



香港中文大學統計學系

Department of Statistics

THE CHINESE UNIVERSITY OF HONG KONG

# SEMINAR

DEPARTMENT OF STATISTICS  
THE CHINESE UNIVERSITY OF HONG KONG

## A Study on Asset Price Bubble Dynamics: Explosive Trend or Quadratic Variation?

### INVITED SPEAKER

Simon Kwok

Associate Professor

School of Economics

The University of Sydney

### TIME

February 27, 2024 (Tue) · 2:00 pm - 3:00 pm

### VENUE

LSB LT1 · Lady Shaw Building - LT1 · CUHK

### ABSTRACT

This paper posits that when an asset exhibits a bubble, the time series of its prices can explode with positive probability if a quadratic variation (QV) risk premium is large enough. This QV channel for bubble explosion is new to the literature. Based on the local martingale theory of bubbles, we provide sufficient conditions under which this QV explosion can occur. We also identify another possible explosion due to an autoregressive (AR) drift. Using the S&P 500 index and a sample of individual stocks over 1996-2021, we document the existence of price bubbles and test for the existence of price explosions. Almost all price explosion episodes discovered are associated with QV and not AR drift channel.