

Legal & General Investment Management America

3Q12 Pension Fiscal Fitness Monitor

Aaron Meder, CFA, FSA, EA

Andrew J. Carter

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Head of US Pension Solutions

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Pension Solutions Strategist



Overview

The Pension Fiscal Fitness Monitor measures the historical market-related funding ratio performance of the traditional “60/40” investment strategy and three different approaches to LDI implementation.

For each of the three approaches to LDI implementation we analyze how funding ratio performance would have changed for three different levels of equity exposure – 60%, 40%, and 20% equities. We define the three different LDI approaches as follows:

- Long Credit LDI: 100% of Fixed Income allocated to Long Duration Credit
- Level 1 LDI: Custom blend of market benchmarks designed within a total portfolio context
- Level 2 LDI: Custom liability benchmark and derivative overlay designed within a total portfolio context

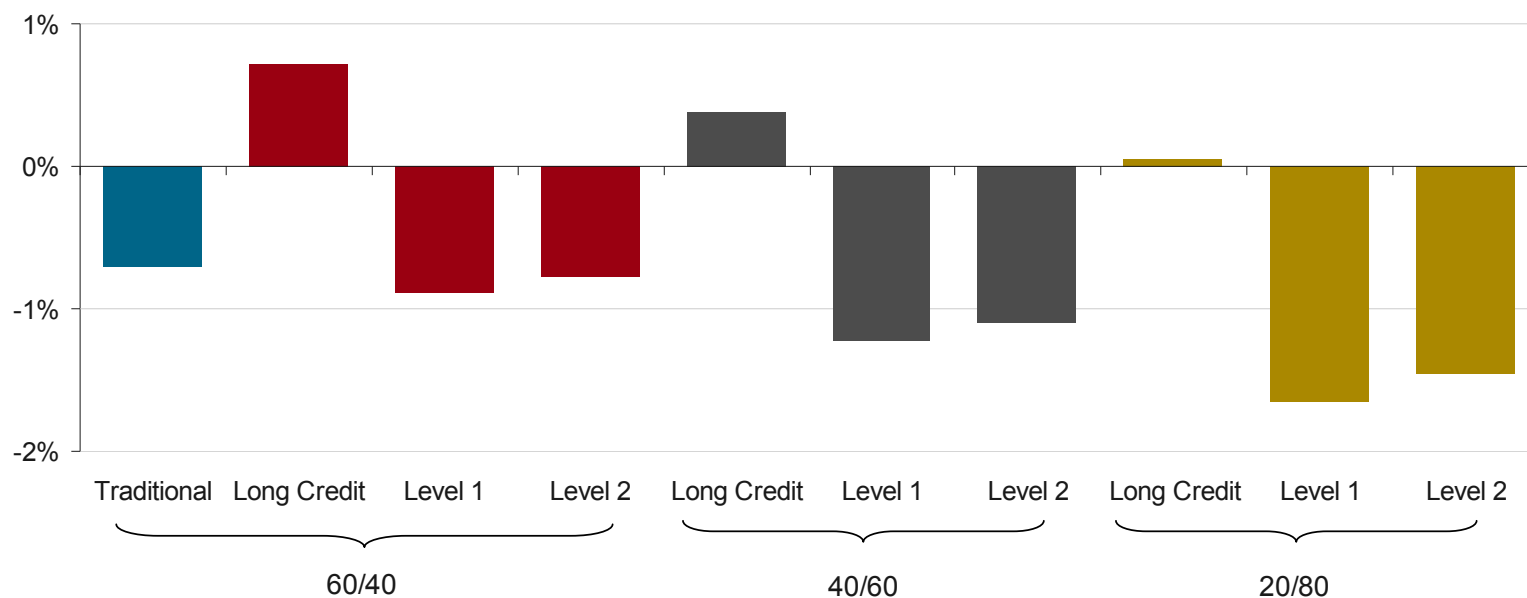
Traditional	Equity	LHA
60/40	60% MSCI AC World	40% Barclays Aggregate
Long Credit LDI		
60% Equities/40% Long Credit	60% MSCI AC World	40% Barclays Long Credit
40% Equities/60% Long Credit	40% MSCI AC World	60% Barclays Long Credit
20% Equities/80% Long Credit	20% MSCI AC World	80% Barclays Long Credit
Level 1		
Level 1: 60% Equities/40% LHA	60% MSCI AC World	10% Barclays Long Credit, 30% Barclays 15+ STRIPS
Level 1: 40% Equities/60% LHA	40% MSCI AC World	30% Barclays Long Credit, 30% Barclays 15+ STRIPS
Level 1: 20% Equities/80% LHA	20% MSCI AC World	60% Barclays Long Credit A-AAA, 15% Barclays 15+ STRIPS, 5% Barclays Long Treasuries
Level 2		
Level 2: 60% Equities/80% IR Hedge/10% CS Hedge	60% MSCI AC World	13% Barclays Long Credit A-AAA, 70% customized Treasuries
Level 2: 40% Equities/90% IR Hedge/30% CS Hedge	40% MSCI AC World	38% Barclays Long Credit A-AAA, 60% customized Treasuries
Level 2: 20% Equities/100% IR Hedge/50% CS Hedge	20% MSCI AC World	62% Barclays Long Credit A-AAA, 50% customized Treasuries

Funding ratios for US pension plans

During the quarter funding ratios declined across the board*:

- The traditional approach ended the second quarter with approximately 1% lower funding ratio as assets increased 5% and liabilities increased 6%.
- The long credit LDI portfolios' funding ratio increased 0.5% - 1%
- The Level 1 LDI model portfolios' funding ratios decreased 1-2%, broadly in-line with the traditional approach. The greater the allocation to equities the better the funding ratio outcome.
- The Level 2 LDI model portfolios' funding ratios decreased 1-2%, broadly in line with the traditional approach and the Level 1 LDI approach. The larger the allocation to equities the better the funding ratio outcome.

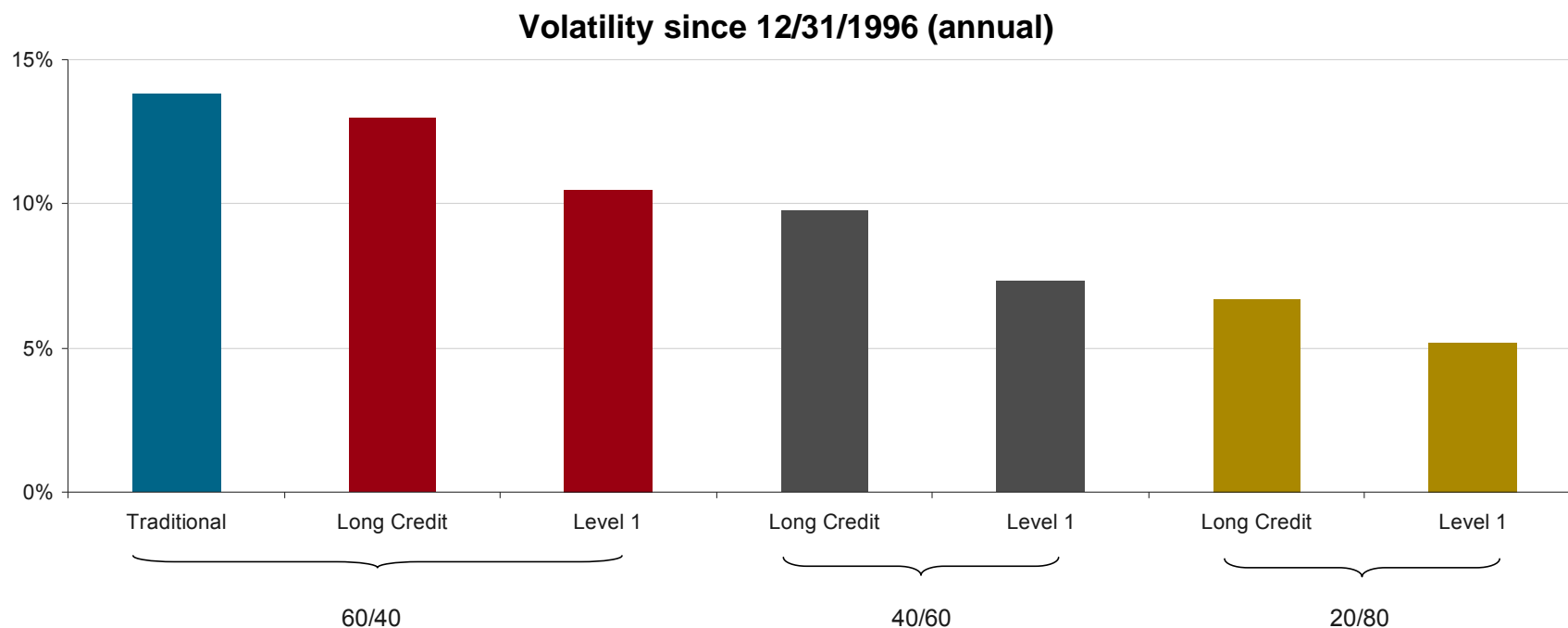
Liabilities increased 6% as the discount rate fell due to a significant narrowing of credit spreads



*Assumes 100% funding level at the beginning of the period

Funding ratio volatility: benefits of Level 1

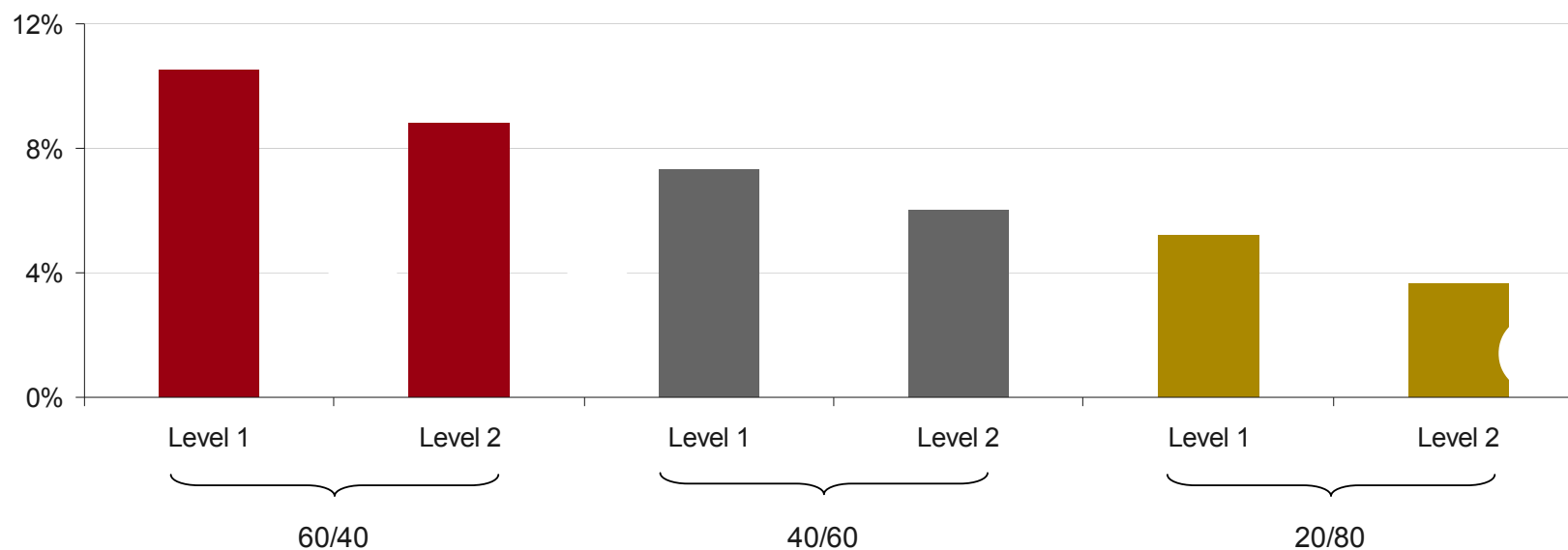
- Funding ratio volatility has emerged as an important metric for measuring plans that have adopted an LDI approach
- Our Level 1 LDI approach involves setting the benchmark of the liability hedging assets (“LHA”) within a total portfolio context using a custom blend of credit and Treasury market benchmarks
- We believe, and the empirical evidence below shows, that when there is an exposure to equities there are significant risk management benefits to holding Treasuries and using them to either maximize duration or more precisely manage interest rate risk
- The benefits of this total portfolio context can be seen by comparing, for each level of equity exposure, the historical volatility between the “long credit” and “Level 1 LDI” approaches
- In addition, this is also evidenced by the fact that there has been minimal risk reduction benefits by moving from core fixed income to long credit when holding 60% equities (first two bars)



Funding ratio volatility: benefits of Level 2

- A level 2 approach involves managing the LHA against a customized liability benchmark with explicit interest rate and credit spread hedge ratio targets
- It can be seen for all of the equity allocations shown that there is a substantial reduction in volatility moving from a Level 1 to a Level 2 approach
- The additional fall in volatility (vs. Level 1) comes from better curve matching and daily interest rate hedge ratio management

Volatility since 12/31/1996 (annual)



Appendix

Funding ratios for US pension plans

Description	3Q12	YTD	1-Year	5-Year (annual)	10-Year (annual)	Volatility since 12/31/1996 (annual)
Traditional "60/40"	-1%	-2%	-1%	-10%	-2%	14%
60% Equities/ 40% Long Credit	1%	1%	3%	-9%	0%	13%
40% Equities/ 60% Long Credit	0%	0%	2%	-7%	-1%	10%
20% Equities/ 80% Long Credit	0%	0%	0%	-5%	-1%	7%
Level 1: 60% Equities/40% LHA	-1%	-1%	1%	-7%	1%	11%
Level 1: 40% Equities/60% LHA	-1%	-1%	0%	-5%	0%	7%
Level 1: 20% Equities/80% LHA	-2%	-2%	-2%	-5%	-2%	5%
Level 2: 60% Equities/80% IR Hedge/10% CS Hedge	-1%	1%	4%	-4%	2%	9%
Level 2: 40% Equities/90% IR Hedge/30% CS Hedge	-1%	0%	2%	-3%	1%	6%
Level 2: 20% Equities/100% IR Hedge/50% CS Hedge	-1%	0%	0%	-2%	0%	4%

*Assumes 100% funding level at the beginning of the period

Sources: Legal & General Investment Management America, Bank of America Merrill Lynch, Bloomberg

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