Asset Duration Management – How Low Should You Go?

GIRO Conference 2014

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25 September 2014
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Our understanding of a typical short-tail insurer:

- A specific duration is not *particularly* targeted, nor positioned for
- It is usually just last year’s position plus or minus 6 months
- Key considerations are often Earnings Volatility and “Don’t be too different from peers”
- Hence, it doesn’t matter what the market environment is, the duration position doesn’t change much!
- Those insurers who do not discount liabilities on their balance sheet are nearly always short duration
  - Usually about 50% short
- But rates exposure is such a key driver of returns for General Insurers
- And the risk of an outsized rates rise has increased
  - surely not optimal to continue “as before”
Sample Duration Positions

Year-end 2013 Sample Duration Profile

Source: Published company information, Mercer assumptions and calculations where:
- Published company information includes year-end 2013 Annual Reports, as well as IPO documentation for Brit
- Assumed liability durations are based on approximate underwriting profiles where not published
Market Update – Rates

US Treasury Yield Curve

Maturity (years)

Date | 3 Mo | 6 Mo | 1 Yr | 2 Yr | 3 Yr | 5 Yr | 7 Yr | 10 Yr | 20 Yr | 30 Yr
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
31/12/2012 | 0.05% | 0.11% | 0.16% | 0.25% | 0.36% | 0.72% | 1.18% | 1.78% | 2.54% | 2.95%
31/12/2013 | 0.07% | 0.10% | 0.13% | 0.38% | 0.78% | 1.75% | 2.45% | 3.04% | 3.72% | 3.96%
29/08/2014 | 0.03% | 0.05% | 0.09% | 0.48% | 0.94% | 1.63% | 2.05% | 2.35% | 2.83% | 3.09%

Source: US Department of the Treasury

25 September 2014
Market Update – Rates

US Treasury Yield Curve (short-end)

<table>
<thead>
<tr>
<th>Date</th>
<th>3 Mo</th>
<th>6 Mo</th>
<th>1 Yr</th>
<th>2 Yr</th>
<th>3 Yr</th>
<th>5 Yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>31/12/2012</td>
<td>0.05%</td>
<td>0.11%</td>
<td>0.16%</td>
<td>0.25%</td>
<td>0.36%</td>
<td>0.72%</td>
</tr>
<tr>
<td>31/12/2013</td>
<td>0.07%</td>
<td>0.10%</td>
<td>0.13%</td>
<td>0.38%</td>
<td>0.78%</td>
<td>1.75%</td>
</tr>
<tr>
<td>29/08/2014</td>
<td>0.03%</td>
<td>0.05%</td>
<td>0.09%</td>
<td>0.48%</td>
<td>0.94%</td>
<td>1.63%</td>
</tr>
</tbody>
</table>

Source: US Department of the Treasury
US Interest Rate Views
Both Short-End and Long-End Appear Mispriced

Market pricing more dovish than the Fed

Though the “dots” showing Fed policymakers’ rate outlook have moved higher, broadly dovish comments by the Fed and other central banks in 1H prompted a rally in rates markets. However, minutes of the July FOMC meeting suggest some Fed officials see rate hikes sooner if data continue to improve.

Treasury demand likely to reduce

Purchases by China and Fed buying have put downward pressure on yields. This buying trend is potentially set to reverse into 2H 2014/1H 2015.

Source: GSAM. The economic and market forecasts presented herein have been generated by GSAM for informational purposes as of the date of this presentation. There can be no assurance that the forecasts will be achieved. These examples are for illustrative purposes only and are not actual results. If any assumptions used do not prove to be true, results may vary substantially. This information discusses general market activity, industry or sector trends, or other broad-based economic, market or political conditions and should not be construed as research or investment advice. This material has been prepared by GSAM and is not financial research nor a product of Goldman Sachs Global Investment Research (GIR). It was not prepared in compliance with applicable provisions of law designed to promote the independence of financial analysis and is not subject to a prohibition on trading following the distribution of financial research. The views and opinions expressed may differ from those of Goldman Sachs Global Investment Research or other departments or divisions of Goldman Sachs and its affiliates. Investors are urged to consult with their financial advisors before buying or selling any securities. This information may not be current and GSAM has no obligation to provide any updates or changes. Confidentiality. No part of this material may, without GSAM’s prior written consent, be (i) copied, photocopied or duplicated in any form, or (ii) distributed to any person that is not an employee, officer, director, or authorized agent of the recipient. ©2014 Goldman Sachs. All rights reserved.
Market Update – Rates

UK Nominal Gilt Curve

<table>
<thead>
<tr>
<th>Date</th>
<th>9 Mo</th>
<th>1 Yr</th>
<th>2 Yr</th>
<th>3 Yr</th>
<th>5 Yr</th>
<th>7 Yr</th>
<th>10 Yr</th>
<th>20 Yr</th>
<th>25 Yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>31/12/2012</td>
<td>0.38%</td>
<td>0.33%</td>
<td>0.31%</td>
<td>0.45%</td>
<td>0.89%</td>
<td>1.32%</td>
<td>1.88%</td>
<td>3.02%</td>
<td>3.33%</td>
</tr>
<tr>
<td>31/12/2013</td>
<td>0.35%</td>
<td>0.37%</td>
<td>0.72%</td>
<td>1.18%</td>
<td>1.99%</td>
<td>2.58%</td>
<td>3.16%</td>
<td>3.73%</td>
<td>3.76%</td>
</tr>
<tr>
<td>29/08/2014</td>
<td>0.39%</td>
<td>0.48%</td>
<td>0.88%</td>
<td>1.21%</td>
<td>1.70%</td>
<td>2.04%</td>
<td>2.39%</td>
<td>2.97%</td>
<td>3.05%</td>
</tr>
</tbody>
</table>

Source: Bank of England
Market Update – Rates

UK Nominal Gilt Curve (short-end)

<table>
<thead>
<tr>
<th>Date</th>
<th>9 Mo</th>
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<th>3 Yr</th>
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<td>0.48%</td>
<td>0.88%</td>
<td>1.21%</td>
<td>1.70%</td>
</tr>
</tbody>
</table>

Source: Bank of England
### Market Update – Rates

**Euro Area Yield Curve**

<table>
<thead>
<tr>
<th>Date</th>
<th>3 Mo</th>
<th>6 Mo</th>
<th>1 Yr</th>
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<th>5 Yr</th>
<th>7 Yr</th>
<th>10 Yr</th>
<th>20 Yr</th>
<th>30 Yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>31/12/2012</td>
<td>0.06%</td>
<td>0.01%</td>
<td>-0.04%</td>
<td>-0.01%</td>
<td>0.13%</td>
<td>0.58%</td>
<td>1.09%</td>
<td>1.72%</td>
<td>2.50%</td>
<td>2.38%</td>
</tr>
<tr>
<td>31/12/2013</td>
<td>0.08%</td>
<td>0.07%</td>
<td>0.09%</td>
<td>0.25%</td>
<td>0.49%</td>
<td>1.07%</td>
<td>1.62%</td>
<td>2.24%</td>
<td>2.93%</td>
<td>2.90%</td>
</tr>
<tr>
<td>29/08/2014</td>
<td>0.00%</td>
<td>-0.03%</td>
<td>-0.06%</td>
<td>-0.05%</td>
<td>0.02%</td>
<td>0.28%</td>
<td>0.59%</td>
<td>1.03%</td>
<td>1.81%</td>
<td>1.84%</td>
</tr>
</tbody>
</table>

Source: European Central Bank

25 September 2014
Market Update – Rates

Euro Area Yield Curve (short-end)

<table>
<thead>
<tr>
<th>Date</th>
<th>3 Mo</th>
<th>6 Mo</th>
<th>1 Yr</th>
<th>2 Yr</th>
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<td>0.25%</td>
<td>0.49%</td>
<td>1.07%</td>
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<tr>
<td>29/08/2014</td>
<td>0.00%</td>
<td>-0.03%</td>
<td>-0.06%</td>
<td>-0.05%</td>
<td>0.02%</td>
<td>0.28%</td>
</tr>
</tbody>
</table>

Source: European Central Bank

25 September 2014
What’s driving Central Banks?

Taylor 1999 Rule (“Taylor’s Rule”):

Appropriate policy rate = neutral real policy rate + inflation + 0.5 * inflation gap + 2.3 * unemployment rate gap

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>US</th>
<th>UK</th>
<th>EU</th>
<th>JP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral nominal policy rate</td>
<td>3.8%</td>
<td>5.0%</td>
<td>3.0%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Neutral real policy rate</td>
<td>1.8%</td>
<td>3.0%</td>
<td>1.0%</td>
<td>-1.5%</td>
</tr>
<tr>
<td>Inflation target</td>
<td>2.0%</td>
<td>2.0%</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>NAIRU</td>
<td>5.4%</td>
<td>5.1%</td>
<td>8.6%</td>
<td>3.5%</td>
</tr>
</tbody>
</table>

The US will likely start taking its foot off the gas ...

The UK will likely start applying the brakes the fastest ...

Source: Bloomberg and BlackRock at 24 July 2014
Market Update – Credit

Option-Adjusted Spread - US

* Source: Barclays Live - US Aggregate Corporate Index
Market Update – Credit

Option-Adjusted Spread - Europe

*Source: Barclays Live - Euro-Aggregate Corporate Index*
Market Update – Credit

Option-Adjusted Spread - US v Europe (31/08/2014)

* Source: Barclays Live - Euro-Aggregate Corporate Index and US Aggregate Corporate Index
Option-Adjusted Spreads – as at 22/09/2014

*Source: Barclays Live - Euro-Aggregate Corporate Index and US Aggregate Corporate Index*
Relative value opportunities

- Given the low-rate environment, insurers are searching for enhanced yield
- Every little helps

<table>
<thead>
<tr>
<th>Potential asset classes offering value</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA-rated CMBS</td>
<td>Still pricing wide of BBB-rated US corporate bonds</td>
</tr>
<tr>
<td>AAA-CLOs</td>
<td>Offering great value on an economic basis. Pity about Solvency II treatment.</td>
</tr>
<tr>
<td>Emerging Market BBB-rated corporate debt</td>
<td>Currently yielding c.120bps higher than Developed Market BBB-rated corporate bonds</td>
</tr>
</tbody>
</table>
## What can insurers do to mitigate interest risk?

<table>
<thead>
<tr>
<th>Sample Options</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute return bond strategies</td>
<td>Delegate the investment decisions to an external manager (interest rate, credit spread, currency and opportunity set)</td>
</tr>
<tr>
<td>Option-based strategies</td>
<td>Little upside from interest rates falling from current levels! So sell this to fund downside protection</td>
</tr>
<tr>
<td>Curve Roll-down</td>
<td>Don’t just roll with the index</td>
</tr>
<tr>
<td>Increase the carry in the portfolio</td>
<td>Avail of the illiquidity premium available in specific asset classes</td>
</tr>
<tr>
<td>Increase the investible universe</td>
<td>• Geographic diversification</td>
</tr>
<tr>
<td></td>
<td>• Add alternative sources of alpha to the portfolio and enhance the diversification across risk drivers</td>
</tr>
<tr>
<td>Barbell</td>
<td>e.g. long credit and short overall duration</td>
</tr>
<tr>
<td>Tail risk overlay</td>
<td>Employ a specialist manager using market signals to dictate when to hedge</td>
</tr>
</tbody>
</table>
**Risk budget**

- **FIRST** - How much risk can you afford?
  - Let’s not be fooled by past averages
    - A 1% rise from current levels is **not** a 1-in-200 year event

- **Do you care about the rating agencies?**
  - S&P assume a 1.5 year mismatch as a minimum
  - Don’t give much benefit to diversification
  - Have some odd treatments of physicals vs. derivatives

- **Do you care about the Capital treatment?**
  - Under Solvency II, diversification wins – for 3-year liabilities, it doesn’t matter whether you are hedged or not from a 1-year capital perspective
In which scenarios do you win and in which do you lose?

Source: US Department of the Treasury as at 31/12/2013

Note: All strategies yield the same market-implied return
Interest rates – Curve Roll-down

US Treasury Yield Curves

• The smarter “lower-for longer” bet
• Take advantage of steep yield curves, but allow your risk to run-off
• Better than just being lazy-long the index?
Boost your Carry - Case Study 1

<table>
<thead>
<tr>
<th></th>
<th>Expected Profit</th>
<th>Prob. Of Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment Profit with Current Portfolio</td>
<td>£17m</td>
<td>15%</td>
</tr>
<tr>
<td>Investment Profit with Current Portfolio (and increased carry)</td>
<td>£30m</td>
<td>10%</td>
</tr>
</tbody>
</table>

- Increased carry in portfolio provides a cushion against rates volatility

This chart shows the full quartile outcomes from the current and proposed portfolios

Potential Spread of Investment Profit

- 75th-95th Percentile
- 50th-75th Percentile
- 25th-50th Percentile
- 5th-25th Percentile
- 1st-5th Percentile
Bar-belling – Case Study 2

• Split matching portfolio into 2 conceptual segments
  – Say 1-3 year and 3-7 year
  – Look at balances and blends between cash / corporate bonds /
    government bonds for these segments separately
  – Be long credit risk in US$ where spread curve is steep
  – Be shorter credit risk in EUR
  – Use swaps / futures / FX to tailor currency and rates exposures
  – Balance long credit with short duration?
Enabled Risk Taking

Tools and levers are available to insurers but in this current market environment, a well-defined Risk Appetite Statement is required to enable insurers to enhance investment returns.
Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenters.