LIC Webinar Series

Product & Investment Management in a Prolonged Low Interest Rate Environment

December 1, 2020

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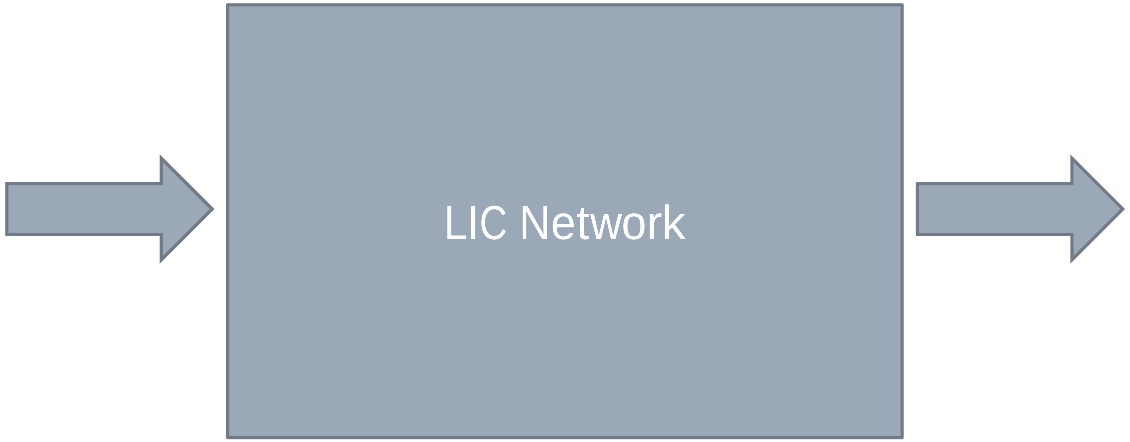
Trilogy Actuarial Solutions

LIC Value Proposition

<u>Your Questions</u>



We’re working on the same thing
Here’s how we did it
Here’s who we worked with
Here’s what worked
Here’s what didn’t work

LIC Resources

Conferences

- Annual Meeting and Marketing
- Final Expense Profitability
- Preneed Forum

Research

- Final Expense Survey Report
- Preneed Survey Report
- Small Company Annuity Survey Report

Resources

- LOMA.org/LICConnect
- LOMA Info Center

Committees

- Operations
- Project Management
- Technology
- Home Service
- Marketing
- Enterprise Risk Management
- Human Resources
- Investments/Capital Management
- Laws & Legislation
- Annuities
- Supplemental Products
- CEO Forum
- Financial Accounting

LIC Upcoming Events

Supplemental Products Committee
Thursday *12/10/20 20 3:00 PM – 4:30 PM ET*

CEO Forum
Monday *2/1/21 10:00 AM – 3:00 PM ET* (with break from 12:00 – 1:00)

LIC Annual Meeting & Marketing Conference
Wednesday & Thursday *2/3/21 – 2/4/21 10:00 AM – 3:00 PM ET* both days
(with break from 12:00 – 1:00)

Product and Investment Management in a Prolonged Low Interest Rate Environment

Presented by Trilogy Actuarial Solutions LLC and Parkway Advisors L.P.

“I can’t change the direction of the wind, but I can adjust my sails to always reach my destination.”

- JIMMY DEAN

Agenda

Interest Rates – Past, Present, & Future

Surplus Impact

Alternative Assets

Interest Rate Setting

Product Alternatives

Interest Rates

Past, Present, and Future

What is your outlook for interest rates over the next five to ten years?

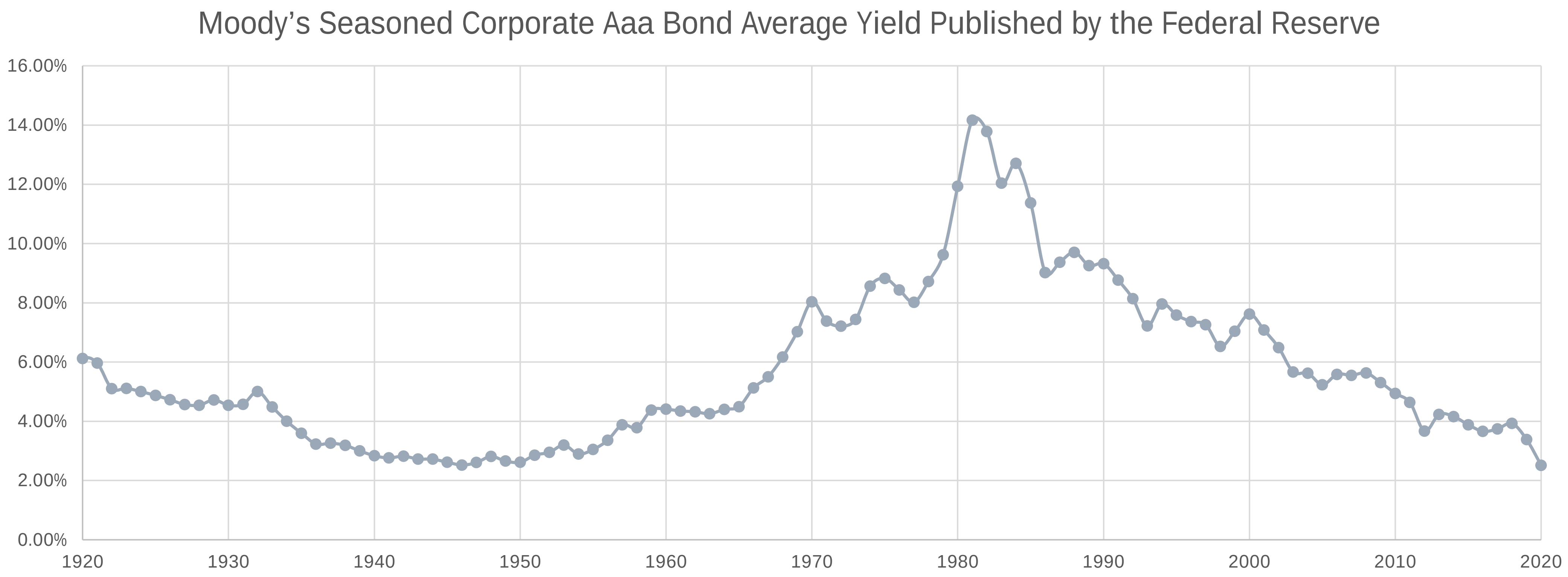
Significant increase (>2 point increase in long-term rates)

Modest increase (<2 point increase in long-term rates)

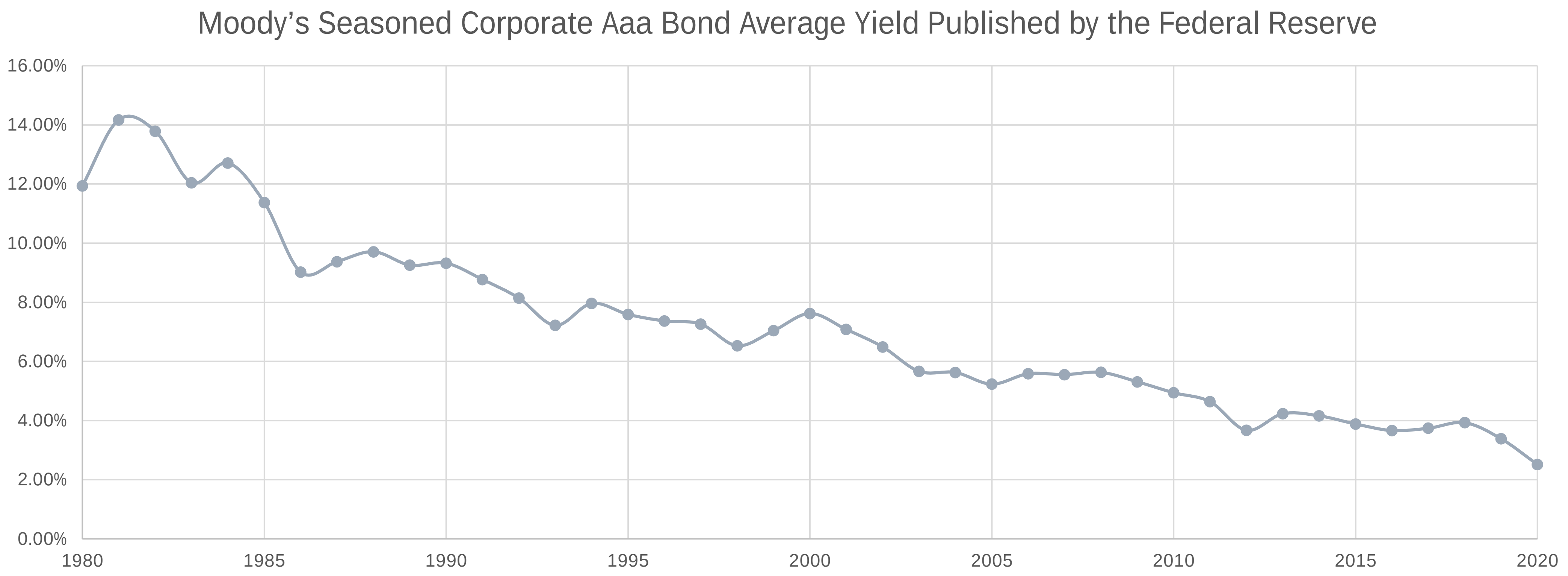
Remain relatively flat

Continue to decline

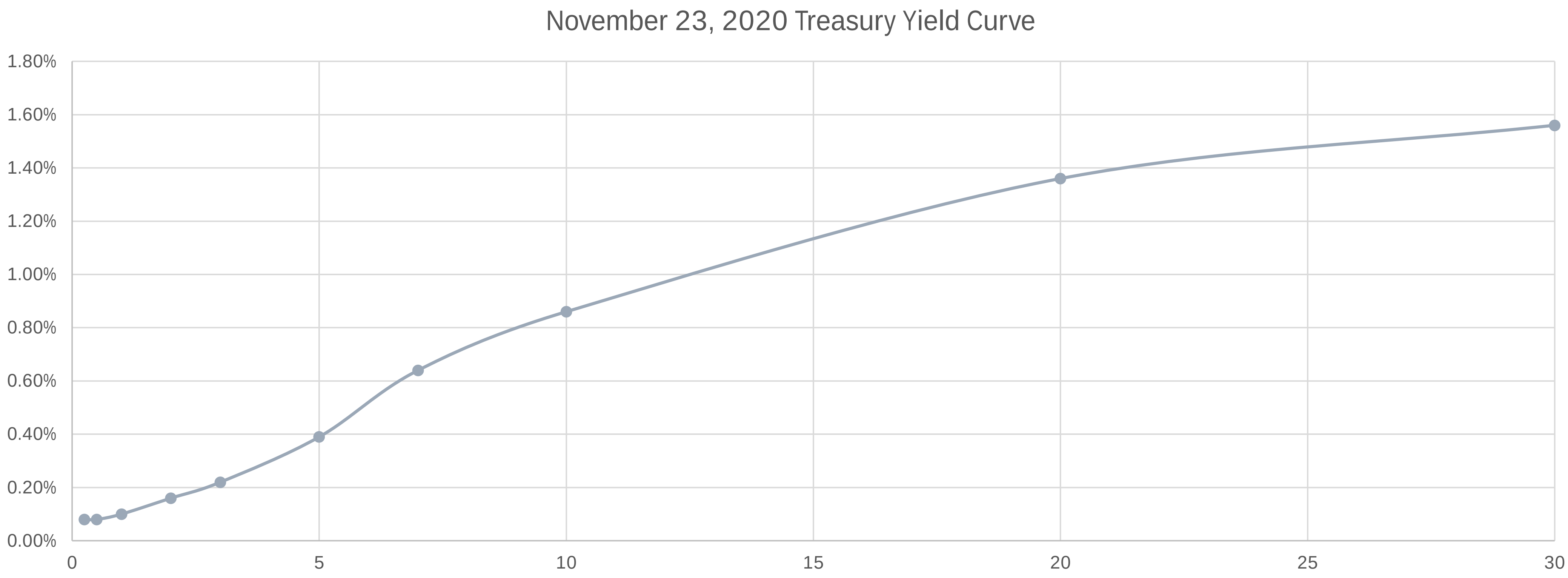
Historical Interest Rates



Historical Interest Rates



Current Interest Rates



Future Interest Rates

- The FED continues to have a highly accommodative monetary policy
- Inflation could cause rates to increase
- High money supply, yet low velocity= high savings rates
- Spreads may widen with increased uncertainty, despite yields remaining suppressed
- Deficit spending continues to increase exponentially, which could result in repayment uncertainty
- Steepening of the yield curve
- Foreign investors could cause treasuries to rally

Enter # <GO> to view analyst forecast, <Back> to Return

Chart Analysts | Forecast Histogram | Export | Disclaimer | Bond Yield Forecasts: Analysts

United States

Fed Tgt Upper Bound

Market Yield 0.25

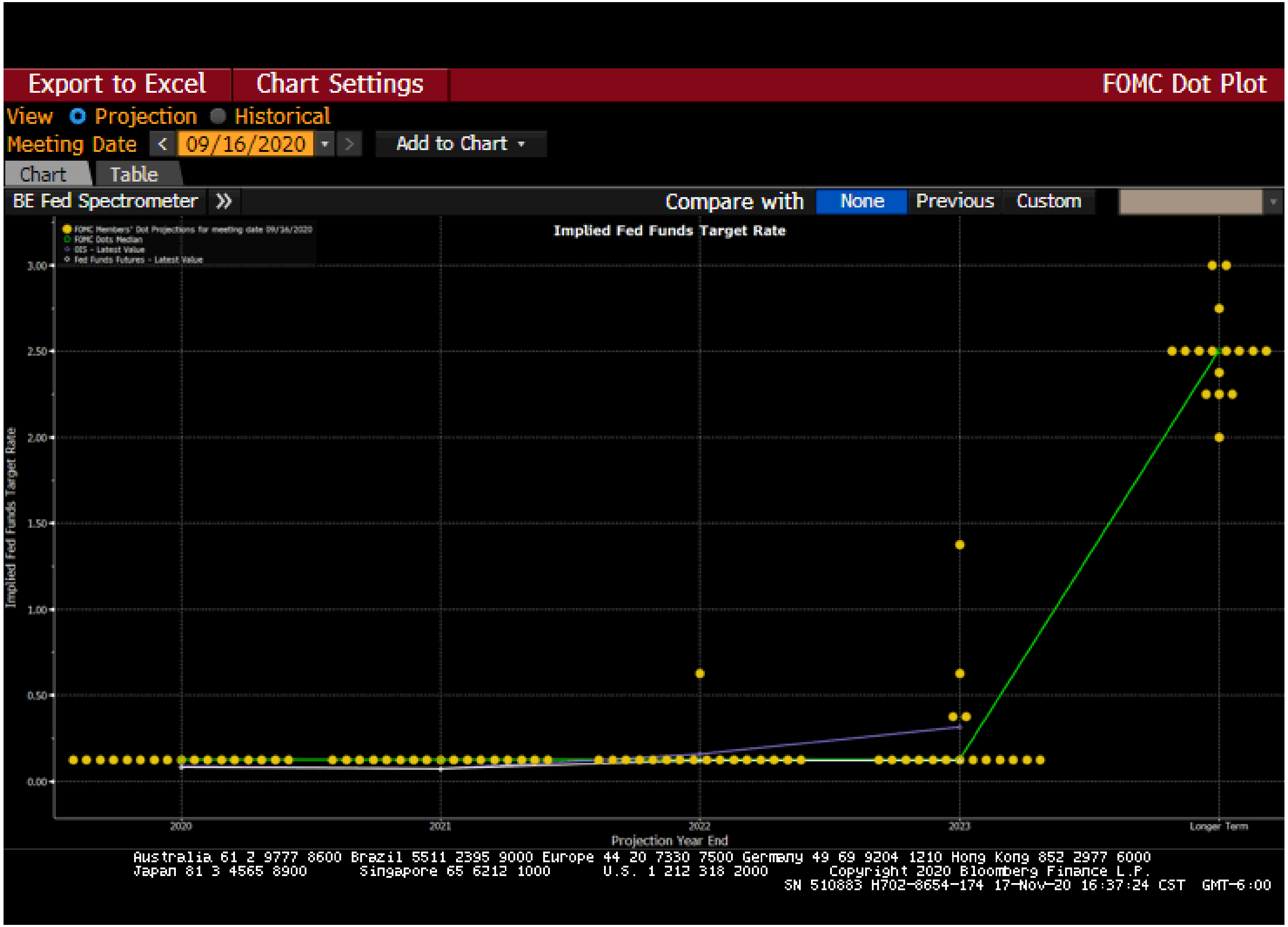
	Q4 20	Q1 21	Q2 21	Q3 21	Q4 21	Q1 22	Q2 22	Q3 22	Q4 22	Q1 23
Bloomberg Wgt Avg	0.25	0.25	0.25	0.30	0.30	0.30	0.30	0.35	0.35	0.40
Median Forecast	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Average Forecast	0.25	0.25	0.26	0.28	0.28	0.30	0.32	0.34	0.35	0.40
High Forecast	0.25	0.25	0.75	1.00	1.00	1.00	1.25	1.25	1.25	1.50
Low Forecast	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Responses	69	69	69	69	67	51	49	49	49	38

Recent Updates

No Update Since Last Official Survey

Nov. Survey Median	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Oct. Survey Median	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Change in Medians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Firm Name	Analyst	As of	Q4 20	Q1 21	Q2 21	Q3 21	Q4 21	Q1 22	Q2 22	Q3 22	Q4 22	Q1 23
1)	4CAST-RGE Ltd	D. Sloan	11/13	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
2)	AXA Investment Managers UK Ltd	D. Page	11/13	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
3)	Action Economics LLC	M. Englund	11/13	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
4)	Amherst Pierpont Securities LLC	S. Stanley	11/13	0.25	0.25	0.25	0.25	0.25	0.50	0.75	1.00	1.25	1.25
5)	BBVA Research SA	N. Karp	11/13	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
6)	Bank of America Corp	M. Meyer	11/13	0.25	0.25	0.25	0.25	0.25					
7)	Bank of Montreal	S. Kaushik	11/13	0.25	0.25	0.25	0.25	0.25					
8)	Bank of the West	S. Anderson	11/13	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
9)	Barclays PLC	M. Gapen	11/13	0.25	0.25	0.25	0.25	0.25					
10)	Bayerische Landesbank	M. Bucher	11/13	0.25	0.25	0.25	0.25	0.25					
11)	Bloomberg Economics	C. Riccadonna	11/13	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
12)	Canadian Imperial Bank of Comm…	A. Shenfeld	11/13	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
13)	Commerzbank AG	Research	11/13	0.25	0.25	0.25	0.25	0.25					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FOMC Dot Plot
View Projection Historical
Meeting Date 09/16/2020
Add to Chart
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FOMC Members' Dot Projections for meeting date 09/16/2020
FOMC Dots Median
OIS - Latest Value
Fed Funds Futures - Latest Value
Implied Fed Funds Target Rate
Implied Fed Funds Target Rate
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Projection Year End
Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
Japan 81 3 4565 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2020 Bloomberg Finance L.P.
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Projections and Strategy

An Effective ALM Strategy is the Key for an Insurer

- Mitigates Both Reinvestment and Market Risk
- The Fundamental Investment Strategy should not Shift with Interest Rate Directional Bets

Lack of an Appropriate ALM Strategy Historically

- Top Reason Insurance Companies are Experiencing Declines in the Solvency Ratio
- Places an Insurance Company at a Strategic Disadvantage to Competitors

The Current Position of Asset Cash Flows Relative to the Liabilities

- The Top Factor in What Investment Options are Available to Enhance Net Income
- What Additional Risks are Appropriate for an Insurer to Consider

Surplus Impact

How important is asset/liability management to your company's operations?

Extremely important

Very important

Somewhat important

Not very important

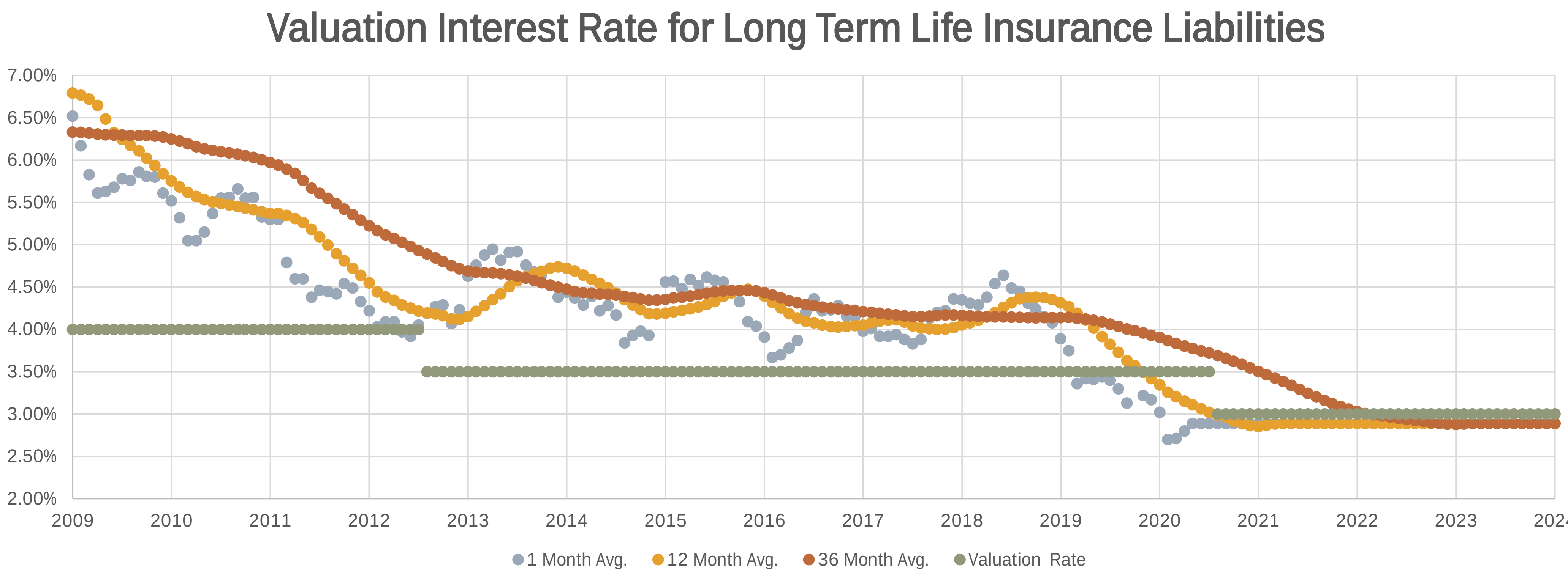
Other/It depends

Statutory Reserves

Projected Valuation Interest Rates for Long Term Life Insurance Liabilities

Calendar Year	Change in Moody's Corporate Bond Yield Avg. Beginning 11/2020					
	-1.00%	-0.75%	0.00%	+1.00%	+2.00%	+3.00%
2022	3.00%	3.00%	3.00%	3.00%	3.00%	3.50%
2023	2.50%	3.00%	3.00%	3.00%	3.50%	3.50%
2024	2.50%	3.00%	3.00%	3.00%	3.50%	4.00%
2025	2.50%	3.00%	3.00%	3.00%	3.50%	4.00%

Statutory Reserves



Asset Adequacy Testing

Starting Yield Curves

		1 Year	2 Year	3 Year	5 Year	7 Year	10 Year	20 Year	30 Year
9/30/2019	Treasury Curve	**1.75%**	1.63%	1.56%	**1.55%**	1.62%	**1.68%**	1.94%	**2.12%**
	Bond Yield A	**2.18%**	2.16%	2.19%	**2.36%**	2.57%	**2.75%**	3.24%	**3.66%**
	Bond Yield BBB	**2.47%**	2.51%	2.59%	**2.85%**	3.10%	**3.37%**	4.25%	**5.05%**
	60/40 Blend	**2.30%**	2.30%	2.35%	**2.56%**	2.78%	**3.00%**	3.65%	**4.22%**
9/30/2020	Treasury Yield	**0.12%**	0.13%	0.16%	**0.28%**	0.47%	**0.69%**	1.23%	**1.46%**
	Bond Yield A	**0.54%**	0.67%	0.82%	**1.15%**	1.51%	**1.91%**	2.73%	**3.23%**
	Bond Yield BBB	**1.07%**	1.26%	1.47%	**1.88%**	2.22%	**2.59%**	3.53%	**4.16%**
	60/40 Blend	**0.75%**	0.90%	1.08%	**1.44%**	1.79%	**2.18%**	3.05%	**3.60%**
Change	Treasury Yield	**-1.63%**	-1.50%	-1.40%	**-1.27%**	-1.15%	**-0.99%**	-0.71%	**-0.66%**
	Bond Yield A	**-1.65%**	-1.50%	-1.37%	**-1.21%**	-1.06%	**-0.84%**	-0.52%	**-0.43%**
	Bond Yield BBB	**-1.41%**	-1.25%	-1.12%	**-0.97%**	-0.88%	**-0.78%**	-0.72%	**-0.89%**
	60/40 Blend	**-1.55%**	-1.40%	-1.27%	**-1.12%**	-0.99%	**-0.81%**	-0.60%	**-0.62%**

Bond yields are based on the VM-20 Current Benchmark Spreads (Table F)

Which interest rate scenarios does your company use for cash flow testing? (Check all that apply)

New York Seven

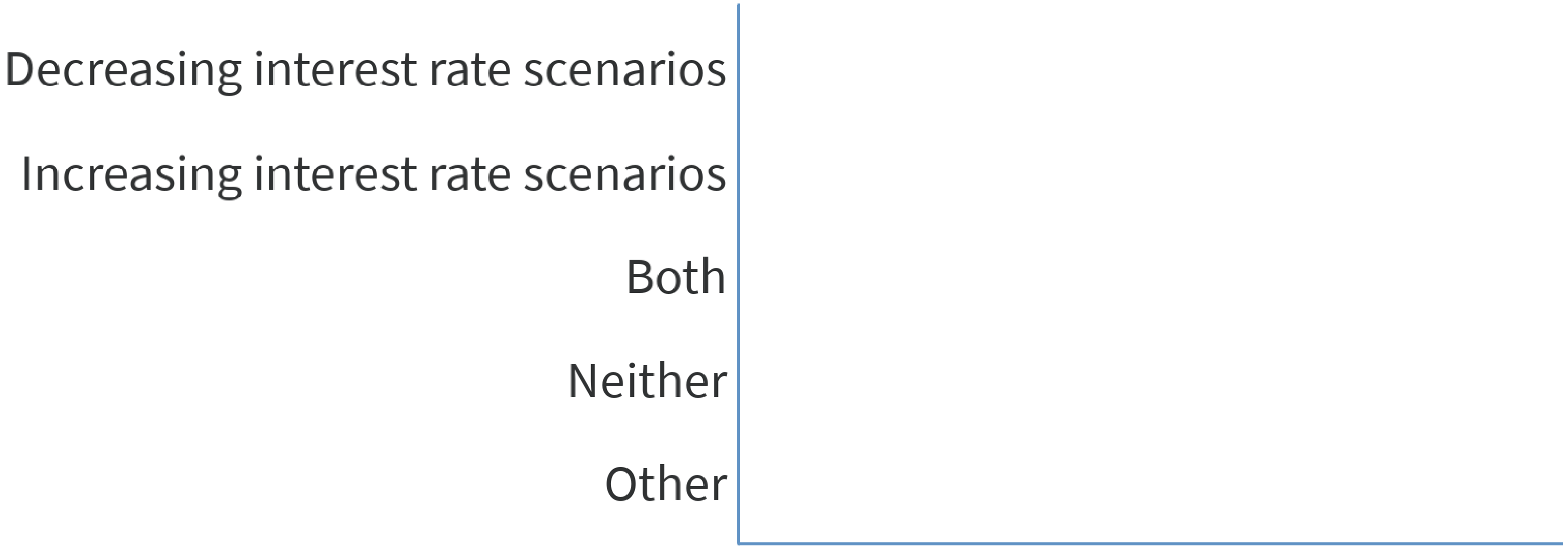
Modern Deterministic Scenarios

Stochastic Scenarios

Other

Don't know

Which interest rate scenarios generate the worst results for your company?



Asset Adequacy Testing

Modern Deterministic Scenarios

New York Seven interest rate scenarios are woefully out of date and very simplistic.

In most states, the interest rate scenarios used for asset adequacy testing are not prescribed by regulation.

Modern deterministic scenarios were developed based on a rigorous statistical analysis of historical interest rates with the following objectives

- Develop deterministic scenarios that can be considered moderately adverse and appropriate for use in asset adequacy testing.
- Designed to dynamically adjust to the current interest rate environment.

Modern deterministic scenarios are less adverse than NY7 with respect to low interest rate scenarios.

Investment Trend Observations in the Low Interest Rate Environment

Extension of Overall Portfolio Duration

Holding Additional Cash or Shorter Securities

Downward Drift in Overall Portfolio Credit Quality

Increased Exposure to Direct Mortgage Loans

Alternative Assets

ASSETS OUTSIDE OF THE TRADITIONAL CORE FIXED

Direct Mortgage Loans

Common Trend Over the Last Five Years

Positive Attributes

- Enhances Net Investment Income
- Provides Monthly Cash Flows

Risk Characteristics

- Developing Concern for Rating Agencies and Regulators
- Optionality Impacts Cash Flows in the Opposite Direction of Standard Liabilities
- Higher AVR Reserve
- Must be Considered in Relation to the Overall Mortgages within the Core Portfolio (MBS/CMO)

What to Consider: Does it fit within a long term investment plan?, Is it an area of key expertise?, What level of optionality is there in the core fixed income portfolio?, How does it impact the ALM strategy in a rising rate environment?

Lower Rated Securities

Common Industry Trend (Reason Behind Proposed RBC Changes)

Positive Attributes

- Higher Book Yield

Risk Characteristics

- Higher AVR
- Reduced RBC Levels
- Higher Default Risk

What to Consider: Is any exposure part of a long term investment plan?, How is diversification viewed differently for any lower rated securities?, What is the overall exposure to credit risk?

Higher Exposure to Common Stock

Positive Attributes
- Long Term and Consistent Exposure Enhances Surplus
- Provides Diversification

Risk Characteristics
- Not Appropriate for Assets within the ALM Strategy
- Statutory Accounting Requires Marked to Market Accounting Treatment
- Creates both Surplus and BCAR Volatility
- Extremely High AVR Factors

What to Consider: Is exposure appropriate considering the level of surplus to assets?, What is the overall exposure to securities that create surplus volatility (surplus volatility analysis)?, How does exposure impact the ALM strategy?

Structured Fixed Income

Positive Attributes

- Higher Book Yield
- Diversification

Risk Characteristics

- Volatility in Future Cash Flows
- Unique Statutory Regulations
- Structure Risk
- Regulatory and Perception Risk

What to Consider: Overall exposure and diversification, What is the overall cash flow understanding and transparency?, What is the exposure to optionality within the core portfolio?

Private Placements

Positive Attributes

- Higher Book Yield
- Appropriate Securities for Assets Supporting the ALM Strategy

Risk Characteristics

- Higher Liquidity Risk
- Higher Analysis Cost and NAIC Filings
- Statutory Pricing Difficulties

What to Consider: How does the overall ALM picture look in relation to increased liquidly risk (Is there high volatility in the lability cash flows)?

Real Estate

Positive Attributes

- Higher Book Yield
- Diversification

Risk Characteristics

- State Limitations
- Limited use as Assets within the ALM Strategy
- Higher AVR
- Higher Liquidity Risk

What to Consider: How does the ALM position look without these assets?, How does exposure impact surplus considering AVR?, How is diversification by issuer maintained?

Additional Considerations

The Investment Plan Should have Consistency (Avoid Reaction to the Environment)

Alternative Assets can have a Dramatic Impact on RBC and AVR (Consider Pending Changes)

Alternative Assets must be Viewed in Light of the Overall ALM Strategy

The Appropriateness of Alternative Assets is very Subject to Specific Insurer Characteristics

Alternative Assets Increase Risk (Mitigated Through Diversification)

Communication between the Asset Manager and the Actuary and Accountants is Mandatory

Increased Complexity in the Cash Flow Testing Asset Assumptions and Design

Competitive Advantage is Highly Dependent upon the History of the ALM Strategy

Interest Rate Setting

How often do you review/modify your crediting interest rates?

At least monthly

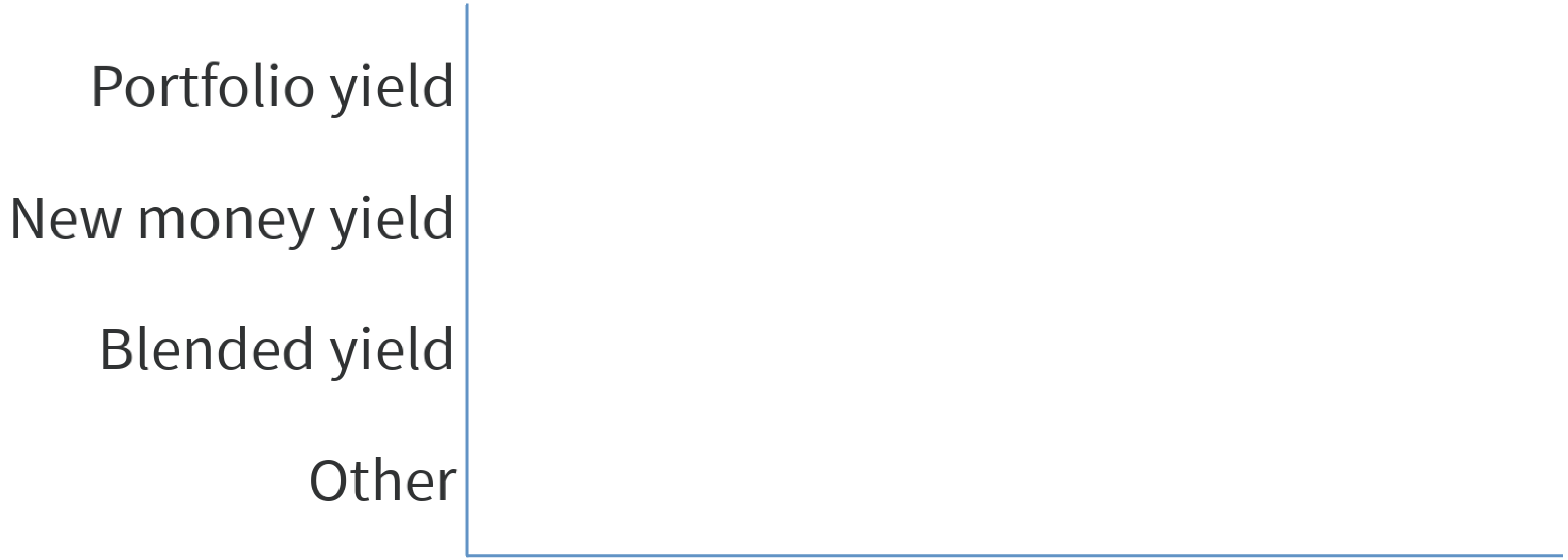
At least quarterly

At least semi-annually

At least annually

As needed/Other

How do you determine crediting rates for new annuity contracts?



How do you set your guaranteed minimum annuity crediting rates?

Statutory minimum

Less than half a point higher than statutory minimum

Half a point or more than the statutory minimum

Other

Guardrails for Portfolio Strategies

Interest rates have fallen rapidly in 2020. This creates the potential for a large differential between the current portfolio yield and yields on new investments.

Metrics for quantifying the impact of interest rate decisions/annuity sales on:

- Portfolio yield
- Crediting rates for in force contracts
- Company profitability

Guardrails for Portfolio Strategies

Case Study Specifications:

- Net Earned Rate on in Force Assets = 4.0%
- Crediting Rate on in Force Business = 3.0%
- Net Yield on New Investments = 2.0%
- Market Interest Rate = 3.0% (crediting rates much below this value will not generate significant premium)

Decision Set for Interest Crediting Rates

A. Set new money rates at a level that won't generate new business and in force crediting rates based on portfolio rate.
B. Set new money and in force crediting rates based on current portfolio yield.
C. Set new money and in force crediting rates based on projected portfolio yield.
D. Set new money rates at a level that won't generate new business and reduce in force crediting rates to match rates established in Scenario C.

Guardrails for Portfolio Strategies

Scenario	Portfolio	Net Earned Rate	Crediting Rate	Assets	Spread	Spread Revenue
A	In Force	4.00%	3.00%	100,000,000	1.00%	1,000,000
	New Business	2.00%	1.00%	0	0.00%	0
	Total	4.00%	3.00%	100,000,000	1.00%	1,000,000
B	In Force	4.00%	3.00%	100,000,000	1.00%	1,000,000
	New Business	2.00%	3.00%	10,000,000	-1.00%	(100,000)
	Total	3.82%	3.00%	110,000,000	0.82%	900,000
C	In Force	4.00%	2.82%	100,000,000	1.18%	1,180,000
	New Business	2.00%	2.82%	10,000,000	-0.82%	(82,000)
	Total	3.82%	2.82%	110,000,000	1.00%	1,098,000
D	In Force	4.00%	2.82%	100,000,000	1.18%	1,180,000
	New Business	2.00%	1.00%	0	0.00%	0
	Total	4.00%	2.82%	100,000,000	1.18%	1,180,000

Guardrails for Portfolio Strategies

Guardrail Examples:

- At a bare minimum, don’t set crediting rates below the net yield on new investments plus some minimum spread.
- Limit sales volumes to limit negative impact to portfolio yield, crediting rates on in force contacts, and/or marginal losses.
- Carefully evaluate long term guarantees in excess of statutory minimums (e.g., limit any such guarantees to the surrender charge period).

Product Strategies

What products does your company offer? (check all that apply)

Fixed annuities (immediate and/or deferred)	A
Indexed annuities (immediate and/or deferred)	B
Universal Life	C
Whole Life	D
Term	E
Other products (i.e. A&H, credit, med supp, etc.)	F

Lessons from Other Economies

Europe:

Like the US, life insurance has been a significant long-term savings tool for affluent markets.

Primary responses:

- Increased focus on core protection products (e.g., death, disability)
- Shift to unit-linked (variable) products
- Partial digitization of distribution

Lessons from Other Economies

Japan:

90% of Japanese households have life insurance (compared to 70% in the US).

Breakdown of Individual Insurance in Force:

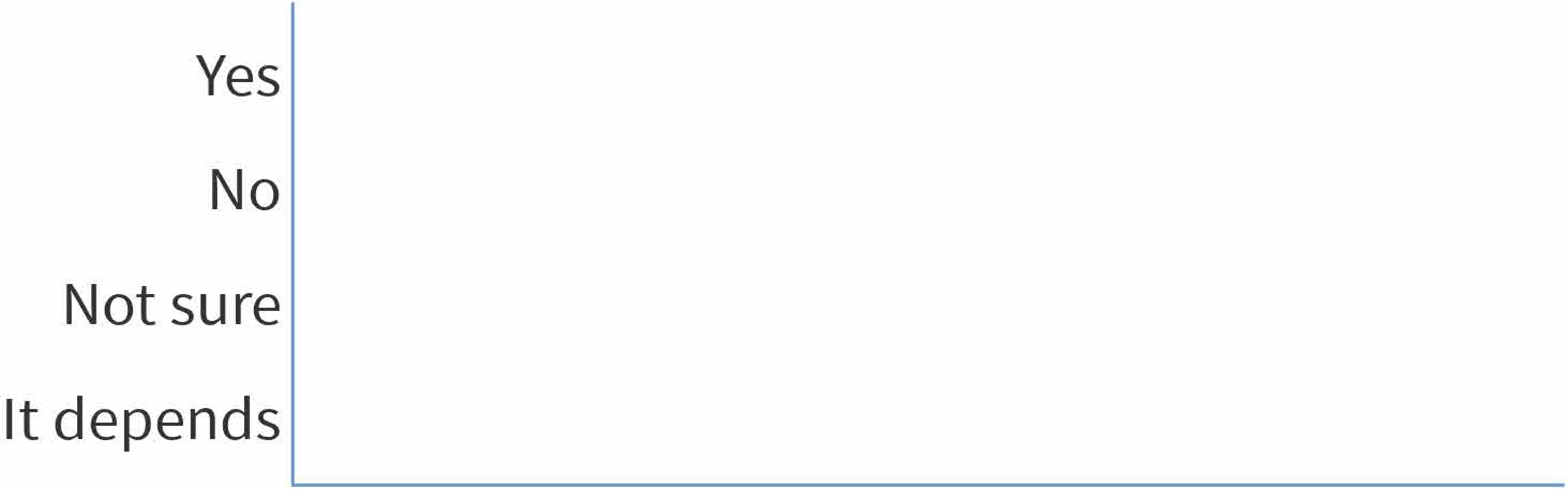
- 31% Whole Life (decreasing)
- 13% Term Life (increasing)
- 8% Endowment Insurance (decreasing)
- 35% Medical/Cancer (increasing)
- 13% Other (decreasing)

21.5 million annuity policies in force in 2017 (general population = 126.8 million)

Foreign currency denominated products (policyholders exposed to exchange rate risk)

Focus on innovative product development (unique product features and value-added services) and identifying new risks. Example: life insurance premium discounts linked to wellness benefits.

Is a crediting rate as low as 1% viable for a fixed annuity (assuming it is competitive with CD's and other annuity rates)?



Fixed Deferred Annuities

Some companies have limited or suspended fixed deferred annuity sales. Yields on well matched asset portfolios aren't very attractive in the current environment.

Interest sensitive lapse risk following the surrender charge schedule limits the prudent investment horizon. Increased focus on the reason that these products are purchased can help reduce interest sensitive lapse risk and extend the investment horizon.

- Wealth Transfer: issue single premium whole life insurance instead
- Income: issue SPIA/DIA instead
- Accumulation: pivot to product designs with longer liability durations such as fixed indexed annuities, reduced liquidity options, or products where the surrender charge resets.

The popularity of short-term products indicates that consumers and/or their agents believe that interest rates are likely to increase in the near future.

Equity Indexed Products

Given the high demand for protection oriented savings products and the additional burdens of selling through registered representatives, equity indexed products (life insurance and annuities) could offer a more compelling value proposition than fixed products to a wider group of consumers in very low interest rate environments.

- Longer surrender charge schedules are easier to sell due to the focus on index participation instead of a fixed crediting rate.
- Expected to outperform fixed products over the long-term.
- As interest rates continue to fall, it may be necessary to offer guaranteed floors less than 0% in order to offer compelling index participation.
- Even with hedging fees, these products still offer substantial principal protection relative to variable products and you don’t have to earn back losses.

Floating Rate Products

Provides a fixed crediting rate/benefit plus a variable component that is linked to an interest rate index (e.g., LIBOR, Federal Funds Rate, etc.).

Examples of deferred annuities in the US and an immediate annuity in Australia.

Can allow for a longer surrender charge period and investment horizon by addressing concerns about missing out on an increase in interest rates.

The guaranteed crediting rate/benefit will typically be lower than the corresponding value for products without this feature.

Other Actions

Increase focus on products with pricing that doesn’t depend significantly on interest rates.

- Term Life Insurance
- Supplemental Health Insurance Products

Reduce mortality costs and customer engagement through wellness programs.

Reduce expenses.

Any Final Questions?

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Kyle.Timmermann@ParkwayAdvisors.com