

**Reference pricing in the presence of pseudo-generics**Ricardo Gonçalves<sup>1</sup>, Vasco Rodrigues<sup>1</sup>, Hélder Vasconcelos<sup>1</sup><sup>1</sup> Faculdade de Economia e Gestão, Universidade Católica Portuguesa(Porto), Porto, PORTUGALContact: [rgoncalves@porto.ucp.pt](mailto:rgoncalves@porto.ucp.pt)

**Objectivos (Objectives):** As the patents of branded pharmaceuticals expire, generic competition becomes possible. The producers of the branded pharmaceutical can also market a generic version of their branded product, commonly known as pseudo-generics. Because such a strategy appears, at first sight, to be unprofitable - generics typically have a much lower price than the branded pharmaceutical and, thus, selling pseudo-generics could significantly reduce profit margins - Rodrigues, Gonçalves and Vasconcelos (2011) analyse the potential for anticompetitive effects associated with the presence of pseudo-generics in pharmaceutical markets. Our objective is to extend the analysis of Rodrigues et al. (2011) by considering a setting where a reimbursement mechanism is in place, i.e. where the consumer does not bear the full price of pharmaceutical products.

**Metodologia (Methodology):** We incorporate into the model of Rodrigues et al. (2011) two widely adopted reimbursement mechanisms: fixed percentage reimbursement (FPR) mechanism and a reference pricing (RP) mechanism. Under a FPR mechanism, the consumer supports a fixed percentage (copayment rate) of the pharmaceutical's price, whilst the government (or other third-party payers) is responsible for financing the remainder. By contrast, under a RP mechanism, within each cluster of pharmaceuticals, the government's contribution towards the purchase of pharmaceuticals is calculated on the basis of a reference price.

**Resultados (Results):** We find that reference pricing, with or without the presence of pseudo-generics, leads to lower prices and higher consumer surplus than FPR mechanisms. It is particularly interesting to note that, under a FPR mechanism, pharmaceutical firms effectively receive a public subsidy but consumers do not benefit from lower (effective) prices. By contrast, under reference pricing, it is consumers who receive a public subsidy, which allows them to increase their consumer surplus. From a welfare perspective, we uncover the following results: (i) as mentioned, RP yields higher consumer surplus than FPR, but the difference between the two is shown to be larger when a pseudo-generic is present in the market; and (ii) RP is shown to be particularly advantageous when a pseudo-generic is present.

**Conclusões (Conclusions):** This paper extends the analysis of Rodrigues et al. (2011) by looking at two widely adopted reimbursement mechanisms: a fixed percentage reimbursement mechanism and a reference pricing mechanism. In particular, in a setting encompassing both vertical product differentiation (between branded and nonbranded pharmaceuticals) and horizontal product differentiation (between generics) a number of interesting results are uncovered. First, under either reimbursement mechanism, the results of Rodrigues et al. (2011) hold: the presence of a pseudo-generic raises the prices of all pharmaceuticals and can be used as a tool to soften competition between the branded and generic pharmaceutical producers. In addition, reference pricing is shown to bring about lower prices and thus higher consumer surplus than FPR mechanisms, but this effect is more significant when a pseudo-generic is present. Second, from a welfare perspective, our results are equivalent to those of Brekke et al. (2007): if firms' profits are excluded from the analysis - a public payer's welfare perspective in countries where the pharmaceutical industry is absent - reference pricing is also superior to FPR. Lastly, we further show that this difference is larger when a pseudogeneric is present, which implies that, in this case, adopting reference pricing would be particularly advantageous. Alternatively, if a pseudo-generic is present, this suggests a more pressing need for price regulation within a FPR mechanism.