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THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON FINANCIAL MATHEMATICS

Passive Fragility

by

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Abstract

We present a plausible model for the dollar size of the US equity market that incorporates passive share. Our model relies upon a small set of assumptions that are nearly universally accepted, or at a minimum widely used by quant practitioners. While our assumptions are seemingly innocuous and uncontroversial, the implications of our model should be a cause for significant concern. Once the passive share crosses a threshold, index volatility is expected to increase at a cubic speed, which may lead to much faster boom and bust cycles in the market. Significantly, in the absence of market controls, such as circuit breakers and closures, a higher threshold of passive share may spell disaster. Here, the major indices have a positive probability of hitting 0 before rebounding, over any finite time interval. This is joint work with Michael Green (Simplify Asset Management) and Hari P. Krishnan (SCT Capital Management).

Date : 25 February 2026 (Wednesday)
Time : 4:30p.m. – 5:30p.m.
Venue : Room 4503 (Lift 25/26)

All are Welcome!