

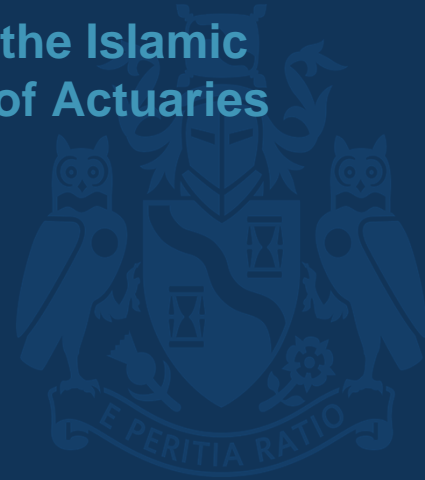


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Takaful – Insurance the Islamic Way – and the Role of Actuaries

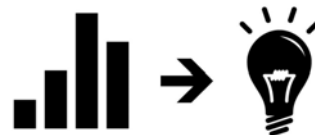
Takaful Life Working Party

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Introduction

- Subject material inherently very large
- Remit is in respect of family takaful business only
- A great deal has already been written about takaful business
- Our objective is to provide new insights, especially in relation to actuarial considerations



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2

Introduction



Research covers three main areas

1. Understanding and exploring the main proposition of takaful; in particular, surplus distribution
2. Assessing the capital requirements of takaful business, comparing and contrasting to insurance business as well as its implications
3. How can actuarial science contribute to the better financial management of takaful business and what areas of the science would need enhancement to meet the specific nature of takaful business?

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3



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Research Topic 1

Understanding and exploring the main proposition of takaful; in particular, surplus distribution

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Thought leadership
Progress
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Sessional Meetings
Education
Working parties
Volunteering
Research
Shaping the future
Networking
Professional support
Enterprise and risk
Learned society
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International profile
Journals
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What is Takaful?

- Takaful is an Islamic form of (cooperative) insurance
- Differentiators of Islamic Finance
 - **Riba**: The payment or receipt of interest
 - **Gharar**: Uncertainty
 - **Maisir**: Being party to transactions with gambling or of a speculative nature
 - **Haram**: Association with asset classes partaking in prohibited activities.
- Some similarities with Friendly Societies or Mutuals

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5

Comparison of takaful with insurance

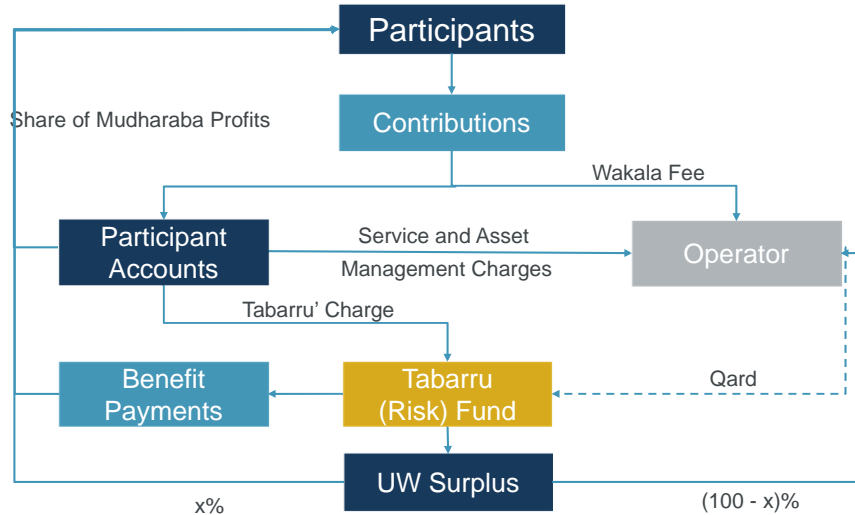
	Conventional Insurance	Takaful
Risk Transfer	Risks transferred from policyholder to insurer in exchange for a premium	Risks shared by the pool's members (participants) with the operator managing the pool
Uncertainty	Contract terms are unclear as to when losses occur and how much is compensated	Contributions into risk pool are donations to mitigate losses affecting the participants
Gambling	The insurer compensates the insured for a loss even if it far exceeds the premium	Participants pay contributions in the spirit of brotherhood to cover mutual losses
Interest	Funds are invested in interest bearing instruments and so contain Riba	Funds are only invested in non-interest bearing instruments
Surplus	Surplus belongs to shareholders and with-profit policyholders whilst in-force	Surplus ownership unclear but most common view is that it belongs to participants

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6

Example of a typical takaful model in Malaysia

Wakala With Mudharaba



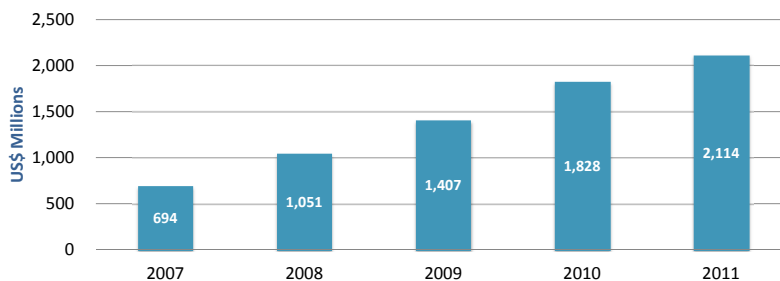
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7

Overview of global family takaful market

- Global Family Takaful market small at US\$2,114m. Malaysia is the largest, representing over 50% of all contributions. UK is negligible.
- Malaysia has some of the most robust takaful regulations including a risk-based capital framework
- Highest growth is expected from the Indonesian market.

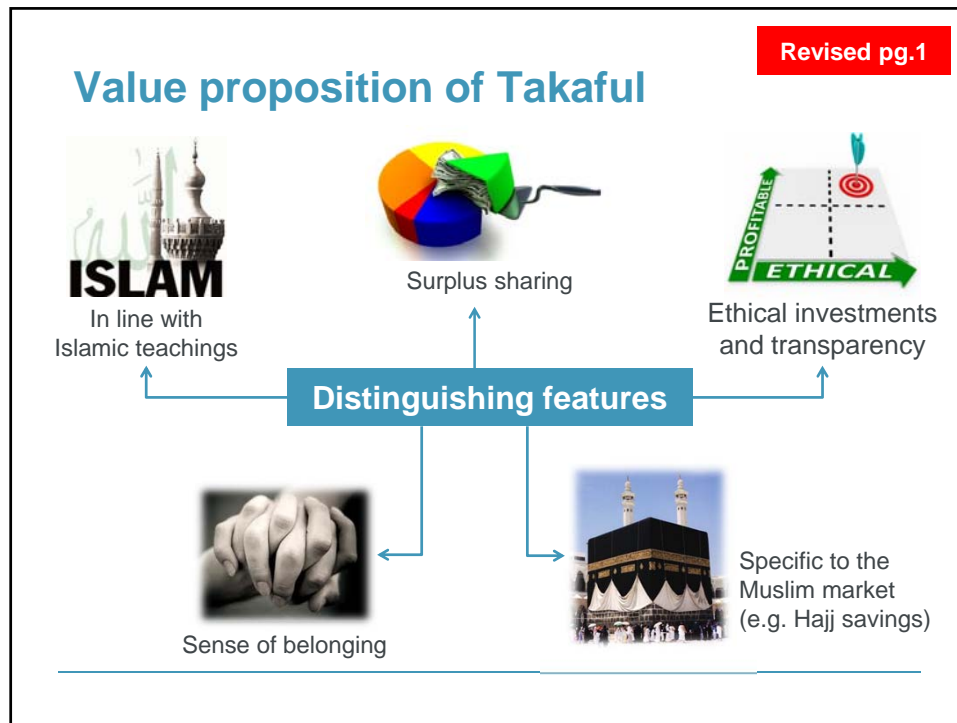
Global Family Takaful Gross Contributions



Source: Milliman Global Family Takaful Report 2013

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8



Revised pg.2

Value proposition of Takaful

No common value proposition across markets

- Conformity with Islam appears to be main appeal at a basic level
- Surplus sharing could be a genuine advantage
 - Variety of approaches for distribution
 - PRE underdeveloped from both a consumer and actuarial perspective

The illustration shows a green silhouette of a mosque dome and minaret. In front of it, there are black silhouettes of a family (two adults and a child) holding hands, suggesting a sense of community and belonging.



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Research Topic 2

Assessing the capital requirements of takaful business, comparing and contrasting to insurance business as well as its implications

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Hypothesis

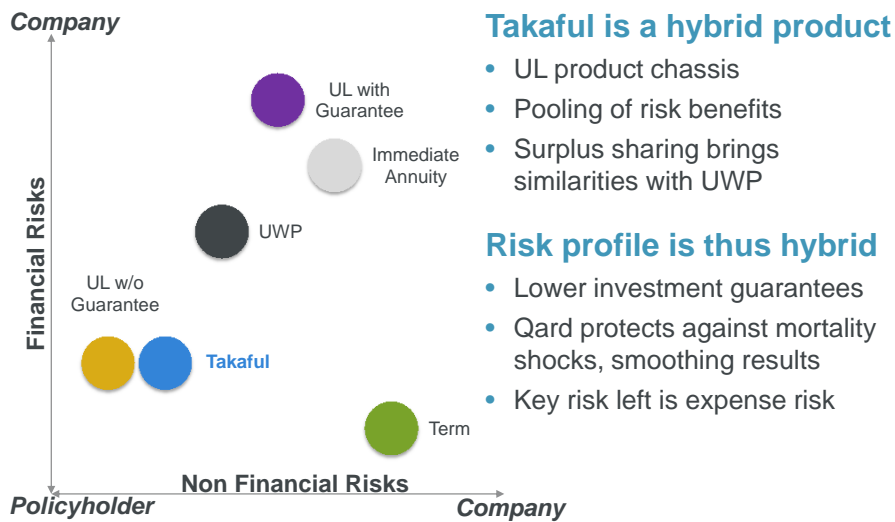
The principle of risk pooling under takaful business, as opposed to risk transfer, results in less strenuous capital requirements compared to an equivalent UK insurance product



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12

Risk Profile of takaful products



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13

Choice of takaful model



On going concern offering takaful products on a quasi UWP basis

- Clear separation of takaful cover and savings and a clear charging structure
- Surplus sharing via risk fund with investment risk passed back to participants
- Company has reached critical size
 - One new year's business tranche modelled
- Solvency II standard formulae without management actions
 - Qard allowed for when calculating BE liabilities but ignored when determining SCR



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14

Qard

What is it?

- Loan by SHs to risk fund when in deficit, repayable from future surplus
- Deficits occur for the usual reasons
- May suggest that a deficit will be “covered” from regulatory point of view

Is this better than WP?

- For WP SHs must make good any deficit with potential loss of value
- SHs fund deficit due to short term volatility without permanent injection
- Not to be confused with “burn through” cost

How Does Qard work under Solvency II?

- Key question is recoverability
- Either as asset in balance sheet or negative reserve. We assume former

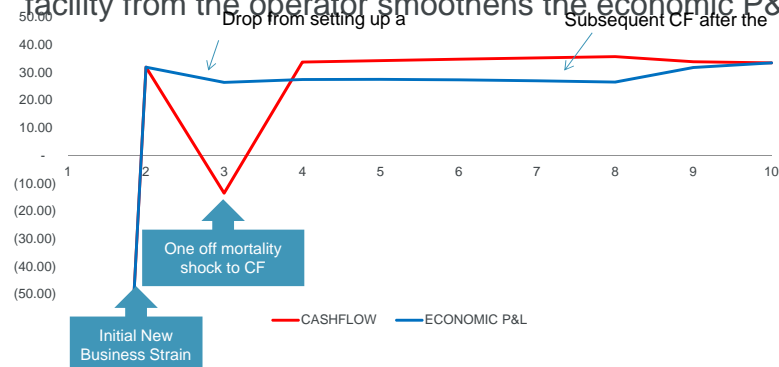


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15

How does Qard work under Solvency II?

- Chart illustrates a mortality shock to the risk fund in year 3
- Pure cashflow immediately reflects this shock but Qard facility from the operator smoothens the economic P&L



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16

Key Results

Quasi UWP Takaful model

- Base scenario assumes a 20:80 share in surplus for a new business tranche.

	Base
Risk Fund Best Estimate Liability	0
Operating Fund BE Liability	0
Solvency Capital Requirement (SCR)	1,905
Risk Margin (RM)	1,642
Total liabilities	3,547

} No subsidy of reserves between RF& OF

} SCR & RM will depend on how Qard is treated under SII.

PV of Profit to Shareholders	1,762
Less: PV of Unrecoverable Qard to Risk Fund	0
PV of Net Profit to Shareholders	1,762

} Profits is built up from margins in Risk Fund and Operating Fund. Net profit here considers unrecovered Qard on adverse scenarios

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17

Key Results

Quasi UWP Takaful model

- We tested different scenarios with the following results on liability:

	Base	Mortality	Mortality Shock	Expense
Risk Fund Best Estimate Liability	0	0	0	0
Operating Fund BE Liability	0	0	0	970
Solvency Capital Requirement (SCR)	1,905	4,472	2,653	1,992
Risk Margin (RM)	1,642	3,854	2,288	1,718
Total liabilities	3,547	8,325	4,941	4,680

PV of Profit to Shareholders	1,762
Less: PV of Unrecoverable Qard to Risk Fund	0
PV of Net Profit to Shareholders	1,762

BEL is negative if margin in pricing is adequate. We have zeroed negative reserves in OF

Scenarios

Base	Best estimate
Mortality	A permanent increase in mortality rates of 15% over the base scenario
Mortality shock	A one-off shock of 50% increase in mortality rates for the 3rd year
Expense	A 25% increase in expenses over the base scenario

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18

Key Results

Quasi UWP Takaful model

- And on profitability:

	Base	Mortality	Mortality Shock	Expense
Risk Fund Best Estimate Liability	0	0	0	0
Operating Fund BE Liability	0	0	0	970
Solvency Capital Requirement (SCR)	1,905	4,472	2,653	1,992
Risk Margin (RM)	1,642	3,854	2,288	1,718
Total liabilities	3,547	8,325	4,941	4,680
PV of Profit to Shareholders	1,762	1,301	1,729	662
Less: PV of Unrecoverable Qard to Risk Fund	0	1,126	763	0
PV of Net Profit to Shareholders	1,762	176	966	662

Losses on adverse experience of the Risk Fund captured as unrecovered Qard in the balance sheet; reduces expected profitability

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19

With Profits comparison

- Qard facility reduces the BEL but also the profit in adverse scenarios
- The impact of Qard on the SCR and RM depends on how Qard is treated
- Qard is ignored in the SCR calculation as otherwise capital requirements are reduced. Under Solvency II, there would need to be a way of capturing it in the SCR calculation

Unlike takaful, adverse experience is captured in BEL

No difference in SCR & RM here. Any difference depends on how Qard is treated

	Base	Mortality	Mortality shock	Expense
Risk Fund Best Estimate Liability	0	1,126	113	0
Operating Fund BE Liability	0	0	0	970
Solvency Capital Requirement (SCR)	1,905	4,472	2,653	1,992
Risk Margin (RM)	1,642	3,854	2,288	1,718
Total liabilities	3,547	9,451	5,054	4,680
<i>As a percentage of Takaful</i>	100%	114%	102%	100%
PV of Profit to Shareholders	1,762	1,301	1,607	662
<i>As a percentage of Takaful</i>	100%	736%	166%	100%

On adverse experience of the risk fund, value of transfer out of risk fund is lower for Takaful as we assume no transfer to S/H is allowed until Qard is fully repaid

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20

Hypothesis proved?



Takaful is less capital intensive than similar insurance products

- Takaful, due to the underlying principle of risk pooling, instead of transfer, can be less strenuous in terms of capital requirements
 - The Qard facility allows transparent smoothing of risk experience
 - Liability and capital for takaful are likely lower, if not the same
 - Qard is unlikely to offer protection against a permanent worsening of experience. Offers no protection against expense risk
- At the same time, this results in poorer returns to shareholders as profit is deferred until Qard is repaid
- The treatment of Qard under Solvency II, especially its impact on SCR, requires further research

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21



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Research Topic 3

How can actuarial science contribute to the better financial management of takaful business and what areas of the science would need enhancement to meet the specific nature of takaful business?

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On going hypothesis – Actuaries working in takaful are lonely

We identified 5 broad areas to concentrate our research

- Product design and pricing
- Surplus distribution
- Performance measurement
- Role of the profession
- Investment and ALM



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23

Approach

- Needed to gather data from takaful experts around the world
- Used a combination of face to face, telephone, and email interviews
- Had a list of direct questions around the areas we wished to cover but used an open question approach and asked for specific recommendations to answer our brief.



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24

Findings and how the profession can help the industry

Three headlines

- Development of differentiated value proposition and role of the regulations
- Type and quality of interaction with Sharia community
- Qualify and quantify takaful specific risks.



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25

Findings and how the profession can help the industry

Other interesting takeaways

- Further research into Sharia finance by actuarial community
- More education of the public
- Broaden our involvement in the takaful industry.



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26

Working Party Summary



- Takaful value proposition is distinct from insurance but evolving. Surplus sharing feature and practice is not robust
- Takaful may offer less capital intensive solutions but this critically depends on treatment of Qard under Solvency II
- Many areas for actuaries to enhance approach and quality

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27

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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28

