Chapter 8

SOME CRITICAL AND CONCLUDING REMARKS

8.1. Some Critical Remarks on the Present State of the Discipline

8.11 The subject of development programming has attracted the interest of a number of authors these last ten years, and a considerable body of knowledge and insight have come into existence. Since the discipline is a young one, it is the playground of all sorts of pioneering, and it could not be otherwise. Some first-rank scientists of different denomination have given thought to the subject matter, among them several not mainly interested in economic problems. The subject also has been one of intensive political controversy. For all these reasons, sometimes very unorthodox ideas have been launched, so much so that the authors, though not themselves feeling orthodox, think that some critical remarks on a few of these ideas are in order. They want to present these remarks in all modesty, being aware of the big role unorthodox approaches sometimes have to play and being aware also of the restricted tools they themselves handle. The general attitude the authors take in this section is the attitude of the economist trying to test the economic soundness of some of the ideas they criticize. They are aware of the autonomous rights of politicians, on the one hand, to choose their aims and of mathematicians, on the other hand, to choose their methods of analysis.

8.12 To begin with, some critical remarks will be made on the aims assumed for development programming, while remembering the autonomy of politicians in this field.

1. Aims are often not very clearly specified. This applies to the economic variables representing the aims as well as to the timing of these

variables. As has been shown in Sec. 3.5, it can make a tremendous difference whether a development plan aims at maximum consumption five, ten, or twenty years from the start of the plan. The nature of the variables representing the aims is very often of a derived nature, and it is not clear whether the relationship between the ultimate aim and the derived aim is very clear to those setting the aims. Is income the aim, or consumption, or the satisfaction derived from consumption? This is only one example of many other conceivable questions that are often not answered. The number of aims is another case in point.

2. An extremely important example of an aim which plays a preponderant role in a number of countries is the alleged priority given to heavy industry. This also can be understood only as a derived aim, not an autonomous one. It is highly desirable that this relationship be discussed more openly in order to understand what the real choice—in terms of ultimate aims—amounts to.

3. A similar question has to be put with regard to the degree of autarchy aimed at by many programmers from the political angle. There is hardly another example to be found where the relationship between the practical aim set and the ultimate aim behind it is so much one of partly antiquated links, links valid only in a previous era.

4. An important group of scientific workers in the field likes to assume that the relative importance the population or their representatives attach to the various aims of a program of development is constant, independently of the level of satisfaction reached. We are hinting, of course, at the assumption of a linear maximand made in linear programming. This seems to us an unhappy way of molding reality to the shape of a simple theory.

5. A famous example of something similar is the assumption that a given, fixed composition of the stock of capital goods is the aim of development policy. This aim has been assumed by a number of authors, who are dealing, it seems, with what may be called a *prestage* to balanced growth. The economic future, in this context, consists of two stages, of which the second is the one of balanced growth. During the first stage, a number of bottlenecks have to be overcome in order that the subsequent process may be one of balanced development. If this is the approach these authors have in mind, it might be useful to state it explicitly.

Most of the processes dealt with in this book are meant to be models for balanced growth, that is, for the second stage just mentioned. This does not preclude the possibility of the existence of bottlenecks even during such a process. To a certain extent it is a question of taste whether factors of a scarce nature are or are not called bottlenecks. The clearest example in this book of the prestage mentioned is what has here been called the adaptation process (see Sec. 4.2).

8.13 Next, some critical remarks may be made with regard to the assumptions made about the structure of the economy.

1. The same lack of clarity in stating explicitly the aims of development policy can be found in the realm of the means of that policy. The important question of what and how many means can be handled is often passed by in complete silence. A more explicit and a more precise discussion would contribute not only to the efficiency of planning but even to more mutual understanding between the representatives of politically opposed groups.

2. In some famous purely scientific analyses of the process of development assumptions are made with respect to the behavior of consumption which really are too simple. One is the assumption that consumption over time per unit of labor input is constant; the other is that consumption is autonomous.

3. Equally oversimplified is the assumption that, on the production side, there are only two, rather distinct, techniques available in the economy as a whole, not themselves changing over time.

4. Similarly the time structure is also much too much simplified in models in which a uniform gestation period is assumed to exist for all investment processes.

5. A hypothesis which has not been very explicitly formulated but actually is at the basis of a famous scientific and political controversy—the one about the choice of technology—is the assumption that investment is mainly financed out of profits. This hypothesis neglects the possibility of financing investment out of indirect taxes, and this neglect means a heavy qualification of the devices on technology formulated by the advocates of the "most advanced technology."

6. A general drawback to the use of linear models is the necessity to introduce a large number of boundary conditions, some of which are of a very arbitrary character. Especially boundary conditions on the volume of sales—national or international—of a given commodity are a really too crude representation of the law of demand.

8.14 Finally some critical remarks may be made on the solutions of some of the major problems of development programming.

1. There is too little awareness of the very unsatisfactory state of our insight into the main problem: the problem of the optimum rate of development (see Sec. 2.4). This means that (*a*) more efforts should be devoted to a solution of this problem and (*b*) practical planning should be undertaken in the awareness that the decision on the rate of development cannot be very precise and for that reason had better be taken first, starting more precise work after this choice has been made.

2. A practical development policy cannot be carried out without some

instruments for short-term adaptations of the economy to quick changes in data; but these adaptations cannot be studied with the aid of existing long-term planning models, since the short-term solutions of the movements of these models are unreliable (see Sec. 4.66). It is necessary and possible to study short-term movements with the aid of models of another type.

3. Even with a perfect regulation of short-term disturbances, it is not always possible suddenly to change the pattern of long-term development if that is desired. Such changes may require a period of adaptation of the volumes of specific capital goods, and this period may be considerable.

8.2. Some Practical Suggestions

In conclusion, some practical suggestions may be made regarding the computation of a development program for a national economy over a given planning period. The following stages in such a computation seem to make sense.

1. The most desirable general rate of development, that is, the rate of increase in national income at constant internal prices, is estimated with the aid of a simple macromodel, using provisional data on the capital coefficient for the nation as a whole and on foreign investment to be expected. The estimate must be based on an intuitive comparison between future advantages and present disadvantages of an increase in saving.

2. A choice is made on the number and exact definition of sectors to be considered.

3. Home demand for finished products is estimated for all years of the planning periods on the basis of the projection of income and investment, assuming no structural changes.

4. Demand for existing export products is estimated for all years of the planning period, assuming no price changes.

5. Current demand for intermediate products—as far as represented in the choice of sectors—is estimated on the basis of final demands computed under stages 3 and 4. Among these are imports.

6. Contributions to the national product to be obtained from a unit of new investment in each of the sectors and of possible new sectors are estimated, partly on the basis of data on individual projects, partly on the basis of general knowledge on learning curves and on the influence of the size of an enterprise on its costs.

7. If exports found under stage 4 fall short of imports found under stage 5 by an amount surpassing expected capital imports, new exports or import-replacing production volumes are estimated in the sectors contributing most (per unit of new investment) to national product so as to

equilibrate the balance of payments. Sectors with high comparative advantages may even be expanded to such an extent that the corresponding prices fall, the consequences of which must then be estimated.

8. Similar variations in the production program may be envisaged in order to fulfill other aims of development policy, such as employment or distribution objectives.

9. With the aid of sector capital coefficients, or an "investment input matrix," the investment needs may now be specified in a more precise way, according to the supplying sectors and on the basis of gestation lags.

10. If total investments needed each year, calculated under stage 9, are deviating too much from the investment volumes assumed under stage 1, this latter calculation can now be corrected and all the subsequent estimates revised.

11. The investment program may now be "filled" with individual projects, taken in the order of attractiveness as found under stage 6.

The reader will understand that the above suggestions are based on the techniques developed in the preceding chapters and models and that the model discussed in Sec. 6.2 will be of considerable help. Practical programming will often have to go beyond this model, however, or at least supplement it with partial research. This applies above all to the computations in stages 6, 7, and 8. Sometimes elements as discussed in Secs. 5.4 to 5.6 or 6.3 may be inserted in such a "partial" way, that is, in one sector or a few sectors to which these elements apply more particularly.

The *splitting up* of a national program into regional programs may be the next task for the development planner. Here the distance between practical possibilities and theoretical models is considerable still. The statistical data needed for a model in which transportation costs are fully playing their role are hardly available. To begin with, a distinction between *regional* sectors and sectors the products of which can move to other regions can be made. Next, differences in production costs between regions can be ascertained. Thus, some regional distribution of production can be made without having recourse to details about transportation costs. As a third step, transportation costs can be brought into the picture for such sectors as show high—but not prohibitive—transportation costs. This seems to be the most practical approach to regional planning at the moment. Further refinements, along the lines of the model discussed in Sec. 7.4, may be the next step. Here, however, we are clearly on academic rather than practical ground.