Fundamentally re-thinking ALM

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What we hear when we discuss general insurance investment...
The ideal: Risk Based Capital
Constrained Portfolio Management

- Clear investment objective driving investment strategy
- Focus on economic value not accounting profits
- Risk appetite clearly expressed
- Clear governance within set risk limits
- Transparent view of risk and relevant performance

Jargon Buster

- Funding
- Liquidity
- Capital

- RWA
- Leverage
- Spread

"Give me a lever long enough and a place to stand and I will move the entire earth", Archimedes
A step back:
The competitive landscape

Pressure on banks

Volcker rule

| Source: CGFS Paper No 52 “Market making and proprietary trading: industry trends, drivers and policy implications” | 6 |
Implications

Reduced leverage

Falling inventory

Lower turnover

Source: CGFS Paper No 52 “Market making and proprietary trading: industry trends, drivers and policy implications”

Knock-on effect for hedge-funds

Strategy return

IRR 10%

L+150

6 * leverage

Cost L+25

Strategy return

IRR 5.5%

L+150

6 * leverage

Cost L+100


Private equity – loan-on-loan finance

- Purchased at large discount
- Returns through restructure and onward sale
- Non-performing loans L+[700]
- Equity (35%)
- Loan-on-loan 65%
- L+350
- IRR = 15% (L+1350)
- 5 year loan vs. longer dated loans
- Refinancing risk

Source: Cushman and Wakefield “European Real Estate Lending Market” February 2015

So who can fill the gap

Long-term investors. Market participants with medium- or long-term investment horizons, such as pension funds, life insurance companies and reserve managers, tend to be less sensitive to changes in liquidity conditions. In principle, these market players are well positioned to mitigate the impact of reduced market-making supply during times of temporary order imbalances, e.g., by buying assets at depressed levels or by lending out their inventory to support market-makers.

Yet, once the current environment of monetary accommodation is changing, more prudent investment policies in the aftermath of the global financial crisis may encourage a structural shift towards investing in less risky and more short-term instruments, possibly accentuating the impact of reduced risk-taking by dealers. This shift comes in addition to ongoing accounting and regulatory changes to improve transparency and solvency. Greater use of fair value accounting under IFRS, for example, may limit the scope for taking long-term or illiquid assets on balance sheet, particularly during times of elevated market volatility. Likewise, higher risk charges may disincentivise allocations to corporate bonds.

Source: CGFS Paper No 52 “Market making and proprietary trading: industry trends, drivers and policy implications”
The opportunity for insurers

Allocating the cost of funding

- Insurance liabilities
- Liability benchmark portfolio
- Investment portfolio

"Risk-free" – X Underwriting profit
Risk-free rate
“Risk-free” + spread / excess return

Liquidity needs and duration profile
Basis risk vs. liability discounting
Return vs. marginal capital

Libor - CRA

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Liquidity needs and duration profile
Basis risk vs. liability discounting
Return vs. marginal capital

23/11/2015
Insurance vs. market risk

Excess return (spread)  
25 bpa

Return on marginal capital  
<table>
<thead>
<tr>
<th>Stand-alone</th>
<th>Diversified</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0%</td>
<td>13.6%</td>
</tr>
</tbody>
</table>

Examples ...

“Float” Funding @ 2.2% (T-bills - 3%)

Leverage 1.6-1

Information ratio 0.66

<table>
<thead>
<tr>
<th>Year</th>
<th>Float of year</th>
<th>Average cost of float</th>
<th>Excess return (spread)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975-1980</td>
<td>0.70</td>
<td>1.67</td>
<td>-4.59</td>
</tr>
<tr>
<td>1981-1985</td>
<td>0.50</td>
<td>1.00</td>
<td>-1.27</td>
</tr>
<tr>
<td>1986-1990</td>
<td>0.60</td>
<td>2.07</td>
<td>-1.16</td>
</tr>
<tr>
<td>1991-1995</td>
<td>0.60</td>
<td>3.21</td>
<td>-1.00</td>
</tr>
<tr>
<td>1996-2000</td>
<td>0.60</td>
<td>2.36</td>
<td>-1.00</td>
</tr>
<tr>
<td>2001-2005</td>
<td>0.60</td>
<td>1.36</td>
<td>-0.82</td>
</tr>
<tr>
<td>2006-2011</td>
<td>0.60</td>
<td>4.00</td>
<td>-0.84</td>
</tr>
<tr>
<td>Full sample</td>
<td>0.60</td>
<td>2.20</td>
<td>-0.84</td>
</tr>
</tbody>
</table>

1965-2014

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>19.4% p.a.</td>
<td>21.6% p.a.</td>
<td>9.9% p.a.</td>
</tr>
<tr>
<td></td>
<td>751,113%</td>
<td>1,826,163%</td>
<td>11,196%</td>
</tr>
</tbody>
</table>

Examples …

**Assumptions in business model**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Portfolio yield</td>
<td>6%-7%</td>
</tr>
<tr>
<td>Cost of funds/reserves</td>
<td>3%-4%</td>
</tr>
<tr>
<td><strong>Net spread</strong></td>
<td>2%-4%</td>
</tr>
<tr>
<td>Overheads &amp; taxes</td>
<td>1%-2%</td>
</tr>
<tr>
<td>Operating income</td>
<td>1%-3%</td>
</tr>
<tr>
<td>Capital / reserves</td>
<td>7%-10%</td>
</tr>
</tbody>
</table>

**Return on equity illustration**

<p>| | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td>$1,500</td>
</tr>
<tr>
<td>Reserves</td>
<td>$1,400</td>
</tr>
<tr>
<td>Capital [7%]</td>
<td>$100</td>
</tr>
<tr>
<td>Liabilities</td>
<td>$1,500</td>
</tr>
</tbody>
</table>

**Income statement**

<p>| | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Investment income [6%]</td>
<td>$90</td>
</tr>
<tr>
<td>(Cost of reserves [3.5%])</td>
<td>($49)</td>
</tr>
<tr>
<td>Spread income</td>
<td>$41</td>
</tr>
<tr>
<td>Overheads &amp; taxes [1.5%]</td>
<td>($21)</td>
</tr>
<tr>
<td>Operating income</td>
<td>$20</td>
</tr>
<tr>
<td>Return on equity</td>
<td>20%</td>
</tr>
</tbody>
</table>


Examples …

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Source: Fosun International 2014 Annual Results Presentation
Where structural premiums originate

- Not all investors are in an equal position!

- Rationale for structural investor specific advantages are:
  1. **Illiquidity** - It is difficult to trade out of the positions during life of the transaction.
  2. **Complexity** - Trades require significant structuring expertise and due diligence, which must be compensated.
  3. **Cost of funding** - Funding cost of participants active in the market may be larger than for insurer
  4. **Regulatory** - Regulatory constraints can increase cost of consuming risk for aggregate participant, often via mismatches between economic and regulatory capital requirements
  5. **Size** – Some illiquid trades come in large sizes and are typically accessible only to large institutional investors
How liabilities enter the picture

Liability cashflows \times \text{(swap implied) discount factors}

- The present value of a liability is the projected cashflows discounted at the relevant discount rate
- For the economic basis this discount rate is implied from the interest rate swap market
- Therefore there is market risk embedded in liabilities as changes in swap rates result in changes in liability

How we manage liability risk

- Liability value is calibrated to market instruments (IRS + potentially others)
- Can construct a portfolio of swaps that offsets any change in market value of the liabilities due to market movements
- Will need to receive the fixed rate on the swaps to match the fixed liability payments – leaves us with a floating rate payment
- Floating rate is 6 month LIBOR – this is the effective liability funding rate
- The market risk exposure of the liabilities have been matched by a portfolio of assets and we have to make regular LIBOR-linked payments
What that means for the assets

- Investment objective is to invest in assets to meet the liability funding rate of LIBOR
- Return in excess of this will add to the surplus
- Need to be aware of and able to manage the risk taken to earn this target
- Effectively a risk constrained absolute return investment objective

Risk Constrained Assets

Focusing on the risk/required capital constrained assets.

The investment objective becomes one of allocating risk/capital budget to assets that are expected to offer excess returns for their given risk

- Property
  - Dependent on liquidity surplus
- Multi-strategy diversified growth funds
  - Low volatility return generation

Fixed Income
  - This is what we will focus on for the rest of the presentation
Analysing Fixed Income Returns

Spread is excess return over the liability valuation rate but need to hold RBC for risk of this widening

Allocate risk capital to assets that you judge to offer good excess returns for given Risk Based Capital you will be required to provision

Spread can be further broken down

IR matches against the IR exposure embedded in liability valuation via valuation rate

Bond yield can be decomposed into Interest Rate and Spread

Economic Capital for Spread Risk

• Credit spread volatility curve is downward sloping
• Viewed in market value terms the RBC required increases with longer maturity and lower credit rating
Using Derivatives

- Derivatives are a useful tool for risk management
- Fixed income securities contain various risks
  - credit risk
  - interest rate risk
  - exchange rate risk (if denominated in a foreign currency) and
  - inflation risk (if payments are linked to inflation)
- Derivatives allow you to manage these risks and isolate the credit risk. This is where we want to spend our risk based capital, allowing us to take the risks we want to with the aim of earning returns in excess of our target rate.

Break-even target asset return

- We have shown that the liability value grows at LIBOR (less CRA)
  - Leaving LIBOR as the asset target return to keep up with the liabilities
- We also need to consider the market risk of the assets
  - And the RBC we need to provision for this risk
  - This capital that has been provisioned needs to be remunerated
- This leads to target return over a time horizon to meet the liabilities and remunerate the capital provisioned for market risk

\[
\text{Breakeven return} = \text{LIBOR} + RBC \times \text{CoC} \times \text{diversification}
\]

Returns in excess of this breakeven rate add economic value as it delivers asset value gains over and above what is required to meet the liability and the cost of capital for the risk taken.
Considerations - Portfolio Composition

Given the investment objective to maximise return relative to economic risk (or return for an amount of Risk Based Capital) what needs to be considered when composing a portfolio?

Some caveats

- Actual returns are retrospective
- Expected returns are prospective and subjective
- Neither are the same thing as yields or spreads
- But yields/spreads are useful for illustration purposes as it is transparent, objective and simple. Avoids the subjectivity from overlaying investment views

Governance and Discretion

- Liability exposures to be matched can be communicated in terms of interest rate, inflation and liquidity
- Risk appetite made explicit in terms of company aligned metrics such as RBC, counterparty limits, liquidity, etc.
- This leaves the manager free to utilise risk budget for opportunities that provide good excess returns
- Discretion gives ability take advantage of and benefit from dislocations in the market and relative value opportunities
- Transparent risk and performance reporting

[Diagram showing the flow of liability exposures, risk limitations, and manager discretion]
Example 1 – UK Government Bonds

- Risk Based Capital increases with credit duration
- The spread curves flatten off at the long (high RBC) end
- Want to position such that we can maximise return vs risk
- Forward credit spread exposures can be more efficient than plain long only

Example 2 – Swiss AAA Covered Bonds

- The Swiss National Bank applied a currency floor of the EUR CHF exchange rate to stop the CHF strengthening
- In Jan 2015 the Swiss National Bank abandoned the peg and cut its target interest rate to -0.75%
- This unexpected and abrupt move caused market dislocations
Example 2 – Swiss AAA Covered Bonds

- The white curve shows the spread of a short dated AAA Swiss covered bond
- The yellow curve shows the spread of a longer-dated 15 year bond from the same issuer
- As shown in the graph, the spread of the short-dated bond widened whereas the long-dated bond did not move as much ⇒ it’s not a credit quality related spread move
- At the same time the cross currency basis widened significantly

Source: Bloomberg

Example 3 – XCCY Relative Value

Corporates issue bonds in multiple currencies
- Facilitates currency specific funding needs
- Increases and diversifies the investor base
- Relative funding value

Valuations across currencies vary as local investor sentiment and local liquidity conditions amongst other factors change.

The underlying credit risk remains the same

This provides opportunities to buy in another currency swapped back to liability currency
Recap

- Investment objective is to target economic value when investing
- Target excess returns compared to liability funding rate
- Need to provision (and remunerate) capital for market risk taken
- Clear risk aligned investment mandates delineates overlapping issues
- Matching market exposures of the liabilities with a portfolio of derivatives, we are left with a risk constrained absolute return asset portfolio
- Target is to meet liabilities and pay for the capital provisioned (which is itself a function of the assets held)
- A bond is a package of risks. Derivatives can isolate these risks and allow better investment outcomes
- Insurers have a structural investment advantage in some markets

Questions

Comments

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