
PREFACE

This volume brings together four of my papers that developed longitudinal econometric methods in early part of my career and 23 applications addressing problems of food, nutrition and health in developing and developed countries. It may seem unusual to begin one's career in theoretical econometrics developing statistical tests and estimation methods and then apply them to resolve rather technical biomedical issues in food sciences and population health. The applied papers were published in diverse journals in economics, statistics, nutrition, psychology, anthropology, demography and public health. Thus, the main purpose in putting these papers into a single volume is that most libraries do not subscribe to all the journals and, perhaps more importantly, there are clear connections between the themes covered in the papers. However, it may be somewhat difficult for the reader to see the inter-connections and the introductory Chapter 1, therefore, outlines the links. The papers are organized into six broad themes i.e. econometric methodology, food intakes and health and productivity in developing countries, child health and cognitive development in developing countries, effects of population health on economic growth, economic demography in developing countries, and diet and obesity in developed countries such as the U.S.

I would like to briefly describe the evolution of my research interests since many economists were surprised with my switch to biomedical sciences and public health. From 1979–1983, I worked with Professor J.D. Sargan, at the London School of Economics, who had a sound intuition for mathematical concepts. He was a very modest person and one of the few truly introverted economists that I have come across. Econometrics to him was a quasi inter-disciplinary subject covering statistical theory, estimation methods and advanced computational techniques to address economic policy issues. In a sense, I tried to follow his approach in the early part of my career. However, in 1988, I encountered a policy debate concerned with the effects of rises in household incomes on the way individuals nourish themselves in developing countries such as India. It struck me that economists are often unfamiliar with nutritional sciences though are not shy about invoking simplifying assumptions that can be at variance with the knowledge in biomedical sciences. Even in the behavioral field, psychologists have reservations about economists' assumptions concerning human behavior. I outlined some of these issues in an editorial in the *Journal of Econometrics* (Bhargava, 1997) and received strong encouragement from Professor Herbert Simon who was a well-known economist and psychologist. Despite the current popularity of randomized controlled experiments in economics, it remains to be seen if the micro-economics literature will gradually begin to rely on scientifically acceptable assumptions.

A stark contrast between the research in econometrics and applied health sciences is that while economists spend much time developing complex estimation techniques, health scientists are more concerned with measurement issues and the design of surveys. The contrast is more striking in research analyzing aggregate time series where I began my career developing tests for "unit roots". An inordinate effort is spent devising alternative statistical methods for time series though there have been few significant improvements in data collection methods or in compiling disaggregated measures of economic activity that may afford closer links between economic theory and data analyses. By contrast, the data from numerous carefully designed longitudinal studies are available in food and health sciences and knowledge of the scientific issues can greatly strengthen the formulation and

estimation of models for health outcomes. While bio-statistical literature is often available in health sciences, there is a division of labor between biomedical scientists and statisticians. Although some specialization is inevitable, it is difficult for biomedical scientists to visualize how their knowledge can be used to extract further information from the data that have been painstakingly compiled. The main objective of my research in the last two decades has been to fill this gap especially since there are urgent problems of malnutrition and ill health affecting billions of inhabitants in developing countries.

There are, of course, many hindrances in making a career switch in the competitive environments existing in academia. The peer review system can hamper the transition unless the editors of leading journals take independent and critical views of the research in their fields. The existence of such editors in biological sciences is assured by the fact that even in the most scientific disciplines, empirical results depend on the relationships postulated for the variables and hence there is scope for misinterpreting the results. This spirit is less common in social sciences where conceptually weak paradigms can sometimes dominate the research for decades. My transition into biomedical sciences was facilitated by editors who accepted my papers often on controversial issues. I was also fortunate to have the benefit of criticisms from eminent nutritionists like Nevin Scrimshaw whose main goal has been to improve the nutritional well-being of individuals in developing countries. My former teachers from the London School of Economics, Partha Dasgupta, Terence Gorman, David Hendry and Amartya Sen have encouraged me to address pressing problems such as hunger, population, AIDS, and obesity. I would also like to thank Tony Atkinson, Howdy Bouis, Bob Fogel, Jerry Hausman, Jim Heckman, Peter Hogfeldt, Dan McFadden, and Martin Ravallion for their encouragement.

Lastly, on a personal note, there are things about our personalities and motivations that are largely inexplicable. The psychologist Carl Jung, for example, revived the ancient Indian notion of “maya” (or illusion) arguing that the unconscious mind drives many of our conscious behaviors (Jung, 1961). I was fortunate in having the support of my parents in the early years to create a carefree inner world that allowed me to mull over abstract concepts. I think that there is an asymmetry in human development in that we seek to know our children consciously but the relationships with our parents are driven by unconscious forces. So, while I consciously learnt the classical theories of Piaget (1977) and Vygotsky (1987) for improving the specification of models for children’s cognitive development, I suspect that most of my work has been an unconscious tribute to the love and affection that I received from my parents. I became conscious of this phenomenon when my father suddenly passed away on 19 January 1999 leaving a vacuum in my life that no amount of research is likely to fill. Of course, my wife and children have helped me in many ways over the past several years.

References

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