Capital Analysis of Takaful Companies

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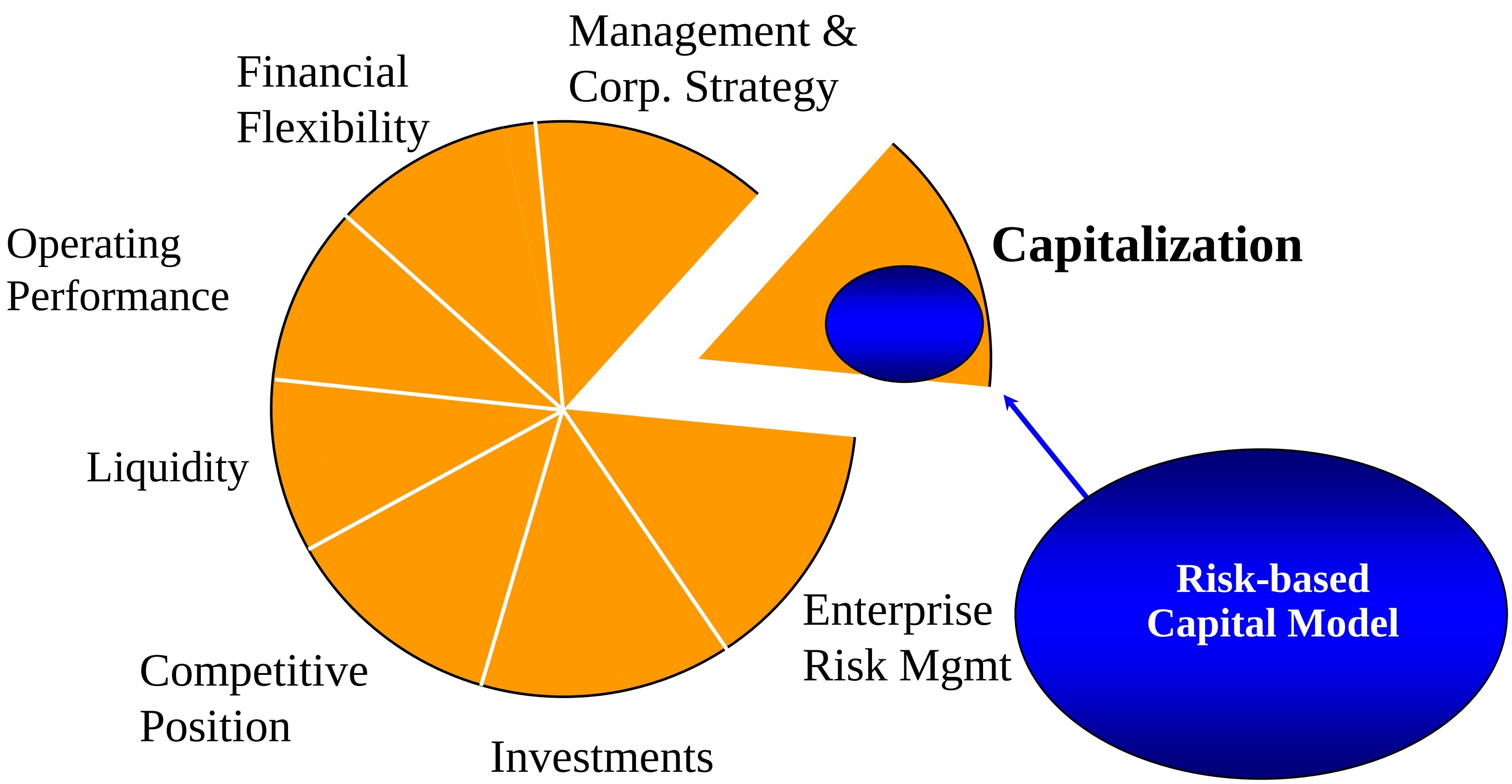
S&P Capital Model in Context



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What is Capitalization?

Standard & Poor’s considers

- **Capital adequacy**
- **Technical reserving**
- **Reinsurance protection available**

How Much Capital Is Necessary?

Fundamentally, capital acts as a shock absorber for times of financial stress.

For an insurer the minimum quantum needed depends on:

a) **The regulatory framework**

b) **The views of management**

c) **An assessment of the risk framework being carried by the insurer**

S&P uses its risk-based capital model to monitor these perspectives.

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What is a Takaful Company's Risk Framework?

Takaful companies carry 2 separate (types of) funds:

1. **Shareholders' funds bear assets risks, so credit and market risks exist, particularly for investments.**
2. **Takaful funds (family/general) bear the risks of**
   a) **the underwriting decisions – so risk pricing and reserving risks**
   b) **the asset risks, so credit and market risks again.**

A takaful fund deficit can only be recovered from the fund members, but shareholders funds give support through the Qard Hassan loan facility to finance takaful funds in deficit.

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S&P's assessment of Takaful Capital Adequacy

We use the combined separate balance sheets presented for both shareholders funds and takaful funds.

We adjust shareholders capital to deduct any Qard Hassan made by the shareholders to the takaful fund; i.e. we treat the Qard Hassan receivable as a loss.

S&P's capital adequacy model estimates total assets risks, so credit and market risks derived from the combined assets of the shareholders and the takaful funds.

The model also estimates liability risks derived from the underwriting decisions – so pricing and reserving risks.

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S&P Capital Model in Context

The capital model:

✓ Provides a consistent framework to assess capital adequacy

✓ Acts as a tool to gain insight into a company's risk profile

✓ Identifies potential risk concentrations

✓ Assesses quantum and quality of capital

The capital model does not:

X Define the rating outcome

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Overview of Capital Model

Key Features

- Globally consistent framework
- A single model with regional factors
- A deterministic, factor-based model
- Data requirements manageable
- Not a substitute for broad-based analysis
- Used in conjunction with ERM evaluation

Takaful fund deficits – an interpretation

How large is the takaful fund deficit relative to gross annual contributions?

How will it be recovered?

At what point does the accumulating deficit represent an unreasonable drag on the future fund members' contribution levels?

So is that accumulating takaful fund deficit a drag on the entity's competitive position?

Capital Model Confidence Levels

Target Capital Rating	Confidence Level
AAA	> 99.9%
AA	> 99.7%
A	> 99.4%
BBB	> 97.2%

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S&P Ratings: Capital Adequacy vs Capitalization

- **Current Rated Takaful Insurers**

	S&P Rating	Capital Adequacy	Capitalization
Hannover Retakaful	A/Stable	Extremely Strong	Strong
Takaful International	BBB/CW negative	Good	Good
Wethaq Takaful	BB/Stable	Good	Good
Malath	BBB/Positive	Extremely Strong	Good
Saudi Re	BBB+/Stable	Extremely Strong	Strong
Tawuniya	A/Stable	Good	Good
Aman	BBB/Stable	Good	Good
Noor Takaful Family	BBB-/Stable	Strong	Good
Noor Takaful General	BBB-/Stable	Strong	Good
Salama*	BBB+/Positive	Extremely Strong	Strong
BEST Re	BBB+/Positive	Strong	Strong
Takaful Re	BBB/Stable	Extremely Strong	Strong
Tokio Marine Retakaful	AA-/Negative	Guaranteed by Parent	

* Includes BEST Re;

Source: RatingsDirect.com

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Asset Risk Charges

Asset Charges – Equities

Data

- 30 years' monthly MSCI data

Distribution/Method

- Regime switching log normal model
- Better fit than log normal model
- Absolute goodness-of-fit varied by market

Charges

- Countries grouped into charging bands

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Asset Charges – Property

Data

- Various property price indices used
- Periods of five, 10 and 15 years considered

Distribution/Method

- Lognormal distribution assumed

Charges

- Volatilities a blend of results from different periods
- Countries grouped by similar characteristics

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Asset Charges – Credit

Data

- ➢ S&P default studies

Distribution/Method

- ➢ Normal distribution assumed
- ➢ Discounted
- ➢ Recovery varied by rating/asset type

Charges

- ➢ Grouped by rating and term

Asset Liability Management Charges

- Charges based on historic interest rate and spread volatility
- Duration mismatch assumptions determined for each market
  - Sensitive to interest rates and guarantee levels
- Mismatch assumptions modified by ERM assessment
- Mismatch assumptions can be adjusted for actual company data
- Close matching will attract lower capital requirements
- Net impact of interest rate shocks calculated

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Liability Risk Charges

Underwriting Risk: Non-life Pricing Risk

- Accident year loss data analysed over 20 year period
- Second worst accident year selected for each major business line
- Factors tailored to regional experience

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Liability Charges - Life

- Charges vary by liability type
- Charges derived from limited data sources
- Capital requirements reflect exposure to:
  - Longevity
  - Mortality/morbidity
  - Embedded options and guarantees
  - Lapsation
  - Expenses
  - Operational risk

Underwriting Risk: Reserve Volatility

- Loss development metric (LDM) methodology used to determine reserve volatility using last 20 years of loss reserve development data
- The discounted LDM ratios are calculated by line, company, and accident year. A percentile distribution is established to measure adverse scenario loss development.
- These factors are tailored to regional experience

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Catastrophe Capital Charge

The 1/250-year PML

Market Models

- **In the Market – reserve requirements at each confidence level have increased due to an assumption of increased frequency and severity – specifically, the short-term catalog of events.**

S&P Approach

- **Is based on: higher level of confidence (previously 1-in-100) required**
- **Should include: demand surge, fire following (attached to earthquake and fire policies), sprinkler leakage (if not excluded), storm surge and secondary uncertainty losses.**
- **Is global: The capital charge covers catastrophe exposures on a global basis, covering the perils: hurricanes (wind), flood (outside the U.S.), earthquake, tornadoes, and hail.**

Relevant Standard & Poor's Criteria Publications:

- **Refined Methodology And Assumptions For Analyzing Insurer Capital Adequacy Using The Risk-Based Insurance Capital Model, 7 June 2010**
- **Standard & Poor's Approach To Rating Takaful And Retakaful (Islamic Re/Insurance) Companies, 30 March 2009**

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