The Pension Risk Transfer Market at $260 Billion
Innovation, Globalization and Growth

Amy Kessler
Senior Vice President
Head of Longevity Risk Transfer
Prudential Retirement

William McCloskey, CFA
Vice President
Longevity Risk Transfer
Prudential Retirement

Arnaud Bensoussan
Vice President
Longevity Risk Transfer
Prudential Retirement
Contents

Introduction ...........................................................................................................2
Going Global—Following the Trend in the U.K. ..............................................3
Transferring Longevity Risk in the U.K. and Beyond ....................................4
Funding Longer Retirements ...............................................................................4
Living Longer Increases Other Risks .................................................................6
Pension De-Risking Solutions ..........................................................................7
Examining Longevity Risk Transfer Transactions .........................................8
Electing the Most Appropriate Solution .........................................................11
Re-thinking Pension Risk ................................................................................12
INTRODUCTION

The international pension risk transfer marketplace is experiencing remarkable growth, with more than $260 billion in transactions completed since 2007. In the United Kingdom, United States and Canada, hundreds of companies have transferred pension risk to insurers and reinsurers, with at least 40 pension funds executing transactions over $1 billion. Each of these transactions fulfills and secures the lifetime benefit promise to plan participants, while achieving significant corporate finance benefits for the plan sponsor.

Today, pension risk transfer is:

- Increasingly global
- Employed by corporations of all sizes and industries
- Flexible and customizable
- Aimed at achieving a lower-risk future

A number of recent high-profile transactions reveal the strength of the global de-risking trend. Industry icons like General Motors, Rolls-Royce, Verizon, British Telecom, Bell Canada, Motorola Solutions, Bristol-Myers Squibb, GlaxoSmithKline, Kimberly-Clark and AkzoNobel have all completed pension risk transfer transactions. Each firm varies in terms of its resources, constraints, strategic goals and definitions of success. Accordingly, each deal was tailored with features to meet the company’s unique needs, and reflect a broad range of transaction sizes, with agreement amounts up to $27.7 billion. They all share the common objectives of securing the benefits promised to members and achieving a lower-risk future for the sponsor.

By employing effective de-risking strategies, plan sponsors and fiduciaries can:

- Minimize the risk around plan contributions
- Improve consistency of financial results and realize corporate finance benefits
- Allow greater focus on the firm’s core business
- Enhance retirement security for employees and retirees

Plan sponsors and fiduciaries who proactively manage or transfer pension risk can fund their pension obligations with certainty and gain a considerable advantage over those who don’t.
Going Global—Following the Trend in the U.K.

Universally recognized as the global leader in pension de-risking, the U.K. has seen approximately $180 billion in liabilities transferred between 2007 and June 2015. The U.K. is also the global leader in innovation, with pioneering products and approaches that enable pension funds to tailor de-risking strategies.

In recent years, North American plan sponsors have watched U.K. developments with growing interest. In 2012, the landmark General Motors and Verizon transactions transformed the U.S. market, modest since the 1990s. Despite these and many other agreements, the U.S. still trails the U.K. with only $67 billion in transaction volume between 2007 and June 2015. Canada is a distant third with $16 billion over the same period.

**Exhibit 1: The U.K. Leads the World in Transaction Volume and Innovation**

The collective transaction activity in the U.S., U.K. and Canada between 2007 and June 2015 is reflected in Exhibit 1. All transactions in the U.S. (shown in dark blue at the bottom of the graph) have been pension buy-outs or buy-ins. These are holistic solutions whereby the insurer assumes all asset and liability risk. Canada, shown in red at the top of the graph, has experienced modest transaction volume, and through year-end 2014 all of its transactions were pension buy-outs and buy-ins.

Momentum in the U.K. market is apparent. The volume of buy-in and buy-out transactions (shown in medium blue) exceeds all U.S. and Canadian volume combined. The U.K. activity is notable considering the country’s relative size, and today momentum is accelerating because of competitive pressure in every industry peer group. The same pressure to de-risk may emerge in the U.S. and Canada within five years.

While the volume of buy-ins and buy-outs in the U.K. is striking, that country boasts an additional market segment for longevity risk transfer (shown in light blue). This sizeable market segment reflects transactions covering longevity risk alone—the risk of annuitants and beneficiaries living longer than predicted.

When we look at the U.K. today, we see the global future of pension de-risking and the shape of the risk transfer market to come to other countries. We see a line-up of flexible solutions designed to meet the needs of any company on a path to a lower risk future. In the U.K., where the risk transfer market is the most advanced, plan sponsors are making very personal decisions that are specific to their resources, constraints, objectives and definitions of success. These decisions lead to highly customized de-risking strategies that are rapidly going global.

Transferring Longevity Risk in the U.K. and Beyond

“Hibernation” is not only for sleeping bears—today it also describes strategies for maintaining a frozen pension fund on a corporation’s balance sheet. As the capstone to any pension hibernation strategy, longevity risk transfer is flourishing in the U.K. Firms seeking to manage pension risk can employ Liability Driven Investing (LDI) as an effective means of building asset strategies that match expected liabilities. However, LDI alone cannot solve the uncertainty around the expected liability, or a misestimation by the pension scheme regarding the longevity of its members. To address these concerns, several leading U.K. plan sponsors have proactively transferred their longevity risk to the insurance and reinsurance community.

Many of the largest and most risk-savvy pension funds in the U.K. have chosen to combine LDI and longevity risk transfer for an effective hibernation strategy on some or all of their liabilities. BMW, Rolls-Royce, Aviva, British Airways, British Aerospace and British Telecom have all embraced this approach. Since 2013, greater choice has arrived in the U.K. market with respect to structuring longevity risk transfer transactions. The British Telecom Pension Scheme and the Merchant Navy Officers Pension Scheme have pioneered captive insurance and reinsurance solutions that are more cost effective than earlier approaches, and that promise to become the dominant path for large, sophisticated pension funds worldwide seeking to hibernate pension risk on their balance sheet with a longevity hedge in place.

Bell Canada became the first North American pension fund to complete a longevity risk transfer transaction when it transferred $5 billion of pension liabilities in early 2015. This watershed transaction was the first longevity risk transfer in North America.

Funding Longer Retirements

Defined benefit plan sponsors assume the real risk of participants living longer than expected. Exhibit 2 shows the retired lifetimes—or life expectancy at age 65—of men in the U.K. and U.S., and illustrates how these expectations have evolved since 1970.
Exhibit 2: Retired Lifetimes for U.S. and U.K. Males Have Increased Significantly

Exhibit 2 shows that the retired lifetime of the typical U.S. male has increased 35% over the past 40 years, while their U.K. counterparts have experienced a 49% increase. Men in both the U.S. and U.K. can now expect to spend nearly 18 years in retirement. The graph demonstrates that improvements in life expectancy are occurring steadily over time. For U.S. pension funds, however, the impact of longer life can seem more like a step function because the pensioner mortality tables have been updated only once every decade, as shown in Exhibit 3. With every update, there has been a significant pension liability increase.

As shown below in Exhibit 3, U.S. pension valuation tables have typically failed to keep up with actual longevity improvements, creating considerable pension liability increases in every recent decade as the tables were updated. While most plan sponsors have become accustomed to the investment risk that is inherent in their pension plans, longevity risk remains an important yet often-ignored risk that cannot be managed through investment strategy alone. It is also not a risk most plan sponsors would choose to hold, but one that can be managed effectively through insurance solutions.

Exhibit 3: New Mortality Tables Create Increased Liability for U.S. Plan Sponsors

70-year-old Male Life Expectancy

Current tables may be the optimal approach for large U.S. plans

Source: Prudential calculations.
Because U.S. pensioner mortality tables are revised only once every decade, large increases in liabilities occur with each new update. For U.S. corporate pension funds that have begun using the new RP-2014 tables, there is an increase in the overall liability of approximately 7%, but the impact on individual pension funds will vary, and many large U.S. pension funds are completing an experience study to determine what custom tables are appropriate for their specific plans.

For a pension fund that employs standard assumptions, the new mortality tables will move the life expectancy of a 70-year old male by two full years, and increase the liability associated with that same person by 7.7%. This is a very material change over a 10-year period, and this change is much larger than the cost to hedge the risk.

Until recently, longevity risk has not been top of mind for most U.S. pension fund sponsors, but with the emerging emphasis on longevity tables, an opportunity exists to include longevity risk in the greater pension risk discussion.

**Living Longer Increases Other Risks**

When retirees live longer than projected, pension liabilities grow, and these larger liabilities will have longer durations. As a result, pension funds will be challenged by more interest rate and duration risk, and pension funds with cost-of-living adjustments will have nearly double the exposure. These realities are demonstrated in the deterministic stress tests shown in Exhibit 4.

**Exhibit 4: Longer Lives Increase Other Risks**

![Graphs showing stress on liabilities](source: Pacific Global Advisors)
The graph on the left depicts fixed liabilities with no cost-of-living adjustments, which are common among U.S. corporate pension funds. Conversely, the graph on the right depicts inflation-linked liabilities, which are common for U.S. public sector pension funds, and all pension plans in the U.K. and Canada. Retiree liabilities are shown on the bottom of each graph, while younger, deferred annuitants are on the top.

Each graph in Exhibit 4 illustrates the impact on the liability from a 1% reduction in rates (first bar), as well as the effect from a 1% increase in mortality improvements (second bar). Each graph then combines those stresses in the fourth bar, which is larger than the sum of the two shocks applied individually. The difference (the third bar) is the crossover risk that arises because people lived longer than predicted and the pension liability grew.

Interest rate risk, longevity risk, and inflation risk compound each other in the pension liability. Consequently, leaving longevity risk out of the analysis will underestimate total risk, especially in regard to inflation-linked and deferred liabilities, because their longer durations make them significantly more sensitive to adverse outcomes.

It is evident, then, that pension decisions made without longevity risk in the equation will consistently undervalue the benefits of risk management or risk transfer. To date, only insurance solutions can address the longevity risk in large pension funds, but there are several insurance solutions from which to choose.

**Pension De-Risking Solutions**

Many plan sponsors have chosen de-risking solutions tailored to meet their specific needs. Exhibit 5 shows the solutions currently available, examples of firms that have implemented them, and transaction activity in the U.S., U.K. and Canada between 2007 and June 2015.

**Exhibit 5: Pension Risk Transfer Solutions**

Sources: LCP, LIMRA, Hymans Robertson and Prudential analysis, June 2015
Buy-outs are common in the U.S., U.K. and Canada, and require the plan to pay a premium to the insurer to settle the liability, with the insurer then covering all investment and longevity risks for annuitants.

Buy-outs allow plan sponsors to:

- Transfer risk, including investment and longevity risk, to an insurer, which guarantees payments to participants for life
- Eliminate administrative, actuarial, and investment management expenses, including guaranty corporation premiums
- Remove pension liabilities from balance sheets

This solution is ideal for plan sponsors seeking to reduce pension liabilities, and can be leveraged in corporate restructurings.

Pension buy-ins enable sponsors to purchase bulk annuities and hold them as liability matching assets of the plan. This allows pension plans to transfer risk today without the accounting impact of liability settlement charges, and offers additional advantages for underfunded plan sponsors, including:

- Maintaining funded status
- Holding contributions steady
- Minimizing accounting and funding volatility

Though buy-ins provide plans with the precise amount of income required to make benefit payments for participants’ entire lifetimes, this solution is rarely employed in the U.S., because the liability is not settled. It is more commonly implemented in the U.K. for pension funds beginning the plan termination process, or taking steps in a phased de-risking program.

Longevity risk transfer is the fastest-growing solution in the U.K. The products currently available convert an unknown future liability into a fixed liability cash flow by locking in the life expectancy of the plan participants. Large pension funds find it easier to manage an asset portfolio against a liability when the future obligation is fixed and known. In fact, for many plan sponsors, longevity risk transfer is the last step in a “do it yourself” pension de-risking undertaking.

After addressing funded status and asset risk concerns, longevity risk transfer can serve as the capstone to a pension hibernation strategy, with the sponsor continuing to manage the plan on its balance sheet, with risks and expenses managed within a tight tolerance. Longevity risk transfer transactions will increasingly be conducted via captive insurance and reinsurance strategies, thus ensuring cost-effective execution. These captive strategies were pioneered by the British Telecom and Merchant Navy Officers Pension Schemes.

**Examining Longevity Risk Transfer Transactions**

Industry leaders Aviva, BMW, British Telecom and Rolls-Royce chose to hibernate their liabilities on their balance sheets and hedge their longevity risk. The following is a closer examination of how those transactions work.
The curved blue line on Exhibit 6 shows the expected future liability cash flow for a group of U.K. retirees. The 2015 starting point is the total amount of benefits due to all living beneficiaries at transaction inception and the blue line shows these benefits projected over the next half century. The line is driven upward over time by cost-of-living adjustments and downward by mortality. The vertical grey bars extending from the line represent the potential risk around the liability cash flow, demonstrating how future longevity improvements could differ from current expectations. It is important to consider risk from this perspective, because future medical improvements are likely to occur and health and demographic trends will impact people’s lives in ways that we can’t predict with certainty.

As Exhibit 7 demonstrates, the longevity risk transfer transaction eliminates this uncertainty for pension funds by converting an unknown future liability into a fixed and known liability cash flow (shown here in the thick green line).

Specifically, the pension fund pays the green line, which is the expected liability, plus a risk fee. The insurers and reinsurers in the transaction receive the green line, and subsequently pay the pension fund the actual amount of benefits owed to the surviving beneficiaries, which is likely to be somewhere within the vertical grey bars, but could fall outside of them. If plan participants live longer than the stress scenario depicted here at the top of the grey bars, the insurers and reinsurers in this agreement will pay the incremental benefits for as long as the beneficiaries live.

Nearly a dozen transactions like this have been completed for U.K. pension funds, but none have been executed in the United States yet. Early in 2015, Bell Canada completed the first transaction for a pension fund in Canada. Expectations within the pension risk transfer space are that several other countries will begin actively using longevity risk transfer solutions, including the U.S.

In 2014, the BT Pension Scheme in the U.K. executed the largest and most innovative longevity risk transfer transaction the marketplace has experienced to date. To complete the transaction, the BT Pension Scheme created its own captive insurer in Guernsey, which insured the longevity risk. BT’s Guernsey captive then reinsured the risk to The Prudential Insurance Company of America, completing an arrangement that is fully collateralized.
The transaction covers liabilities worth £16 billion, or nearly $28 billion. It was also the first longevity risk transfer agreement to use an insurance captive owned by a pension fund whose sponsor is not in the insurance industry. By creating its own insurance company to facilitate the transaction, the BT Pension Scheme gained wider access to the global reinsurance markets and achieved the best value for the Scheme.

This arrangement is often the preferred approach for a very large pension fund, which may be a world-class asset manager in its own right and can continue to manage its assets against a fixed and known future liability. It is, of course, significantly easier to manage an asset portfolio against that fixed and known green line, than it is to manage assets against obligations that are unknown—and unknowable.

Whenever the longevity arrangement covers a portion of a scheme’s liabilities where the assets are in an LDI strategy, it can be regarded as a segment of the liability profile that has been immunized for a long and secure hibernation. Another benefit is that the transaction allows a scheme to pay for its de-risking over time, rather than up front. And finally, it allows a pension scheme to divest a risk it views as unrewarded.

Knowing there is only so much risk a pension fund can absorb, an increasing number of U.K. plan sponsors are engaging in risk budgeting exercises, whereby they determine how much cash they can afford to contribute, and then work backwards. This limit on cash contributions in turn restricts the amount of pension funded-status losses they can afford to bear, which in turn limits how much risk they can take. Combined, these factors drive a forced ranking of which risks to keep, which to manage, and which to shed.
Pension plan sponsors who prefer longevity risk transfer have:

- large scale
- high fixed income allocation
- high funded status
- prefer to retain risk
- prefer to pay over time

Those who do not fit these criteria generally prefer a buy-in or buy-out solution.

Sponsors take these actions because they seek to use their limited risk budgets on risks they believe are rewarded, and manage or thrust aside unrewarded risks. Further, the marketplace has embraced the BT Pension Scheme transaction as a significant advance for the U.K., and as a model for the world’s largest pension funds to follow.

Until recently, the common practice among large, global pension funds was to retain longevity risk and “out earn” it through investment results, even if that meant assuming an uncomfortable amount of asset risk. Now, it is clear that there is a more proactive way to manage longevity exposure.

The BT Pension Scheme transaction provides a clear and proven example for the largest defined benefit pension plans in the world to manage their longevity risk. This structure can be replicated by large pension funds in the U.K., U.S., Canada, the Netherlands, Australia and elsewhere.

Market participants reacted favorably to the BT Pension Scheme transaction, deeming it “sensible risk and volatility management of the pension scheme,” and describing it as a modest credit positive to have reduced pension longevity risk. With this agreement, the BT Pension Scheme joined the ranks of plan sponsors who have used a customized pension risk transfer solution to meet their needs.

Clearly, no two plan sponsors have the same goals, resources, constraints or definitions of success, and that is why no two pension risk transfer agreements are the same. Perhaps the most intriguing aspect of the ongoing pension de-risking trend is that firms of all industries, sizes, geographic locations and levels of funded status are starting down the de-risking path, having benefited from the experience of the many companies that have gone before. With so many choices available, today’s leading pension funds are wondering whether longevity risk transfer is right for them, or whether they would prefer other de-risking solutions.

**Electing the Most Appropriate Solution**

As illustrated in Exhibit 9, longevity risk transfer solutions are most appropriate for sponsors of large pension plans who:

- Hold significant allocations to fixed income
- Have healthy funded status
- Choose to retain some risk
- Wish to pay for de-risking over time

Pension funds that don’t meet any of those criteria may favor a pension buy-in or buy-out solution.

**Exhibit 9: How Plan Sponsors Choose a Solution**

<table>
<thead>
<tr>
<th>Pension plan sponsors who prefer</th>
</tr>
</thead>
<tbody>
<tr>
<td>LONGEVITY RISK TRANSFER</td>
</tr>
<tr>
<td>Large scale</td>
</tr>
<tr>
<td>High fixed income allocation</td>
</tr>
<tr>
<td>High funded status</td>
</tr>
<tr>
<td>Prefer to retain risk</td>
</tr>
<tr>
<td>Prefer to pay over time</td>
</tr>
</tbody>
</table>

Those who do not fit these criteria generally prefer a buy-in or buy-out.
Re-thinking Pension Risk

With recent transaction activity standing as testament, the time for defined benefit plan sponsors to re-think pension risk is now. A number of risk transfer solutions exist, each of which can help plan sponsors:

- Solidify market leadership
- Achieve more consistent financial results
- Avoid potential cash calls on the firm
- Maximize strategic flexibility

Managing pension risk sets companies apart from their peers. In 2012, when jumbo pension risk transfer agreements first arrived in the market, the question on most plan sponsors’ minds was whether or not to reduce pension risk. Today, with customized solutions readily available, the question is, which path will they take to a lower-risk future?
Insurance and reinsurance contracts are issued by The Prudential Insurance Company of America (PICA), Newark, NJ, or Prudential Retirement Insurance and Annuity Company (PRIAC), Hartford, CT, which contracts are negotiated, underwritten and performed by PICA or PRIAC in the United States. Each company is solely responsible for its financial condition and contractual obligations. PICA and PRIAC are wholly owned subsidiaries of Prudential Financial, Inc. (PFI), headquartered in the United States. Neither PICA nor PRIAC is licensed or regulated by the U.K. Prudential Regulation Authority as an insurer or regulated by the Financial Conduct Authority, nor does either offer insurance or reinsurance in the United Kingdom.

PICA and PRIAC do provide insurance products for U.S. pension plans and reinsurance in the United States to companies that have acquired U.K. pension risk through transactions with U.K. plan sponsors. PFI of the United States is not affiliated with Prudential plc of the United Kingdom. Prudential Retirement is a PFI business.

This discussion document has been prepared for informational purposes only and is not an offer to enter into any agreement. PFI, PICA and PRIAC do not provide legal, regulatory, investment, tax or accounting advice. An institution and its advisors should seek legal, regulatory, investment, tax and/or accounting advice regarding the implications of any of the strategies described herein.

© 2015 Prudential Financial, Inc. and its related entities. Prudential, the Prudential logo, the Rock symbol and Bring Your Challenges are service marks of Prudential Financial, Inc. and its related entities, registered in many jurisdictions worldwide.