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Life Insurers to Benefit from Rising Interest Rates

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◆ Introduction

The recent global financial crisis (GFC) brought forth significant monetary intervention by the Federal Reserve (Fed). Since the onset of the crisis, the Fed has actively pushed interest rates to historic lows and has initiated several rounds of large-scale asset purchases—or "quantitative easing (QE)"—with the aim of spurring credit and liquidity in the economy and stimulating economic growth. Moreover, the Fed has held its key Federal Funds Target Rate near zero since December 2008. The GFC has also prompted major central banks in a number of advanced economies—in particular, the United Kingdom, the Eurozone and Japan—to take unprecedented monetary measures (Figure 1).

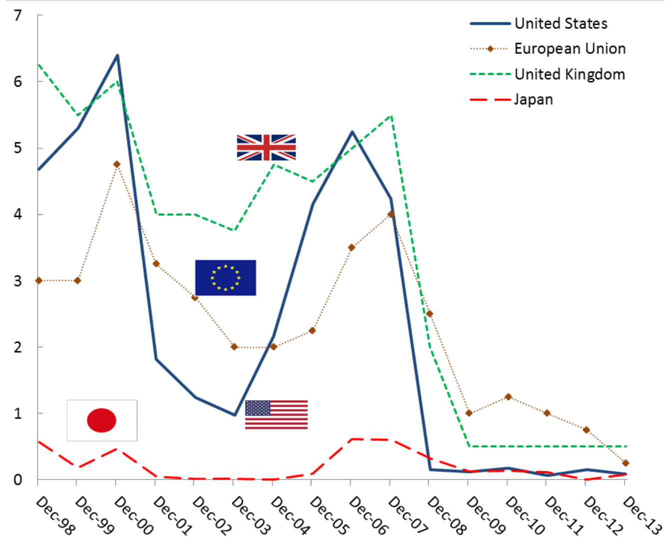
The prolonged period of record-low interest rates has placed considerable pressure on life insurers' ability to pay guaranteed rates of return and to maintain strong profitability. In a July 2013 report, Fitch Ratings noted the decline in interest rates continues "to pressure industry operating fundamentals, weaken industry balance sheets and has led a number of insurers to rationalize their participation in interest-sensitive insurance product lines."[1] However, in December 2013 the Fed announced it will begin to "taper" or pull back from its QE program due to a stronger job market and economic growth. Longer-term interest rates have edged higher over the last several months in anticipation of the Fed's announcement. Most market analysts expect long-term rates to continue to rise and stay on an upward path in 2014. Moreover, Moody's Investors Services (Moody's) recently changed its outlook on the U.S. life insurance industry from "negative" to "stable" based on its expectation interest rates will continue their gradual rise in 2014.[2]

This article is an update to the "Low Interest Rates and the Implications on Life Insurers" article published in the April 2012 *CIPR Newsletter*.[3] The aim of this article is to provide an overview of the current interest rate environment as well as an update to the NAIC's study on the impact of the low interest rate environment on the U.S. life insurance industry.

◆ Interest Rate Environment over the Past Five Years

Between 2007 and 2012, the Fed has used a variety of tools to stabilize the financial system, foster economic growth and keep interest rates low. It dramatically lowered the Fed Funds Target Rate to effectively zero. It employed "Operation Twist," which focused on trading short-term bills on the Fed's balance sheet for long-term bonds. It also

Figure 1: U.S. and International Main Policy Rates (%)



Sources: U.S. Federal Reserve, European Central Bank, Bank of England and Ministry of Finance of Japan.

implemented its QE program, or large-scale purchases of long-term government bonds and other securities, in 2008, 2010 and 2012—often called QE1, QE2 and QE3, respectively. As a result, the Fed has swelled its balance sheet to nearly $4 trillion and interest rates have fallen to historic lows. The benchmark 10-year Treasury yield fell from 4.68% at the start of 2007 to 2.25% at the end of 2008 and 1.89% at the end of 2011.

However, the Fed announced on Dec. 18, 2013 it will start to taper its QE program. Outgoing Fed Chairman Ben Bernanke stated the Fed will reduce monthly purchases of Treasury securities and mortgage-backed securities by $10 billion. The Fed has been purchasing $85 billion of assets monthly since December 2012 under its current QE3. Economists expect the Fed to cut bond purchases in $10 billion incremental moves until ending the program late in the year.[4] In addition, the Fed Funds Target Rate will still be kept at near zero as long as the unemployment rate remains above 6.5% and inflation is under control. The Fed said it

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[1] "Heightened Interest Rate Risk for U.S. Life Insurers: Rating Implications over the Long-Term." Fitch Ratings. July 17, 2013.
[2] "Moody's changes outlook on US life insurance industry to stable, given rising interest rates." December 4, 2013. Retrieved from: www.moodys.com/research/Moodys-changes-outlook-on-US-life-insurance-industry-to-stable--PR_288187
[3] www.naic.org/cipr_newsletter_archive/vol3_low_interest_rates.htm
[4] According to the median estimate in a Dec. 19, 2013, Bloomberg News survey of 41 forecasters.

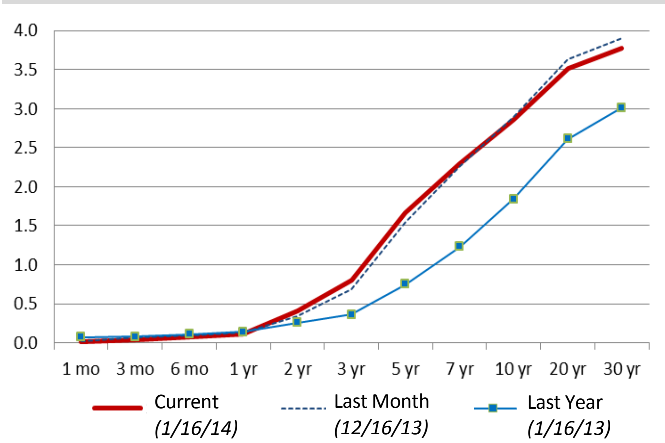
also expects to keep the Fed Funds Target Rate low "well past the time" when the country's unemployment rate, now at 6.7%[5], falls below 6.5%.

In announcing the tapering, the Fed said in a statement the decision was based on "improvements in economic activity and labor market conditions" that are "consistent with growing underlying strength in the broader economy." Bernanke was optimistic the U.S. would soon move out of the recovery phase. "We're hopeful that the economy will continue to make progress, and that we'll begin to see the whites of the eyes of the end of the recovery and the beginning of the more normal period of economic growth."[6] Bernanke added he had consulted closely with Janet Yellen, who will succeed him as chairman on Jan. 31, 2014. Yellen said in her Nov. 14 confirmation hearing she'll maintain the bond-buying program until a "strong recovery" convinces her to end it.

Longer-term interest rates have risen higher in 2013 in anticipation of the Fed tapering its bond buying (Figure 2). The 10-year Treasury yield has climbed from 1.76% at the end of 2012 to 3.04% at the end of 2013—its highest level in more than two years and more than double its record low of 1.38% set in July 2012. Market analysts expect the 10-year Treasury note to rise to 3.25%–3.5% or higher as economic growth continues to improve and the Fed takes a measured approach to tapering.

However, despite the modest rise in the longer-term rates, the Fed's continued commitment to keeping short-term interest rates at the current very low levels suggests any substantial increases in the long-term rates would most likely be gradual over an extended period of time, given the slow economic recovery. The Fed's cautious approach to interest rates with the gradual pulling-back of its QE program points

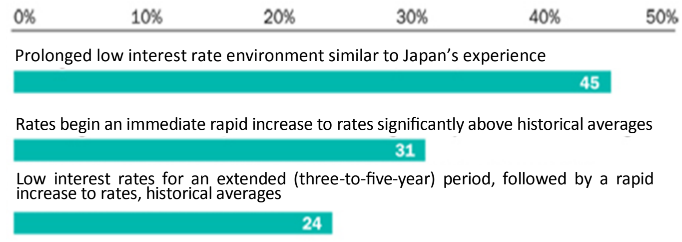
Figure 2: Treasury Yield Curve (%)



Source: U.S. Department of the Treasury.

Figure 3: Towers Watson Survey

Which of these poses the greatest threat to your business?



out the desire for controlling the pace of rate increases. The rate at which the economy is growing and unemployment is declining will determine the speed at which the Fed will continue to scale down its bond-buying program. While a rise in long-term rates is expected to continue, the Fed stands ready to contain any sudden interest rate spikes that may derail the still fragile economic recovery.

◆ Impact on Life Insurers

The low interest rate environment has been a key concern for U.S. life insurers. Interviews conducted by CIPR with several life insurance company executives in 2012 revealed the prolonged low interest rate environment is a primary business concern (see article on page 30 for more). The sentiment was echoed in a Life Insurance CFO Survey conducted by Towers Watson in June 2012.[7] The survey showed almost all (97%) of the respondents consider interest rate risk a significant exposure for their company and almost half view the prolonged interest rate environment as their greatest threat to their business (Figure 3).

Life insurers' earnings are typically derived from the spread between their investment returns and what they credit as interest on insurance policies and products. If their contractually guaranteed obligations exceed achievable returns in the capital markets for a certain length of time, life insurers' ability to meet expectations can be greatly reduced.

In addition, low interest rates affect life insurers' liquidity. As part of asset-liability management (ALM), life companies strive to match liability cash flows with asset cash flows to avoid setting up an additional asset-liability mismatch reserve. During periods of low interest rates, assets and liabilities cash flows can be seriously mismatched, exposing insur-

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[5] Bureau of Labor Statistics. Employment Situation Summary, January 10, 2014. United States Department of Labor.

[6] Transcript of Chairman Bernanke's Press Conference. December 18, 2013. Retrieved from: www.federalreserve.gov/mediacenter/files/FOMCpresconf20131218.pdf

[7] "Life Insurance CFO Survey #30." Towers Watson. June 2012. Retrieved from: www.towerswatson.com/en-US/Insights/IC-Types/Survey-Research-Results/2012/06/Life-Insurance-CFO-Survey-30

ers to losses from uneconomic asset sales to meet current obligations to policyholders. While under conditions of persistent low interest rates, life insurers' earnings are squeezed, liquidity demands tend to decrease as policyholders are more likely to keep their money in life insurance investment products, such as annuities, due to the scant availability of higher-yielding alternatives.

A reversal of this trend could be beneficial for life insurers. In a Dec. 4, 2013, report, Moody's noted a gradual rise in interest rates would benefit the insurance industry, as it would ease spread compression in spread-dependent businesses and move long-term investment returns closer to reserve and pricing assumptions for long-tailed products. A slower more gradual rise in interest rates would be the ideal scenario for life insurers, as they would have the time to adjust and bring their credited interest rates in line with market interest rates, appropriately matching their assets with their liabilities.

Life insurers, in general, with their well-matched investment portfolios composed mostly of safe, investment-grade assets, can see through the period of gradually rising interest rates reasonably well. The firmer anchoring at the shorter part of the yield curve with the increases at the longer-term side generally bodes well for life insurers due to their typically longer-term investment horizon. Lower-yielding held-to-maturity assets can be rolled over into new higher-yielding investments significantly improving life companies' investment performance. On the product side, the steepening of the yield curve is providing fixed annuities with a great advantage over comparable conservative investments from the banking sector.

However, a sudden jump in rates could be damaging, as it may tempt policyholders to surrender their policies for new policies with higher crediting rates or other financial products, such as bank certificates of deposits offering higher yields. Moody's notes that a rapid spike in interest rates would be negative for most life insurers, as it "could lead to annuity policyholders jumping to higher-return products at the same time that life insurers' investment portfolios report unrealized losses." However, most life insurance investment products incorporate penalties for early surrenders, making it more difficult for policyholders to withdraw their money and expose life insurers to a bank-run-like scenario.

The recent rise in interest rates from historic lows during 2013 has lessened macroeconomic headwinds for insurance companies. Annuity sales benefited from the higher interest rates and, while rates are still hovering near all-time lows, insurance companies have received some needed relief from the recent increases. For the foreseeable future, new money yields would likely be lower than the yields on the maturing investments, as most life insurers have portfolio yields between 4% and 5%. Crediting rates are expected to lag the rise in the 10-year Treasury yield, but there could be pressure on crediting rates in the next few months should interest rates continue to rise. For the first half of 2014, a continuing increase in interest rates would result in higher discount rates, which could benefit free cash flows related to company reserving.[8]

The experience of life insurers during the inflationary 1970s is a cautionary tale of the effects of rapidly rising interest rates. When interest rates reached 15%, life insurers were seriously impacted with policy surrenders rising to previously unanticipated levels. As a consequence, many life insurers were forced to liquidate assets in order to meet surrender demand. When interest rates eventually came down in the 1980s, the guaranteed crediting rates on policies were substantially higher than insurers' investment yields, causing solvency issues and rating downgrades for a number of companies.[9]

Life insurers depend on their capital and reserves to absorb risks. A prolonged period of low interest rates would negatively impact life insurers' investment income, particularly of those companies with more long-term exposure. Life insurers' statutory reserves on new issues are also pushed higher as a result of persistent low interest rates, impacting their profitability and capital adequacy.

Should low interest rates continue to persist, some of the most important implications for life insurers would be their need to: a) increase yield by lowering credit quality or increasing duration; b) increase investments in more complex and volatile assets such as hybrid securities; c) sell insurance policies to hedge funds; d) lobby to change non-forfeiture and valuation laws; e) stop taking new deposits on flexible premium annuity contracts; f) stop writing fixed annuity contracts; and g) increase sales of variable contracts.

Life insurers with well-established and effective ALM programs are best equipped to manage through a low interest period and prepare for the eventual rise in interest rates that is to follow. The use of sophisticated enterprise risk management techniques helps enhance life insurers' ability to monitor their asset-liability positions by employing cash-flow analysis, duration, convexity, earnings, and capital at risk, as well as focusing on tail returns and effectively hedg-

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[8] Barron's, 2013 "Rising Rates to Revive Life Insurers." Barron's Investors' Soapbox PM. December 20, 2013.

[9] Grossman, Robert, Martin Hansen, and Peter Patrino, 2012. "The 'Bond Bubble': Risks and Mitigants." Fitch Ratings. December 19, 2012.

[10] "Moody's changes outlook on US life insurance industry to stable, given rising interest rates." December 4, 2013.

ing interest rate risks through interest rate floors or forward cash flow hedging.

◆ NAIC Low Interest Rate Study

An NAIC study of the impact of the low interest rate environment on life insurers was conducted covering the 2006-2012 calendar year period. The data used was sourced from the annual statements of 713 life insurance company legal entities whose reserves represented 99% of the total industry life insurance reserves during that period. The study showed a squeeze in the spread between the net investment portfolio yield and the guaranteed interest rate during that period, particularly from 2008 to 2009—namely, at the peak years of the GFC. Total industry reserves grew from $1.98 trillion in 2006 to $2.78 trillion by the end of 2012 as a result of the low interest rates during that period.

Although credited interest rate guarantees may be less than the valuation rate of interest, state insurance law specifies the minimum valuation interest rate to be used in valuing insurance liabilities (policy reserves). This, in effect, means the insurance company must have a net portfolio yield at least as great as the minimum valuation interest rate in order to fund the growth in policy reserves. Valuation interest rates for life insurance are determined each calendar year and apply to business issued in that calendar year. These valuation interest rates are locked in at policy issue and do not change.

The guaranteed interest rate declined by 23 basis points between 2006 and 2012 (Figure 4). This is due, in part, to the decline in the composite yield on seasoned corporate bonds as published by Moody's, and due in part to a change in the mix of new business written by the insurance industry.

Looking at the difference between the net portfolio yield and the guaranteed interest rate, we can see the impact the low interest rate environment has had on the insurance industry (Figure 5). Investment net spreads declined 62 basis points between 2006 and 2012. This is a significant drop in spread over a six-year period of time, amounting roughly to $15 billion of lost spread revenue over the six-year period on average reserves of $2.42 trillion.

While this is significant, the life insurance industry is still in a position of positive net investment income spread. Consequently, the period of the low interest environment created spread compression on earnings, but it did not materially impact life insurers' solvency. It is important to note the pricing of life insurance products in the U.S. contains not only an investment spread margin, but also a spread margin built into the mortality rates and the expense component (e.g., contract fees and policy expense charges).

To manage their interest rate risk, life insurers are matching their asset and liability cash flows. Statutory valuation law requires insurance companies to perform an annual cash flow testing exercise where the life insurance company must build a financial model of their in-force assets and liabilities. The company must run the financial model for a sufficient number of years, such that any remaining in-force liability at the end of the projection period is not material.

At each duration, the financial model calculates the difference between liability and asset cash flows and accumulates this difference forward under a given interest rate scenario. At the start of the model, assets are set equal liabilities, so surplus is zero. Most companies run both a set of stochastically generated interest rate scenarios (typically

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FIGURE 4: GUARANTEED INTEREST RATE

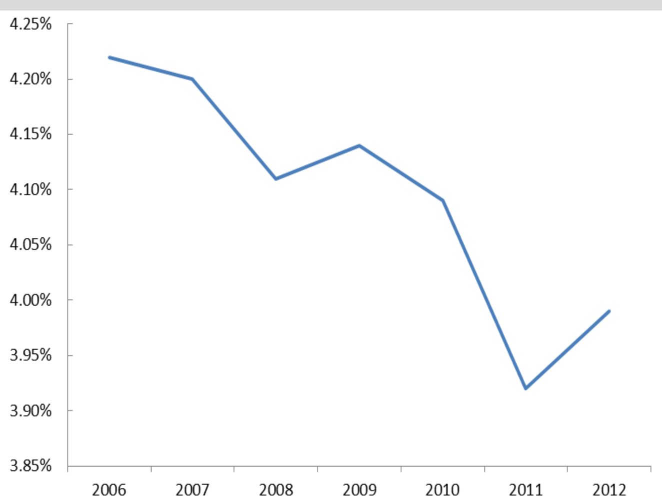
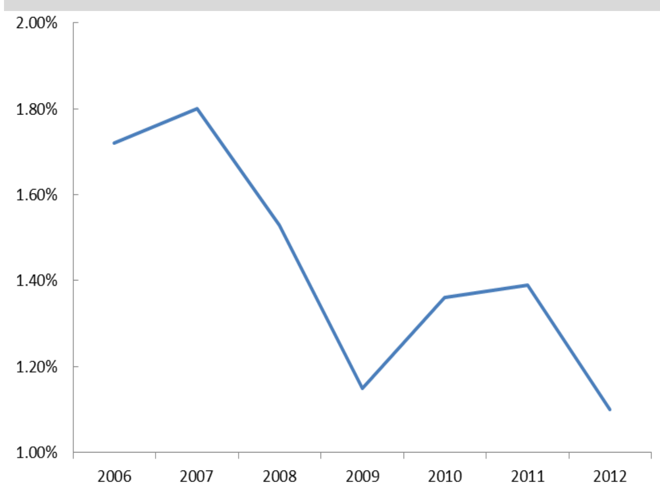


FIGURE 5: NET SPREAD OVER GUARANTEED INTEREST RATE



1,000+ scenarios), as well as a set of seven deterministic interest rate scenarios prescribed by state insurance regulators (referred to as "the New York 7"). These scenarios consist of a level interest rate scenario and combinations of increasing and decreasing interest rates over a five and 10-year period.

The New York 7 interest rate scenarios are as follows:

1. Level interest rate scenario
2. Uniformly increasing over 10 years at 0.5% per year and then level
3. Uniformly increasing over five years at 1.0% per year and then uniformly decreasing over five years at 1.0% per year and then level
4. An immediate increase of 3% and level forever
5. Uniformly decreasing over 10 years at 0.5% per year and then level
6. Uniformly decreasing over five years at 1.0% per year and then uniformly increasing over five years at 1.0% per year and then level
7. An immediate decrease of 3% and level forever

Such interest rate scenarios provide a good set of stress tests to help ensure life insurance companies have either well-matched asset and liability cash flows or have established additional reserves that are available to cover any interest rate or reinvestment rate risk embedded in their balance sheets. The Standard Valuation Law (#820) requires life insurance companies to post an additional reserve if the appointed actuary determines a significant amount of mismatch exists between the company's asset and liability cash flows. As part of this study, the NAIC pulled the additional reserves liabilities established by companies at year-end 2012. The life insurance industry posted an additional asset/liability cash flow risk reserve of $9.7 billion.

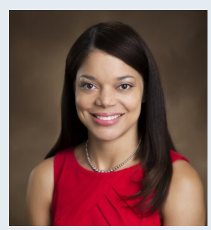
Consistent with the NAIC study, a recent report by Moody's[11]indicated life insurers continued to beef up their statutory reserves in 2012 due to the continuing low interest rate environment. After reviewing the annually filed publicly available Statements of Actuarial Opinions of its rated universe for year-end 2011 and 2012, the rating agency found approximately 57% additional reserves were added due to asset adequacy testing for year-end 2012 vs. 2011. Specifically, $6.4 billion in additional reserves were posted in 2011 and $10.1 billion added in 2012. Moody's emphasized the fact insurers' need to post additional asset/liability cash flow risk reserves is credit negative, as it points out interest sensitivity, which, if it gets worse, can reduce the capital cushion's ability to absorb additional risk if needed. Furthermore, looking at specific companies, Moody's found the products most impacted by low interest rates are fixed annuities, universal life with secondary guarantees, and long-term care.[12]

◆ Conclusion

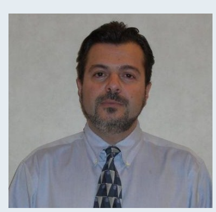
Despite continuing low interest rates, looking forward into 2014, rising interest rates should improve life insurers' cash flows, relieving some of the pressure related to reserving. Investment income trends may become more promising, helping insurers recover their capital position. The life insurance industry is in good position to fully benefit from higher interest rates as many companies have been actively rebuilding and re-pricing product portfolios to be successful in this new environment.

About the Authors

Larry J. Bruning FSA, MAAA, CLU serves as the NAIC Life Actuary. He joined the NAIC on January 4, 2011. Prior to joining the NAIC he was the Chief Actuary for the Kansas Insurance Department. As Chief Actuary of the Kansas Insurance Department, he participated in various NAIC committees in developing model insurance laws and regulations. He also served as chair of the NAIC's Life and Health Actuarial Task Force. Larry is a past recipient of the NAIC's Dineen Award. Bruning has over 30 years of insurance industry experience and has worked as an actuary for AmerUs Annuity Group and Security Benefit Life. He currently teaches actuarial science classes at Washburn University in Topeka, Kansas and has taught actuarial science classes at the University of Nebraska, Lincoln and Omaha.



Shanique (Nikki) Hall is the manager of the NAIC's Center for Insurance Policy and Research. She joined the NAIC in 2000 after working at J.P. Morgan Securities in the Global Economic Research Division. At J.P. Morgan, she worked closely with the chief economist to publish research on the principal forces shaping the economy and financial markets. Ms. Hall has more than 20 years of capital markets and insurance expertise. She has a bachelor's degree in economics and an MBA in financial services. She also studied abroad at the London School of Economics.



Dimitris Karapiperis joined the NAIC in 2001 and he is a researcher with the NAIC's Center for Insurance Policy and Research. He has worked for more than 15 years as an economist and analyst in the financial services industry, focusing on economic, financial market and insurance industry trends and developments. Karapiperis studied economics and finance at Rutgers University and the New School for Social Research, and he developed an extensive research background while working in the public and private sector.

11 "Continued low interest rates have driven US life insurers' statutory reserves higher." Moody's Investor Service, Special Comment. November 25, 2013.

12 Ibid.

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