An early warning system for monitoring stress in the financial system

Piet de Jong[a,*], Geoffrey Loudon[a], Weihao Choo[a]

[a] *Department of Applied Finance and Actuarial Studies Macquarie University, NSW 2109, Australia.*

Abstract

SRISK methodology recently proposed in the literature is refined and extended using a formalised stress testing framework and exploiting time series methods. Baseline risk and the stress risk are in terms of time series based ordinary and stressed expectation. Stressed expectation is expectation computed under a hypothetical stress, modelled with a stress function and scenarios. Systemic stress is defined in terms of stresses impacting groups of firms or financial entities. Stress functions are chosen by the practitioner and exaggerate the probability undesirable outcomes. Properties and characterisations of stress and stress related quantities are displayed and explored. Application is made to the study of the stability of Australian banks using daily time series data.

Keywords: Capital shortfall, baseline risk, stress testing, stressed expectation, stress diversification.

*Corresponding author

Email address: piet.dejong@mq.edu.au (Piet de Jong)

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