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ON COMPARATIVE STUDY OF ECONOMIC STRUCTURE AND GROWTH OF NATIONS

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This memorandum assumes the need for more knowledge and better understanding of the functioning structures and growth (or stagnation) patterns of economies the world over. By structure we mean a relatively coherent framework of interrelated parts, each with a distinctive role but harnessed to a set of common goals. Thus a household, a firm, an industry, and a country possess structure in that each employs, in its economic activity, interrelated parts (e.g. capital, labor, the entrepreneurial factor, etc., or a structure of needs guiding consumption) so that an exogenous impact upon, or endogenous movement of, one part will affect all the others. Growth is a sustained increase in the magnitude of a unit, necessarily accompanied by changes in magnitude of the component interdependent parts and often attended by shifts in their relative magnitude or the emergence of new parts and lines of organization.

I assume this need for more knowledge and better understanding of economies the world over because of an impression that the present corpus of economic knowledge and theory is permeated by reference to the economic and social institutions of the free, Western part of the world, and has been increasingly geared to emphasis on short-term problems of the free, advanced economies. Much less is known of the functioning of the structures of authoritarian or of the less developed economies outside the Western orbit; and the responses of these economies to various impulses present an unanswered intellectual challenge, in the sense that much of what happens is incomprehensible in terms of accepted economic theory, and comes as a surprise, often unpleasant. The same is true of actual growth experience, even in the advanced economies, but especially in the rest of the world. If this impression is valid, there is an obvious need for more observation and analysis — of the growth experience in the free, developed countries themselves and of the structure and growth patterns in the rest of the world — if we are to attain better understanding, i.e. clearer recognition of the elements of order and constraint that would permit a valid interpretation of both events and contingencies.

So far I have stressed the need for more knowledge and better understanding, without specific reference to the possible usefulness of such knowledge for policy problems. I hesitate even to mention the usual platitudes on the relation between greater knowledge and better understanding, on the one hand, and more intelligent response to policy problems, on the other. It may well be that we already know and understand enough for a more intelligent, far-sighted, and vigorous handling of our policy problems than has taken place. Just as there is a substantial lag in ordered, hypothesis-oriented, and systematic, wide-scope analysis behind the accumulation of raw data that are piling up unused in dusty volumes, so there may be a lag in policy response to whatever we already know about the economic structures and growth patterns of our economy and those in the rest of the world. Perhaps the greatest need is not for more data and analysis but for a clearer and more imaginative vision that would formulate a set of long-range goals to guide and invigorate policy decisions. But granting the need for such vision, it should be sufficiently informed, and whatever specific policies may be formulated in the light of it would require far more orderly observation and tested knowledge of economic structures and growth patterns than we now possess.

This memorandum also assumes that the unit of observation and analysis for the study of economic structure and growth patterns the world over is the nation-state, at least as a first approximation. We shall, therefore, consider the comparative structure and growth of nations — not of other area units, industries, firms, or groups of producers distinguished by their organizational characteristics (family or individual proprietorships, corporations, etc.) or by the color of their hair or skin. The reason for the choice is that nations are the major focuses for decisions on problems of economic structure and growth, as well as for the cumulation of distinctive residues of the historical past that provide specific conditions for functioning structures and growth patterns. This, of course, is a working assumption that can be tested only in application and judged only by its results; and it clearly does not hold at the extreme low range — for no one would view Monaco, Andorra, or even Luxembourg as units whose economic structure and growth are sufficiently independent to warrant study except as parts of some larger whole. But any one type of unit around which to group the study of structure and growth would be subject to many qualifications, and it is perhaps characteristic of *modern* economic growth (in which we are particularly interested) that we so readily assume the nation-state as the dominant, and potentially most useful, unit of observation and analysis.

Given the assumptions stated — the need for more knowledge and understanding of economic structure and growth the world over, and the choice of the nation-state as the central unit — the desirability of *comparative* study of economic structure and growth of *nations* becomes self-evident. For presumably it is by establishing the structural characteristics

and growth experience of a variety of nations, differing in size, location, and historical heritage, that we could find common features and patterns indicative of some common forces at play, and could associate divergences from such patterns with such factors as our hypotheses might suggest and empirical evidence test and confirm. The alternative would be to *infer* differences in structure and growth patterns from a model embodying some factors claimed as fundamental, by varying the weights and identities of such factors. But even such a *potentially useful* intellectual exercise would not be really fruitful unless comparative study provided the necessary empirical coefficients as well as checks on the identity of the relevant factors. And with the present state of our knowledge, or rather ignorance, the danger is all too great that some important elements of empirical evidence indispensable to the analysis are missing — and cannot be conjured up by imagination pending far more comparative study than has so far been made.

These comments advance us but little, for all they do is open up a vast field of study which, by indiscriminate use of scarce intellectual resources, could absorb them for decades without yielding a systematic and cumulative product of genuine value for promoting our understanding. We need as a minimum a skeleton model, no matter how bare, that would, on the basis of whatever knowledge we already have, give us some framework of the field; and such a framework would permit consideration of possible directions of study and a choice of the lines most promising because they could utilize accumulated data and bear most directly upon strategic gaps in our knowledge.

Sketch of a General Model

In considering modern economic growth, i.e. growth since the middle or late eighteenth century, it seems useful to distinguish among transnational factors (those potentially common to the world), national factors (those observed in the internal structure and growth patterns of individual nations), and international factors (those emerging when we study interactions among the various national units). The transnational factors are those most directly associated with the characteristics of modern economic growth *common* to all the nations that may be said to have been affected by it, in the sense either of having attained it or of having borne its impact in other ways. The national factors are those most directly associated with the *divergent* features of economic growth, among the developed countries, and even more among countries differing in the levels of their development. The international factors are those most directly associated with the *mechanism* by which the transnational elements, common to the world, are transmitted in their impact from one country to another, and the mechanism which also carries the interactions of the distinctive and diverse characteristics of nations.

Transnational factors. The transnational complexes of factors that

come easily to mind in thinking of modern economic growth are three. The first is the industrial system, i.e. the system of production based on extensive use of the ever-increasing technological potential afforded by additions to tested knowledge, by modern science in the broadest meaning of that term. This is a system that requires, and must therefore be accompanied by, some constrained choice of social characteristics. For example, it cannot be effectively applied without some minimum literacy of the population and the labor force; its economies of scale require a non-familial, impersonal type of organization of the more advanced economic units (corporations, etc.); it results in a degree of urbanization unparalleled in history; and so on. Furthermore, the system is subject to a dynamics of its own, in that the stock of useful knowledge and the technological potential based on it have been continuously expanding since the emergence of the industrial system in the second half of the eighteenth century, and expanding at apparently changing rates and with different areas of emphasis during successive periods.

A second transnational complex of factors is to be found in the community of human wants and aspirations. This can be illustrated by the relatively little resistance that has been encountered, at least in recent decades, to the spread of modern technology in reduction in death rates — demonstrating (if it need be demonstrated) that the will to live is a rather common human characteristic. It is also illustrated by the relative slowness with which the pattern of lower birth rates has spread — demonstrating that the will to reproduce is not far behind the will to live. Another illustration is the generality of Engel's laws in their historical application to a wide variety of societies. Finally, perhaps the most telling illustration is the widespread desire for a higher economic standard of performance and level of living. It is irrelevant to the general point here whether such a community of human wants and aspirations is the result of increasing contact among various parts of the world; but it is relevant that such a community may also have a pattern of movement of its own, and that a change in the degree of similarity of wants and purposes may affect both the national differences in economic structure and growth and the spread of the industrial system through the mechanism of international relations.

The third transnational complex of factors lies in the very organization of the world into nation-states, each with apparently impenetrable and unoverridable sovereignty. Some of this formally strict divisibility is tempered by ties of solidarity, by allegiance to some common set of beliefs or interest, particularly in the recent decades of doctrinal blocs. But despite these, it can be argued that throughout the period of modern economic growth, the independent state structure, recognizing no limits within its claimed area, has been a continuously present and common element in the world. Here again the factors have been subject to a dynamics of their own: there appears to have been a marked intensification of the pressure for cultural unity and conformity within the increasingly monolithic national states, and changes over the successive periods

in the divisive vs. the cooperative tendencies of this type of organization of the world.

National factors. Given the industrial system, the community of human wants, and the organization into politically sovereign communities — all of these world-wide, yet subject to trends of their own over time — there will nevertheless be many differences among nations in the extent to which they have adopted the industrial system or been affected by it in other ways; in the particular set of social institutions established for its adoption, or in response to its impact; in the specific weights that have been assigned to various categories of human wants; and in the intensity with which the apparatus of the nation-state has been utilized. Thus, even among the dozen to dozen and a half countries that may be viewed as having adopted the industrial system and that are now economically developed, there are many significant differences in structure and pattern of growth, in the degree of industrialization, in the composition of product by use, in the extent of dependence upon foreign trade, in the role of the state, and so on. The differences become much wider when we include the rest of the world, which cannot be said to have reached an adequate level of development, but has merely felt the impact of the industrial system — positively or negatively — through its adoption elsewhere.

The reasons for such national diversity are many. Nations differ in size, location, natural resources, and above all in their historical heritage, which leaves them with a distinctive and highly specific endowment in the way of language, culture, social structure, and so on through the full range of institutions that govern the social life of human beings. The unity and coherence of a nation is but another aspect of its distinctiveness, its difference from others. Such cultural and social diversities are in turn the result of a different antecedent history — a long chain of events almost unfathomable in their complexity and in their variety of combinations over time. I do not mean that the chain stretching back into the past is endless: if it were, in the sense that existing differences could not be understood except by an infinite regression in time, there would be little hope of comparative analysis. But even if one does not have to go far back, one must consider the initial structures which, having emerged from and functioned over long periods in the past, provide the specific framework that either may be modified to accommodate modern economic growth, or may modify the latter, or may largely resist it. The consideration of the national elements thus leads directly to an emphasis on the distinctive structure and on the differences in growth patterns.

International factors. Given the coexistence of different nations and the possibility of contact among them, there are bound to be relations of cooperation and conflict, peaceful exchange of goods and acts of dominance and exploitative aggression, and, above all, knowledge and imitation, attraction and repulsion. The combination of differences in the natural and historical endowments of nations with a community of human wants and the sharing of a potentially common technology means a whole

set of flows among the nations, i.e. interdependence. Thus, to some extent the treatment of nation-states as independent units is a fiction — tolerable only insofar as the ties of interdependence are reasonably limited relative to the internal structure and pattern of each nation.

Corresponding to a given complex of nations with their diverse characteristics, and the given state of the art of international intercourse, there will be a structure of interactions among nations — ranging from the peaceful flow of goods, capital, and people to aggression, overt or potential. But this structure of international relations is continuously affected by economic growth. The latter, insofar as it stems from a complex of transnational factors and is essentially the spread of a major innovation in a world of separate entities called nation-states, must either emerge simultaneously and generally in all parts of the world or originate first in some one part of it. Usually the latter occurs, since the diversity of the world at any given time means that some one part is far readier for an epochal innovation than the rest. If it is the latter that takes place, the impact of economic growth on various nations is necessarily unequal; and the ensuing changes in the relative position set up changes in relations among them, which usually result in the transmission of impact of growth elsewhere. It may thus lead to imitation on the part of some, which, if successful, brings the next follower group of nations to the fore, or to domination of others by the nation that forged ahead in economic growth. Whatever pattern of international relations existed before would be affected by the unequal impact of growth; and one can argue that the whole complex of international relations can best be viewed not only as a tying of the various nations at any given time into a structure of cooperation and competition, but also, more importantly, as a mechanism of transmission of the unequal impact of economic growth, modified by some autonomous changes in the technology of communication across space and national boundaries.

The variety of the initial structure of nations involved in the network of interaction, the diversity of ways in which such interaction occurs (ranging from peaceful to violent), the continuous impact of unequally distributed economic growth, and the ever present technological and social inventions affecting the interaction make the world of international relations exceedingly complex. It must be noted that the purely “economic” types of flow across the boundaries of any given nation are of more limited importance than the purely economic processes within it and that the patterns of change are extremely fluid. Thus in one period we find the volume of international commodity trade growing rapidly proportionately to the growth of world output—because of the technical revolution in transport, and also because the nations leading in economic growth found it advantageous to further international division of labor and impose virtually free trade practices upon the rest of the world. In another period we find world commodity trade shrinking relatively to world output, despite further progress in transport and communication,

because the countries leading in the rate of domestic growth preferred to isolate themselves and their populations from the competitive influence of the freedom and high standards of living in the more advanced countries. Yet transmission of economic growth that formerly took place via trade and capital export, and sometimes through migration, is now furthered by the export of doctrine and the subversion of domestic groups in other countries so that they accept this doctrine as paramount. It would be unrealistic not to recognize that international relations, by the nature of the case, i.e. the great diversity of the institutional and other characteristics of the nations involved, can seldom be purely economic, as may be the market relations among various groups and parts of the economic structure of a given nation, where a common set of governing institutions and rules of behavior assuring dominance of economic considerations can usually (but not always) be assumed.

Possible Lines of Inquiry

The comments above suggest that I am concerned largely with economic growth. And, indeed, I am interested in differences in economic structure among nations because they represent the cumulative results of different patterns of antecedent growth, or mean different conditions for potential growth in the future, or constitute a framework within which unequal impact of economic growth sets up changes in international relations and thus further affects growth possibilities—or involve all three. And having this interest in modern economic growth, I find useful the above scheme which suggests the combination of a common transnational complex of factors with a whole range of national differences, the mechanism of transmission operating through international relations.

There are several broad implications that bear upon possible lines of inquiry. The first is that comparative study of economic structure and growth of nations, no matter how widely conceived, is inadequate for the proper analysis of transnational complexes of factors or of the network of international relations. Assume that we observe the economic structure of each and every nation—its population, labor force, natural resources, capital supplies, total product and its various components, the set of institutions that governs its economic activity and so on, including exports and imports and other aspects of relations with the rest of the world. Assume also that, in addition, we observe the pattern of growth (or stagnation) of each nation for a sufficiently long period to gauge the long-term responses of the structure to the technological potential of growth afforded by the industrial system. Such a study would yield a highly valuable set of common and divergent characteristics in a variety of aspects of economic structure and growth, and, depending upon our capacity for interweaving empirical analysis with theoretical formulation, would suggest comprehensible and tested elements of order, thus providing guides to the consideration of many specific policy problems. But

such comparative study would not, in and of itself, bear directly upon the structure and trends of the transnational complexes of factors. To illustrate, it would not tell us much about the dynamics and bearing of additions to useful knowledge, i.e. science, technological invention, and even the social concomitants that they impose. Nor would such a comparative study, in and of itself, tell us much of the common and disparate elements in human wants and aspirations, which reach out into the interrelation between economic and other values. Except for the most radical differences in political and related forms of organization, it might not tell us much of the variety and changing pattern of political structure. Nor, despite information on the magnitude of foreign trade and other flows across the boundaries of each nation, would such comparative study be directly contributory to the understanding of the network of international interaction, its pattern, and the trends in it.

The reason for such limitation can be briefly suggested. What we called transnational complexes of factors are general constructs that transcend the limits of any single nation, or any complex of them, short of worldwide. The industrial system is such a construct, similar to, but broader in scope than, the concept of industrial capitalism; and the concept of human wants and aspirations is likewise a construct, as is the political structure of social units. Yet they have their empirical counterparts in observable human activities, responses, and motivations that should be studied outside the framework of a comparative study of nations. What we need from the latter—and this suggests the second general observation—is evidence that some complexes of factors are truly transnational in that they are tied to common characteristics in all nations, and some suggestions on the linkages. Comparative study of nations thus provides some of the checks and the suggested links for a direct analysis of the transnational complexes—just as the study of Great Britain's experience provided many of the suggestions for the classical and Marxian analysis of industrial capitalism (as a type). But, in and of itself, a comparative study that concentrates on the nation as a unit is out of focus if we are concerned directly with the structure and trends of the industrial system, the human wants and aspirations tied to the latter, or the related political structure of social units. And the same would be true if we were concerned with the structure and trends of, say, the agricultural system and the related structure of human wants and aspirations, or the related political structure.

A somewhat different tie exists between the comparative study of nations and the analysis of the whole complex of international relations. The latter cannot, in fact, be undertaken without antecedent knowledge of the diverse structure and unequal growth patterns of the nations of the world. Thus, one can grasp how a scientist's search becomes translated into a practical invention, and this in turn into a growing firm, without having to think of the economic structure and growth of nations; but one cannot begin to understand international relations except on the basis of

already known differences in structure and growth patterns of nations. And yet, indispensable as it is, comparative study of nations along the lines illustrated above is not sufficient. For international relations have patterns of their own, not perceived when there is concentration on nations as separate units rather than on their interactions; and international relations must be examined and analyzed with a different focus than is involved in a comparative study.

It follows that seeking more ordered knowledge and better understanding of modern economic growth of nations involves not only a comparative study of the latter, but also two other lines of inquiry: one dealing with observation and analysis of complexes of factors common to all nations, whether they be best conceived in terms of the industrial system and its social concomitants or some other general constructs of this type, and the focus of which should be free from concentration on the nation as the unit; the other dealing with the system of interactions among nations. This does not mean that the comparative study of economic structure and growth patterns of nations is not indispensable even for the two other lines of inquiry; but it does mean that the former must be supplemented by the latter, and indeed requires some minimum knowledge of the transnational and international complexes of factors.

But the most crucial point is yet to be stressed. If there were no substantial transnational factors, there would be no common features of significance in the economic growth of nations—and comparative study would be hardly warranted, for it would amount to no more than a compilation of historical detail, and there would be no hope of finding intellectual order in it. Indeed, a general model of a nation's economic growth, following a modern growth pattern, is possible only because the industrial system has certain elements of identity throughout the world, because human nature responds in similar ways to rising real income per capita, and so on. Likewise, an analysis of international interaction should provide us with a model of the spread of modern economic growth among nations. While comparative study of structure and growth is central, its intellectual rationale, as far as possibility of tested generalization is concerned, is conditioned on the existence of common, transnational factors, and a mechanism of interaction among nations that will produce some systematic order in the way modern economic growth can be expected to spread around the world—given the initial structure of nations at the outset of the modern era.

It follows that a comparative study of structure and growth of nations must be carried on with continuous reference to the transnational factors and the mechanism of interaction among nations, and must be accompanied by systematic work along these other two lines. Conversely, the results of such comparative study are indispensable to the testing of the general models, of both internal economic growth and of the international spread of the industrial system, which are the main concern of the inquiries focused on the transnational factors and on international relations.

As we turn now to the comparative study proper, four observations can be made. First, the amount of data that has accumulated for such comparative study is enormous. Nation-states have been prodigious producers of quantitative data and qualitative evidence—much of it a necessary by-product of and basis for administrative, legislative, and judicial activity of governments themselves, as well as of the activities of a host of non-governmental organizations. Furthermore, much of the work of historians, economists of various fields of specialization, political scientists, and sociologists has been focused on the nation's past and present structure, growth, and problems.

Secondly, for obvious reasons, the data differ widely among countries and within a country between the more distant past and the present, in coverage, quality, and comparability. This is due in part to the fact that production of primary data depends largely on the level of a country's economic development, and is also affected by the country's political structure, and often by its size. In underdeveloped countries much of the social activity escapes reporting and observation, except by special and costly techniques often beyond the country's resources; in authoritarian countries, even if economically developed, concealment and disguise of much of the data is common practice; and in small countries, even if free and developed, problems can often be solved without recourse to formally organized and publicly available information. Furthermore, because comparative study has so far been pursued to only a limited extent, compared to the far greater volume of resources, material and intellectual, that have been devoted to nationally-oriented data collection and analysis, there has been limited opportunity to test and cross-check the national data in an attempt to bring them into meaningful comparison, and fill the more obvious gaps. To be sure, the several international agencies that have been organized since World War II, and some of their predecessors, have made considerable progress in introducing some minimum standards of international comparability and coverage; but the task is in its very beginnings.

Thirdly, it follows that any comparative study will encounter, at the outset, qualitative diversity in the available data and major gaps, major in the sense that for certain periods crucial to the analysis or for certain countries that must be included to cover an adequate range of experience no usable data are directly at hand. The problem in any such study will lie in the allocation of resources between the attempt to analyze whatever data are readily available and the attempt to plug the more serious gaps by special work on some periods or areas.

Finally, it is clear that comparative study of economic structure and growth of nations lends itself to as much specialization as the whole discipline of economics, including under the latter those parts that used to be included under political economy from the 1770's to the middle of the nineteenth century when economic growth was the central problem of economic analysis. Thus emphasis in comparative study may range

from the major aggregates and their components—population, labor force, national product, and national wealth—to more narrowly defined topics that would reflect the specialized interest of such subdisciplines as agricultural economics, the economics of natural resources and location, industrial organization, transportation economics, the economics of money, credit, financial institutions, taxation and public finance, the position of labor, consumption economics, and so on down the line. Alongside such possible differences in emphasis on particular aspects of economic structure and growth, there may be differences in scope of coverage, in terms of the groups of nations that are to be included: the comparisons attempted may be world-wide, or they may be limited to the developed nations or to nations with a free rather than authoritarian system of organization, or even to the nations in some broad region. The field of comparative study is thus extremely wide and open to a variety of possible choices of emphasis and scope.

The Problem of Choice — An Illustration

Within the wide field of comparative study, the choice will be determined first by the interest of the individual scholar; secondly, by the resources that he himself can devote and those that he can mobilize by enlisting the interest of others and by securing the necessary material means; thirdly, by the availability of data. I have listed these factors in the order of their relative importance. The interest of the scholar is paramount; and unless it exists, there is little sense in proceeding. Once interest is aroused, much depends upon the resources that can be mobilized to serve that interest. In the present stage of lag of analysis behind the accumulation of data, I consider the availability of data the least limiting consideration in determining the choice of inquiry, no matter how limiting it may eventually prove to be for securing and testing some specific findings.

Holding such a view, and being unable to speak for anyone but myself, all I can do here is note the particular directions of the work done in recent years by a group of us on the Committee on Economic Growth of the Social Science Research Council. One line of inquiry, pursued mostly through conferences, each planned and prepared for over a period of at least two years, deals largely with topics outside the direct comparative study of nations—topics that belong rather to the other two types of study, particularly the transnational complexes. Illustrative is the conference held in 1951 on technological change and economic growth, the one in 1956 on state and economic growth, and the one in 1958 on the commitment of the labor force to industrialization. There was one conference, however—on India, Japan, and Brazil (held in 1953)—that did deal with a set of comparisons of economic, demographic, and social aspects of the structures of the three nations, although it was subject to many limitations. Further conferences are under consideration at present, most of them outside comparative study as such.

More directly within the field of comparative study of nations are two other lines of work. The first, also under the auspices of the Committee, attempts to stimulate interest in the review and analysis of long-term records of growth (particularly of national product, wealth, and their components) in many countries where the available data and literature promise a ready harvest and where scholars can be found to assume responsibility for such work. It proceeded first on the basis of limited part-time cooperation by some of the members of the International Association for Research into Income and Wealth (I.A.R.I.W.), and then through full-time studies by younger scholars, usually under the auspices of some economic research institution native to the country, with limited financial assistance from the Ford Foundation. The countries in which such work is going on at present are the United Kingdom, France, Germany, the Netherlands, Denmark, Norway, Sweden, and, outside of Europe, Japan and Australia. The work on the income estimates in Italy (back to 1861) is completed, but no analytical study has as yet been initiated. Other countries covered in the publications of the I.A.R.I.W. are the United States, Canada, and Hungary. The Committee hopes to extend the coverage of such studies to other countries. There may be some in Latin America, Southern Europe, and Asia, where the statistical and scholarly resources may warrant such an attempt.

The studies noted in the preceding paragraph provide records, and preferably analysis, of some aggregative aspects of long-term growth in a single country; but the results are only raw material for comparative study. More directly within the latter field is my own attempt to draw systematic comparisons of quantitative aspects of economic growth of nations, employing largely the already available data (and such of the results of the current work in the several countries as are ready), and to link them to some relevant hypotheses, or indicate their implications by discussing the questions upon which the data seem to bear. I hope to be able to continue this attempt to order the available quantitative data on economic growth, establish some common and divergent patterns, and weave them into some explanatory framework, even if on a low grade of abstraction and generality.

This illustration of a choice in study of comparative growth could be discussed at greater length, partly by providing further detail and partly by indicating some of the more specific reasons for the choice. But such amplification is out of place here. More detail is available in the accounts of the Committee on Economic Growth in the annual reports of the Social Science Research Council for recent years. I would prefer to pass on to some organizational steps which are suggested by the experience of my own work in the field—in the hope that they could at least be examined in any subsequent planning. The steps that it would seem to me useful to consider are: first, the setting up of a continuous center for *quantitative* study of economic structure and growth of nations; and

second, and perhaps more problematical at the present time, the setting up of a standing conference in the study of economic growth.

A Center for Quantitative Study

Despite the valuable work of Colin Clark, the Woytinskys, and the international agencies, or perhaps because their harvest is so rich and uneven, it has been my feeling for a number of years that in the study of economic growth of nations there is need for a continuous nucleus of scholars who would devote themselves to the collation, review, and analysis of the quantitative data that are increasingly becoming available. I am emphasizing the statistical approach for several reasons. First, the data, though recalcitrant, are critically important in studying economic growth, which, after all, is a process of *quantitative* change. Secondly, in view of the wide scope of the field, the program of the center should be given some defensible limit that would prevent it from spreading to areas of related non-quantitative data, the quality of which is still uncertain and the integration of which into testable analysis may be beyond the present capacity of our tools. Thirdly, the supply of quantitative data that is increasing apace is crying out for consistent and continuous analysis by a group whose work would set standards now badly lacking in the field. Fourthly, there is an urgent need to use this accumulating body of data in an attempt to relate it to questions and concepts posed by the various theories advanced. Much of the theorizing today is altogether too facile because it is based either on an uncritical acceptance of disparate data or on a neglect of the data because they do not lend themselves to intelligent use except through hard and critical work which the model-builders or hypothesis-makers are unable or unwilling to undertake.

Even if restricted by the emphasis on quantitative data and the comparative approach, the program of such a center would be wide indeed. It would concern itself with long-term trends in population, national product and its components, national wealth and its own components—and here there is much room for an increasing depth of approach, with further differentiation of various aspects of economic activity. It would concern itself with cross-section analysis of national structures at a given point of time—to add to the rather limited long-term records an insight into current structural differences, viewed partly as points in the processes of growth caught, as it were, at different stages and phases. And it would have to relate these studies to a variety of questions posed in the theoretical discussions, whether or not quasi-mathematical, on the interplay between population, natural resources, capital, forms of entrepreneurial organization, size, character of political structure, and so on, in their bearing on a country's long-term growth. Indeed, the work of such a center would be limited not by its program, but by the scarcity of competent scholars.

To my knowledge, no such continuous nucleus of scholars engaged in a program of the type suggested exists at present. The international agen-

cies (the UN, the various area commissions, the specialized agencies such as the FAO, ILO, WHO, and the financial agencies) contribute richly to the flow of current data; and now and then they find it possible to devote a few months to some special problem. But both because of their organizational structure and the pressure of current duties, they are inhibited from developing a long historical perspective. Nor can they find the time and personnel to do the critical and analytical work that is needed: this can be undertaken only by a group of scholars, free from the compulsions of a current service program within an organization that must keep in mind the political aspects of what it is doing. No such work is done within any of our nongovernmental research agencies — the National Bureau of Economic Research, the Brookings Institution, the Council for Foreign Relations, the Twentieth Century Fund, etc. — all of which either emphasize domestic economic problems or are not equipped for emphasis on quantitative economics. I do not know what research on comparative economic growth of nations is under way in our government agencies, but I have no evidence that it approaches a program of the type suggested. Finally, the M.I.T. group is too closely geared to intermediate policy objectives, while other groups (such as the entrepreneurial research group at Harvard or the economic development and cultural change group at Chicago) have their own orientations which would keep them from emphasis on the quantitative study of economic growth.

If the need exists, and if at present it cannot be satisfied except by the limited efforts of individual scholars, there is much to be said for setting up a continuous center for the program suggested. The assurance of continuity thus provided is important because the results are necessarily cumulative in character, and because the task is sufficiently wide to require a long period of sustained effort. Furthermore, in a program of this type there is much value in having a small cadre of assistants of junior standing, some but not all of whom will graduate to the stage where they can assume responsibility for a research task. If the experience at the National Bureau of Economic Research is any indication, a continuous nucleus of such assistants is of great help in permitting the senior scholars to devote more time and attention than would otherwise be possible to the analysis of the data rather than to their collation and cross-checking.

As noted above, the major bottleneck would be the scarcity of competent scholars to man the center. It would require economists who are conversant with theory, able and willing to deal with the recalcitrant quantitative data, and sufficiently informed about the variety of economic and social structures that exist in the world. Such economists are extremely few, if I can judge by the part of the field that I know best—the use of national income and wealth estimates. Any planning of such a center would therefore have to begin with two ideas: (1) that the original and continuous nucleus of scholars attached to it would perforce be small, indeed, so small as to be counted on the fingers of one hand; and (2) that it should be so organized, through opportunities for one or two year

residence of visiting scholars, that it could perform the very important function of training not only younger scholars in the United States but also those from foreign countries.

A Standing Conference in the Field

If two or three competent scholars could be found to man a center of the type suggested above, and resources secured to permit a sustained and continuous program, it would, within a few years, make a significant contribution to both knowledge and standards in the field; but I am less convinced of the possible value, *at the present time*, of a standing conference. The type of organization I have in mind is exemplified by the United States Conference on Research in Income and Wealth.

If it were true that much sustained work on comparative economic growth is done by scholars in universities, government offices, international agencies, and nongovernmental research institutions, there would be need for a conference that would give them an opportunity to meet once a year (without being lost among the crowds that attend the professional associations' meetings); to have a forum at which intellectual problems of wide interest could be discussed; and to exchange information on work in progress. In a way the Committee on Economic Growth has tried to do this through joint meetings with a few scholars from the various centers (M.I.T., Chicago, the UN, the World Bank, the New School for Social Research), which, in particular, considered topics for some jointly organized conferences.

But my impression is that, despite the fashionableness of the topic, the amount of sustained work on comparative economic growth is in actuality quite small—too small, in fact, to justify a standing conference, especially if it were limited to economists to thus avoid the difficulties that would beset it if it were to include scholars from rather disparate disciplines. Perhaps this impression is wrong; perhaps there is a sufficient amount of work going on closely related to the broad topic of comparative growth of nations to warrant consideration of a standing conference in the field.

If the time is not ripe for the latter now, it may come later. The hope is that the continuous intellectual challenge in the field will further the systematic use of the comparative approach beyond the aggregates to the various important aspects of the economic structure and growth of nations, and that at some point, when sufficient spread of intellectual effort has been attained, a standing conference may become useful as a means of keeping in touch and of providing further stimulation.