

ENHANCING RETAKAFUL AND CAPITAL EFFICIENCY AND EFFECTIVENESS THROUGH FORMULATION OF OPTIMUM RETENTION

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Abstract: *The objective of this research is to highlight need for a takaful operator to enhance efficiency and effectiveness of its retakaful undertakings through the formulation of an optimum retention policy of the takaful risks underwritten before placement to retakaful. This is a qualitative study which discusses the theoretical and practical aspects of retakaful management with special reference to retention methodology through literature review and secondary data from published sources. This study highlights the practices of retakaful management in order to optimise risk retention by takaful operators. It outlines the theory and practice of risk retention undertaken in takaful business as a means to heighten the security, sustainability and growth of the Participants' Risk Fund (PRF). This study contributes to the current dearth on literature and research on takaful and retakaful as a nascent industry, as compared to the more matured insurance and reinsurance industry. Hence, the conventional reinsurance management and practice is also referred as a benchmark. The study would provide better insight for the takaful industry in undertaking the retakaful management through a more efficient and effective retention methodology; supported by practical examples. Better understanding and management of retakaful in terms of retention policy by takaful operators based on a practitioner's perspective in order to bolstering the technical and financial position of the PRF.*

Keywords: *Takaful, Retakaful, Retention, Participants' Risk Fund.*

Methodology

This is a qualitative study which discusses the theoretical and practical aspects of capital management in retakāful undertaking, through literature review and secondary data from published sources. The issues discussed in this research is framed in the practitioner's perspective in order to align the gaps between what practitioners or market requires; as compared to what researchers' study (Nguyen and Hider, 2018, p.3).

Literature Review

This paper adopts the integrative literature review for this applied research. This approach is supported by Whittemore & Knafl (2005, p.546), that a good integrative literature review can contribute to theory development and formulating practical solutions on the issues being studied. The broad spectrum of available literature will be condensed and clarified both in their text and context, for easier understanding and appreciation of the issues discussed in this research.

Introduction

As the principal risk absorbers of the economy, takaful operators and insurance companies play a critical role in ensuring that certain insurable risks in the economy which may cause losses to economic assets (including lives) and liabilities are adequately and prudently managed. The potential losses to the economy from risks such as from natural disasters, health risks, life cycle risks, social and economic risks are huge (Chiaramonte, et.al, 2020; Surminski, 2013). However, the takaful and insurance industry has limited capacity to absorb all the risks, due to the limited and finite amount of capital and financial capacity in the industry. In a similar manner, a huge financial disaster such as earthquake or tsunami, termed as 'fundamental risks' are too huge for the industry as a whole to absorb; thus, normally require the financial assistance of the government to alleviate the resultant economic losses. This calls for the need of a prudent retention policy by a takaful operator; as an important part of its underwriting policy and retakaful policy (Mey, 2007; McFall & Keller, 1990, p.178; Straub, 1988, p.68; Beard, 1960).

For example, it is mathematically not viable for a takaful company with a capital of RM100 million to cover the Petronas Twin Towers in Malaysia for fire takaful with a sum covered of RM4 billion (let's say, in consideration of an annual takaful contribution of RM1 million paid to the PRF). A potential scenario where a fire which causes 25% damage to the building complex will cost the PRF, RM1 billion in claims. Without retakaful, this will effectively and immediately bankrupt the PRF (and takaful operator – who will not likely be able to cover such loss by Qard or other means). This means that for every risk written, a prudent retention policy should be formulated – to ensure certain portion of the risks that are beyond the financial capacity of the takaful are placed to retakaful. This denotes the importance of retakaful, as a means to spread such risks to the wider domestic and global takaful and retakaful markets.

Therefore, it is a common industry practice, based on prudential reasons, for a takaful operator to only dedicate a small fraction of its total financial resources (capital and free reserves) for a risk/risks which is/are commonly known as the "Retention Policy". This signifies the pulse of a retakaful program. Here, after its own net retention, the takaful operator will need to cede (share) the balance of the risk to retakaful to ensure its financial resilience. Geonka (2003), defines retention as "*the amount of sum covered which a ceding company retains for its own net account on a particular risk or in a catastrophic event affecting several risks at the same*

time (p.200)”. In other words, retention is a self-funded allocation of risks by a takaful operator for the portion of risks retained, without retakaful. Therefore, any claim within the retention limit will be fully funded by the PRF.

Objectives of Retention Policy

The objective of a retention policy is to enable a takaful operator to optimize growth in the net contributions. This in turn, will steadily strengthen its takaful fund, whilst controlling the likely variation of claims in an “adverse” year within acceptable limits. A too small retention will mean that a sizeable portion of the hard-earned contributions, will be passed to the retakaful. On the other hand, a too high retention will adversely expose the takaful operator to financial ruin - arising from large outflow of cost from its takaful fund in the event of claims. Most importantly, through the retention policy, shareholders of a takaful operator seek a fair return on their capital, through a sustainable and orderly growth. In the same breath, participants and regulators are assured of the takaful operator’s ability and capability to honour its obligations and liabilities. In this respect, the aim in determining the limit, is to establish an optimal retention level that can maximise the profitability of the takaful funds, as well as to reduce the operator’s solvency risks on the capital (Bahri, et.al, 2017). The relationship between retention and capital is described in the figure below:

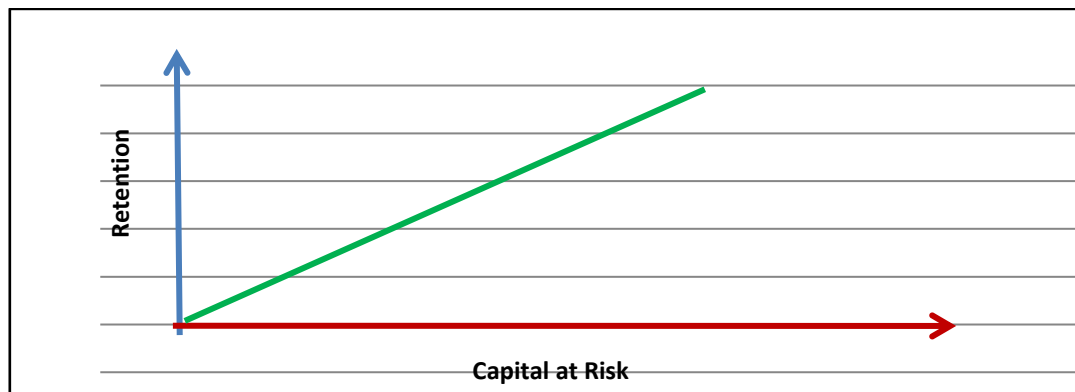


Figure 1: Retention and Capital

Source: Bradshaw, et.al (1990).

The above diagram shows that the higher retention, the higher will be the risk to the capital of a takaful operator. Therefore, for a newly start-up takaful operation, the better option to the operator is to be prudent by adopting a policy of relatively low retention level, at least during the initial years of its operation. Paradoxically, an abnormally high retention level would not signal a “friendly gesture” to the retakaful operator. Without any track record and past experience, it may be perceived by the retakaful operator that the ceding takaful operator would take advantage of only wanting to pass undesirable risks to the retakaful facility. Such unethical practice is termed as anti-selection. However, once the business pattern and the claim experience start to formulate, the limit can be gradually reviewed. In short, it is better to adopt a conservative approach and always be prudent and cautious in the financial management, and more so in the business like takaful when in the event of catastrophe, the liability is usually gigantically bigger than the contribution collected. As a rule, a takaful operator should retain more risks as possible with low sums covered. Nonetheless it has to exercise in a balance

approach taking into consideration the interest of the retakaful partner as well (Kaufhold & Lennartz, 2016).

Fundamental factors in determining retention consist of the takaful operator’s corporate philosophy and business strategy, size of the shareholders fund and its free reserves, liquid assets available, size and characteristics of the takaful portfolio including types of risk underwritten, and the loss profile/claims experience over certain periods and detailed breakdown of claims portfolio. On the other hand, the moderating factors will take into consideration such features as the solvency consideration both from the operator’s financial position and the statutory requirement, market and economic conditions, as well as the availability and cost of retakaful. If the net retention of the takaful operator is comparatively small, then a fairly sizeable portion of the hard earned contribution will be passed on to retakaful. Conversely, a too high the retention, the higher will be the susceptibility to exposure of unnecessary financial loss to the operator (Wan Zamri, et.al, 2021; Kaufhold & Lennartz, 2016).

Gross and Net Retention

The Retention Policy will also determine the retention levels in terms of Gross and Net Retention for prudential purposes as described below:

- (i) Net Retention – This represents the financial value a takaful operator can afford to lose in any one risk/event. Should there be a claim or loss, the takaful operator must be able to honour the obligations from its own “pocket” without the retakaful support. Indeed, net retention is the heart of any retakaful program.
- (ii) Gross Retention - The level of cover a takaful operator can be adequately comfortable to issue a certificate in order to be competitive in the market. Unlike the net retention, a takaful operator has the opportunity to call upon the support of the retakaful partner in accordance with the retakaful arrangement. This is because the takaful operator can be fairly secured from other forms of retakaful mechanism such as Excess of Loss, Catastrophic Loss, Stop Loss, and the like usually packaged in a retakaful arrangement. The co-relationship between the two retentions – net and gross - is depicted in the diagram below:

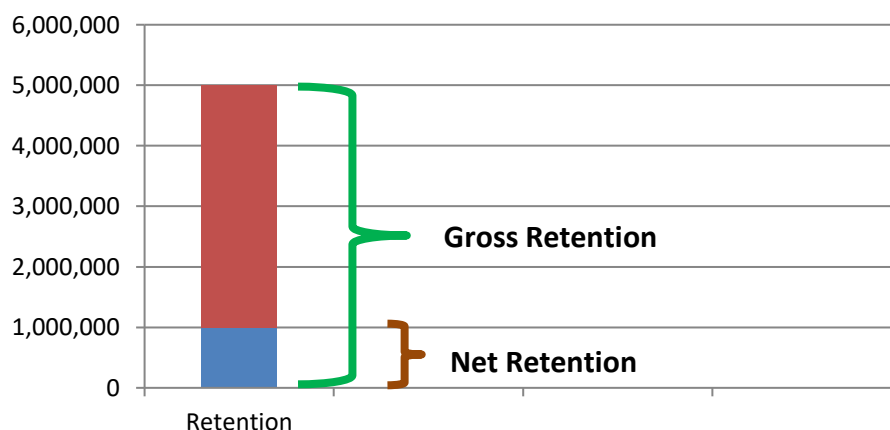


Figure 2: Co-Relationship Between the Two Retentions – Net and Gross

Source: Wan Zamri, et.al (2021)

Retention Methodology

From the perspective of operational convenience, taking into account various elements of exposures and catastrophes, determining the right and reasonable level of retention limit as practised in the market, is usually based on the following:

- (1) Exposure to Loss Per Risk Per Loss - between 1% to 2% of the Security Capital i.e free capital to support the risk of 1% to 2% of Net Contribution Income (whichever is the higher).
- (2) Exposure to Loss by One Event – between 2% to 5% of the Security Capital or 2% to 5% of Net Contribution Income (whichever is the higher).
- (3) Per Risk - not to be more than 20% of liquid asset.
- (4) Per Risk - to be between 7.5% to 15% of estimated gross profit and investment income during the next year.

This simply means that for a takaful operator with a paid-up capital of RM100 million, it can consider to only retain for its net account for every risk an amount of RM1 million to RM2 million, and RM2 million to RM5 million for one loss event. The purpose is to insulate the operator from incurring more than say 5% of its capital plus free reserves, should a single and large claim, or an accumulation of small claims impacted out of one event (Wan Zamri, *et.al*, 2021; Gerhard & Forwick, 2013; Geonka, 2003).

As mentioned above, the retention policy also considers accumulation of risks as well as catastrophic risks covered by the takaful operator. Therefore, where a single event such as an earthquake occurs, it will affect many risks simultaneously. This is described as ‘vertical and horizontal exposures’ due to the such accumulations as shown in the diagram below:

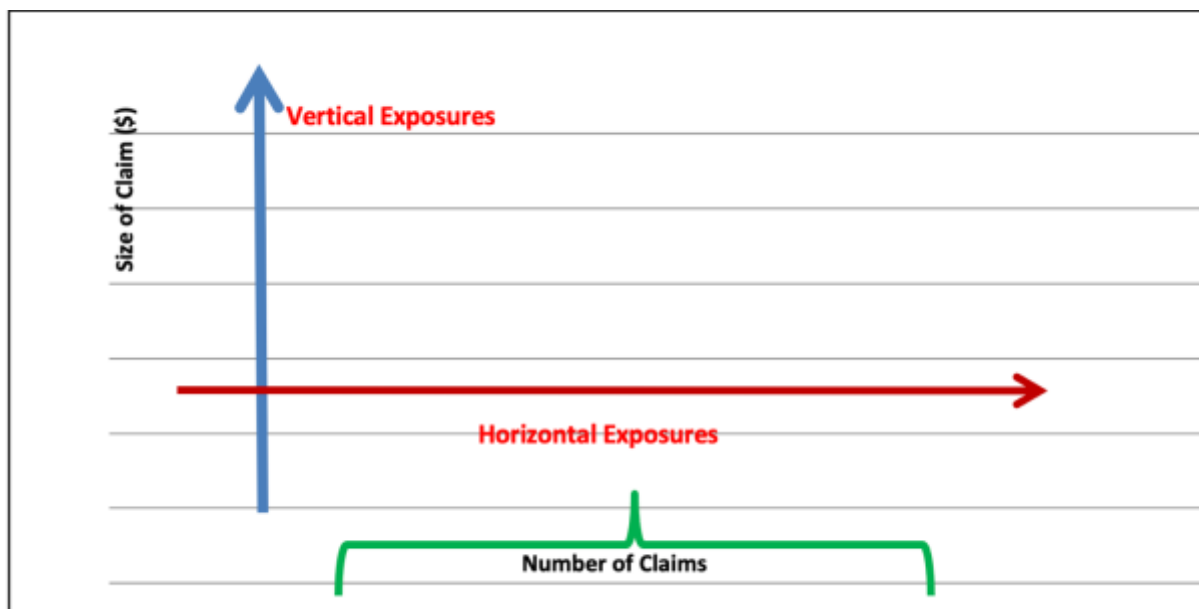


Figure 3: Size of Claim and Number of Claims

Source: Wan Zamri, *et.al* (2021)

For example, in an earthquake, it may cause losses to all lines of business – fire insurance, public liability insurance, engineering insurance, motor insurance, personal accident insurance, and others. Some instances of possible accumulation are:

- (i) Where an insurance company issues several commercial property policies for fire, all risks and engineering, in the same geographical location.
- (ii) Multiple commercial insurance risks covering one insured or client.
- (iii) Multiple vessels and voyages traversing the same route.

It can also emanate from losses out of several insurance policies, or different sections from a single policy. Risk accumulation may be known explicitly or implicitly by the underwriter during the process of assessing and underwriting the risk through various means; such as the risk survey, proposal form or other related documents. Notwithstanding the above, there are certain risks which the underwriter might not have any knowledge of during the underwriting stage involving:

- (i) Known accumulations – when covering a row of shops in a mall, Group Family or Personal Accident travelling together in a flight or bus.
- (ii) Unknown accumulations – when individuals participated in Personal Accident or Family Takaful separately and different times but happened to travel in the same aircraft (for example in the tragic case of MH 17 & MH 370), or cargo consignments covered separately by different participants.

Another recent example of risk accumulation was reported by Fen (2016), involving massive warehouse explosions at Tianjin Port, China, resulting in a death toll of more than 173 people, injuring hundreds others, damaged 304 buildings, destroyed more than 12,000 vehicles and 7,500 containers – with estimated total loss of upto US\$2 billion.

For family takaful, retention determinant is normally based on the expected mortality and morbidity risks, for each participant's life that the takaful operator covers. Alternatively, for the group family plan or product, besides the retention per life, the maximum retention per group basis will also be applied (Sheriss & Veprauskaite, 2012; Lee, et.al, 1992). For example, the retention limits in a family retakaful agreement may be based as follows:

“The retention of the Takaful Operator on any one life will be RM1,000,000 per life. The same retention shall apply to the accident benefit supplementary coverages in the aggregate between all accident benefit supplementary coverages issued on the same life.”

Among the factors in determining retention are: the takaful operator's corporate philosophy and business strategy, size of the Shareholders Fund and its free reserves, liquid assets available, size and characteristics of the takaful portfolio including types of risk underwritten, and the loss profile/claims experience over certain periods and detailed breakdown of claims portfolio, statutory requirements, market and economic conditions, as well as the availability and cost of retakaful (Pohl, et.al, 2018; Geonka, 2003).

Sum Covered, Estimated Maximum Loss (EML) and Probable Maximum Loss (PML)

From the operational perspective, retention may be determined by using Sum Covered and/or Estimated Maximum Loss/Probable maximum Loss methods. The most common and prudent method is to use the sum covered method. Sum covered may be simply defined as

“The maximum amount a takaful operator shall pay to its participants as indemnity for loss suffered by the participants in accordance with the terms and conditions of the takaful certificate.”

However, there are exceptions to the application of indemnity in takaful agreements such as excess clause, franchise clause, average clause, deductible clause and so forth.

On the other hand, some underwriters prefer to use the Estimated Maximum Loss (EML) or Probable Maximum Loss (PML) method in determining the retention level (Gustavsson, et.al, 2010; Ismail & Awwad, 2019; Woo, 2002). This method should be handled with due care. Most importantly, the operator must ensure it has a strong technical basis, backed by experienced and qualified underwriters. EML is defined by the London Insurance and Reinsurance Market Association (LIMRA) as

“An estimate of the monetary loss which could be sustained by insurers on a single risk as a result of fire or explosion considered by the underwriter within the realms of probability. The estimate ignores such remote coincidences and catastrophes as may be possibilities but still remain unlikely (cited by Goenka, 2003).”

PML or EML is usually expressed as a percentage of the sum covered and is usually determined by experienced underwriters with the collaboration of experienced risk surveyors to arrive at the most prudent decision, especially for large and complex risks. The factors involved are the location, construction, occupation, loss experience, and housekeeping focusing on the protection or safety features of the risks such as sprinkler installations (Buchanon, et.al, 2017, p.28-30). For example, in a large factory complex, the PML mechanism may be applied as follows:

Table 1: PML Mechanism

	Risk	Sum Covered	PML %	PML Amount
1.	Office Block	RM1,500,000	20%	RM300,000
2.	Staff Quarters	RM1,000,000	30%	RM300,000
3.	Raw Materials	RM5,000,000	90%	RM4,500,000
4.	Finished Goods	RM7,000,000	90%	RM6,300,000
5.	Foundry	RM5,000,000	100%	RM5,000,000
6.	Oil Tank	RM1,000,000	100%	RM1,000,000
7.	Vehicle Garage	RM1,000,000	50%	RM500,000
	Total	RM21,500,000		

Source: Wan Zamri (2021)

In practice, item no.4 ‘Finished Goods’ has the highest PML amount at RM6,300,000; which shall be used as the PML for the factory complex and calculated as follows:

Highest PML
 ----- X 100
 Total Sum Covered

RM6,300,000
 ----- X 100 = 29%
 RM21,500,000

Therefore, PML for the factory complex is rounded to 30%.
 From the above example, the surplus retakaful placement on sum covered and PML basis is compared as follows:

Table 2: Surplus Retakaful Based on Sum Covered and PML

Sum Covered Basis		PML basis	
Sum Covered	RM21,500,000	PML Sum Covered (revised sum covered using PML)	RM6,300,000 (30%)
Original Contribution	RM40,000	Original Contribution	RM40,000
Retention: RM5,375,000 (25%) Share of Contribution : RM10,000		Retention: RM5,375,000 (85.31%) Share of Contribution: RM34,124	
Surplus Treaty Share :RM16,125,000 (75%) Share of Contribution :RM30,000		Surplus Treaty Share: RM925,000 Share of Contribution : RM5,875	

Source: Wan Zamri, et.al (2021)

It can also be seen from the above example that the application of PML provides the takaful operator with a higher underwriting capacity as compared to the sum covered basis. Another simple example on the application of PML is as follows:

Sum Covered	RM4,000,000
Contribution	RM4,000
Retention	RM1,000,000 (25%) - Contr. RM1,000
Surplus	RM3,000,000 (75%) - Contr. RM3,000
PML	40.00%
Effective PML	RM1,600,000 (this becomes revised Sum Covered)
Contribution	RM4,000
Retention	RM1,000,000 (62.50%) – Contr. RM2,500
Surplus	RM600,000 (37.50%) - Contr. RM1,500

If a loss were to occur, the takaful operator (ceding company) and its retakaful operator would pay in proportion to the original cession i.e. 62.50% / 37.50%

Target Risk

Another important criterion in determining the level of retention is through the mechanism of identifying target risk. It refers to:

- (i) A large and complex risk involving very large sum covered and requires strict underwriting evaluation by way of conducting a risk survey.
- (ii) A multi-location certificates.
- (iii) The risk with the highest loss potential, usually predicates the retention.

Table of Retention

Table of Retention provides a valuable guide for uniformity in the organisation and management of determining the appropriate retention level for the various classes of business or takaful plans/schemes/products. It reflects the maximum amount expected to be retained on the best risk in a particular category of risk. For practical purposes it should be kept simple and should be revised periodically to facilitate and take into account changing market environment and corporate philosophy as well as the business strategy of the takaful operator. A sample Table of Retention is shown below:

Table 3: Table of Retention for Fire Takaful

Class I Risk	Class II Risk	Class III Risk	Others
Residential Properties	Retail trading	Textiles	Decline
Hotels, Offices, Other Simple Occupancies	Construction	Leather and Fiber Products Industries	
Restaurants, Places of Recreation	Food Processing Industries	Motor Trade and Related Risks	
	Beverages	Oil Mill	
	Non-Metallic Minerals	Rice and Flour Mills	
	Metal Working, Engineering	Sugar Factory	
	Cinemas, Studios & Exhibition Halls	Cocoa, Coffee & Tea Factories	
	General Storage	Cold Stores	
Construction Class I (RM)			
Own Retention	4,000,000.00	3,500,000.00	3,000,000.00
Surplus Treaty 25 lines	100,000,000.00	87,500,000.00	75,000,000.00
Facultative	Above 100,000,000.00	Above 87,500,000.00	Above 75,000,000.00
Construction Class II (RM)			
Own Retention	3,500,000.00	3,000,000.00	2,500,000.00
Surplus Treaty	87,500,000.00	75,000,000.00	62,500,000.00
Facultative	Above 87,500,000.00	Above 75,000,000.00	Above 62,500,000.00
Construction Class III (RM)			
Own Retention	3,000,000.00	2,500,000.00	2,000,000.00
Surplus Treaty	75,000,000.00	62,500,000.00	50,000,000.00
Facultative	Above 75,000,000.00	Above 62,500,000.00	Above 50,000,000.00

Source: Wan Zamri , et.al (2021)

Underwriting Capacity

After deciding the optimum retention, the next critical aspect in managing an efficient retakaful program is to determine the amount or size of underwriting capacity for the business. Essentially, the underwriting capacity of a takaful operator is leveraged on the “capital” provided by the retakaful operator (Oyetayo & Abbas, 2020; Lee & Lee, 2012). The criterion in determining an optimum underwriting capacity will have a major influence in the retakaful program in particular, but will also help chart the business direction of the takaful operator in the market. For this purpose, a thorough discussion between the takaful operator with the broker and the retakaful operator would have to be undertaken. The important elements to be considered are as follows:

- (i) Volume of contribution – the retakaful operator will need to know the expected retakaful contribution to be ceded in order to justify the capacity proposed.
- (ii) Underwriting Policy – the retakaful operator will need to agree to the underwriting philosophy and policy of the takaful operator to ensure that the capacity to be made available will not be detrimental to the ‘capital’ provided
- (iii) Composition and experience of the Portfolio – the takaful operator will need to make a proper analysis on the portfolio of business to be ceded in terms of types of risk, rates, size of risks and most importantly, the past loss experience of the portfolio.
- (iv) Expertise and Experience – the retakaful operator must have the confidence that the takaful operator has the necessary technical expertise within the organisation to underwrite the risks to be accepted in a professional and prudent manner. This is where a written document such as an underwriting manual and operational procedure would be essential.

An example of Underwriting Capacity after taking account the retention policy can be seen in a simple Surplus Treaty program is explained in the table below where for example, a takaful operator wishes to fix its retention for its fire business at RM50,000 per risk and effects a Surplus Treaty for ten lines (capacity of RM500,000):

Table 4: Surplus Treaty (RM)

Risk	Original Sum Covered	Own Retention by Takaful Operator	Cedes to Surplus Treaty	Claim	Claim assumed by Takaful Operator	Claims recovery under the Surplus Treaty
Risk 1	40,000	40,000	-	30,000	30,000	-
Risk 2	100,000	50,000	50,000	75,000	50,000	25,000
Risk 3	150,000	50,000	100,000	140,000	50,000	90,000
Risk 4	400,000	50,000	350,000	300,000	50,000	250,000
Risk 5	550,000	50,000	500,000	490,000	50,000	440,000

Source: Fadzli, et.al (2015)

Conclusion

Retention Policy is a critical part of a takaful operator’s enterprise risk management, that seeks to ensure the security, sustainability and growth of the PRF. As trustee and manager of the PRF, the takaful operator has the fiduciary duty to ensure that the PRF are able to meet all its financial obligations to the participants, fully and timely, as determined in the takaful contracts. As a corporate and professional financial intermediary that are duly licensed by the regulatory authorities, it is incumbent upon the takaful operators to discharge its obligations to the

participants in best manner and consistent with industry's best practices in terms of its' retention policy. A wrong formulation of retention or lapse in its monitoring will be fatal to the business.

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