The Structure of Simple General Equilibrium Models

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I. INTRODUCTION

It is difficult to find any major branch of applied economics that has not made some use of the simple general equilibrium model of production. For years this model has served as the workhorse for most of the developments in the pure theory of international trade. It has been used to study the effects of taxation on the distribution of income and the impact of technological change on the composition of outputs and the structure of prices. Perhaps the most prominent of its recent uses is to be found in the neoclassical theory of economic growth.

Such intensive use of the simple two-sector model of production suggests that a few properties are being retranslated in such diverse areas as public finance, international trade, and economic growth. The unity provided by a common theoretical structure is further emphasized by the dual relationship that exists between sets of variables in the model itself. Traditional formulations of the model tend to obscure this feature. My purpose in this article is to analyze the structure of the simple competitive model of production in a manner designed to highlight both the dual relationship and the similarity that exists among a number of traditional problems in comparative statics and economic growth.

The model is described in Sections II and III. In Section IV I discuss the dual nature of two theorems in the theory of international trade associated with the names of Stolper and Samuelson on the one hand and Rybczynski on the other. A simple demand relationship is added in Section V, and a problem in public finance is analyzed—the effect of excise subsidies or taxes on relative commodity and factor prices. The static model of production is then reinterpreted as a neoclassical model of economic growth by letting one of the outputs serve as the capital good. The dual of the "incidence" problem in public finance in the static

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