

On the robustness of models within ‘old’ and ‘new’ growth theory

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Abstract

According to the advocates of new growth theory (NGT), their approach to the theory of growth offers several advantages over more traditional approaches. Above all, however, NGT seems to differ from its ‘old’ predecessor in the emphasis placed upon its descriptive adequacy. The literature of 1960s and 1970s contained plenty of caveats about the limitations of growth theory. It was usually maintained that its content was neither a satisfactory description of actual growth processes or development experiences, nor a useful starting point for policy recommendation, but simply a first step towards a better understanding of some fundamental mechanisms (primarily the accumulation of capital) affecting economic growth. As Frank Hahn (*Readings in the Theory of Growth*. London: Macmillan, 1971, p. vii) puts it:

The theory of growth is not a theory of economic history. It is of no help in answering Max Weber’s famous question and only of marginal use in understanding, say, Industrial Revolution. Where the theory is to be taken descriptively, it takes the institutional setting for granted and highly idealises it. The parts of the theory which are to be understood as prescriptive have hardly anything to say on either the actual problems of ‘control’ or on the society to be controlled

In this respect new growth theorists share a different and much more ambitious attitude. Consider, for instance, the following passages taken from Aghion and Howitt (*Endogenous Growth Theory*. Cambridge, Mass.: MIT Press, 1998, pp. 6-7): a recent and widely acclaimed advanced textbook on NGT:

Because of its explicit emphasis on structural aspects of the innovation process, endogenous growth theory makes it possible to bridge the gap between theory and various strands of empirical and historical literature. ... Thus one of our primary motivations in developing the model ... with capital accumulation and population growth is to show that when these other important aspects of growth are taken into account, our approach becomes broadly consistent with the empirical observations that have been adduced to refute it.

Behind this sharp change of perspective we may easily detect a firm belief in the possibility of deriving from (‘new’) growth theory some reliable prescriptions of policy designed to rise the rate of growth of actual economies. If this goal could actually be achieved, its importance could be hardly underestimated. However, one unavoidable characteristic of models intended to support such a very demanding objective is their “robustness”.

Robustness is supposedly a desirable attribute, and scientific progress is often related to (among other things) the discovery of increasingly robust theoretical and/or empirical relations. Like

other normative terms, however, robustness works as a comprehensive ‘umbrella’ under which various different concepts are subsumed. In F. Guala and A. Salanti, “On the robustness of economic models” (mimeo, 2001), three main meanings of the term ‘robustness’ have been identified: (1) robustness to changes in the model’s idealisations; (2) robustness to changes in the ‘background’ conditions (usually, but somewhat improperly, referred to as *ceteris paribus* clauses); (3) robustness to changes in the implied causal mechanism.

This paper, therefore, is devoted to appraise the robustness of models within both traditional theories of growth and NGT according to these different senses in which a model can be said to be robust. Special attention is paid to the robustness in the implied causal mechanisms, due to its substantial role concerning the possibility of deriving sound policy prescriptions from (either theoretical or empirical) models.