtailment accounting when plan is frozen
  - Requires accelerated recognition of unrecognized prior service cost and, potentially, gains/losses
  - If effect is net loss, recognize when probable and measurable
  - If effect is net gain, recognize when amendment adopted
- Settlement accounting when liabilities extinguished and assets distributed
  - Re-measure liabilities on plan termination basis

Investment Issues

Articulating the Plan Sponsor's Goal

Frozen Plan

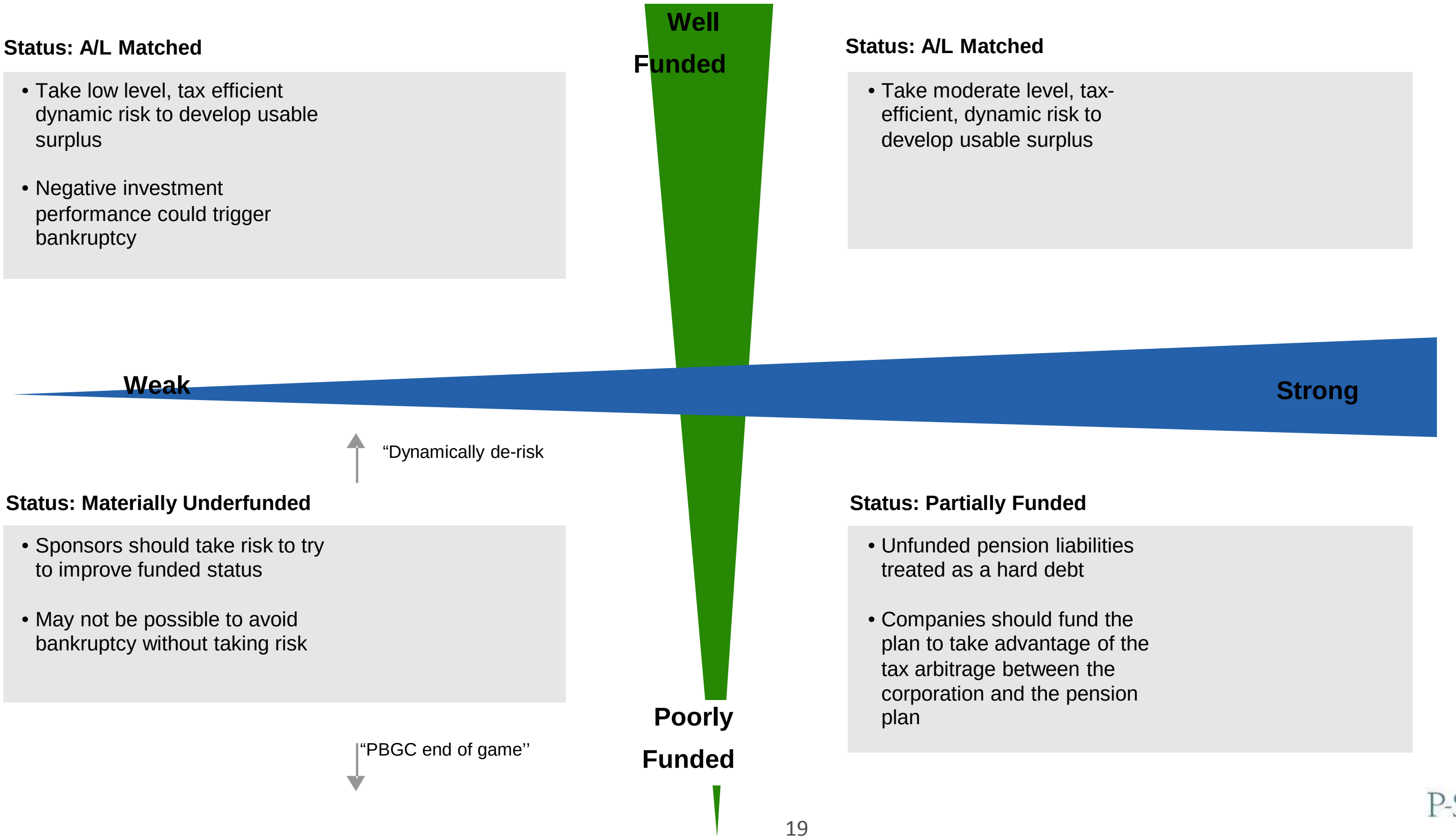
- Plan Sponsor: Exit the pension business
- Questions: How & when?
- Key issue: Manage towards termination or "hibernation" mode

Open Plan

- Plan Sponsor: Maintain benefit structure
- Question: How much risk can organization bear (size of plan relative to company)?
- Key issue: Trade off – current risk management versus reducing future contributions

Pension Management – Our Perspective

Funded status and corporate strength require different pension strategy



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Where We Go From Here: Framework

It is difficult to assign probabilities to quadrants

Probabilities are likely to vary markedly over near term.

The logical conclusion is that high volatility will be the norm.

Hedging risky quadrant still important – compare to insurance against disaster

Return Seeking Assets – emphasis on wider mandates, alternatives, tactical

Inflation

STAGFLATION
- Declining Real Economy
- Declining Purchasing Power of Dollar
- Liquid Capital Markets

HEATING
- Increasing Real and Nominal Economy
- Declining Purchasing Power of Dollar
- Liquid Capital Markets

GDP grows slower than debt

GDP grows faster than debt

DEFLATION
- Declining Real and Nominal Economy
- Increasing Purchasing Power of Dollar
- Illiquid Capital Markets

INNOVATION
- Increasing Real and Nominal Economy
- Increasing Purchasing Power of Dollar
- Liquid Capital Markets

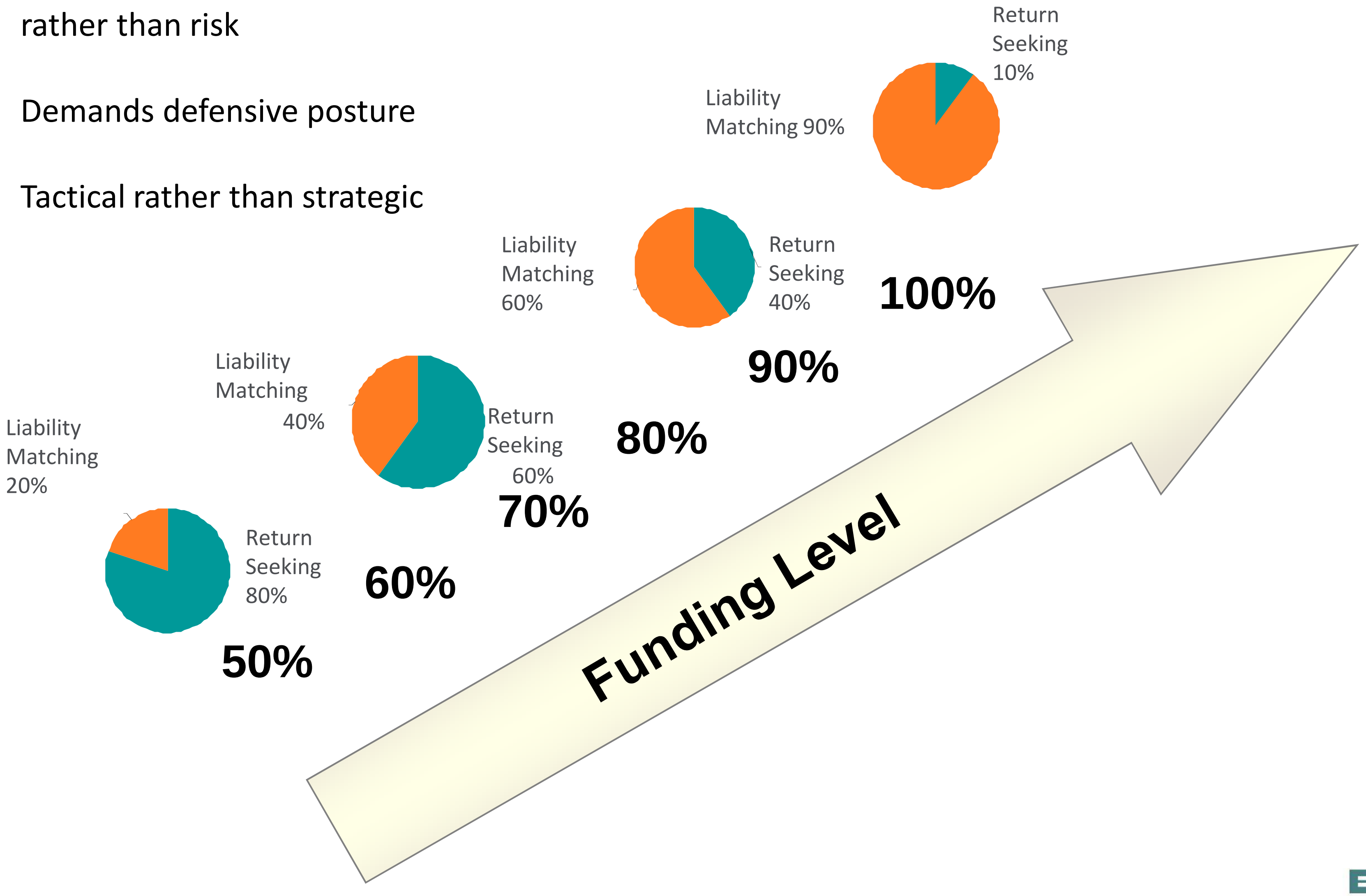
Deflation

Key Question – Inflation

- January 25, 2012 – Federal Open Market Committee decided today to keep the target range for the federal funds rate at 0 to 1/4 percent and currently anticipates that economic conditions--including low rates of resource utilization and a subdued outlook for inflation over the medium run--are likely to warrant exceptionally low levels for the federal funds rate at least through late 2014
- February 2, 2012 – Ben Bernanke - House Budget Committee testimony - "…we want to move inflation always back toward 2 percent."
- April 11, 2012 – Janet Yellen – Vice Chair Federal Reserve – "Such policy involves keeping the funds rate close to zero until late 2015… the risk that continued high unemployment could eventually lead to more-persistent structural problems underscores the case for maintaining a highly accommodative stance on monetary policy."
- December 12, 2012 – Federal Open Market Committee decided to keep the target range for the federal funds rate at 0 to 1/4 percent … at least as long as the unemployment rate remains above 6-1/2 percent

Dynamic Pension Asset Allocation

- Current macro-economy dominated by uncertainty rather than risk
- Demands defensive posture
- Tactical rather than strategic



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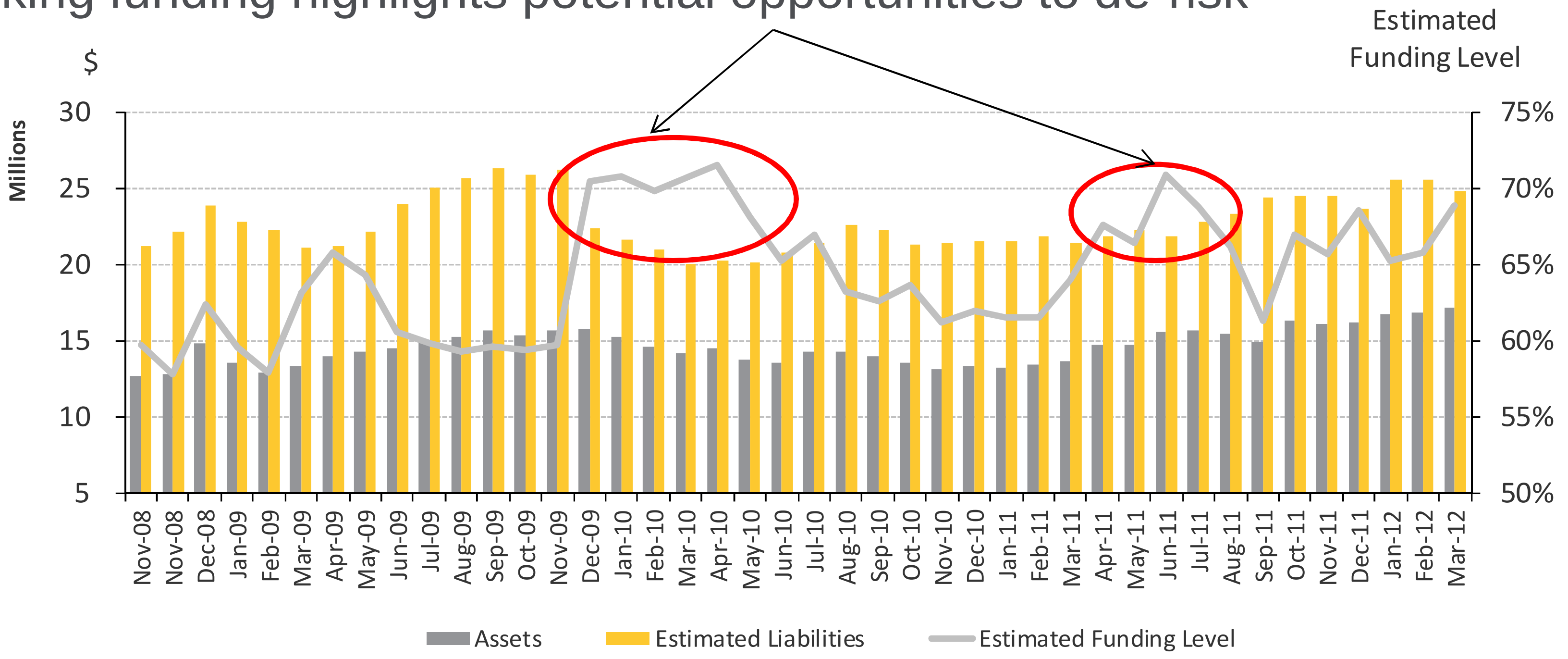
New School Governance

Tracking funding highlights potential opportunities to de-risk



	Inception 11/12/2008	Last Fiscal Year End 12/31/2010	Last Quarter 12/31/2011	Current 3/31/2012	Quarterly Inv Return
Assets	$ 12,635,735	$ 13,291,580	$ 16,204,727	$ 17,087,253	3.9%
Liabilities[1]	$ 21,168,681	$ 21,475,236	$ 23,650,559	$ 24,832,267	5.8%
Surplus (Deficit)	**$ (8,532,947)**	**$ (8,183,656)**	**$ (7,445,832)**	**$ (7,745,013)**	
Estimated Funding Level	59.7%	61.9%	68.5%	68.8%	
Effective Discount Rate	7.61%	5.50%	4.75%	4.39%	

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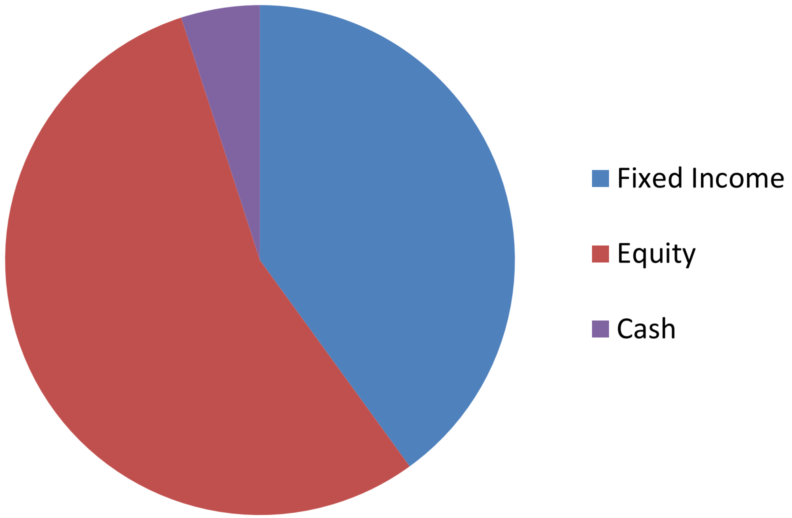
Three Core Principles of Pension Management

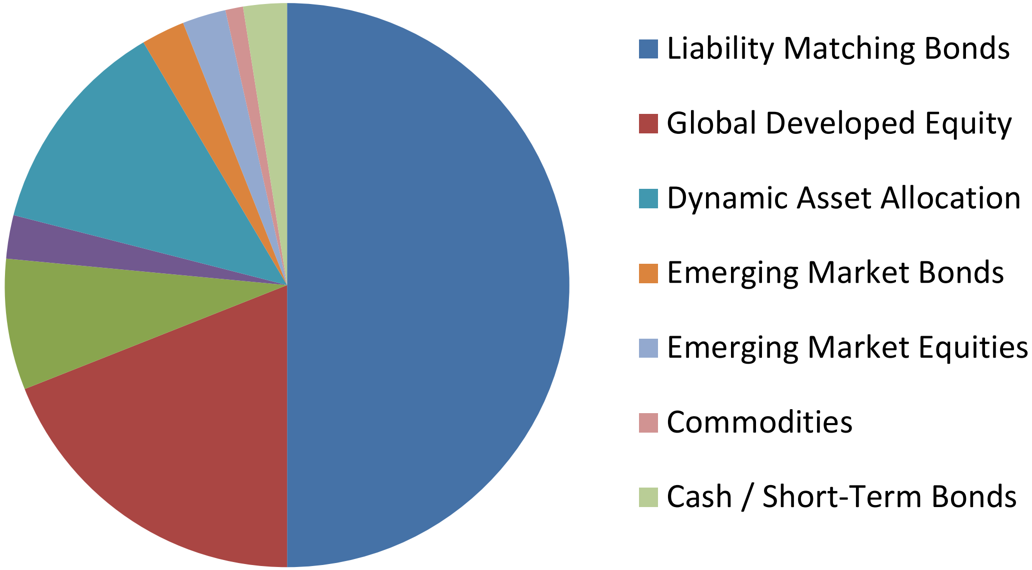
1. Key measurement = Funded Status of plan
2. Portfolio has only two categories of assets: liability-matching and return-seeking
3. Factors to determine portfolio split
   A. Funded status
   B. Sponsor's ability/desire to bear risk (enterprise risk management)

"Old School" Asset Allocation



- Strategic Asset Allocation – primarily static, rebalance back to "neutral"
- Not focused on liabilities – typically provides only a 15% hedge of long-term interest rates
- Lack of diversification – typically equity focused with high correlation especially in challenging economic conditions
- Cash – viewed as low risk asset, but in fact, is a high-risk asset: no interest rate sensitivity and no return
- Low fixed income yield – 2+% lower than FAS liability discount rate

"New School" Asset Allocation



- Liability focused – dedicated matching allocation hedges 40-50% of interest rate risk
- Diversified return-seeking portfolio – provides better risk-adjusted return than equities alone
- Tactical – significant latitude on return-seeking portfolio
- Strategic – allocation between two portfolios always looking to secure gains in FUNDED STATUS by increasing liability hedge

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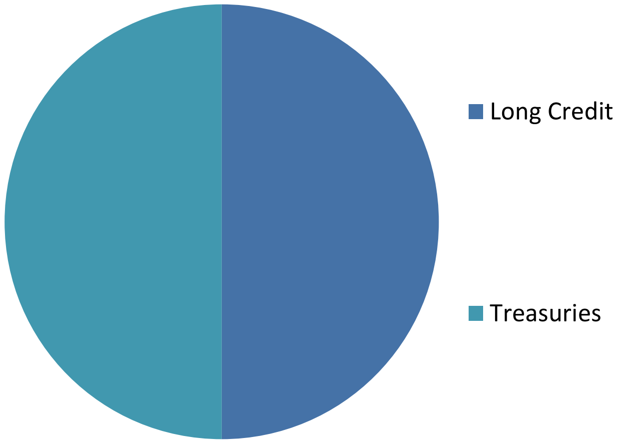
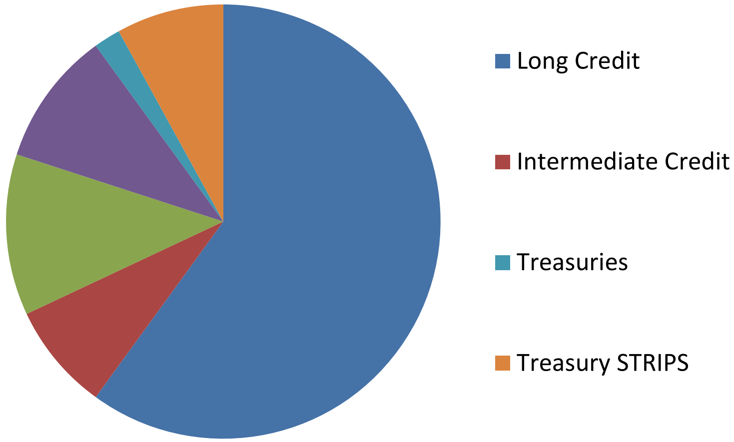
Building Liability-Matching Portfolios

First Generation Liability-Matching Portfolio



- Duration close to liability duration
- Yield below FAS discount rate, close to termination rate
- Exposure to changes in curve shape

Second Generation Liability-Matching Portfolio



- Duration = liability duration
- Yield => FAS (or termination) yield
- Duration matched along curve
- Continued credit spread mismatch

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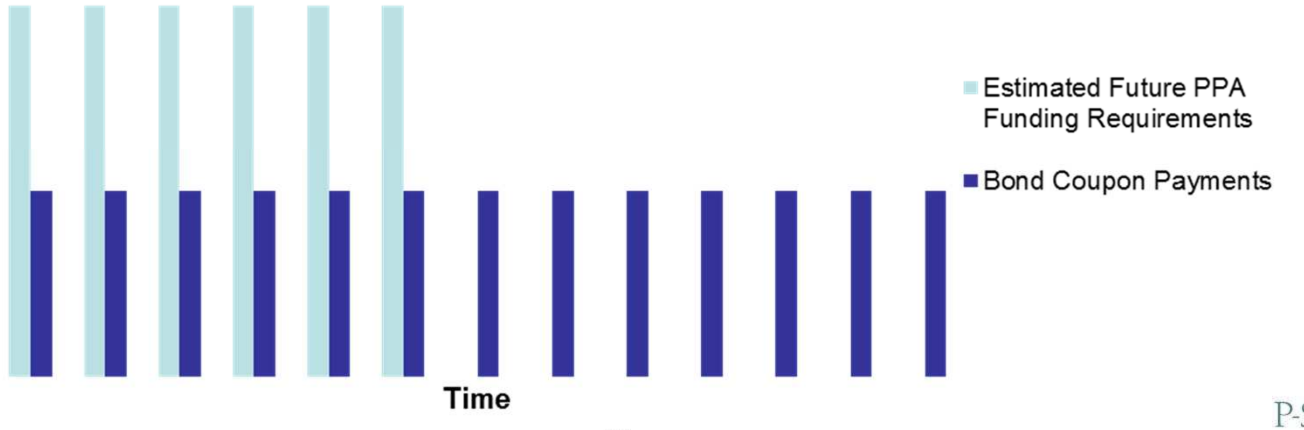
De-Risking Strategy – Issues to Consider

- Liability-Driven Investment ≠ 100% invested in bonds today
- Most plans will de-risk: key questions are "how fast" and "to what level"
- As liability-matching allocations grow, <u>how</u> you match liabilities becomes almost as important as <u>how much</u> you match liabilities
- Difficult to execute a pension de-risking strategy if the actuarial and investment teams do not communicate
- Difficult to de-risk if your investment advisor does not "speak actuary"
- Caveat Emptor: most investment advisors (and many actuaries) do not want you de-risk and certainly do not want to see you terminate!

Why Issue Corporate Debt to Fund Pension Plan?

- Reasons
  - Tax Incentives
  - Relatively Low Borrowing Rates
  - Reduced PBGC Premiums
  - Extend Funding Requirements - see chart below
    - PPA 7-10 year time frame
    - Corporate debt could be longer
  - Lower Pension Expense
  - Lower Volatility
  - Simplify Administration – notice requirements



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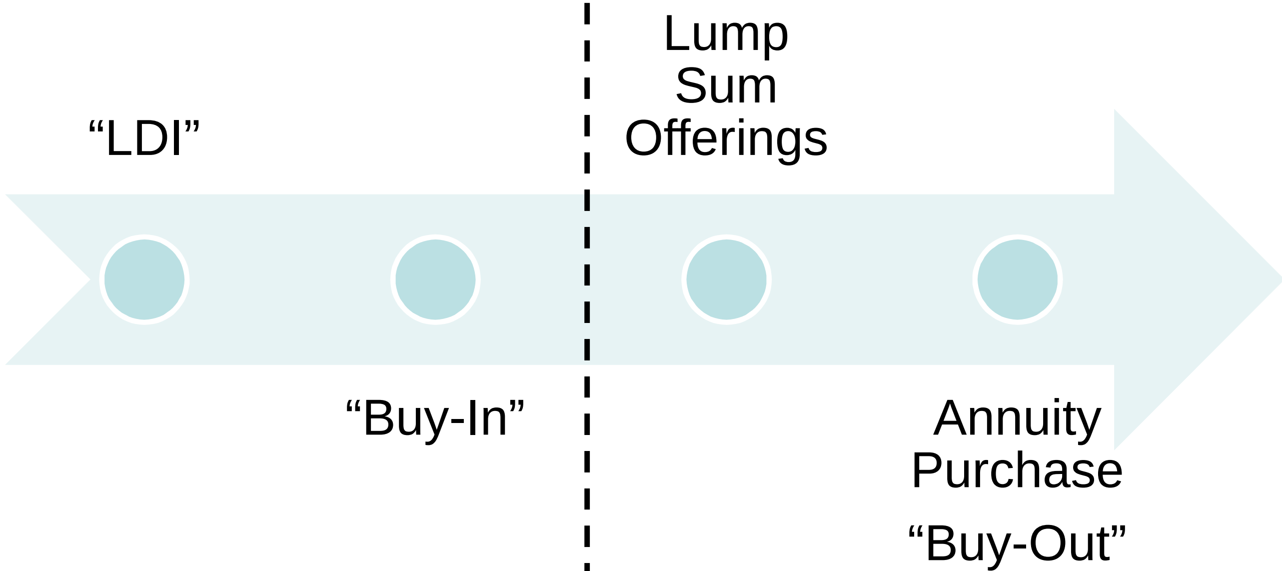
Spectrum of De-Risking Strategies

Asset Solutions – no assets leave the plan

Liability Solutions –assets/liability leave the plan – “shrink the ball”



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Buy-In vs. Buy-Out

- Buy-In
  - Insurance contract version of LDI strategy
  - Contract is a plan asset – value set equal to market value of liabilities
  - No settlement accounting required
  - Participants do not have relationship/contract with insurer
  - Payment flow:

  - Convertible to a "Buy-Out" – i.e. complete the annuity purchase
  - Revocable

- Buy-Out
  - Traditional annuity purchase, completes transaction
  - Contracts issued to participants
  - Settles liability >>> settlement accounting

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Buy-In vs. Buy-Out

Issues	Buy-out	Buy-in	Comments
Interest rate risk	Eliminates	Eliminates	
Investment risk	Eliminates	Eliminates	
Longevity risk	Eliminates	Eliminates	
Accounting	Settlement	No settlement	Both may also impact ongoing FAS 87 expense
PBGC Premiums	Eliminates	No change	No PBGC or IRS filings required
Administrative expenses (e.g. record keeping, actuarial, investment management	Eliminates	Investment Fees will be reduced	For affected participants and / or assets
Precedent	Well established	New in the U.S., established in the UK	
Impact on plan size	Reduces size	No change	
Impact on funded status	Varies	No change	
Liquidity	Irrevocable	Can be unwound	
Flexibility	Can be implemented in tranches	Can be implemented in tranches; Can convert to buy-out	
Counterparty Risk	None, if plan sponsor meets safest available annuity purchase process standards	Sponsor should monitor credit status of annuity provider	
Other issues	Cost of annuities relative to accounting liability; May impact contribution requirements	Cost of annuities relative to accounting liability;	

* Source: MetLife

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US Pension Risk Transfer – Evolution of Annuity Marketplace

1974
- ERISA Passed

1975
- Pension Benefit Guaranty Corp. pays first benefit.

1984
- Regulatory agencies require sponsors of terminating plans to buy annuities from insurers.

1985
- Group Annuity Sales exceed $10 bn.
- 17 – 20 insurers compete
- FAS 88 sets accounting treatment for terminations

1990
- OBRA passed in response to "boom" in terminations, increases reversion excise tax to 50%

Early 1990's
- Two large annuity insurers fail – Executive Life and Mutual Benefit Life

1994
- NAIC promulgates Risk Based Capital requirements – more expensive for insurers to write long term annuities
- SOA publishes new mortality table

1995
- DOL 95-1 on "Safest Available", reduces viable annuity provider market

2006
- Pension Protection Act (PPA) – significant changes in funding rules – less conservative lump sum rates to be phased in over five years

2008
- Rev Ruling 2008-45 issued – clarified that annuity purchase/lump sum is only route to standard termination

2011
- First US "buy-in" (Hickory Springs)
- Group Annuity sales less than $1 b
- 6 – 8 insurers competing

2012
- SOA publishes new mortality table
- GM de-risks plan with lump sum/annuity deal valued at $26+ b with Pru

* Source – Camradata

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Case Study 1 – “Successful Landing”

- **Overview**
  - Recently completed termination including annuities and lump sums for complex plan design (floor-offset DB/DC plan)

- **Step 1 – Understand Risks**
  - Communicated plan risks in language of CFO – option pricing

- **Step 2 – Mitigate Risks**
  - Implemented “LDI”

- **Step 3 – Funding Policy**
  - Developed funding policy
  - Communicated with CFO/Treasurer on continuous basis – eventually leading to significant contribution as corporate cash became available

- **Step 4 – Termination**
  - Led annuity purchase search, selected annuity provider
  - Consulted on lump sum communication, timing

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Case Study 2 – "Shrink the ball, now in landing pattern"

- **Overview**
  - In termination process after
    - freezing plan, designing grandfathering provisions and new DC arrangement,
    - purchasing annuities for existing retirees five years ago, then
    - implementing LDI
- **Step 1 – Shrink the Ball**
  - Purchased annuities for existing retirees – reduced overall risk to organization
- **Step 2 – Mitigate Risks**
  - Implemented "LDI"
- **Step 3 – Funding Policy**
  - Developed funding policy in conjunction with CFO/Treasurer
  - Met with Board to review funding policy, rationale for plan termination – Board approved action
- **Step 4 – Termination**
  - In process on annuity purchase search, selected annuity provider
  - Consulted on lump sum communication, timing

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Case Study 3 – "Close the gap, now in holding pattern"

- Overview
  - Soft frozen plan with volatility of deficit producing significant risk/pain
  - Financially strong company
  - Recommended
    - significant contribution (additional borrowing from foreign parent [Japan]) PLUS
    - LDI – "do not want to put money in twice"

- Step 1 – Understand case for borrowing money to fund the plan
  - Worked with management to understand issue
  - Developed support significant cash contribution with foreign parent

- Step 2 – Mitigate Risks
  - Implemented "LDI"

- Step 3 – Funding Policy
  - Developed ongoing funding policy in conjunction with CFO

Conclusion

- Challenging pension landscape
- Need for more refined investment strategies
- Need for more dynamic governance structure
- It is possible to “win” the pension game, but you have to know what success looks like

Appendix

About P-Solve Cassidy

P-Solve Cassidy is the U.S. actuarial and investment solutions business within the U.K.-based Punter Southall Group. Formed in February 2012 by the merger of P-Solve and Cassidy Retirement Group, P-Solve Cassidy provides independent, customized advice to pension plans in the U.S. With a reputation for innovative thinking, tailored client solutions and willingness to take responsibility for our advice, we currently serve over 50 U.S. institutions with collective assets of over $2 billion. Globally, the Punter Southall Group advises over 350 institutions on retirement issues.

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Speaker Biographies

Dan Cassidy, FSA, EA, CFA

Dan has over 20 years of experience serving companies ranging in size from 50 to 50,000 employees in the US, Canada and the UK. Dan specializes in pension plan valuations and forecasts, plan design, mergers and acquisitions, and investment performance monitoring. Dan, founder of Cassidy Retirement Group and co-founder of P-Solve Cassidy, is the author of "A Manager's Guide to Strategic Retirement Plan Management" published by John Wiley & Sons, Inc., and is on the faculty at Boston College's Center for Retirement Research. Dan's professional designations include Fellow of the Society of Actuaries (FSA), Enrolled Actuary, Joint Board for the Enrollment of Actuaries (EA), Member, American Academy of Actuaries (MAAA), and Chartered Financial Analyst (CFA).

Speaker Biographies

David Kershner, FSA, EA

David has served clients and their retirement plans for over 27 years. With extensive experience on all aspects of post-employment benefit plans, he has consulted on qualified and non-qualified defined benefit pension plans, and retiree welfare plans. Prior to joining P-Solve Cassidy in January 2012, David spent 9 years as a Consulting Actuary with Towers Watson and 12 years as a Partner and Consulting Actuary with Ernst & Young. David's professional designations include Fellow of the Society of Actuaries (FSA), Enrolled Actuary, Joint Board for the Enrollment of Actuaries (EA), Member, American Academy of Actuaries (MAAA), and Fellow of the Conference of Consulting Actuaries (FCA). He has a Bachelor of Arts in Mathematics from York University in Toronto, Canada.

P-Solve Cassidy Retirement Consulting Value Proposition

P-Solve Cassidy provides the best of both worlds - a flexible service model with a broad range of services, and deep knowledge and experience at a great value.

Client Needs	Smaller Firms	P-Solve Cassidy	National Firms
Personal Attention	Personalized service from owner to owner	**Mid-sized firm with senior leadership directly serving the day-to-day strategic needs of clients**	Senior leadership focused on "Fortune 500" clientele. Mid-market service provided in bulk through "national practice model"
Breadth of Services	Boutique with one or two areas of expertise	**Complete Range of Retirement Consulting Services:** • **Actuarial, compliance, plan design and investments** • **Qualified and Non Qualified Defined Benefit and Defined Contribution Plans**	Complete range of retirement consulting services along with other areas (e.g. health & welfare, property & casualty, large plan administration)
Deep Knowledge	Limited resources, network, and expertise	**Extensive staff of consultants with national firm background and training. Our consultants are:** • **recognized thought leaders regularly published** • **actively involved in national professional organizations and local employee benefits groups** • **speak widely at retirement related forums**	Extensive experience
Flexible Service Model	Entrepreneurial so able to adjust to client requirement	**Local integrated business model that allows for bringing the services needed in an integrated fashion suited for the client's specific business situation.**	Practice silos with distinct P&Ls overseen by risk-averse national leadership
Competitive Cost	Low cost since low overhead "home office"	**High value with top quality and low overhead**	High fees to support large overhead structure and shareholder demands

P-Solve Cassidy Pension Plan Management Consulting Services

FOCUSED ON OUR CLIENTS' RETIREMENT PLANS NEEDS

	ADVICE / SOLUTIONS	DELEGATION and ONGOING MONITORING
Actuarial Services	**Retirement Plan Strategy Consulting**	**Investment Implementation and Strategic Consulting**
None	Lower ← **P-Solve's Fiduciary Status**	→ Higher

Actuarial Services
- Traditional liability focused service
- Investment framework set by outside group
- Shift toward more integrated approaches
  - Closed plans and exit strategy
  - Restrictive funding rules with increased cost volatility
  - Prescriptive accounting guidelines

Retirement Plan Strategy Consulting
- Strong linkage between assets, liabilities, actuary and investment managers
- More suitable when financial risk management is a priority – e.g. frozen plans
- Underpinning for asset allocation glide path and exit strategy
- Regular monitoring of funded status, asset/liability duration match and de-risking opportunities
- Preparation for timely plan termination
- P-Solve acts as ERISA §3(21) fiduciary

Investment Implementation and Strategic Consulting
- Plan Sponsor delegates responsibility for investment process to P-Solve
- P-Solve acts as ERISA §3(38) fiduciary
- Potentially less costly and more efficient in decision making

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