

The Actuarial Profession
making financial sense of the future

33rd ANNUAL GIRO CONVENTION

A postcode from the industry
Andrew Pryde & James Toller

Hilton Vienna Hotel, Am Stadtpark

A postcard from the industry

Linking business processes

- What are we trying to achieve?
- Which approach?
- How do we explain it?
- So what...?

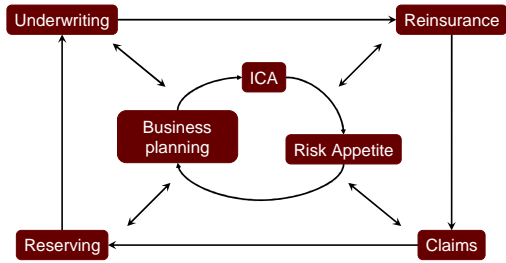
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What are we trying to achieve?

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graph TD; Underwriting --> Reinsurance; Reinsurance --> Claims; Claims --> Reserving; Reserving --> Underwriting;
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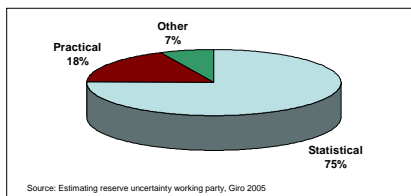
What are we trying to achieve?



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Which approach?

Main ICA approach used



Source: Estimating reserve uncertainty working party, Giro 2005

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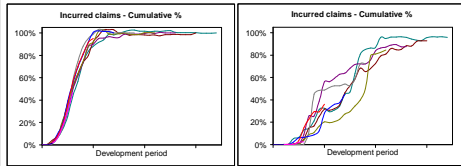
Which approach?

- Not how the business views risk
- Data availability
- Nature of liabilities
- Statistical approach requirements

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Which approach?

Nature of our liabilities



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Which approach?

Holistic underwriting view

- 1

Estimation error	...	Systemic risk	...	β	...	Market Cycle risk
Process error	...	Systematic risk	...	α	...	Claims Volatility risk
- 2 Consider underwriting risk and reserving risk together
- 3 Correlations fall naturally out of the process
- 4 Understand and parameterise underlying drivers and then apply the stochastic model

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Which approach?

- Formalises processes
- Incorporates changes explicitly
- Drives behaviour / direct ownership
- Is self testing
- Facilitates links across business processes
- Business rather than regulatory focus

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Working for the Public - The Future

How do we explain it?

	Central team	Business teams
Input	Make the framework > transparent > explicit > consistent with reality	Input from the business but broad constraints set centrally
Output	Use few technical terms > describe risks not stats	Present clear output > consistent > regular

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Taking the Risk Away - The Message

How do we explain it?

Repeat the messages !

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Taking the Risk Away - The Message

So what...?

- ... a range of people own and update assumptions
- ... recognition that processes are interdependent
- ... it is one of the tools used to make business decisions
- ... the Board understands it!

- ... it provides the Board with a snapshot of the business in a way that it views risk

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Taking the Risk Away - The Message

A postcard from the industry

Covering some of the issues
in more detail

- ICA principles
- ICA process
- Market cycle
- Risk appetite

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ICA principles

Focused on the key risks and buy-in:

Objective

- To produce a system that quantifies all major risks (and rewards) in the company and to communicate this to management

Technically achievable

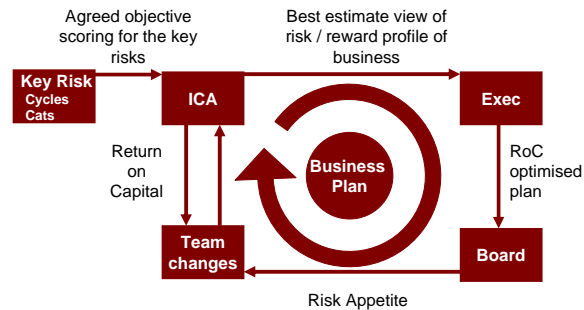
- There is not enough data to 'prove' any output. Parameters would be set through rational argument based on a limited data

Business achievable

- Decisions would not be made based on a black box. All key assumptions would have to be understood and agreed before it would be used

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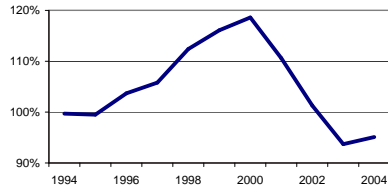
ICA process - Embedded and transparent



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Market cycles – bigger than cats

Ultimate US AY ultimate combined ratio, cat adjusted



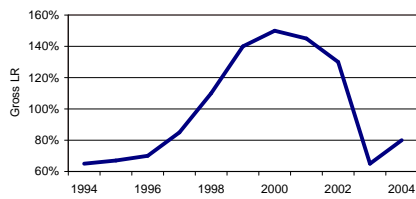
- WTC impact 2%. 2005 Hurricane impact ~5% single year
- Cycle range 25% multiple years

Source: Swiss Re Sigma No3 2006

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Market cycles – all markets

Lloyd's loss ratio (net brokerage)

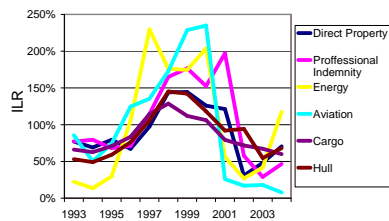


- Hurricane impact ~\$3.3bn / \$15.0bn = 22% single year
- Cycle range 75%
- Do more complex products have a greater cycle?

Source: Lloyd's

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Market cycles – all classes

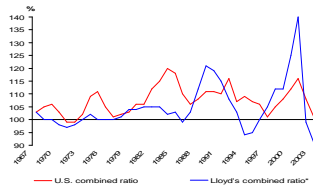


- Cycles in most major classes
- Highly correlated between classes and years
- More severe in big ticket / complex classes

Source: Lloyd's – note representative risk codes and not whole market

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Market cycles – not one off



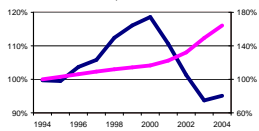
- Has recurred for last 50 years
- 7 – 10 year period?
- Where are we now for non-cat?

Source: Lloyd's

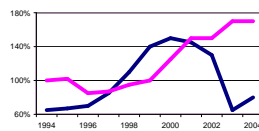
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Market cycles – not premium drop

Ultimate US AY ultimate combined ratio, cat adjusted vs. prem



Lloyd's loss ratio (net brokerage) vs prem



- Premium volumes flat over softening cycle, coverage up
- Standard business cycle
 - Capital in → coverage up → capital lost → price up, coverage down
- Pursuit of short term profit with imperfect cost knowledge

Source Swiss Re Sigma No3 2006, Lloyd's, iii

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Market cycles – by class

Scored all classes for market cycle risk – 40 factors

Class	Client sophistication, business complexity...
Control	Alignment of underwriter incentives, level of delegation...
Pricing	Competitive position, knowledge of true price, growth...
Claims	Length tail, inflation risk, uncertainty of case estimate...

Tool for improvement

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