UNIVERSITI TEKNOLOGI MARA

APPLICATION OF SYSTEM DYNAMIC IN TAKAFUL MODEL

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Thesis submitted in fulfillment
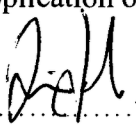of the requirements for the degree of
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AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This topic has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Acedemic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Takaful, the Islamic alternative to conventional insurance is based on the concept of social solidarity, cooperation and mutual indemnification of losses of members. The 'transparency' offered in the Takaful system will eliminates the elements of gharar (uncertainty), maisir (gambling), and riba (usury). Because of the dynamicity and the complexity of the cash flows in the Takaful system, the application of system dynamic approach is used in order to discover the possible internal and external impact in the assumptions used in determining contributions rate from the participants. The traditional approach is limited because it is not able to determine the effect of changes in actual experience, and hence, does not allow the management to make decisions on how to continuously become solvent and may cause the operators to stop issuing contracts or products. Using system dynamic, these possible effects from the actual experience can be determined in terms of amounts transferred to shareholder's fund and the result obtained can assist the management to decide which assumptions to be used so that the operators will continue solvent and making profit at the same time. The results of System Dynamic simulation analysis in this paper represent the impact of changes of components in the takaful model. This result can be used as a decision tools to the takaful operator in order to determine the best assumptions and strategies in order to maximize their profits.

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