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Preface to the papers on 'health econometrics'

This issue features a selection of papers presented at the Fourth Health Econometrics Workshop held on July 18th–20th, 2014, at the University of Padua (Italy). The workshop was funded and organized by the Inter-University Research Centre on Public Services at the University of Milan Bicocca (Italy), University of Bergamo and Brunel University London (UK), in conjunction with the University of Padua (Italy) that acted as the local organizer of the event. In the spirit of initiatives such as the Annual Health Econometrics Workshop and the European Workshop on Econometrics and Health Economics, this biannual meeting provides a forum where policy makers, economists and econometricians discuss the use of statistical and econometric methods to address concerns in health economics. This issue includes four of the contributions presented which went through the usual refereeing process of the journal.

More than 15 years ago, Jones (2000) documented the breadth of econometric methods that are used in health economics. Similarly, the papers that are presented in this issue utilize a variety of techniques. These include parametric methods such as difference in differences, multilevel modelling, the fitting of unordered multinomial data, comparisons of parametric and non-parametric regression discontinuity designs and modelling of positive long-tailed distributions. Although the applications that are presented are in the area of health economics, the associated methods may be applicable to other areas.

Summary of the papers

In 1990, in common with several European countries, Italy adopted a quasi-market healthcare model, with a system based on diagnostically related groups with national health tariffs, allowing regions to opt out from the national regime and to decide their own tariffs. The implementation of region-specific tariffs is part of a gradual process in which the Italian National Health Service has been transferring the responsibilities of financing and managing healthcare services from the central system to the regions. Exploiting differences across regions in the adoption of tariffs, Cappellari, De Paoli and Turati study the effect of the introduction of market incentives via a fixed price payment system, on individual self-assessed health and on health services utilization. Using survey data for 20000 households in Italy followed over the years 1993–2007, they find that the introduction of region-specific diagnosis-related group tariffs has no effect on the health of people, while observing a decline in the utilization of publicly provided health services.

Among the Italian regions, Lombardy has been the first to implement the 1997 regional health reform, which is an innovative healthcare model to give patients increased freedom to choose between health providers to stimulate competition between hospitals. Berta, Martini, Moscone and Vittadini study the effect of competition between hospitals on hospital quality, proxied by hospital level health outcomes. Using data on over 194000 patients admitted to any of the 126 hospitals in the Lombardy region in 2012, they find no association between hospital competition and quality. They argue that this may be in part the result of asymmetric information, as well as the difficulty in finding reliable quality indicators in this strand of literature.

Koch and Racine examine the effect of user-fee abolition on healthcare facility choice by using individual level data from South Africa. Patients have three alternatives when falling ill—

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home care, private care and public care. Although the reform has probably increased the use of public care, it is important to find out what type of care has been substituted. They expand a regression discontinuity design to unordered multinomial data, both parametrically and non-parametrically. When adopting the non-parametric framework, they find that user fee abolition increases access to healthcare overall and reduces home care. Under the parametric setting, they find that the increase in public care is primarily driven by reductions in private care, as well as home care.

Finally, Jones, Lomas, Moore and Rice model in-patient healthcare costs, the distribution of which has properties that make them challenging to model: large numbers of 0s, with positive skewness and leptokurtosis. Using administrative data on hospital in-patients for England, they conduct a quasi-Monte-Carlo comparison of 16 semiparametric and fully parametric regression methods. They suggest that a linear regression with a square-root-transformed response variable is the best model in terms of bias, and the generalized linear model with square-root link function and Poisson distribution is the best in terms of goodness of fit. The study also shows that the widely adopted regression model with log-link performs poorly relatively to other models.

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Reference

Jones, A. M. (2000) Health econometrics. In *Handbook of Health Economics*, vol. 1 (eds A. J. Culyer and J. P. Newhouse), pp. 265–344. Amsterdam: Elsevier.

A. Chevalier, F. Moscone and J. Mullahy
Guest Associate Editors