

Econometric analysis of private medicines expenditure in Portugal – dealing with excess of zeros

Mónica Inês¹, Filipa Duarte-Ramos² and Nicoletta Rosati³

1- University of Lisbon, Faculty of Medicine, Instituto de Medicina Molecular, Avenida Prof. Egas Moniz, 1649-028 Lisbon, Portugal

2- University of Lisbon, Faculty of Pharmacy, Departamento de Sódio Farmácia, Avenida Professor Gama Pinto, 1649-003 Lisbon, Portugal

3- University of Lisbon, Lisbon School of Economics and Management, and CEMAPRE, Rua do Quelhas 6, 1200-781 Lisbon, Portugal

Correspondence author:

Mónica Inês

Instituto de Medicina Molecular

Faculdade de Medicina

Universidade de Lisboa

Av. Prof. Egas Moniz,

1649-028 Lisbon,

Portugal

Tel. (+351) 932964225

E-mail monica.s.ines@gmail.com

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ABSTRACT

Objectives: Evaluate equity issues testing for the association of non need variables with private medicines expenditure. Develop an econometric model that could deal with the high proportion of individuals reporting zero expenditure and the different nature of these zeros. *Methods:* This study uses data from two waves of National Health Survey (1995/1996 and 1998/1999) that could be merged. A two-part model (2PM) was adopted. To model the probability of occurrence of medicines private expenditure, a modified logit model was specified accounting for the double nature of the zeros of the dependent variable and asymmetry. In the second part a Poisson pseudo maximum likelihood estimator was adopted. No misspecification was detected in the two-part model. *Results:* The main results showed inequity in Portuguese private medicines expenditures with respect to supplementary health insurance (private and job related), income and pharmacies density. *Conclusions:* Models that account for excess of zeros like the 2PM that we developed have to be used in order to obtain a robust and reliable analysis of private medicines expenditure in Portugal.

Keywords: Portuguese National Health Survey, Medicines, Expenditure, Two-part model, Poisson pseudo maximum likelihood estimator