

# EDITORIAL

For half a century econometrics has prospered under the dominion of the Econometric Society. During this time, the subject and its community of scholars have evolved and multiplied at a rate that must surely surpass even the most optimistic projections entertained by its founding fathers. The last decade has witnessed the most rapid and the most far-reaching developments, particularly in theoretical econometric research. Econometricians who are active in the front line of research see the frontiers of the subject expanding and deepening at an unprecedented rate. For the econometrics profession at large, there can be no doubt that this is a period of spectacular development, a period when there is much for each of us to contribute and much more for each of us to learn. The challenge that we now face as a community is to respond constructively to the forces of change that are upon us. It is especially important that we provide for the evolution of subject matter that is taking place at the theoretical level. Equally, we must encourage the rising generation of young econometricians whose technical skills hold great promise for the future development of our subject. We must also respect the growing area of productive contact that we have with other scientific disciplines; and we must welcome into an enlarged fellowship of scientists colleagues from outside our own discipline who are working on related problems.

To meet the challenge presented by these forces of change this new journal has been established. Its name is *Econometric Theory (ET)*, and its central focus is theoretical research. *ET* will be published three times a year in the months of April, August, and December. This is the inaugural issue.

The forces of change that led to the foundation of *ET* now shape the editorial policy of the journal. Its most general goal is to endow econometrics with an innovative and authoritative journal dedicated to advancing theoretical research. More specifically, the editorial policy of *ET* is translated into the following explicit objectives:

1. To publish original research of high quality in the field of econometric theory.

In recent years there has been a great flowering of mathematical sophistication in econometrics. Generality at many different levels has begun to characterize theoretical research in econometrics; and the statistical and probabilistic underpinnings of the subject have deepened and matured. Students of quantitative economics now find the intellectual challenges of econometric theory at least as exciting and as rich in mathematical elegance as those of mathematical economics. Many of the new researchers in the field have a high level of mathematical skill, which is reflected in the technical

## 2 EDITORIAL

quality of their work and the confidence with which they tackle new and difficult problems. This new generation of econometricians is already moving into the vanguard of the subject, questioning and deepening its foundations, generalizing earlier results in productive ways, and devising new tools of econometric research. But there is much work to do. At each point on the frontier, unsolved problems seem to challenge our progress from virtually every direction. Often the conjunction and succession of several powerful minds is needed to carry the analysis through to the next level. A primary objective of *ET* is to support and to stimulate these theoretical research endeavors in econometrics.

2. To support innovative theoretical developments in econometrics for which the time horizon of empirical application may seem to be long-term.

In a certain fundamental sense, it may be argued that mathematics, at least as we presently know it, is too weak a language to deal adequately with many of the problems that confront us in econometrics (and, for that matter, more generally in economics). According to this view, only as our mathematical language becomes more powerful will it be possible for certain conceptualizations of economic activity to find appropriate expression in mathematical form. An example from physics may help to illustrate this point. It is possible to explain to a layman the conceptual framework and some of the conclusions of the general theory of relativity. Yet without the mathematics of tensor calculus and Riemannian geometry, the theory would not have been articulated in mathematical form by Einstein in the early years of this century. More particularly, it is certain that the development of tensor calculus by Ricci in the final years of the nineteenth century helped enormously in realizing the achievement of the theory of relativity. It does not seem unreasonable to expect similar considerations to apply in the study of economic (and more generally, socioeconomic) activity. From this perspective, theoretical research endeavor in econometrics takes on a new significance, one in which the value of the research should not be assessed in terms of the apparent time horizon of its empirical application.

Unfortunately, access to the established quantitative journals in economics often tends to be limited by issues of relevance and immediate payoff. For this reason, *ET* will provide a receptive arena for innovative theoretical econometric research whose application potential is on a longer time horizon. Specifically, high-quality technical research will be published in *ET* without having to demonstrate immediate payoff in terms of applications. Such publication decisions can be made, recognizing that applied investigations that are opened up by the theoretical work already have a wide choice of professional research outlets. In this way *ET* will work to enhance the productivity of econometric theory and support its complementary role in empirical research.

3. To foster the multidisciplinary features of econometrics that extend beyond the subject of economics.

The growth in size and in mathematical sophistication of econometrics in recent years has led to a substantial increase in the extent of the productive contact that our subject has with other scientific disciplines. Most notable among these are mathematical statistics, probability theory, control engineering, and applied mathematics. Theoretical developments in econometrics now draw on a wide theatre of research in these and other scientific disciplines. Considerable theoretical research activity (and applications potential) in econometrics now manifests itself in major statistical fields such as time series, multivariate analysis, nonparametric methods, Bayesian statistics, robustness and nonlinear modeling, to name some of those that are currently the most significant. This broadening of disciplinary contact brings with it an important addition to the author and audience constituency of econometric research. A major objective of *ET* is to foster these multidisciplinary features of econometrics. Our purpose is twofold: to strengthen lines of communication between scientists who are working in these complementary fields and to sharpen the awareness amongst econometricians of modern research developments in sister disciplines that bear on work in their own field. This dual purpose is being actively promoted through the structure of our multidisciplinary editorial board and under the auspices of our advisory board of distinguished econometricians and statisticians. Together we encourage contributions from related scientific disciplines which exposit methodological and technical advances that seem to offer potential in econometric research. It is our hope that such contributions will work toward the productive exchange of ideas from which each of the disciplines will prosper.

4. To serve an educational role in econometrics.

The time is ripe for the econometrics community to concern itself publicly with the problem of education. At the departmental level in many universities and institutes of higher education, a good deal of faculty time is spent in the discussion of course planning, curricula, and methods of assessment in econometrics. Most departments of economics now offer both undergraduate and graduate sequences in econometrics involving many different courses and several faculty members. These courses are in a constant state of change in response to the natural evolution of the subject and the needs imposed by related economics courses in the general curriculum. Moreover, with the growth of microcomputing and microsoftware packages in econometrics, the style of instruction and the computational content of econometrics teaching are certain to change. To promote the role of education in econometrics and to facilitate the interchange of ideas on this important topic, *ET* encourages the submission of pedagogical papers that deal explicitly with educational

#### 4 EDITORIAL

issues and discuss new approaches to the teaching of econometrics. *ET* will also publish student exercises and research level problems in a “Problems and Solutions Series.” More details about this particular series is given in the Editorial Note that appears later in this issue.

5. To publish historical studies on the evolution of econometric thought and on the subject’s early scholars.

In its present stage of evolution, the subject of econometrics is still visibly rooted in the historical tradition that slowly took shape in the early years of this century, which gained definite form in the work of Frisch and Tinbergen in the 1930s and crystallized in the studies of Haavelmo and the research of the Cowles Commission during the 1940s, the latter very largely under the inspiration of Marschak and Koopmans. Many of us have much to learn from this historical tradition and from the talents, concerns, and achievements of these forerunners of present day econometrics. Happily, this field of research in the history of thought is now under development. In support of this field, *ET* wishes to encourage the publication of articles that explore the nature of this historical tradition, examine the evolution of econometric thought from its foundation research, and study the subject’s early scholars. Contributions in each of these areas are welcomed.

6. To publish high-level professional interviews with leading econometricians.

Commencing with this issue, *ET* will publish the transcripts of high-level professional interviews with some of the subject’s leading scholars. These in-depth interviews will offer the opportunity of a wide ranging personal commentary on major schools of thought and reveal individual insights into the evolution and the present state of econometric research. Through these interviews the econometrics community will be able to learn more about the human side of research discovery and come to understand the genesis of the subject’s main ideas from some of its finest minds. Most particularly, those readers who have not had the benefit of personal contact with some of our leading econometricians may now have the opportunity to hear their voices, not only on matters concerned with their own research, but also on their intellectual background and influences and on their methods of teaching and research. It is hoped that these interviews will awaken an intellectual excitement in new and prospective generations of econometricians and will encourage them to make the fullest use of their own talents.

The criteria of acceptance of manuscripts for publication in *ET* have been set to meet the preceding objectives. In particular, the criteria emphasize significant theoretical work that opens up new and interesting areas of econometric research. Articles which unify earlier work either in productive ways or by the use of more elegant methods will also be favored by the Journal.

Expository articles of high quality that impart useful technical machinery from other disciplines and demonstrate their application to econometric problems will have excellent prospects of publication. In all cases, articles that display constructive, original, and rigorous thinking within the field of econometric theory will be sympathetically reviewed by the Journal.

Contributions in all of the areas discussed here are now welcomed. Contributors are asked to consult the inside back cover of the Journal for details concerning the submission procedure and form for manuscripts.

Much work has been done since the conception of this new publication. I am honored and fortunate to have the support of the prominent scientists from the econometrics and statistics communities who form the Journal's advisory board, to have the assistance of a most talented editorial committee in the running of the Journal, and to have the services of an editorial board of outstanding scholars from many complementary fields whose specialist knowledge is vital to the process of editorial review. I thank all members of our boards for the work they have done, as well as those specialist external referees whose professional assistance we have already solicited.

As founder and the editor of *Econometric Theory*, I have long been enthusiastic about the role that it can play in our research and teaching communities. As an outlet for professional research, this Journal is the servant of subject, author, and audience. Its momentum springs from your creative energy and from our common need for scientific intercourse. I invite all of you to take an active part in the realization of our goals through your research contributions, your professional services, and your combined support of this venture. I am privileged to present to you this first issue of *Econometric Theory*.

*Peter C. B. Phillips*