Efficiency in the New Zealand Rock Lobster Fishery: Production Frontier Analysis

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New Zealand’s quota management system has been operating since 1986. Evidence based on quota prices supports the effectiveness of rights based management in addressing the twin ills of fisheries management, unsustainable harvest and economic inefficiency. Faced with output controls fishing firms have an incentive improve efficiency. Little is known about efficiency gains within rights-based systems of governance. This paper looks for evidence of efficiency gains in New Zealand’s commercial rock lobster fishery between 1993 and 2002. Confidential firm-level data are used. The stochastic Cobb-Douglas production frontier model used to estimate efficiency performed well. Parameter estimates accorded with theory and were significant in each period with the exception of labour in 1993. The industry is not characterised by constant returns to scale. A comparison of the efficiency distribution in 1993 with that obtained in 2002 suggests that the mean level of efficiency has increased over the period and the increase is significant. The within-year dispersion of efficiency has reduced. These results support the efficiency enhancing incentives associated with rights-based fishing.