The 'New' Growth Theory: Old Wine in New Goatskins

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INTRODUCTION

With the inception of systematic economic analysis in the time of the classical economists the problem of what determines the dynamism and growth performance of the economy has become a major focus of research in social sciences. Since that time it has always been known that in order to understand the nature and causes of the wealth of nations and its growth one ought to study first and foremost the 'causes of improvement in the productive powers of labour', as Smith put it, or the factors affecting the development of the 'productive powers of society', to use Marx's concept. It has also always been understood that there is an endogenous side to this process of improvement in social productivity. Reading authors such as Adam Smith, Charles Babbage, Karl Marx or Alfred Marshall one gets indeed the impression that there is no such thing as a purely exogenous change in productive powers. These are rather seen to depend on the actions of individuals, and the impact these actions have in fostering economic growth. These actions and their 'growth effectiveness' are envisaged as shaped by a variety of factors including cultural norms, social institutions and a nation's policy. In these authors technological and organisational change is consistently portrayed as essentially endogenous. For example, in Smith's concept of the division of labour the pace at which capital accumulates and thus markets expand is singled out as the factor which is most important for the growth in labour productivity and income per capita (cf. Smith, 1976, book I, chs I-III; see also Negishi, 1993). The endogeneity of technological progress was also stressed in more recent times by authors such as Allyn Young, and particularly by Nicholas Kaldor who even attempted, albeit with only limited success, to put the relationship between productivity growth and capital accumulation into algebraic form, in his so-called 'technical progress function'. It was clear to these authors that 'human capital' and 'technological knowledge' do matter and that improvements in the 'skill, dexterity, and judgment with which labour is applied in any nation' (Smith) is favourable to growth.

Following the boom of interest in the economics profession

in growth theory in the 1950s and 1960s there was a slump in the 1970s and early 1980s, while the second half of the 1980s saw a swift revival of interest in growth theory. Robert Solow recently spoke of a 'boomlet' (cf. Pasinetti, 1994, p. 354). Yet given the burst of activity which is reflected in a large and still mounting wave of publications on growth this has now become a fully fledged boom. In this paper emphasis will be on the so-called 'new' or 'endogenous' growth theory (henceforth NGT) which presents itself in a bewildering variety of 'new' growth models (henceforth NGMs). The NGT purports to provide, to use Hicks's term, a 'theory of economic history' (cf. Hicks, 1969), as far as the growth and development of economies is concerned.

There is no problem, in principle, to elaborate a theory of economic history or, somewhat less demanding, a model of endogenous technological progress. The question is whether the story told by the NGT is interesting and illuminating and whether and how much it goes beyond what we already know. In other words, the question is whether the NGT stands up to its bold claims or can be expected to do so in the near future. In this paper we shall, however, ask a simpler question, namely in what sense is the theory really 'new' and in what sense is growth explained 'endogenously'. More specifically, we will analyse some models of endogenous growth and show how they relate to earlier theories.

The meaning of endogenous growth in the 'new' growth literature is that output grows faster than the exogenous factors would make it grow. The innovation of these contributions relative to the Solovian model is that the rate of technological change, and a fortiori the rate of growth, is no longer taken as given from outside, but is envisaged to depend on the 'behaviour' of agents, that is, on their preferences or tastes. In the formalisations this influence is commonly reduced to that of the rate of time discount, or time preference, and the elasticity of substitution between present and future consumption. Hence, other than their Solovian ancestors, in the new conceptualisation agents are free to decide their future expressed in terms of the rate of growth of per capita income. Adam Ferguson, the Scottish philosopher, had maintained that what is happening in history is 'the result of human action, but not the execution of any human design' (Ferguson, 1793, p. 205). In some of the contributions to

the NGT history is rather portrayed as the result of human action which is taken to effectively execute some human design. With different preferences, the technological and demographic parameters being the same, the steady-state growth rate will generally be different. This is the basic message of the NGT.

The structure of the paper is as follows. Section 2 deals with how in our view endogenous growth is generated in the NGMs. The following three sections verify this view with respect to some NGMs. Given the amount of literature devoted to this area of theoretical and applied research in the last few years, these sections can only deal with a small subset of this literature. Emphasis will be on those contributions that triggered the literary avalanche, since they defined the confines within which much of the later work was carried out. Broadly speaking, the different NGMs analysed in these sections will be scrutinised in an ascending order of difficulty or sophistication; as will become clear this order deviates from the chronological one. We shall discuss, in Sections 3-5, respectively:

(i) 'linear models', in which our view on how endogenous growth is generated is most easily recognised (Rebelo, 1991; King and Rebelo, 1990);

(ii) the model by Lucas (1988), which focuses attention on the accumulation of human capital; and

(iii) the model by Romer (1986), which emphasises the generation of new knowledge in research and development activities of firms.

Section 3 contains also a generalisation of the Rebelo model which will be formally expounded in another paper by us and Section 4 contains suggestions how land and scarce natural resources may be introduced in the Lucas model. Section 6 contains some critical remarks on the NGT, methodological and other. Section 7 contains some conclusions.