

Online Appendix

Income Opportunities and Sea Piracy in Indonesia

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Table 1: Labor Market Effects by Lights at Night

Outcome:	Share of Work	Hours not Fishing	Income	Log(Income)
<i>A: Full sample</i>				
Above Median Fish.	0.0099 (0.0035)*** [0.0035]***	-0.39 (0.15)*** [0.15]***	8026.5 (2411.8)*** [2746.0]***	0.13 (0.039)*** [0.037]***
Observations	11780	12285	6563	6559
R-Squared	0.092	0.083	0.16	0.25
Mean of Outcome	0.97	1.09	41949.2	10.4
<i>B: Coastal districts with lights below 10th percentile</i>				
Above Median Fish.	0.062 (0.026)**	-2.44 (1.20)*	51774.7 (27280.7)*	0.47 (0.092)***
Observations	1064	1069	392	392
R-Squared	0.093	0.11	0.15	0.32
Mean of Outcome	0.97	1.29	54320.1	10.6
<i>C: Coastal districts with lights above 10th percentile</i>				
Above Median Fish.	0.0072 (0.0033)**	-0.28 (0.14)**	6272.7 (2015.3)***	0.11 (0.040)***
Observations	10716	11216	6171	6167
R-Squared	0.097	0.084	0.16	0.24
Mean of Outcome	0.97	1.08	41163.3	10.4
Location FE	Yes	Yes	Yes	Yes
Month * Year FE	Yes	Yes	Yes	Yes

Notes: This table reports the effect of above median fishing conditions in a 50 nautical mile fishing zone from the coast on labor market outcomes in 250-260 coastal districts (depending on the availability of data). All regressions include fixed effects for each month-year combination and coastal district. Robust standard errors clustered on the districts are reported in parenthesis and Conley (2008) standard errors that are adjusted for both spatial and temporal correlations (assuming a distance cut-off of 1,000 km) are reported in brackets. Panel A reports the results for the full sample (i.e. corresponding to Table 1 in the paper, whereas panels B and C split the sample into districts with average stable lights at night below and above the 10th percentile in the year before the sample period starts (2006)).

Table 2: Validating Measure of Fishing Conditions (Additional Specifications)

Outcome:	Price	Share of Work	Hours not Fishing	Income	Log(Income)
Above Median Fish.	-1933.7 (1095.3)*	0.0087 (0.0036)** [0.0023]***	-0.34 (0.14)** [0.090]***	7695.3 (2626.7)***(3430.6)** [3052.9]** [3652.8]**	0.13 (0.040)***(0.050)***(0.043)***
Observations	448	11778	12283	6562	6558
R-Squared	0.20	0.095	0.084	0.16	0.25
Mean of Outcome	22713.3	0.97	1.09	41951.0	10.4
Wild Cluster P-value	0.082				
Location FE	Yes	No	Yes	Yes	No
Location * Month FE	No	Yes	No	No	Yes
Year FE	No	No	No	No	No
Year * Month FE	Yes	Yes	Yes	Yes	No
Controls	Quadratic Quadratic Quadratic Quadratic Quadratic Quadratic Quadratic Quadratic Quadratic Quadratic				

Notes: This table reports the effect of above median fishing conditions in a 50 nautical mile fishing zone from the coast on the average price of fish in 16 coastal markets and a set of labor market outcomes in 250-260 coastal districts (depending on the availability of data). Compared to Table 1 in the paper, all specifications in this table add controls for a second degree polynomial of the weather variables (wind speed, wave height and accumulated rainfall). In addition, the second column for each variable also controls for location by month and year fixed effects. Robust standard errors clustered on the local markets or coastal districts are reported in parenthesis. P-values using the Wild Clustered Bootstrap procedure suggested by Cameron, Gelbach and Miller (2008) are also reported for the price sample and Conley (2008) standard errors that are adjusted for both spatial and temporal correlations (assuming a distance cut-off of 1,000 km) are reported in brackets for the labor market outcomes.

Table 3: Conley Cutoff Distances

	Conley Cutoff Distance (km)					
	250	500	750	1000	1250	1500
Coefficient	-0.017	-0.017	-0.017	-0.017	-0.017	-0.017
Standard Error	0.008	0.008	0.008	0.008	0.008	0.008
P-value	0.028	0.029	0.037	0.034	0.032	0.029
Month * Cell FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Quadratic	Quadratic	Quadratic	Quadratic	Quadratic	Quadratic

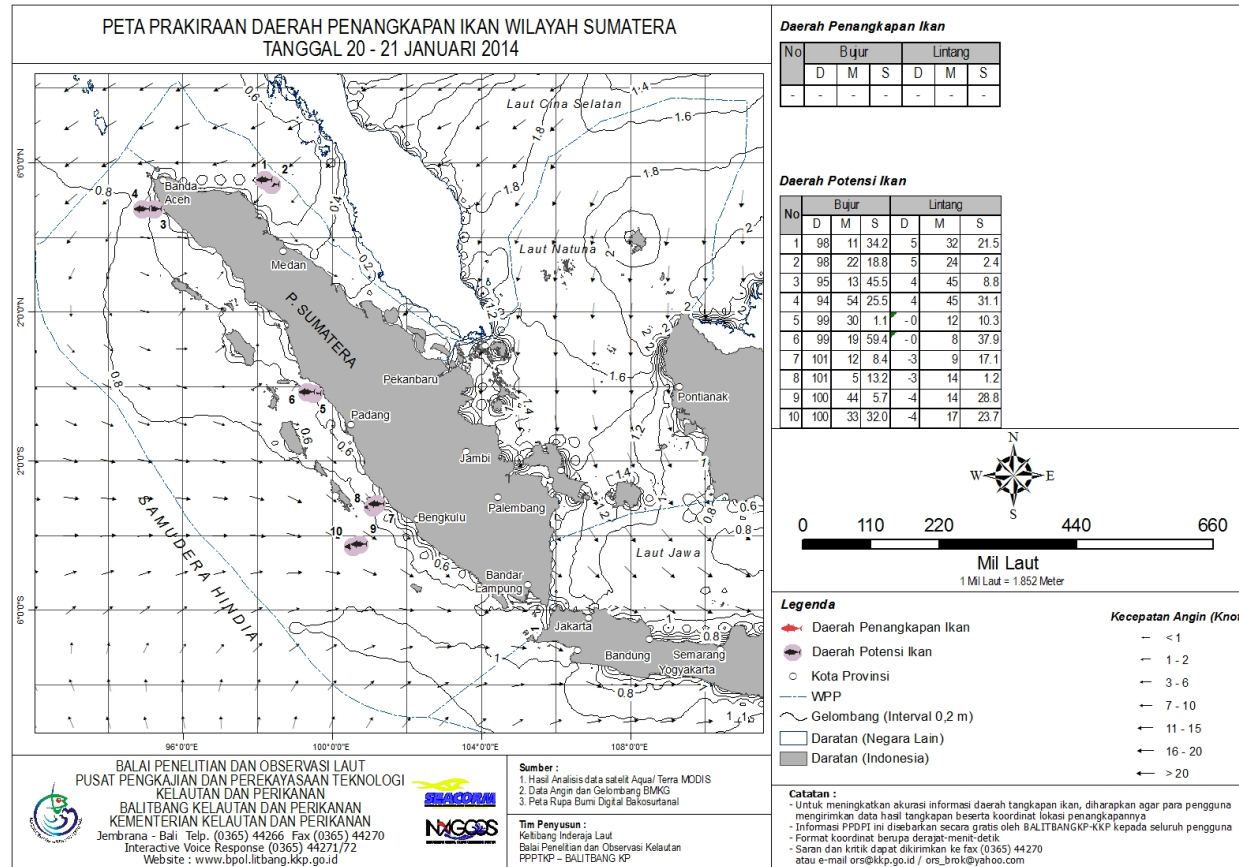
Notes: This table reports the coefficients, standard errors and p-values for the main specification, i.e. column (4) in Table 2, with 6 different Conley (2008) distance cutoffs, both with longer and shorter distances than the one in the main specification (1,000 km).

Table 4: Effect of Piracy Patrols: Coastal District Sample

Outcome:	# Attacks			
Sample included after July 2005:	1 year	2 years	3 years	4 years
<i>A: Direct effect of Piracy Patrols</i>				
Patrolled * Post	-0.49 (0.076)*** [0.12]***	-0.30 (0.069)*** [0.10]***	-0.23 (0.075)*** [0.10]**	-0.20 (0.069)*** [0.098]**
<i>B: Heterogeneous effects by fishing conditions</i>				
Patrolled * Post	-0.62 (0.11)*** [0.16]***	-0.48 (0.078)*** [0.13]***	-0.45 (0.075)*** [0.12]***	-0.42 (0.075)*** [0.11]***
Patrolled * Post * Above Median	0.15 (0.11) [0.19]	0.29 (0.11)*** [0.18]	0.37 (0.099)*** [0.16]**	0.37 (0.10)*** [0.16]**
Observations	5424	6780	8112	9468
Mean of Outcome	0.34	0.32	0.29	0.26
Coast * Month FE	Yes	Yes	Yes	Yes
Year * Month FE	Yes	Yes	Yes	Yes
Controls	Quadratic	Quadratic	Quadratic	Quadratic

Notes: Panel A in this table reports the results from estimating equation (3) for the coastal district sample. All attacks within 50 nautical miles from shore are included in this analysis to ensure that all relevant attacks are captured. The columns present the estimate for one, two, three and four years after the initiation of patrols. Panel B implement a triple difference strategy where the DID variables from Panel A are interacted with the measure of good fishing conditions. All regressions control for above median fishing conditions as well as quadratic functions of accumulated rainfall, wind speed and wave height. Robust standard errors in parenthesis are clustered on the coastal district and Conley (2008) standard errors that are adjusted for both spatial and temporal correlations (assuming a distance cut-off of 1,000 km) in brackets.

Figure 1: Map of Fish Abundance Areas

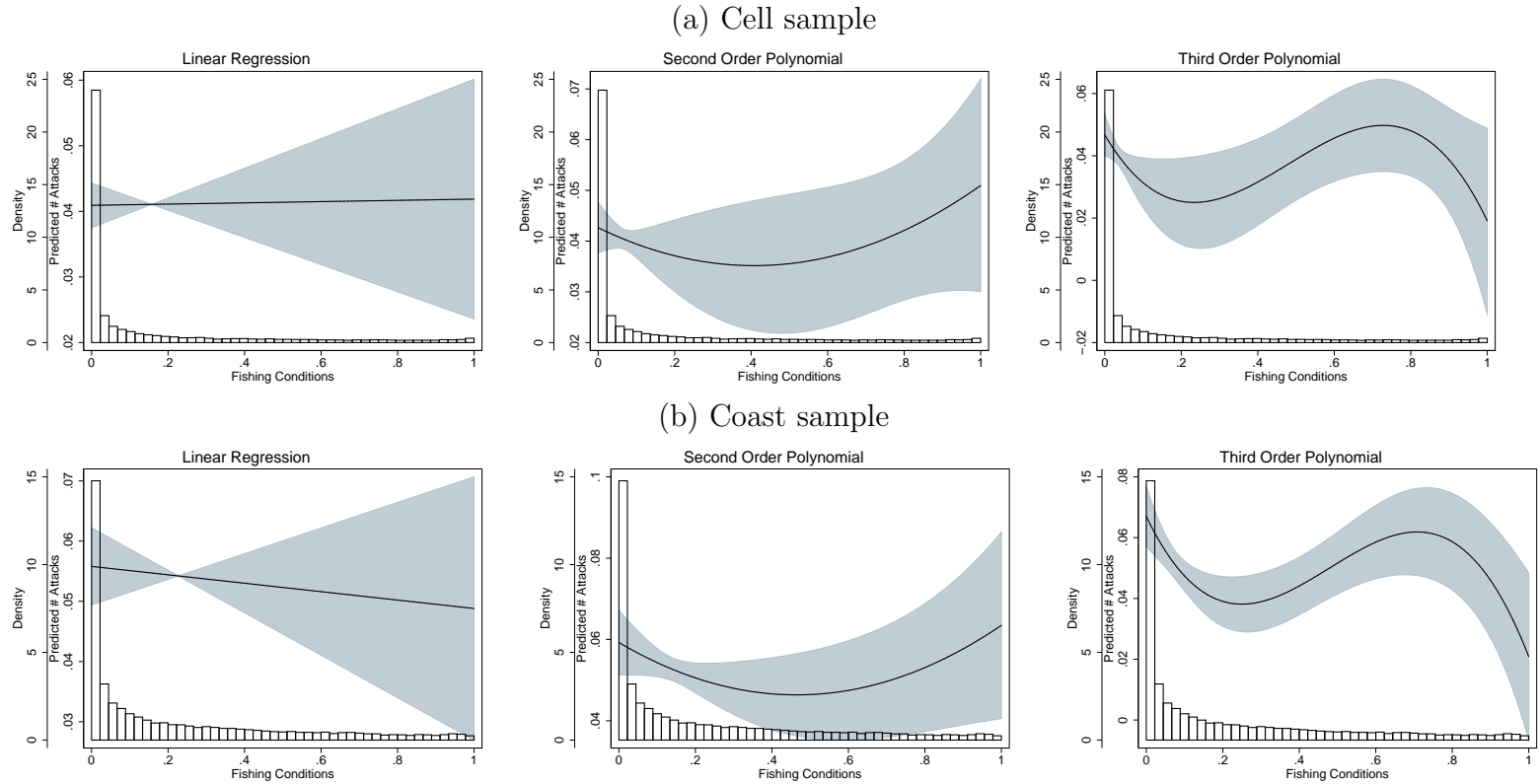


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Notes: This figure shows a map of areas of fish abundance in the eastern part of Indonesia produced by experts at the Indonesian Institute for Marine Research and Observation. These estimates have been used to validate the measure of fishing conditions in the paper.

Source: The map is from website of the Ministry of Marine Affairs and Fisheries (<http://kkp.go.id/index.php/category/peta-prakiraan-daerah-penangkapan-ikan/>).

Figure 2: Regressions with Raw Measure of Fishing Conditions



Notes: This figure plots the response function of linear and polynomial regressions using the raw measure of fishing conditions as defined in Section II in the paper (which ranges between 0 and 1) as well as the density of the variable. All regressions control for location by month fixed effects, year fixed effects as well as for a second degree polynomial of wind speed, wave height and accumulated rainfall. The top three figures in Panel A are using the cell sample, whereas the bottom three figures run the corresponding regressions for the coastal district sample (with the number of attacks within 20 nautical miles as outcome). The shaded areas illustrate the range of the 95 percent confidence intervals based on standard errors clustered at the geographical unit of analysis. Note the heavy skewness of the variables which provides an additional reason for using the above median definition of fishing conditions in the main analysis.

Source: Figure is based on Author's own calculations using the data presented in Table A1 in the paper.