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Introduction

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The economics of expectations, which was the subject of the conference reported in this volume, has rather suddenly taken shape as a professional discipline. Theoretical speculation about the nature and role of economic anticipations has been intense ever since the Swedish school opened up the field nearly thirty years ago. But until fairly recently, the study of expectations was limited almost entirely to mere surmise. Now there is content, thanks to the rapid creation of an impressive body of statistics, many sets of which are reviewed in this volume.

This conference, held at Princeton on November 8 and 9, 1957, should be seen in the context of other efforts here and abroad. In the United States, the primary sources of data have been the investment-intentions survey conducted jointly by the Department of Commerce and the Securities and Exchange Commission, and the consumer-intentions survey conducted under the auspices of the Board of Governors of the Federal Reserve System by the Survey Research Center at the University of Michigan. Perhaps equally important in laying the foundation for development was a project on business expectations and planning launched in 1949 at the University of Illinois, sponsored by the Merrill Foundation, under the leadership of Howard Bowen and Franco Modigliani. The project led not only to interesting field work, but also to a systematic search for data, and to the recruiting for this line of inquiry of a group of talented research workers.

A conference held at Ann Arbor in 1951 brought together a good deal of evidence on and analysis of short-term forecasting.[1] When in 1954 the Federal Reserve Board set up five "task groups" to consider the development of economic statistics, no less than three were assigned to work on the statistics of expectations—a field which a few years earlier had not existed. One group, under the chairmanship of George Terborgh, worked on business investment intentions; a second, under the chairmanship of Arthur Smithies, on consumer expectations and intentions. The third, under the chairmanship of Martin Gainsbrugh, worked on "general

[1] *Short-term Economic Forecasting*, Studies in Income and Wealth, Princeton University Press for the National Bureau of Economic Research, 1955.

business expectations," the complex of factors—orders, sales expectations, inventory control, pricing, and scheduling of production and employment—which affect operating decisions.[2]

A meeting devoted to the impact of uncertainty on business decisions was held in 1955 at the Carnegie Institute of Technology under the auspices of the Committee on Business Enterprise Research of the Social Science Research Council.[3] Uncertainty was also the focus of a British meeting in 1953, which, however, did not deal with empirical materials.[4] A meeting of European students working along the lines of the IFO–Institut in Munich was held in 1957.[5]

Nature and Uses of Expectational Data[6]

What seems to mark off the papers here from earlier work in this expanding international enterprise is the maturing of a consensus about the place of anticipations in the economic process. The predictive value of expectations is systematically studied to aid us in forecasting, to tell us what kind of information the stated expectations contain, and to give clues to how the economic process (jointly with other social processes) generates expectations.

No student of anticipations can afford to be scornful of their use in forecasting. Concern with forecasting originated the Commerce–SEC, the Michigan surveys, and such private surveys as McGraw–Hill's, and makes possible their continuance on an adequate scale. Furthermore, the surveys proved reliable in predicting major changes in the sectors they cover, and are widely viewed as one of the most useful services offered by economic research to government and to business. The process of developing new and retrospective measures of anticipations and of testing anticipations as direct forecasts of the variables predicted continues to be a fruitful one, as several papers in this volume demonstrate.

However, direct forecasting is not the only use of anticipations data—nor, indeed, their most promising use. Most such data are at their best when used as *ingredients* in forecasting models which combine them with other variables in ways that allow for their biases and for the interaction

[2] The reports of the five task groups are published together in a hearings volume of the Joint Committee on the Economic Report, *Reports of Federal Reserve Consultant Committees on Economic Statistics*, 1955.

[3] The proceedings, under the editorship of Mary Jean Bowman, were published as *Expectations, Uncertainty, and Business Behavior*, Social Science Research Council, May 1958.

[4] Issued as a symposium edited by C. F. Carter, G. P. Meredith, and G. L. S. Shackle, *Uncertainty and Business Decisions*, Liverpool, University of Liverpool Press, 1954; second enlarged edition, 1957.

[5] The IFO–Institut is also the publisher of the first journal in the field (*IFO–Studien*, issued semiannually).

[6] For a fuller discussion, see the monograph in the Illinois series by Modigliani and Cohen. (For full citation, see p. 15, n. 10.)

of economic forces. More fundamentally, anticipations data are one of our basic sources of evidence on how firms and households make the decisions which in our decentralized society guide the whole course of economic development. To account satisfactorily for economic change, we need to develop and test hypotheses about the way experience shapes people's view of the future, the way this view of the future shapes their decisions, and the way further experience reshapes forecasts and plans. The resulting insights in turn can enhance our ability to forecast. Every forecasting technique must rest at crucial points on an assumption that some observed uniformities will continue into the future. As we gain more background knowledge, we become able to shift the assumptions from ones about surface phenomena to ones based on more reliable, deep-seated relationships. Specifically, we can get more reliable uniformities for expectations by considering intentions (to install plant and equipment, for example) as *conditional* and analyzing them through models which make room for divergence from expectations in the conditioning variables (in the example, manufacturing sales).

Anticipations data can be placed in two broad classes, though the line of demarcation cannot always be sharply drawn.[7] First, there are anticipations relating to the future behavior of the *environment*, that is, to the course of variables which the person answering does not control, such as the demand for his products by customers, the availability and cost of his inputs, and the state of the market for financing. Second, there are anticipations about *future actions of the economic unit* for which he speaks, such as the scheduling of the use of materials and equipment in its possession. The first class of anticipations are perhaps best termed *market anticipations* or *forecasts*; the second, *intentions* or plans. Close to the border of the two classes are anticipations which hinge on the interaction of the economic unit and its environment—for example, forecasts of the inventory of finished products, which reflect both output and price decisions and customers' demand.

In static economic models we often picture decisions as depending solely on the situation at the moment of decision—a firm's plant, staff, and inventory as they have developed cumulatively through past transactions, and its current rate of sales. To use the models for the analysis of change we divide time into "periods," and treat each period's events as setting the stage for the next. But in a world where many decisions will have results that run through many future periods, and where people making such forward-looking decisions are well aware of the processes of change, it is often more appropriate to view decisions as depending on the expected future behavior of the environment. Then the interesting question about a reported anticipation will be not so much whether it correctly

[7] For a classification of expectations see the *Reports of the Federal Reserve Consultant Committees.*

pictures what is going to happen as whether it correctly pictures what the decision makers involved think will happen.

When we think of what decisions can be registered by finding out about intentions, we realize that intentions may be more or less conditional. At the extreme of unconditional decisions, we have *commitments*, such as signed construction contracts on which orders to execute a decision have been issued and which can be altered only by a rare kind of emergency action that reverses an action already going on. Orders to execute are also issued on matters which an economic unit cannot settle unilaterally. For example, a firm often sets a selling price and instructs its agents to sell all they can at that price; the price can be regarded as an intention, but sales under it can only be forecast.

On beyond the commitments for the near future which must be made at once to carry on business, an economic unit commonly has long-range *plans*. To frame plans is also a form of decision. But next year's intended actions need not be embodied in immediate orders to execute, and the eventual action may in the end diverge sharply from that now contemplated. A plan of this sort is like a body of guesses about what future course will be adopted *if* anticipations do not change significantly before the intentions involved must solidify into commitments. The fact that such a plan will in all probability never be executed without major amendments does not make it useless for understanding the actual decisions, however. Long-range plans give orientation to current actions—for instance, a railroad would be foolish to commit itself to new rolling stock unless it could look forward to maintaining its line in usable condition. Any action which is more than a reflex can be made sense of only as a link in a chain of intended actions, even though the later links are still to be forged.

Thus decisions are related to the expectations held by the economic unit through a *planning function*. Actions conditionally decided upon are related by a *realization function* to initial plans and to the later development of the conditioning factors (for example, sales in relation to plant and equipment installations in the second half of a budget year). Both functions can be studied in data on expectations.

Behind the two relations lies the problem how expectations are generated by experience through a relation we may call the *forecast function*. It is reasonable to suppose, as most dynamic theoretical models imply, that the forecasts which people report are based chiefly on extrapolations of relevant experience. But what experience they deem relevant, how they ordinarily combine the elements, and how far special occasions bring in special data or lead them to switch forecasting formulas are questions of fact, on which we can seek data through a study of anticipations data. The problem is not yet under control, but we seem to have reached the stage where it is standard procedure to scrutinize data for clues to the forecast function as well as to the planning and realization functions.

On one major area we so far have little concrete information. In principle, every expectation is held with some degree of uncertainty. It should be possible to ask people to state confidence limits for at least some estimates, or to tell us whether they ever adopt different "strategic assumptions" about a single variable for different planning problems in hand simultaneously, so as to play safe over a range of possibilities. This is an area which is wide open for future research.

Content of the Volume

Part I contains two papers whose authors look normatively at the planning process—working back from the problems to be decided into the forecasts needed for rational decision. Charles C. Holt opens his paper (itself an exercise in forecasting!) with a brief survey of past and present uses of forecasts and then discusses the impact of new decision methods on needs for forecasts (which prove to be stiffened in some ways, but relaxed in others). He concludes with a presentation of a concrete decision analysis and its specific forecast requirements. Henri Theil considers forecasting in its relation to government policy-making. He presents an analysis of the accuracy of the Dutch model predictions (both conditional and unconditional), which is followed by a section, mainly theoretical, on the problem of governmental decisions based on econometric models.

In Part II are the papers which focus most sharply on the formation of expectations. George Katona brings to bear cross-lights from psychology plus the insights of a research team who have firsthand experience with several types of expectation surveys. Robert Ferber illustrates the strengths and difficulties of comparing bodies of evidence, and Albert G. Hart, those of a check from internal evidence. Broadly speaking, the papers confirm our advance impression that relatively simple extrapolation patterns "explain" a large part of the variance of expectations. Katona makes it plain that "general economic conditions" as well as personal experience with the variable to be forecast have a marked influence on respondents, and Hart suggests that extrapolation of recent levels and rates of change leaves an "unexplained" residue which contains an appreciable part of the predictive value of expectations.

Part III is devoted primarily to reports on series not previously available for systematic professional scrutiny. F. Thomas Juster and Morris Cohen, in particular, report on the first stages of research enterprises which seem likely to yield valuable time series. James J. O'Leary, on the other hand, offers a rather tantalizing glimpse into a body of data which seems fairly well established as a continuing series but so derived that it is hard to publish results.

Part IV brings together reviews of series already scrutinized at earlier

conferences but so important that review should be fairly continuous. Arthur Okun's paper comes last because its central emphasis on combining expectational indications with each other and with related data makes it an effective review of almost the entire field of the conference.

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