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THEORETICAL EXAMINATION OF INCENTIVES TO CROSS-SUBSIDISATION AMONG PUBLIC ENTERPRISES

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Overview

From a theoretical point of view this paper studies incentives to cross-subsidisation among combined heat and power producers (CHP). The CHP has monopoly on a local heat market but competes with other enterprises on a liberalised power market and the CHP is considered to be public enterprises. Claims of cross-subsidisation among public producers are common in many newspapers. In the theoretical literature on cross-subsidisation, incentives to this kind of behaviour are shown for private, regulated producers (Brenan (1991)). A regulation stating that the revenue from heat shall cover a weighted average between the stand-alone and incremental costs of producing heat is imposed on the CHP. We study two welfare effects of cross-subsidisation: misallocation of costs and distorted technological choice. By mathematical analyse it is shown that the CHP has an incentive to cross-subsidise both throughout misallocation of costs and distorted technological choice. Both theories of cross-subsidisation result in higher heating prices and lower power prices. With this kind of behaviour the public CHP engage in unfair competition in relation to its competitors on the power market.

Method

The paper makes use of theoretical, mathematical analyse. As mentioned above the previous literature studies incentives to cross subsidisation among private, regulated producers. It is reasonable to assume that private, regulated enterprises maximises profit. However, we assume that the CHP is a public producer. For public enterprises profit is often restricted by legislation. Therefore, the CHP must be modelled as having another objective than profit. Among the suggestions in the literature is maximisation of revenue (Sherman (1982)) and output (Lindsay (1976)). In this paper we study cross-subsidisation among a public, revenue maximising CHP.

Results

We show that a revenue maximising CHP has an incentive to cross-subsidising behaviour both throughout misallocation of costs and distorted technological choice. Both theories of cross-subsidisation result in higher heating prices. Note that this conclusion generalises to two other cases. First, the result regarding cross-subsidisation generalise to other objectives (for example output maximisation). Second, other regulatory designs than that the revenue shall cover a weighted average between stand-alone and incremental costs (for example marginal cost pricing) can be assumed without altering the main conclusions.

Conclusion

In this paper we show that public enterprises have an incentive to cross-subsidising behaviour. This incentive arises both throughout misallocation of costs and distorted technological choice. In this way the paper produce a novel contribution to the economic literature.