THE EDUCATION DILEMMA: GROWTH VERSUS EQUITY**

BY

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1 THE EDUCATION DILEMMA

The attention paid to education from an economic perspective has shifted considerably in the last two decades, even among the adherents of the human capital school. In the sixties the main emphasis was on the contribution of education to economic growth. Schultz (1961) and Denison (1962) provided with their analyses much of the basis for the formulation of the human capital school. These studies combined well with the general awareness of a prevailing shortage of trained manpower in the developed countries. But in the late sixties and early seventies the tide turned from a shortage to an oversupply of labour. The interest in the contribution of education to economic growth then diminished, leaving aside, of course, a number of exceptions, such as Razin (1977). The focus seems to have become redirected towards the role of education in the distribution of labour incomes (see e.g. Mincer's 1970 survey article).

This paper presents an approach to the blending of considerations of economic growth and income distribution from an education-investment perspective. The core of the problem is to determine what the outlays for different levels of education should be so that a mixed criterion of long-run economic growth and the distribution of income is maximum. Expenditures on education in most economic analyses are considered to be determined by behavioural rules. Here the departure is different. Government or planning board decides on these expenditures with economic growth and income distribution in mind. In this vein we follow Tinbergen's reasoning (1975). In Section 2 the manpower planning concept stands central. The search is for the optimal outlays on education so that consumption is maximized over a long, but finite, period of time. These outlays lead to an optimal distribution of the labour force by level of education. We focus on steady-state growth paths.

** This paper presents a concise survey of some of the research, reported in Ritzen (1977). Helpful suggestions by Prof. J. Tinbergen are gratefully acknowledged.
In reality deviations from such growth paths are to be expected. Not only because reality is more complex and stochastic than the model used here acknowledges, but also because objectives other than growth prevail when governments decide on educational expenditures. One such objective is income distribution. By providing the monies for and admitting more students to higher educational levels than strictly required for economic growth the distribution of gross income from labour can become more equal, since the scarcity value of the graduates falls, and with it their wages. This objective is generally consistent with a policy of 'social demand' planning of education: unrestricted admission to higher levels of education. It is attractive for a government to interfere with income distribution through education. First, it is a positive action: more education is supplied than would have been the case if manpower planning were followed. This generally conforms with the social demand for education. Second, such policies attack the cause of income inequality, while most other policies concerned with the distribution of income 'kurieren am Symptom' [cure the symptoms] (Pen and Tinbergen, 1977).

The third section presents an analysis of steady-state growth trajectories which are optimal with respect to a mixed criterion of growth and income distribution. This analysis is followed by numerical examples (Section 4) and concludes with some remarks concerning possible extensions of the study.

2 GROWTH AND EDUCATION

At this stage our premise is that there exists such a thing as the optimal distribution of the labour force over levels of education such that economic growth is maximum. Before embarking on the search for an optimal distribution the premise requires careful attention. The first observation is that it is only meaningful to consider the relation between growth and the distribution of the labour force by level of education in an education-investment framework: additional schooling leads to increased productivity. If more schooling did not lead to more production it would be pointless to focus on the distribution of the labour force by level of education. From now on we consider all expenditures on education to lead to human capital improvements. Or, to put it another way: we consider only those expenditures for education which are investments in human capital.

Second, the premise implies certain assumptions concerning the technological possibilities of production. The problem is degenerate if an infinite elasticity of substitution exists between labour with different levels of education, as in Denison's case (1962). Obviously in such a case economic growth would be maximal if all workers had one and the same level of education, that is to say, the