

R0242686 (24)

Implications of Taxing Quota Value in an Individual Transferable Quota Fishery: Comment

R. QUENTIN GRAFTON
University of Ottawa

In a recent paper in this journal Johnson (1995) examines the effects of imposing resource rentals on fishers in an individual transferable quota (ITQ) fishery. He shows that a tax on quota values is not neutral if the marginal opportunity cost of fishing effort is increasing in effort and if fishers are able to influence the setting of the total allowable catch (TAC). Johnson uses this result to argue against a tax on quota value and asserts that such a tax would have a negative impact on the incentives of fishers to undertake cost-reducing activities. In his concluding remarks, he notes that it would seem equitable for fishers to pay for the cost of defining and policing ITQs. He suggests that the charges to cover these costs should be paid in the form of proportional lump sum fees based on the share of the TAC held by each fisher.

The paper demonstrates the complexities of rent capture in renewable resources—a topic that has been neglected in the literature. It is also one of the few papers to recognize the importance of fishers' influence on the setting of the TAC in ITQ fisheries. Nevertheless, the paper may leave the reader with the impression that the resource rent should be left with the industry and that fishers should contribute only to the costs of management through lump sum fees. The realities of fisheries management suggest that these conclusions may not be valid.

First and foremost, it should be realized that ITQs alone will not lead to a first-best outcome in the presence of in-season stock and congestion externalities (Boyce 1992). Lack of compliance with ITQ regulations, imperfect competition, information problems, and other factors also suggest that ITQs will not result in an efficient outcome (Grafton 1996). The important point, however, is that ITQs are a desirable instrument in fisheries management if they result in a superior situation to current practice or other management alternatives.

The same conclusion could be made in the context of collecting resource rents, namely, in a second-best world, rent capture may not result in an efficient outcome but the benefits of resource rentals may outweigh the costs. Grafton (1994) makes it clear that with heterogeneous fishers under uncertainty and an exogenous TAC, it may be desirable to use a method of rent capture that reduces the variance faced by fishers. An *ad valorem* royalty, profit and net cash flow charge reduce the output price uncertainty faced by fishers and can potentially increase the expected resource rent in the fishery. In contrast, a quota tax and an equal or proportional lump sum fee do not. In fact, with an exogenous TAC and for the same total amount of rent captured, a quota tax based upon a uniform quota price and a proportional lump sum fee impose identical burdens in terms of resource rentals paid by fishers. Thus, certain methods of rent capture may or may not reduce resource rents depending on the circumstances of the fishery, and in particular the heterogeneity of fishers, uncertainty, and fishers' influence on setting the TAC.

R. Quentin Grafton is assistant professor in the Department of Economics, University of Ottawa, P.O. Box 450, Station A, Ottawa, Ontario, Canada K1N 6N5; e-mail: qgrifton@uottawa.ca.

Johnson makes an important point that rent capture is predicated on the fact that quota holders only own a share of the resource flow from the fishery and do not own the resource stock. This attenuation of the property right also has implications beyond that of rent capture. If ITQs only provide a property right over the resource flow, quota holders are likely to have a greater share of the benefits relative to the share of the costs from not reducing TACs. This is analogous to a free rider problem which can lead to a higher than desirable total harvest whenever quota holders are able to set the TAC themselves. Thus, if fishers are able to influence the setting of TACs—as emphasized by Johnson—this may affect the sustainability of the resource.

A major theme of the paper is the potentially negative impact of resource rent capture on the incentives for fishers to innovate. Grafton (1994 and 1995) makes this point but only in reference to the capture of intra-marginal rents from fishers. It is certainly possible that resource rent capture could affect innovation, but the incentive to innovate is most likely determined by the existence of differential or intra-marginal returns among fishers. Such a view accords with Schumpeter's notion that innovation is the act by which firms attempt to collect entrepreneurial profits which "...are the prizes offered by capitalistic society to the successful innovator." (Schumpeter 1950 p.102). Thus, the incentive problems associated with resource rent capture emphasized by Johnson may be exaggerated.

To obtain a more complete understanding of the points made by Johnson, it is useful to discuss the consequences of not undertaking rent capture. In a number of fisheries, the market price of quota multiplied by the quota holdings of some individual fishers can be worth several million dollars. The high cost of purchasing and leasing quota may pose an important barrier to entry in ITQ fisheries where capital markets are imperfect. To the extent that new entrants may be younger fishers who may be more willing to undertake innovation, it is possible that by not capturing the resource rent and keeping quota prices higher than they would otherwise be, the total future returns from the fishery may be reduced. When quota is distributed gratis to fishers, failure to impose resource rentals may also make the setting of the initial individual quota allocations more difficult for the resource owner. This is because even small changes in the initial allocation may represent large changes in wealth for fishers. To the extent that dissatisfaction with the initial quota allocation (due to wealth considerations) can have a negative impact on fisheries management (Cunningham 1994), resource rent capture can mitigate the problem.

Allowing the resource rent to accrue to the first generation of quota holders also begs the question, exactly who should benefit from ITQs? It has been argued elsewhere that if resource rents are sufficiently large, quota holders should pay the resource owner(s) more than just an amount equal to the costs of management. The existence of substantial resource rents is also likely to generate rent-seeking behavior. Fishers who are not participants in ITQ fisheries, where resource rents and quota values are high, may lobby for free access to the resource. For example, high returns in two individual vessel quota snow crab fisheries in Atlantic Canada led persons outside of the fishery to lobby for the right to harvest crab. The result was that in 1995, 16% and 9% of the TAC in the two fisheries was allocated to new entrants (Canada Department of Fisheries and Oceans April 1995)—thus dissipating a share of the resource rents.

Johnson emphasizes the potential negative consequences of capturing resource rents from ITQ fisheries. This comment shows that the subject is more complex than it first appears. It also suggests that it may be desirable to impose resource rentals and capture a share of the resource rent over and above the costs of management.

References

- Boyce, J.R. 1992. Individual Transferable Quotas and Production Externalities in a Fishery. *Natural Resource Modeling* 6:385-408.
- Canada Department of Fisheries and Oceans. April 1995. Highlights of 1995 Atlantic Snow Crab Fishery. News release B-HQ-95-12E.
- Cunningham, S. 1994. Fishermen's Incomes and Fisheries Management. *Marine Resource Economics* 9(3):241-52.
- Grafton, R.Q. 1994. A Note on Uncertainty and Rent Capture in an ITQ Fishery. *Journal of Environmental Economics and Management* 27:286-94.
- . 1995. Rent Capture in a Rights Based Fishery. *Journal of Environmental Economics and Management* 28:48-67.
- . 1996. Individual Transferable Quotas: Theory and Practice. *Reviews in Fish Biology and Fisheries* 6:5-20.
- Johnson, R.N. 1995. Implications of Taxing Quota Value in an Individual Transferable Quota Fishery. *Marine Resource Economics* 10(4):327-40.
- Schumpeter, J.A. 1950. *Capitalism, Socialism and Democracy*. Third edition, New York: Harper and Row Publishers.