



## Reply

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Received 27 June 2002; accepted 12 July 2002

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Okajima is correct in arguing that there exists no separating equilibrium in the case of Bertrand competition considered by Qiu (1994). Although the conclusion stated in Proposition 3 by Qiu (1994) remains unchanged, the structure and analysis of Section 4 in Qiu (1994) should be reorganized as follows.

First, consider the necessary and sufficient condition for a separation-inducing menu. Following Okajima's analysis, we can establish a result similar to Lemma 2 by Qiu (1994):

**Lemma 3.** *The necessary and sufficient condition for a menu to induce separation is*

$$s_L - s_H \geq \frac{\gamma^2(c_H - c_L)}{2(2\beta^2 - \gamma^2)}.$$

Then, consider the optimal taxes  $(s_L, s_H)$  by ignoring the incentive-compatibility constraint (i.e., the inequality in Lemma 3). We find that

$$s_i^* = -\frac{\gamma^2}{4\beta^2(2\beta^2 - \gamma^2)}[\alpha(2\beta + \gamma) - (2\beta^2 - \gamma^2)c_i], \quad i = L, H.$$

Thus,  $s_L < s_H$ , that is, under complete information the government imposes a higher export tax on the lower cost firm. This violates Lemma 3, however. Therefore, it is optimal for the government to impose a uniform export tax on the

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firm, whether the firm is high-cost or low-cost.<sup>1</sup> Consequently, we need only to consider the uniform policy, or a pooling equilibrium. Hence, together with the analysis contained in the first half of Section 4 in Qiu (1994), we modify Proposition 3 as follows.

**Proposition 3.** *In the two-stage sequential game with asymmetric information and Bertrand competition, it is optimal to choose a uniform policy. The result is a pooling equilibrium.*

## References

- Cheng, L.K., Qiu, L.D., Wong, K.P., 2001. Anti-dumping measures as a tool of protectionism: a mechanism design approach. *Canadian Journal of Economics* 34 (3), 639–660.
- Guesnerie, R., Laffont, J.J., 1984. A complete solution to a class of principal-agent problems with an application to the control of a self-managed firm. *Journal of Public Economics* 34, 329–369.
- Qiu, L.D., 1994. Optimal strategic trade policy under asymmetric information. *Journal of International Economics* 36, 333–354.

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<sup>1</sup>This follows Guesnerie and Laffont (1984; Theorem 4). Cheng et al. (2001) also use this approach to derive optimal anti-dumping duties in the model with incomplete information.