Can an Eye on Investment Markets Smooth your Balance Sheet?

Daniel Banks and Punil Chaubal
River and Mercantile Solutions
About us
Questions we will answer

Can insurers improve stability of profits by looking through other lenses?

- Should insurers include dynamic asset allocation as part of their investment mandate?
- How can insurers develop a more holistic approach that considers assets and liabilities in tandem?
- Can investment return be improved without taking additional economic risk?
Background

Challenges of underwriting non-life insurance
Themes in underwriting personal lines insurance

• Underwriting personal lines insurance continue to face challenges

• Some recent good news for motor insurers with Ogden revisions and the Civil Liability Bill
Poor historical market performance

- Motor insurance is increasingly competitive with tight margins, but provides insurers with premium volume
- Home insurance is facing greater challenges around rates and digitisation

Source: ABI General Insurance Overview Statistics
The importance of investment income

Source: Bloomberg – 2017 Average Combined Ratio calculated on sample of six personal lines insurers from FTSE non-life insurers
Traditional asset classes are low yielding today

Yields for short dated Gilts and Investment Grade Bonds

Average investment income for UK personal lines insurers

This has reduced investment income

Source: Bloomberg – Average investment income for UK personal lines insurers based on sample of six personal lines insurers from FTSE non-life insurers
Dynamic Asset Allocation

Inclusion of flexible investment mandates
Should insurers rethink their investment mandates?

Typical considerations for setting investment mandates

- Solvency Capital Requirement
- IFRS Volatility
- Liquidity
- Static investment mandate

If we take SCR then it does give you the benefit of a "price" for risk

Optimising under these constraints may not always provide the best outcome
Case for dynamic asset allocation

• Consider an insurer with an investment portfolio comprising entirely of investment grade bonds.

<table>
<thead>
<tr>
<th></th>
<th>Corporate Bonds</th>
<th>High Yield Bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historical Compound Annual Return</td>
<td>3.3%</td>
<td>7.2%</td>
</tr>
<tr>
<td>Annualised Volatility (Actual)</td>
<td>1.8%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Maximum Drawdown</td>
<td>-1.7%</td>
<td>-33.6%</td>
</tr>
</tbody>
</table>

Over the same period High Yield bonds provided nearly twice as much return.

But we cannot ignore the huge increase in volatility or drawdown!

Standalone Market Risk SCR = 11%
Standalone Market Risk SCR = 35%

Source: Merrill Lynch Sterling Broad Market Investment Grade Bonds 1-5 Years and Global High Yield indices for the period Jan 2007 to Jun 2018
Note: Standalone SCR have been estimated assuming 10 year duration bonds with A and BB ratings for Corporate Bonds and High Yield respectively.
Case for dynamic asset allocation

• How can insurers access a riskier asset class like High Yield without increasing risk?
Case for dynamic asset allocation
Case for dynamic asset allocation

- Inclusion of a dynamic mandate allowing up to 25% allocation in High Yield:

Through allocation to High Yield Bonds at opportune times investment return and risk characteristics improve significantly, compared to investing only in High Yield Bonds.

<table>
<thead>
<tr>
<th></th>
<th>Corporate Bonds</th>
<th>High Yield Bonds</th>
<th>Dynamic Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historical Compound</td>
<td>3.3%</td>
<td>7.2%</td>
<td>4.5</td>
</tr>
<tr>
<td>Annualised Volatility</td>
<td>1.8%</td>
<td>10.0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Maximum Drawdown</td>
<td>-1.7%</td>
<td>-33.6%</td>
<td>-1.7%</td>
</tr>
</tbody>
</table>

Source: Merrill Lynch Sterling Broad Market Investment Grade Bonds 1-5 Years and Global High Yield indices for the period Jan 2007 to Jun 2018
Case for dynamic asset allocation – impact to profits

• Assuming that an insurer has the following income statement and risk profile:

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Earned Premium</td>
<td>£750m</td>
</tr>
<tr>
<td>Claims</td>
<td>-£600m</td>
</tr>
<tr>
<td>Expenses (25% of Net Earned Premium)</td>
<td>-£188m</td>
</tr>
<tr>
<td>Underwriting Results</td>
<td>-£38m</td>
</tr>
<tr>
<td>Investment Income Corporate Bonds on £1bn Investment Portfolio</td>
<td>+£33m</td>
</tr>
</tbody>
</table>

SCR expressed as a percentage of total investment portfolio. Total SCR reflects total diversified SCR calculated under standard formula, assuming approximate industry average standalone SCRs for underwriting, default and operational risks.
Case for dynamic asset allocation – impact to profits

• Assuming that an insurer has the following income statement and risk profile:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Earned Premium</td>
<td>£750m</td>
</tr>
<tr>
<td>Claims</td>
<td>-£600m</td>
</tr>
<tr>
<td>Expenses (25% of Net Earned Premium)</td>
<td>-£188m</td>
</tr>
<tr>
<td>Underwriting Results</td>
<td>-£38m</td>
</tr>
<tr>
<td>Investment Income Corporate Bonds on £1bn Investment Portfolio</td>
<td>+45m</td>
</tr>
</tbody>
</table>

Total SCR = 23%

SCR expressed as a percentage of total investment portfolio. Total SCR reflects total diversified SCR calculated under standard formula, assuming approximate industry average standalone SCRs for underwriting, default and operational risks.
Allowing for dynamic allocation can improve profits

Case for dynamic asset allocation?
Developing a holistic approach to asset allocation
What does a holistic approach mean?

- What risks impact assets and liabilities and how are they really correlated?
- How does this relationship change over time?
- For example, what economic risks can impact both sides of an insurer’s balance sheet?

Traditional framework vs. Holistic approach:
- Economic risks within investment portfolios?
- Reserve risk, underwriting risk, economic risk?
Correlations between assets and liabilities

1. Solvency II suggests market and underwriting are positively correlated

<table>
<thead>
<tr>
<th></th>
<th>Market</th>
<th>Default</th>
<th>Life</th>
<th>Health</th>
<th>Non-Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default</td>
<td>25%</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life</td>
<td>25%</td>
<td>25%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Non-Life</td>
<td>25%</td>
<td>50%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

*EU Commission Level 2 - Delegated Acts

2. But to paint a different picture…

<table>
<thead>
<tr>
<th></th>
<th><strong>Motor Underwriting</strong></th>
<th><strong>Property Underwriting</strong></th>
<th>FTSE 100 Returns</th>
<th>Corporate Bonds Returns</th>
<th>Property Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Underwriting</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property Underwriting</td>
<td>12%</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTSE 100 Returns</td>
<td>-32%</td>
<td>10%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate Bonds Returns</td>
<td>-48%</td>
<td>-3%</td>
<td>72%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Property Returns</td>
<td>-4%</td>
<td>20%</td>
<td>49%</td>
<td>19%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Historic correlation from 2007 – 2016 for ABI statistics vs Bloomberg asset returns

Some assets classes can exhibit negative correlation to underwriting risks, but this relationship will change over time
Comparing historic performance for motor insurance with three common asset classes to Equities, Corporate Bonds and Property, illustrates why we observe negative correlations.

We also observe what could be considered as a lagged correlation e.g. in 2009 ABI data highlights losses of similar magnitude as Equities in 2008.
Power of diversification

- Diversification benefit between asset and underwriting performance can be greater than diversification with investment portfolios.

<table>
<thead>
<tr>
<th>Standalone Volatilities</th>
<th>Equities</th>
<th>Diversified Volatility</th>
<th>Diversification Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor UW</td>
<td>6.2%</td>
<td>15.5%</td>
<td>7.3%</td>
</tr>
<tr>
<td>Corporate Bonds</td>
<td>3.5%</td>
<td>15.5%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Property</td>
<td>12.1%</td>
<td>15.5%</td>
<td>12.0%</td>
</tr>
</tbody>
</table>

Source: Bloomberg - Merrill Lynch Corporate Bonds Index, CBRE UK All Property and FTSE 100 Total Returns for Jan 2007 to December 2016.

Should insurers consider underwriting as an asset class?
Harnessing underwriting data for asset allocation

How can insurers link their big data to their investment allocation?

Data available for asset allocation
- Economic, Social and Governance data
- Historic data
- Investment factors
- Economic conditions
- Historic data

Data available for underwriting
- Behavioural data sets
- Telematics
- Claims
- Fraud detection
- Policyholder trends
- Social network analysis
- Block chain

Underwriting should be another asset class insurers compare to investment assets
Conclusions

• Underwriting personal lines continues to be challenging, as such, insurers should prioritise investment income to aid profitability.

• Asset allocation should consider the broader relationship between asset classes and underwriting returns, in turn allowing for non-traditional asset classes to be considered.

• Insurers should develop a holistic process for evaluating their investment allocation decisions taking into account relevant metrics, such as returns, capital and risk.

• There is always scope for making investment portfolios work harder for insurers, particularly if a dynamic approach to portfolio allocation is used.
The views expressed in this presentation are those of invited contributors and not necessarily those of the IFoA. The IFoA do not endorse any of the views stated, nor any claims or representations made in this [publication/presentation] and accept no responsibility or liability to any person for loss or damage suffered as a consequence of their placing reliance upon any view, claim or representation made in this [publication/presentation].

The information and expressions of opinion contained in this publication are not intended to be a comprehensive study, nor to provide actuarial advice or advice of any nature and should not be treated as a substitute for specific advice concerning individual situations. On no account may any part of this [publication/presentation] be reproduced without the written permission of the IFoA [or authors, in the case of non-IFoA research].