SEAC Meeting
Interest Rate Volatility and Implications to the Insurance Industry

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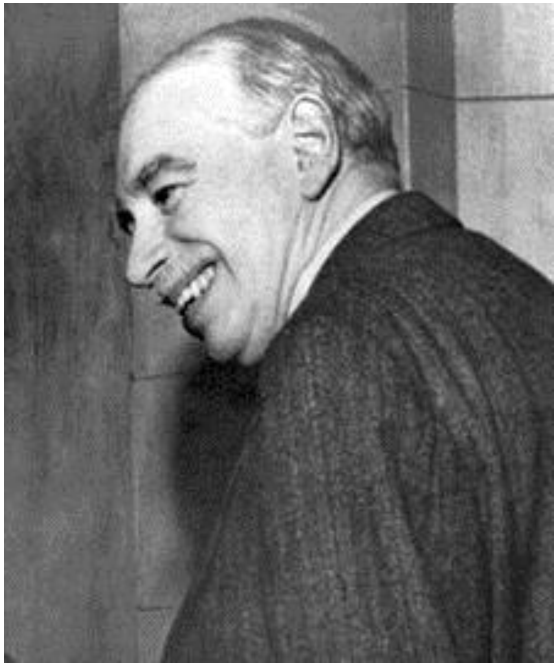
Historic Interest Rate Environment

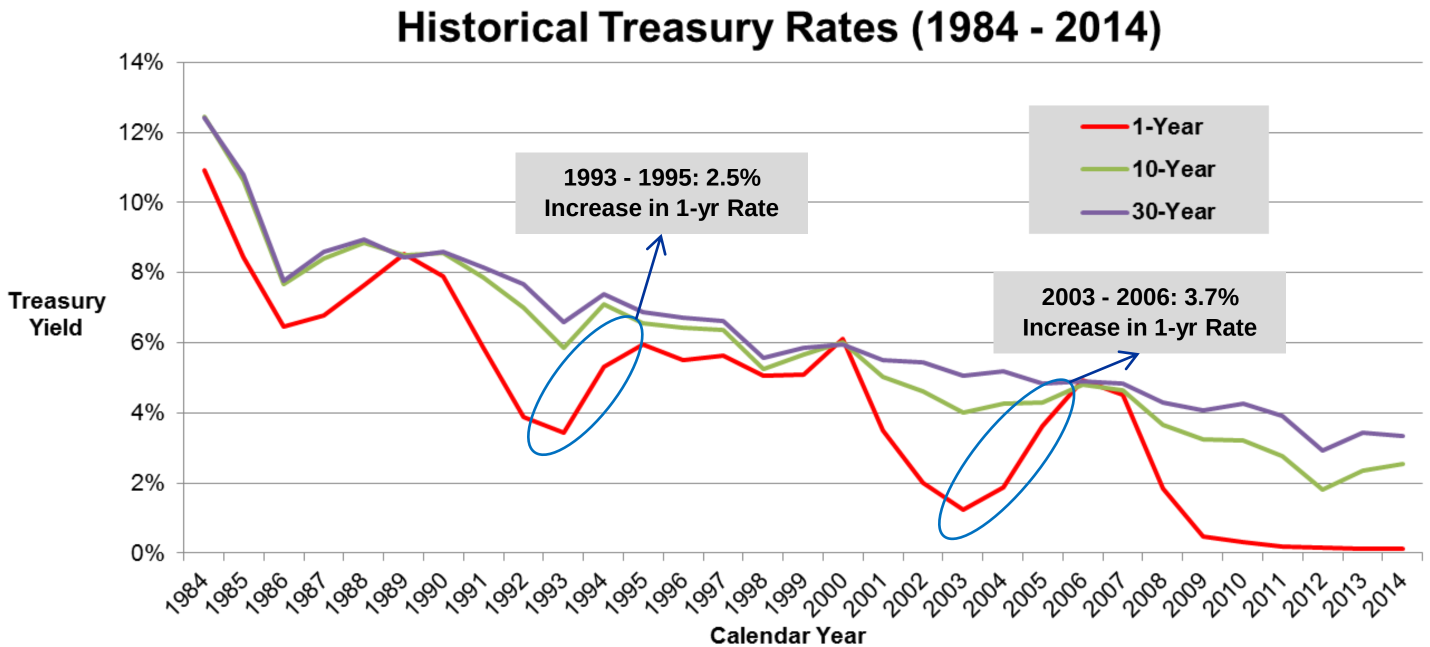
The market can stay irrational longer than you can stay solvent. – John Maynard Keynes

- Interest rates continue to be at relatively low levels
- Over the past three-five years, many companies have focused on the impact of low, persistent interest rates on:
  - Product guarantees
  - Policyholder behavior
  - Liquidity and ALM
- Companies also need to be prepared for the opposite scenario – a sharp, relatively quick rise in interest rates
- In this scenario, the shift in policyholder behavior could be significant



Historic Interest Rate Environment

- Interest rates continue to hover at or around historical lows



* Treasury Rate Information obtained from http://www.federalreserve.gov/releases/h15/data.htm

- To return to the average interest rate level over the past 30 years, rates would need to rise an average of 3.3% at all maturity levels:

	1-Year	10-Year	30-Year
Maximum	10.9%	12.5%	12.4%
Median	4.9%	5.7%	5.9%
Mean	**4.3%**	**5.8%**	**6.3%**
Minimum	0.1%	1.8%	2.9%
7/1/2015	**0.3%**	**2.4%**	**3.2%**

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Product Implications – Deferred Annuity

- Fixed Annuities
  - Rising interest rates could help relieve the burden of interest rate guarantees
  - Could also reduce competitive pressures and spread compression that have dampened profitability
  - Policyholder behavior implications:
    - Potential increased lapses from low crediting rate contracts
    - Behavior could be different based on type of penalty (Market Value Adjustment vs Surrender Charge)
    - Could see a continued lull in sales in the market, as people wait for interest rates to keep rising before buying back in
    - New participants in the market
- Variable Annuities
  - Designed to help reduce interest rate pressure but some still exists on Fixed Accounts
  - Could see a shift in funds from Separate Account to Fixed Account if rates become attractive enough
  - VA GMWB Rider Fees prices are often very sensitive to prevailing interest rates:
    - How quickly will companies respond and change prices for new business?
    - Will rider fees that vary by interest rates start to take more of a hold in the market?

10-Year Treasury Rate	GMWB Rider Cost
x < 2.0%	200 bps
2.0% < x < 2.5%	175 bps
2.5% < x < 3.5%	150 bps
3.5% < x < 5.0%	125 bps
x > 5.0%	100 bps

Product Implications – Life Insurance

- Universal Life
  - Similar to Fixed Annuity, rising interest rates will affect crediting rates and interest rate guarantees
  - Policy loan arbitrage - policyholders can increase loans taken if rate is attractive compared to prevailing market rates
  - Implications for funding levels on UL – Increased interest rates will help the Account Value build up and help avoid underfunding
  - Particularly for UL – companies will need to understand the mixed effect of rising interest rates on guaranteed products

- Term Life
  - Companies retain interest rate risk on term, but the low asset base limits impacts from interest rates
  - Letters of credit could become more expensive, where used to support blocks of life insurance
  - Periodic premiums will provide investment opportunity in rising interest rate environment
  - Overall, less impact on policyholder behavior / lapses

Product Implications – Long-Term Care

- Long-Term Care
  - Generally speaking, this is a complex product with significant interest rate risk, where the company absorbs the interest rate risk
  - Rising interest rates are generally favorable from an investment perspective
    - Similar to term, prospective premiums provide a positive opportunity in a rising interest rate environment
  - Offset would include the impact of interest rate increase on the cost of service provided:
    - Increased claim cost
    - Increased utilization of benefits
  - Similar to Annuity and ULSG, companies will need to understand mixed impact of rising interest rates

Modeling Considerations

- Policyholder Behavior
    - Lapses
    - Premiums
    - Loans/Withdrawals
- Dynamic Modeling
    - Understand Impact of Parameters
    - Consider Regime Switching
- Interest Rate Scenarios
    - Generator Behavior/Bias
        - Mean Reversion
        - Volatility
    - Scenarios vs. Stochastic
- Cash Flows
    - Negative Cash Flows
    - Taxes

Consider scenarios to supplement and/or validate stochastic modeling

Current Implications and Things to Consider

- Insurance Companies Today:
  - In low rate environment, companies took actions to try and gain return, which could be risky if interest rates rise:
    - Extended credit quality of portfolio
    - Increased duration of assets
    - Shift into alternative assets
  - Companies need to consider:
    - The mix of business your company has and expects to have over the next 1-3 years
    - Asset portfolio construction, and how it will move compared to liabilities (especially in scenarios where there are potentially large-scale shifts in policyholder behavior)
- Liquidity needs:
  - Companies should work to understand liquidity needs in multiple interest rate environments
  - A formal liquidity plan can help take some of the uncertainty out of these scenarios
    - What are your potential sources of liquid incoming cash flows (premiums, asset maturities, etc.)?
    - What are other concerns/considerations?
      - Fungibility concerns/asset substitution
      - Tax considerations
      - Legal Entity considerations
    - What would be the structure/order of current assets you would sell in response to a liquidity crisis?

Understand your risks. Understand your company/product profile. Take action.

Mitigating Interest Rate Risk

- Options to help offset/manage a company's interest rate risk include:
  - Purchasing interest rate protection:
    - Challenges regarding how much protection and for what length of time
    - Different hedge options available
  - Aligning asset portfolio to provide flexibility:
    - May mean a small sacrifice in yield
    - Need to evaluate tradeoff at a total company level
  - Need to consider the product mix as a whole – are you getting a benefit from annuities that is offset by a negative impact from Long-Term Care?
- Look at managing interest rate risk in a broad market context
  - If a move in interest rates impacts your company, it likely will impact many insurance companies
  - Insurance companies own a significant concentration of 30-year assets, and asset concentration in the insurance industry could create a stressed market