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# The respective role of vessels, skipper and environment in tuna catches

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## Abstract

The firm's management in production is a critical, but unobserved input. Within a panel data framework, the firm's management and firm effects have to date been conflated. Exploiting variability in the managerial dimension, this paper identifies the firm's management from firm and time effects in a production function using a three-way fixed effect model and a unique panel data set tracking multiple managers for each firm in each year for an industry over 27 years. The model is applied to the French purse-seine fleet harvesting tunas in the Indian Ocean. The results indicate the importance of distinguishing firm and management effects and contribute to public regulation of industries exploiting common resources.

**Keywords:** Firm's management, firm effect, management effect, time effect, tuna fisheries

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