

APPENDIX

Appendix Table A1. Port Groupings

Port Group	Ports
NPS	Bellingham Bay, Friday Harbor
SPS	Seattle
CWA	Westport
CLW	Ilwaco/Chinook
CLO	Astoria/Warrenton
NPA	Newport
CBA	Charleston (Coos Bay)
BRA	Brookings, Crescent City
ERK	Eureka
BDA	Bodega Bay
SF	San Francisco
HMB	Princeton (Half Moon Bay)
MB	Monterey, Moss Landing
SLO	Morro Bay, Avila
SB	Santa Barbara

Note: These port groupings are identical to those defined in Fuller et al. (2017).

Appendix Table A2. Standard Cobb-Douglas Production Function with Full Sample of Vessels

Variables	(1)	(2)	(3)	(4)
ln(Days at sea)	1.340*** [0.119]	0.536*** [0.098]	0.607*** [0.092]	0.576*** [0.093]
ln(Crew)	1.391*** [0.152]	0.488** [0.189]	0.352** [0.178]	0.356** [0.176]
ln(Distance in km.)	-0.259*** [0.079]	0.062 [0.079]	0.089 [0.074]	0.106 [0.073]
ln(Vessel length in ft.)	0.542*** [0.158]			
CA Risk Pool member	0.286*** [0.070]			
Constant	5.653*** [0.634]	8.119*** [0.414]	8.162*** [0.387]	8.160*** [0.383]
Vessel FE	N	Y	Y	Y
Year FE	N	N	N	Y
Season FE	N	N	Y	Y
Observations	593	593	593	593
R-squared	0.57	0.12	0.234	0.257
Number of vessels	78	78	78	78

Notes: The regressions are estimated using ordinary least squares. The estimation sample includes 3 primary fishing seasons in each year from 2011-2014. Since this model does not require a balanced panel, we have 78 unique vessels observed in some but not necessarily all of the 12 time periods, yielding 593 total observations. The dependent variable is the natural log of average revenue per trip. The columns add additional fixed effects (abbreviated FE in the table) from left to right. Standard errors are reported in parentheses. One, two, and three asterisks denote statistical significance at the 10, 5, and 1-percent levels, respectively. Vessel length (measured in feet) and California Risk Pool membership (measured as a 1/0 dummy variable) are time-invariant for a vessel and thus drop out of the model in columns (2)-(4) when vessel fixed effects are added.

Appendix Table A3. Peer Effects Results for Full Sample of Vessels

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Modal Port	Risk Pool & Modal Port	Any Port	Risk Pool & Any Port	Risk Pool Only	Risk Pool & Non-modal Port	Owner Names
ln(Days at Sea)	-0.207 [0.130]	-0.209 [0.131]	-0.217 [0.138]	-0.211 [0.138]	-0.228* [0.135]	-0.220 [0.135]	-0.240* [0.133]
ln(Crew)	1.961*** [0.312]	1.965*** [0.310]	1.997*** [0.312]	1.999*** [0.312]	2.020*** [0.316]	2.021*** [0.310]	1.997*** [0.316]
ln(Distance in km.)	1.373*** [0.072]	1.373*** [0.072]	1.368*** [0.074]	1.366*** [0.074]	1.366*** [0.074]	1.364*** [0.073]	1.373*** [0.074]
W*ln(Days at Sea)	-0.169 [0.113]	-0.168 [0.147]	-0.074 [0.222]	-0.126 [0.235]	-0.211 [0.415]	0.022 [0.193]	-0.353 [0.215]
W*ln(Crew)	0.138 [0.195]	0.174 [0.271]	0.154 [0.489]	0.215 [0.533]	1.666** [0.764]	-0.106 [0.322]	0.111 [0.425]
W*ln(Distance)	-0.183*** [0.051]	-0.200** [0.089]	-0.194* [0.107]	-0.177 [0.114]	0.286 [0.231]	-0.099 [0.098]	0.016 [0.110]
Rho	0.117*** [0.032]	0.124*** [0.036]	0.120** [0.049]	0.112** [0.052]	-0.283** [0.132]	0.077* [0.043]	0.001 [0.045]
Vessel FE	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y
Season FE	Y	Y	Y	Y	Y	Y	Y
Observations	936	936	936	936	936	936	936
R-squared	0.990	0.990	0.990	0.990	0.989	0.989	0.990
Number of vessels	78	78	78	78	78	78	78

Notes: The spatial autoregressive regressions are estimated using maximum likelihood. The estimation sample includes 3 primary fishing seasons in each year from 2011-2014. The dependent variable is the natural log of average revenue per trip. Columns provide results for different definitions of peer groups, as defined in the footnote to Table 4. Given that our balanced sample only includes 18 (approximately 19%) of the trawl fishing vessels, we consider alternative approaches to test the robustness of our results. Since the estimation procedure requires a time-invariant spatial weighting matrix (Lee et al. 2010) we need observations for every vessel in every period (a balanced sample). When some vessels do take any fishing trips in some periods, this creates a problem of missing observations. It would be inappropriate to impute revenue in cases where vessels truly did not operate. Rather, we elect to assign zeros to both inputs and outputs for any period in which a vessel did not take any fishing trips. The economic assumption is that if these vessels did not fish, they neither utilized inputs nor produced revenue. Overall, we find the results are largely robust between our sample of 18 vessels that fish consistently (Table 4)) and the full sample of 78 trawl fishers shown above. This supports our other data analysis suggesting that the selection of 18 vessels that consistently fish in every main season throughout the sample period does not bias our results regarding competitive and cooperative peer effects among the fishing vessels.