

Testing for Speculative Bubbles: Revisiting the Rolling Window

Stan Hurn (with Yang Chong)

Abstract

Recent research on detecting asset pricing bubbles in real-time has focussed on recursive and rolling-recursive regressions in combination with the supremum norm of a sequence of right-tailed unit root tests. The rolling-recursive algorithm, in particular, has proved relatively successful in identifying the timeline of bubbles but it does suffer from the disadvantages of being computationally quite intensive and also requiring the use of non-standard limit theory. This paper re-evaluates a more simple and perhaps somewhat neglected approach to the date-stamping of bubbles, namely the rolling-window unit root testing approach, and provides a comprehensive comparison of its performance against the recursive and rolling-recursive methods. The results of a suite of simulation experiments indicate that rolling-window tests may in fact be superior to the other two methods. In addition, the rolling-window approach yields better inference than its competitors when applied to a sample of the Nasdaq stock index and a sample of U.S. housing price-to-rent ratios, both of which are known to contain bubbles.