

Economic growth with subsistence consumption

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Abstract

Four stylized facts of economic growth in DCs are set up initially. Despite its obvious simplicity the linear growth model with subsistence consumption is able to reproduce two of them: a rise in the saving rate along with per capita income as well as β -divergence. The rate of convergence shows extraordinarily low values at early stages of economic development. Hence, the big diversity in growth rates can partly be explained to represent transitional phenomena. An extension of the basic model additionally allows an explanation of the hump-shaped pattern of growth. © 2000 Elsevier Science B.V. All rights reserved.

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1. Introduction

The development process is one of transition. Gersovitz (1988, p. 383)

If one takes Gersovitz (1988) literally and is interested in an explanation of economic growth and development in terms of growth theory, one is led to ask what class of growth models is consistent with this view. In addition, it is reasonable to ask what class of growth models is able to reproduce the main

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stylized facts of (aggregate) economic growth primarily applying to the lower range of per capita income:¹

1. A big diversity in the growth rates of per capita income including zero and even negative growth;²
2. a positive correlation between the saving rate and per capita income;³ and
3. a positive correlation between the growth rate and the level of per capita income, i.e. β -divergence.⁴
4. More generally, many authors report β -divergence for the lower range of per capita income and β -convergence for the upper range of per capita income, i.e. a hump-shaped pattern of growth.⁵

Beside an increase in total factor productivity, the accumulation of reproducible inputs (physical and human capital) represents one of the major forces of growth. Especially in the long run, the accumulation of physical and human capital needs to be financed by internal saving.⁶ Within the development literature it is stressed that saving in the case of developing countries (DCs) is determined by the willingness as well as the ability to save (e.g., Hemmer, 1988, pp. 150–159). The usual constant-intertemporal-elasticity-of-substitution (CIES) formulation of preferences abstracts from the requirement of a minimum consumption level in order to sustain life. However, the requirement of subsistence consumption undoubtedly restricts the possibilities to substitute consumption intertemporally and hence the ability to save at least for the lower range of income. Several questions arise which are of fundamental importance: Does the requirement of subsistence consumption influence the process of growth beyond this threshold? If so, how long does it take for the influence of subsistence consumption on growth to vanish? How does the requirement of subsistence consumption interact with other essential mechanisms of growth? The paper in hand seeks to answer these questions systematically within the context of simple endogenous growth models with Stone–Geary preferences. In addition, it will be shown that these models provide a potential

¹ The general stylized facts of economic growth were formulated by Kaldor (1961). Romer (1989) enlarges Kaldor's list by five other prominent features of the data.

² This corresponds to Kaldor's (1961) sixth fact. For the case of low-income countries this empirical regularity is particularly marked; see Romer (1989) for a discussion.

³ The empirical evidence in favor of this empirical regularity is overwhelming (e.g., Aghevli et al., 1990; Ogaki et al., 1996).

⁴ For empirical evidence, see Baumol (1986), Zind (1991), and Pritchett (1997).

⁵ For empirical evidence, see Dollar (1992), Baumol et al. (1989), and Easterly (1994).

⁶ As far as specific consumption activities (nutrition, health efforts, and education) are productive, the accumulation of human capital does not necessarily require the renunciation of consumption. This aspect is ignored within this paper; for this see Steger (2000).

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