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A MODIFIED YARDSTICK COMPETITION MECHANISM

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Overview

This paper develops a simplified yardstick mechanism, which might facilitate the implementation of yardstick competition in practice. In fact, the seminal paper by Shleifer (1985) "A Theory of Yardstick Competition" has been followed by a large number of theoretical developments, but a relatively modest number of practical applications. Assuming that information requirements may be one obstacle to the implementation of yardstick competition, our mechanism is based on more easily available information: whereas traditional yardstick regulation requires information on marginal costs, in our model the regulator "only" needs to observe total costs and output of all firms within the competition mechanism. The modified yardstick competition mechanism (MYC) can assure a socially optimal outcome allowing for spatial and second degree price discrimination, without increasing the informational requirements.

Methods

We apply a traditional microeconomic theory approach of a welfare maximizing regulator, combined with several modifications of the basic model using game theory. The basic static model compares the information requirements of marginal-cost regulation with those of the one proposed in this paper. We find that the modified yardstick competition leads to a socially optimal allocation, a Nash-equilibrium which is symmetric and unique. We are also able to show that the modified yardstick competition mechanism will lead to socially optimal allocation in the case of spatial price discrimination.

The paper also develops a dynamic version of the model: we introduce a regulatory lag, whereby the (regulated) price depends on the observed cost in the previous period. We distinguish two types of behavior: i) myopic behavior by the regulated companies, and ii) firms with a long-run planning horizon maximizing their present value ("strategic behavior").

Results

We show that the modified yardstick competition mechanism replicates the social optimum as a Nash-equilibrium. In addition, the mechanism is based on an information set that seems to be more accessible for the regulatory authority than that of the traditional yardstick mechanism. Specifically, the regulatory authority needs not to separate total costs into fixed (capital) costs and variable costs. If the local monopolies are multi-product firms the regulatory agency does not need to know the true allocation of costs to customer groups.

If one takes regulatory lags into account, then in turns out, that the MYC-mechanism is approaching the optimal steady state slower than yardstick competition as introduced by Shleifer. As a result, a total assessment of both systems has to take into account the welfare effects during the transition path with total welfare in the steady state.

Conclusions

The modified yardstick mechanism developed in this paper has the clear advantage of reduced information requirements, and thus, a potential improvement over the current applications. This may be valuable to regulators trying to implement incentive regulation, and therefore leads perhaps to a more widespread use of the yardstick mechanism in practice.

References

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