

Statistics and Economic History

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*Statistics and Economic History*¹

THIS paper deals with the relation between statistical analysis as applied in economic inquiry and history as written or interpreted by economic historians. Although both these branches of economic study derive from the same body of raw materials of inquiry—the recordable past and present of economic society—each has developed in comparative isolation from the other. Statistical economists have failed to utilize adequately the contributions that economic historians have made to our knowledge of the past; and historians have rarely employed either the analytical tools or the basic theoretical hypotheses of statistical research. It is the thesis of this essay that such failure to effect a close interrelation between historical approach and statistical analysis needs to be corrected in the light of the final goal of economic study.

The argument begins with a brief summary of types of statistical analysis in economics and of their aims; considers the bearing of such analysis upon the study of economic history; indicates how economic history can help to raise critical standards in economic inquiry; and concludes by suggesting some of the practical implications that flow from the discussion.

I

Statistical analysis, like several other scientific methods, uses empirical data in an attempt to establish common and persistent relations in a variegated and changing universe. It differs from the other techniques in that it studies a variability that is beyond direct, manipulative control and is expressible in quantitative terms. Its task is simplest when experimental control can be extended to the point where the residue of unexplained variability can easily be interpreted as due to many minor random causes. In economics, as in other social sciences, such experimental control cannot be achieved, and the statistical analyst must make repeated attempts to resolve the variable stuff of measurable experience into significant components before he can venture to ascribe the residual variability to random factors. The nature of statistical analysis in economics brings that discipline into a relation to economic history far closer than that which obtains, for example, between statistical analysis in physics or in genetics and the history of matter or of heredity. The important phases

¹ A revised version of the paper presented at the meeting of the Economic History Association at New York City, December 28, 1940.

of statistical analysis in economics, that is, those which serve to distinguish in the available data differences over space or variations over time attributable to substantive factors rather than to random causes, are described below under three heads: (a) the adjustment of data to fit analytical categories; (b) the analysis of different patterns of temporal change; (c) the measurement of theoretically formulated relations, largely of the short run.

(a) The data available to the statistical economist are neither derived in the laboratory nor obtained by scientists for scientists. Most frequently they are by-products of the administrative activity of public or private agencies. Consequently they are often inaccurate. Rarely are they collected or tabulated with reference to categories with which the statistical investigator is concerned; and, in altogether too many cases, they are inaccessible to students at large. At best, the data result from efforts by public agencies to obtain information for wide popular use: the information collected in this country by the Federal Bureau of the Census is in that category. But the scope of such data is necessarily limited; their collection is expensive; the information obtained must be confined to questions to which the respondents can easily reply; and the categories and concepts used must remain on the level of common sense, understanding, and acceptance, as distinguished from the specialized and sometimes forbidding language of economic discourse.

In economics, therefore, the first phase of statistical analysis is a treatment of the available data that will make them more directly adaptable to the requirements of the economist. This procedure may be relatively simple, as when the investigator ascertains whether the given price of a commodity x is really the price in the economist's sense of the word, that is, the actual monetary *quid pro quo*, or just a quotation for bargaining purposes differing from actual payment by amounts represented as discounts, premiums. Again it may be a far more laborious task, involving, for example, the welding of disparate data into measures of such broad categories as national income, wealth, total production, general price level, stock of money in circulation, volume of bank credit, volume of savings, ultimate consumption, and the like. The more complex of these undertakings call for extensive statistical and economic analysis, since difficulties arising from inadequacy or incomparability of the data must be overcome by statistical ingenuity and by knowledge of the interactions of economic processes. Even the specific tasks in this first phase of analysis may turn out to be impossible of accomplishment. The efforts

to transform institutionally given categories of quantitative data into categories that are analytically usable constitute a most important and time-absorbing endeavor of statistical economists.

(b) Work of the type just described is a preparation for the substantive analysis which seeks to determine the invariant elements in the variable economic universe. In this kind of analysis two distinct approaches have emerged. In the first, changing economic reality is considered in all its complexity, and the analysis proceeds toward the segregation of different patterns of temporal change. Long-term changes whose movement persists in the same direction over decades are segregated as secular trends. The shorter up-and-down fluctuations that recur with some regularity and have a simultaneous effect (at intervals ranging from 3 to 11 years) upon the preponderant majority of economic processes in a national economy are studied as business cycles. The month-to-month oscillations recurring in every calendar year are distinguished as seasonal variations. Those irregular changes that remain, and cannot be analyzed further in general terms, are interpreted as far as possible in association with historical events or are treated as random.

The statistical economist hopes that by this sort of resolution of the complete quantitative record of an economic process there will be discernible in various economic processes in the same country or in a number of countries features common to these distinct types of temporal change; that for some of these temporal changes a pattern persistent through time will emerge; and, finally, that when these groups of temporal changes are treated separately they can be associated more easily with forces observable from other data. The attainment of these objectives would reveal elements that are invariant in space and time, and indicate their connection with other factors whose invariance and persistence had been or could be established by experimental methods. Where natural causes affect social change directly, as in the case of seasonal variations, it is particularly easy to establish for diverse processes patterns that are similar and persistent over time. Even with such socially determined events as business cycles, elements of common and persistent differences in the timing and amplitude of cycles in the several economic processes can be observed. And for secular movements in population and volume of production, it is possible to find certain quantitative characteristics in a variety of countries and industries, at least within the broad historical period associated with industrial capitalism.

The search for the persistent and invariant elements, in the sort of analysis described above, follows a resolution of the complete time series into distinct patterns of temporal change. These components are suggested by the data themselves; indeed, the recognition of economic cycles has been forced upon the more theoretically minded students by the cumulation of empirical observation. Usually, therefore, the procedures characteristic of this approach are flexible enough to allow for a variety of types of temporal change. They are directed toward the establishment of invariant elements only as an ultimate goal; but the existence of such invariant elements is not assumed as a basic premise that might govern the analysis itself.

(c) The third phase of statistical analysis, unlike the search for patterns of temporal change, starts with a basic assumption that the invariant relations formulated by economic theory do exist. Since as a rule such relations can be formulated theoretically only under the limiting conditions of the short run, attempts to measure them statistically are applied most frequently to the cyclical-irregular changes in time series, after the secular movements have been removed. The investigator presupposes that for these short-run changes the relation to be measured, for example, between supply and price, or between demand and price, or between the volume of money and the general price level, is persistent over time. He proceeds, therefore, to try to establish an average measure of this relation, usually with the help of correlation analysis, and does not concern himself with the specific characteristics of the cyclical or irregular changes that are being correlated. Out of such attempts has developed an extensive literature directed at the establishment of statistical laws of demand and supply, measures of elasticities, flexibilities, and weights of the various determinants in the sets of mathematical equations taken to represent the theoretical skeleton of the functioning economic system in its short-term behavior. In a few cases procedures of this type, based upon theoretically formulated relations for which the statistical counterpart is being sought, have been applied to secular movements as well, largely in connection with studies of the marginal productivity of labor and of capital. Whatever the difficulty inherent in the assumption that the relations thus measured are truly persistent over time, even if confined to short-term changes, no survey of the use of statistical analysis in economics can disregard the well-developed work on statistical quantification of economic theory.

The three types of statistical analysis whose characteristics we have just summarized are interdependent, and the validity of their results is

conditioned by knowledge derived by methods that are not always statistical in nature. It is obvious that translation of institutionally given data into analytical categories must serve as a preparation for the other two phases of analysis and that it will often determine the actual formulation of the latter; on the other hand, the categories employed in the analysis of time series or in the quantification of static theory are basic to any attempt to derive usable analytical categories from imperfect data. The analysis of time series into patterns of temporal change must precede the study of statistical laws of short-term responses; and these laws in their theoretical form function as guides in the analysis of cycles or of secular movements, since they suggest types of producers' and consumers' reaction that help to explain why, under varying conditions, certain kinds of cycles or of secular movements will occur. It is clear also that the results of statistical analysis, confined as they are to processes for which quantitative data are available, must be combined with knowledge obtained from other data if a tolerably complete picture of even a segment of economic reality is to be obtained.

II

What is the bearing of statistical analysis, thus pursued in economics, upon economic history? It is easy to reply that such analysis, since it deals with events occurring in historical time, is itself economic history. Indeed, if we accept literally certain definitions of economic history, that answer is inevitable. Thus in a very interesting article on "Quantitative Measurement in Economic History"² Professor Eli Heckscher writes: "The object of economic history is to show how scarce or insufficient means have been used for human ends throughout the ages; how the character of this problem has changed or 'developed'; what these situations and changes in them have been due to; how they have reacted upon other sides of human life and human society. As far as I can see, this covers the whole field, and nothing but the field, of economic history."³ Professor Heckscher goes on to state: . . . "our object is the same as that of studying present-day economic life 'in being,' with one extremely important qualification, i.e. the addition of social change."⁴ According to such a definition, all types of statistical analysis that are concerned with manifestations of economic activity through time are aspects of economic history—even the statistical laws of demand and supply, since they

² *Quarterly Journal of Economics* (February, 1939), 167-193.

³ *Ibid.*, 167-168.

⁴ *Ibid.*, 168.

are but generalized statements as to how concurrent short-term changes have taken place in related economic processes during specified periods.

Unfortunately, however, so simple an answer is contingent upon an interpretation of the term “economic history” that is perhaps too broad to be meaningful. If we were to adopt a similarly inclusive definition of history, we could regard theoretical physics as history of matter in its physical aspects, or genetics as history of groups of biological species with reference to their inheritance relations. The easy answer ignores the distinctive characteristics of economic history, and glosses over the fact that in the institutional pursuit of that discipline there has been virtually no employment of any sort of statistical analysis. It is perhaps more realistic, and certainly more useful for the present discussion, to take a narrower view of economic history, and to consider the special characteristics of study and writing in the field.

First among the characteristics relevant to the problem at hand is the fact that economic history, like all history, is concerned primarily with the concrete and particular manifestations of changing economic reality in its chronological unfolding. The point was clearly stated by the late Professor Henri Pirenne in an article entitled “What are Historians Trying to Do?”⁵ In comparing history with sociology Professor Pirenne wrote :

While the sociologist seeks to formulate the laws inherent in its very nature which regulate social existence—or, if one wishes, *in abstracto*—the historian devotes himself to acquiring concrete knowledge of this existence during its span. What he desires is to understand it thoroughly; trace it in all vicissitudes, describe its particular characteristics, bring out all that has happened in the course of the ages to make of it what it has in reality been. For him, chance and the deeds of prominent personalities, of which the sociologist cannot take account, constitute the essential data of his subject. In other words, the sociologist seeks to separate the typical and the general, while for the historian the typical and general are only the canvas upon which life has painted perpetually changing scenes. The former uses facts only with a view to the elaboration of a theory; the latter considers them as the episodes of a great adventure about which he must tell.⁶

If we substitute the terms “statistical economist” for “sociologist” and “economic historian” for “historian,” we have an acceptable description of the contrast between the adherence to the concrete and specific that characterizes the method of the economic historian and the tendency

⁵ *Methods in Social Science* (Chicago, 1931), 435-445.

⁶ *Ibid.*, 435-436.

toward generalized concepts and the search for invariant relations that typify the statistical economist.

A second relevant characteristic of economic history is that the historian utilizes not only quantitative data but, unlike the statistician, information not expressible in measurable units. Professor Pirenne, in the article just mentioned, even maintained that “to achieve certainty about a subject as flowing, diverse, and complex as social behavior, is impossible. . . . The conditions indispensable to all really scientific knowledge—calculation and measurement—are completely lacking in this field.”⁷ This statement, which seems extreme, is belied by the generous sprinkling of quantitative data in the economic history that has been written in recent decades. It is true, however, that economic history seeks primarily to set down a specific record of qualitative changes in the structure and characteristics of economic institutions, and that it deals only rather incidentally with the quantitatively measurable magnitudes of these institutions and of their substantive performance—most frequently using these data as illustrations of qualitative statements relating to marked changes or differences, and almost never subjecting them to analysis designed to segregate the common and persistent from the different and variable.

If the foregoing considerations are both pertinent and valid, what can we now say about the bearing upon economic history of the kinds of statistical analysis we have described? Can we regard as directly applicable and useful for a particularized description of the temporal flow of economic events and of the qualitative changes in the structure and organization of economic institutions the generalized concepts that result from the transformation of data to suit analytical categories; the invariant tendencies and recurrences suggested by the analysis of patterns of change; and the average measures of theoretical relations? An answer to this question necessarily depends upon our conception of the basic purposes of economic inquiry, and upon our notion of a suitable division of labor between economic history and other branches of economic study in the effort to attain these purposes. I assume that the basic purposes of economic inquiry are to distinguish in the flow and interrelation of economic activities among the common, persistent elements and those that are diverse and variable; to measure both; to relate them to recognizable factors in operation; and hence finally to lay the foundation for an unbiased understanding of the present, an intelligent consideration of public policy, and a reasonable prognosis of the future. Whatever specific

⁷ *Ibid.*, 443.

function economic history is to perform in facilitating attainment of this set of basic aims, it should lean upon statistical analysis far more heavily than it has up to the present time. The bases for this assertion may now be suggested.

That economic history is concerned with a concrete account of the changes in the historical unfolding of economic reality does not mean that there is no selection among the infinite variety of events that may be recorded; or that no principle of organization or unity, beyond chronological succession and confinement to a specific area, is to be introduced. The economic historian has to select for treatment only those events that appear to him important as determinants of the temporal flow of economic reality, and he must necessarily accept the general notion of the interdependence of various processes in economic society. Without a rough classification of groups of economic events by their weight, either current in the short run or as determining the long run, and without some conception of the interrelations among these classes of events, some knowledge at least of the directions in which the effects of one impinge on the others, there could be no economic history.

Economic history shares with economic theory and also with statistical analysis certain basic notions that provide a frame of reference. Economic theory is concerned with formulating the important categories or classes of processes and with working out the implications of interdependence of parts of an economic scheme. Statistical analysis utilizes these results of economic theory. But it goes beyond the everyday knowledge to which the work of verbal theorists is often confined in measuring more accurately the magnitudes of the economic processes and events distinguished, in establishing the exact forms that interdependence assumes, and in adding to purely static analysis an analysis of forms of temporal change. Thus it tends both to implement and to transform the results of verbal theorizing, yielding a new product more directly applicable to the study of empirically observable reality.

Insofar as statistical analysis serves to transmute economic theory into a form that can be applied and tested empirically, it cannot fail to play a strategic role in economic history. For it attempts to provide, with more direct relevance than verbal economic theory, the fundamental notions that economic historians need for the organization of their materials and for the orientation of their concrete descriptions. It is difficult to see how economic historians can dispense with both the concepts and the measures of population, national income, national wealth, total consumption, capital formation, savings, general and group price levels, stock of money

(and this list is far from complete). Since they cannot and usually do not attempt to dispense with these concepts and measures, should they not then acquire familiarity with the statistical and theoretical analysis involved in the derivation and measurement of these quantities, and develop the habit of employing them? Again, the distinction between secular and cyclical movements is of immediate importance to the subject of economic history; and even though historians are concerned primarily with secular movements, would it not be well for them to be acquainted with the methods of statistical study of such movements and to use both these methods and whatever scanty results economists have thus far obtained? Nor can the statistical laws of demand and supply be neglected by the economic historian: when established for several groups of economic goods, they reveal considerable difference among them, and thus significant variations in the responsiveness of groups concerned with the production or consumption of diverse economic goods to the vicissitudes of economic change.

It may be argued, however, and here we come to the second point, that statistical data should be used only to document the story of qualitative changes in the economic system or of those faults in its structure that are associated with such events as wars or revolutions; that there is no room in economic history for statistical analysis which assumes a continuity of phenomena to be measured. Some may go far as to claim that the historian's emphasis on qualitative changes, and his reluctance to undertake analysis in terms of general and persistent relations, afford a convenient and even advantageous division of labor, whereby the historian remains free to observe the facts while the economist ventures forth on the perilous sands of generalization.

That such a position is not tenable has already been suggested in the foregoing discussion. Facts are recorded and cited because of their presumptive significance; and that significance is nebulous indeed unless it is interpreted in the light of the knowledge brought out by quantitative analysis. A historian may record a change in the production of commodity A between years x and y , but the significance of that fact cannot be determined until we know in what phases of the cycle the years x and y happen to fall; until we have ascertained the rate of change and compared it with rates of change in other branches of production; and until we have appraised by analysis of supply-and-demand factors the economic characteristics of commodity A. A qualitative change in the structure or functioning of an economic institution, for example, a change in land policy or in the relation of government to business, is of uncertain import until

it is translated, with the help of quantitative data and statistical analysis, to show what these qualitatively identified events mean in terms of measurable modifications in the substantive performance of economic institutions—modifications that can reasonably be attributed to the qualitative change under scrutiny rather than to other, concurrent, factors. I do not imply that the economic historian should become so immersed in statistical and theoretical analysis that he would take over the functions of the statistical economist; but he can be expected at least to take cognizance of the categories, tools, and research problems of the latter, so that in his treatment of the specific, concrete development of economic life he will profit in his selection of facts, in his search for additional information, and in his emphasis on this or that aspect of manifold economic reality, by the work of statistical economists. Thus he can contribute directly to the testing and reformulation of current hypotheses and to the restriction of the arena of fruitless controversy.

It may be objected that statistical data are scanty even for such economic events as are quantitatively measurable. Available statistical records are inadequate even for the nineteenth century; and they are discouragingly sparse for the more distant past. Moreover, as already mentioned, a large number of economic events are not susceptible to quantitative measurement. Is it not inevitable, then, that statistical analysis must occupy a subordinate place in economic history?

Although it cannot be denied that statistical analysis is severely limited by paucity of data and immeasurability of certain types of occurrence, there are additional observations to be made. First, both paucity of data and lack of measurability do not represent absolutely insurmountable difficulties; they can be mitigated in some degree by a search for new data and by ingenuity in the formulation of quantitative measures of the effects of apparently nonquantitative phenomena. I may refer here to the large additions to available bodies of data in recent decades; and to continuing efforts to measure phenomena (such as progress of monopolization or status of public opinion) that used to be regarded as nonmeasurable. Second, economic history is the one special field of history in which the potentialities of quantitative measurement appear greatest. Statistical analysis may seem to promise little for political, diplomatic, or literary history; but of all social phenomena, economic phenomena are the most readily adaptable to quantitative measurement.

All this is quite obvious and perhaps I am laboring a truism. The question is whether or not economic history has actually utilized the results and methods of statistical analysis available to it. Have economic

historians, fully appreciative of the potentialities of statistical analysis, exploited it to the full? Have they been constrained only by lack of data or by the scanty supply of results?

One cannot answer these questions fairly without going through the literature of economic history, studying the data and methods actually employed and comparing them with the data and methods available to see whether the extent of utilization measures up to reasonable standards. I do not pretend to have undertaken such a monumental survey. Yet there are several current indications that economic historians themselves are becoming aware of the need for greater emphasis on the use of statistical data and of statistical analysis: the article by Professor Heckscher is a case in point, and from the aspect of the present paper the discussion by Professor Usher in his review of Clapham's *Economic History of Modern Britain* is still more significant.⁸ In a sense, too, a negative answer to the questions posed above is predetermined by the fact that the development of statistical analysis in economics is such a recent phenomenon. It is largely a product of the past three decades, and one could not expect the new technique to have been taken over immediately into a discipline that developed from much older pursuits whose established methods it retained. Statistical analysis could not, until very recent years, have played the strategic role in economic history that we envisage for the future.

III

A new and closer relation between economic history and statistics should not only enrich economic history, but should have perhaps an even more salutary effect upon statistical analysis and economic theory. Because statistical analysis has usually been carried on in relative isolation from historical study and because, for various reasons, the historical training of economists in American universities has left much to be desired, statistical analysis has suffered from all the dangers inherent in the failure of students to consider the concrete variety of changing reality.

In every type of statistical analysis these dangers are all too apparent, and their effects are clearly observable by trained and critical students. In the translation of institutionally given data into analytical categories it is difficult to avoid the inclusion of incommensurables and the treatment of the resulting synthetic totals as magnitudes of uniform import. National income as measured today and national income as estimated fifty years ago—though both are expressible in figures that can be added,

⁸ *Journal of Political Economy*, April 1932.

subtracted, multiplied, and divided—contain elements of incomparability, too easily overlooked in purely statistical treatment; and other broad categories of economic and statistical analysis are subject to similar shortcomings. Greater attention to historical experience, to the changing content of economic life, would certainly have led to a more cautious and critical interpretation of these analytical categories, and would have prevented economists from reading too much or perhaps the wrong things into the quantitative changes themselves.

The analysis of time series, which is largely the study of secular movements and of business cycles, has suffered from neglect of economic history by economists and statisticians quite as much as this analysis has suffered from its neglect by economic historians. In the field of secular movements broad questions (for example, how to determine a homogeneous period of development?) have not been explored in the light of the experience of historians who have attempted to set limits to relatively homogeneous historical eras in the development of society. More specific questions as to how the factors of sustained change actually work through acts of individuals and groups have been left relatively unilluminated, because the studies of economic and other historians in this field have not been integrated with the quantitative analysis of the secular movements themselves. In the field of economic cycles, both the proponents of theories and the more empirically minded students of statistics could have profited from extensive research in the history of business cycles in various countries, research that would have resulted in authoritative accounts of the outstanding characteristics of successive cyclical fluctuations in the economic life of those countries. Even the formulation of statistical “laws” of demand and supply would have benefited profoundly from research in economic history which could have tested their validity against the rich variety of historical experience.

The results, as might have been expected, have been a tendency toward easy generalization and a recurrence of controversies made possible by the equal plausibility of conflicting assumptions. In secular movements the present arguments center about the question of a maturing economy and the implications of such maturity; in business cycles they are concerned with the validity of diverse theories and hence with the presumptive effectiveness of the policies of amelioration or control suggested by those theories; in the analysis of relations in short-term changes they revolve around the significance and validity of different assumptions concerning the degree of competition or monopoly, and the extent of knowledge and anticipation of market developments. Recourse to eco-

conomic history in most such controversies all too often means merely that the economist will plunge for a brief moment into the vast sea of potential information and emerge with a few historical facts in support of the hypothesis he favors, without regard to the possibility that other facts, of equal or greater weight, might bolster a different thesis.

More intensive concern on the part of economic historians with the concepts, hypotheses, and methods of statistical analysis will not necessarily provide a historically established source of reference that would effectively put an end to disputes among economists—especially disputes over such thorny matters as the general course of secular movements in industrial capitalism; the causes of business cycles; and the form that the static laws of supply and demand should assume. But one may hope that attention by economic historians to the economists' tentative generalizations will narrow the realm of controversy and supply some of the necessary touchstones. The pressing need is not for mere collections of facts strung along the thread of chronological sequence and governed by general notions of a hierarchy of importance, although of course such annals are useful. But even more there is a demand for historical studies that would take direct account of theoretical and statistical analysis, so that the use of both quantitative and qualitative data in the description of historical reality could be oriented toward the questions raised by the statistician's attempts at generalization. More specifically, what is needed at present is an economic history of this and other countries which, with respect to secular movements, would try to discover what factors in the past have determined the rate of economic growth, provided the opportunities for expansion, and secured the mechanism by which such expansion has been fostered or hindered. Equally necessary is a history of business cycles in this and other countries that would be sufficiently informed by knowledge of business-cycle theories and of statistical techniques of measurement to lead the authors to attempt to answer for the successive cycles the questions that economists would like to see resolved. Again, we need studies of industries and of single firms in which the mechanisms of response and reaction to various recordable impulses can be observed by an economic historian who is well acquainted with the hypotheses that economists have evolved concerning the behavior of firms and the nature of market processes.

A broader and more far-reaching use of statistical analysis by the economic historian will not only yield improved organization and heightened perception in historical study itself, but also will serve to limit the area within which the economist may generalize without constraint. Indeed,

when we consider that it is economic history that provides the raw materials from which economists generalize, whether the basis be observation of everyday life or the more precise measures of statistical analysis, there is little need to dwell upon the immense potential value of a more direct utilization of theoretical and statistical analysis in economic history.

IV

The underlying assumption of this paper is that the search for uniformities in the variable stuff of historical experience is a legitimate and promising undertaking ; and that such a search can and should be guided by hypotheses and categories evolved by theoretical and statistical analysis of problems in the foreground of economic inquiry. In this search for uniformities the goal is ever distant. But the phenomena one may find on the way—particularly the significant differences in the patterns of stability and movement of various economic processes—are basic to an understanding of the forces that determine economic change. Such understanding is the fundamental aim of all studies concerning the functioning of economic society.

Acceptance of this assumption implies recognition of the need for more extensive use of generalization and analysis in economic history. In the organization and furtherance of work in this field, questions of theoretical and statistical analysis in economics, which historical evidence can clarify, provide important guides and suggestions. Research in economic history should devote increasing attention to problems as formulated in theoretical and statistical analysis ; such an emphasis ordinarily means not so much the abandonment of the more usual scheme of organization of the historian's labor as the exploration of paths that go beyond the "straight" historical account. Whether this is a task for economic historians or for economists turned historians is immaterial. There is obvious need for the combination of statistical, theoretical, and historical analysis in application to the leading problems in the study of how economic society functions.

This plea for more extensive use of generalization and analysis in economic history should not be interpreted as a suggestion that the historian abandon the spirit of meticulous objectivity, become biased in his selection of materials, and deal exclusively with quantitative data. It involves only a more explicit recognition of problems and generalizations formulated by statistical analysis and economic theory ; a willingness to follow as guides in the selection of material the measurable criteria that have

been developed by other branches of economic inquiry rather than the more nebulous and variable guides that govern the choice of material by historians at large. It means an admission of the great potential value of statistical data and statistical analysis.

Perhaps it is not unseemly to suggest that comparative neglect of social theory and statistical analysis has contributed to the adoption by historians in general, and even by economic historians, of one of three undesirable positions. One, finding in the past a reflection only of the capricious behavior of fate, has attributed unity in the historical account to the subjective interpretation of the scholar himself. Another has viewed the past as a product of immutable forces, subject to little modification by human effort, and has regarded "true" history as an account that might vary in detail but not in substance. A third has sought refuge from the implications of the first two interpretations by piling up records of facts, deferring the task of analysis and synthesis until that far-off day when the sheer weight of the data must force the student (preferably some other student, and not necessarily a historian) to look at the whole picture. Without the more rigorous analysis made possible by the use of quantitative data and of theoretical hypotheses, it is altogether too easy either to abandon the search for uniformities or to find and fix them with a rigidity that scorns empirical tests.

Union of historical and theoretical-statistical research should contribute also to a much better understanding of current problems by economists, and to a more valid appraisal by them of the historical significance of the changes that take place under their very eyes. A broader historical background might have prevented some economists from ignoring the dependence of their generalizations upon transient historical conditions, and thus from delivering a variety of erroneous judgments ranging all the way from statements concerning the new "era" in the 1920's to glib pronouncements that the unorthodox financial arrangements instituted by totalitarian states could not endure. And a broader theoretical and historical insight might have caused statistical economists to hesitate before undertaking too easy an extrapolation of trends, and deterred them from issuing facile observations about the character of cycles.

There is no doubt that an increased emphasis upon theoretical-statistical analysis in economic history and upon the historical approach in theoretical and statistical analysis would raise difficult problems. Ways would have to be found not only of recording but also of summarizing qualitative knowledge to a point where the reliability of the results would

approximate that of quantitative measurement. Some means of coöperation among the present generation of economic historians, statisticians, and theorists would have to be found, so that they could pool their research skills to the greatest advantage. The graduate training of the younger generation of research workers would have to be modified to allow for more intensive training of economists in the techniques and approaches of historical research and of historians in the results and practices of statistical and theoretical analysis. Yet these tasks, though difficult, are neither fruitless nor impracticable. A welding of the theoretical approach with statistical analysis has become more pronounced and more productive of late in economic inquiry; but promising as this development has been, it has made all the more necessary an extension of the historical range of economic study and a recognition of the dependence of that study upon the work of economic historians. The historians, for their part, can greatly enhance their contribution if they will adopt for their own use the tools and concepts now employed in the theoretical and statistical branches of economic inquiry.

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