The Actuarial Profession
making financial sense of the future

33rd ANNUAL GIRO CONVENTION

Hilton Vienna Hotel, Am Stadtpark

Financial Economics & Insurance

Capital is the bridge between the insurance firm and the investment markets:

- Insurance firm needs capital
- Investors supply capital
- Communication is key

- Target amounts of capital to hold in the firm
- Target returns on that capital

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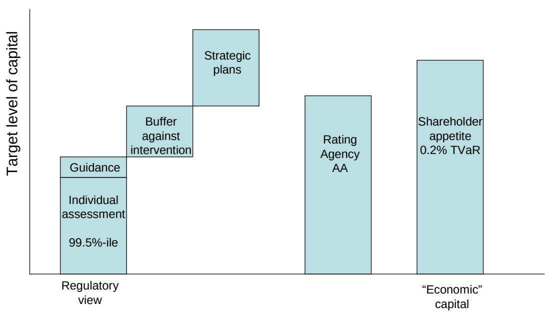
Comparing different risk measures



Judgemental / arbitrary measures

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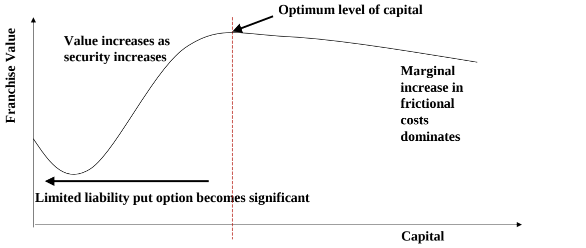
Maximise franchise value



Decreasing credit rating: lose business
Regulatory intervention

Increasing double tax penalty
Increasing agency risks

Exley/Smith Institute paper January 2006

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Target returns on capital

- Cost of Capital defined:
  - required total return on the market value of the firm, as determined by reference to the opportunity cost of alternative investments of equivalent risk
  - Sets a target for TSR (total shareholder return)
- Cannot apply CoC directly as a target for RoE (return on equity):
  - Price (share market value)
    > Book Value (net assets)
  - Difference is “franchise value”
  - TSR not the same as ROE

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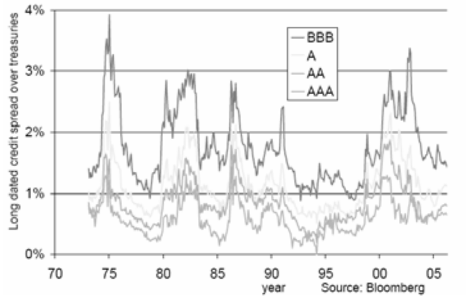
Insurance cost of capital linked to firm’s insurance credit rating



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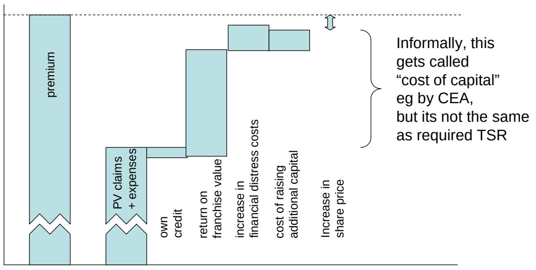
Putting it All Together



Investors won't let us forget: Parameter and Model Risk

Future claim costs uncertain and hard to hedge**:**

- Windstorms, floods, earthquakes
- Court awards: Ogden, Courts Act
- History of adverse reserve run-offs

So investors mark down our shares

- It reflects the investors' concerns that we have under-estimated the mean
- Our recent track record counts against us
- Looks like a higher CoC if you don't share markets' scepticism of our cash flow projections

Raising capital from the investor

Target amounts of capital**:**

- Risk appetite: regulatory plus a buffer; rating agency; shareholder promises to customers
- Risk reward trade off: security versus ROE
- Maximising franchise value

Target returns on capital**:**

- Return required on franchise value, so cannot apply CoC directly in ROE equation
- Investment risk of capital assets
- Double tax penalty
- Firm's credit rating: impacts value of NPV
- Parameter and model risk

See our November Institute paper

ASSESSMENT OF TARGET CAPITAL FOR GENERAL INSURANCE FIRMS

BY A. N. HITCHCOX, I. A. HINDER, A. M. KAUFMAN, T. J. MAYNARD, A. D. SMITH AND M. G. WHITE

[Presented to the Institute of Actuaries, 27 November 2006]

Turning all this into a target premium loading:

- Worked example in Section 5 of our paper
- Difficult and complex calculation!

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