MACROECONOMICS:
ARBITRAGE, ASSET VALUATION AND SPECULATIVE BUBBLES

SYLLABUS (SPRING 2020)

Gaetano Bloise
Department of Economics
University of Rome III
gaetano.bloise@uniroma3.it

Course objectives

We will review the basic literature on no arbitrage pricing and on the appearance of speculative bubbles in security prices. Bubbles can occur in an asset market in which some sort of friction (for instance, short selling constraints) limits the ability of traders to profit from and eliminate bubbles. We move from the Fundamental Theorem of Finance both under complete and incomplete markets. We then extend the basic framework to an infinite horizon and provide a characterization of speculative bubbles based on no arbitrage and the martingale property of asset prices. We conclude with a description of conditions under which speculative bubbles can and cannot occur at a competitive equilibrium.

Main references

(1) L. Ljungqvist and T.J. Sargent, *Recursive Macroeconomic Theory*, 2012
(2) J.M. Harrison and D.M. Kreps, Speculative Investor Behavior in a Stock Market with Heterogeneous Expectations, *The Quarterly Journal of Economics* . 92, 1978.
(3) N.R. Kocherlakota, Injecting Rational Bubbles, *Journal of Economic Theory* 142, 2008.
(4) S.F. LeRoy and J. Werner. *Principles of Financial Economics*, 2014.
(5) J. Miao, *Economic Dynamics in Discrete Time*, 2014
(6) M.S. Santos and M. Woodford, Rational Asset Pricing Bubbles, *Econometrica* 65, 1997.
(7) J. Tirole, On the Possibility of Speculation under Rational Expectations, *Econometrica* 50, 1982.
(8) J. Tirole, Asset Bubbles and Overlapping Generations, *Econometrica* 53, 1985.

Course outline

1. Brief review of the basic principles of no arbitrage pricing: Valuation, state prices, risk-neutral probability. 2. Extension to a dynamic framework: Time resolution of uncertainty, retrading, no arbitrage pricing. 3. Martingale property of security prices: Market efficiency, consumption-based security pricing. 4. Speculative bubbles: Intrinsic value of an asset, no bubble theorem, the occurrence of bubbles with market frictions.