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Capital Management under Evolving Solvency Regime in Asia Pacific

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Agenda

1	Capital Management Framework
2	Overview of Evolving Solvency Regime
3	Strategy Post Evolved Solvency Regime
4	Conclusion

Capital Management Framework

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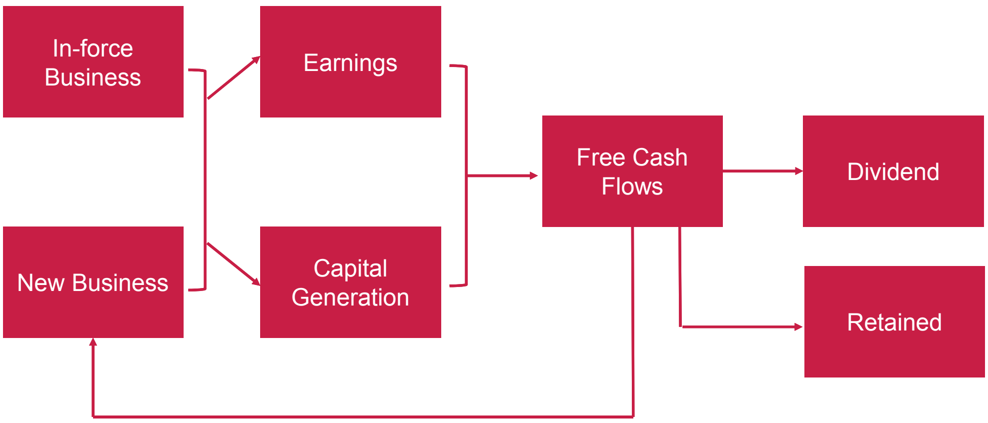
Capital Management Framework - Overview



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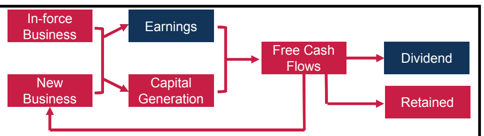
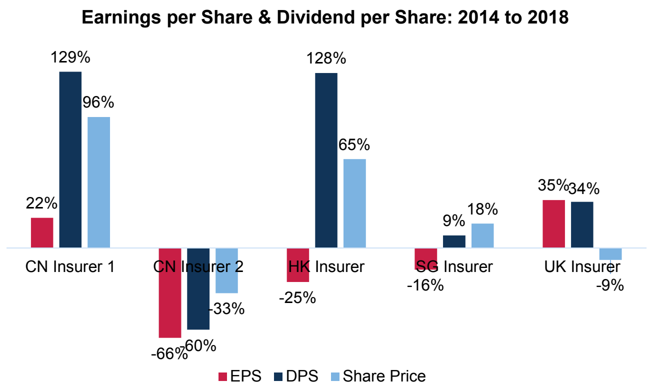


IFRS Earnings



- IFRS earnings remain the primary metrics for determine dividend pay-out.
- Earnings per share vs. dividend per share for 5 leading Asian life insurers are shown on the left.
- Three out of five Insurers show material stronger dividend growth than earnings growth from 2014 to 2018, i.e. an increasing dividend pay-out ratio.

Data Source: Insurance Firms' Annual Report

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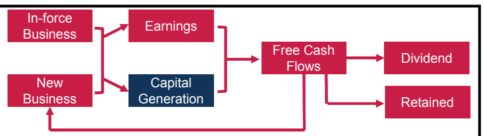
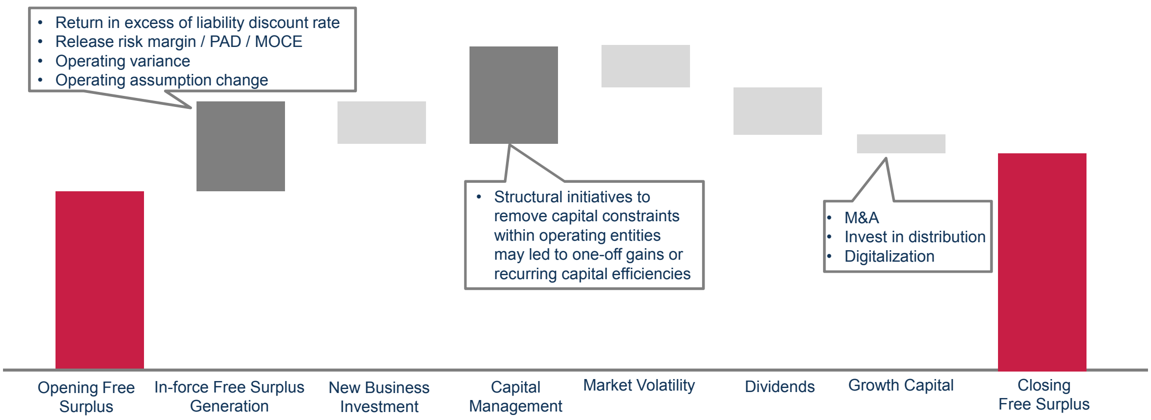


Capital Generation



Note: free surplus represents the excess of assets over statutory reserve and required capital

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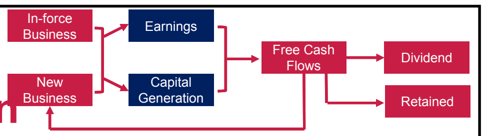
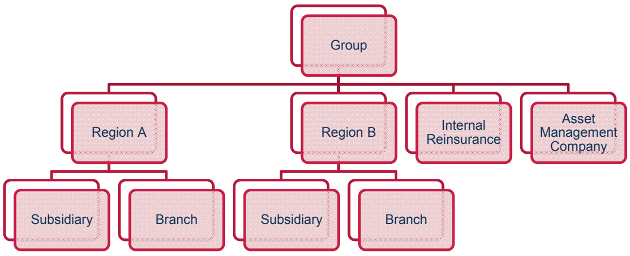


IFRS Earnings vs. Capital Generation



- Large insurance groups typically deal with multiple accounting and solvency regimes.
- Divergence between accounting and regulatory balance sheets & income profiles cause challenge. Local GAAP could further impose constraints that are hardly visible to the Group.
- Moving towards IFRS 17 and market & risk-based solvency regime will, to some extent, bring them more in line, however, significant differences remain, e.g. profit recognition, impact of assumption change, discount rate, risk adjustment.

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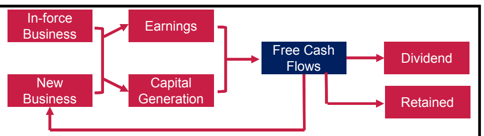

Free Cash Flow

Additional adjustments would be required to convert earnings and capital generation into free cash flows.

- Remove non-cash items, such as deferral of acquisition costs under IFRS, another example is negative reserve recognized in capital regime, which represents future profit instead of current profit.
- Add prudency according to internal risk policy: e.g. insurers voluntarily hold additional capital to maintain strong balance sheet under stress, other metrics such as rating agency, economic capital, liquidity.
- Capital fungibility, e.g. regulatory constraints which restrict operating entities remit dividend back to the group office, to what extend the insurer would like to centralise cash within the group.

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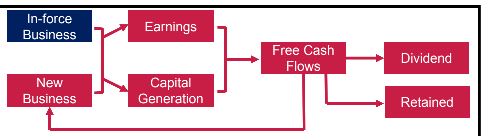
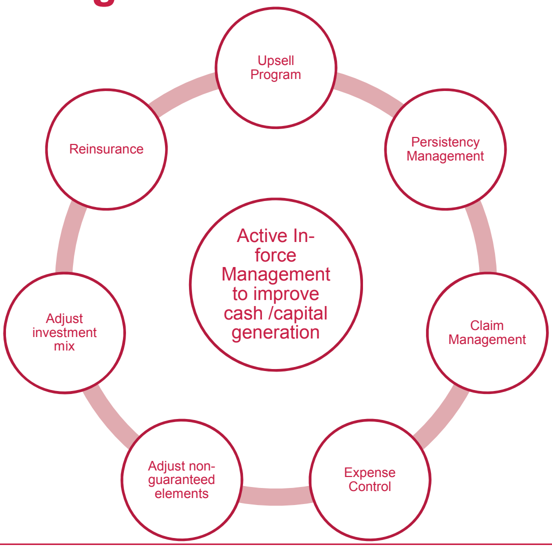


In-force Management



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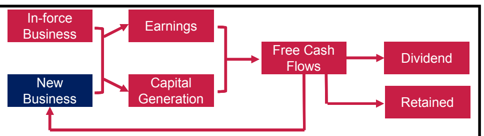

New Business

Previous Lessons Learnt	China: CIRC banned universal life products as add-on to life policies, the regulator adopted a more cautious attitude towards the use of insurance money to fund investment
	Hong Kong: certain participating products draw public attention of low fulfilment ratio, i.e. actual declared bonus much lower than illustrated as at point of sales
	Singapore: an insurer's certain products incurred high first year lapse due to agency misconduct, where the insurer offered first year commission higher than first year premium for these products
	South Korea: certain critical illness & health products incur loss due to increasing incidence for thyroid, breast, colorectal cancer, and relevant reinsurance cost
	Thailand: certain whole life products sold 20 years ago offered high guarantee options to policyholders, based on the high interest rates as at pricing

- Besides earning and capital generation, growth is another key focus, i.e. long-term value will only be created through developing profitable new business.
- It is crucial the assumptions used is valid in the first place, and the cost of options and guarantees is properly priced.
- Following the trend of moving towards risk-based capital, there is an emphasis in risk-based rather than volume-based new business margin measures, which demonstrate the value of new business per unit of risk capital employed.

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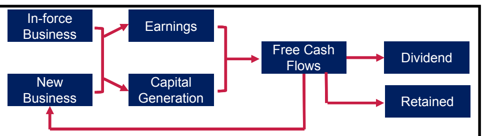
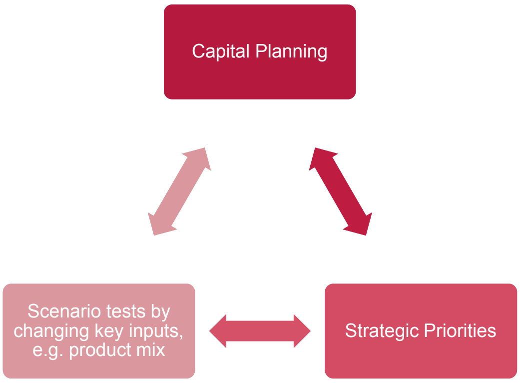


Capital Planning



- Move away from a silo approach, where capital planning is mainly driven by accounting & regulatory considerations, to a mixed approach, where capital planning is complemented by weighing strategic priorities, such as market opportunities, geographic footprint, product and channel review.
- Forward looking, projection into longer time horizon, with well-designed scenario tests, to facilitate key decision making:
  - Dividend policy (remittance from business units, payment to shareholders)
  - Geographic footprint
  - Distribution channel / product strategy
  - M&A or other corporate structuring decisions
  - Reinsurance
  - Debt / equity financing

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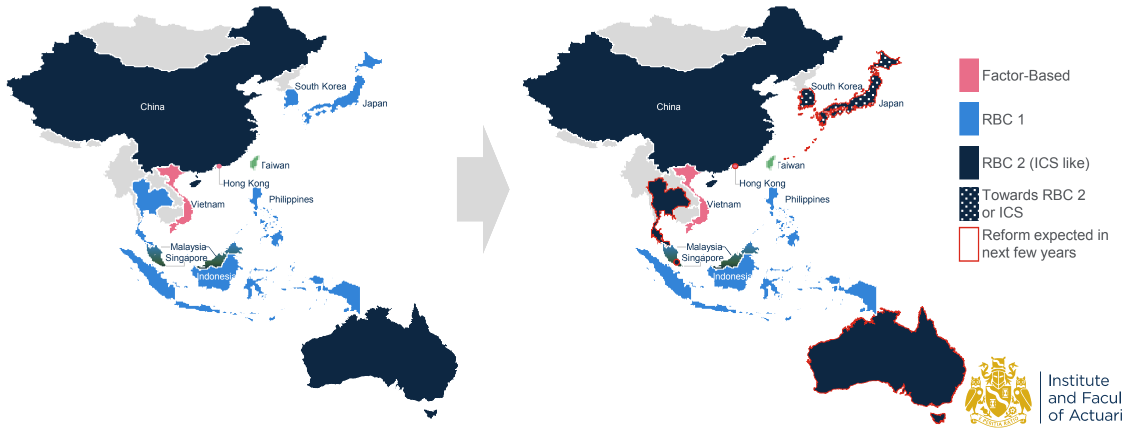
Overview of Evolving Solvency Regime

Current & Near-Future Status in Asia Pacific

Numerous supervisors / regulators have recently implemented or started reviewing the existing regime, towards Risk-Based regulatory regime

Current — Near Future



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Solvency Regime Evolving in Asia Pacific

1 Factor-Based

- **Solvency I type**
- Required Capital:
  - **Prescribed %** of reserves and/or 'sum at risk'
  - Percentages varied by type of product
- Capital Adequacy Ratio = % of Req. Cap.

2 Risk-Based I

- Required Capital:
  - Depends on **several risks** being exposed to, e.g. insurance risk, market risk, credit risk, etc.
  - Either **prescribed factor** or **stress-test** basis
  - **Diversification** allowed
- Available Capital based on Prescribed Formula
- Capital Adequacy Ratio = Ratio of Available Cap and Req. Cap.

3 Risk-Based II

- 3 Pillars approach (or similar):
  - Quantitative
    - Applies **Total Balance Sheet approach**
    - **Full coverage** of risks
    - Mainly **stress-test** basis
    - Requirement of **categorizing capital base** (e.g. Tier 1 & 2)
    - Based on **value-at-risk** at certain confidence level or other similar metrics
  - Qualitative (e.g. **ERM**, **ORSA**)
  - Disclosure and Transparency

Example: Hong Kong
- Solvency Margin = total assets - liabilities
- Required Solvency (life) = max(HK$2 million, generally 4% of mathematical reserves + 0.3% of capital at risk.

Example: Singapore
- Applying risk factors (standard formula) on the exposures of both assets and liabilities
- Financial Resources:
  - Total assets - liabilities (non-Participating funds)
  - sum of surplus account and 50% of non-guaranteed benefits for Participating funds
- Risk Requirement: sum of insurance (stress-test approach) and market risks requirement (factor approach)

Example: China CROSS, Hong Kong RBC, Singapore RBC2

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Overview of Risk-Based II Framework (1/2)

Insurance Supervisor
Principles, methods, standards of regulation

Three-pillars

Quantitative
- Address and mitigate quantifiable risks
- Requiring adequate and appropriate capital
- Based on value-at-risk at certain confidence level or other similar metrics

Qualitative
- Built on Pillar 1 to further mitigate risks
- Integrated quantitative risks and those are difficult to be quantified
- For example, ERM & ORSA
- Insurance supervisor may specify intervention action

Disclosure
- Rely on market discipline

Company's internal solvency and capital management and related policies

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Overview of Risk-Based II Framework (2/2)

Available Capital

- Market consistent valuation
- Total balance sheet approach
- Fair-value approach
- Take into account the variability

Total assets	**Available Capital / Capital Resource**
	Other Liabilities
	PAD / MOCE / RM
	Insurance liabilities

Required Capital

Insurance Risk
- Mortality
- Longevity
- Morbidity
- Lapse / Mass Lapse
- Expense / Inflation
- Premium & claim reserves
- Catastrophe, others

Market Risk
- Interest Rate
- Equity
- Property
- Currency
- Concentration*
- Credit / Counterparty

Operational Risk

Diversification Benefit

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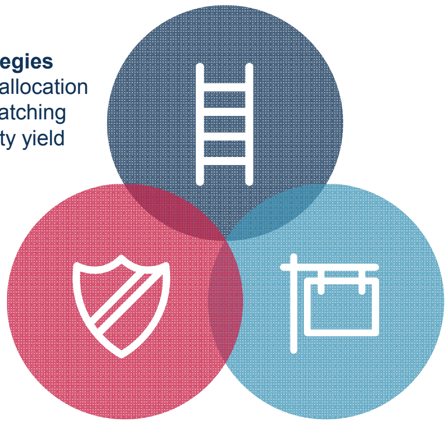
Strategy Post Evolved Solvency Regime

How to Maintain / Improve Solvency Post Risk-Based II?

In light of reduced solvency ratios post implementing the Risk-Based II pillar 1 framework, insurers could explore different strategies

Investment Strategies
- Strategic asset allocation
- Asset liability matching
- Asset and liability yield arbitrage



Product Strategies
- Diversification benefits
- Liabilities duration
- Matching adjustments

Reinsurance Strategies
- Coinsurance
- Stop-loss

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Investment – Strategic Asset Allocation

Change asset allocation immediately affects solvency ratio. Setting SAA is more art than science.

Selected Market Risk Shocks

Shock	China C-ROSS	HK RBC QIS2	SG RBC2
Property	Depending on method of valuation & property fair value change, range could be c.6-15%	• Investments: 44% • Owner occupied: 22%	30%
Equity	Listed: 33%-60%	• Developed 40% • Strategic 20% • Other 50%	• Developed 35% • Other 50%
Oversea Asset	Charged differently from risk for local assets	N/A	N/A
Credit Spread	Term >= 5 years: AAA: 100bps AA+: 110bps AA: 130bps AA-: 160bps A: 200bps BBB & below: 224bps	Term >= 10 years: AAA: 75bps AA: 95bps A: 130bps BBB: 200bps BB: 355bps B & below: 530bps Unrated:: 278bps	Term >= 10 years: AAA: 90bps AA: 95bps A: 125bps BBB: 215bps BB: 355bps B & below: 475bps Unrated:: 285bps

Possible Actions

- C-ROSS:
  - Switch to Property from Equity (or REITS)
  - Reduce unnecessary overseas assets
- HK – from current regulation to RBC:
  - Improve credit rating of bonds
  - Private equities to Strategic investments
- SG – from prevailing RBC to RBC2:
  - Improve credit rating of bonds
  - Adopt look-through approach if the underlying are mostly listed equities or investment grade bonds

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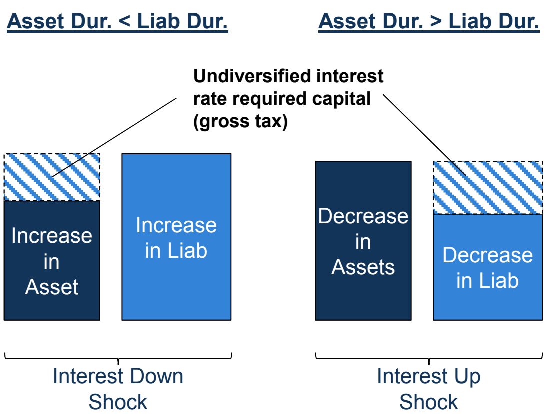
Investment – Asset Liability Matching

Narrow the assets and liabilities' duration gap help in reducing the interest rate required capital

Interest Rate Risk



Possible Actions

- Match fixed income investments and liabilities duration
  - Shift to bonds of certain duration
  - Lobby government to issue new bonds
  - Callable bonds?
- Investment derivatives
  - Swap: long or short fixed
  - Options: long or short call
  - Forwards & futures

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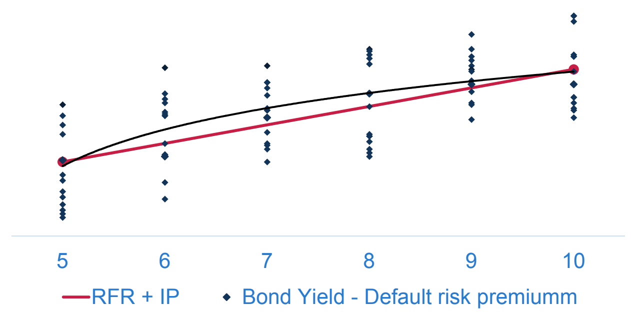
Investment – Asset & Liability Yield Arbitrage

Risk-free rates are interpolated for some terms and arbitrage opportunity may exist

Risk-free Rate vs. Bonds Yields



Comments

- The risk-free rates for year 6 to 9 are mostly interpolated between the observable risk-free rates at year 5 and 10
- On the other hand, the actual term structure of bond yields may not be linear, even after adjusting for default risk premium
- The company possibly could explore such “arbitrage” opportunity that the assets are rolled at higher rates than that for liabilities for certain terms

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Product – Diversification Benefits

Adjust overall profile via new products so that the company could benefit more from diversification

Hong Kong RBC

4% of mathematical reserves + 0.3% of capital at risk

- Mortality + 15%
- Longevity - 25%
- Morbidity + 35/25%
- Expense + 10% Inflation + 1%
- Lapse ± 40% Mass Lapse + 30/50%
- Catastrophe + 1.5 per mille
- Investment Risks

Diversification Benefit

Utilise Diversification

	Mortality	Longevity	Morbidity
Mortality	100%	(25)%	25%
Longevity	(25)%	100%	0%
Morbidity	25%	0%	100%

	Market	Insurance
Market	100%	25%
Insurance	25%	100%

- Launch product with features to maximise benefit between mortality / morbidity and longevity
- Adjust benefit level to maximise diversification benefit between insurance and market
- Improvement is emerged slowly

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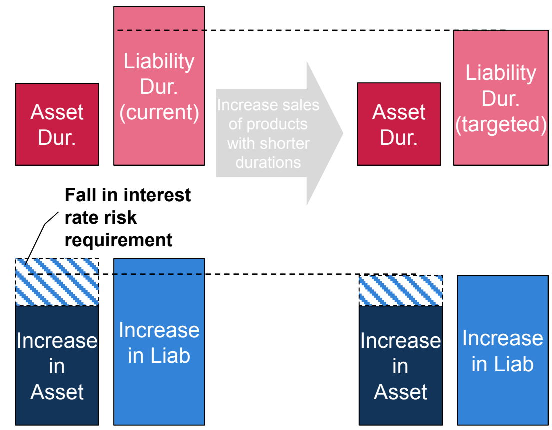
Product – Liabilities Duration

Focus on sales of products with specific durations to adjust the overall liability duration

Interest Rate Risk



Comments

- Interest rate risk required capital exists as a result of assets and liabilities' duration gap
- Larger the duration gap, larger the required capital (measured as % of base liabilities)
- In product development and pricing stage, insurance company could design products which help the company to steer towards "targeted liability duration":
  - Product types, e.g. whole-of-life, endowment, term
  - Regular pay or limited pay premium
  - Contract boundary?
  - Benefit features

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Product – Matching Adjustment

Pricing with matching adjustment on possible products to be more competitive

Valuation Perspective

Matching adjustment may not be attractive for current in-force portfolio:

X The criteria is generally stringent
- Matching of cashflows expected from assets and liabilities, normally this criteria is stringent
- Excess cashflows (income – outgo) during earlier years may need to be recycled within the ring-fenced portfolio for future shortfall in cashflows
- Additional criteria varied by regulator

X Overall impact might be small

X Reduced flexibility: identified and ring-fenced assets and liabilities

Pricing Perspective

- Pricing new products on basis with matching adjustment may allow the company to offer competitive rates

Higher discount rate and lower required capital

↓

More competitive rates

↓

Improve top & bottom line

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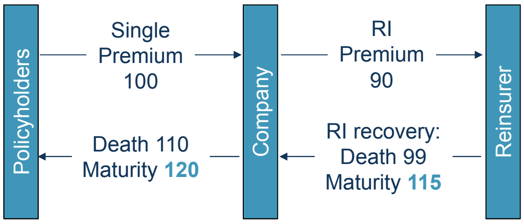
Reinsurance

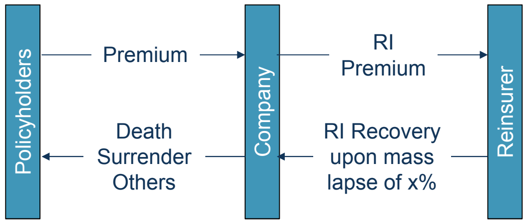
Company could improve its solvency position immediately upon passing risks to reinsurer

Coinsurance



- Company is guaranteed with “investment return” from reinsurer, which enables it with a spread
- Company retains a small portion that contributes positively to solvency ratio and pass the remaining risks to reinsurer

Stop-loss



- CROSS, SG RBC2 & HK RBC all require company to hold capital against mass lapse (30% shock)
- If x<30, the impact from shock of (30 – x)% is passed to reinsurer and could help the company to reduce its capital requirements

Hypothetical figures for illustration only

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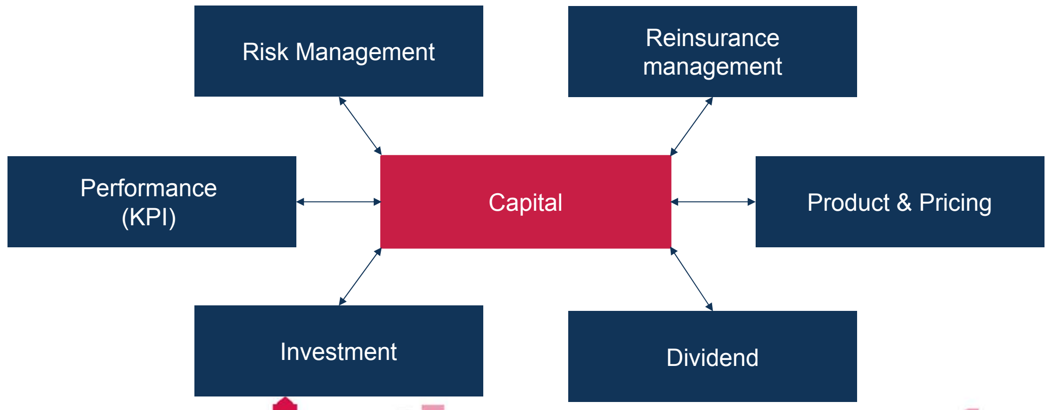
Conclusion

Capital Management Relates to Many Things



Questions

Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.

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