

Setting the Course for LDI: Perceptions and Use of Liability-Driven Investing Strategies Among Global Plan Sponsors

October 2006

Pension plan sponsors in Europe and North America are looking for alternatives to traditional pension management strategies. Regulatory initiatives, accounting rule revisions, aging populations, plan under-funding and a host of related issues are prompting plan fiduciaries to seek out new solutions with the potential to relieve the pressure building on their funds. FRS 17 has been adopted in the United Kingdom and this past year the Netherlands adopted similar regulations, with the United States moving in the same direction. The implications of these accounting reforms are profound.

Of all the strategic options available, one approach has attracted perhaps the greatest amount of attention and scrutiny: liability driven investing (LDI). Despite the growing interest in LDI among plan sponsors around the world, there remains considerable confusion about what exactly it entails, how associated strategies should be implemented, and how to determine its true value proposition (benefits versus costs) to plan sponsors, plan participants and beneficiaries.

In order to help answer these questions, Greenwich Associates and Northern Trust designed a custom market research project to collect feedback from 140 plan sponsors in Europe and North America about their perceptions, understanding and actual usage of LDI. Among the many important findings of the research, one in particular stood out. As Greenwich Associates consultant Lori Crosley explains: "The term LDI means different things to different plan sponsors. To some of the study's participants, LDI is a synonym for asset-liability matching or even total immunization. To others it is a general strategy for extending duration in order to manage the risks of the portfolio. Despite these differences, our research suggests that plan sponsors to a large degree are all seeking the same thing from liability-driven investing strategies: a greater sense of certainty."

Key Take-Aways

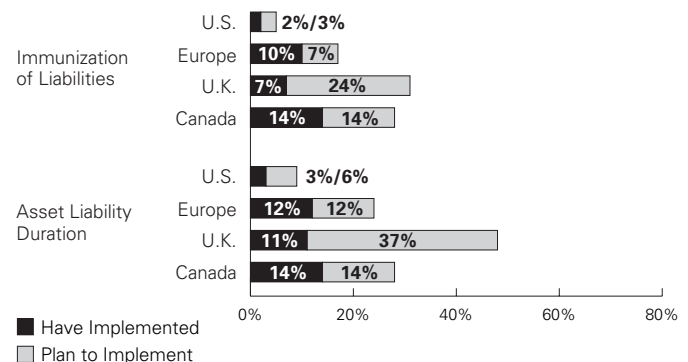
- Liability driven investing has evolved into an established market in the United Kingdom and LDI is gaining momentum among plan sponsors in the United States.
- Following the precedent established in the United Kingdom and continental Europe, regulatory and accounting rule changes are among the key drivers for U.S. plan sponsors implementing LDI strategies.
- Plan sponsors that are considering an LDI strategy should be aware of several important barriers that will need to be addressed before implementation.
- The best way for plan sponsors to ensure success in overcoming barriers and achieving successful implementation is to select strategies and providers that are well suited to specific plan characteristics.

LDI Usage: Europe and North America

As pension plans around the world investigate LDI, experiences of plan sponsors who have already implemented an LDI strategy can provide important benchmarks and lessons to those who are still at the starting line. As reported in Greenwich Associates' 2006 annual plan sponsor research, it appears that plan sponsors in the United Kingdom are the most active users of LDI strategies. Eleven percent of U.K. plan sponsors say they have implemented an asset/liability duration matching strategy using derivatives, and 7% say they have immunized liabilities. In continental Europe, 12% of plan sponsors have in place an asset/liability matching strategy utilizing derivatives, and one in 10 have immunized liabilities. Usage of both strategies is lower in the United States, where a total of 6% of corporate plan sponsors said they had either implemented asset/liability duration matching with derivatives or immunized as of 2005.

In all the major markets covered in the annual research, a significant proportion of plan sponsors also said they were giving serious consideration to LDI strategies. For example, in continental Europe 12% of plan sponsors said they were considering asset/liability matching with derivatives and 7% said they were considering immunization. Among corporate plan sponsors in the United Kingdom, more than 30% said they are considering asset/liability matching using derivatives and nearly a quarter are contemplating immunization. About 8% of U.S. corporate plan sponsors are considering such matching strategies and another 4% are taking a serious look at immunizing liabilities.

Use of LDI Strategies



Note: Based on interviews with 1,050 funds in the United States, 224 in the United Kingdom, 197 in Canada and 217 in Europe.

The results of Greenwich Associates' annual research suggest that usage of LDI strategies increases significantly among defined benefit (DB) pension funds that have been closed to new employees.

"Looking specifically to our research findings in the United States, the use of asset/liability duration solutions increases to 10% if the analysis is restricted to closed plans, and another 7% of sponsors with plans closed to new employees say they are giving such solutions serious consideration," says Greenwich Associates consultant Chris McNickle. "Meanwhile 3% of plan sponsors with closed plans have immunized their liabilities and another 5% are seriously considering this option."

For the custom study on LDI, Greenwich Associates and Northern Trust focused on plan sponsors from Greenwich's annual research who had indicated that they currently used or were planning to use an LDI strategy. Of the 140 plan sponsors participating in the study, 27 said they have implemented an LDI solution. That proportion — nearly 20% — is slightly higher than the overall share of plan sponsors reporting use of LDI solutions in the annual Greenwich Associates research program, thus indicative that implementation has indeed picked up.

"Although the 140 plan sponsors participating in the LDI study represent a much smaller sample size than that used in the Greenwich Associates annual research, the fact that the proportion of plans identifying themselves as LDI users grew in both the European and North American markets provides an indication that liability-driven investing has gained traction among pension funds over the past six months," says Duane Rocheleau, Managing Director Investment Solutions Team at Northern Trust.

Plan Management Concerns Drive LDI Demand

The most important drivers of LDI demand arise from plan sponsor responses to serious challenges threatening the health and survival of DB pension plans. For example, nearly 70% of the plan sponsors interviewed for the LDI study said they were either "concerned" or "very concerned" about increases in under-funding status and declines in capital market returns. Almost 60% expressed similar levels of concern regarding adverse changes in interest rates, and more than 40% said they were concerned or very concerned about a rise in inflation-related costs such as health care.

Despite the intuitive appeal of a basic liability-based solution to address some of these problems, as a stand-alone approach LDI has some major shortcomings. The majority of pension funds around the world have liability durations between 11 and 20 years. Almost a quarter of U.K. plans and nearly 20% of Continental plans have

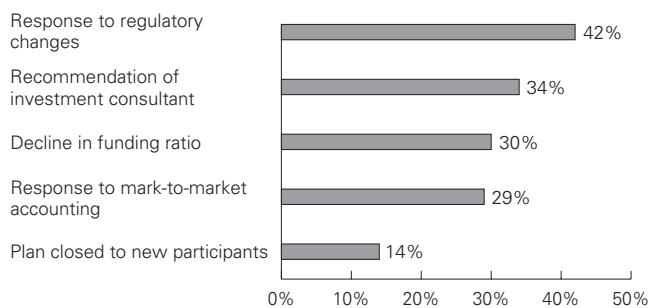
liabilities of greater than 20 years. As Colin Robertson, Managing Director of Global Fixed Income at Northern Trust Global Investments (NTGI) explains: "Asset liability matching using traditional long-only methods will often prove ineffective because a standard benchmark like the Lehman Aggregate Bond Index has an average duration of five years. Extending duration beyond those traditional fixed-income benchmarks is difficult due to the limited supply of good-quality long duration bonds. For these reasons, many plan sponsors will require a different approach."

Liability driven investing represents an appealing option in part because LDI solutions can overcome this issue of duration through the use of derivatives. One plan sponsor explained the central role that LDI is playing for his plan: "We've implemented an LDI strategy with interest-rate and inflation-rate swaps that match 30-year cash flow to address our main concerns of adverse changes in interest rates, a rise in inflation-related costs, declines in capital market returns, and an increase in under-funded status."

New Rules Call for New Strategies

Many of these internal economic concerns are being magnified by regulatory and accounting changes that plan sponsors say are beginning to overshadow other considerations. When plan sponsors in the United Kingdom, continental Europe, Canada and the United States were asked to name the issues, events or trends that would cause them to implement an LDI solution, "response to regulatory changes" topped the list. Also ranking near the top were factors such as changes to the actuarial discount rate, mark-to-market accounting rules and minimum funding requirements for defined benefit plans.

Catalysts for Implementing LDI

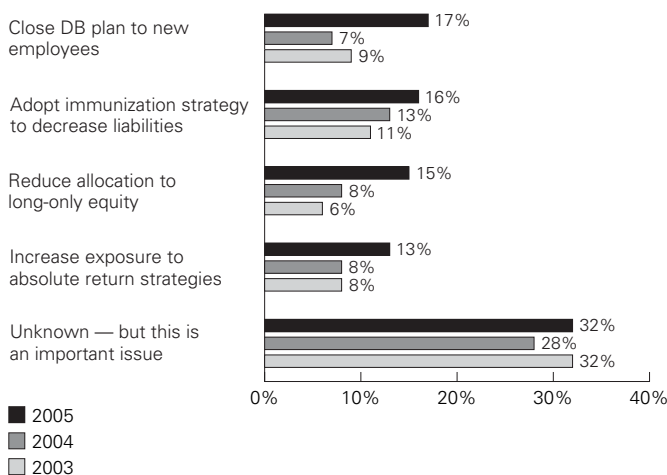


Note: Based on interviews with 140 institutions in the United States, Canada, United Kingdom, and Europe.

While these issues are hardly new to plan sponsors, recent regulatory actions have injected a new sense of urgency. In the United Kingdom, corporate plan sponsors are well into the process of adjusting to mark-to-market accounting rules. In the United States, the recently passed Pension Protection Act of 2006 promises significant changes to

U.S. Plan Sponsor Response to FASB Regulation

Corporate Funds



Note: Based on interviews with 288 corporate pension plans in 2003, 286 in 2004, and 372 in 2005.

pension management requiring corporations to increase their funding status and Phase I of FASB's pension benefit accounting reform now requires companies to state 'clearly' the funding status of their pension and benefit plans on either their balance sheet or financial statement. Phase II may introduce mark-to-market accounting which will directly impact the income statement.

More than 35% of plan sponsors in the United States and continental Europe cite mark-to-market accounting rules as a main reason they would implement an LDI solution, as do more than 30% of Canadian funds. As Greenwich Associates consultant William Wechsler notes: "The only group that did not cite mark-to-market accounting as one of the leading reasons they would implement an LDI solution was composed of plan sponsors in the United Kingdom, where the major impacts of mark-to-market rules have already been felt."

In continental Europe, the greatest sensitivity to mark-to-market accounting is apparent in the Netherlands where the regulatory environment has just changed. In Greenwich Associates' annual investment management study, 51% of Dutch plan sponsors cited this as the most important policy issue affecting management of their plan, while zero cited funding gaps. Other Dutch plan sponsors cited issues such as capital preservation and return volatility, many of which are of relatively greater concern to funds across the continent outside of the Netherlands. LDI, however, can be part of the solution applied to any of these inter-related issues.

LDI Essentials: Strategies, Providers and Custom Solutions

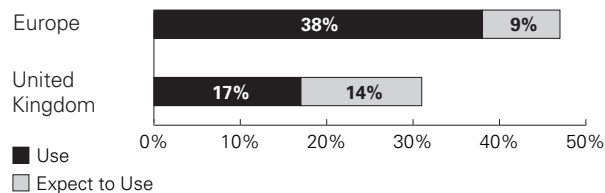
The descriptions of LDI strategies provided by study participants who indicated that they have a solution in place range from complete immunization to an investment approach guided in concept by liabilities. On the whole, most plan sponsors seem to be aiming somewhere in the middle — for an approach that relieves stress on the balance sheet by managing around the liabilities while still generating a return that helps mitigate the opportunity costs of liability matching.

Among the LDI users included in the study, the most commonly employed strategies were immunized interest-rate risk with duration matching and alpha targets. Roughly half the plan sponsors that have implemented an LDI solution said that more than 50% of their current assets were tied to match the duration of plan liabilities. More than one in five LDI users put that proportion between 75% and 100%. At the other end of the spectrum, more than a third of respondents said that less than a quarter of their assets were tied to match the duration of plan liabilities. Plan sponsors were roughly split between those that expected these proportions to change and those that expected them to remain constant.

It is important to note that plan sponsors that have adopted an LDI solution for at least a portion of their portfolios are employing a range of strategies to generate alpha in order to make up for opportunity costs associated with LDI. Among the LDI users in the study, the proportion saying they are generating alpha through traditional long-only strategies is double that using hedge funds for alpha generation. However, it appears these plan sponsors have used LDI to reduce the overall risk of their portfolio only to take on more risk with the other assets.

For many pension funds, absolute return strategies represent an alternative to LDI narrowly defined. Absolute return strategies allow pension plans to benefit from excess returns with a lower risk of loss of asset value than normally accompanies relative return strategies. It is an

Global Use and Expected Use of Absolute Return



Note: Based on interviews with 412 funds in the United Kingdom and 351 in Europe.

alternative means of accomplishing one of the goals of LDI — to reduce the likelihood of reporting an increased funding gap — while still accessing returns higher than fixed-income markets currently offer.

Of the study participants describing themselves as LDI users, 56% use active portfolio managers as their LDI providers and 19% use investment banks. The remainder was divided among actuaries, investment consultants, insurance companies and others including one plan sponsor who reported that their LDI solution was implemented and managed internally.

How did these plan sponsors select their providers? For most plan sponsors, the selection of an LDI provider will count among the most important factors in determining the success or failure of the strategy. Respondents ranked reporting capabilities and customization of strategies as the two most important value-added services they seek when reviewing potential LDI providers. “Every pension fund has its own set of unique characteristics including funding level, liability duration, current asset allocation, expected capital market returns and a host of other factors,” says Northern Trust’s Greg Kuhl. “As a result, customized solutions may have more appeal to the general plan sponsor market.”

The need for a “holistic” solution that takes into account all of the unique needs and traits of a pension plan in turn requires collaboration between all the various providers contributing to the effort. “Because of the degree of complexity involved with these types of solutions, plan sponsors must insist that all providers adopt a cooperative approach in analyzing the plan’s assets and liabilities, formulating a strategy and implementing the plan,” says Greenwich Associates consultant Andrew Klebanow. “In particular, plan sponsors should seek out investment managers that are committed to and capable of coordinating such cooperation.”

Northern Trust’s Duane Rocheleau concludes: “Plan sponsors seeking an LDI provider should be keenly aware of indicators suggesting a potential partner is committed to serving its clients in such a manner — namely, the presence of solutions advisory teams and dedicated client implementation and servicing teams. Indeed, when Northern Trust and Greenwich Associates asked plan sponsors to name their LDI providers, the firms that received the highest number of mentions were those with teams dedicated to providing plan sponsors with solutions, customized strategies and implementation assistance.”

Greenwich Associates Consultants

Lori Crosley, Dev Clifford, Chris McNickle, Rodger Smith, Will Wechsler, and Andrew Klebanow advise on the global investment management market.

Northern Trust

Duane Rocheleau, Managing Director, Investment Solutions Team; Colin Robertson,



Northern Trust

Managing Director of Global Fixed Income; Greg Kuhl, Director of Client Service – Institutional Group; Wayne Bowers, Director, Global Portfolio Management for NTGI.

Methodology

Greenwich Associates conducted telephone interviews with 140 senior-level plan sponsors in the United States, Canada, United Kingdom, and Western Europe who had indicated in 2005 that they had implemented or planned to implement an LDI solution. Interviews were conducted August through September 2006. The survey was designed to capture specific behaviors, policies, issues, and preferences relating to the drivers and interest in LDI by pensions plans worldwide.

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LDI: Barriers to Implementation and Hidden Costs

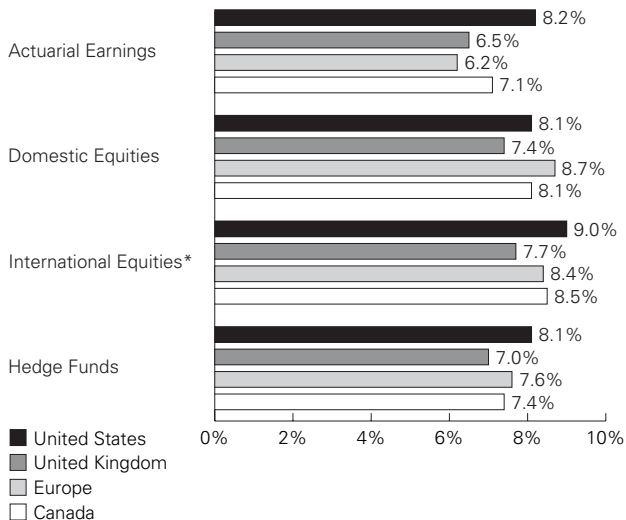
October 2006

With so many economic and environmental forces aligning in favor of new strategies like liability driven investing, an obvious question arises: Why haven't more pension funds implemented an LDI solution?

In the United Kingdom, interest rates seem to be the primary factor limiting the uptake of LDI. Nearly 45% of the U.K. plan sponsors interviewed said that the current interest rate environment posed a significant barrier to adopting LDI. The same concerns can be detected in continental Europe and other markets. "We've seen the LDI discussion among some plans go through phases," says Greenwich Associates consultant Chris McNickle. "The desire to match the duration of assets to liabilities to reduce the potential consequences of interest rate risk is strong. But when executives calculate the implicit cost of a large increase in fixed income investments with expected returns 200 to 300 basis points below equities and significantly below actuarial return calculations, they often conclude they cannot afford the solution. However, the dialogue does not stop there because the problem remains."

Greenwich Associates believes that much of the rise in interest among institutional investors in hedge fund strategies and absolute return strategies relates to the same concepts driving LDI. Research across major markets shows that return expectations for hedge funds are

Expected Rates of Return



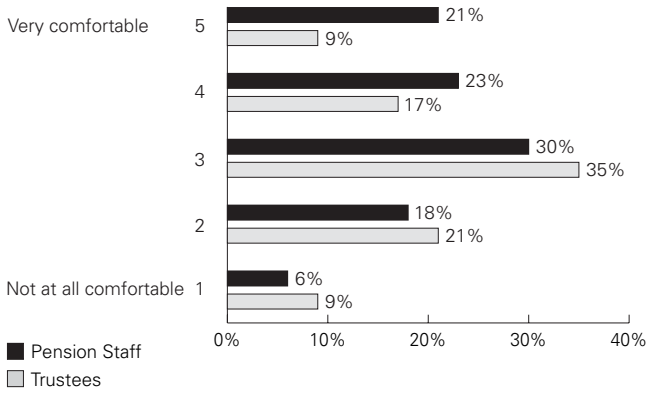
Note: Based on interviews with 836 institutions in the United States, 281 in Canada, 412 in the United Kingdom, and 177 in Europe. *EAFE in Canada.

similar to or lower than expectations for domestic equities and international equities in long only strategies. But expectations to increase allocations to hedge funds are vastly greater. Why should this be, when the cost of hedging is substantially higher? The obvious conclusion, McNickle continues, "is pension plans are using hedge funds to achieve equity-like returns with protection against the normal fluctuations of the stock market." The premium is being paid for better control of risk because in the current regulatory environment, pension plans cannot live with even short-term discrepancies between the value of assets and liabilities, although in the long-term, the need to generate high returns has not changed.

While such market conditions obviously play an important role in other markets as well, plan sponsors in Canada and the United States were more likely to cite uncertainty about the logistics of LDI implementation as an impediment. In terms of specific implementation barriers, small but significant proportions of plan sponsors from all the major markets said restrictions on the use of derivatives or swaps could prevent them from using LDI. "In the United Kingdom, 15% of funds said such restrictions posed a significant barrier to implementing an LDI solution, and in Canada nearly 20% of plan sponsors cited similar limitations," says Greenwich Associates consultant Rodger Smith. Wayne Bowers, Director, Global Portfolio Management for NTGI says plan sponsors can allay many concerns by thoroughly researching the subject before making any decisions. "Counterparty risks and other challenges associated with derivatives might be new to many plan sponsors, but in many cases they are hurdles that can be overcome if identified early on in the process," says Bowers.

Over and above such specific concerns, the results of the study suggest that some plan sponsors might be hesitant to adopt liability driven strategies due to their own lack of understanding about what LDI is and how to implement it. Greenwich Associates and Northern Trust asked participating plan sponsors to rate their own comfort level in implementing an LDI solution based on their current knowledge of domestic regulatory and accounting rules and instruments for liability-driven solutions. Even in these self-assessments, more than a quarter of plan sponsors in the United Kingdom and more than 20% in the United States rated their comfort level as a one or a two on a five-point scale, with five being extremely com-

Comfort Level with LDI



Note: Based on interviews with 140 institutions in the United States, Canada, United Kingdom, and Europe.

comfortable. At the other end of the scale, fully half the U.S. plan sponsors said they would be comfortable or very comfortable implementing an LDI solution based on their current level of knowledge.

“On a global basis, there is at least the perception within plan sponsor organizations that trustees are much less comfortable than staff with implementing LDI solutions based on their current level of understanding,” says Greg Kuhl, Director of Client Solutions for NTGI. “This finding helps to explain the ambiguity around LDI and why more funds have not embraced LDI.”

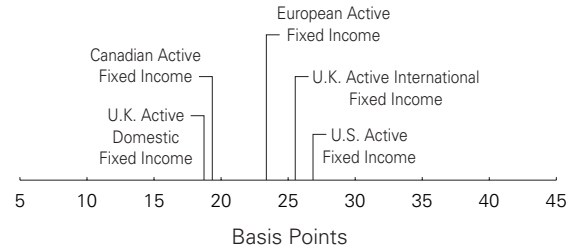
Assessing Costs and Fees

Another obvious barrier to implementation are the significant costs associated with LDI. The biggest costs in connection with LDI are not imposed by providers; rather, they are the opportunity costs incurred in the shift to asset classes with lower returns. One third of the LDI users interviewed said their plans’ total expected return expectations had to be adjusted after their LDI solution was implemented. In Canada that proportion topped two-thirds.

Of course, there are also explicit fees. The majority of the LDI users participating in the study said their providers

charged an asset-based fee, although a third said their fee structure was performance based. While a meaningful proportion of participants either couldn’t answer or declined to answer when asked to give their actual fee levels, the responses that were collected suggest that fees for LDI vary widely. Stated fees ranged from less than 10 bps to more than 50 bps.

Average Fees Paid to Investment Managers



Note: Based on interviews with 412 institutions in the United Kingdom, and 351 in Europe in 2006 and 281 in Canada, and 1,050 in the United States in 2005.

In addition to absolute fee levels, plan sponsors assessing LDI costs also place a considerable emphasis on the unbundling of fees for important services such as asset/liability modeling, developing customized strategies, and implementation consulting. Indeed, the proportion of plan sponsors rating the unbundling of these fees as “important” or “very important” ranged from a low of 40% in the United States to a high of almost 70% in Canada, with the United Kingdom and continental Europe coming in between 55% and 60%.

“In liability driven investing there is a component of fees derived from basic operational services, and another component associated directly with value-added services,” says Greenwich Associates consultant Dev Clifford. “It is imperative that plan sponsors reviewing LDI providers peel back the onion to see exactly how these layers comprise the overall fee. Are you paying for asset/liability matching, and if so how much? Are you paying for a customized solution or implementation consulting? It is important to ask such specific questions, because some providers offer these services for free as a value-added complement to their technical strategies.”

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