

*For favour of posting*

DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE  
THE UNIVERSITY OF HONG KONG

Seminar for Confirmation of Candidature

**Ms. TIAN Dongzi**

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will give a talk

entitled

**INTERNAL MODEL OF NON-LIFE PREMIUM AND RESERVE  
RISK: MODELING DEPENDENCE WITH VINE COPULA**

Abstract

Solvency II Derivative introduced a standard formula based on market wide for the calculation of solvency capital requirement. Insurers can decide to use the standard formula or develop its own internal model subjected to the approval of supervisory authority. Focusing on premium and reserve risk in multi-line non-life insurance, we propose an undertaking specific internal model as an alternative to the standard formula. Stochastic claim reserving method is applied to the loss run-off triangles in order to predict the outstanding claims. The uncertainty of loss reserve prediction has been discussed widely over the past two decades based on an ultimo view. In contrast, we present a simulation approach to quantify one-year risk capital which is consistent with the solvency II framework. The dependencies between loss triangles are modeled using vine copula. The flexible vine copula structure allows the analyst to understand the associations between different lines of business and quantify the diversification effects. Based on the internal model, we develop a bootstrap procedure to compute the entire predictive distribution of claim development result. At last, we present a comparison between the capital requirement obtained by the internal model and the solvency capital requirement computed via standard formula.

on

**Tuesday, August 30, 2016**

**2:30 p.m. – 3:30 p.m.**

at

**Room 301, Run Run Shaw Building**

All interested are welcome