

Signalling to the home policymaker

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June 12, 2008

Abstract

We consider two Cournot firms, one located in the home country and the other in the foreign country, producing substitute goods for consumption in a third country. The inverse demands in the third country are assumed to be linear and given by

$$p_A = a - bq_A - q_B,$$

$$p_B = a - q_A - bq_B,$$

where p_A and p_B are the per-unit prices of the goods produced, respectively, by the home and the foreign firms, when q_A units of home output and q_B units of foreign output are sold, and $a > 0$ and $b \geq 1$. We note that the two products are substitutes, and, since $b \geq 1$, "cross effects" are dominated by "own effects". Moreover, if $b = 1$, then the goods are homogeneous. At the beginning of period 1, the home government announces and commits to a period 1 per-unit output/export subsidy for the home firm. At this stage neither the home policymaker nor the foreign firm knows the costs of the firm. However, it is common knowledge that the

home firm's marginal costs are constant and either low, c_A^L , or high, c_A^H with $\text{Prob}(C_A = c_A^L) = \phi$. No uncertainty attaches to the marginal costs of the foreign firm and it is assumed that it is common knowledge, constant, and given by c_B . Given ϕ and the output subsidy, the two firms choose period 1 outputs to maximize profit. At the end of the first period, the foreign firm and the home policymaker observe the home firm's first-period output and use this information to update their probability assessments regarding the costs of the home firm. Let $\phi(q_{A,1})$ be the common updated probability assessment, where $q_{A,1}$ is the first-period output of the home firm. At the beginning of the second period, given its updated probability assessment, $\phi(q_{A,1})$, the policymaker announces and commits to a period 2 output subsidy for the home firm. Given this subsidy and the foreign firm's updated probability assessment, $\phi(q_{A,1})$, the two firms choose period 2 outputs to maximize profit.

We study the influences of the own prices effect on the demand and of the uncertainty on the production costs of the home firm in the signalling strategies by the home firm. We study the influence of a fine balance between the own prices effect and the uncertainty on the costs in the per-unit output subsidy to the home firm when we compare a signalling strategy with a misrepresent low-cost strategy.

Keywords: Signalling strategy; Substitute goods.

Mathematics Subject Classification: 91A10; 91A28; 91A80.

References

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