Computational method of finding optimal structural change in economic systems: an input-output projected-gradient approach

Alexander Vaninsky*

Mathematics Department
Hostos Community College
The City University of New York
500 Grand Concourse Av., Room B 409
Bronx, NY 10451
U.S.A.

Abstract

A method of finding locally optimal structural change in economic systems described by input-output models and aimed to maximization of final product per capita is suggested. The method is based on a projected-gradient. Both projected-gradient and corresponding locally optimal structural change are obtained in explicit form. Numerical examples are provided.

Keywords: Projected gradient method, optimal-structural change, input output models.

1. Introduction

In this paper a computational method of finding locally optimal structural change in economic systems described by input-output models is suggested. Input-output model, see e.g. Gregory and Stuart (2004), is combined with a special method of factor decomposition developed in Vaninsky (1984) and a projected-gradient method. Suggested method uses a known fact that a projection of a gradient on a plane tangent to a surface is a gradient of the limitation of the original function on the

*E-mail: avaninsky@hostos.cuny.edu

Journal of Interdisciplinary Mathematics
Vol. 9 (2006), No. 1, pp. 61–76
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