

Introduction to a General Equilibrium Approach to Economic Growth

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Endogenous growth theory has had some success in explaining the observed data related to the process of economic growth. However, the results of the models in this literature are typically very sensitive to their micro-economic structure. It is therefore important to understand how the growth process behaves under more general specifications of such features as the number of commodities, the number and preferences of consumers, the factors of production, and the financial and information structures. In other words, valuable insights can be gained by integrating growth theory into the framework of general equilibrium theory. The summary of the papers in this volume, focuses on seven issues that are crucial to this integration and highlights the contributions of the papers to the resolution of these issues. *Journal of Economic Literature* Classification Numbers: C61, D50, D90, F43, O30, O41. © 2002 Elsevier Science (USA)

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1. INTRODUCTION

The development of growth theory has been motivated by three major empirical observations: the permanent growth of the standard of living, the substantial disparities across countries in the output levels and growth rates, and the convergence of growth rates and incomes among the richest countries. Our ability to explain these facts has improved in the recent years with the advent of the endogenous growth models. The engine of this renewal is the recognition that the long-run rate of growth is the result of conscious decisions by the economic agents, instead of being exogenous as was

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assumed in optimal growth models. In this respect, the “endogenous growth” revolution is a further step in the evolution of neoclassical economic theory.

The endogenous growth literature has isolated two general mechanisms of the growth process. The first mechanism is the accumulation of knowledge, driven in part by research and development and by learning-by-doing (see, e.g., Shell [67]). It is generally assumed that knowledge is non-rival and non-excludable. In such cases there is a natural lack of incentives by competitive firms to invest in R & D and a strictly positive production of innovation requires that the innovator possess some monopoly power. Introducing costly imitation and diffusion produces both diversity and convergence, or conditional convergence (see, e.g., Lucas [47] and Barro and Sala-i-Martin [3]). The future benefits and the initial costs associated with innovation and imitation as well as the uncertainty about the net returns are highly dependent on the micro-economic structure of the country (Shell [68]). The way the firms deal with the uncertainty also depends on the development of the financial and insurance markets as well as the government policy toward innovation. Finally, the process of diffusion, occurring by definition across countries, industries or firms, also calls for an integrated general equilibrium approach.

The second mechanism considers the accumulation of capital as the driving force. Capital, defined in a broad sense, as to include human capital, differs from knowledge because of its excludability and rival properties. However, as this capital has a “knowledge” component, usually there is a spillover effect producing technical progress and increasing social returns. In these models the micro-economic structure affects the outcome through many channels. First, in presence of externalities, the potentially many sectors of the economy interact both through the competitive general equilibrium markets and through the non-marketed externalities. Second, the formation of human capital depends on the environment faced by the individuals, in particular on the financial constraints. These factors enhance the sensitivity of the equilibrium path to the fundamentals of the economy. Finally, when these models predict multiple equilibria or indeterminacy, the outcome is also very sensitive, through the channel of expectations, to the socio-economical conditions (see, for e.g., Benhabib and Farmer [11]).

Because the results of the models in the literature are typically very sensitive to their micro-economic structure, it is important to understand how the growth process behaves under more general specifications. The adopted framework should be flexible enough to allow for many agents, many goods and sectors, and general preferences and technologies. The analysis of situations characterized by incomplete markets, restricted participation, asymmetric information and strategic power should also be made possible.

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