



Takaful Models:

Overview from an actuarial perspective

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Agenda

Introduction to Takaful

- Overview
- The African Market
- Summary Market Statistics

Takaful Operating Models

- Mudharaba Model
- Wakala Model
- Wakala-Waqf Model

A comparison of models:

- Assumptions & Methodology
- Performance Metrics

How Actuaries can get involved

Introduction to Takaful

General overview

The African market

Summary market statistics

Introduction to Takaful

General overview

Takaful is derived from the Arabic word *kafala* meaning “joint benefit or shared responsibility”.

Takaful is the Islamic alternative to conventional insurance and is therefore Shariah compliant.

What are the principles of Shariah?

- islamic law
- interest, gambling and dealing in arms is prohibited

What are the key features of Takaful?

- mutuality – risk sharing
- separation of assets (between operator and participants)
- shariah-compliant investments

Introduction to Takaful

General overview (continued)

Takaful insurance can include General insurance, Life insurance, Medical and Health insurance, as well as accident and education plans.

Family Takaful:

- Includes endowments and savings products
- Characterised by low penetration rates

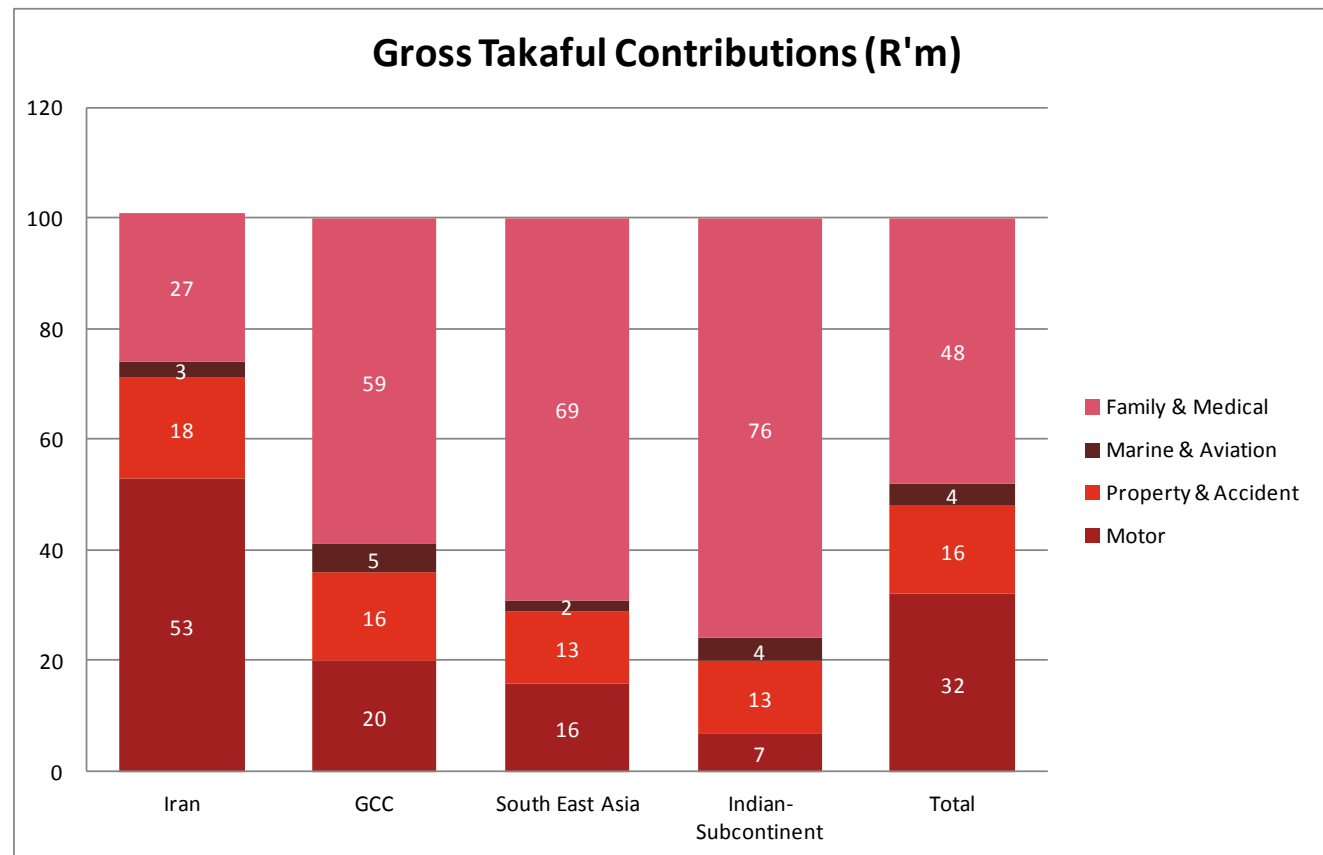
General and Health Takaful:

- Includes commercial and personal property and motor products, marine and aviation, and health insurance
- Health Takaful is a rapidly growing sector in the GCC as health insurance is increasingly being made compulsory in GCC countries.

Introduction to Takaful

General overview (continued)

Takaful insurance can include General insurance, Life insurance, Medical and Health insurance, as well as accident and education plans.



Introduction to Takaful

General overview (continued)

As in the conventional insurance industry, there is a need for strong and reliable re-insurers in the Takaful space.

Although most Shariah scholars have allowed Takaful operators to re-insure conventionally when no re-Takaful alternative is available, the development of re-Takaful has been strongly encouraged.

From an operational perspective, the re-Takaful operator is set up in a similar manner to the Takaful operator.

Examples of Re-Takaful companies are:

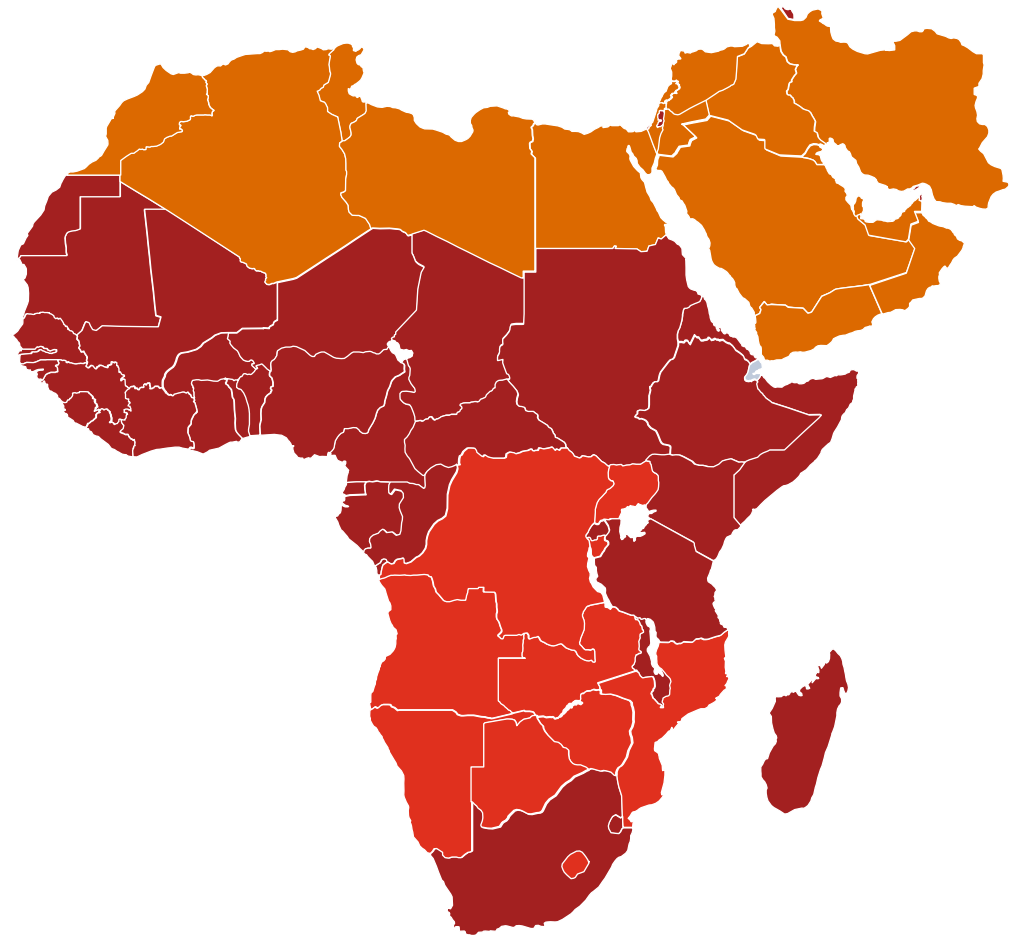
- TakafulRe in Dubai – paid-up capital of USD 125 million and a BBB+ credit rating
- BEST Re in Tunisia – paid-up capital of USD 55 million and a BBB+ credit rating

Introduction to Takaful

The African Market

The map below illustrates the countries in Africa which we have identified as showing the greatest potential for the expansion and growth of Takaful and Islamic Finance.

The countries in the Middle East and North Africa should also be considered as areas where African specialists can be involved - currently these markets are mainly served through European companies.



Legend:

- Key countries identified
- Middle East and North Africa
- Other

Introduction to Takaful

The African Market

Kenya, Tanzania, Sudan, Ethiopia

- Stable economic region, with steady levels of growth and a highly educated population.
- The region also has a significant Muslim population,

Nigeria, Ghana, Senegal, Ivory Coast, Cameroon

- West Africa has the largest population concentration in Africa (including large proportion of Muslims).
- Booming financial services industry

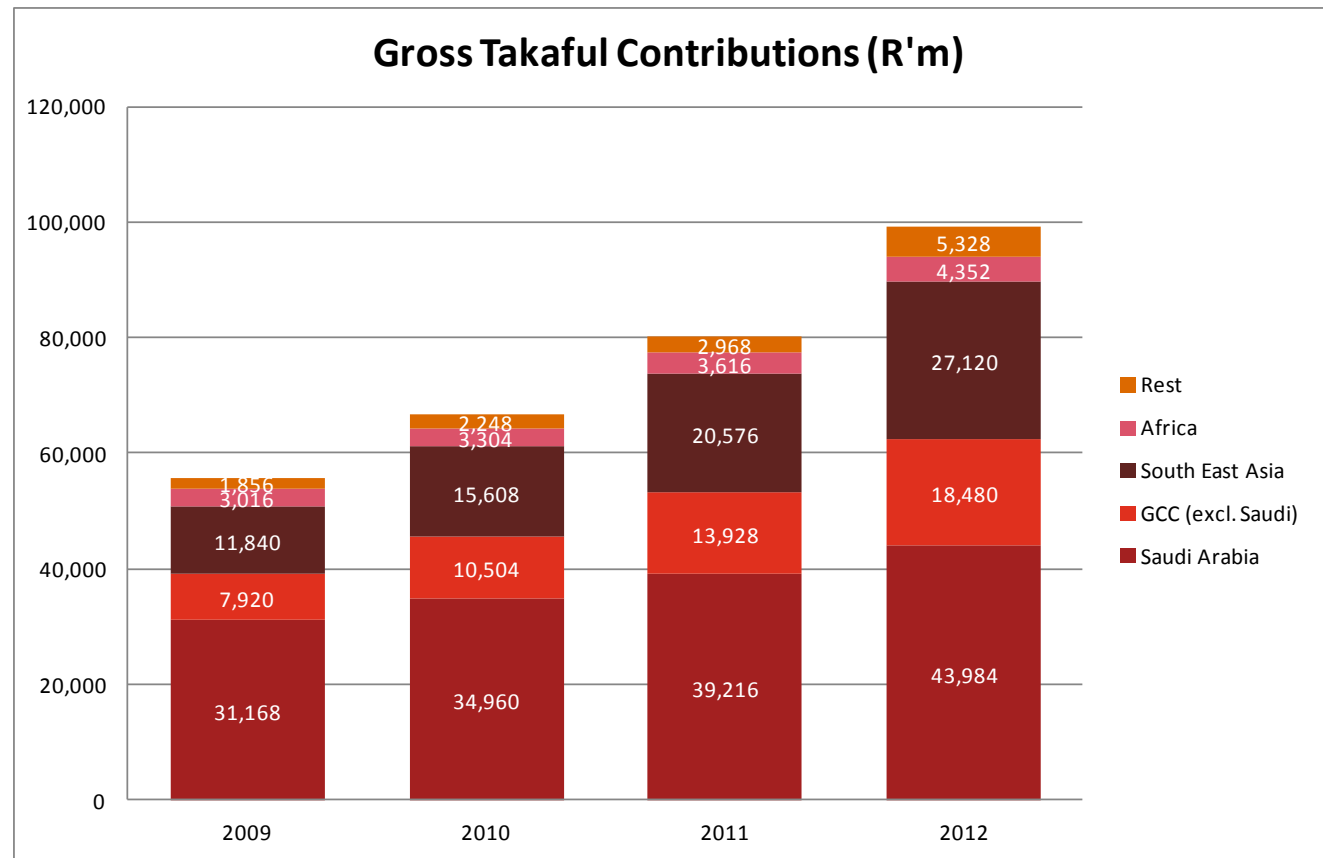
Morocco, Algeria, Libya, Tunisia

- The Northern African Takaful and Islamic Finance market can be considered to be the most well established.
- However, these markets have traditionally been serviced by companies in Europe and the U.K.

Introduction to Takaful

Summary market statistics

The global contributions have shown steady growth averaging roughly 20% per annum. The growth for 2012 is projected to be 25%.



Takaful Operating Models

Overview

Models

- Mudharaba (“profit-share model”)
- Wakala (“agency model”)
- Wakala-Waqf (“hybrid model”)

Takaful Operating Models

Overview

There is no unique operating model for Takaful companies, as each country has its preferred model.

There are three operating models that are commonly used:

1. Mudharaba (Profit Share) Model

- profit sharing based on fund surplus at the end of each year
- operational issues to consider

2. Wakala (Agency) Model

- fee based model
- most transparent disclosure of fees

Takaful Operating Models

Overview

3. Wakala-Waqf (Hybrid) Model

- combination of profit sharing and fee based models
- most commonly used model in South Africa

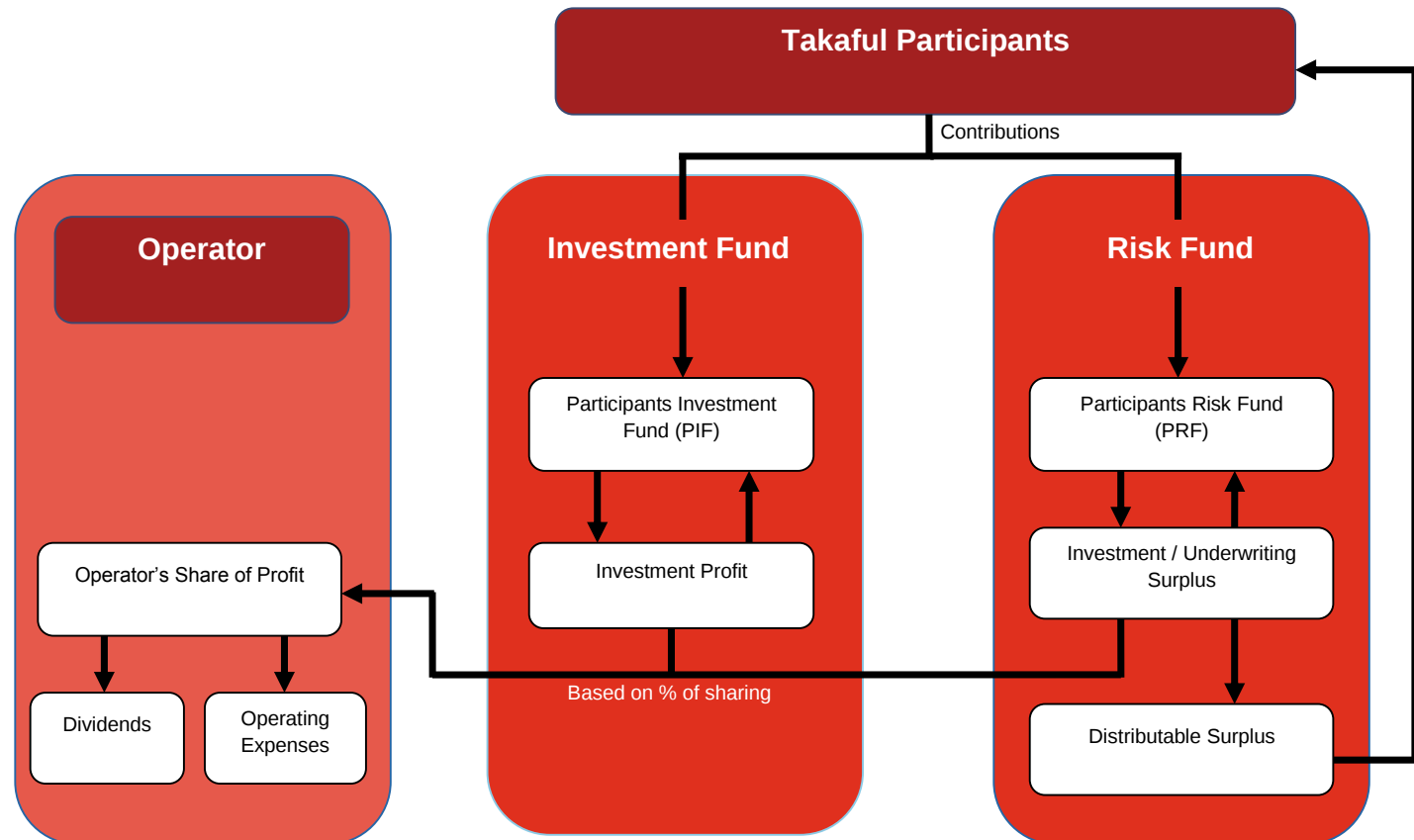
Models by country

	Saudi	GCC	Africa	Asia
Mudharaba (Profit Share)	✓	✗	✗	✓
Wakala (Agency)	✗	✓	✓	✗
Wakala-Waqf (Hybrid)	✓	✗	✓	✓

Takaful Operating Models

Mudharaba (Profit Share) Model

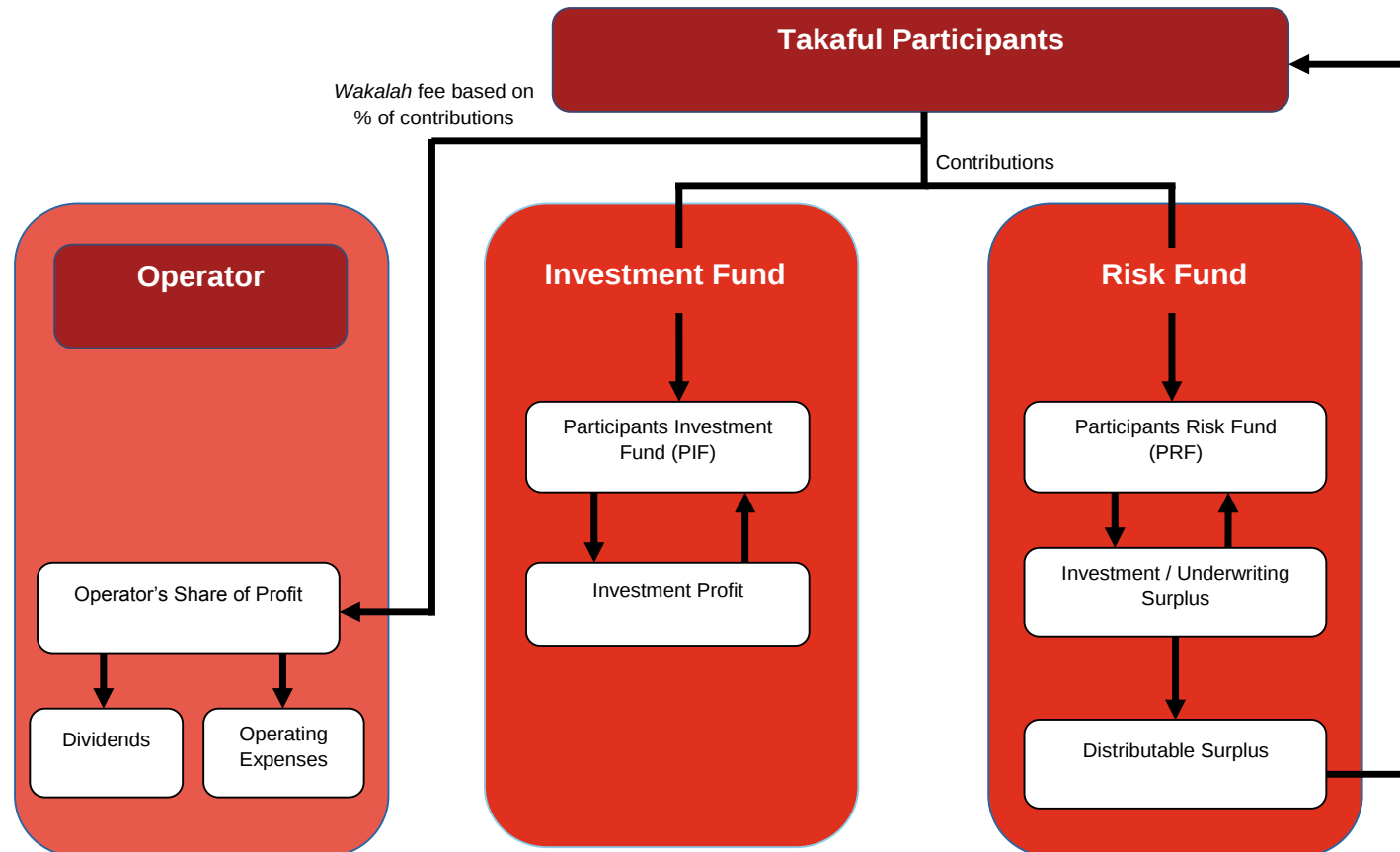
- Profit sharing based on fund surplus at the end of each year.
- Operational issues to consider.



Takaful Operating Models

Wakala (Agency) Model

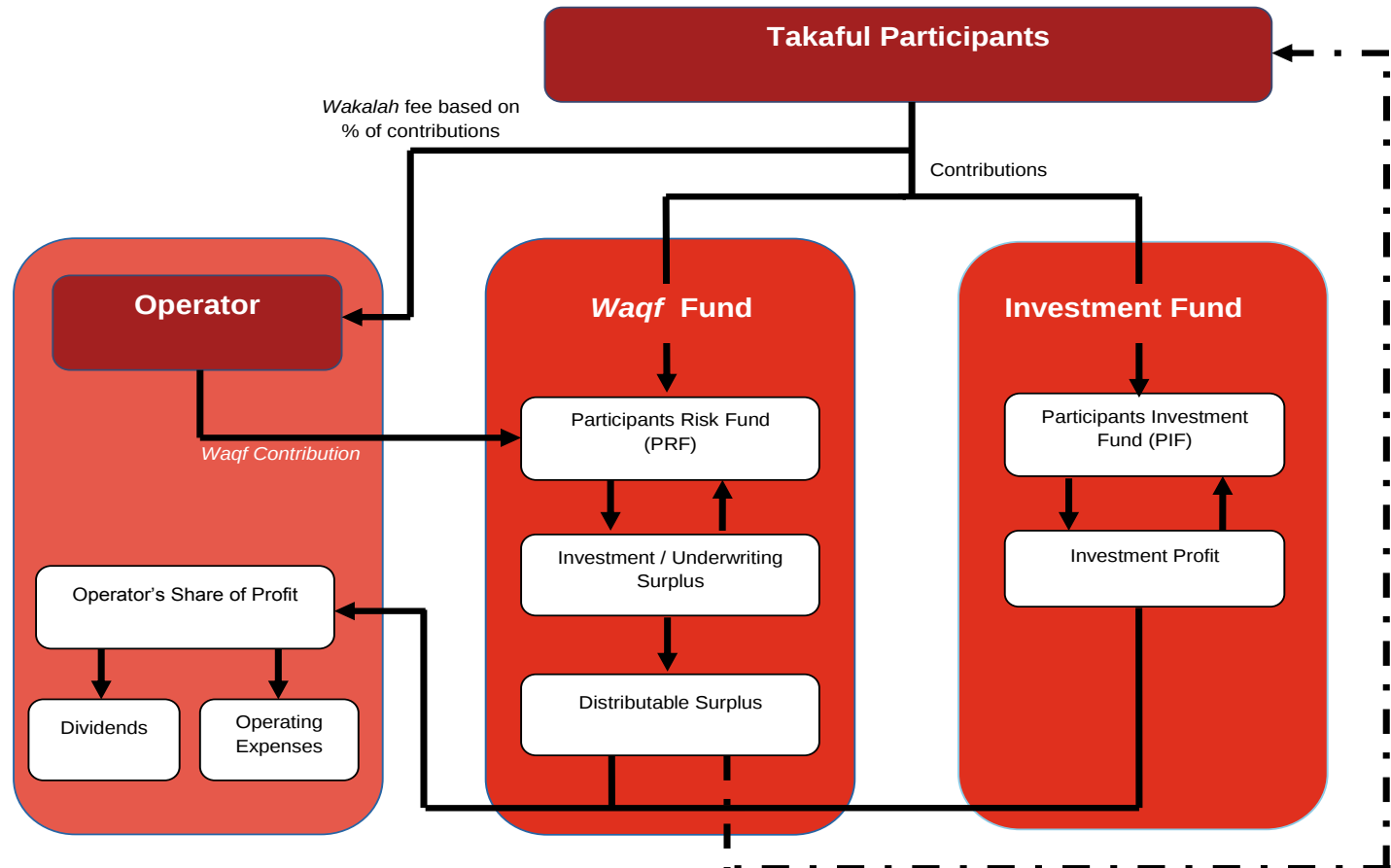
- Agency model
- Most transparent



Takaful Operating Models

Wakala-Waqf (Hybrid) Model

- Combination of profit sharing and fee based models
- Most commonly used model in South Africa



Comparison of Models

Assumptions and Methodology

Performance Metrics

- Probability of Qard (based on Stochastic Returns)
- Cost of Capital
- Present value of net cashflows to the Operator
- Capital ratios
- Risk Fund cashflows
- Reduction in Yield
- Return on Equity

Comparison of Models

Assumptions and Methodology

Product features:

- 10-year endowment assurance product with sum assured of R500,000
- savings element in the investment fund

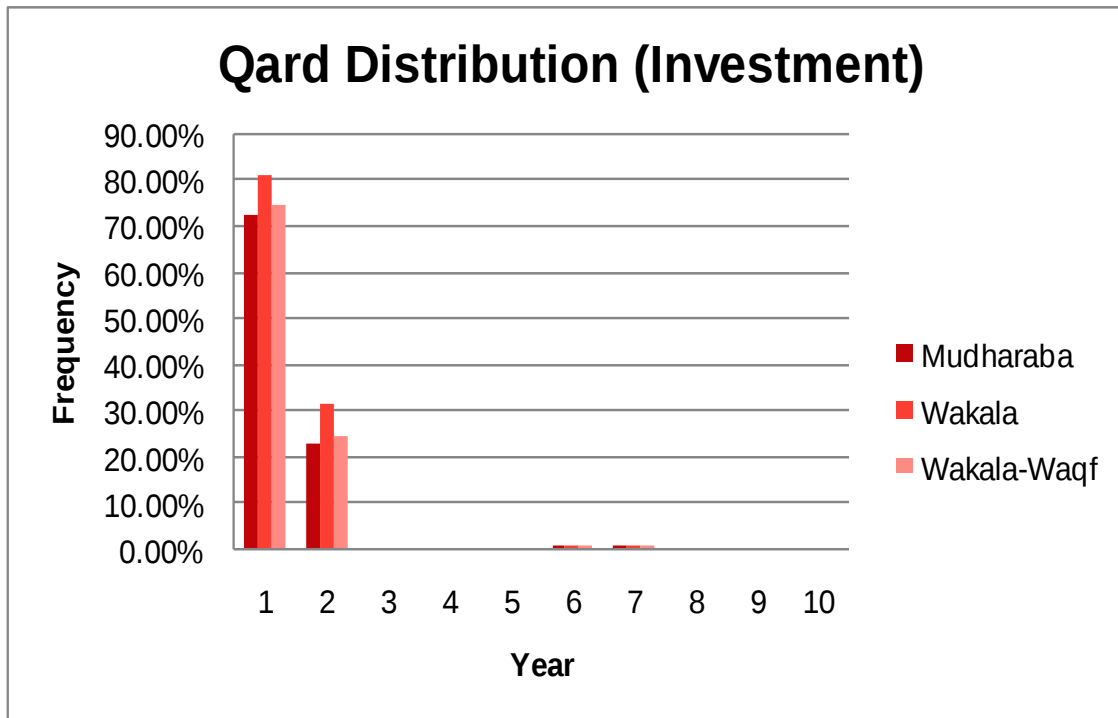
Assumptions:

- Pricing margin of 40% above risk premium.
- 1000 stochastic projections (annual) across 10 years
 - Investment returns based on LogNormal distribution (expected returns of 10%, volatility of 30%)
 - Deaths based on Binomial distribution ($n = 1,000$, $p = 0.2\%$)
- product features are identical across all models
- no new business

Comparison of Models

Performance Metrics

Stochastic Projection Results (frequency by year)



The majority of the loans occur in years 1 and 2. This is because the impact of poor investment returns outweighs the effect of other positive cashflows.

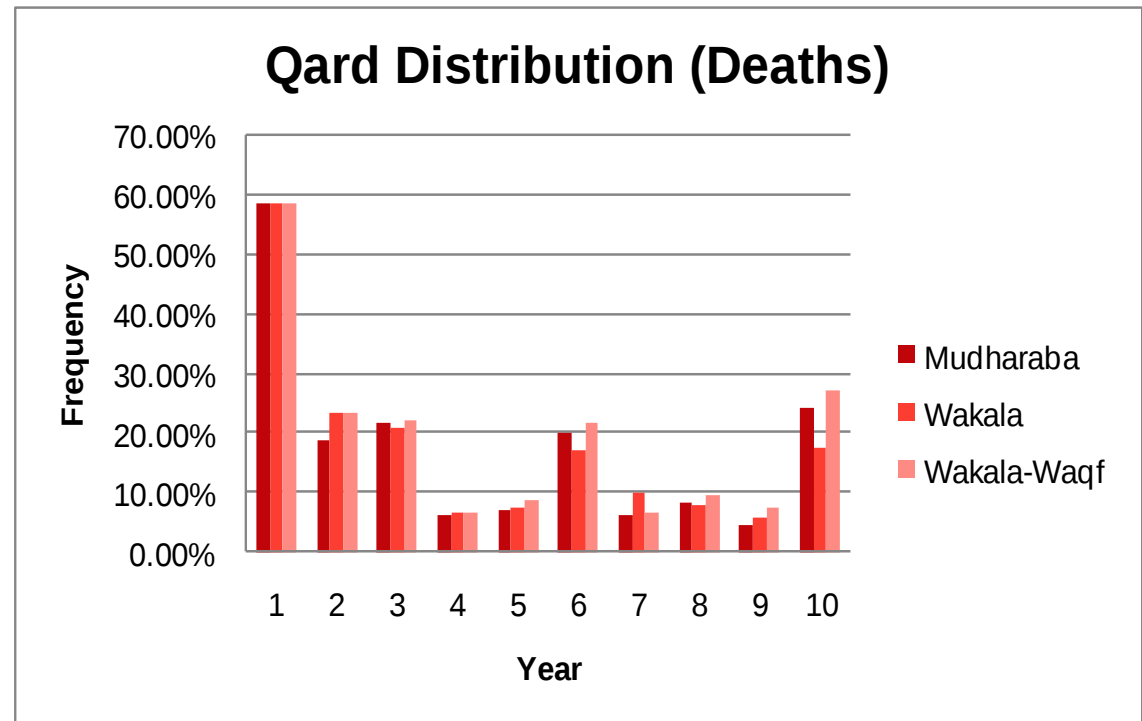
At later durations, these cashflows are less dependent on the actual investment performance.

Comparison of Models

Performance Metrics

Stochastic Projection Results (frequency by year)

The variance in actual and expected deaths is not time dependent. However, given the small size of the risk fund in the earlier years, we would expect a higher frequency of loans in years 1 and 2.



Comparison of Models

Performance Metrics

Comparison of other metrics

	Mudharaba (Profit Share) Model	Wakala (Agency) Model	Wakala-Waqf (Hybrid) Model
P(Qard Investment)	9%	12%	10%
P(Qard Death)	18%	17%	18%
Cost of Required Capital	367,661	367,661	367,661
PV (NCFs to Operator)	16,122,594	(3,865,373)	(1,948,975)
PV (NCFs) less CoC / Capital	315%	-85%	-46%

Comparison of Models

Performance Metrics

Comparison of other metrics

	Mudharaba (Profit Share) Model	Wakala (Agency) Model	Wakala-Waqf (Hybrid) Model
PV Claims / Premiums	55%	63%	57%
PV PH Surplus / Premiums	9%	18%	9%
PV SH Surplus / Premiums	23%	0%	23%
RIY	31%	1%	4%
Average ROE	379%	-72%	-24%

Comparison of Models

Performance Metrics

Conclusions and Limitation

Conclusions:

- The Mudharaba (Profit Share) and Wakala-Waqf (Hybrid) model provide a higher potential up-side to the Operator
- The Wakala (Agency) model has the highest return to policyholders
- Pricing of products will therefore differ under each of the 3 models. This may include pricing for the likelihood of providing an interest-free loan.
- Operational risk differs across all 3 models and hence capital requirement will differ

The model results are dependent on the assumptions made up-front.

How Actuaries can get involved

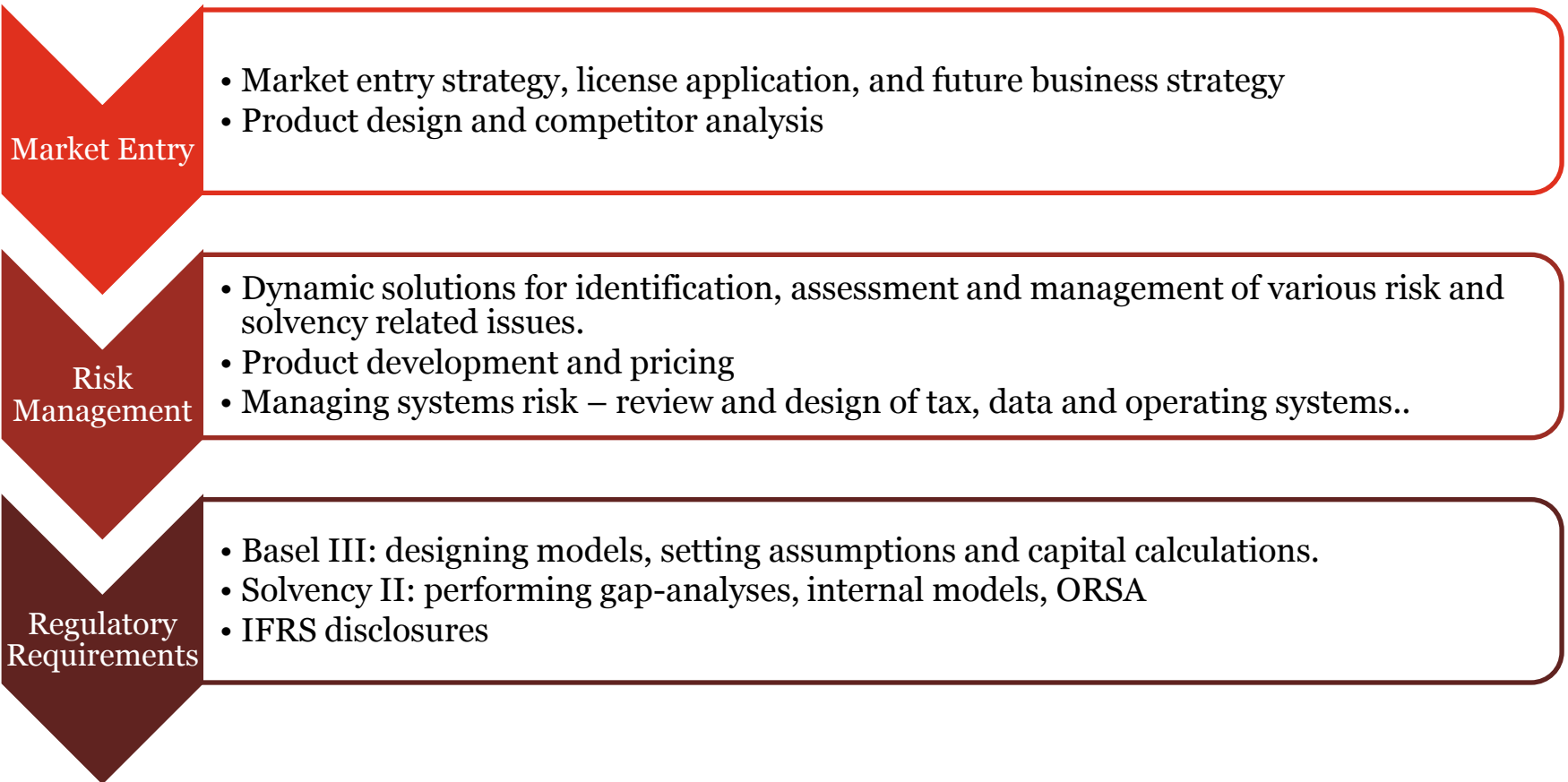
How can we help in entering the Takaful market?

How can we help our in managing risk?

How can we help in meeting regulatory requirements?

What Actuaries can offer

Actuaries bring together a range of business and technical skills



Discussion

Thank you:

David Kirk

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