

Frequency of trade and the determinacy of equilibrium paths: logarithmic economies of overlapping generations under certainty ^{*†}

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Abstract

Equilibrium paths in economies of overlapping generations depend on the frequency of trade. In a logarithmic example, determinacy obtains as the frequency of trades tends to infinity or trade occurs in continuous time.

If time extends infinitely into the infinite past as well as into the infinite future, in continuous time, all non-stationary equilibrium paths of prices are time-shifts of a single path; in addition, there are two stationary solutions; in discrete time, there is a one dimensional family of non-stationary solutions, up to time-shift, but the indeterminacy vanishes as the frequency of trade tends to infinity.

If, alternatively, time has a finite starting point, in discrete time the degree of indeterminacy increases with the frequency of trade, and, in continuous time, it is infinite; however, these are families of exponentially decreasing oscillations that, although they may exhibit pseudo-chaotic behavior for a while, as time tends to infinity, all get damped, and asymptotic behavior is that of the economy that originates in the infinite past.

This is different from the effect of increases in the life span of individuals.

Key words: frequency of trade, continuous time, overlapping generations, determinacy.

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†Gaetano Bloise, Chris Edmond and Stefano Lovo made interesting comments.

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