

# Preface

This book provides systematic and comprehensive materials for applying inframarginal analysis to the study of a wide range of economic phenomena. The analysis is based on a new overarching framework known as the “Smithian framework”, pioneered by Yang (1988) and Yang and Ng (1993). The framework is employed to resurrect the classical notion of division of labor and specialization which is the essential source of increasing nation’s wealth.

This framework has many conceptual and policy implications different from those of orthodox analysis. It differs from Marshall’s marginal analysis of demand and supply which is based on the neoclassical dichotomy between pure consumers and firms and separates the analysis of demand and supply from the analysis of individuals’ decisions in choosing their levels of specialization. The framework begins from an analysis of individual consumer-producers’ decisions in choosing levels of specialization, and then applies inframarginal analysis (total benefit-cost analysis across corner solutions in addition to marginal analysis of each corner solution) to investigate how the network size of division of labor in society is determined in the market place. According to this inframarginal analysis, demand and supply are two sides of the division of labor (Allyn Young, 1928). Hence demand and supply are determined not only by resource allocation for a given network pattern of division of labor, but also by the network pattern of division of labor.

Under this framework, we do not have a dichotomy between microeconomics and macroeconomics. Since a particular level of division of labor is associated with a certain size of market network, the extent of the market and aggregate demand are determined by individuals’ decisions

in choosing their levels of specialization that yield the network size of division of labor for society as a whole. Hence many macroeconomic phenomena, such as unemployment and business cycles are some special features of the complicated network of division of labor.

In this book, non-linear programming, dynamic programming, and other nonclassical mathematical programming are employed to resurrect the spirit of classical mainstream economics within a modern body of formalism. Despite the innovation, it keeps the continuity of the mainstream of economics through a synthesis of the existing and emerging branches of economics. Neoclassical trade theory is synthesized into the text by highlighting its features of inframarginal comparative statics that generate jumps of equilibrium trade pattern across corner and interior solutions (chapter 10). New trade theory developed by Dixit and Stiglitz (1977), Krugman (1979, 1980, 1981), Ethier (1982), and others is covered in chapter 9. New equilibrium game models such as the models of Nash bargaining game and Rubenstein's alternating offer bargaining game and the model of commitment game of Dewatripont-Maskin, are covered and applied to analyze the relationship between endogenous transaction costs and network size of division of labor in chapters 7 and 8.

New models that formalize the notion of endogenous transaction costs caused by moral hazard and information asymmetry, the theory on structure of residual rights and incomplete contract, and the new theory of the firm are covered in chapters 7 and 8. These models are extended in this text to explore the relationship between endogenous transaction costs, evolution of division of labor, structure of property rights, and emergence of the institution of the firm. New endogenous growth models (AK models, R&D based models, and models with endogenous evolution of division of labor) are covered in chapters 18, 19, and 20. The different endogenous growth models are compared in the light of recent empirical work that tests them against observations.

Several Smithian general equilibrium models are used to develop an overarching framework for explaining all micro and macro phenomena. It is shown that when the network size of division of labor is endogenized in a general equilibrium analysis, marginal comparative statics for a given pattern of the network can address conventional

microeconomic resource allocation problem, while inframarginal comparative statics explain discontinuous jumps of the equilibrium size of network of division of labor and related aggregate variables across different structures. The inframarginal comparative statics (or dynamics) can then explain emergence of money, business cycles, and unemployment from division of labor. Hence, for our grand synthesis, macroeconomic analysis and microeconomic analysis are just at two different levels within an integrated framework.

Many insights of Buchanan, Cheung, Coase, and North into transaction costs, property rights, institution of the firm, and contract are formalized in the text. Challenges posed by nonlinear evolutionary economics (see Nelson, 1995, Conlisk, 1996, and references therein) and by the Austrian School (see Kirner, 1997, and references therein) against the mainstream are taken and absorbed into the text. For instance, the concept of Walrasian sequential equilibrium is developed in chapter 20 to predict concurrent evolution of economic organisms and evolution of information acquired by society through social experiment with various organisms using price mechanism. The recursive paradox, which means that a decision problem based on bounded rationality cannot be well defined, raised by nonlinear evolutionary economists is solved in a well closed dynamic general equilibrium model based on adaptive behaviors and bounded rationality. The dynamic equilibrium model substantiates the proposition in nonlinear evolutionary economics that concurrent evolution of organisms and information about organisms acquired by society involves uncertainty of the direction of the evolution as well as a certain tendency of the evolution (Nelson, 1995).

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Any remaining errors are solely our own responsibility.

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