THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON STATISTICS

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

By

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Abstract

This paper posits that when an asset exhibits a bubble, its price process can be unbounded from above in finite time with positive probability if a quadratic variation (QV) risk premium is large enough. Based on the local martingale theory of bubbles, we provide sufficient conditions under which price explosion occurs via the QV channel provided that bubbles are present. This QV channel of price explosions is new to the literature and distinct from the explosive autoregressive (AR) dynamics, which is often identified with the presence of bubbles as defined in the time series literature. Using the S&P 500 index and a sample of individual stocks over 1996-2021, we document the existence of price explosions during periods when bubbles occur. Almost all price explosion episodes discovered are associated with the QV and not AR drift channel.

Date : **25 April 2024 (Thursday)**
Time : **4:00pm-5:00pm**
Venue : **CYT G002 (near Lifts 35/36)**

All are Welcome!