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National Economic Planning

Introduction

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Fashions among economists are almost as fickle as among dress designers. It would have been inconceivable for a conference volume with this title to have appeared thirty-five years ago. Twenty-five years ago it would have been assumed that it was a volume about economic policy in the Soviet Union, which was the only country then regarded as having a "planned economy." Fifteen years ago the assumption would have been that it was a book about the planned development of the so-called underdeveloped countries, where the idea of national economic planning was beginning to gain wide popularity as a necessary and even sometimes sufficient condition for economic growth. Within the last ten years the term has become so popular and has been applied to so many different kinds of activities that it could now refer to almost any kind of economic analysis or policy thinking in almost any country in the world. Whereas before World War II the term economic planning frequently carried, for many people in both professional and popular discourse, unfavorable connotations of centralization and autocratic control, it is now widely regarded as a good thing which should be practiced in one form or another by all governments.

The reasons for this change in both the content and value overtones of the term are complex. They are to be found partly in changes in the nature of the policy problems with which applied economists have been forced to concern themselves and partly in changes in the analytic tools which the profession has been engaged in fashioning over the past couple of decades. The focus of attention of the economics profession—even of those of its members most disdainful of applied work—has always been profoundly influenced by the dominant policy issues of the day. During the great depression of the 1930's, Ph.D. theses in economics reflected the concerns of both the students and their faculty advisers in their titles, the majority of which related to the theoretical and

applied problems of the business cycle, the full employment of resources, and the control of short-term fluctuations in economic activity.

World War II brought shifts in both problems and methods. With the rise in defense spending, the generation of effective demand took care of itself and inflation was handled in considerable part by direct price control. Attention shifted to resource allocation. Even those who believed that in peacetime this could be left largely to the market were forced to concede that in wartime at least some important allocative decisions had to be made by government and that new tools would have to be developed for this purpose. The most important of these at the aggregate level was national income and product accounting, which was given a big push forward by wartime requirements. It was recognized that interindustry analysis of the input-output sort was highly relevant to wartime allocative problems, but inadequacies of data and computational difficulties prevented it from being extensively used. After the war, the problems of postwar European recovery posed the issue of what would now be called planning in a clear-cut fashion. Governments involved in the Marshall Plan negotiations had to make projections of gross national product, domestic savings, investment requirements, and foreign exchange needs over a five-year period. While little use was made of the now popular planning models in these exercises, what is now the flourishing planning activity of many European governments had its embryonic development in the Marshall Plan era. This was notably true in France, for instance, under the influence of Jean Monnet.

Meanwhile, in the underdeveloped world, country after country was achieving independence from former colonial masters, often after many years of concentration on the goal of political freedom, and its leaders were turning their attention from the all-consuming struggle for independence to the problems of industrialization and economic growth. They turned naturally to economic planning as a tool, in some cases because of the socialist background of the leadership, but increasingly because the emerging theories of economic development being spawned by economists suggested that only through conscious and determined governmental policy could these countries escape from the low-income trap in which they found themselves. The developed countries, and particularly the United States, came increasingly to feel that they had an interest both in enlarging their understanding of how countries might achieve self-sustaining economic growth and in helping to promote that process through such instruments as foreign aid. The economics profession responded to this new set of policy problems with alacrity and

a swelling volume of literature appeared focusing on the problems of development and on the kinds of economic planning necessary to bring it about.

Another and initially unrelated strand of economic thinking was meanwhile taking shape, sparked by a quite different set of policy concerns. Soviet acquisition of atomic weapons followed by the shock of Sputnik led a concerned western world to wonder how an economy which had started so far behind in terms of the conventional indexes could be so threatening. The detailed work launched just after the war in a number of centers concentrating on Soviet studies had begun to document what appeared to be fairly long-term growth rates in the Soviet economy well above what the western countries were then experiencing. The game became popular of extrapolating growth curves for East and West and predicting when they would cross. Western economists, reassured by postwar history that they had mastered at least in broad outline both the diagnostic and prescriptive problems of short-term fluctuations and full employment, turned back once again to the classic preoccupation with the analysis of economic growth. As Soviet growth slowed down somewhat and the Western European economies rather unexpectedly accelerated during the 1950's, the East-West comparison became less engrossing than the transatlantic one, but the concern with the determinants of growth in the developed economies persisted. It came to be increasingly accepted in the developed countries, as it had been earlier in much of the underdeveloped world, that the secular growth rate of the economy was a parameter manipulable by public policy and an appropriate dimension for a social welfare function even in capitalist states. The process of selecting a growth rate and a set of policies appropriate to implement it came to constitute an important part of what was included under the heading of economic planning.

One final substantive change is worthy of comment. World War II left in its wake public sectors representing a much larger fraction of the gross products of the countries of the western world than that in the prewar period. This was partly a consequence of the high levels of defense expenditure associated with the East-West conflict, but equally importantly resulted from the growing demand in the West for public goods of a sort not readily allocable through the market, like education, road transport, public health, and urban renewal. Along with these growing demands for public goods came an increasing awareness of the many complementarities and interdependencies between investment in the private sector and these public investments in infrastructure. Eco-

nomic projections of the sort required for aggregate economic planning were increasingly needed as a basis for fundamental decisions about both the revenue and the expenditure sides of national governmental budgets. In all of these problem areas the economics profession saw an opportunity to bring its analytic techniques to bear.

During the twenty years following World War II, these techniques themselves underwent a transformation that made many kinds of economic planning much more feasible. The essence of this transformation was the emerging possibility, enormously facilitated by the appearance of the high-speed computer, of dealing quantitatively with much more complex systems of interdependent variables than had ever been possible before. The groundwork for these systems was substantially laid before the computer came to maturity in the early work of input-output analysis, linear programing, and the econometric estimation of statistical parameters. But the proliferation of testable models of real-life situations using these analytic techniques became economical only with the advent of the computer. Until then, the limits on model complexity were frequently set by what was computationally feasible. Now they are set much more largely by the capacity of the human mind to understand the results once produced. The extent of the revolution is indicated by the fact that in our graduate schools the economics students are no longer identified by the books in their briefcases or the diagrams on their blackboards, but rather by their decks of punch cards and the stacks of computer printouts.

These changes in the applied problems with which economists have been called upon to deal and the associated changes in the analytic techniques at their disposal have led to an enormous broadening of the concept of economic planning. Virtually all countries now have government policies of one sort or another for both the secular growth of the economy and the broad pattern of resource allocation which is to be utilized to achieve these and other goals. This is now broadly true whatever the stage of development of the economy or the degree of central control over resource allocation exercised by its government. While it is perhaps less true of the United States than of almost any other economy in the world, even the United States requires countries that hope to be recipients of U.S. economic aid to engage in planning, and the U.S. government does in fact a good deal of what in other countries would be called planning while still avoiding the term.

About three years ago the Universities-National Bureau Committee concluded that the time was ripe to hold a conference on national economic planning. There was no lack of conferences and symposia with

titles similar to this. But planning has many dimensions and there had not been a symposium focusing on the common elements in the analytic tools which the economics profession was bringing to bear on the planning process in countries at different stages of growth and with different degrees of centralization of decision-making. As with all conferences, the papers prepared for this one and included in the present volume reflect partly the views of the committee responsible for planning the conference and partly the particular current interests of the individual economists requested to contribute papers and comments on them. I would like to describe briefly what the conference planning committee had in mind in laying out the conference program and leave it to the reader to decide how far these intentions were realized in the final product. The Committee consisted of Abram Bergson, Everett Hagen, and Edward Mason in addition to myself.

We thought there should be two sorts of papers. First, we felt there were a number of functional problems common to planning everywhere which had been inadequately treated in the literature and which should be dealt with in the first half of the conference. Second, we thought it would be useful to have a series of country papers looking at the techniques of planning used in a selected group of countries at different stages of growth and with different political philosophies, and making some appraisal of the impact of planning on performance in this wide range of situations.

The functional papers raised a very serious problem of selection. There was time for only about five such papers in our schedule and the possible topics to be dealt with were legion. We could have had papers on planning for each of the major sectors of an economy such as agriculture, fuel and power, transport, industry, services, and housing and construction. Or we could have had papers on the main areas of economic policy affected by planning such as price policy, monetary policy, fiscal policy, regulatory policy, and educational policy. Or we could have filled the time with a detailed examination of a number of the principal analytic tools employed in planning exercises such as national income projections, input-output analysis, linear and nonlinear programing, statistical estimation of econometric parameters, and computer simulation. We ended up by being selective and eclectic, using as our principal criterion topics which we felt were both important and relatively neglected in the literature.

We decided to start with an over-all review of the methodology of planning models. Richard Stone at Cambridge University was, we knew, engaged in a systematic survey of the characteristics of planning models

being used by economists all over the world. The first paper in the volume is a report by him and his colleague Colin Leicester on the results of this survey. Second, we felt that a problem of great practical importance which had received less attention than it deserved in the analytic literature was that of locational choices for investment projects. One of the most common simplifications of reality in the macroeconomic analysis of national aggregates is to neglect the spatial aspects of the problem. We asked Thomas Vietorisz of the International Business Machines Corporation to address himself to this range of issues. Third, we felt that while a great deal of attention had been paid by operating agencies to the economic appraisal of particular projects, the links between this kind of work and aggregate and national planning were in a quite underdeveloped state. The third paper, by Arnold Harberger of the University of Chicago, is concerned with some of these issues.

Fourth, we were impressed with the fact that while no planner can neglect the foreign trade of the economy with which he is dealing, many national plans and the models on which they are based treat foreign trade either as an exogenous factor or as determined by unrealistically simple and arbitrary relationships. The paper by Don Humphrey of the Fletcher School treats this topic. Finally, in virtually all countries a very substantial fraction of the resources over which the planners have some influence is devoted to activities which are not subject to the usual type of cost benefit calculation, either because costs do not give the signals they should, as in the case of public utilities, or because benefits cannot be measured in the usual way, as with public services, education, and health. Arthur Lewis addresses himself to the rationale underlying the public expenditure portions of a plan in the fifth essay in this volume.

The problem of country selection for case studies was not much easier. Ideally we would have liked to pick countries representing all the permutations and combinations of at least three stages of development and three degrees of centralization of decision-making. This would have required nine papers and we had room for only four. It was clear that a symposium on national economic planning had to have an appraisal of the Soviet experience. Alexander Erlich of Columbia University produced this for us. Of the Western noncentralized and reasonably developed economies, most of whom cut their planning teeth on postwar rehabilitation requirements, the country most associated with new directions in planning was France. We asked Charles Kindleberger of M.I.T. to write about the French planning experience. At the underdeveloped end of the spectrum, there is an abundance of paper plans, but real planning experience with at least a decade of history is con-

fined to a few countries of which the biggest and most important is India. Richard Eckaus of M.I.T. reviews the techniques used in Indian planning and describes a model developed in collaboration with a group of M.I.T. colleagues designed to illuminate some of the problems of capital allocation. Finally, one of the most interesting cases with many unique features of its own is that of Yugoslavia which is in an intermediate position, both in its stage of development and in the degree of centralization of decision-making. Jaroslav Vanek of Cornell University reviewed the Yugoslav case in the final paper.

No clear consensus emerges from this symposium, either as to the influence planning has had on the actual course of events in the countries where it has been tried, or as to the utility for practical planning problems of the newer techniques of analysis of allocative efficiency being evolved by the economics profession. On the first point, there is not much disposition to question that in the relatively centralized Soviet system the planners, interpreting that term broadly, have called the tune. Erlich and Bergson focus on whether Soviet planning has been as efficient as it might have been in furthering the presumed goals of the leadership. In the other three cases the effect of the planning process is more deeply in doubt. Eckaus and Vanek credit it with more influence in India and Yugoslavia than Mason and Montias are prepared to concede. In the case of France, Kindleberger and Wellisz agree that in effect there is simply no way of telling how influential it has been.

On the second question of whether the art of fashioning more formal planning models has yet advanced to the stage at which these models can be genuinely useful to decision-makers, the debate is joined in scattered places through the symposium, perhaps most explicitly in the colloquy between Mason and Eckaus, but can hardly be said to be resolved. The case that these models are still too primitive to be of much practical help rests on a number of major criticisms. In the first place, in spite of all the effort which the model builders have put into lessening the restrictiveness of the assumptions they must make to confine the complexities of the real world to manageable proportions, the critics still feel that some of the most important phenomena of growth are excluded by the use of linear relations, by the assumed constancy of coefficients known to be variable, and by the arbitrary weighting systems which must be used to bring a nearly infinite range of variables within the grasp of even the enormously expanded capability of the modern computer (and perhaps even more importantly within the grasp of the human mind that can understand what it computes when it processes the information supplied to it). The dialogues in this volume highlight

the second question of whether, even in those cases in which the ingenuity of the model builder has been able to cope with complexities in real-world relationships, we can in fact find the statistical information necessary to estimate values for the parameters assumed to be at work which will permit solutions. The charge here is that the data are much too rough and uncertain to warrant the relatively sophisticated manipulation applied to them in these models. Thirdly, many of the planning models now available are optimizing models designed to produce solutions which maximize an objective function. The critics complain that what is being maximized in these models reflects only a very restricted portion of the goals that motivate planners in the design of their national plans. Customarily the focus of the models is on maximizing the growth rate of aggregates, such as national income, product, or consumption, and no allowance is made even for such other quantifiable goals as employment and income distribution, let alone intangibles like political cohesion and national prestige. Finally, so the critics argue, even if the models improve the rationality and the efficiency of the paper plans, there is seldom any effective machinery for implementing the plan once drawn up and any correspondence between what happens and what was planned is very largely accidental.

To each of these criticisms, the proponents of model building have a rebuttal. As far as restrictive assumptions are concerned, these are implicit in any orderly thinking about a complex problem. The models focus attention on their unreality by forcing the analyst to define very explicitly and precisely the assumptions he is making instead of permitting him to gloss over and bury them in imprecise literary formulations. No one has found a good way to deal analytically, for instance, with external economies or with the determinants of technological progress, and an explicit formulation that calls attention to their omission from a model underlines a warning about the limits of the analysis which is too often overlooked in more descriptive studies. It serves the further function of stimulating model builders to try to find precise ways of dealing with these phenomena which might be otherwise left to a vague verbal qualification. The models undoubtedly have a long way to go in the direction of realism, but progress is being made more rapidly than if there were no attempt at precision.

As far as the inadequacy of data is concerned, sensitivity analysis of the models with the aid of computers can tell us how important errors in different kinds of data are to our conclusions and thus direct the limited resources available to governments for improving data to the most urgent tasks. Models will frequently focus attention on the im-

portance of collecting kinds of information that would not otherwise be gathered. Input-output analysis, for example, has stimulated the collection of information about interindustry flows, which is important for a wide variety of purposes. As to the multiplicity of goals, conflicts of objectives are not easy to deal with formally in the present state of the art, but models frequently make it possible to estimate the magnitude of the loss of one value being maximized required by the adoption of a policy intended to pursue some different value. If, for instance, employment and growth are in conflict, a well-designed model can tell the policymaker how much growth he has to give up in order to get how much additional employment. Finally, the fact that many plans are not implemented is not to say that they have no influence. The role of the planner is not to run the country for which he is planning but to improve the insights of those who do. The test of his success is not the correspondence of his plans with *ex post* performance but the extent to which that performance would have been worse had the planning process never been undertaken.

Wherever one comes out in this debate on the present usefulness of some of the newer planning techniques—and it is very much a matter of judgment—there can be very little question but that in the years to come there will be more planning rather than less and that the techniques will become more complex and sophisticated. This volume suggests some of the directions this evolution is currently taking.

The conference was held at Princeton, New Jersey, on November 27–28, 1964. The volume was edited by Ester Moskowitz and the charts were drawn by H. Irving Forman.