

# **GREQAM**

**Groupement de Recherche en Economie  
Quantitative d'Aix-Marseille - UMR-CNRS 6579  
Ecole des Hautes Etudes en Sciences Sociales  
Universités d'Aix-Marseille II et III**

**Document de Travail  
n°2006-44**

## **INDETERMINACY IN DISCRETE-TIME INFINITE-HORIZON MODELS**

**Kazuo NISHIMURA  
Alain VENDITTI**

**September 2006**

**DT-GREQAM**

# Indeterminacy in discrete-time infinite-horizon models

Kazuo NISHIMURA

*Institute of Economic Research, Kyoto University, Yoshida-Honmachi,  
Sakyo-ku, Kyoto 606, Japan*

and

Alain VENDITTI

*GREQAM, 2 rue de la Charité, 13002 Marseille, France*

**Abstract:** *We present a survey of the main conditions for the occurrence of indeterminacy in discrete-time infinite-horizon models with technological external effects. One-sector models are characterized by global external effects coupled with increasing social returns. We will show that indeterminacy of equilibria is fundamentally based on the consideration of endogenous labor demand and externalities coming both from capital and labor. Most of the two-sector models are characterized by constant returns to scale at the social level. We will show that depending on whether external effects are sector-specific or intersectoral, some simple but different conditions on capital intensity differences across sectors generate indeterminate equilibria.*

**Keywords:** *Two-sector models, externalities, depreciation of capital, CES technologies, indeterminacy.*

*Journal of Economic Literature* Classification Numbers: C62, E32, O41.