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Death Derivatives Emerge From Pension Risks of Living Too Long

By Oliver Suess, Carolyn Bandel and Kevin Crowley - May 16, 2011

Goldman Sachs Group Inc. (GS), Deutsche Bank AG (DBK) and JPMorgan Chase & Co. (JPM), which bundled and sold billions of dollars of mortgage loans, now want to help investors bet on people's deaths.

Pension funds sitting on more than $23 trillion of assets are buying insurance against the risk their members live longer than expected. Banks are looking to earn fees from packaging that risk into bonds and other securities to sell to investors. The hard part: Finding buyers willing to take the other side of bets that may take 20 years or more to play out.

"Banks are increasingly looking to offer derivative solutions," said Nardeep Sangha, 43, chief executive officer of Abbey Life Assurance Co., a London-based Deutsche Bank unit that helps pension funds manage the risk of retirees living longer than expected. "Making the long maturity of the risks palatable for investors, including sovereign wealth funds, private-equity firms and specialist funds, is the challenge."

As insurers reach the limit of how much pension-fund liability they're willing to shoulder, companies such as JPMorgan and Prudential Plc (PRU) last year set up a trade group aimed at establishing and standardizing a secondary market for so- called longevity risks. They're also developing indexes that measure mortality rates and securities to let pension funds pay fixed premiums to investors in return for coverage against major deviations from projections.

Swiss Reinsurance Co., the second-biggest reinsurer, sold the world's first longevity bond in December in what it called a "test case" to sell risk to the capital markets.

'Run Dry'

Goldman Sachs, based in New York, and Deutsche Bank in Frankfurt have set up insurance companies that promise to pay pensions if retirees live beyond a certain age. They typically receive a portion of the pension plan's assets in return. The banks, along with Morgan Stanley (MS), Credit Suisse Group AG (CSGN) and UBS AG (UBSN), are looking for ways to offer this risk to investors.

“Ultimately, reinsurance capacity for longevity risks will run dry, and that’s why it’s imperative that as the market grows and develops it is able to bring in new types of risk-takers,” Sangha said. “The obvious channel is the capital markets.”

Medical advances and healthier lifestyles have made predicting life spans more difficult for pension funds. Life expectancy in the U.K. is increasing by one to three months every year, according to Dutch insurer Aegon NV. (AGN) Every year of additional life expectancy typically adds as much as 4 percent to future pension requirements, Aegon said in a report in March.

Aegon reported last week that first-quarter profit fell 12 percent as the company set aside money to cover the risk of policyholders in the Netherlands living longer than expected.

Glaxo Transfer

Pension funds can hedge against life-expectancy risk by transferring assets to an insurer or other counterparty that promises to pay some or all of the future liabilities. Last year, GlaxoSmithKline Plc (GSK), the U.K.’s biggest drugmaker, became the 10th FTSE 100 firm to buy insurance on about 900 million pounds ($1.5 billion), or 15 percent, of its U.K. obligations.

That means Prudential, the U.K.’s largest insurer, rather than the pension fund, will pay some GlaxoSmithKline pensioners should they live longer than expected. Most longevity risk transferred from pension funds is held by insurers.

Regulators are just beginning to focus on the new products.

“We’re seeing more and more sophisticated mechanisms being offered,” said Bill Galvin, CEO of the U.K.’s Pensions Regulator. “From a regulatory perspective, we are concerned to ensure that trustees understand the extent to which longevity risk has been passed from their scheme and the precise shape of any residual risk.”

‘Early Days’

The Frankfurt-based European Insurance & Occupational Pensions Authority isn’t reviewing longevity transfers, said Sybille Reitz, a spokeswoman for the organization, because “the market is still in its early days.”

The U.K. is the world’s biggest market for insuring pension liabilities after a change in accounting rules in 2004 forced companies to include pension plans on their balance sheets, increasing the volatility of earnings. Since then, 30 billion pounds of liabilities have been insured, about 3 percent of the total outstanding, according to estimates by Hymans Robertson LLP., a London-based pension consultant.

Banks and insurers completed a record 8.2 billion pounds in longevity-risk transfers last year. Goldman Sachs-owned Rothesay Life Ltd. sold the most pension-plan insurance in 2010, while Deutsche Bank's Abbey Life completed the biggest swaps deal.

Longevity Risks

With $17 trillion of the $23 trillion in pension-fund assets worldwide exposed to longevity risks, according to Zurich-based Swiss Re, investment banks see this as an opportunity to create a new market for those willing to bet on life-expectancy rates. If pensioners die sooner than expected, investors profit. If they live longer, investors must compensate the pension fund for the additional costs it faces.

Investors may be attracted to such bets because longevity trends aren't linked to movements in equities, bonds or commodity markets, said David Blake, director of the pensions institute at Cass Business School in London, who has worked with JPMorgan on the derivatives.

The complexity and risk involved in longevity assets with timelines of more than 20 years means banks are looking to create bonds that offer 5 percent to 9 percent in annual returns, according to Guy Coughlan, former head of longevity structuring at JPMorgan. Returns as high as the "mid-teens" are possible, he said.

'Structural Problems'

Investors remain unconvinced. Not knowing whether a bet on a group of pensioners' life spans is correct for decades prevents hedge funds such as London-based Leadenhall Capital Partners LLP from entering the marketplace.

"There are big structural problems with the longevity market," said Luca Albertini, CEO of Leadenhall, which has $120 million under management and invests in insurance-linked securities such as catastrophe bonds used to help cover hurricanes and other extreme risks. With clients able to withdraw investments only every month or quarter, "the only way I can invest is if the market is truly liquid," he said. "No one has proven that to me yet."

Subprime mortgages sold in the past decade were the genesis of the biggest financial meltdown since the Great Depression. Investment banks passed the risk of borrowers defaulting to the capital markets by packaging, or securitizing, the loans into bonds and selling them to investors and one another.

‘Fully Collateralized’

Collateralized debt obligations were created and sold in such volume that when mortgage holders defaulted, governments in the U.S. and Europe had to bail out the financial system. Banks are now looking to investors in much the same way to securitize the risk of pensioners living longer than expected.

Securities based on life expectancy don’t hold the same risks as those linked to subprime mortgages because they are “fully collateralized,” minimizing the risk from a counterparty failing to meet its obligations, Coughlan said.

Cass Business School’s Blake said it’s unfair to compare the securitization of mortality expectations to the subprime- mortgage market.

“Subprime was highly leveraged,” Blake said. “This is different.”

Still, longevity transfers expose investors to the credit risk of issuers for many years. Once a pension fund agrees to transfer its assets in return for protection against pensioners living longer than expected, they are tied into a long-term contract that can be difficult to unwind, said David McCourt, senior policy adviser at the U.K.’s National Association of Pension Funds. That means the insurer, bank or hedge fund that a pension plan chooses to deal with is important, he said.

‘No Going Back’

“There’s a massive counterparty risk,” McCourt said. “People say insurance companies don’t go bust, but they do. We’ve seen AIG and investment banks going under like Lehman. There’s a lot of pressure on the trustees to make sure they’re comfortable the deal is right because there’s no going back.”

Pension funds outside the U.K. also remain hesitant.

APG Algemene Pensioen Groep NV in Amsterdam, which manages 277 billion euros ($396 billion) of assets for seven pension funds, “will not do transactions to actively hedge longevity risk,” according to Harmen Geers, a spokesman for the firm.

“The market is unbalanced, since there are no natural counterparties to take up a risk of that size in absolute terms,” Geers said.

Life Settlements

There has been less interest in the U.S. because regulatory pressure on pension funds hasn’t been as intense as in the U.K., said Pretty Sagoo, director of structuring at Deutsche Bank in London. In the U.S., investors can bet instead on life expectancy through so-called life settlements.

Rather than exchanging assets and liabilities with a pension plan, the life-settlement market allows investors to buy insurance policies from individuals and pay the premiums until that person dies. Investors then receive the death benefits.

The secondary market for U.S. life settlements began in the 1980s when the AIDS epidemic led some patients to sell their insurance policies to pay for treatment. The industry was valued at $2 billion in 2001 and, once it became regulated, quickly grew to a maturity value of $35 billion by 2009, according to Conning & Co., a Hartford, Connecticut-based research firm.

Goldman Sachs-owned Rothesay Life, started in 2007, was the biggest pension liability insurer in the U.K. last year after insuring 1.3 billion pounds of liabilities from the British Airways Plc pension plan. The largest swaps deal was completed between Deutsche Bank's Abbey Life unit and Bayerische Motoren Werke AG's U.K. pension plan.

Q-Forward Swaps

Rothesay Life CEO Addy Loudiadis was the architect of a Goldman Sachs deal in 2001 that allowed Greece to mask its indebtedness, according to London-based Risk magazine. Sophie Bullock, a spokeswoman for the firm in London, declined to comment on Loudiadis's involvement in Greece and said she was unavailable to comment.

Goldman Sachs isn't part of the new industry group, the London-based Life & Longevity Markets Association, preferring to develop the market alone, according to Tom Pearce, managing director of Rothesay Life. Pearce said it won't be easy trading a security linked to life expectancy.

"Clearly, if there was a capital market solution that would be helpful for the market generally, but there are some challenges," he said. "The biggest challenge is selling these very long-term risks to shorter-dated investors."

Mortality Indexes

Unlike Deutsche Bank and Goldman Sachs, New York-based JPMorgan doesn't carry any of the risk of pensioners living longer than expected. Instead, it arranges swaps, called q- Forwards, which allow a pension fund to pay a fixed premium to a counterparty based on its members living to a specified age. If members live longer than expected, the counterparty reimburses the fund; if they die sooner, the counterparty profits.

Credit Suisse and JPMorgan have developed indexes that measure mortality rates and life expectancy for the U.S., Germany, the Netherlands, England and Wales. The indexes act as a basis for pricing individual swaps and bonds, according to Cass Business School's Blake, who helped develop them with JPMorgan in 2007. They will help buyers and sellers price derivatives more accurately and give them confidence to trade them, creating a liquid market, Blake said.

Swiss Re sold the world's first longevity bond in December, passing the risk from its own balance sheet to investors. The $50 million bond, named Kortis, was a "test case," said Alison McKie, head of life and health products at the firm.

The bond pays investors a fixed sum from reinsurers for taking the risk that people live longer than projected. If there is a large divergence in mortality improvements between British men aged 75 to 85 and U.S. males aged 55 to 65, investors risk losing some or all of their money, Swiss Re said in December. The bond is rated BB+ by Standard & Poor's.

BNP, Munich Re

Previously, Paris-based BNP Paribas SA and the European Investment Bank, the European Union's financing institution in Luxembourg, created a longevity bond in 2004. A year later they withdrew the notes, which had a maturity of 25 years, after they didn't find a buyer.

Munich Re, the world's biggest reinsurer, hasn't participated in longevity transfers "as the deals we've seen haven't met our profitability requirements," said Joachim Wenning, the management board member responsible for life reinsurance. "The future longevity trend is not easy to predict. If your assumptions are wrong, the cost is high."

Nevertheless, the Munich-based reinsurer recently became the 12th member of the Life & Longevity Markets Association.

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