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Indeterminacy in a monetary economy with heterogeneous agents

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§1. Introduction

It is well known that indeterminacy and chaotic behaviour of equilibria can arise in a monetary economy. To the best of our knowledge, the first work analysing the relationship between a monetary economy and the indeterminacy of equilibria is Brock (1974), who shows that there are multiple equilibrium paths in a discrete-time version of a monetary model with a single agent and elastic labour supply. Gray (1984) and Obstfeld (1984) show that indeterminacy of monetary equilibria may arise in a model with a nonseparable utility function in real money holdings and consumption in continuous-time frameworks. In addition, Mino (1984) studies indeterminacy in connection with several endogenized money supply rules. Matsuyama (1991) finds that chaotic behaviour of equilibria also arises in a discrete-time framework. Fukuda (1993) demonstrates that these results also hold in a model with separable utility function. However, all of the above studies mainly concern indeterminacy and chaotic behaviour of equilibria in connection with the monetary policy or preferences of a single agent in an economy. In contrast, this paper focuses on heterogeneity of real asset holdings and its relationship to indeterminacy of monetary equilibria.

The linkage between indeterminacy and heterogeneity of agents has been investigated in several recent studies. Using an overlapping-generations model with heterogeneous agents, Ghiglino and Tvede (1995) show that heterogeneity may generate indeterminacy and cycles. Ghiglino and Olszak-Duquenne (2001) and Ghiglino and Soger (2002) demonstrate that these results also hold in the discrete-time version of a two-sector

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