

Ramsey Prices in the Italian Electricity Market.

Simona Bigerna and Carlo Andrea Bollino

Department of Economics, University of Perugia, 06123 Perugia, Italy (e-mail: carloandrea.bollino@unipg.it).

ABSTRACT

The main aim of this paper is to define an optimal design to determine zonal prices in an organized electricity market, using explicitly information on the demand side. Surprisingly, the literature of theoretical and empirical analysis of deregulated electricity markets has not taken into account this important side of the market, but it has rather focused the analysis on the zonal price differences arising on the supply side of the market.

In this paper, we derive optimal zonal prices in the Italian day ahead electricity market using estimation of a complete system of hourly demand in 2010-2011. We use ex ante individual bids expressed by heterogeneous consumers, which are distinguished by geographical zones. Using empirical estimation of heterogeneous consumer behavior, we compute zonal prices according to a Ramsey-type optimal scheme. This is a new result in the electricity market literature, as previous studies have analyzed zonal prices based only on line congestion. Results show that optimal pricing can improve welfare in the Italian market, with respect to both the existing uniform price scheme and the proposed zonal price scheme.