Achieving Pension Outcomes in a Volatile, Low Return Environment

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Thomas J. Kennelly, III
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   Tom Kennelly III, SSgA ISG
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De-Risking a Pension Fund While Pursuing Growth
Driving Forces Behind Pension Volatility
How Did we Get Here

A. Two Major Equity Drawdowns in the Past 12 Years

B. Higher Correlation in Traditional Asset Classes

C. Secular Decline in Interest Rates

= Underfunding, Increased Funding Volatility and Lower Expected Return on Assets

Source: SSgA. For illustrative purposes only.
The Pension Challenge

- Secular decline in rates
  - Are higher rates the anomaly?
- Significant equity drawdowns and correlation risk
  - They have been more frequent
- Return seeking assets are inherently short volatility
  - Where do plans go for safety with bond yields so low?

Source: SSgA and MSCI

The correlation coefficient measures the strength and direction of a linear relationship between two variables. It measures the degree to which the deviations of one variable from its mean are related to those of a different variable from its respective mean. Past performance is not a guarantee of future results. The index returns are unmanaged and do not reflect the deduction of any fees or expenses. The index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income.
What Does This Imply for Asset Allocation?

• Cash not necessarily “safe”
  – Money expansion, low rates = negative real returns for years to come

• Increasing use of factor-based asset allocation

• Allocate risk budget in more attractive areas

• More nimble asset allocation to prevent future drawdowns
  – Target constant volatility
  – Regime based asset allocation
Managing Funding Volatility
Plan sponsors are actively managing risk across all spectrums

<table>
<thead>
<tr>
<th>Liability Side</th>
<th>Asset Side</th>
<th>Total Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freeze</td>
<td>Liability Based Bonds</td>
<td>Insource/Outsource</td>
</tr>
<tr>
<td>Lump Sum</td>
<td>Lowering Equity Beta</td>
<td>Tactical Asset Allocation</td>
</tr>
<tr>
<td>Annuitize</td>
<td>Liquid Alternatives</td>
<td>Dynamic De-Risking</td>
</tr>
</tbody>
</table>

The information contained above is for illustrative purposes only.
**Dynamic De-Risking** offers plan sponsors a disciplined framework to define and target a desired outcome (e.g., going concern, termination, annuitization) and provide a more stable roadmap to get there.

A Strategic “flight path” capitalizes on risk reduction or risk transfer opportunities as they arise with pre-determined “triggers”, based on funding levels, interest rate environment, or both.

Source: SSgA Investment Solutions Group (ISG) Team. For discussion purposes only.
### Sample Custom De-Risking Flight Path

- **Sample Flight Path: Risk Based Allocation**
- **Incorporate triggers into Policy Statement and Investment Management Agreements**

<table>
<thead>
<tr>
<th></th>
<th>Current Allocation</th>
<th>85%–93%</th>
<th>93%–100%</th>
<th>100%–106%</th>
<th>106%–110%</th>
<th>&gt;110%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Growth Assets</strong></td>
<td>60%</td>
<td>60%</td>
<td>45%</td>
<td>30%</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Liability Based Assets</strong></td>
<td>40</td>
<td>40</td>
<td>55</td>
<td>70</td>
<td>85</td>
<td>90</td>
</tr>
<tr>
<td><strong>Projected Asset Return</strong></td>
<td>6.1</td>
<td>6.3</td>
<td>6.0</td>
<td>5.7</td>
<td>5.5</td>
<td>5.4</td>
</tr>
<tr>
<td><strong>Projected Tracking Error</strong></td>
<td><strong>9.6</strong></td>
<td><strong>8.0</strong></td>
<td><strong>6.1</strong></td>
<td><strong>4.5</strong></td>
<td><strong>3.5</strong></td>
<td><strong>3.3</strong></td>
</tr>
</tbody>
</table>

- **Risk Factor approach using Projected Tracking Error as guide**

Observations and considerations are for general discussion purposes only. Projected return and tracking error based on 10-year forward looking simulation. The above projections are estimates based on certain assumptions and analysis made by SSgA. There is no guarantee that the estimates will be achieved.
Managing Equity Volatility
Managed Volatility: Addressing Sponsor Concerns

What we are hearing from investors

• “We are concerned about the volatility of our portfolio”
• “Our portfolio needs to grow to meet future commitments”
• “Another drawdown in the equity market may restrain us from meeting our investment objectives”
• “We desire transparency and committee friendly solutions”

One way to address these concerns

• Incorporate a Managed Volatility equity strategy within portfolio
  – Seeks to reduce volatility of returns, while maintaining equity growth potential, over long term
  – Can be applied to all equity universes (developed markets, emerging markets, etc.)
  – May improve Sharpe Ratio of growth assets and overall plan
Redesigning Equities

Traditional Model

Core-Cap Weighted

- Active #1
- Active #2
- Active #3
- Active #4
- Active #5
- Active #6

Factor Based Model

Low Beta

- Value
- Carry
- Quality
- Emerging Markets
- Size
- Momentum

Source: State Street Global Advisors
The information contained above is for illustrative purposes only.
High Beta Doesn’t Necessarily Mean High Returns

Average Annualized Monthly Return versus Beta for Equal Weighted Portfolios Formed on Expected Beta (MSCI World Index Universe)
January 1990 – December 2009

- Returns expected to be linearly increasing with beta but appear flat or declining
- Low beta stocks have historically performed much better than expected
- High beta stocks have historically performed much worse than expected

Source: SSgA
As of December 2009
Past performance is not a guarantee of future results.
The MSCI World Index is a trademark of MSCI Inc.
Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income.
As of September 30, 2012
Source: SSgA. For illustrative purposes only.
The expected returns are estimated based on certain assumptions and analysis made by SSgA. There is no guarantee that the estimates will be achieved. Past performance is not a guarantee of future results. Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income.

**Including Low Beta or Managed Volatility Equity Strategies allows Plan Sponsor to reduce overall risk or allocate more capital to equities and manage surplus risk**

<table>
<thead>
<tr>
<th></th>
<th>Beta</th>
<th>Dividend Yield</th>
<th>Expected Return</th>
<th>Realized Volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSCI World Index</td>
<td>1.00</td>
<td>2.84%</td>
<td>6.80%</td>
<td>22.23%</td>
</tr>
<tr>
<td>Global Managed Volatility</td>
<td>0.64</td>
<td>3.63</td>
<td>6.80</td>
<td>15.11</td>
</tr>
<tr>
<td>Scaled Up Global Managed Volatility = (1/0.64)</td>
<td>1.00</td>
<td>5.67%</td>
<td>10.63%</td>
<td>18.89%</td>
</tr>
</tbody>
</table>
Managed Volatility Equity: Potential Benefits

**Historical Drawdown**
January 1999 – December 2010

- Seeks downside protection
  - Substantial reduction in drawdown
  - Max drawdown (simulation period):
    - Managed Volatility: -35%
    - MSCI World Index: -54%

- Seeks stronger Sharpe ratio
  - Better risk-adjusted performance

*Source: SSgA*

*Simulation period: January 1999 – December 2010. The simulated performance shown is not indicative of actual future performance, which could differ substantially. Please see the Appendix for additional Simulation Disclosure. Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income.*
Managing Liability Volatility
# Liability Risk Management

<table>
<thead>
<tr>
<th></th>
<th>Liability Benchmarks</th>
<th>Asset Benchmarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Citibank Pension Liability Index</td>
<td>PPA Liability Benchmark Curve</td>
</tr>
<tr>
<td>Corporate</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Govt/Non-Corp</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Treasury</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Securitized</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

## Sector %

<table>
<thead>
<tr>
<th></th>
<th>Corporate</th>
<th>Govt/Non-Corp</th>
<th>Treasury</th>
<th>Securitized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sector %</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

## Quality

<table>
<thead>
<tr>
<th></th>
<th>Minimum Rating</th>
<th>BBB Exposure</th>
<th>Average Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Rating</td>
<td>AA-</td>
<td>A-</td>
<td>A-</td>
</tr>
<tr>
<td>BBB Exposure</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Average Rating</td>
<td>AA</td>
<td>A+</td>
<td>A</td>
</tr>
</tbody>
</table>
Dynamic Liability Based Approach: Historical Correlation to a Sample Plan Liability

<table>
<thead>
<tr>
<th>Sept 2002 – Sept 2012</th>
<th>Plan Liabilities</th>
<th>Aggregate Bonds</th>
<th>Long Govt/Credit</th>
<th>Dynamic Blend: 5-20yr Corp, 20+yr Corp and 20Yr + STRIPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Duration</td>
<td>12.84</td>
<td>4.84</td>
<td>11.78</td>
<td>12.84</td>
</tr>
<tr>
<td>Average Return</td>
<td>9.12%</td>
<td>5.27%</td>
<td>8.30%</td>
<td>8.74%</td>
</tr>
<tr>
<td>Return Correlation</td>
<td>0.84</td>
<td>0.93</td>
<td>0.95</td>
<td></td>
</tr>
<tr>
<td>Liability Tracking Error</td>
<td>9.74%</td>
<td>5.09%</td>
<td>3.83%</td>
<td></td>
</tr>
<tr>
<td>Max Tracking Error (12 Mon)</td>
<td>20.99%</td>
<td>12.36%</td>
<td>7.40%</td>
<td></td>
</tr>
</tbody>
</table>

Dynamic Approach meaningfully reduces tracking error and overall risk
Reduce overall Plan Risk or Redeploy Risk budget elsewhere
De-Risking while Pursuing Growth

Capital and Risk Efficient Approach

Fixed Income
1. Move Out of Core Bonds
2. Match Liability Duration
3. Add Treasury Strips, High Quality Corporate, TIPs
4. **Reduce** Bond allocation

Growth Assets
1. Reduce Cap Weighted Equity
2. Include Low Volatility Equity
3. Add Dividend Equity, High Yield, Alts, Real Assets
4. **Increase** Growth allocation

Dynamic De-Risking Framework

Source: SSgA. For illustrative purposes only.
**Capital Efficient Fixed Income**

*Reduce bond allocation, extend duration*

*Remain interest rate risk neutral*

*Free up capital to shift to growth assets*

<table>
<thead>
<tr>
<th>Allocation</th>
<th>Weight 1</th>
<th>Fixed Income Duration</th>
<th>Total Plan Duration</th>
<th>Total Hedge Ratio 2</th>
<th>Expected Return 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan Liabilities 4</td>
<td>100%</td>
<td>13.0</td>
<td>13.0</td>
<td></td>
<td>3.75%</td>
</tr>
<tr>
<td>Current Fixed Income 5</td>
<td>40</td>
<td>9.7</td>
<td>3.9</td>
<td>25%</td>
<td>2.60</td>
</tr>
<tr>
<td>Capital Efficient Fixed Income</td>
<td>30</td>
<td>13.0</td>
<td>3.9</td>
<td>25%</td>
<td>4.10</td>
</tr>
</tbody>
</table>

*Similar interest rate risk profile but improved return and correlation to plan liabilities*

Source: SSgA. For illustrative purposes only. As of September 30, 2012

1 Capital Efficient Bonds based on diversified long duration mix of Corporate Bonds, Treasury Strips, TIPs and High Yield
2 Hedge Ratio is Asset DV01/Liability DV01, assumes the plan is 82% funded
3 Expected Return based on SSgA Investment Solutions Team 10yr Asset Class Forecast
4 Plan Liabilities based on Hypothetical Pension Plan Sample Liability Profile
5 Intermediate Bonds assumes Barclays Aggregate Bond Strategy

The expected returns are not necessarily indicative of future performance, which could differ substantially.
Better Duration and Yield Curve Match to Plan Liabilities

Source: Barclays Index Data, SSgA. For illustrative purposes only. As of September 30, 2012
KRD = Key Rate Duration, OAS = Option Adjusted Spread, OAC = Option Adjusted Convexity, CTD = Contribution to Duration
Past performance is not a guarantee of future results.
## Capital Efficient Strategic Allocation

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Current Allocation</th>
<th>Capital Efficient Allocation</th>
<th>Expected Return¹</th>
<th>Standard Deviation¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Developed</td>
<td>60.0%</td>
<td>16.0%</td>
<td>6.5%</td>
<td></td>
</tr>
<tr>
<td>Emerging Market Equity</td>
<td>0.0</td>
<td>13.0</td>
<td>7.4</td>
<td></td>
</tr>
<tr>
<td>Low Beta/Dividend Equity</td>
<td>0.0</td>
<td>26.0</td>
<td>6.0</td>
<td></td>
</tr>
<tr>
<td>Alternatives</td>
<td>0.0</td>
<td>10.0</td>
<td>5.2</td>
<td></td>
</tr>
<tr>
<td>Real Assets</td>
<td>0.0</td>
<td>10.0</td>
<td>5.3</td>
<td></td>
</tr>
<tr>
<td>Current Fixed Income</td>
<td>40.0</td>
<td>0.0</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Capital Efficient Dynamic</td>
<td>0.0</td>
<td>30.0</td>
<td>4.1</td>
<td></td>
</tr>
</tbody>
</table>

**Plan Characteristics**

<table>
<thead>
<tr>
<th></th>
<th>Current Allocation</th>
<th>Capital Efficient Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth</td>
<td>60.0%</td>
<td>70.0%</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>40.0</td>
<td>30.0</td>
</tr>
</tbody>
</table>

| Expected Return¹     | 4.94%              | 5.58%                        |
| A/L Hedge Ratio²     | 25%                | 25%                          |

Note: Data as of Sept 30, 2012

¹ Source: SSgA Investment Solutions Group (ISG) Team, 10yr Expected Return Forecast

² A/L Hedge Ratio based on total dollar asset duration / total dollar liability duration

The information contained above is for illustrative purposes only. Characteristics and allocations are as of the date indicated, are subject to change, and should not be relied upon as current thereafter. The above Expected Returns are estimates based on certain assumptions and analysis made by SSgA. There is no guarantee that the estimates will be achieved.
Scenario Analysis

Asset — Liability Analysis comparing:

• Base Case Allocation versus Capital Efficient: Static and Dynamic Allocation

Plan Stats

• 80% Funded, $1B PBO, 13yr Liability Duration, Citi PDC

Forward-looking and Back-test Simulations

• Monte Carlo Analysis (10 year projection)
  – Non normal, stress environments

• Deterministic Scenario Analysis
  – Factor Based Yield Curve and Credit Spread Environment
    – Rising rates, Flatter curve and Steeper curve
    – Falling rates, Flatter curve
    – Tighter/Wider Credit Spreads

Plan Stats are for a Sample Representative Plan. Assumes cash flows that equate to $1B PBO with 13yr using Citi Pension Discount Rate Curve.
Back-testing Results

The simulated performance shown was created by the Multi Asset Class Solutions Group. Back testing performed for a time period starting June 30, 2011 through June 30, 2012 using index returns as a proxy to strategy returns. Liability cash flows discounted with Citigroup Pension Discount Curve. The results shown do not represent the results of actual trading using client assets but were achieved by means of the retroactive application of a model that was designed with the benefit of hindsight. The simulated performance was compiled after the end of the period depicted and does not represent the actual investment decisions of the advisor. These results do not reflect the effect of material economic and market factors on decision-making. The simulated performance data is reported on a gross of fees basis, but net of administrative costs. Additional fees, such as the advisory fee, would reduce the return. For example, if an annualized gross return of 10% was achieved over a 5-year period and a management fee of 1% per year was charged and deducted annually, then the resulting return would be reduced from 61% to 54%. The performance includes the reinvestment of dividends and other corporate earnings and is calculated in USD. The simulated performance shown is not necessarily indicative of future performance, which could differ substantially.

Key Observations

- Dynamic De-risking solution provides favorable results
  - Better funded status; 91% versus 72%
  - Lower contributions; PV of $0.3mm versus $16.9mm
  - Lower volatility and tracking error; 12.5% versus 13.9%
**Capital Efficient Dynamic approach offers improved terminal funded status, reduced volatility, better downside protection and lowers contributions**

<table>
<thead>
<tr>
<th></th>
<th>Median</th>
<th>5&lt;sup&gt;th&lt;/sup&gt; Percentile</th>
<th>PV of 10yr Contributions</th>
<th>Tracking Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Allocation</td>
<td>106%</td>
<td>77%</td>
<td>$33.6M</td>
<td>10.0%</td>
</tr>
<tr>
<td>Capital Efficient Dynamic Allocation</td>
<td>108</td>
<td>84</td>
<td>$26.2</td>
<td>8.8</td>
</tr>
</tbody>
</table>

**Improvement**

+2%  
+7%

-$7.5M  
-1.2%

---

1 Beginning Funding Ratio 80%
2 Beginning Funding Ratio 100% (Sept 2002 thru Sept 2012)
Source: SSgA. For illustrative purposes only.
The simulated performance shown is not necessarily indicative of future performance, which could differ substantially. Please refer to the appendix for more information.
### 5yr Horizon Scenario

<table>
<thead>
<tr>
<th>Bear Flattener/Spreads Tighter</th>
<th>Median</th>
<th>Worst Case</th>
<th>Tracking Error</th>
<th>PV of Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current: Static</td>
<td>95%</td>
<td>89%</td>
<td>10.6%</td>
<td>$25.2</td>
</tr>
<tr>
<td>Capital Efficient Dynamic</td>
<td>98%</td>
<td>93%</td>
<td>9.5%</td>
<td>$24.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bear Steepener/Spreads Tighter</th>
<th>Median</th>
<th>Worst Case</th>
<th>Tracking Error</th>
<th>PV of Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current: Static</td>
<td>102%</td>
<td>76%</td>
<td>10.3%</td>
<td>$17.7</td>
</tr>
<tr>
<td>Capital Efficient Dynamic</td>
<td>104%</td>
<td>87%</td>
<td>9.6%</td>
<td>$15.8</td>
</tr>
</tbody>
</table>

In rising rate scenario, yield curve shifts and credit spread scenarios, the Capital Efficient Dynamic Approach offers better risk adjusted results.
## Forward Looking Deterministic Scenario

<table>
<thead>
<tr>
<th>5yr Horizon Scenario</th>
<th>Median</th>
<th>Worst Case</th>
<th>Tracking Error</th>
<th>PV of Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bear Steepener/Spreads Wider</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current: Static</td>
<td>95%</td>
<td>87%</td>
<td>9.6%</td>
<td>$12.0</td>
</tr>
<tr>
<td>Capital Efficient Dynamic</td>
<td>103%</td>
<td>85%</td>
<td>8.3%</td>
<td>$9.5</td>
</tr>
<tr>
<td>Bull Flattener/Spreads Wider</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current: Static</td>
<td>88%</td>
<td>76%</td>
<td>10.0%</td>
<td>$15.6</td>
</tr>
<tr>
<td>Capital Efficient Dynamic</td>
<td>94%</td>
<td>84%</td>
<td>9.1%</td>
<td>$14.0</td>
</tr>
</tbody>
</table>

Rising rate scenario with steeper curve and wider credit spreads

Declining rate scenario with flatter curve and wider credit spreads

Source: SSgA. For illustrative purposes only.
Summary

Key steps and considerations

• Isolate key liability risk factors
  – Implement the liability based portfolio now

• Be mindful of Cap Weighted Equity
  – Seek lower volatility and yield within growth based assets

• Allocation to Growth versus Liability based driven by funded status and risk tolerance

• Create flight path triggers to de-risk and actively review funded status

• Tactical asset allocation at plan level to add alpha

Observations are for general discussion purposes only
Comprehensive service offering driven by client needs:

**Client strategy and Investment Advisory**
Clients benefit from our total portfolio perspective, which includes comprehensive asset/liability, cash flow, scenario and risk analysis including forward looking and historical simulations, followed by recommendations for actionable and outcome oriented investment solutions.

**Market outlook, trend and asset class viewpoints**
Clients can expect updates on asset class forecasts, economic and market perspectives, regulatory/accounting insights and portfolio construction trends, delivered through educational seminars/conferences, one-on-one client discussions and thought leadership articles.

**Portfolio management services**
Clients can dictate both the structure and nature of portfolio management services provided, whether they choose a custom, separately managed account, a pooled fund of funds implementation, or a derivatives based overlay program, with ISG as the advisor or outsourced CIO.

**Proprietary and client-driven research**
To address client concerns directly, SSgA strategists and portfolio managers use proprietary research tools and institutional insights to develop client-specific analysis and innovative investment strategies and solutions.

**Full range of fiduciary services**
Clients choose how to engage our fiduciary services, whether they need investment policy statement design/advisory services, portfolio construction, manager selection or ongoing portfolio management, manager oversight and reporting.

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**Multi Asset Class Strategies and Solutions**

**Tactical Asset Allocation**
- Relative/Absolute Return
- Real Return
- Discretionary Rebalancing

**Strategic Asset Allocation**
- Liability Driven Investing
- Target Date or Risk Based
- Diversified Growth
- Diversified Beta Strategies

**Exposure Management**
- Cash Equitization/Strategic Overlay
- Liquidity Management
- Tactical Overlay
- Portable Alpha

**Specialty Solutions**
- Manager of External Managers
- Real Assets
- Multisource Active Commodity
- All International
- Target Volatility
- Optimized Beta/Risk Parity
- Options Based
SSgA Investment Solutions Group AUM Profile

- Established team of over 60 investment professionals across 8 global locations
- Collaborate with clients to design, construct, and manage custom solutions
- Extensive capabilities across asset allocation, risk management, and fiduciary advice

Investment Solutions Group (ISG) Assets Under Management† $164.6 Billion*

**Balanced Portfolios**
$128.4 Billion of Total

- Target Retirement $14.4 B
- Tactical Asset Allocation $23.0 B
- Strategic Asset Allocation $87.3 B
- Fiduciary Services/outsourced CIO $2.4 B
- Specialty Solutions $1.3 B

**Liability Driven Investment**
$33.0 Billion of Total

- ISG LDI $7.9B

**Exposure Management**
$28.3 Billion of Total Notional Value
($179.6 Billion of Total Account Assets)

- Physical Based Exposure Management $3.3 B
- Derivative Based Exposure Management $25.0 B
- Execution Only LDI $25.1 B
- ISG LDI $7.9B

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June 30th, 2012 updated bi-annually.

*Total ISG AUM includes all Balanced Portfolios, Exposure Management, and the ISG LDI component of Liability Driven Investment. Derivatives based exposure management assets under management represents the gross notional value of exposure managed. Total AUM figure excludes execution only LDI mandates. †Effective June 30, 2011 the reported ISG assets under management accounts for the gross notional value for exposure management mandates. Prior to June 30, 2011 the total assets under management included the total account market value for exposure management mandates.
Appendix A: Important Disclosure
Important Disclosure

The views expressed in this material are the views of Ric Thomas and Thomas Kennelly through the period ended February 28, 2013 and are subject to change based on market and other conditions. This document contains certain statements that may be deemed forward-looking statements. Please note that any such statements are not guarantees of any future performance and actual results or developments may differ materially from those projected.

Asset Allocation is a method of diversification which positions assets among major investment categories. Asset Allocation may be used in an effort to manage risk and enhance returns. It does not, however, guarantee a profit or protect against loss.

Generally, among asset classes, stocks are more volatile than bonds or short-term instruments. Government bonds and corporate bonds generally have more moderate short-term price fluctuations than stocks, but provide lower potential long-term returns. US Treasury Bills maintain a stable value if held to maturity, but returns are generally only slightly above the inflation rate.

Source: Barclays POINT/Global Family of Indices. ©2013 Barclays Inc. Used with permission.

The simulated performance shown was created by the SSgA Multi Asset Class Solutions Group and the Advanced Research Center (ARC). The model projects a series of simulated asset and liability return paths over a 10yr period. Liability cash flows and projected returns are based on sample plan liability cash flows discounted by simulated Corporate Bond yields. Asset level returns are based on expected returns, volatility and correlations among asset classes. The results shown do not represent the results of actual trading using client assets but were achieved by means of the forward looking application of a model. The simulated performance does not represent the actual investment decisions of the advisor. These results do not reflect the effect of material economic and market factors on decision-making.

The simulated performance data is reported on a gross of fees basis, but net of administrative costs. Additional fees, such as the advisory fee, would reduce the return. For example, if an annualized gross return of 10% was achieved over a 5-year period and a management fee of 1% per year was charged and deducted annually, then the resulting return would be reduced from 61% to 54%. The performance includes the reinvestment of dividends and other corporate earnings and is calculated in USD.

The simulated performance shown is not necessarily indicative of future performance, which could differ substantially.

Although bonds generally present less short-term risk and volatility risk than stocks, bonds contain interest rate risks; the risk of issuer default; issuer credit risk; liquidity risk; and inflation risk. This effect is usually pronounced for longer-term securities. Any fixed income security sold or redeemed prior to maturity may be subject to a substantial gain or loss.

Investing in foreign domiciled securities may involve risk of capital loss from unfavorable fluctuation in currency values, withholding taxes, from differences in generally accepted accounting principles or from economic or political instability in other nations.

Investments in emerging or developing markets may be more volatile and less liquid than investing in developed markets and may involve exposure to economic structures that are generally less diverse and mature and to political systems which have less stability than those of more developed countries.

Risk associated with equity investing include stock values which may fluctuate in response to the activities of individual companies and general market and economic conditions.
Appendix B: Biography
Thomas J. Kennelly, III

Tom is a Managing Director and Senior Portfolio Manager in SSgA’s Investment Solutions Group (ISG) and Head of our North American Liability Driven Investing team. He is responsible for the analysis, development, and ongoing management of customized, investment solutions ranging from strategic liability based fixed income strategies to tactical multi-asset allocation strategies and derivative overlay solutions.

Tom has over 20 years of experience in investment portfolio management and asset-liability consulting. Previously, he was a Senior Consultant at Lynch & Associates, where he advised corporations in the area of post retirement benefit funding and non-qualified liability hedging strategies. Prior to that, he was a Senior Managing Director in the BankBoston Global Treasury Asset - Liability Management Group responsible for fixed income portfolio management and derivative based asset-liability hedging strategies.

Tom earned a Masters of Business Administration degree from Bentley University with a concentration in Finance and a Bachelors of Arts Degree from Merrimack College with a concentration in Finance.
THANK YOU