Journal of Econometrics 145 (2008) 1–3

Contents lists available at ScienceDirect

Journal of Econometrics

journal homepage: www.elsevier.com/locate/jeconom

Editorial

Special issue editors' introduction: The use of econometrics in informing public policy makers

Some years ago we thought there was a place for a Special Issue of the Journal of Econometrics that highlighted new econometric methods which were linked to substantive empirical applications that inform the makers of domestic and international public policy. In short, we proposed a Special Issue on "The Use of Econometrics in Informing Public Policy Makers".

There can be no doubt of the importance of econometric research and analysis to governments and to those who provide leadership in the development and design of public policy. Its usefulness stems from a methodology based on the mathematical modeling of strategic relations and the quantification of parameters of interest using statistical techniques. This methodology was pioneered by Ragnar Frisch and Jan Tinbergen and their contributions were recognized in 1969 when they were jointly awarded the first Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel.

The appeal of Frisch and Tinbergen's work to a new generation of econometricians in a new millennium is compelling and provides motivation for the topics in this Special Issue. This Issue brings together the works of a number of leading empirical and applied scholars whose research focuses on the interplay between the development and implementation of sophisticated econometric methodologies and their use in putting forth public policy recommendations. The papers contained in this volume speak to the important role of econometrics in informing public policy makers that Ragnar Frisch and Jan Tinbergen championed during 20th century. A short overview of the research contributed to this Special Issue follows.

The growth in the numbers receiving Disability Insurance and the associated cost, in terms of direct benefit payments and entitlements under the Medicare and Medicaid programs, has drawn the attention of policy makers and researchers alike. Kajal Lahiri (University at Albany-SUNY), Jae G. Song (Social Security Administration), and Bernard Wixon (Social Security Administration) examine the economic decision to apply for Disability Insurance (DI). Amongst their key findings is that the elasticity of the probability of applying for DI with respect to benefit size is small, suggesting the extraordinary growth in DI enrollment cannot be attributed to benefit levels. On the other hand, they find that medical factors play a large role in the application decision and that the availability of Medicare benefits significantly increases the probability of applying for DI.

Wilbert van der Klaauw (Federal Reserve Bank of New York) and Kenneth I. Wolpin (University of Pennsylvania) estimate a model of retirement and consumption that incorporates social security rules, borrowing constraints, uncertain health and Medicare and employer-provided health coverage. They use their estimated model to simulate the impact of plausible policy options for relieving budgetary pressures placed on Social Security by the retirement of the baby boomers. Their results indicate that both labor supply and savings decisions play important roles in mitigating the welfare impacts of the potential reforms they consider. For example, for all such measures considered, their model predicts a sharp increase in the average annual hours worked by 62–69 year olds. Their findings illustrate the tradeoffs faced by policy makers in terms of balancing consumer losses against the need to finance Social Security.

The rising costs of health care and the issue of health insurance are the policy issues motivating the paper by Mathew Dey (Bureau of Labor Statistics) and Christopher Flinn (New York University). The authors provide a new method for estimating and interpreting the household's implicit valuation of health insurance coverage using a dynamic framework in which long run household welfare is maximized. Their estimates clearly demonstrate that the usual "marginal willingness to pay" for health insurance estimates found in the literature are flawed because they fail to account for its household-level nature. The model developed by Dey and Flinn is a useful starting point for providing better information on the costs and benefits of health insurance, which is a necessary step for accurately evaluating health care reform options.

The program evaluation literature has become an important tool for policy makers. This literature typically focuses on the mean impact of the program or policy being evaluated on those affected by it. The contribution of Habiba Djebbari (Université Laval, IZA and CIRPÉE) and Jeffrey Smith (University of Michigan, NBER) is in providing a template for analyses when there is variation in the impact of the policy across groups and the object of interest is the distribution of impacts of treatment. The authors demonstrate these methods using data from the experimental evaluation of the Mexican conditional cash transfer program, PROGRESSA. The heterogeneous effects approach is particularly relevant to policy makers who wish to target programs to those groups for whom the gains are the greatest.

The nature of youth unemployment, evaluating policies that seek to reduce unemployment among welfare recipients, and measuring the cost of being laid off are issues addressed in the papers contributed by the next three papers whose authors are: Denise Doiron (University of New South Wales) and Tue Gørgens (Australian National University); Cheng Hsiao (University of Southern California), Yan Shen (China Center for Economic Research), Boqing Wang (Washington State Department of Social and Health Services), and Greg Weeks (Washington State Employment Security Department); and Martin Browning (University of Oxford and IFS) and Thomas F. Crossley (University

0304-4076/$ – see front matter
doi:10.1016/j.jeconom.2008.05.016

of Cambridge, McMaster University and IFS). The paper by Denise Doiron and Tue Gørgens is motivated by the disappointing effects of active labor market policies targeting youth. To better understand the poor performance of these policies the authors investigate the nature and extent of a causal relationship between past labor market experiences and future outcomes. Their findings suggest that while past employment spells increase the probability of future employment for youth, past spells of unemployment raise the probability of future unemployment. No evidence is found that the duration of employment or unemployment spells matter for youth. A job search initiative targeting prime age female recipients of welfare is studied by Cheng Hsiao, Yan Shen, Boqing Wang, and Greg Weeks. Specifically, they use non-experimental data to evaluate the effect on employment of Job Search Services (JSS), a program designed to improve job search skills and outcomes. A key feature of JSS is that it potentially involves repeated treatments in that welfare recipients may be required to undertake more than one type of Job Search program. Given the cost of the JSS program, the question of whether repeated treatment is more effective than a single treatment is of key interest to policy makers. The authors find that while the initial treatment of JSS increases the probability of employment, subsequent treatments do not. The paper by Martin Browning and Thomas F. Crossley takes a novel approach to calculating the losses suffered by workers who are permanently laid off when the plant they are working at closes. They use a consumption based method to measure the long run impact of displacement from a job. Their results suggest that, on average, a job loss is equivalent to loosing two years of normal consumption growth.

Improving student outcomes is the topic of the papers by Leslie E. Papke (Michigan State University) and Jeffrey M. Wooldridge (Michigan State University) and by Trevor Collier (Southern Methodist University) and Daniel L. Millimet (Southern Methodist University). Papke and Wooldridge develop a new estimator for fractional response models in order to study the relationship between district level spending on education and the pass rate for the 4th grade math test in Michigan. Using a variety of models and estimation techniques, the authors find robust evidence that increasing the average real spending on education raises the pass rate on the math test. Their estimates suggest that a 10% increase in average education expenditure increases the pass rate on average in the range of three to six percentage points. The ability of policy makers to improve student outcomes through increased competition among public schools is the subject of Trevor Collier and Daniel Millimet's paper. The authors find robust evidence that pubic school districts become more efficient in response to increased efficiency in neighboring districts.

Another issue associated with substantial economic and social cost is crime. While most economic studies of crime tend to focus on the impact of deterrence based strategies, Robin C. Sickles (Rice University) and Jennifer Williams (University of Melbourne) introduce social capital to capture the stigma of arrest and allow for the potential for prevention based strategies. Their results suggest that while criminal youth do respond to deterrence, they are more responsive to investments in the stock of social capital, particularly to investments made early in life.

The sources of productivity growth and business cycles in an economy and the impact of regional trade agreements on foreign direct investment are studied by W. Erwin Diewert (University of British Columbia) and Kevin J. Fox (University of New South Wales), and by Badi H. Baltagi (Syracuse University), Peter Egger (University of Munich and CESifo), and Michael Pfaffermayr (University of Innsbruck). In studying productivity growth within an economy, Diewert and Fox develop a model which allows productivity growth to be decomposed into contributions from returns to scale and technological progress. Consistent with a growing body of research, their results suggest a large role for increasing returns to scale in explaining US growth, and a comparatively smaller role for technological progress. Baltagi, Egger and Pfaffermayr examine the impact of the Europe Agreements (a set of regional trade agreements designed to liberalize trade between Economic Union (EU) member countries and the Central and Eastern European countries that had applied for EU membership) on foreign direct investment (FDI). The authors find that the regional trade agreements studied have resulted in a relocation of FDI from Western European countries to Central and Eastern European countries. This suggests welfare analysis of trade liberalization should consider costs and benefits of movements in factors of production via foreign direct investment in addition to the effects on trade in goods and services.

Government agencies are under continuous public scrutiny. Measuring the performance of public entities and understanding the changing nature of demand for their services are the subjects of the papers by and David C. Wheelock (Federal Reserve Bank of St. Louis) and Paul W. Wilson (Clemson University), and Seung-Hyun Hong (University of Illinois) and Frank A. Wolak (Stanford University). A methodology that could assist government agencies in identifying inefficiencies and best practices across its offices is developed by Wheelock and Wilson. The ability of their methodology to identify relevant "peers" for each decision making unit is a particularly useful innovation, allowing policy makers to identify operations that exhibit best practice. They demonstrate their methodology by investigating the technical efficiency of the Federal Reserve check processing operations. The changing nature of household demand for postal services provided by the USPS is studied by Hong and Wolak. They find that the household demand for postal services is price elastic, implying that increases in the price of postal services decreases revenue from the household sector. They also find that the adverse affects on revenues from recent increases in the price of postal services has been exacerbated by the growing penetration of personal computing technology and the declining cost of telephone services, both of which provide substitutes for the services provided by the USPS.

The paper by Sungjin Cho (Hanyang University) and John Rust (University of Maryland) provides a point of contrast with the other papers in this Special Issue by illustrating the use of econometrics as a tool to improve policies chosen by *private* policy makers. The authors point out that while assessing the benefits from using econometric models to aid decision making in public policy applications is complicated because the outcomes of interest are typically subjective, such as "social welfare", in the case of private policy making by firms the outcome of interest is profits. This easily quantifiable and objective criteria makes judging whether policy A is better than policy B a straightforward exercise. Thus, Cho and Rust argue that one of the most convincing demonstrations of the value of econometric models is to show how they can be used to help firms find more profitable operating policies. They do just this in a case study of the vehicle replacement policy of a large rental car company. Their model predicts that the company under analysis could significantly increase its profits by keeping its rental cars longer than is its current practice. The company undertook an experiment to verify the predictions of the model and found that indeed their profits were increased in locations where the Cho and Rust recommendations were carried out.

In order for the policy recommendations to be transparent to policy makers who may find the econometric methodologies somewhat opaque, the authors have provided an executive summary of the paper's policy findings.

Acknowledgements

We are indebted to the Rice University James A. Baker III Institute for Public Policy and the Microeconometrics Center, University of Melbourne for providing the bulk of financial support for a workshop held at Rice University in April 2006 that helped bring form to this Special Issue. We would also like to thank the Co-Editors of the Journal of Econometrics, especially Cheng Hsiao who was the liaising Co-Editor on this Special Annals Issue, for supporting the idea behind this volume, as well as to the referees for their very helpful and productive comments, which greatly improved the quality of the contributions contained in the following pages.

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Available online 25 June 2008

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