Ratios:
Are Standard Comparisons Appropriate

EAAC – 16th October 2013
Redefining Risk. Creating Value.

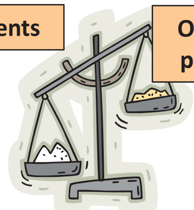
Contents

- All companies are not the same
  - “Rules of thumb”
  - How the different ratios vary – over time/by company
    - Case study of Sri Lanka, Malaysia and Singapore
  - Implications of different RBC regimes
- Moving from “Compliance” to “Comprehension”
  - Traditional Business Planning
  - Business Planning in an RBC Environment
  - Uses of Business Planning
- Conclusions

All companies are **NOT** the same

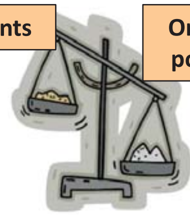
Distribution Methods

Agents | Online portal

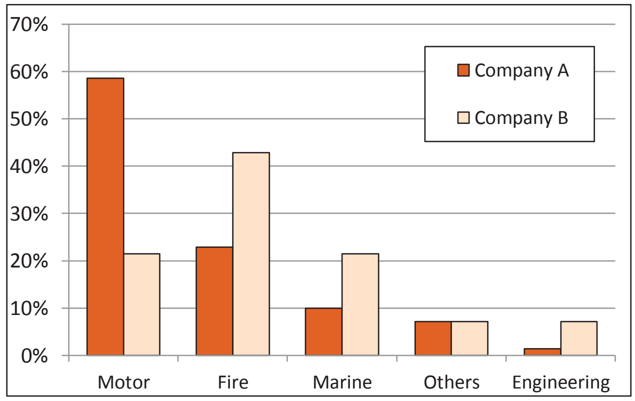


vs

Agents | Online portal



Mix of Business



Capital Available

vs

Number of Claims per Handler

vs

Company A (GWP of $500m)

Company B (GWP of $500m)

Common "Rules of thumb"

Operational Ratios

- Claims ratio
- Commission Rate
- Expense ratio
- Combined Ratio
- Reporting delays
- Claim settlement pattern
- Premium ratio
- Investment return
- Average Claim Size
- Claim Frequency
- Cost per Policy
- Average Premium

Profit Ratios

- Profit margin
- Return on capital

Financial Strength

- Assets to Liabilities ratio
- Solvency margin

Zooming into Sri Lanka

Google Maps

Sri Lanka

- Island south of India
- Approx. 22 million people
- 65,000 km^2

Sri Lankan Insurance Market

- General insurance market is relatively immature
- Approximately 20 companies in the market but dominated by top 5 companies
- Distribution channel is dominated by 'Agency'

nmg

Zooming into Sri Lanka

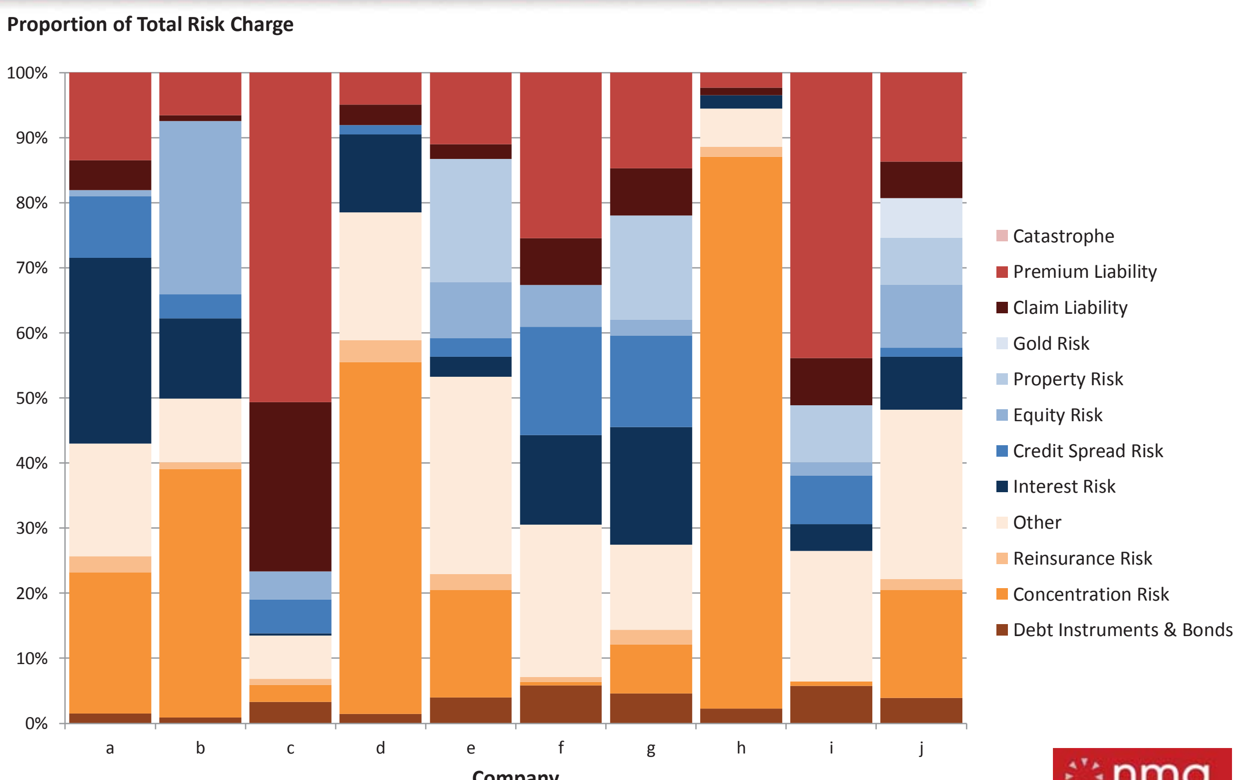
Example ratios : how the rules vary by company
(to be added later)

nmg

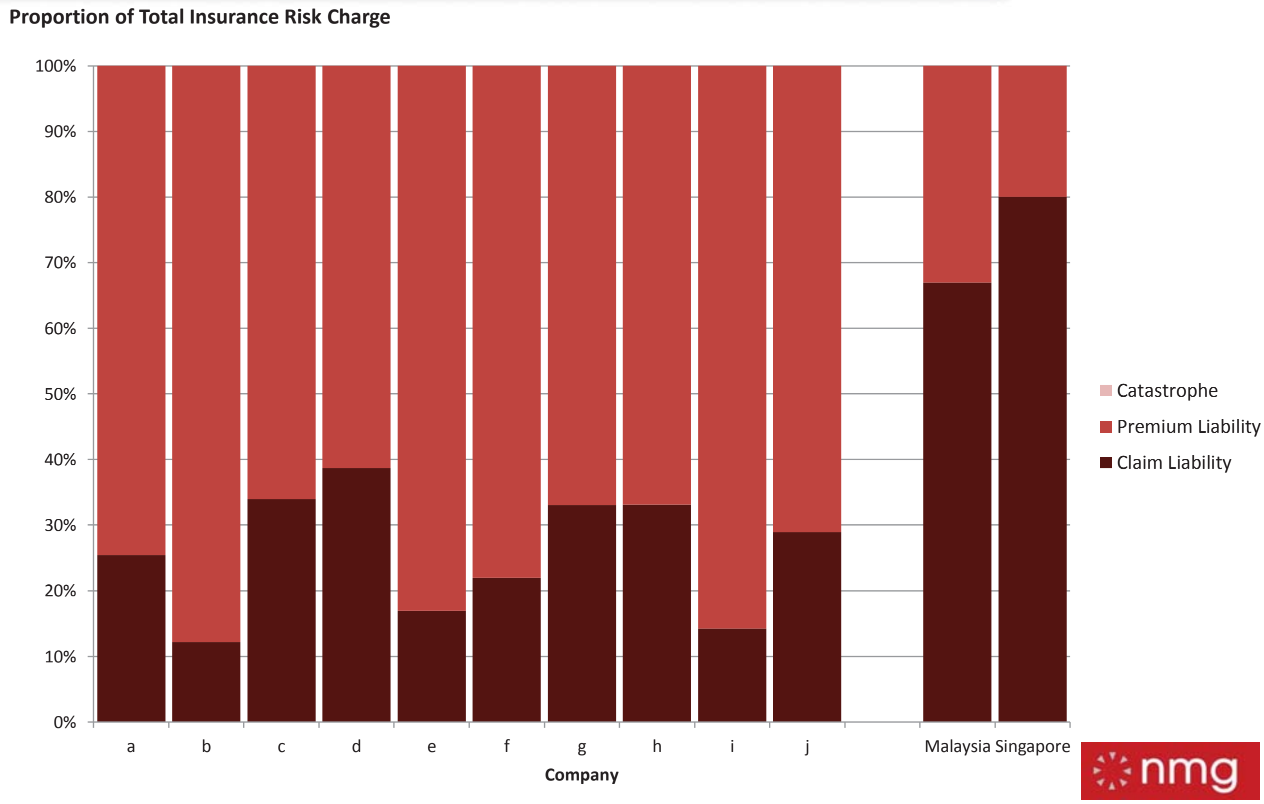
Zooming into Sri Lanka

Example ratios : how the rules vary over time
(to be added later)

Zooming into Sri Lanka



Zooming into Sri Lanka



Zooming into Malaysia

Malaysia

- Peninsular and Borneo Island
- Approx. 30 million people
- Approx. 330,000 km^2

Google Maps

Malaysian Insurance Market

- General insurance market is relatively mature
- Approximately 27 companies in the market but top 6 companies write over 50% of the premium
- Distribution channel is dominated by ‘Agency’

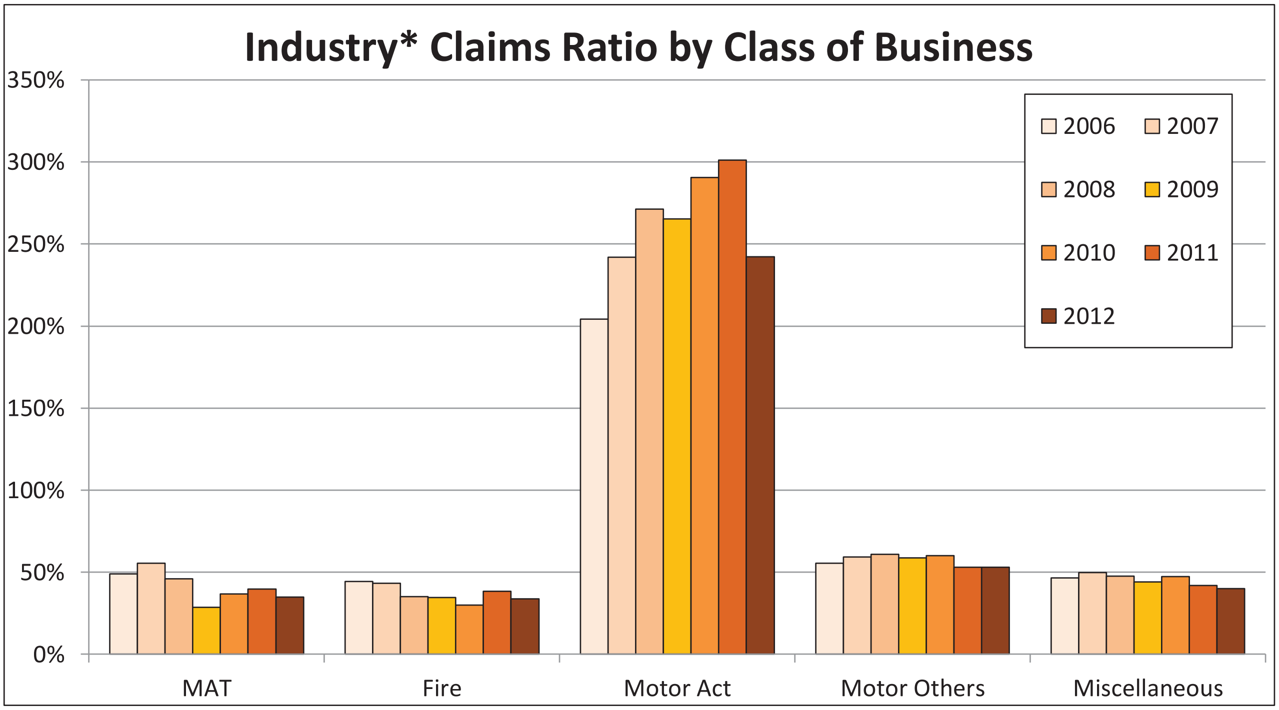
Zooming into Malaysia

Example ratios : how the rules vary by company
(to be added later)

Zooming into Malaysia

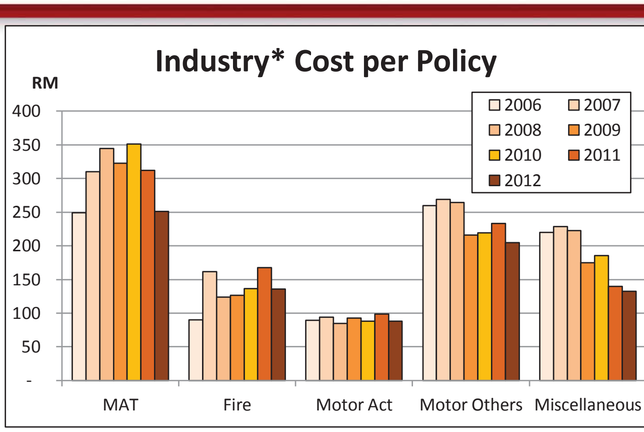
Example ratios : how the rules vary over time
(to be added later)

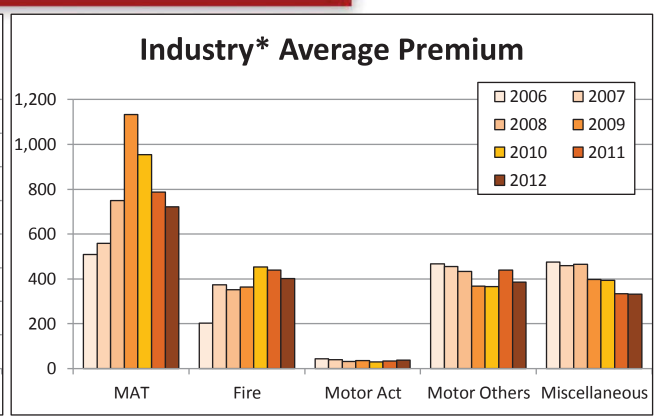
Zooming into Malaysia

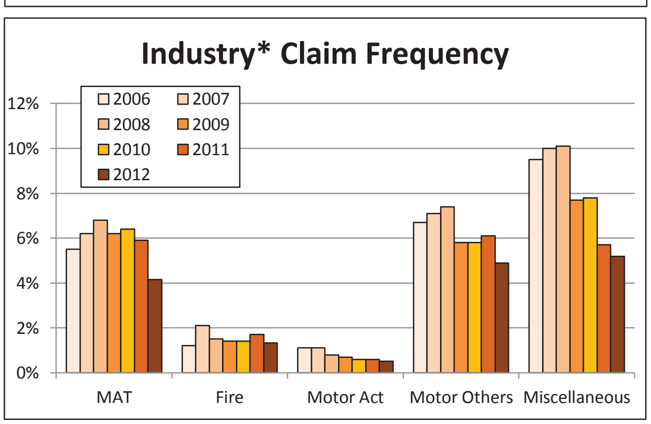


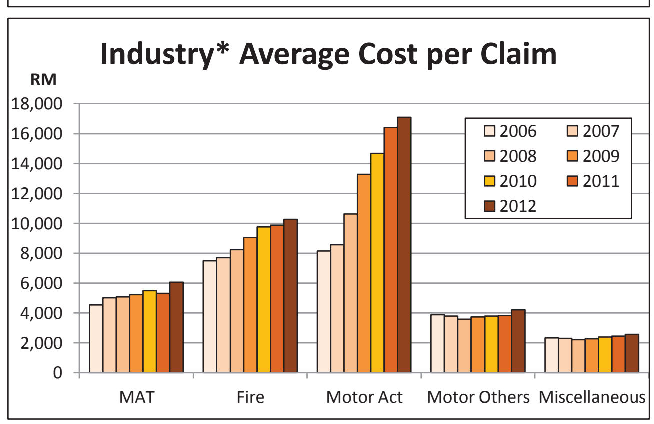
* Industry data is obtained from Bank Negara Malaysia Annual Insurance Statistics

Zooming into Malaysia

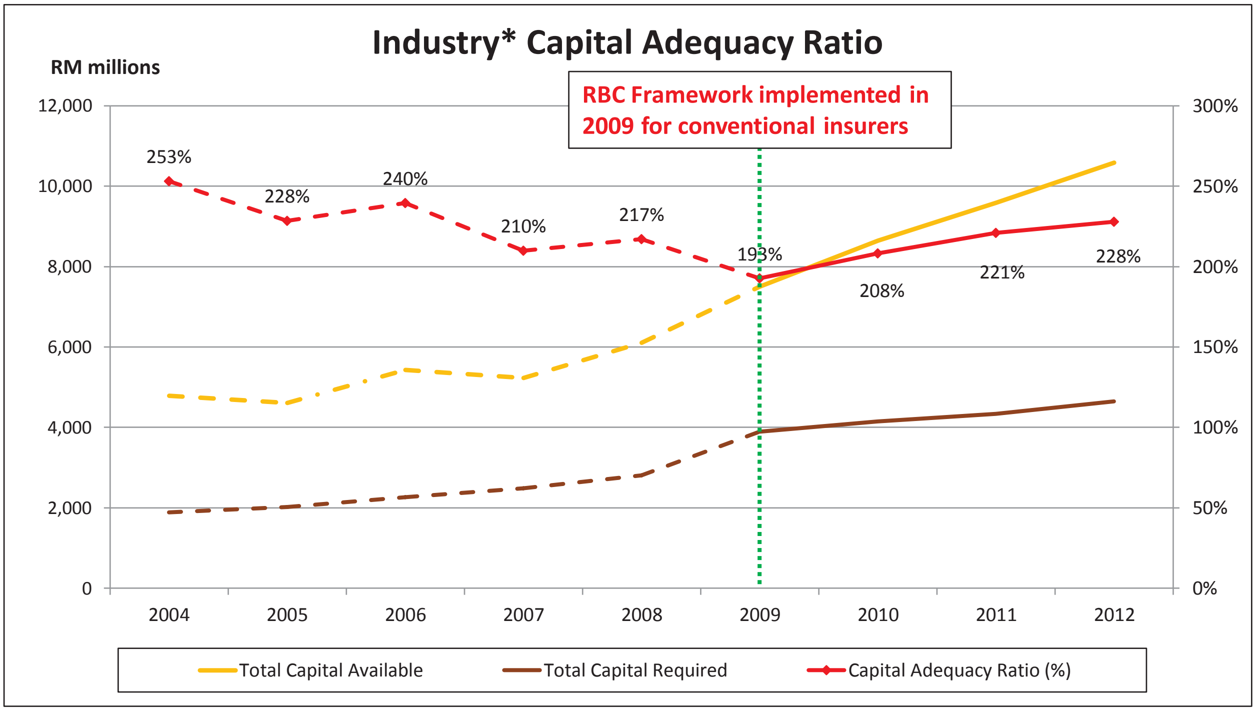








Zooming into Malaysia

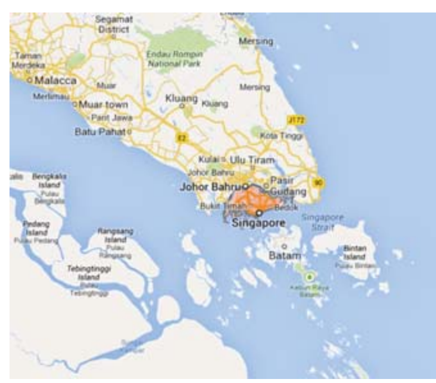


* Industry data is obtained from Bank Negara Malaysia Annual Insurance Statistics

Zooming into Singapore

Singapore

- Island between Malaysia and Indonesia
- Approx. 5 million people
- Approx. 710 km^2



Google Maps

Singaporean Insurance Market

- General insurance market is relatively mature
- 55 General Insurance companies in the market and top 10 companies write over 60% of the premiums
- Distribution channel is dominated by ‘Agency’, though an increasing direct channel

Zooming into Singapore

Example ratios : how the rules vary by company
(to be added later)

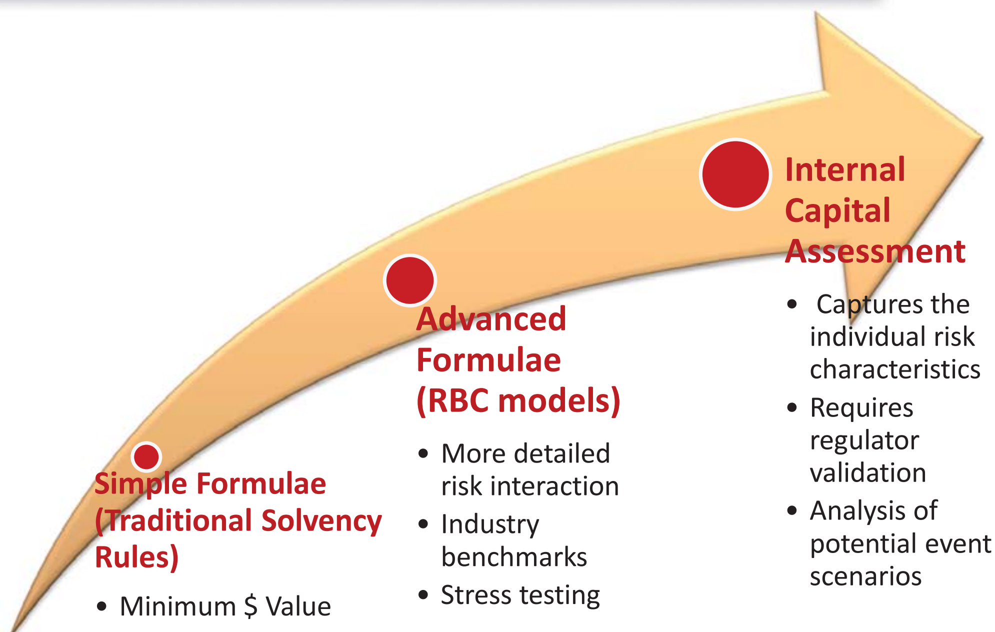
Zooming into Singapore

Example ratios : how the rules vary over time
(to be added later)

Why are companies different?

- The reasons for differences:
  - The process of a claim
  - How it is managed
  - How different management teams approach the problem – ‘reactive’ vs. ‘proactive’
- This is why Stress Testing is important
  - Brings the analysis close to the Company than the Industry
  - Understand key drivers of business
  - Alignment to business strategies

Implications for a Risk-based Capital framework



Simple Formulae (Traditional Solvency Rules)

- Minimum $ Value
- % of Premiums
- % of Reserves
- Focus solely on liability side of the balance sheet

Advanced Formulae (RBC models)

- More detailed risk interaction
- Industry benchmarks
- Stress testing

Internal Capital Assessment

- Captures the individual risk characteristics
- Requires regulator validation
- Analysis of potential event scenarios

Different RBC regimes

- Different RBC regimes apply standard relationships:
  - Applying standard IBNR factors
  - Applying standard PRAD loadings
  - Applying standard capital charge loadings
- Prescribed scenarios or Self-select scenarios
- Emphasis Enterprise Risk Management
- Different statutory CAR requirements
- Explicit charges enhance the transparency of risks

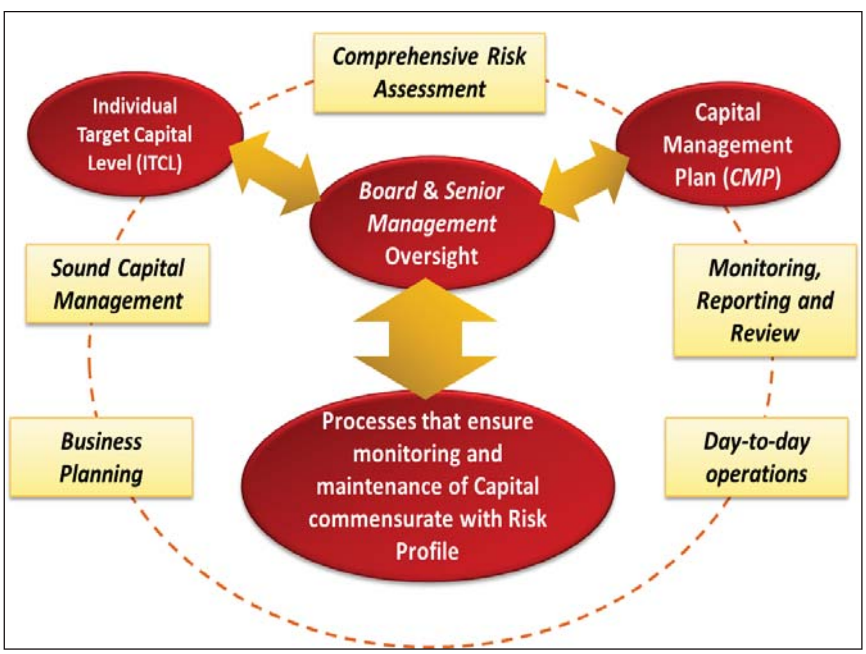
Implications of Solvency II

- Continuous monitoring of developments and raising level of risk and capital management measures to stay ahead of development and remain relevant
- Benefits of implementing an equivalent of Pillar II requirements such as ORSA:
  - Enhanced understanding of sources of risks
  - Improved governance through more informed decision taking
  - More forward-looking and align to Company's objectives over the long-term
- Not suggesting Solvency II is appropriate for Asia
  - The concept of better understanding the business is the key point
  - Imposing a consistent approach through regulation may not be the most efficient manner of developing this understanding

Moving from “Compliance” to “Comprehension”

- [ ] Exceptional
- [x] Exceeds requirement
- [ ] Meets requirement
- [ ] Need Improvement

Moving from “Compliance” to “Comprehension”



Traditional Business Planning

- P&L focussed
- Builds up from Individual Profit Centres
- Objective is to determine the expected 'Profit'
  - Usually defined as a 'Dollar Value' but may be expressed as a 'Return on Equity'
- Usually a Single Value to be presented to the Board for approval

Traditional Business Planning

Business Line 1 NWP **Business Line 2 NWP** **:** **Total NWP**
Business Line 1 Claims Incurred **Business Line 2 Claims Incurred** **:** **Total Claims Incurred**
Expenses
Profit
Return on Equity?

Business Planning in an RBC Environment

- RBC shifts the focus to Capital
  - Need a capital model for the business plan
  - Requires Balance Sheet Modelling as well
- Risk Accepted is as important as Profit Earned
  - Profit can be raised by increasing risk
  - Higher Risk requires more capital
- Expected Value no longer enough
  - Need to consider less likely scenarios

Business Planning in an RBC Environment

Business Line 1 NWP
Business Line 2 NWP
:
Total NWP

Value of Assets
- Types of Assets
- Reinsurance Recoveries

Business Line 1 Claims Incurred
Business Line 2 Claims Incurred
:
Total Claims Incurred

Value of Liabilities
- Claim Payment Patterns
- Premium Earning Patterns
- Classes of Business

Expenses

Value of Equity

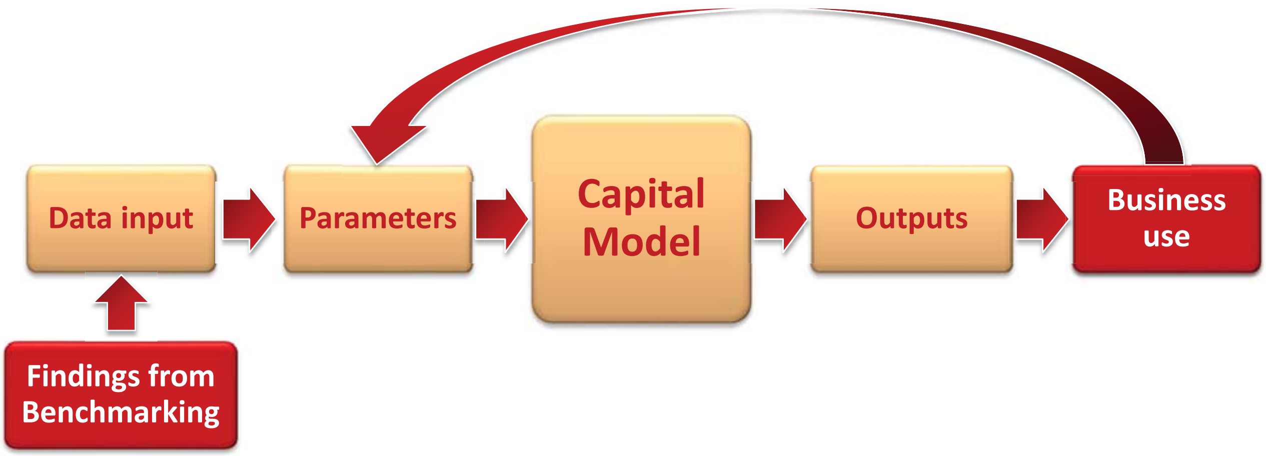
Profit

Total Risk Charge

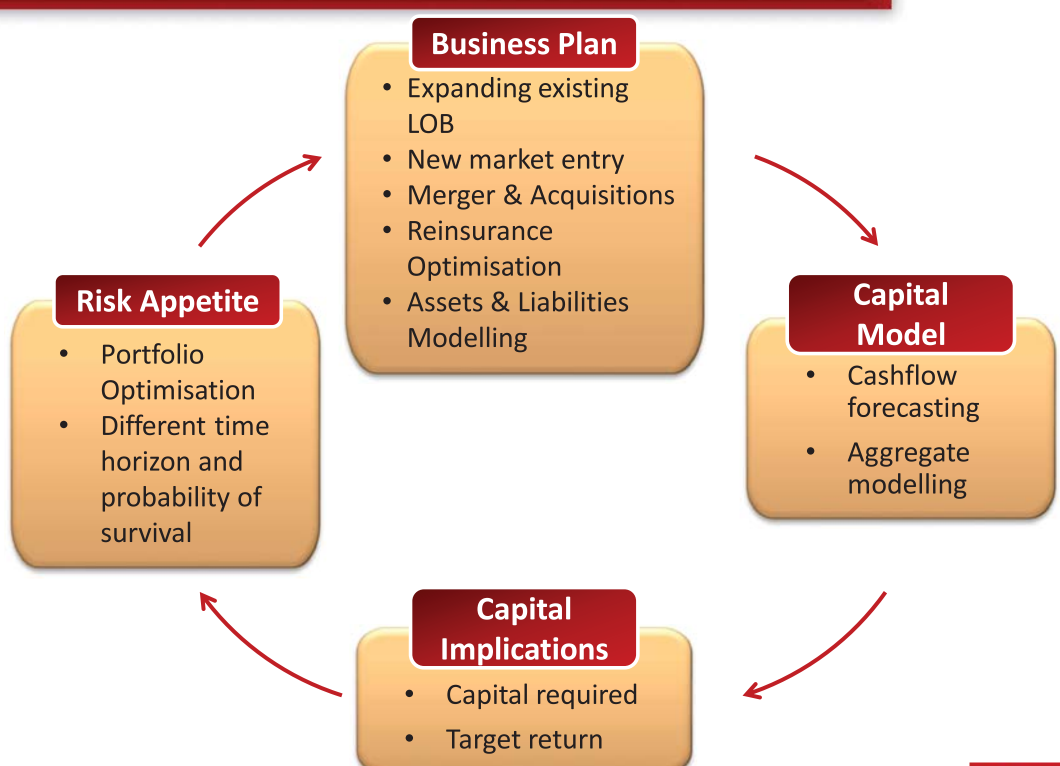
Return on Equity
Projected CAR
Likelihood of Insolvency

Risk Appetite

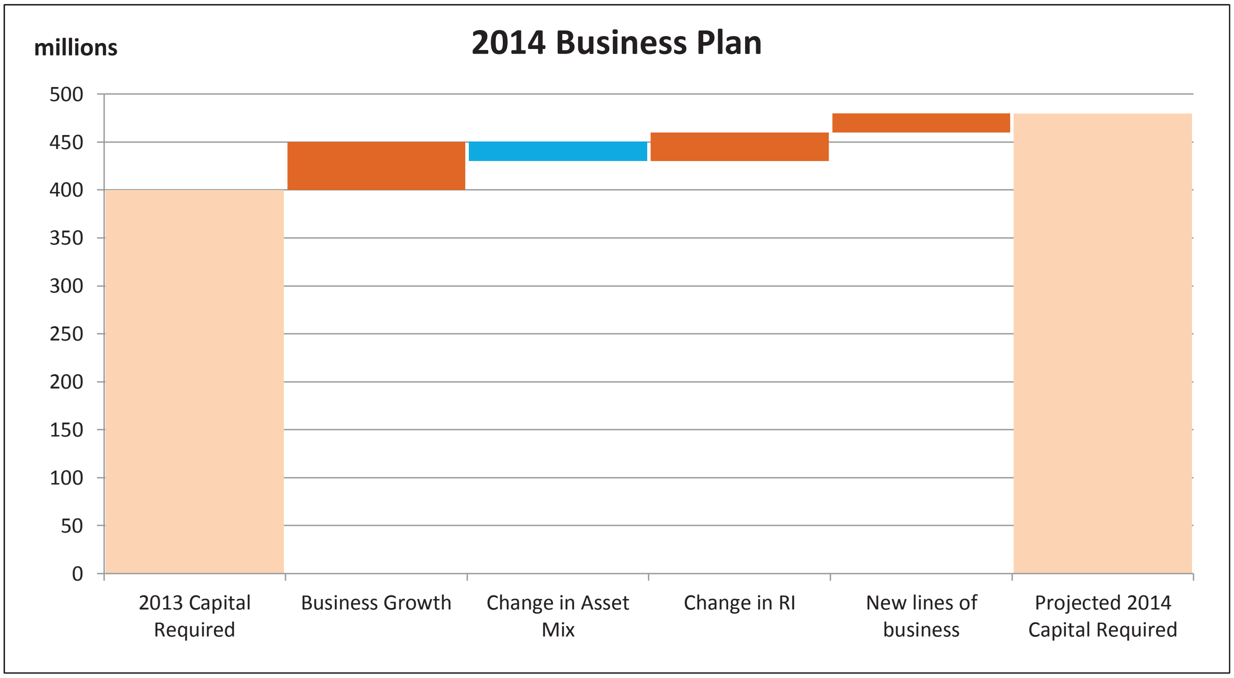
Overview of Capital Modelling process



Business Planning



Business Planning – Expected Value



Integrating your Capital Model

Input

Current Financial Condition	Business Plans	Claims Experience

Capital Model

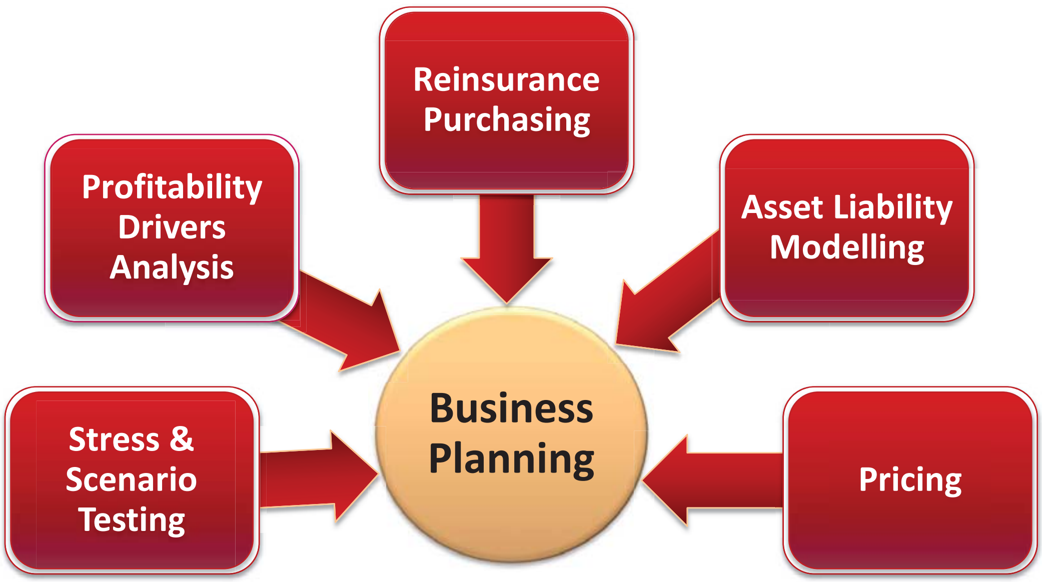
Stress & Scenario Tests	Dynamic Solvency Models

Outcomes

Key risk identification	Determine Relevant management actions	Capital Adequacy	Performance measurement

Examples of Uses of Business Planning in an RBC Environment

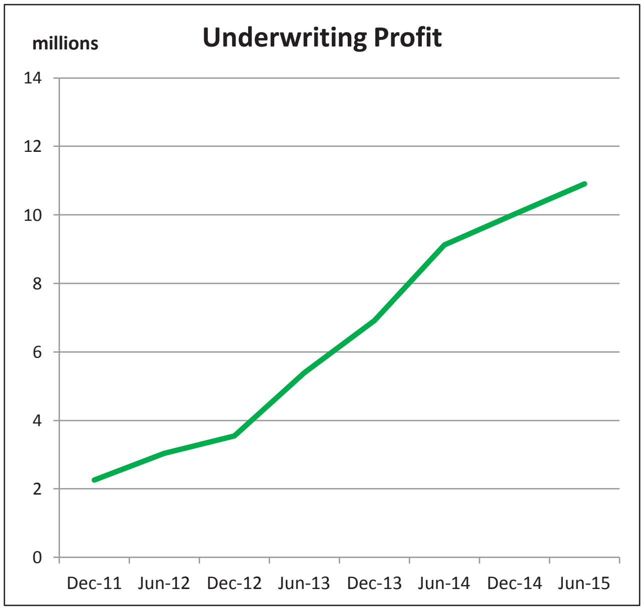
Apart from potential regulatory disclosures…

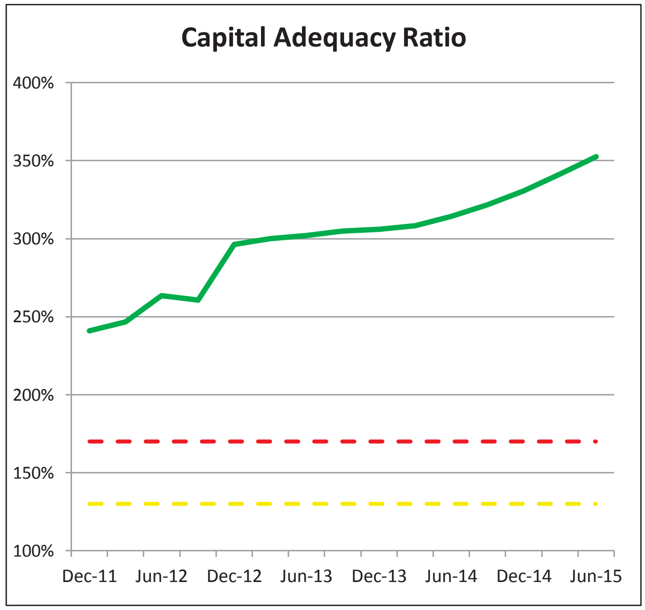


Example: Reinsurance Purchasing

Input	Capital Modelling	Reinsurance Purchasing
▶ Current financial position ▶ Business plan ▶ Experience and Exposure data ▶ Current reinsurance arrangements	▶ Investigate cost of arrangement ▶ Investigate the impact from a capital perspective and surplus position ▶ Investigate the impact of ‘Peak Exposures’	▶ Tool for discussion with brokers and underwriters ▶ Optimum retention level ▶ Optimum structure

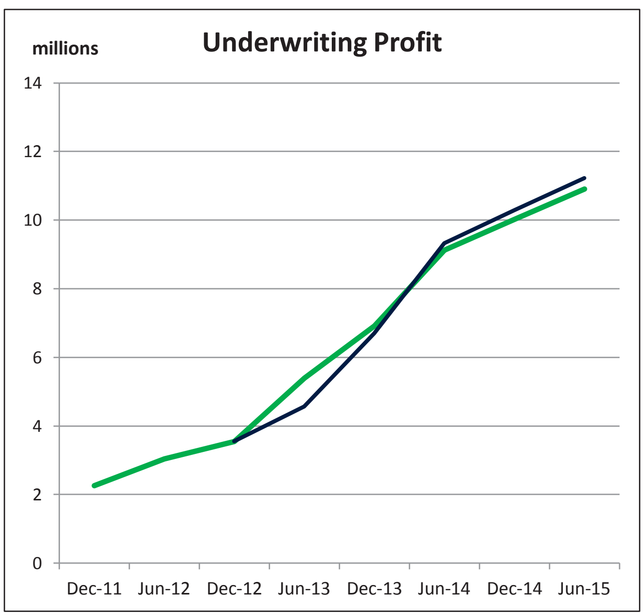
Example: Reinsurance Purchasing

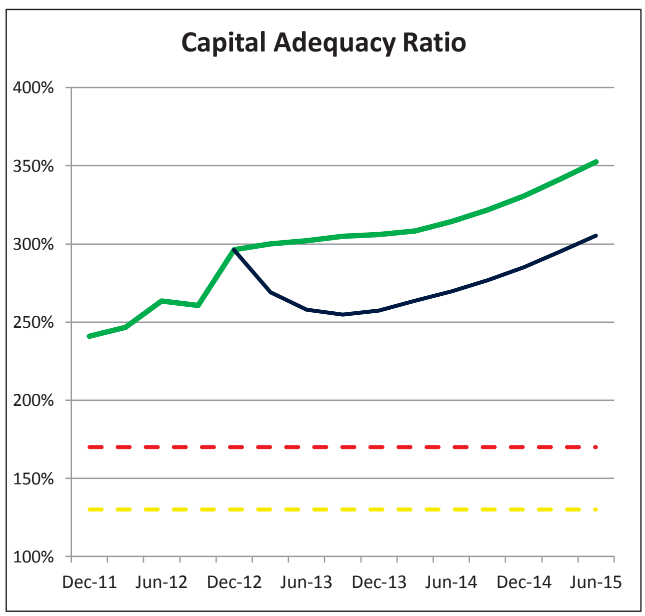




Internal CAR   Statutory CAR   Base - 50%QS

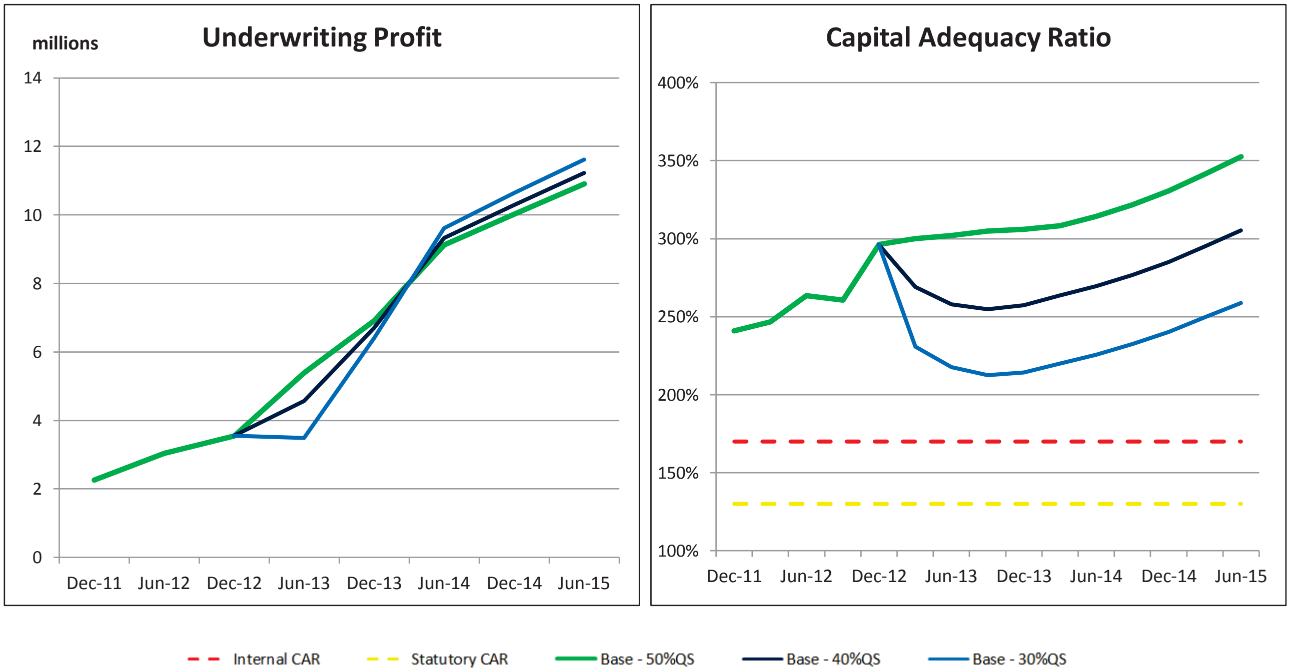
Example: Reinsurance Purchasing



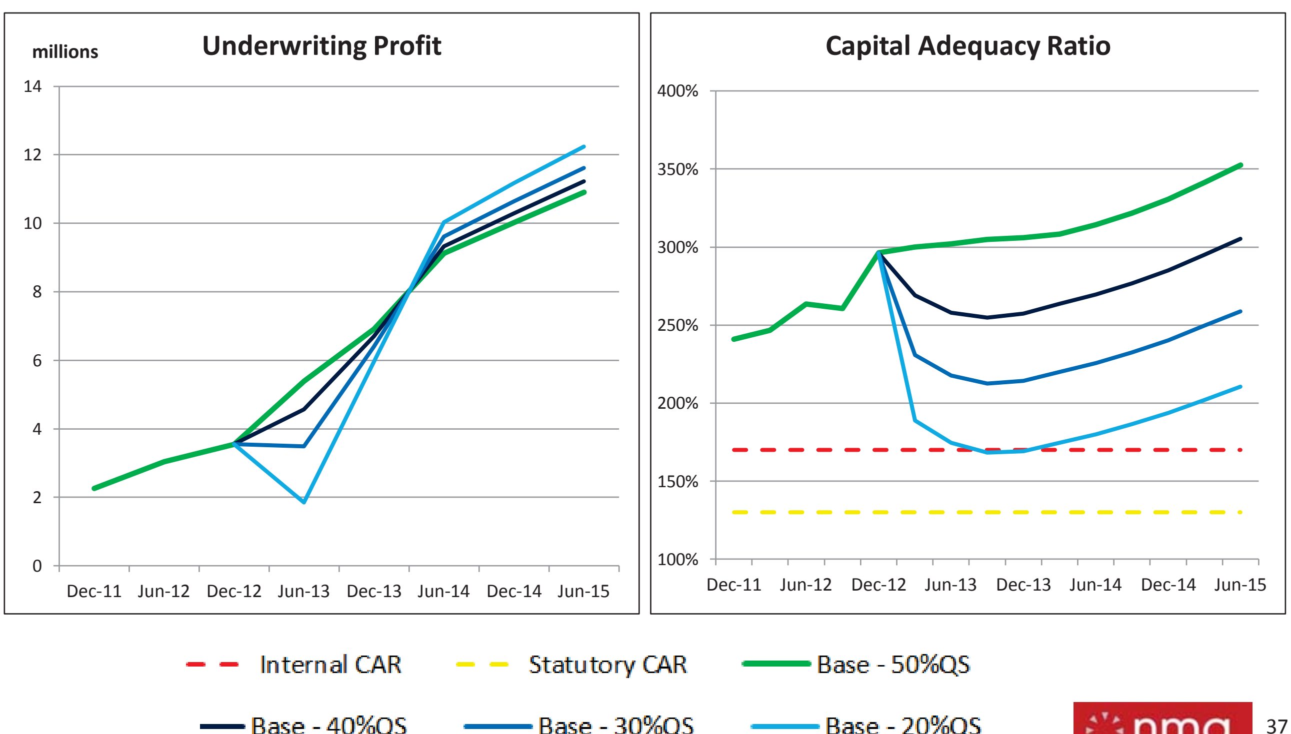


Internal CAR   Statutory CAR   Base - 50%QS   Base - 40%QS

Example: Reinsurance Purchasing



Example: Reinsurance Purchasing



Example: Asset-Liability Modelling

1

Realignment of investment portfolios

- Understand the effect of various economic scenarios, e.g. fall in equity prices or change in interest rates
- E.g. hold lower equities and higher fixed income instruments
- Derivatives to hedge asset-related risks

2

More active Asset-Liability Management (ALM)

- Use of Economic Scenario Generator (ESG)
- Minimise duration and currency mismatches
- Trade off of risk and return of the assets

Example: Asset-Liability Modelling

Scenario Number	Scenarios	Capital Adequacy Ratio	
		As at Jun-13	Improvement over Base
0	**Base scenario**	**122%**	
1	Claim Liability deteriorations	118%	-4%
2	Composition in Unit Trust is changed to Corporate Bonds	128%	6%
3	**Reduce duration of all Sovereign Bonds to less than 3 months**	**171%**	**49%**
4	Alternative investment strategy to match base scenario CAR	122%	0%
5	Shock matrix based on movement in historical interest rate	118%	-4%

Example: Pricing

- **Cost of capital** should be added to the risk price of each insurance contract

- For example, capital loading will be higher for long tailed classes, due to the continued capital cost in subsequent years, arising from:
  - **Reserving** – liabilities might deteriorate
  - **Credit** – reinsurers might go into default
  - **Market** – assets that back the technical fund might lose value

Example: Pricing

Capital Modelling

- Managing portfolio synergies
- Capital allocation of each LOB
- Set target return on allocated capital

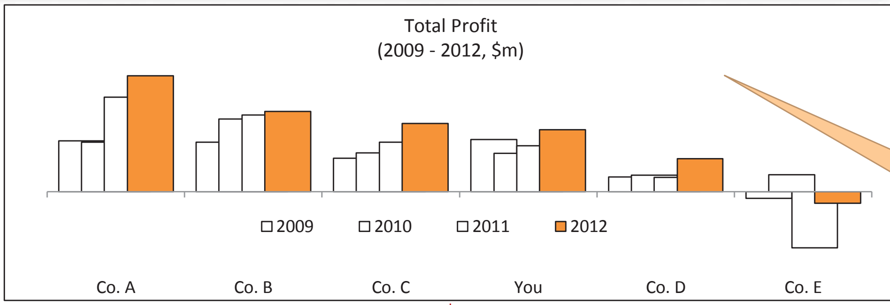
Consistency in methodology, assumptions and data

Pricing

- Determine risk premium
- Measuring value of contracts

Optimise expected profit under current market conditions

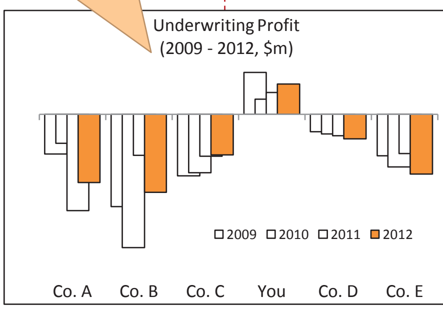
Example: Profitability Drivers Analysis

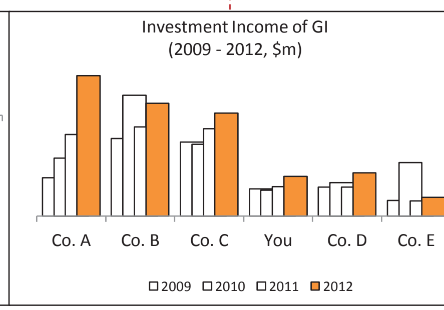


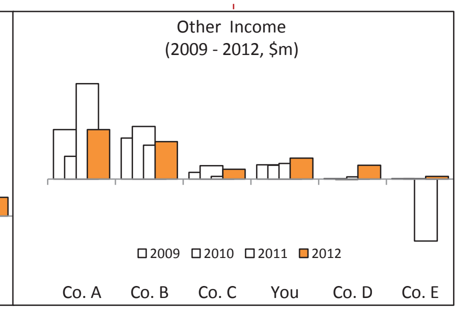
Starting with **Total Profit** at an aggregate Company level we are able to analyse the components of profit:

- **Underwriting Profit**
- **Investment Income**
- **Other Income**

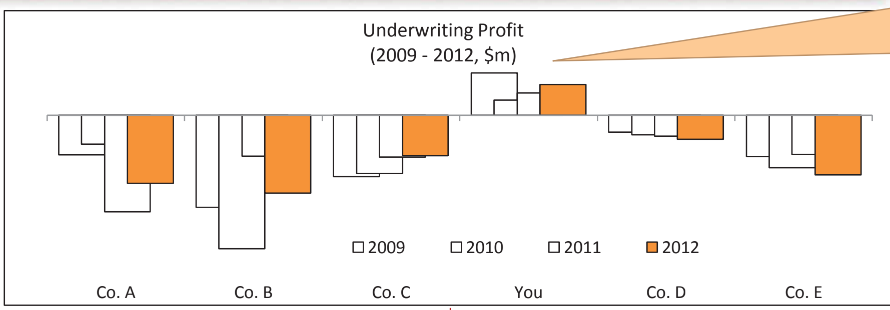
We are then able to look at the individual Profit Drivers in more detail. For example, we could focus on **Underwriting Profit**





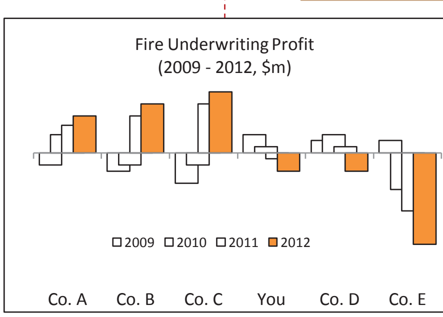


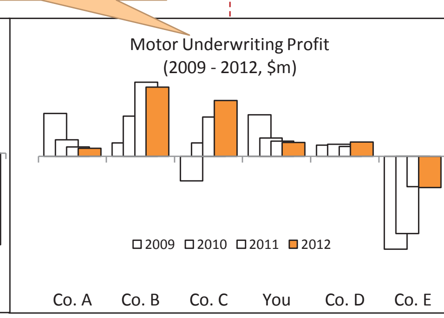
Example: Profitability Drivers Analysis

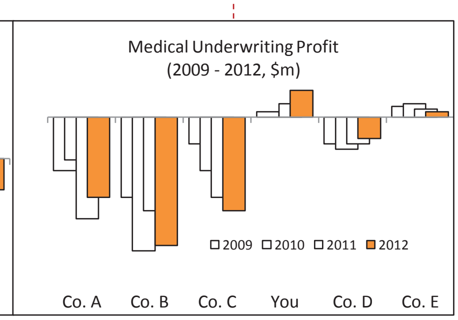


Having focused on **Underwriting Profit** by Company at an aggregate portfolio level, we are able to analyse the business at a **Class of Business** level

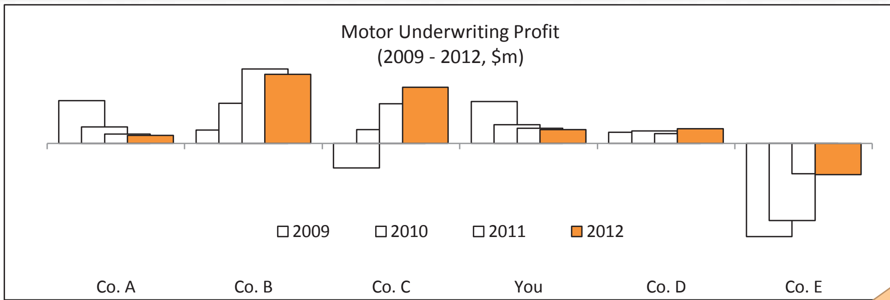
We may be interested in looking at the drivers of the **Motor Class of Business** in more detail



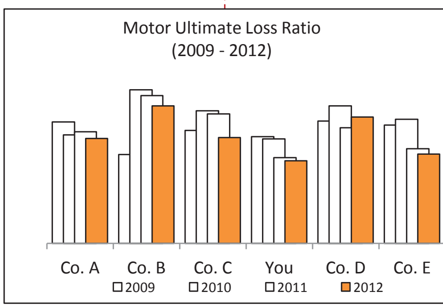


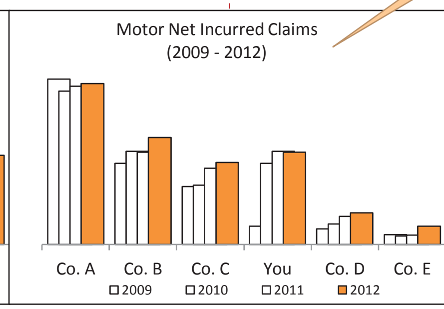


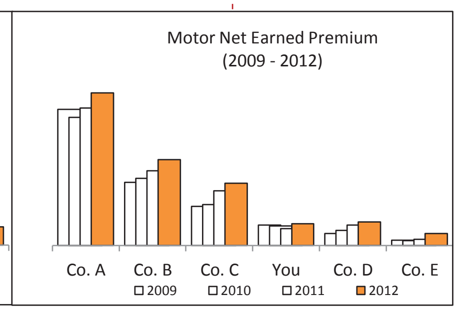
Example: Profitability Drivers Analysis



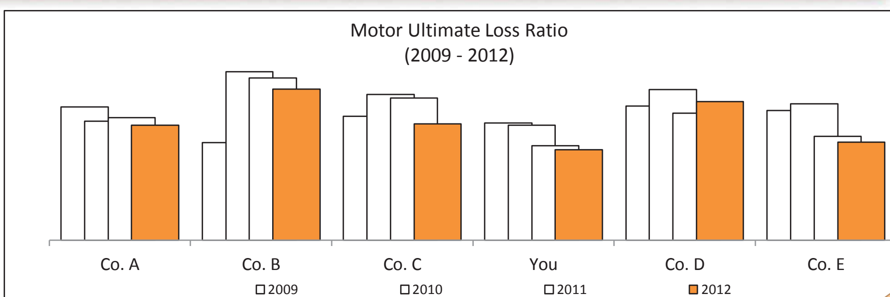
Compare the drivers of the Motor results



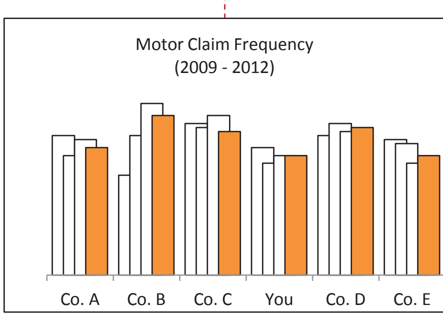


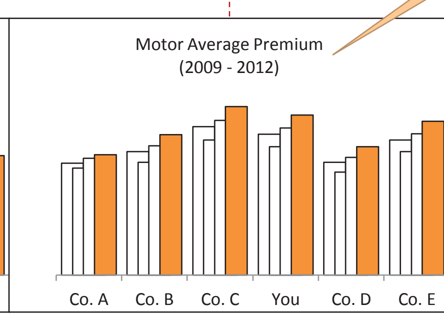


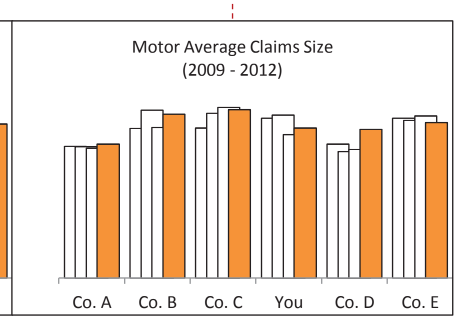
Example: Profitability Drivers Analysis



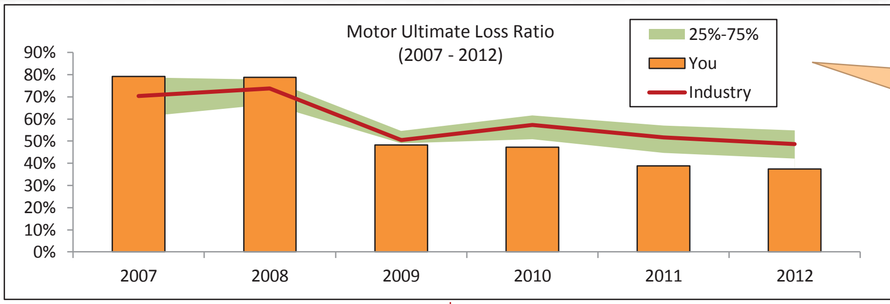
Benchmark the drivers of the Ultimate Loss Ratio by Company





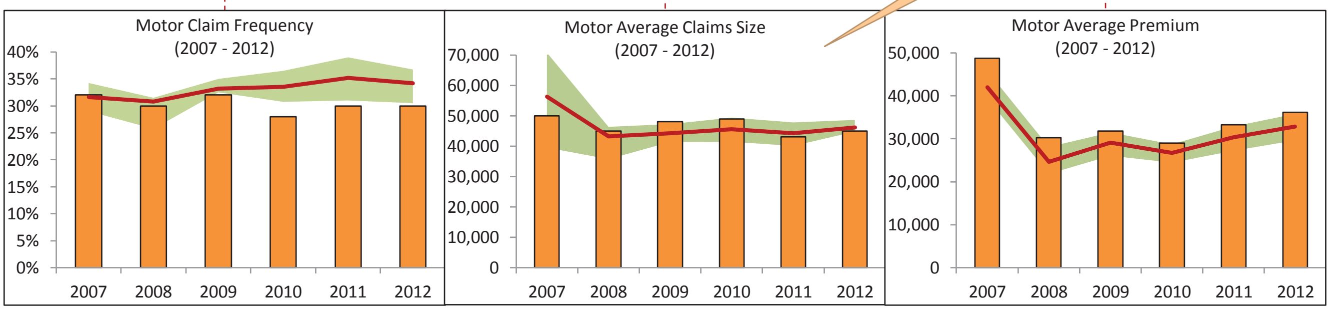


Example: Profitability Drivers Analysis



Benchmark your Company's experience against the Industry by Accident Year

Benchmark your experience against the Frequency, Severity and Average Premium in the market



Example: Profitability Drivers Analysis

Benchmark additional financial indicators based on Risk Based Capital framework

Conclusions

- All insurance companies are not the same
  - Companies have different approaches to their business meaning the results develop differently
  - It is not enough to simply compare one company to another to determine if there is a problem or not
  - Need to review the underlying reasons for the differences
- Moving away from "Compliance" to "Comprehension"
  - Need to view RBC as part of a more holistic approach, e.g. incorporating stress testing and capital management as part of business planning process
    - Risk management, reinsurance management, pricing, profitability drivers analysis etc.
- Actuarial input
  - Taking a step back, we are in the business of managing risks. Beyond the calculations, we can contribute in qualitative risk management

Thank you

For more information please contact:

Matthew Maguire
Partner, NMG Actuarial
Tel: +65 6325 9842
Matthew.Maguire@NMG-Group.com

Roshan Perera
Principal Consultant, NMG Actuarial
Tel: +603 2283 6466
Roshan.Perera@NMG-Group.com