

A stock-flow consistent macroeconomic model for asset price bubbles

Matheus Grasselli

McMaster University

(Dated: October 16, 2014)

In this talk I first describe a stock-flow consistent model for an economy with households, firms, and banks in the form of a three-dimensional dynamical system for wages, employment, and firm debt. This is then extended by a fourth variable representing the flow of borrowing that is used purely for speculation on an existing financial asset, rather than productive capital investment. Finally, the system is augmented by introducing a price dynamics for the financial asset in the form of a standard geometric Brownian motion plus a downward jump modeled as a non-homogenous Poisson process whose intensity is an increasing function of the speculative ratio. The compensator for this downward jump then leads to the super-exponential growth characteristic of asset price bubbles. Moreover, when the bubble bursts the cost of borrowing in the real economy increases, leading to a feedback mechanism from the asset price dynamics to the original system. This is joint work with Bernardo Costa Lima and Adrien Nguyen Huu.