

Can One Detect a Bubble in Real Time?

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Abstract

Recent advances in the mathematical modeling of financial bubbles have led to the observation that bubble detection often boils down to determining if, under the risk neutral measure, a process is a strict local martingale or a true martingale. Bubbles are fairly easily recognizable after the fact, once they have run their course, but it is often difficult to detect their presence in real time. There are few tools available to distinguish a martingale from a strict local martingale, and it seems that determining which is the case from data is a delicate procedure. Indeed, one can argue that in principle it is impossible. Nevertheless in this talk we will explain how, in a special case, there is hope that one can determine when a bubble is present, and when it is not, in real time.

The talk is based on joint work with Robert Jarrow and Younes Kchia.

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