EQUILIBRIA IN BANACH LATTICES WITHOUT ORDERED PREFERENCES

Nicholas C. YANNELIS*

University of Minnesota, Minneapolis, MN 55455, USA

William R. ZAME*

University of Minnesota, Minneapolis, MN 55455, USA

State University of New York at Buffalo, Buffalo, NY 14214, USA

This paper establishes a very general result on the existence of competitive equilibria for exchange economies (with a finite number of agents) with an infinite-dimensional commodity space. The commodity spaces treated are Banach lattices, but no interiority assumptions on the positive cone are made; thus, the commodity spaces covered by this result include most of the spaces considered in economic analysis. Moreover, this result applies to preferences which may not be monotone, complete, or transitive; preferences may even be interdependent. Since preferences need not be monotone, the result allows for non-positive prices, and an exact equilibrium is obtained, rather than a free-disposal equilibrium.

1. Introduction

Infinite-dimensional commodity spaces have become well-established in the literature since their introduction by Debreu (1954), Peleg and Yaari (1970) and Bewley (1972, 1973). Infinite-dimensional commodity spaces arise naturally when we consider economic activity over an infinite time horizon, or with uncertainty about the (possibly infinite number of) states of the world, or in a setting where an infinite variety of commodity characteristics are possible. Many different infinite-dimensional spaces arise naturally. For example, Bewley (1972) uses the space l_∞ of bounded real sequences to model