“The Wobbly Economy, Part II; Introducing land”

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Abstract

This paper is a sequel of our Part I. The key innovation here is to introduce land and show wobbly macro-dynamics with endogenous fluctuations in land prices and aggregate economic activities. We show that there are again an infinity of rational expectations trajectories in which there are multiple momentary equilibria and the price of land can endogenously fluctuate without either converging or diverging. Associated with endogenous fluctuations in land prices, the aggregate output also bounces around infinitely.

In some cases, a path that looks like it might be explosive can be an equilibrium path. Even if the price of land rises for an extended period of time, in a way which might seem unsustainable, it can suddenly fall by endogenous changes in expectations, decreasing thereafter for some periods, and then start going up again. These movements can occur in a way with totally consistent rational expectations. Moreover, these fluctuations look like a bubble path but they are fully determined by the fundamental values of land.

Moreover, we show that land bubbles can arise under some parameter values. Even if there is a unique momentary equilibrium and a unique high steady-state equilibrium leading to full employment and the economy initially stays there, with the appearance of a land bubble, there can be a phase transition from a state with a unique momentary equilibrium into a wobbly bubble-economy, thereby generating instability.

Furthermore, we extend the basic model to consider a case where land is used as collateral. We demonstrate that all results we have derived in the basic model apply, except for two points. There is more multiplicity of momentary equilibria. Prices of land and the aggregate output rise and fall in more different ways: sometimes collateral constraints bind and sometimes not. Relaxing a borrowing constraint, i.e., financial deregulation, leads to higher leverage associated with lower interest rates, which increases the upper limit of land prices that are sustainable, thereby expanding the region where land prices can endogenously fluctuate.