Professional Indemnity Forum 2009
An Actuary's Analysis
7 July 2009
Section one

Profitability – Stability and Turmoil
Impact of Solvency II
Top Tips – How to get things right
Profitability – Stability and Turmoil
Impact of underwriting cycle on profitability

Market pricing cycle clearly impacting UK Professional Indemnity insurance

Source: 2009 FSA return data
Profitability – Stability and Turmoil

Observed rate change

Prices have dropped approximately 20% over 2004 - 2008

Source: PwC estimates
Impact of underwriting cycle and observed rate change

There is a clear connection between observed ULR’s and rate changes.

Source: ULR’s - 2009 FSA return data
Relative exposure – PwC estimates
Observed Claims Inflation

Extremely subjective – difficult to assess either prospectively or retrospectively.

An implied claims inflation can be derived considering the following relationship:

\[
ULR_{x+1} = ULR_x \times \frac{1 + c_{x \rightarrow x+1}}{1 + r_{x \rightarrow x+1}}
\]

\[
c_{x \rightarrow x+1} = \left[ \frac{ULR_{x+1}}{ULR_x} \times (1 + r_{x \rightarrow x+1}) \right] - 1
\]

Reasons for the implied negative claims inflation over 2006 – 2007?

<table>
<thead>
<tr>
<th>Year</th>
<th>UWY (x)</th>
<th>(\frac{ULR_{x+1}}{ULR_x})</th>
<th>(r_{x \rightarrow x+1})</th>
<th>(c_{x \rightarrow x+1})</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>108%</td>
<td>-9.3%</td>
<td>-2.1%</td>
<td></td>
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<td>2007</td>
<td>107%</td>
<td>-8.5%</td>
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Profitability – Stability and Turmoil

Observed Claims Inflation

<table>
<thead>
<tr>
<th>Year</th>
<th>UWY</th>
<th>ULR_{x+1}</th>
<th>r_{x\rightarrow x+1}</th>
<th>C_{x\rightarrow x+1}</th>
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Profitability – Stability and Turmoil

Impact of recent market turmoil

Potential impact on both future years and historical underwriting years
Profitability – Stability and Turmoil

Impact of recent market turmoil - Scenario

Gross ULR’s could easily hit 90% by 2010.

All else being equal

Assumes 2006 – 2010 are ‘Non-Event’ years

<table>
<thead>
<tr>
<th>UWY</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009 &amp; 2010</th>
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</thead>
<tbody>
<tr>
<td>Rate Change</td>
<td>-9.3%</td>
<td>-8.5%</td>
<td>4.1%</td>
<td>0%</td>
</tr>
<tr>
<td>Claims inflation</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
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</tbody>
</table>
Key risks and uncertainties - Identification

Risk / uncertainty

- Property Crash
- Economic Recession
- Financial Crisis
- Market Pricing Cycle
- Lower Investment Returns

- Claims Inflation
- Rate Change

Profitability

PI market - an actuary's analysis
PricewaterhouseCoopers LLP
July 2009
## Profitability – Stability and Turmoil

### Key risks and uncertainties – Measurement and management

<table>
<thead>
<tr>
<th>Risk / uncertainty</th>
<th>Measurement</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Crash</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic Recession</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Crisis</td>
<td></td>
<td></td>
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<tr>
<td>Market Pricing Cycle</td>
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<tr>
<td>Lower Investment Returns</td>
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*Slide 12: PI market - an actuary’s analysis, PricewaterhouseCoopers LLP, July 2009*
Section two

Profitability – Stability and Turmoil
Impact of Solvency II
Top Tips – How to get things right
Impact of Solvency II

Solvency II requires insurers to implement and embed an integrated risk management framework ("RMF").
Placing a risk dimension at the heart of the organisation. Risk is core consideration when setting strategy, formulating business plans, managing performance and rewarding management success.

Identification and assessment of all (current and emerging / desired and undesired) risk faced by the organisation. Robust processes in place to aggregate and prioritise risks on an enterprise wide basis.

Governance structure (“three lines of defence” model emerging as industry norm). Senior management accountability and responsibility for “top tier” risks. Clear risk management policies and procedures for managing all material risks.

Internal risk and capital models at the heart of the ERM framework. Models meet highest quality standards, appropriately calibrated (“real time”) and fully tested and documented. Models subjected to independent scrutiny and validation.

Required level of MI to support ERM framework. MI appropriately tailored to roles, responsibilities and authority levels.

Risk appetite clearly articulated reflecting the group’s risk carrying capacity, business strategy and financial goals. Processes and procedures in place to manage risk on an enterprise wide basis within defined (hard and soft) boundaries without stifling day to day operations.

ERM focused external communications strategy centred around actively managing stakeholders (policy holders, regulators (group and local legal entity), rating agencies, debt and equity investors, etc) in order to yield shareholder value added and capture wider business benefits.


People behaviour aligned with group risk, capital and performance strategy / business plans through balanced score cards, MBOs and incentive and reward schemes. Required level of skill, experience and knowledge exhibited by majority of staff.

Core technology to support fully integrated ERM approach. Focus on organisational span, data quality and automated processing.
### The PwC ERM Framework – Professional Indemnity

<table>
<thead>
<tr>
<th>Section</th>
<th>Area</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business strategy</strong></td>
<td>Risk Strategy</td>
<td>Write long tail / SME business</td>
</tr>
<tr>
<td></td>
<td>Risk Appetite</td>
<td>Lose no more than one years average earnings</td>
</tr>
<tr>
<td></td>
<td>Risk Profile</td>
<td>10% Solicitor’s vs. 15% Appetite</td>
</tr>
<tr>
<td><strong>Business management</strong></td>
<td>Risk &amp; Capital assessment (including internal models)</td>
<td>Professional Indemnity Underwriters to sign off key assumptions</td>
</tr>
<tr>
<td><strong>Business platform</strong></td>
<td>People and Reward</td>
<td>Bonus claw back (or deferred) for underwriters of long tail business</td>
</tr>
<tr>
<td></td>
<td>Management Information</td>
<td>Key Performance indicators</td>
</tr>
<tr>
<td></td>
<td>Technology and Infrastructure</td>
<td>Data Warehouse</td>
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Section three

Profitability – Stability and Turmoil
Impact of Solvency II
Top Tips – How to get things right
Top Tips

Need to consider all aspects of the business to “get things right”
e.g. capital costs, risk aggregation, pricing and reserving

![Diagram showing Profitability, Risk Aggregation, Cost Of Capital, Pricing & Reserving, Capital, and Risks]
Top Tips – Reserving & Pricing

Cyclical monitoring and planning crucial in times of stability and more so in turmoil
Top Tips

Top Tips – Risk Aggregation (Catastrophes)

Professional Indemnity yet to be impacted by a “Catastrophe”.

Significant analysis and estimation of catastrophes exists for a number of insurance lines.

What allowance is made for catastrophes when pricing Professional Indemnity insurance?

Discussion raised during PIF 2006 - Will action only be taken when it’s too late?

When pricing, what goes wrong?

What allowance is made for catastrophes?
Top Tips

Top Tips – Aggregations of risk (Sideways cover)

Same issues remain from PIF July 2006 – what has been done?

Allowing for sideways cover.
PI standard contracts currently leave insurers open to many claims from one source.
• IFA mis-selling
• No aggregate policy limits?
• RI aggregation clauses

<table>
<thead>
<tr>
<th>Premium rate</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Competition / substitutes</td>
<td></td>
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<table>
<thead>
<tr>
<th>£1m limit</th>
<th>£2m limit</th>
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<tbody>
<tr>
<td>e.g. solicitors</td>
<td></td>
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<table>
<thead>
<tr>
<th>£1m limit</th>
<th>n * £1m limit</th>
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<tbody>
<tr>
<td>Cost / value?</td>
<td></td>
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</table>
Top Tips – Cost of Capital… Year one (Premium charge)

Net Earned Premium

Amount (£m)

10.0
Top Tips – Cost of Capital… Year one (Premium charge)

Net Earned Premium

Premium Capital charge
(BBB Rated)*

*Capital Charges Based on A.M Best BCAR calculation tool excluding impact of diversification. For diversified portfolios a reduction of 10% could be considered appropriate

Capital charges above based on a BBB rating
Top Tips

Top Tips – Cost of Capital… Year one (Premium charge)

- **Net Earned Premium**: 10.0
- **Premium Capital charge (BBB Rated)**: 3.7
- **Premium Capital charge (A Rated)**: 5.6

*Capital Charges Based on A.M Best BCAR calculation tool excluding impact of diversification. For diversified portfolios a reduction of 10% could be considered appropriate*

**Capital charge for A rating approximately 150% higher than BBB rating**
Top Tips – Cost of Capital… Year one (Premium charge)

Managing for the upturn
Year one cost of capital for A rating @ 9% p.a. = £5.6m * 9% = £0.5m

E.g. Impact of delay between earning and payment of premium?

*Capital Charges Based on A.M Best BCAR calculation tool excluding impact of diversification. For diversified portfolios a reduction of 10% could be considered appropriate
Continued capital charges
Year two cost of rating @ 9% p.a. = £4.5m * 9% = £0.4m

E.g. Impact of reserve deterioration?
Top Tips - Summary

• The current global focus on risk management means we have to consider both the impact and interactions of profitability, capital and risk.

• The current state of the Professional Indemnity Insurance market means it is vital to get these things right now.

• Consideration needs to be given to the realistic possibility of significant aggregation of risks in the future (e.g. Professional Indemnity catastrophes and sideways cover).