

Family takaful: RBCT and year-end valuation issues

Agenda

- Summary of key changes draft -> final RBCT
- Accounting issues
- Reserving and capital calculations under RBCT

Summary of key changes: Draft vs. Final RBCT

Summary of key changes in final RBCT

Family takaful

- Capital available recognised in the risk fund increased from 100% TCR to 130% TCR
- ORCC: Clarity that the 1% charge is applied to all assets including the PIF

General takaful

- Contribution Liabilities Capital Charge (CLCC) reduced by excess of contribution liabilities over URR at the 75th percentile
- ECC reduced by excess of provision for unearned wakalah over UER at the 75th percentile

Reporting

- Requirement to provide results for each sub-risk fund

Accounting issues

Qard impairment

- TOF requires impairment of Qard beyond a certain period
- Should non-repayment of qard be allowed in the pricing stage?
- Should wakalah fee be loaded up to allow for the potential qard (and its non-repayment)?
- From Shariah point of view, qard cannot be written off.

Guidelines on Financial Reporting for Takaful Operators

- New guidelines on Financial Reporting for Takaful Operators
- Effective for financial years beginning on and after 1 July 2011
- For companies with a financial year Jan-Dec, year-end 2012 is the first full-year financial reporting under this new guidelines (although interim reporting would have been applicable from 1 Jan 2012)
- Change from **combined** basis (GPT6) to aggregated basis (e.g. **consolidated** or **combined** basis)
 - There is a requirement to do separate accounts and aggregated accounts
 - But basis of aggregated accounts is not specified
 - Some companies have moved to consolidated while others have retained the combined basis.

Guidelines on Financial Reporting for Takaful Operators

- One major difference between “combined” and “consolidated” financial statements:
 - Combined: Interfund transactions such as Qard, are not eliminated.
 - Consolidated: Interfund transactions such as Qard are eliminated
- Para 10.6: Takaful Operators must ensure that **the aggregated total assets and total liabilities presented in Company’s statement of financial position are net of Qard** to avoid double counting of assets and overstatement of liabilities.

IFRS 4 Phase II

- This is consistent with IFRS 4 Phase II
- There was a discussion paper by MASB earlier this year on how should the accounts of a takaful entity be structured:
 - Separate
 - Combined
 - Consolidated
- IFRS 10 requires company to consolidate the entities it controls
- What defines CONTROL?
 - Under IFRS 10, Control is defined as having the ability to effect the entity's returns.
- In a typical financial company, consolidated accounting basis is required when the parent company has at least 51% ownership of the subsidiaries.

Does the Takaful Operator control the Participant's Funds?

Control?

- Takaful operator:
 - Sets contribution rates
 - Manage the level and quality of underwriting
 - Determines products sold
 - Determines how surplus is calculated
 - Determines the investment strategy
 - Sets wakala fee
 - Mudharabah sharing % / Surplus Sharing %

Non-Control?

- Takaful operator:
 - Does not own the assets of the takaful risk fund / participants funds
 - Cannot change the wakala fee for existing business
 - Cannot change the mudharabah / surplus sharing % for existing long term contracts
 - Cannot change the level of profitability in the participant's funds once the contract terms have been determined.

IFRS 4 Phase II vs. RBCT framework in Malaysia

- The basis for IFRS 4 Phase II is similar to RBCT in certain aspects but are also different in other aspects.
- The additional set of rules will effectively complicate the reporting of insurance company's financial performance. IFRS 4 Phase II effectively requires an analysis of surplus in the accounts.
- Key differences between IFRS 4 Phase II and Malaysia RBC:
 - **The introduction of a Residual Margin – surplus / wakalah fee amortisation**
 - **Allowance in future cashflows – Future surplus?**
 - **Calculation of the risk adjustment or risk margin**
 - **Treatment of non incremental expenses (e.g. overhead expenses)**

Reserving and solvency calculations under RBCT

Reserving under RBCT

- Reserving for Family Takaful are currently prescribed in ‘Guidelines on Valuation Basis for Liabilities of Family Takaful Business’.
- With the introduction of RBCT, it is essential to understand how the underlying pieces are applied to ensure consistency between:
 - Reserving vs. solvency calculation
 - Risk fund vs. Operator’s fund (expense reserve)

Key reserving issues

Calculation of reserve

Calculation of expense reserve

Determining PRAD

Determining FCC

Determining ECC

Calculation of family takaful reserve

- The guidelines state:
 - Para 6.8: The liabilities of family takaful fund shall be valued using a prospective actuarial valuation [**i.e. sum of PV future benefits and expenses – PV of future gross tabarru**], discounted at the specified discount rate.
 - Para 6.9: **Where tabarru deductions is dependent on the PIF** (e.g. investment-linked or long-term ordinary family takaful), the liabilities shall be valued by projecting future cashflows to ensure that **all future obligations can be met without recourse to additional finance or capital support** at any future time during the duration of the certificate.



GPV



Sterling
reserve

Standard GPV vs Sterling reserves

- Assume discount rate = 0% p.a.
- Reserve is beginning of the year
- Working backwards from time 5:

Time	Income – outgo	Standard GPV reserve	Sterling reserves	Discounted negative cashflow reserve
0	+2	-6		
1	-6	-4		
2	+10	-10		
3	+3	0		
4	-5	3		
5	+2	-2		

Sum all cashflows to get GPV reserve of -6 at time 0

Standard GPV vs Sterling reserves

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Time	Income – outgo	Standard GPV reserve	Sterling reserves	Discounted negative cashflow reserve
0	+2			
1	-6			
2	+10			
3	+3			
4	-5		5	
5	+2		0	

Standard GPV vs Sterling reserves

- Assume discount rate = 0% p.a.
- Reserve is beginning of the year
- Working backwards from time 5:

Time	Income – outgo	Standard GPV reserve	Sterling reserves	Discounted negative cashflow reserve
0	+2			
1	-6			
2	+10			
3	+3		$5-3=2$	
4	-5		5	
5	+2		0	

Standard GPV vs Sterling reserves

- Assume discount rate = 0% p.a.
- Reserve is beginning of the year
- Working backwards from time 5:

Time	Income – outgo	Standard GPV reserve	Sterling reserves	Discounted negative cashflow reserve
0	+2			
1	-6			
2	+10		$2 - 10 = -8$ $\rightarrow 0$	
3	+3		$5 - 3 = 2$	
4	-5		5	
5	+2		0	

Standard GPV vs Sterling reserves

- Assume discount rate = 0% p.a.
- Reserve is beginning of the year
- Working backwards from time 5:

Time	Income – outgo	Standard GPV reserve	Sterling reserves	Discounted negative cashflow reserve
0	+2			
1	-6		6	
2	+10		2-10=-8 → 0	
3	+3		5-3=2	
4	-5		5	
5	+2		0	

Standard GPV vs Sterling reserves

- Assume discount rate = 0% p.a.
- Reserve is beginning of the year
- Working backwards from time 5:

Time	Income – outgo	Standard GPV reserve	Sterling reserves	Discounted negative cashflow reserve
0	+2		$6-2=4$	
1	-6		6	
2	+10		$2-10=-8$ $\rightarrow 0$	
3	+3		$5-3=2$	
4	-5		5	
5	+2		0	

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2	+10			
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4	-5			5
5	+2			0

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0	+2			
1	-6			
2	+10			5
3	+3			5
4	-5			5
5	+2			0

Standard GPV vs Sterling reserves

- Assume discount rate = 0% p.a.
- Reserve is beginning of the year
- Working backwards from time 5:

Time	Income – outgo	Standard GPV reserve	Sterling reserves	Discounted negative cashflow reserve
0	+2			11
1	-6			11
2	+10			5
3	+3			5
4	-5			5
5	+2			0

Standard GPV vs. sterling vs. discounted negative cashflows

- All three methods give different results.

Method	Reserve at time zero ($i=0\%$)
Standard GPV	0 (income exceeds outgo by 6)
Sterling reserve	4
Discounted negative cashflow	11

Calculation of reserve

**For investment linked
& drip products
PRF valuation**



**Sterling
Reserve /
Disc neg c/f**

**For non-linked and
non-drip products
PRF valuation**



**Sterling?
GPV?**

**SHF valuation
*Needs to be consistent
With PRF valuation***



**Sterling?
GPV?**

Calculation of expense reserve

- In ‘Guidelines on Valuation Basis for Liabilities of Family Takaful Business’:
 - Para 6.17: “....[to determine the shareholders’ fund income], the Appointed Actuary may only consider distributable income from PRF as shareholders’ fund income cash flow subject to the following conditions:
 - (a) The Appointed Actuary can determine **with reasonable certainty the distributable level of income from the PRF**....for each future time period consistent with the expected experience then, and apply this at certificate level...
 - (b) **the capital requirements that may be imposed on PRF** by the Bank have been met by the takaful operator

Calculation of expense reserve

- Guidelines imply that surplus from PRF can be included as income to calculate expense reserve
 - Subject to reasonable certainty
 - Need to allow for capital requirements
- What is surplus from PRF
 - Option 1: Surplus before capital
 - Option 2: Surplus after capital

Implications on surplus from PRF

- Option 1 is preferred from shareholders' viewpoint
 - surplus arising is immediately transferred to SHF regardless whether PRF is fully capitalised or not
- If Option 2, the surplus allowable is after RBCT capital requirements
 - i.e. market / credit / family takaful liabilities capital charges in PRF
 - 100% or 130% of capital?

Implications on surplus from PRF

- The guidelines seem to imply Option 2 (surplus after capital)
 - “....(b) **the capital requirements that may be imposed on PRF by the Bank have been met by the takaful operator**”
- Does capital need to be met by PRF or SHF?
- If Option 2 is required, there are implications on the surplus distribution policy
 - PRF need to build up until at least fully capitalised before distributing surplus
 - What is fully capitalised?
 - Operator’s access to surplus in PRF is therefore restricted
 - Issue of fairness between generations of participants
- Challenges in modelling surplus!

Determining PRAD

- Valuations of the following scenarios are required for PRF and SHF:
 - High Mortality / High Lapse
 - High Mortality / Low Lapse
 - Low Mortality / High Lapse
 - Low Mortality / Low Lapse
- Para 9.3 of the Guidelines on Valuation Basis for Liabilities of Family Takaful Business
 - To achieve the 75% sufficiency, the AA shall consider adjusting the **valuation assumptions for PRF and SHF in a consistent manner** (e.g. higher mortality assume in PRF shall be accordingly assume in SHF)
 - the AA shall select the scenarios that result in the highest provision for the PRF and SHF **individually** as the value of liabilities

This implies that all 4 scenarios must be tested independently for PRF and SHF

Determining FCC – Family Takaful Liabilities Capital Charge

- In the calculation of PRF reserves, it is common in the takaful industry in Malaysia to use a max (UCR, GPV).
- Particularly if $(V^* - V)$ gives a negative reserve, there is lack of clarity on the calculation of FCC if UCR bites:
 - Should it be based on $(V^* - V)$ i.e. both negative e.g. $-50 - (-100)$ to give a positive FCC of 50?
 - Should it be based on UCR i.e. $FCC = 0$?
 - Should it follow general takaful risk factor i.e. risk factor * (UCR)?
 - Alternative method?

Determining ECC – Expense Capital Charge

- The formula to compute ECC is different for Family and General Takaful business
- However, if family takaful business is valued using General Takaful methodology, should the ECC be calculated using General or Family Takaful basis?
 - Group Term Takaful
 - Personal Accident and medical plans
 - Products with Guaranteed Renewal Feature
 - Standalone vs. rider
 - Long term products which holds max (UCR, GPV)
- Consistency is required in the valuation of the PRF and SHF
- Lack of clarity in the guidelines

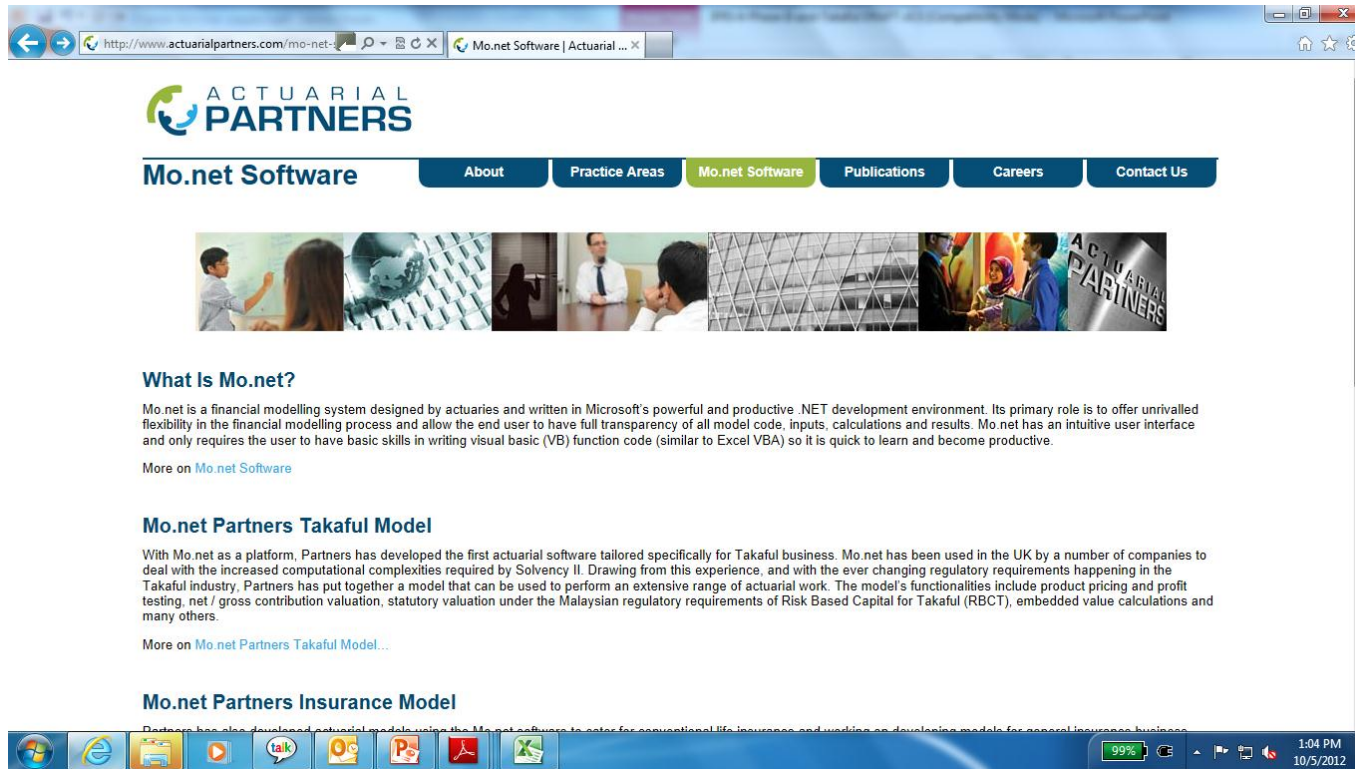
Conclusion

- There is a lack of clarity in the guidelines
- If surplus can also be distributed after capital in the PRF, this has significant implications in surplus distribution policy
- Consistency is key in the valuation of the PRF and SHF
- To be discussed further in the Family Takaful Workshop

- We also provide a 'model review' service.
 - We have experience reviewing both conventional and takaful RBC models
 - In-house modelling expertise e.g. mo.net

Mo.net – Our chosen financial modelling system

- First actuarial software tailored for Takaful business
- Has been used to deal with increased computational complexities required by Solvency II
- <http://www.actuarialpartners.com/mo-net-software/>



The screenshot shows a web browser window displaying the Actuarial Partners website. The browser's address bar shows the URL <http://www.actuarialpartners.com/mo-net-software/>. The website features the Actuarial Partners logo at the top, followed by a navigation menu with tabs for 'About', 'Practice Areas', 'Mo.net Software', 'Publications', 'Careers', and 'Contact Us'. Below the navigation is a banner image showing several people in professional settings. The main content area includes a section titled 'What is Mo.net?' with a paragraph describing the software's design and purpose. Below this is a section titled 'Mo.net Partners Takaful Model' with a paragraph detailing its application in the Takaful industry. At the bottom, there is a section titled 'Mo.net Partners Insurance Model' with a partially visible paragraph. The Windows taskbar at the bottom shows the system clock as 1:04 PM on 10/5/2012.

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What is Mo.net?

Mo.net is a financial modelling system designed by actuaries and written in Microsoft's powerful and productive .NET development environment. Its primary role is to offer unrivalled flexibility in the financial modelling process and allow the end user to have full transparency of all model code, inputs, calculations and results. Mo.net has an intuitive user interface and only requires the user to have basic skills in writing visual basic (VB) function code (similar to Excel VBA) so it is quick to learn and become productive.

More on [Mo.net Software](#)

Mo.net Partners Takaful Model

With Mo.net as a platform, Partners has developed the first actuarial software tailored specifically for Takaful business. Mo.net has been used in the UK by a number of companies to deal with the increased computational complexities required by Solvency II. Drawing from this experience, and with the ever changing regulatory requirements happening in the Takaful industry, Partners has put together a model that can be used to perform an extensive range of actuarial work. The model's functionalities include product pricing and profit testing, net / gross contribution valuation, statutory valuation under the Malaysian regulatory requirements of Risk Based Capital for Takaful (RBCT), embedded value calculations and many others.

More on [Mo.net Partners Takaful Model...](#)

Mo.net Partners Insurance Model

Partners has also developed actuarial models using the Mo.net software to cater for conventional life insurance and winding up developing models for general insurance business.



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