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Maria Bernadette Donato, Monica Milasi, Antonio Villanacci

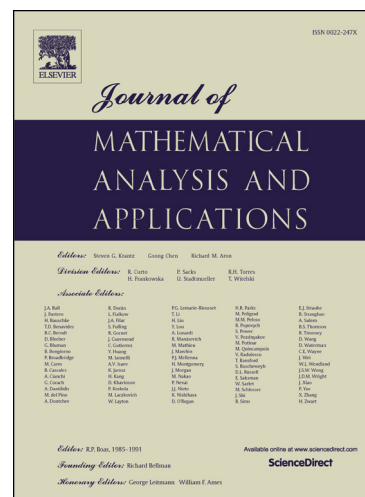
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# Incomplete financial markets model with nominal assets: variational approach

Maria Bernadette Donato, Monica Milasi

*Department of Mathematics and Computer Science, Physical Sciences and Earth Sciences,  
University of Messina*

Antonio Villanacci

*Department of of Economics and Management, University of Florence*

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## Abstract

We deal with the analysis of the general equilibrium model with incomplete financial markets and nominal assets. We assume that there are 2 periods of time, say today and tomorrow. We define a consumption, portfolio holding, commodity and asset price vector as an equilibrium vector associated with a given economy if at those prices and economies households maximize utility under a budget constraints and markets clear. While the path breaking proofs of existence by Cass [6] and Werner [25] use a fixed point argument, we provide an independent existence proof in terms of variational inequalities (about the variational approach for the analysis of general equilibrium models see for example [9] and [10]). The analysis presented in this paper indicates that the variational inequality approach promises to be applicable in many specifications of the incomplete market model.

*Keywords:* convex programming, general equilibrium, incomplete financial markets, nominal assets, variational inequality

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## 1. Introduction

The standard General Equilibrium model analyzes market equilibria, i.e., economic situations described by prices and consumption/production vectors which are consistent with households' and firms' maximizing behaviors and with demand of goods being smaller than or equal to supply.

Even though the origin of general equilibrium dates back to Walras' work at the end of the nineteenth century, it was only in 1954 that Arrow, Debreu and McKenzie analyzed the model in a mathematically rigorous manner. They showed that under some general conditions, for any economy, equilibria exist and associated distributions of resources are efficient (see [3] and [20]).

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