Capital Management and recent RBC2 developments in Singapore

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Munich RE

Agenda

Sharing Ideas to manage Capital

1. Background
2. Some Selected Toolkits for Capital Management
3. Risk Based Capital in Singapore
4. Summary and Questions?

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Today's Presenters

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1. Background - Setting the current scene

Each Individual Company has their unique situations, challenges and needs.

1 Why?

- **Objective** to wish to use available capital in the most cost effective ways to produce optimal growth for company.

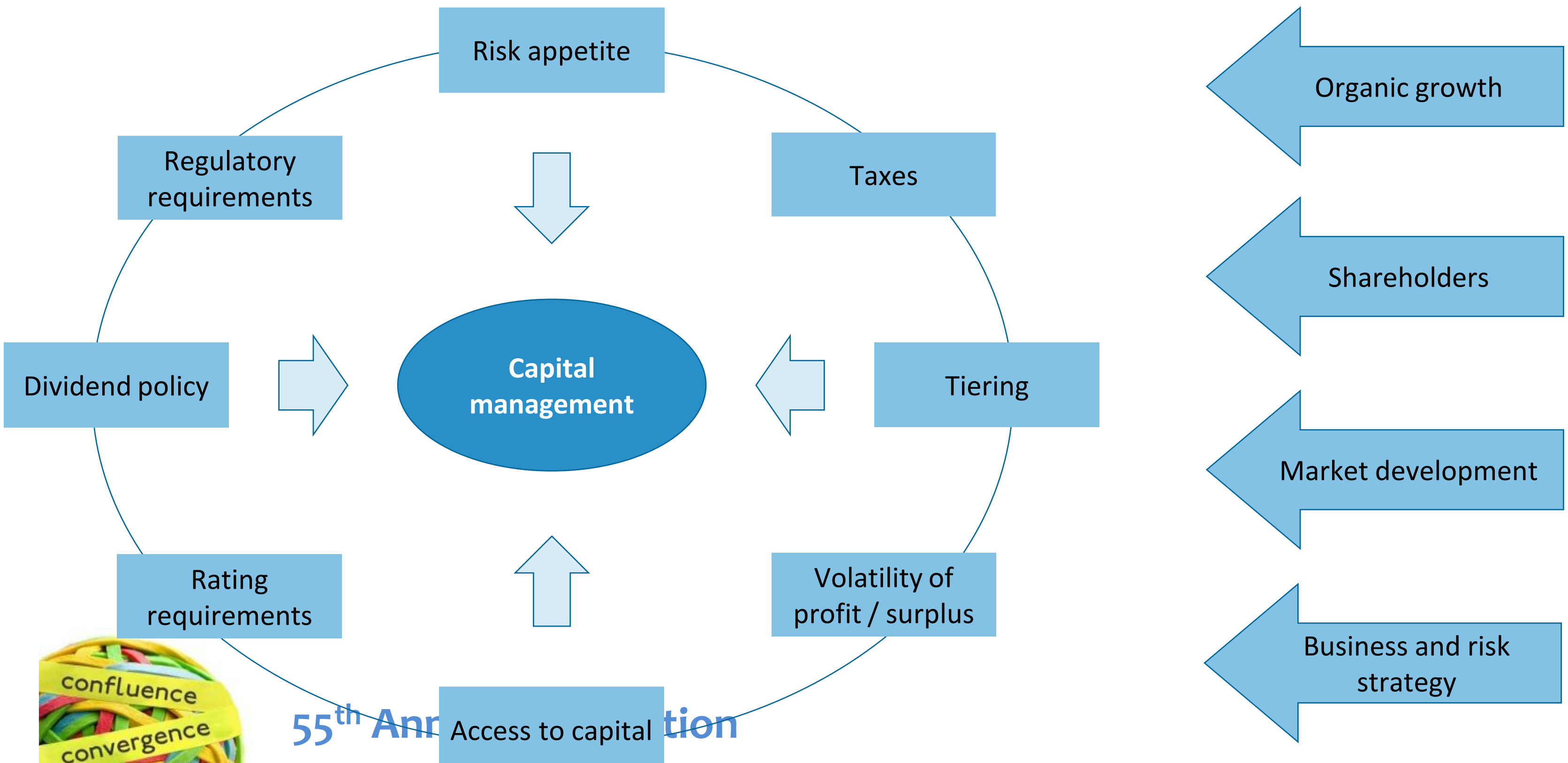
2 Who?

- **All stakeholders,** You, Directors, CEO, CFO, Shareholders Policyholders, Regulators, etc

1. Background -Solution

Understanding Capital Management

Elements to be considered… | **…influenced by**



1. Capital and Capital Adequacy

Capital Adequacy is Institutions must hold sufficient capital to meet their liabilities, to meet the storm

Reasons why capital is needed

- Demonstrate **solvency** to Regulator
- Provide a **buffer** to absorb unanticipated losses from its activities
- **Cushion** against future uncertainty
- **Fund the strains from new business**
- More free assets, higher **investment freedom**
- **Demonstrate financial strengths**
- **Opportunities** for M&A ventures and business developments
- Sell products with options or **guarantees**
- Available capital influence **product designs** and pricing
- **Meeting obligations** to policy owners and other creditors
- Improve solvency positions of the balance sheet
- Overcome timing differences between inflows and outflows

1. Types of Capital?

The two common perspectives

Economic Capital

Internal, based on company's risk profile, risk appetite and needs of its ongoing business strategy.

Regulatory Capital

Prescribed by the regulator to protect against the risk of statutory insolvency.

Toolkit 1

Prepared-ness

Nothing goes right in a Crisis

- Stock markets crashed. Historically no timely re-bound.
- Asset value dropped. Liability increases. Statutory surplus dropped.
- Yield on risk free assets drops.
- Liquidity disappeared on most assets.
- Higher market volatility.
- Limited or no access to Capital at short notice.
- Regulators add more pressures.

The Vision – Be prepared

- Be prepared for crisis, **armed with the right mind & skillsets**
- Start with **Capital Efficient Products**.
- Clear understanding of the business undertaken by **YOU** & the **organisation structure. Pre-requisite for risk analysis excellence.**
- **Good management control** system (eg data recording, auditing,)

Start by being prepared

Toolkit 2

Enterprise risk management (ERM)

Develop your Company's ERM Framework

Toolkit 2: Why ERM

Turning Risk into Value.
Identify Opportunities from Risks.

Allow you to make better decisions

- quantify the risk/return of the business.
- Efficient capital allocation

Increase company's value to shareholders

- ERM identifies, Assesses, Controls,
- Monitors and communicates Risk from all sources

Toolkit 2: Risk analysis part of ERM

What is the significance of each risk?

- Risk
  - Non Financial
    - Operational risk
    - External risk
  - Financial
    - Market risk
    - Credit Risk
    - Business Risk

How each risk impacts the
balance sheet (capital position at any one point in time)
and cashflow (liquidity) requirements?

Toolkit 3

Balance Sheet: " Reduce- Reduce - Increase"

Reduce Asset Risk

Change Non admissible to Admissible

Reduce mis-match risk, closer matching

Different investment returns

Reduce Liabilities

Risk transfer mechanisms (Reinsurance)

Reduce business volume

- Reduce or exit capital intensive lines of business

Restructure products & their management

- Reduce product &/or mismatch risk, hedge
- Reduce or amend timing of financing

Increase Capital

- Increase shareholders equity, issue debts
- **Increase income**
    - **Reinsurance**
    - **Sale of blocks/companies**
    - Reduce sales of high strain business

Example – Product Design

Is product design Capital efficient?

Assessing capital requirements and return on capital

Items	Examples of What IF ?
Total Capital Requirement (including any one off development cost)	• Fall in investment returns? • Changes in economic scenarios? • What is the impact on the ability to meet regulatory requirements ?
Profits expected to emerge	• Changes in mortality experience?
Expected return on capital (Different Measurements)	• Sensitivity testing using different discount rates

Toolkit 4

Some Capital Market Tools

Equity

- Raising Equity Capital increases available capital from an Economic Capital perspective (i.e increase Realistic Capital)

Subordinated Debt

- Rank behind policyholders in a wind up so no reserves need to be held for its repayment. Increases the company's free assets from a policyholder perspective.

Hybrid Capital

- A financial security that combine both debt and equity characteristic

Securitisation

- Increasing Regulatory Capital. Eg converting an illiquid asset into tradable instruments and selling it to the capital markets.

Familiarise yourself with the options available to the Company

Toolkit 5 Reinsurance – a Powerful Tool

Twin Tracks: Traditional or Capital Solution Reinsurance

Reinsurance can reduce amount of capital required.
Reinsurance can act as a source of capital.

Toolkit 5

Reinsurance as a Capital Management Tool

Capital shortfall and optimisation		Solvency financing	RI **reduces capital requirements**, and **retroactive RI and financing deals in life** can even **generate equity**, which improves capital ratios
M&A		Transaction financing	RI to **reduce capital requirements of the acquisition vehicle** as well as concurrently **generating an extraordinary dividend**
Growth		Growth financing	RI to **fund future growth** and **enable a higher dividend yield** as well as **increased return on capital**
Optimisation		Equity / hybrid replacement financing	Optimisation of capital costs by **replacing existing capital with RI** due to **reinsurer's diversification advantage** and **lower cost of capital**

Toolkit 5

Traditional Reinsurance	Capital Solution Reinsurance
Main uses • limitation of exposure to risk • smoothing of results • availability of expertise (new risks, unusual risks, new territories) • increasing capacity to accept risk (singly or cumulatively) • financial assistance (NB strain, merger/acquisition, bolstering free assets) • diversification.	**Main uses** • Need for Cash • Relief of new business cash strain relief • Relief of regulatory capital requirement. • Tax optimisation

Toolkit 5

Capital Solution Reinsurance

What type of capital is the client concerned about

Type	Categories	Comment
Statutory	Solvency I & II, Local, parent solvency/stat	External regulatory measure, threshold & peers in market
Economic	Company specific RBC	Internal measure – used for decision making –model driven.
Rating Agencies	S&P, Moody's,..	Need to understand rating implications of any changes – affects costs of funding, new sales,...
Accounting	IFRS, US GAAP, local GAAP	Used for shareholders & analysts - MCEV,..

Need to understand the impact of proposed solutions

Toolkit 5

Different forms of Financing

Financing amount

Insurance Carrier ← → Munich RE

Reinsurance with financing

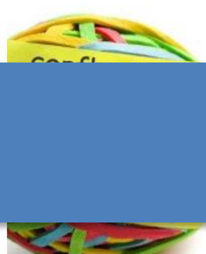
Co, Mod Co, YRT or Stop Loss

Insurance Carrier ↔ Munich RE

No financing

1. The financing or relief is provided to the ceding company, so the company gets both
   - Financing relief, which net of tax will flow to surplus
   - Required capital relief from the block being ceded.

2. The other alternative is simply to reinsure a block without financing
   - Required capital relief from the block being ceded



Criteria: Meeting regulatory approval

Toolkit 5

Reinsurance Benefit

- **Generate capital**
  - Increases Tier 1 Capital
  - Decreases Required Capital
- **Availability**
  - Reinsurance solutions do not depend that heavily on current capital market circumstances. Capital markets might be closed for certain transactions or the transaction is prohibitively expensive during crisis period.
- **Flexibility / Tailor made solutions**
  - Reinsurance solutions can be customized to the client's needs whereas capital market instruments oftentimes require a certain minimum of standardization

Toolkit 5

Reinsurance Benefit

- **Speed**
  - Simpler & faster than Securitization
  - As risks can be limited, less due diligence required than with securitization
- **Better Alignment to your business**
  - Payback of relief variable - based on profits, so matches income stream
  - Removes risk from balance sheet
  - Duration can be variable – compared to a block sale which is permanent
- **Lower transaction costs**
  - Issuing capital market instrument usually require large internal resources as well as fees for external advice:
    - Financial and legal advisory & placement and Rating Agencies fees

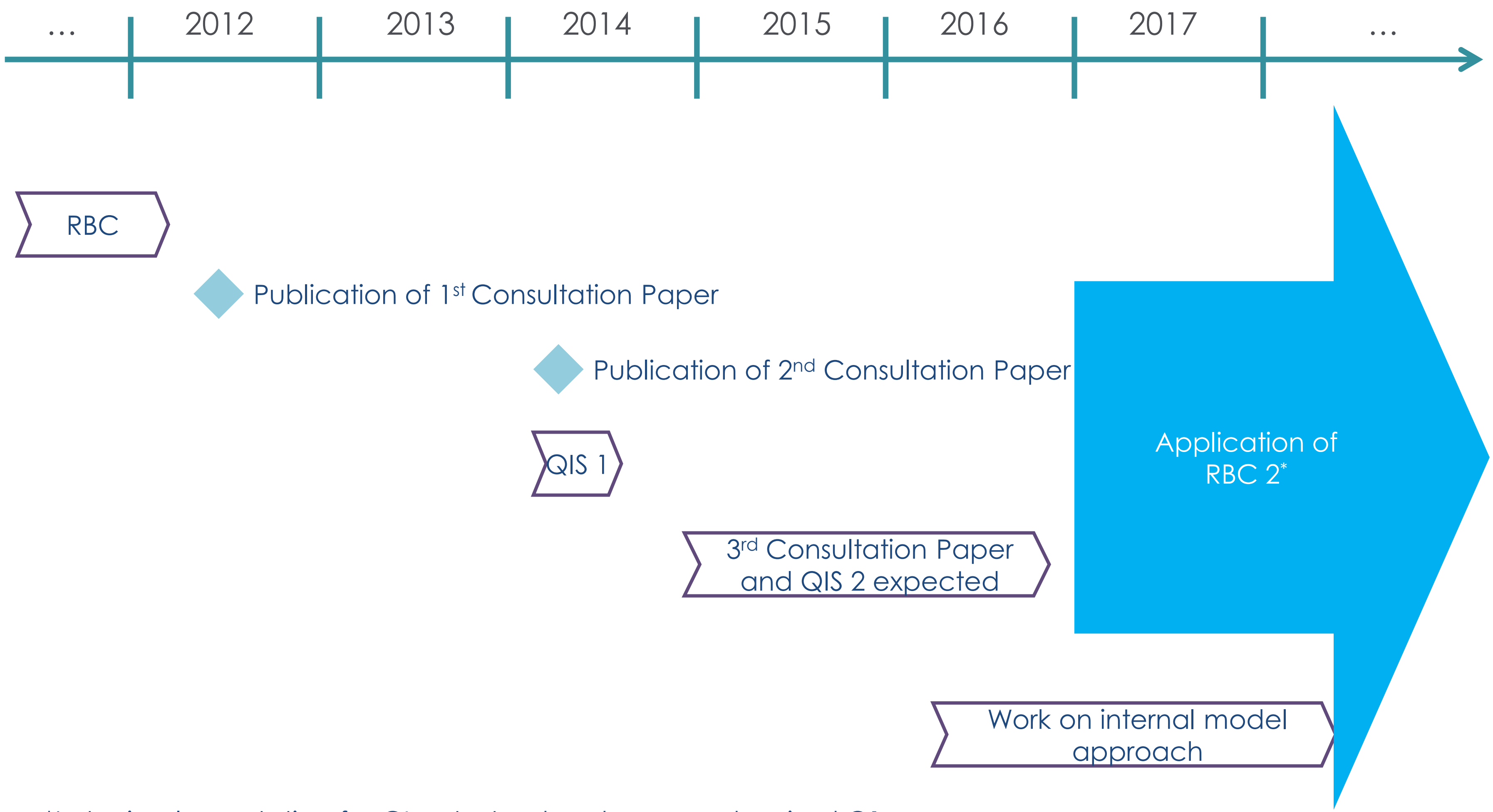
Toolkit 5

Reinsurance Benefit

- **No public disclosure**
  - Compared to the issuance of capital market products reinsurance solutions do not require a public disclosure
- **Favourable financial terms**
  - Reinsurance might be cheaper compared to capital market solutions
- **Other benefits**
  - Can be contingent (capital on call)
  - Improve returns by up fronting profits
  - Improve stability, timing of earnings
  - Reduces strain of acquisition costs
  - Allows you to redeploy capital into higher yielding lines

Risk Based Capital Framework in Singapore

Introduction of RBC 2



*Later implementation for GI catastrophe charge and revised C1 risk requirements for general business

Required Capital - Future State (RBC2)

- MAS recalibrates risk requirements by applying a Value at Risk (**VaR**) **99.5%** over a 1 year horizon

- New approach to move away from factor-based to **scenario-based**

- **Diversification** between different risks allowed

- Four **new risk modules**:
    1. Spread risk
    2. Operational risk
    3. Insurance catastrophic risk
    4. Liquidity risk

- Internal models – later stage

Components of required capital

- Risk capital requirement
  - C1 Insurance
    - General insurance
      - Premium liability
      - Claims liability
      - Insurance catastrophe
    - Life insurance
      - Policy liability
        - Mortality (non-annuity)
        - Mortality (annuity)
        - Disability
        - Dread disease
        - Other insured events
        - Expense
        - Lapse
        - Conversion of options
      - Surrender value condition
      - Insurance catastrophe
  - C2 Asset
    - Equity investment
    - Interest rate mismatch
    - Credit spread
    - Property investment
    - FX mismatch
    - Counterparty default
  - C3 Asset concentration
  - C4 Operational

Risk capital requirement:

$$\sqrt{C1^2 + C2^2} + C3 + C4$$

New risk modules

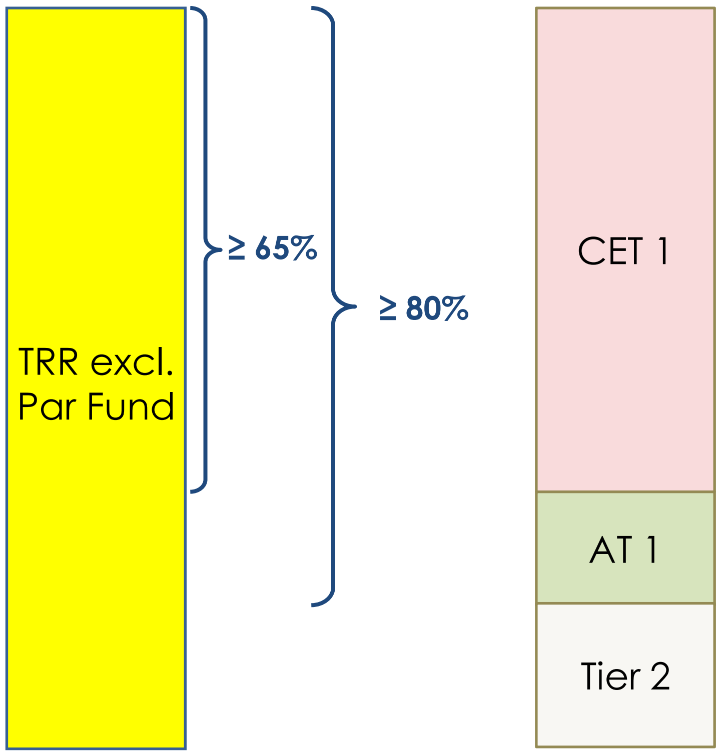
Available Capital

- Three categories:
  1. Tier 1
  2. Tier 2
  3. Aggregate of allowance for provisions for non-guaranteed benefits

- Negative reserves – allow for partial recognition; restricted to
  - a certain amount to be determined
  - positive financial resource adjustment (off-balance sheet treatment)

- Aggregate of allowance for provisions for non-guaranteed benefits
  - MAS proposes to reclassify as positive financial resource adjustment
  - SAS argues that any financial resource adjustment should be Tier 1

Tiering of Available Capital



- Surplus of insurance funds (excl. Par Fund)
- Surplus account of Par Fund
- Surplus of overseas branch operations
- Paid-up capital
- Retained earnings (unappropriated profit/loss) less reinsurance and financial resource adjustment

- Irredeemable and non-cumulative preference shares

- Irredeemable and cumulative preference shares

Alignment with capital framework for banks

* Allowance for transitional arrangements

Supervisory Intervention Levels

Current RBC regime:

- Minimum Capital Adequacy Ratio of 100%
- Notification if falling below 120%

Two intervention levels under RBC2 (to be adopted at **both** company & fund level):

Prescribed capital requirement (PCR)

- Higher supervisory intervention level
- TRR corresponding to VaR 99.5% confidence level over a one year period
- Recovery plan and restoration of capital position within 3 months if violated

Minimum capital requirement (MCR)

- Lower supervisory intervention level
- TRR corresponding to VaR 90% confidence level over a one year period
- Violation may lead to strongest supervisory action (e.g. prohibition of new business)

Valuation of Assets and Liabilities

Two proposals for SGD denominated liabilities:

- Proposal 1
  - Prevailing market yield of Singapore Government Securities (SGS) for durations up to 20 years;
  - 90% of historical average yields since inception and 10% of latest six-month average yield of 30 year SGS for durations beyond 30 years; and
  - Interpolated yields for durations between 20 and 30 years
- Proposal 2
  - Prevailing market yield of SGS for durations up to 30 years; and
  - Flat extrapolation from year 30 onwards

For non-SGD liabilities, MAS proposes to apply the regulatory requirements for discounting as defined by the jurisdiction issuing the currency

Dropped as this is over-complex and could result in inconsistent assessment of liabilities
Further consultation

Matching adjustment

Prerequisites

- Eligibility of assets
  - Singapore Government Securities or SGD corporate bonds of investment grade quality
  - US Treasury Securities or USD corporate bonds of investment grade quality
  - Cash denominated in SGD or USD
  - Fixed cash-flows, no issuer options, Bonds with credit rating BBB- to BBB+ limited to 30% of total eligible assets
  - Eligible assets have to be identified and managed separately from the other assets in the insurance fund
- Eligible products:
  - Products denominated in SGD or USD
  - Life products with immaterial risk exposure to mortality, lapse, disability, dread disease and other insured events

Summary

Be Prepared

Individual

- Underlying the Theme "Capital Management" underlies the intimate needs for a well –developed actuary who is able to understand risks and their impacts.

Tools

- Tools and examples shared are non-exhaustive. Usage depends on circumstances and needs.

Reinsurance

- Reinsurance is one possible good tool and Reinsurers are your good risk partners.

Questions

Thank you very much for your time and for listening

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