3 On Measuring the Redistribution of Lifetime Income (1977)*

I INTRODUCTION

How far, if at all, does the State reduce inequality? Or, how far does a particular policy affect it? To answer these questions one has to compare the actual distribution of income after taxes and benefits (a vector $V^d$) with some hypothetical alternative distribution ($V^H$). The measure of income normally used in such analyses is current annual income, regardless of the past or future income of those concerned (Nicholson, 1964; Musgrave, 1964). But this is unsatisfactory, partly because a person's current income is a bad measure of his underlying real income, and especially because much government activity redistributes a person's lifetime income over his lifetime more than it alters its total. The 'annual-income approach' thus gives the wrong impression in two ways: first, it exaggerates the basic inequality of incomes and then it exaggerates the amount of redistribution.

It is particularly important to take the lifecycle perspective when considering social service expenditures, since, unlike such programmes as roads and defence, the social services typically involve payments by workers to support non-workers such as children, pensioners, the sick or the unemployed. Since individuals do not remain in these dependent categories throughout their lives, current beneficiaries will, at other times, be supporting people who are similar to themselves but at a different stage of their lifecycle or of their fortunes. One may speculate on why such transfers are actually made or may be desirable. In terms of welfare economics many of them may be defended on grounds of the

* Chapter 4 in M.S. Feldstein and R.P. Inman (eds), The Economics of Public Services (London: Macmillan, 1977). This paper arises from work done jointly with Mark Stewart, who did the computing with superb efficiency. The author is also most grateful to M.J. Bowman, P. Dasgupta, A. Flowerdew, R. Jackman, A.R. Prest, G. Psacharopoulos, A.K. Sen, C. von Weizsäcker and B.A. Weisbrod for comments and helpful discussions on various points, and to the Social Science Research Council for financial support.

R. Layard, Tackling Inequality
© Richard Layard 1999
failure of capital and insurance markets or as merit wants, rather than on
grounds of equity, and Arrow (1963) has argued that

a good part of the preference for redistribution expressed in government
taxation and expenditure policies and private charity can be reinterpreted
as desire for insurance. It is noteworthy that virtually nowhere is there a
system of subsidies that has as its aim simply an equalization of income.

This paper, however, is not concerned with how to explain or justify State
action, but with how to measure its effects on the inequality of \textit{ex post} lifetime
incomes.

Section II justifies the use of lifetime rather than annual income to measure
\( V^d \) and considers the problems of measuring it when capital markets are
imperfect and some people live longer than others. Section III discusses how to
measure \( V^H \) using relevant alternative policy assumptions with clearly defined
non-steady-state time dimensions; it also considers the distinction between the
effects of policy on \textit{ex ante} and \textit{ex post} income. Section IV deals briefly with the
parametric representation of redistribution and adopts a framework within
which the distributional and efficiency effects of policies can be computed in a
commensurable way. It also rehearses some handy rules of thumb for
measuring distributional effects, subject to one caution, which is often
overlooked. Section V applies these ideas to education. First it contrasts
approaches that look at effects on parents with those that look at effects on
children, and supports Jencks’s argument that education may not be a very
suitable means towards income equalisation. It then proceeds to compute the
equity and efficiency effects of various possible policies in Britain, using a
newly estimated earnings function. It tentatively concludes that new cash
subsidies to upper secondary education might be efficient and not too
inequitable, but that a reduction in higher education subsidies might be
efficient and equitable.

\section{LIFETIME INCOME AS THE MEASURE OF INDIVIDUAL
WELFARE}

\textbf{Why lifetime income?}

There are well known objections to using income within a limited time period
as an indicator of economic welfare. First, it includes transitory income, which,
according to Friedman (1957, p. 189) accounts for between 15 per cent and
30 per cent of the cross-sectional variance in the annual incomes of urban
families. Then, there are the earnings variations that reflect differential
investments in human capital; if we include in this category the effects of