10

Summary and conclusions

10.1. Main contributions of present study

In the preceding chapters an attempt has been made to integrate some of the main economic theories on the distribution of incomes in Western developed countries. By *economic* theories I mean theories which specify the variables used, in contradistinction to what could be called *stochastic* theories, where the mechanism of income formation is described by the specification of the variables' statistical behaviour, but the latters' nature is not specified. Of course the existence of random components is not denied; every time a correlation coefficient below 1 is obtained they are implied. It is, however, the author's conviction that a stochastic theory constitutes an intermediate product of theorizing only and has to be followed by attempts to specify the most important stochastic components.

The main economic theories of income distribution so far presented emphasize somewhat either the supply or the demand side. This book joins those authors who have already attempted to give a place to both sides.

The studies presented here try to avoid duplication of the existing literature, although this is never completely possible – every scholar builds on what his predecessors have done and rightly so. The attempt to *avoid duplication* is the best excuse for the slight attention given to income from *capital*; a second argument being that incomes after taxes contain only a small portion from capital and that increasingly income-after-tax differences are due to differences in *human* capital.
This is much less true for developing countries. These have only been mentioned on a few occasions and as a contrast. It is the author's hope that scholars and politicians from developing countries may in the present study find something of interest for their future policies.

The book has been kept simple; first of all because it would have been beyond the author's power to make it complicated, but also because complicated models often prevent the reader from seeing the forest because of the large number of trees. Finally simplicity is imposed by the lack of generally accessible statistical data.

In contradistinction to the book's simplicity the author claims some degree of depth in two respects. First, some sort of a complete semi-macro model for the Netherlands has been presented in Chapter 7, enabling us to 'explain' some features of quantitative income distribution and to demonstrate variation and optimalization exercises. And secondly, an unorthodox attempt has been made to work with 'measured utility (or welfare)'. No doubt the greatest controversy about this book will concentrate on this issue. It would not be difficult, even for this author, to write a convincing and killing critique and many such reviews will be written. Constructive criticism will be more valuable, however, and must consist of alternative approaches. The author is happy to know that some such alternatives will be forthcoming.

In the complete model also a production function with five types of labour has been used. Ignoring the trends of the profession a function was chosen with some Cobb-Douglas features, mainly again for simplicity's sake. The author has tried to justify his choice with the aid of a number of elasticity estimates given in Chapter 5.

10.2. Demand and supply method

As already observed, this study constitutes an attempt to integrate income distribution theories mainly emphasizing the supply of types of labour with those mainly emphasizing the
Summary and conclusions

Demand for them. Authors such as Freeman and Ullman have already made such attempts, but important schools of thought such as the human capital school and the education planning school have somewhat overemphasized supply or demand, respectively. For long-run studies the approach chosen here seems more satisfactory, as illustrated by Chapter 6, dealing with changes during the period 1900–1990 for the United States and the Netherlands.

The particular advantages of a combined demand and supply approach are the following. Such a theory reminds us, to begin with, of the fact that for income equalization equal capabilities of all individuals are not required, but rather equality of the demand for and the supply of the various different types of production factors, in particular labour. Secondly, a demand–supply theory reminds us that important shifts in income ratios are natural in contradistinction to the maintenance, preferred by the privileged, of historical ratios. Thirdly, a demand–supply theory helps us find the factors (demand and supply factors, as defined in Chapter 3) behind the labour market, some of which may be susceptible to manipulation, in order to change income distribution. This is not only true for taxes, but also for education and for technological development (see Chapter 6).

Apart from such considerations it is quite natural for an economist to think in terms of demand and supply. It should be added that such an ordering of our thoughts is much more flexible than some representatives of other social sciences (law, sociology) think and that many of the so-called non-economic factors determining income distribution can be easily subsumed under the concepts of demand and supply. Thus, such restrictive forces as the caste system of India, can be said to co-determine the supply of some types of labour. The same applies in Western countries to the prejudices against manual (blue-collar) work as distinct from white-collar work.
10.3. Numerical results obtained

The various chapters of this book contain a succession of studies which at the same time constitute an evolution in the author's thinking. Up to a point they present results which can be seen as tests of theories presented by others; but it has to be kept in mind that the theories used in the early chapters, especially Chapters 2 and 3, are less sophisticated than those used in the later chapters, mainly Chapters 4 to 7 inclusive. Thus, in Chapter 3 the technological level was considered a constant, an assumption abandoned in Chapters 6 and 7.

Chapter 2 constitutes a simple collection of figures referring to different periods and countries, without an element of analysis. This implies, among other things, that comparisons over time only yield a very primitive forecasting which is based on a non-specified assumption of ceteris paribus and that comparisons of incomes pre-tax and incomes after complete redistribution cannot claim to show 'the influence of taxes' since the shifting phenomenon is disregarded. Hence the time needed to reduce inequality of gross incomes by one-half, as mentioned at the end of Section 2.4 -- 50 to 85 years --, is in fact only a statement about the past. Similarly, the redistribution effects mentioned in Tables 2.II.A and B, culminating in the transfer of 13 per cent of national income in Denmark from the persons earning more to those earning less than the median income, also only warn us not to judge primary income inequality as if it were a true measure of income inequality. Perhaps a bit more can be claimed for the statements about the influence of birth control derived from Tables 2.V.A and B.

Chapter 3 goes one step further and essentially contains a number of partial models or labour market models, where only incomes and employment are endogenous and all 'explanatory' variables exogenous, including a number which are connected with incomes in the national economy. In most of the computations shown not incomes as such but their distribution, measured in one way or the other, are the variables 'to be explained' and correspondingly, the average levels and
distribution measures of the supply and demand factors are the ‘explanatory’ variables. Supply is represented throughout this book by education levels and distribution. Demand is represented first (the simplest approach) by the average income of each observed unit (country, state, province or municipality) or (the next simple approach) by the degree of industrialization (or its counterpart, the agrarian level) or, finally, by a demand index which is a weighted average of the percentage of the labour force employed in agriculture, manufacturing, trade and commerce, and other services. The demand for qualified labour is lowest in agriculture and highest in ‘other service’ activities. The weights are the ‘qualified-labour intensity’ of the four main sectors.

The regression equations can be used to answer the question: Which changes in the explanatory variables reduce income inequality by one-half? Among the explanatory variables, education level and distribution are the ones concentrated on in most of this chapter. The answers show considerable divergency. For an inter-country comparison the answer is that 20 per cent more children in the age group 5–19 years should take part in education as compared with the 1960 level which already lay between 70% and 80% and 2 per cent more participation in the age group 20–29 (as compared to a participation level in 1960 of 2–7% in Europe and 12% in the USA). A time series inquiry for the Netherlands and Norway suggests that a doubling of the percentage of university-trained manpower would be needed. So does a cross-section study for the provinces of the Netherlands; but cross-section studies about American states and Canadian provinces give much less optimistic answers. Increases in education that are supposed to be realistic would only reduce, in some cases, the standard deviation of incomes by 10 per cent. The use of the demand index mentioned above yields better results again (Section 3.5). Much more optimistic answers are given also by other authors about the impact of average income growth (that is, economic development) on income inequality. This subject is taken up again in Chapter 6.
In a concluding section of Chapter 3 absolute incomes of groups of individuals with different years of schooling and years of working experience are compared; and it appears that group averages can be explained to a very high extent \((R = 0.97)\) by these two supply factors if a curvilinear relationship is assumed to exist. The completely different nature of this relation as compared with the ones discussed before is emphasized.

Chapter 4 tries to dig more deeply into the supply function by linking it up with utility or welfare functions and submits that welfare can be measured. As a very simple first approach welfare is supposed to depend, for averages of social groups, on income after taxes, schooling required for the job held and actual schooling. Schooling required is estimated on the basis of two alternative assumptions, one for about 20 occupational groups for the Netherlands, the other for seven American states. Numerical computations show that an additional parameter, called the degree of independence of decision-making, has to be added in order to explain income-after-tax differences. The income compensation desired for holding a job requiring higher schooling can be estimated in that manner and appears to be larger for Americans than for Dutchmen.

Chapter 5 tries to develop a theoretical basis for the demand for labour by the estimation of a production function in which five types of labour enter as production factors. It is a generalization of a Cobb–Douglas function, tested with the aid of material collected by Bowles and Dougherty for its substitution elasticity of unity between third-level educated and all other labour. Substitution elasticities between other types of labour are higher and of the orders of magnitude mentioned by these two authors.

After these preparations Chapter 6 reconsiders the influence of increased university education on the income distribution between university graduates and all other labour, taking into account the trend of technological development. The process is characterized as a race between both developments with
education as the inequality depressing agent and technological development as the inequality boosting agent. During the period 1900–1990 both in the USA and in the Netherlands education appears as the victor and inequality has fallen considerably, so far, while there are prospects for some further fall. All this refers to primary incomes and hence in reality incomes have been more equalized.

Chapter 7 then presents a complete semi-macro model for the Netherlands in 1962, enabling us to tackle not only the problem of the impact of more education on income distribution, but also the problems of changes in taxes (including shifting possibilities) and in technology, if considered controllable (up to a point). One model is analytical and enables us to find the effect of given policy changes. The other is normative and yields the social optimum based on the assumption that social welfare is the weighted sum of groups’ welfare, the weights being equal to the numbers of individuals in each group. Actual and optimal income distribution are shown for the Netherlands in Table 7.VI, for Illinois in Table 7.VII and for all seven USA states studied in Table 7.VIII.

Chapter 8 proposes a definition of equitable income distribution, namely a distribution of incomes and jobs such that all social groups show equal welfare. With the specification of the welfare function chosen in Chapter 4, equitable and optimal income distribution appear to be identical, but this is not true for all specifications.

Chapter 9 lists, first of all, the institutions and their instruments already used to influence income distribution, most of them aiming at less inequality. Subsequently it formulates some further proposals derived from the present study. These can be seen as proposed changes in social structure and will be summarized presently.

10.4. Changes in social structure

As announced in Section 1.1, no attempt has been made, in this study, to present in its entirety the social changes considered
desirable by this author, or likely to occur in the coming decades. Only changes closely connected with income distribution changes have been considered. This implies a specification of those conceivable changes in social structure or order which are involved and, as a consequence, the recommendation of evolution rather than revolution, if the latter word stands for a sudden complete change. It is of some importance to stress that point, as will be discussed in Section 10.5. Social changes of particular significance for the attainment—*if at all possible*—of the optimum or of an equitable income distribution are:

(i) The extension of the *educational* system as a means of reducing the *gap* between the *demand* for and *supply* of the various types of labour used in the production process. Chapter 6 illustrates that substantial further reductions in inequality may result.

(ii) A *redirection of research* with respect to at least two points—research should aim at a technological development more in line with this equalization of demand for and supply of differing types of labour, and further research is needed on the concept of *equity* and the measurement of *welfare*. Research will have to be reoriented for several other reasons, such as the threatening world food and world energy situation; but, as explained, these subjects fall outside the scope of the present study.

(iii) A change of the *tax system* directed towards the attainment, through it, of optimal or equitable income distribution, or both. As we found in Chapter 7, the optimal tax system would be approached better if we were able to tax human *capabilities* themselves instead of their results, income. It remains to be seen, however, whether *psycho-technical tests* can be developed which are reliable enough to be used as a tax basis instead of income. This may be asking too much, but an attempt should be made. A discussion of the numerous misunderstandings about the type of tax meant and its impact had better be postponed until psycho-technical tests of sufficient reliability are available.

(iv) Higher taxes on *wealth*, *capital gains*, and *inherited*
estates are a series of possibilities which have been under discussion for quite some time and which are only mentioned for the sake of completeness.

10.5. Implicit criticism of some alternative approaches

As a matter of course this study and the recommendations based on it imply criticism of a number of alternative approaches. This implicit criticism is addressed to three groups in particular. They will be briefly dealt with in succession.

(i) Traditional interest groups. Everywhere in society we come across opposition by vested interests which adhere to the maintenance of existing or historical income ratios. Thus, capital owners prefer to maintain their share in national income; highly paid employees or members of the free professions think the ratio of their income to that of lower paid employees or other citizens should be maintained. Entrepreneurs, whether big or small, claim something similar. All of them forget that the laws of demand and supply also apply to income, and not only to commodity markets, where they are so often seen as natural. Group monopolies of well-paid categories of labour cannot be ethically defended and run counter to the rules of liberal economics, not to speak of a more socially oriented set of rules as developed here.

(ii) Marxists, whether traditional or 'neo', attach more importance to the inequalities created by capital ownership in the old sense than to the inequalities created by human capital. They also tend to neglect the fact that the portion of national product allocated to capital owners has fallen considerably already and has fallen more for incomes after redistribution than for primary incomes. The suggestion that the bourgeois élite constitutes a self-perpetuating group needs the important correction that the number of people belonging to the élite of university graduates is expanding so that in the Netherlands in 1990 it will include ten times the percentage of the labour force it included in 1900. The élite is not only a group of a (more or less) self-perpetuating character, but is
rapidly expanding. All this is not meant to imply that Marx has not contributed to our understanding of society or that Marxists don't put their finger on socially unhealthy situations every once in a while. If they do so with the aid of proper scientific methods, their contribution can be constructive.

(iii) For completeness' sake I mention anarchist groups; I don't formulate any more precise objection to their theory than the very general one that I think that society needs a government and that complete freedom for any group is incompatible with the other groups' complete freedom.

10.6. Further research needed

It is hardly necessary to stress again that further research is needed. Science is always in need of it – science is never finished. For our subject this is clear enough, every chapter of this book leaves a number of unanswered questions.

This is true, first of all, for the information available. We are in urgent need of more information on human capabilities relevant to the production process in the widest sense. We are in need also of better income data and of more administrative checks on tax evasion as part of such better data. Some forms of increasing tax evasion these days will be very difficult to identify. The need for further research on production functions with many types of labour, as initiated by Bowles, Dougherty and Psacharopoulos, is evident too. Particular stress may be laid on the need for an intensive discussion on and elaboration of what has been proposed about the measurement of utility. Here Van Praag and his collaborators should again be mentioned as pioneers. A further elaboration of the concept of optimal social order, now undertaken by Waardenburg, is of equal importance. The reader will no doubt be able to add a long list of further research proposals.