Appendix A: Sample Construction

Our initial dataset includes the complete marine life sales records of all fishermen that ever sold lobsters at any point during the sample period. This is a varied group of fishermen, ranging from those that exclusively fish for lobsters to those that appear to have caught lobsters on a handful of occasions as incidental bycatch. We use an approach similar to Stafford (2015) to identify a subsample of fishermen and choice occasions relevant to the study of labor supply decisions in the lobster fishery. Here, we document this process, explain our rationale, and discuss alternative approaches.

Table A1 describes the initial population and how the population changes as we apply several selection criteria, which are identified by the first column. The column labeled "Fishers" provides the number of unique fishermen in the sample. The column labeled "Lobster Trips" provides the number of sales records in the sample that record any amount of lobsters. The column labeled "Choice Occasions" provides the number of days in the sample on which each fisherman is able to choose lobster fishing. The column labeled "Lobster Sales" provides the share of lobster sales to all sales made during the sample period. Panel A documents the criteria that we apply to arrive at our main regression sample. Panels B, C, and D document alternative methods of constructing our regression sample. In Appendix F, we provide estimation results based on these alternative regression samples.

Our initial population, labelled **"Complete Population"**, includes 1,501 fishermen that make a combined 96,402 lobster trips. For each fisherman, we classify a season as "active" if the fisherman makes at least one lobster sale that year, and we drop from the sample all inactive seasons. Thus, choice occasions reflects the number of open season days once inactive seasons are removed. The majority of these fishermen – around 90% – harvest multiple species during the sample period. This is partially illustrated in Table A1 where we see that lobster sales make up only 57% of the value of all sales made by these fishermen during active lobster seasons.

We identify the effect of earnings on labor supply decisions in the lobster fishery based on the assumption that the moon cycle affects catch rates in the lobster fishery but does not affect the value of outside opportunities. This assumption may not hold if individuals are able to target other species whose behavior is also influenced by the moon cycle. To address this concern, we limit our regression sample to include only the first 70 days of each lobster season (August 6th through October 14th), a period when most other fisheries are closed. We label this criterion **"Beginning of Season"** in Table A1. For these periods, lobster sales make up 94% of all sales made, and the remaining 6% of sales consist predominantly of reef fish, which are common bycatch in lobster traps. Thus, by restricting our sample to the first 70 days of each season, we believe it is reasonable to assume that the moon cycle does not affect outside opportunities. This restriction results in dropping about 14% of fishermen who never sell lobsters during the first 70 days of a lobster season. Lobster sales make up only 5% of overall sales for this group fishermen, while shrimp sales make up 52%, suggesting that lobsters are more likely bycatch and not directly or regularly targeted by these fishermen.

An alternative approach to ensure that the moon cycle does not affect outside opportunities is to limit the sample to fishermen that only fish for lobsters. To allow for periodic bycatch, we identify and retain all fisherman-season pairs for which lobster constitutes 95% or more of the value of all sales. We label this criterion **"Full Season"** in Panel B of Table A1. Because so many fishermen fish for other species later in the lobster season, this is a particularly restrictive approach. Around 55% of fishermen are dropped.

Table A1 Constructing the Relevant Population

Criteria	Fishers	Lobster Trips	Choice Occasions	Lobster Sales
	Panel A: Main Regression Sample			
Complete Population	1,501	96,402	1,080,986	0.570
Beginning of Season	1,292	49,558	277,760	0.942
Lobster Trappers	723	36,702	153,510	0.980
Exit Rule Applied	723	36,702	145,171	0.980
Valid Hours Records	651	30,196	123,575	0.984
	Panel B: Full Season			
Complete Population	1,501	96,402	1,080,986	0.570
Full Season	672	29,948	344,207	0.987
Lobster Trappers	393	22,484	192,699	0.986
Exit Rule Applied	393	22,484	126,687	0.986
Valid Hours Records	343	17,615	104,624	0.985
	Panel C: All Gear Types			
Complete Population	1,501	96,402	1,080,986	0.570
Beginning of Season	1,292	49,558	277,760	0.942
All Gear Types	1,292	49,558	277,760	0.942
Exit Rule Applied	1,292	49,558	231,580	0.942
Valid Hours Records	1,161	40,082	195,773	0.953
	Panel D: No Exit Rule Applied			
Complete Population	1,501	96,402	1,080,986	0.570
Beginning of Season	1,292	49,558	277,760	0.942
Lobster Trappers	723	36,702	153,510	0.980
No Exit Rule Applied	723	36,702	153,510	0.980
Valid Hours Records	651	30,196	130,455	0.984

Notes: The column labeled "Fishers" provides the number of unique fishermen in the sample. The column labeled "Lobster Trips" provides the number of sales records in the sample that record any amount of lobsters. The column labeled "Choice Occasions" provides the number of days in the sample on which each fisherman is able to choose lobster fishing. The column labeled "Lobster Sales" provides the share of lobster sales to all sales made during the sample period. Panel A documents the criteria that we apply to arrive at our main regression sample. Panels B, C, and D document alternative methods of constructing our regression sample. The criteria highlighted in bold in Panels B, C, and D indicate the criteria that are varied to create each alternative sample.

Around 76% of lobster sales records report that traps were used to harvest lobster, 21% report diving, and 3% report mixed or other gear types. Because trappers and divers operate in different environments and because we believe the moon cycle to be a stronger instrument for earnings in the trap fishery than in the dive fishery, we limit our analysis to trappers only. We label this criterion **"Lobster Trappers"**. For each season, we classify fishermen as trappers if at least 90% of the lobster trips that they make report traps as the primary gear used, and we drop observations on all fishermen-season pairs that do not meet this criterion. This results in dropping 44% of fishermen, and 26% of lobster trips. Because this restriction reduces our sample considerably, we also consider a regression sample that retains all individuals regardless of gear usage. We label this criterion **"All**

Gear" in Panel C of Table A1.

Fishermen are not obligated to remain active in the lobster fishery until the season closes on March 31, and many remove their traps from the ocean prior to this date. Once all traps are removed, fishermen are very unlikely to consider participating in the fishery again that season. Ideally, we would remove from the sample all days after which traps are removed from the ocean because fishermen no longer make participation and hours decisions on these dates. However, these "exit" dates are unobservable. Since commercial fishermen almost always have catch to sell after a trip, like Stafford (2015), we infer a fisherman's exit date as the last date a sale is made that season, and we drop from the sample all days after this date. We label this criterion **"Exit Rule Applied"**. Because the vast majority of fishermen continue harvesting lobsters beyond day 70, this exit rule has little effect on our sample in practice. Only about 5% of choice occasions are dropped from the sample. Nevertheless, we consider an alternative sample in which no exit rule is applied and all choice occasions are retained. We label this criterion **"No Exit Rule Applied"** in Panel D of Table A1.

Sales records include "actual time fished", which can be recorded in "hours" or "days". Although fishermen predominantly report time fished in "hours" (82% of sales records), some report 1 day (12%) and some simply omit this information entirely (6%). While this information is not necessary for our participation analysis, we cannot include records reporting days and records with missing information in our hours analysis. We assume that these records are not systematically different from those with "valid" hours information and drop these observations from our hours samples, which results in dropping about 10% of individuals whose sales records never have valid hours information. We label this criterion **"Valid Hours Records"** to make clear the distinction in regression samples.

Results based on the alternative samples described by Panels B, C, and D in Table A1 are presented in Appendix F.

Appendix B: Variable Construction

Wind Speed: The National Oceanic and Atmospheric Administration's (NOAA) historical weather buoy database (www.ndbc.noaa.gov) records hourly wind speed at numerous buoys spanning the coasts of Florida. For each buoy, we average hourly wind speed from midnight to midnight of each day. We assign wind speed values to each fisherman-day using data from the buoy closest to the modal area fished by that fisherman at that time. To identify the closest buoy, we calculate the great circle distance between each buoy and the modal area using the haversine formula.

Modal fishing areas are determined using the areas reported on a fisherman's trip tickets from days on which lobsters were sold. For each fisherman-day we determine the modal area fished within 7-, 30-, and 90-day windows. We also determine the modal area fished each season and during the fisherman's entire career. For each fisherman-day, we assign a value for modal area fished first using the 7-day average, then using the 30-day average when the 7-day average is unavailable (either because the fisherman did not participate within that 7-day window or because area fished was not recorded on any trip tickets within that window), and so on. This procedure creates a complete sample of modal fishing areas for every fisherman-day.

To capture the non-linear effects of wind speed, we construct four categories of average daily wind speed: (i) less than 10 *miles per hour*, (ii) $10-15mph$, (iii) $15-20mph$, and (iv) greater than $20mph$. The rationale for these categories is that wind speeds below $10mph$ are considered calm, wind speeds above $20mph$ are considered rough, and wind speed is typically reported in $5mph$ bands.

Lagged Wind Speed: For each fisherman-day, we construct a measure of recent wind speed that is the maximum average daily wind speed during the previous five days. As with current wind speed, we construct four categories of maximum recent wind speed: (i) less than 10 *mph*, (ii) $10-15mph$, (iii) $15-20mph$, and (iv) greater than $20mph$.

Rainfall: NOAA's National Climatic Data Center (www.ncdc.noaa.gov) records hourly rainfall at 400+ monitoring stations in Florida. For each station, we sum rainfall from midnight to midnight of each day. We assign daily rainfall values to fishermen using data from the station closest to the centroid of the zip code associated with the fisherman's lobster license number. To identify the closest station, we calculate the great circle distance between each station and the centroid of the fisherman's zip code using the haversine formula.

Lagged Rainfall: For each fisherman-day, we construct a measure of recent rainfall that is the sum of rainfall during the previous three days.

Hurricanes: The National Hurricane Center's HURDAT2 database (www.nhc.noaa.gov/data) provides 6-hourly readings of the location of the center and the maximum sustained winds of every cyclone that has formed in the Atlantic basin since the mid-1800s. Because we are interested in hurricanes only, we drop all readings with wind speeds below hurricane force ($< 75mph$). We identify a fisherman's port by the centroid of the zip code associated with the fisherman's lobster license number. For each 6-hourly reading, we calculate the great circle distance between the center of the hurricane and each port using the haversine formula. We classify port-days on which the center of a hurricane came within 100 miles as days on which a hurricane made landfall ("land"). We classify the three days preceding any landfall as "prep" days, and we classify the three days following any landfall as "post" days. To capture the uncertainty of a hurricane's path, we also classify days on which a hurricane came within 200 miles as "prep" days, regardless of whether the hurricane eventually made landfall according to our definition, provided the day is not already classified as "land" or “post”.

Lunar Phase: The United States Naval Observatory (www.usno.navy.mil) provides data on the dates and times that the moon enters each of four phases: new, first quarter, full, and last quarter. Using this data, we calculate a value between 0 and 1 for each minute in our sample that captures the “fullness” of the moon, where 0 indicates a new moon and 1 indicates a full moon. To determine daily “fullness”, we average over all minutes from midnight to midnight of that day. We find that a two-day lag of the lunar phase is the best predictor of catch. Hence, we use a two-day lag of daily “fullness” to capture the effect of the lunar phase on earnings.

Appendix C: Summary Statistics

Table C1 Summary Statistics on Daily Participation Rates

Variable	Retiring Mean	Retiring SD	All Mean	All SD	Entering Mean	Entering SD	Non-Retiring Mean	Non-Retiring SD	Soon-to-Retire Mean	Soon-to-Retire SD	Younger Non-Retiring Mean	Younger Non-Retiring SD
All days	0.24	0.22	0.25	0.12	0.19	0.16	0.29	0.15	0.33	0.18	0.31	0.14
August	0.30	0.22	0.29	0.11	0.18	0.14	0.34	0.14	0.39	0.16	0.37	0.12
September	0.22	0.22	0.24	0.13	0.19	0.17	0.28	0.16	0.31	0.17	0.30	0.14
October	0.17	0.18	0.20	0.09	0.20	0.15	0.23	0.11	0.25	0.17	0.24	0.12
Weekdays	0.26	0.21	0.28	0.11	0.20	0.16	0.32	0.14	0.35	0.18	0.33	0.13
Saturdays	0.25	0.24	0.23	0.10	0.20	0.16	0.25	0.13	0.32	0.17	0.30	0.13
Sundays	0.18	0.21	0.15	0.09	0.12	0.12	0.19	0.13	0.22	0.14	0.21	0.10
All days												
Older	0.26	0.32	0.26	0.12	0.24	0.23	0.29	0.17	0.31	0.21	0.31	0.17
Younger	0.26	0.26	0.25	0.11	0.13	0.20	0.29	0.15	0.34	0.20	0.31	0.14
Saturdays												
Older	0.27	0.34	0.23	0.11	0.22	0.22	0.26	0.16	0.33	0.21	0.30	0.16
Younger	0.24	0.27	0.22	0.10	0.18	0.20	0.25	0.13	0.32	0.19	0.30	0.13
Sundays												
Older	0.20	0.29	0.16	0.10	0.13	0.17	0.20	0.13	0.24	0.18	0.22	0.13
Younger	0.17	0.22	0.15	0.09	0.10	0.15	0.18	0.13	0.20	0.15	0.21	0.11
Wind speed												
Calm	0.33	0.22	0.29	0.10	0.22	0.16	0.34	0.12	0.39	0.15	0.36	0.11
Light	0.26	0.20	0.27	0.11	0.20	0.15	0.32	0.14	0.34	0.16	0.33	0.13
Moderate	0.11	0.11	0.18	0.09	0.15	0.13	0.19	0.11	0.21	0.15	0.23	0.12
High	0.03	0.06	0.06	0.06	0.05	0.08	0.06	0.08	0.09	0.08	0.11	0.09
Lagged wind speed												
Calm	0.23	0.15	0.25	0.09	0.17	0.14	0.29	0.11	0.36	0.17	0.33	0.12
Light	0.27	0.22	0.27	0.09	0.19	0.15	0.30	0.12	0.36	0.16	0.33	0.12
Moderate	0.20	0.22	0.23	0.12	0.17	0.14	0.27	0.14	0.31	0.17	0.30	0.14
High	0.25	0.24	0.26	0.17	0.21	0.18	0.29	0.20	0.26	0.20	0.26	0.16
Hurricane												
Prep	0.18	0.23	0.15	0.15	0.10	0.13	0.15	0.17	0.14	0.15	0.18	0.16
Land	0.03	0.09	0.05	0.08	0.04	0.10	0.04	0.09	0.00	–	0.00	–
Post	0.21	0.24	0.22	0.18	0.14	0.14	0.23	0.22	0.06	0.08	0.05	0.07
Rainfall												
$> 0.15in$	0.20	0.21	0.22	0.13	0.14	0.15	0.26	0.16	0.30	0.18	0.30	0.14
$\leq 0.15in$	0.26	0.22	0.27	0.11	0.21	0.15	0.30	0.14	0.34	0.17	0.32	0.13
Lagged rainfall												
$> 0.15in$	0.27	0.24	0.26	0.12	0.17	0.15	0.30	0.15	0.32	0.17	0.32	0.13
$\leq 0.15in$	0.22	0.19	0.24	0.11	0.22	0.16	0.27	0.13	0.33	0.18	0.30	0.14
Moon												
Week of full	0.20	0.20	0.21	0.10	0.14	0.13	0.24	0.13	0.29	0.15	0.28	0.12
Week of new	0.33	0.23	0.30	0.12	0.21	0.17	0.33	0.16	0.38	0.19	0.35	0.14
Fishermen		39		723		31		124		39		124
Lobster trips		631		36,702		387		7,310		4,220		11,863
Choice occasions		2,578		145,171		2,036		25,228		12,880		37,984

Notes: For each open season day in the sample, we calculate the participation rate as the number of lobster trips taken divided by the number of choice occasions – i.e. the number of fishermen able to participate that day. We then average participation rates over days sharing the same characteristics. "Week of full moon" includes observations within three days of the full moon, and "Week of new moon" includes observations within three days of the new moon.

Table C2 Summary Statistics on Daily Hours

Variable	Retiring Mean	Retiring SD	All Mean	All SD	Entering Mean	Entering SD	Non-Retiring Mean	Non-Retiring SD	Soon-to-Retire Mean	Soon-to-Retire SD	Younger Non-Retiring Mean	Younger Non-Retiring SD
All days	8.0	1.2	8.2	0.3	7.6	1.2	8.5	0.5	8.0	0.8	8.1	0.6
August	8.2	1.1	8.3	0.3	7.7	0.9	8.5	0.4	8.1	0.7	8.1	0.6
September	8.0	1.3	8.2	0.3	7.6	1.4	8.5	0.5	8.1	0.8	8.1	0.6
October	7.5	1.3	8.0	0.4	7.3	1.3	8.4	0.6	7.8	0.9	7.9	0.7
Weekdays	8.1	1.2	8.3	0.3	7.6	1.3	8.5	0.5	8.0	0.7	8.1	0.6
Saturdays	7.7	1.1	8.1	0.4	7.7	1.1	8.4	0.4	8.0	0.9	8.0	0.6
Sundays	7.6	1.4	8.1	0.5	7.5	1.3	8.5	0.5	8.3	1.2	7.9	0.7
All days												
Older	8.8	1.9	8.2	0.3	7.8	1.1	8.3	1.0	8.7	1.2	8.0	0.9
Younger	7.7	0.9	8.2	0.4	7.1	1.4	8.5	0.6	7.7	1.0	8.1	0.8
Saturdays												
Older	8.1	1.6	8.1	0.4	7.7	1.2	8.3	1.1	8.7	1.1	8.1	1.0
Younger	7.6	1.0	8.2	0.4	7.8	0.6	8.5	0.5	7.7	1.1	8.0	0.9
Sundays												
Older	8.5	2.2	8.2	0.4	7.3	1.4	8.4	1.2	9.1	1.5	7.9	1.3
Younger	7.2	1.2	8.0	0.6	8.1	0.3	8.5	0.6	7.9	1.5	7.8	1.1
Wind speed												
Calm	8.0	1.2	8.2	0.3	7.5	1.1	8.5	0.4	8.1	0.7	8.1	0.6
Light	8.1	1.2	8.2	0.3	7.6	1.4	8.5	0.5	8.0	0.8	8.1	0.6
Moderate	8.2	1.1	8.2	0.4	7.6	1.2	8.5	0.7	7.8	1.1	7.9	0.8
High	7.8	1.3	8.1	0.6	7.5	1.0	8.4	1.0	8.1	1.0	8.0	0.8
Lagged wind speed												
Calm	8.0	1.3	8.2	0.3	7.8	1.0	8.4	0.5	8.0	0.8	8.1	0.6
Light	8.1	1.1	8.2	0.3	7.3	1.3	8.5	0.5	8.1	0.8	8.1	0.6
Moderate	7.4	1.3	8.1	0.3	7.5	1.0	8.5	0.5	8.0	0.8	8.1	0.7
High	8.5	0.9	8.4	0.3	8.0	1.3	8.6	0.5	8.0	0.7	8.0	0.6
Hurricane												
Prep	8.7	0.8	8.4	0.4	7.6	0.8	8.5	0.7	7.2	0.2	7.9	0.4
Land	9.0	–	8.3	0.3	8.0	–	8.8	–	–	–	–	–
Post	9.0	1.1	8.5	0.3	7.3	1.2	8.6	0.4	7.5	–	6.5	–
Rainfall												
$> 0.15in$	7.8	1.2	8.2	0.3	7.1	1.6	8.5	0.5	8.0	0.7	8.1	0.5
$\leq 0.15in$	8.1	1.2	8.2	0.3	7.6	1.2	8.5	0.5	8.0	0.8	8.1	0.7
Lagged rainfall												
$> 0.15in$	8.1	1.1	8.3	0.3	7.6	1.2	8.5	0.5	8.0	0.7	8.1	0.6
$\leq 0.15in$	7.9	1.3	8.1	0.4	7.5	1.3	8.4	0.5	8.0	0.9	8.0	0.8
Moon												
Week of full	7.6	1.3	8.2	0.4	8.1	0.8	8.5	0.5	7.9	0.9	8.0	0.7
Week of new	8.3	1.0	8.3	0.3	7.4	1.3	8.6	0.4	8.1	0.7	8.1	0.6
Fishermen		32		651		27		107		34		108
Lobster trips		523		30,196		319		5,435		3,243		8,520

Notes: See Table C1. We average hours at sea across all observations sharing the same characteristics. Thus, days with more participating fishermen carry greater weight in calculating these statistics.

Table C3 Summary Statistics on Hourly Earnings

	Retiring		All		Entering		Non-Retiring		Soon-to-Retire		Younger Non-Retiring	
Variable	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
All days	151	83	126	39	95	59	122	42	140	69	133	55
August	162	86	139	43	114	79	135	43	146	56	141	50
September	147	79	120	34	89	42	117	39	131	56	126	54
October	120	81	104	23	75	38	102	36	149	118	127	68
Weekdays	153	82	126	38	97	57	123	44	139	67	131	51
Saturdays	138	83	122	39	89	56	118	36	152	82	136	49
Sundays	150	94	132	48	89	75	129	37	136	64	145	84
All days												
Older	122	67	117	35	98	65	110	53	159	78	126	65
Younger	176	103	138	48	94	64	125	48	135	125	135	64
Saturdays												
Older	113	79	114	35	93	54	104	41	177	82	127	62
Younger	152	91	131	46	113	82	120	42	138	106	138	56
Sundays												
Older	128	89	122	41	105	111	127	64	199	150	154	110
Younger	188	128	143	61	114	70	129	37	112	60	141	85
Wind speed												
Calm	145	81	124	38	91	47	120	41	134	67	128	52
Light	157	83	131	42	105	56	127	44	146	64	137	53
Moderate	168	102	120	36	89	91	120	43	154	86	142	72
High	98	80	117	36	67	37	106	31	146	81	130	51
Lagged wind speed												
Calm	104	59	112	26	71	31	116	37	117	42	117	42
Light	142	79	123	31	90	45	120	35	134	55	134	54
Moderate	116	70	114	28	91	79	109	35	151	81	133	56
High	217	70	157	55	115	62	147	54	168	91	146	64
Hurricane												
Prep	150	89	131	46	104	59	120	32	240	132	182	55
Land	31	–	116	15	41	–	154	–	–	–	–	–
Post	223	96	168	62	82	92	150	58	79	–	94	–
Rainfall												
$> 0.15in$	144	80	124	32	71	39	120	36	161	84	141	61
$\leq 0.15in$	152	84	126	42	99	61	123	44	133	62	129	52
Lagged rainfall												
$> 0.15in$	160	83	128	37	96	69	124	39	151	77	137	57
$\leq 0.15in$	137	82	119	44	93	43	118	50	126	54	122	47
Moon												
Week of full	110	69	102	23	89	40	99	29	121	52	108	37
Week of new	185	81	146	46	111	62	141	45	157	64	151	55
Fishermen		32		651		27		107		34		108
Lobster trips		523		30,196		319		5,435		3,243		8,520

Notes: See Table C1. We average hourly earnings across all observations sharing the same characteristics.

Appendix D: Selection Correction

We observe earnings only when fishermen choose to participate. As a result, the sample that we use to estimate (11) may be nonrandom. To correct for possible bias, we estimate a sample selection model (type II Tobit) with a reduced form probit participation equation. We employ both a Heckman two-step estimator and partial maximum likelihood under the assumption of jointly normally distributed errors. The reduced form participation equation includes as explanatory variables all variables that directly or indirectly affect participation, namely $\mathbf{X}_{it}$ and $\mathbf{Z}_{it}$.

Beyond relying on functional form assumptions, identification of selection in (11) requires that $\mathbf{Z}_{it}$ contain at least one variable that affects participation but not earnings. As in Stafford (2015), we assume that the following variables included in $\mathbf{Z}_{it}$ satisfy this requirement and exclude them from $\mathbf{X}_{it}$: the weekend indicators, their interactions with a second-order polynomial in fisherman age, and the indicator for whether a hurricane is expected to make landfall within three days. For weekend indicators to be valid exclusions, prices and landings must not vary systematically with the day of the week. Because lobsters are easily storable and transportable, demand in one market on a given day can be met with inventories and imported supply. To test this assumption, Stafford (2015) regresses daily lobster prices on indicators for Saturday and Sunday, season fixed effects, and dealer fixed effects and finds that coefficients on Saturday and Sunday are extremely small and are statistically indistinguishable from zero. We find the same in our sample. Landings will be independent of the day of the week provided they are not affected by aggregate participation. This is a reasonable assumption for trap fishermen because the number of lobsters in one fisherman's trap on any given day should not depend on the number of fishermen participating that day.

For the hurricane preparation indicator to be a valid exclusion, prices and landings must not be systematically different on days before a hurricane is expected to make landfall. Clearly, landings cannot be affected by future weather events. The assumption regarding prices would fail if dealers set prices based on the anticipated effect of hurricanes on lobster supply. Because lobsters are easily storable and transportable, any shock to local supply or demand will only have a significant effect on the local price if access to the global market is temporarily impaired. Even in this case, the effect of a future hurricane on local prices is not easy for dealers to predict. While a particularly strong storm or a direct hit may damage traps and vessels, leading to lower landings, rough water tends to increase landings. In addition, local demand may fall along with local supply, as evacuation and damage to businesses are likely correlated with damage to traps and vessels. Hence, we expect any pre-hurricane price effect to be small. Nevertheless, to test this assumption, Stafford (2015) regresses daily lobster prices on the three hurricane indicators, season fixed effects, and dealer fixed effects and finds that the coefficient on the hurricane preparation indicator is very small and statistically indistinguishable from zero. We find the same in our sample.

As with earnings, we observe hours worked only when fishermen choose to participate. To correct for possible sample selection bias in (6), we estimate a sample selection model based on the same reduced form probit participation equation as with (11), again employing both Heckman two-step and partial maximum likelihood estimators.

Full estimation results are presented in Tables E1-E14. Each table presents estimates of the coefficient λ, which represents the covariance between the errors in the reduced-form probit and outcome equation of interest. It is estimated as the coefficient on the inverse Mills ratio in the Heckman two-step estimator and is directly estimated by the maximum likelihood estimator.

Appendix E: Complete Regression Results

Table E1 presents estimates of the log wage equation (Eqn. 11) underlying the labor supply estimates shown in Tables 2 and 3. Columns 1, 2, and 3 correspond to Panels A, B, and C of Table 2, and columns 4, 5, and 6 correspond to Panels A, B, and C of Table 3. Regression samples include the full population of fishermen active during the indicated sample period.

Table E1 Wage Regressions

Sample Period:	2001-2005			1995-2005		
Selection-Correction:	None	Two-step	MLE	None	Two-step	MLE
Full moon	−0.381	−0.406	−0.397	−0.402	−0.404	−0.403
	(0.030)	(0.036)	(0.033)	(0.020)	(0.022)	(0.022)
Wind speed, light	0.021	0.014	0.017	0.011	0.010	0.010
	(0.018)	(0.019)	(0.019)	(0.011)	(0.011)	(0.011)
Wind speed, moderate	−0.016	−0.049	−0.037	−0.005	−0.007	−0.006
	(0.027)	(0.038)	(0.033)	(0.017)	(0.021)	(0.022)
Wind speed, high	−0.098	−0.203	−0.167	−0.091	−0.099	−0.096
	(0.046)	(0.087)	(0.074)	(0.032)	(0.048)	(0.050)
Lagged wind speed, light	0.111	0.115	0.112	0.039	0.039	0.038
	(0.025)	(0.027)	(0.026)	(0.015)	(0.015)	(0.015)
Lagged wind speed, moderate	0.114	0.122	0.119	0.103	0.104	0.104
	(0.033)	(0.036)	(0.034)	(0.019)	(0.019)	(0.019)
Lagged wind speed, high	0.234	0.257	0.248	0.173	0.176	0.175
	(0.034)	(0.042)	(0.038)	(0.022)	(0.024)	(0.024)
Rainfall	0.015	0.012	0.013	0.015	0.014	0.015
	(0.012)	(0.013)	(0.013)	(0.009)	(0.009)	(0.009)
Lagged Rainfall	0.016	0.017	0.017	0.012	0.013	0.013
	(0.008)	(0.008)	(0.008)	(0.005)	(0.005)	(0.005)
Hurricane, land	−0.121	−0.163	−0.149	−0.150	−0.159	−0.156
	(0.238)	(0.262)	(0.256)	(0.280)	(0.283)	(0.284)
Hurricane, post	−0.096	−0.101	−0.098	−0.105	−0.103	−0.102
	(0.055)	(0.061)	(0.058)	(0.057)	(0.060)	(0.060)
λ		0.108	0.070		0.010	0.006
		(0.076)	(0.056)		(0.049)	(0.050)
Lobster Trips	30,196	30,196	30,196	80,945	80,945	80,945

Notes: All regressions include month-by-season and individual fixed effects. Bootstrapped standard errors, shown in parentheses, are clustered by calendar date. Here, λ represents the covariance between the errors in the reduced-form probit and outcome equation of interest. It is estimated as the coefficient on the inverse Mills ratio in the Heckman two-step estimator and is directly estimated by the maximum likelihood estimator.

Tables E2–E6 present estimates of the log hours equation (Eqn. 6) and participation equation (Eqn. 9) for the populations corresponding to Table 2.

Table E2 Retiring Fishermen with 15+ Years of Experience

	Hours			Participation		
Selection-Correction:	None	Two-step	MLE	None	Two-step	MLE
$ln(\widehat{\text{hourly earnings}})$	0.220	0.256	0.218	1.548	1.452	1.484
	(0.071)	(0.148)	(0.073)	(0.371)	(0.355)	(0.372)
Wind speed, light	0.003	−0.008	0.002	−0.371	−0.359	−0.363
	(0.016)	(0.035)	(0.016)	(0.088)	(0.088)	(0.089)
Wind speed, moderate	0.016	−0.013	0.019	−0.918	−0.871	−0.887
	(0.035)	(0.083)	(0.036)	(0.138)	(0.142)	(0.146)
Wind speed, high	0.098	0.023	0.110	−2.193	−2.049	−2.096
	(0.062)	(0.248)	(0.068)	(0.330)	(0.346)	(0.368)
Lagged wind speed, light	−0.038	−0.041	−0.042	−0.119	−0.115	−0.115
	(0.027)	(0.031)	(0.029)	(0.123)	(0.122)	(0.122)
Lagged wind speed, moderate	−0.046	−0.049	−0.049	−0.105	−0.105	−0.104
	(0.036)	(0.039)	(0.039)	(0.142)	(0.141)	(0.141)
Lagged wind speed, high	−0.094	−0.096	−0.099	−0.073	−0.083	−0.079
	(0.038)	(0.043)	(0.041)	(0.188)	(0.188)	(0.187)
Rainfall	−0.032	−0.032	−0.032	−0.090	−0.083	−0.085
	(0.027)	(0.029)	(0.030)	(0.090)	(0.089)	(0.089)
Lagged Rainfall	−0.019	−0.022	−0.020	−0.054	−0.054	−0.054
	(0.020)	(0.021)	(0.021)	(0.055)	(0.055)	(0.055)
Hurricane, prep	0.014	0.028	0.027	0.356	0.356	0.356
	(0.035)	(0.055)	(0.039)	(0.276)	(0.276)	(0.276)
Hurricane, land	0.130	0.187	0.133	1.090	1.140	1.125
	(0.061)	(0.144)	(0.066)	(0.407)	(0.395)	(0.403)
Hurricane, post	0.052	0.051	0.044	−0.013	−0.016	−0.017
	(0.090)	(0.110)	(0.096)	(0.458)	(0.454)	(0.453)
Saturday	−2.085	−2.943	−2.028	−18.712	−18.712	−18.712
	(1.628)	(2.789)	(1.737)	(9.197)	(9.197)	(9.205)
Sunday	−1.314	−1.735	−1.297	−11.308	−11.308	−11.308
	(2.306)	(2.838)	(2.440)	(8.862)	(8.862)	(8.792)
Age x Saturday	0.057	0.081	0.055	0.524	0.524	0.524
	(0.045)	(0.078)	(0.048)	(0.263)	(0.263)	(0.264)
Age^2 x Saturday	−0.000	−0.001	−0.000	−0.004	−0.004	−0.004
	(0.000)	(0.001)	(0.000)	(0.002)	(0.002)	(0.002)
Age x Sunday	0.026	0.037	0.025	0.292	0.292	0.292
	(0.062)	(0.076)	(0.065)	(0.250)	(0.250)	(0.248)
Age^2 Sunday	−0.000	−0.000	−0.000	−0.002	−0.002	−0.002
	(0.000)	(0.001)	(0.000)	(0.002)	(0.002)	(0.002)
λ		0.057	0.000			
		(0.147)	(0.006)			
Elasticity	0.220	0.256	0.218	2.278	2.137	2.185
	(0.071)	(0.148)	(0.073)	(0.559)	(0.538)	(0.564)
Fishers	32	32	32	39	39	39
Lobster Trips	523	523	523	631	631	631
Choice Occassions				2,578	2,578	2,578

Notes: See Table E1.

Table E3 Retiring Fishermen with Any Amount of Experience

	Hours			Participation		
Selection-Correction:	None	Two-step	MLE	None	Two-step	MLE
$ln(\widehat{\text{hourly earnings}})$	0.166	0.206	0.161	1.450	1.360	1.390
	(0.061)	(0.163)	(0.058)	(0.288)	(0.279)	(0.291)
Wind speed, light	−0.001	−0.009	−0.001	−0.234	−0.222	−0.226
	(0.014)	(0.027)	(0.014)	(0.067)	(0.067)	(0.067)
Wind speed, moderate	−0.011	−0.040	−0.009	−0.780	−0.736	−0.751
	(0.041)	(0.075)	(0.041)	(0.105)	(0.108)	(0.113)
Wind speed, high	0.092	0.007	0.099	−2.091	−1.956	−2.000
	(0.052)	(0.260)	(0.056)	(0.295)	(0.309)	(0.326)
Lagged wind speed, light	−0.037	−0.037	−0.037	−0.059	−0.055	−0.055
	(0.023)	(0.026)	(0.023)	(0.091)	(0.091)	(0.091)
Lagged wind speed, moderate	−0.075	−0.073	−0.075	−0.035	−0.036	−0.035
	(0.032)	(0.034)	(0.033)	(0.108)	(0.107)	(0.107)
Lagged wind speed, high	−0.080	−0.077	−0.081	−0.014	−0.024	−0.020
	(0.033)	(0.037)	(0.034)	(0.139)	(0.139)	(0.138)
Rainfall	−0.027	−0.028	−0.026	−0.109	−0.103	−0.105
	(0.021)	(0.026)	(0.021)	(0.067)	(0.066)	(0.067)
Lagged Rainfall	−0.016	−0.017	−0.017	−0.037	−0.037	−0.038
	(0.014)	(0.015)	(0.014)	(0.040)	(0.040)	(0.040)
Hurricane, prep	0.002	0.011	0.003	0.243	0.243	0.243
	(0.037)	(0.054)	(0.035)	(0.248)	(0.248)	(0.249)
Hurricane, land	0.164	0.215	0.168	0.934	0.981	0.966
	(0.059)	(0.135)	(0.055)	(0.360)	(0.347)	(0.356)
Hurricane, post	0.039	0.034	0.038	−0.063	−0.065	−0.066
	(0.060)	(0.075)	(0.060)	(0.330)	(0.326)	(0.326)
Saturday	−1.438	−2.338	−1.458	−18.853	−18.853	−18.853
	(1.966)	(3.319)	(2.054)	(8.064)	(8.064)	(8.097)
Sunday	−0.111	−0.614	−0.136	−12.991	−12.991	−12.991
	(1.618)	(2.335)	(1.626)	(7.059)	(7.059)	(7.034)
Age x Saturday	0.040	0.066	0.041	0.534	0.534	0.534
	(0.055)	(0.094)	(0.058)	(0.233)	(0.233)	(0.234)
Age^2 x Saturday	−0.000	−0.000	−0.000	−0.004	−0.004	−0.004
	(0.000)	(0.001)	(0.000)	(0.002)	(0.002)	(0.002)
Age x Sunday	−0.004	0.009	−0.004	0.342	0.342	0.342
	(0.044)	(0.063)	(0.045)	(0.203)	(0.203)	(0.202)
Age^2 Sunday	0.000	−0.000	0.000	−0.002	−0.002	−0.002
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
λ		0.062	0.002			
		(0.167)	(0.006)			
Elasticity	0.166	0.206	0.161	2.346	2.200	2.250
	(0.061)	(0.163)	(0.058)	(0.472)	(0.459)	(0.479)
Fishers	59	59	59	70	70	70
Lobster Trips	751	751	751	924	924	924
Choice Occassions				4,446	4,446	4,446

Notes: See Table E1.

Table E4 Full Population of Fishermen

	Hours			Participation		
Selection-Correction:	None	Two-step	MLE	None	Two-step	MLE
$ln(\widehat{\text{hourly earnings}})$	0.051	−0.004	0.048	0.897	0.841	0.860
	(0.014)	(0.034)	(0.015)	(0.115)	(0.106)	(0.117)
Wind speed, light	−0.005	0.003	−0.004	−0.127	−0.120	−0.123
	(0.003)	(0.005)	(0.003)	(0.025)	(0.024)	(0.025)
Wind speed, moderate	−0.014	0.013	−0.012	−0.450	−0.423	−0.432
	(0.006)	(0.018)	(0.007)	(0.043)	(0.044)	(0.048)
Wind speed, high	−0.052	0.030	−0.046	−1.199	−1.115	−1.143
	(0.014)	(0.051)	(0.018)	(0.098)	(0.106)	(0.122)
Lagged wind speed, light	−0.010	−0.010	−0.010	0.008	0.010	0.010
	(0.005)	(0.006)	(0.005)	(0.034)	(0.032)	(0.033)
Lagged wind speed, moderate	0.000	−0.002	0.000	0.041	0.040	0.041
	(0.006)	(0.006)	(0.006)	(0.040)	(0.038)	(0.039)
Lagged wind speed, high	0.000	−0.008	−0.000	0.130	0.124	0.126
	(0.007)	(0.009)	(0.007)	(0.054)	(0.052)	(0.053)
Rainfall	−0.005	−0.001	−0.005	−0.068	−0.064	−0.065
	(0.003)	(0.004)	(0.003)	(0.025)	(0.024)	(0.024)
Lagged Rainfall	0.002	0.003	0.002	−0.010	−0.010	−0.011
	(0.003)	(0.003)	(0.003)	(0.012)	(0.011)	(0.011)
Hurricane, prep	0.007	0.011	0.007	−0.060	−0.060	−0.060
	(0.011)	(0.011)	(0.011)	(0.080)	(0.080)	(0.081)
Hurricane, land	0.050	0.074	0.052	−0.375	−0.346	−0.355
	(0.045)	(0.079)	(0.047)	(0.453)	(0.430)	(0.436)
Hurricane, post	0.000	0.001	0.000	−0.030	−0.031	−0.032
	(0.017)	(0.017)	(0.017)	(0.096)	(0.092)	(0.093)
Saturday	0.003	0.028	0.004	−0.405	−0.405	−0.405
	(0.051)	(0.055)	(0.052)	(0.160)	(0.160)	(0.160)
Sunday	0.033	0.081	0.035	−0.671	−0.671	−0.671
	(0.072)	(0.081)	(0.072)	(0.188)	(0.188)	(0.187)
Age x Saturday	−0.000	−0.001	−0.000	0.010	0.010	0.010
	(0.002)	(0.002)	(0.002)	(0.006)	(0.006)	(0.006)
Age^2 x Saturday	0.000	0.000	0.000	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age x Sunday	−0.002	−0.003	−0.002	0.003	0.003	0.003
	(0.003)	(0.003)	(0.003)	(0.007)	(0.007)	(0.007)
Age^2 Sunday	0.000	0.000	0.000	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
λ		−0.087	−0.002			
		(0.056)	(0.010)			
Elasticity	0.051	−0.004	0.048	1.240	1.163	1.189
	(0.014)	(0.034)	(0.015)	(0.159)	(0.149)	(0.163)
Fishers	651	651	651	723	723	723
Lobster Trips	30,196	30,196	30,196	36,702	36,702	36,702
Choice Occassions				145,171	145,171	145,171

Notes: See Table E1.

Table E5 Entering Fishermen Who Attain 3+ Years of Tenure

	Hours			Participation		
Selection-Correction:	None	Two-step	MLE	None	Two-step	MLE
$ln(\widehat{\text{hourly earnings}})$	−0.063	−0.026	−0.060	0.093	0.087	0.089
	(0.096)	(0.121)	(0.092)	(0.382)	(0.361)	(0.366)
Wind speed, light	0.018	−0.050	0.016	−0.185	−0.184	−0.185
	(0.025)	(0.044)	(0.024)	(0.099)	(0.098)	(0.098)
Wind speed, moderate	−0.048	−0.140	−0.051	−0.413	−0.410	−0.411
	(0.035)	(0.089)	(0.036)	(0.139)	(0.142)	(0.141)
Wind speed, high	−0.149	−0.575	−0.162	−1.802	−1.794	−1.797
	(0.088)	(0.428)	(0.092)	(0.295)	(0.302)	(0.301)
Lagged wind speed, light	−0.087	−0.031	−0.086	0.251	0.251	0.251
	(0.031)	(0.064)	(0.030)	(0.150)	(0.149)	(0.150)
Lagged wind speed, moderate	−0.040	−0.025	−0.040	0.170	0.170	0.171
	(0.038)	(0.065)	(0.038)	(0.178)	(0.178)	(0.177)
Lagged wind speed, high	−0.012	0.082	−0.010	0.422	0.421	0.421
	(0.041)	(0.095)	(0.041)	(0.197)	(0.198)	(0.198)
Rainfall	−0.035	−0.027	−0.035	0.014	0.014	0.014
	(0.035)	(0.049)	(0.035)	(0.115)	(0.115)	(0.115)
Lagged Rainfall	−0.016	0.003	−0.015	0.091	0.091	0.091
	(0.011)	(0.019)	(0.011)	(0.038)	(0.038)	(0.039)
Hurricane, prep	0.052	0.019	0.052	−0.036	−0.036	−0.036
	(0.059)	(0.086)	(0.060)	(0.267)	(0.267)	(0.268)
Hurricane, land	−0.026	−0.047	−0.028	−0.290	−0.287	−0.287
	(0.070)	(0.102)	(0.074)	(0.317)	(0.317)	(0.318)
Hurricane, post	0.079	−0.131	0.075	−0.792	−0.792	−0.792
	(0.136)	(0.221)	(0.133)	(0.337)	(0.336)	(0.337)
Saturday	−0.492	0.741	−0.467	4.553	4.553	4.553
	(0.255)	(0.972)	(0.422)	(1.296)	(1.296)	(1.300)
Sunday	−0.359	0.664	−0.339	3.299	3.299	3.299
	(0.328)	(0.830)	(0.351)	(1.111)	(1.111)	(1.105)
Age x Saturday	0.028	−0.028	0.027	−0.204	−0.204	−0.204
	(0.012)	(0.043)	(0.018)	(0.060)	(0.060)	(0.060)
Age^2 x Saturday	−0.000	0.000	−0.000	0.002	0.002	0.002
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Age x Sunday	0.021	−0.030	0.020	−0.172	−0.172	−0.172
	(0.016)	(0.042)	(0.017)	(0.050)	(0.050)	(0.050)
Age^2 Sunday	−0.000	0.000	−0.000	0.002	0.002	0.002
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
λ		0.338	0.007			
		(0.299)	(0.012)			
Elasticity	−0.063	−0.026	−0.060	0.154	0.144	0.147
	(0.096)	(0.121)	(0.092)	(0.640)	(0.605)	(0.615)
Fishers	27	27	27	31	31	31
Lobster Trips	319	319	319	387	387	387
Choice Occassions				2,036	2,036	2,036

Notes: See Table E1.

Table E6 Entering Fishermen Who Attain 2+ Years of Tenure

	Hours			Participation		
Selection-Correction:	None	Two-step	MLE	None	Two-step	MLE
$ln(\widehat{\text{hourly earnings}})$	−0.032	0.045	−0.017	0.266	0.250	0.255
	(0.090)	(0.138)	(0.088)	(0.338)	(0.319)	(0.323)
Wind speed, light	0.003	−0.067	0.003	−0.164	−0.162	−0.163
	(0.023)	(0.048)	(0.023)	(0.087)	(0.087)	(0.086)
Wind speed, moderate	−0.005	−0.105	−0.005	−0.334	−0.326	−0.329
	(0.041)	(0.085)	(0.042)	(0.125)	(0.127)	(0.126)
Wind speed, high	−0.129	−0.681	−0.138	−1.629	−1.605	−1.613
	(0.087)	(0.421)	(0.090)	(0.287)	(0.293)	(0.292)
Lagged wind speed, light	−0.068	0.005	−0.066	0.219	0.219	0.220
	(0.025)	(0.065)	(0.024)	(0.127)	(0.127)	(0.127)
Lagged wind speed, moderate	−0.012	−0.009	0.006	0.093	0.093	0.094
	(0.035)	(0.062)	(0.036)	(0.152)	(0.152)	(0.151)
Lagged wind speed, high	−0.008	0.092	−0.006	0.303	0.302	0.302
	(0.040)	(0.086)	(0.041)	(0.176)	(0.177)	(0.177)
Rainfall	−0.033	−0.041	−0.033	−0.045	−0.044	−0.044
	(0.024)	(0.045)	(0.024)	(0.104)	(0.104)	(0.104)
Lagged Rainfall	−0.017	0.007	−0.017	0.080	0.080	0.080
	(0.010)	(0.018)	(0.010)	(0.034)	(0.034)	(0.034)
Hurricane, prep	0.039	0.003	0.040	−0.048	−0.048	−0.048
	(0.055)	(0.096)	(0.055)	(0.248)	(0.248)	(0.249)
Hurricane, land	−0.044	−0.053	−0.042	−0.296	−0.287	−0.290
	(0.069)	(0.116)	(0.070)	(0.304)	(0.302)	(0.304)
Hurricane, post	0.074	−0.199	0.067	−0.762	−0.763	−0.763
	(0.120)	(0.233)	(0.120)	(0.327)	(0.327)	(0.328)
Saturday	−0.329	1.010	−0.311	3.127	3.127	3.127
	(0.277)	(0.840)	(0.293)	(1.089)	(1.089)	(1.093)
Sunday	−0.316	0.720	−0.324	2.519	2.519	2.519
	(0.393)	(0.773)	(0.388)	(0.968)	(0.968)	(0.962)
Age x Saturday	0.019	−0.043	0.018	−0.145	−0.145	−0.145
	(0.012)	(0.038)	(0.013)	(0.052)	(0.052)	(0.052)
Age^2 x Saturday	−0.000	0.000	−0.000	0.002	0.002	0.002
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Age x Sunday	0.024	−0.028	0.024	−0.132	−0.132	−0.132
	(0.017)	(0.038)	(0.017)	(0.044)	(0.044)	(0.043)
Age^2 Sunday	−0.000	0.000	−0.000	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
λ		0.432	0.008			
		(0.334)	(0.012)			
Elasticity	−0.032	0.045	−0.017	0.433	0.406	0.415
	(0.090)	(0.138)	(0.088)	(0.548)	(0.518)	(0.525)
Fishers	32	32	32	37	37	37
Lobster Trips	386	386	386	462	462	462
Choice Occassions				2,399	2,399	2,399

Notes: See Table E1.

Tables E7–E14 present estimates of the log hours equation (Eqn. 6) and participation equation (Eqn. 9) for the populations corresponding to Table 3.

Table E7 Retiring Fishermen with 15+ Years of Experience

	Hours			Participation		
Selection-Correction:	None	Two-step	MLE	None	Two-step	MLE
$ln(\widehat{\text{hourly earnings}})$	0.209	0.257	0.172	1.465	1.459	1.462
	(0.065)	(0.146)	(0.071)	(0.351)	(0.350)	(0.354)
Wind speed, light	0.005	−0.007	0.013	−0.355	−0.353	−0.354
	(0.016)	(0.035)	(0.015)	(0.089)	(0.089)	(0.089)
Wind speed, moderate	0.013	−0.024	0.041	−0.934	−0.932	−0.933
	(0.035)	(0.086)	(0.036)	(0.135)	(0.136)	(0.139)
Wind speed, high	0.096	−0.004	0.182	−2.210	−2.200	−2.204
	(0.060)	(0.258)	(0.063)	(0.327)	(0.333)	(0.335)
Lagged wind speed, light	−0.022	−0.021	−0.031	−0.005	−0.004	−0.004
	(0.025)	(0.028)	(0.027)	(0.120)	(0.120)	(0.120)
Lagged wind speed, moderate	−0.043	−0.044	−0.051	−0.079	−0.080	−0.080
	(0.035)	(0.038)	(0.038)	(0.146)	(0.146)	(0.145)
Lagged wind speed, high	−0.079	−0.076	−0.093	0.037	0.032	0.033
	(0.034)	(0.038)	(0.038)	(0.174)	(0.174)	(0.173)
Rainfall	−0.032	−0.033	−0.029	−0.088	−0.087	−0.087
	(0.026)	(0.029)	(0.029)	(0.090)	(0.090)	(0.091)
Lagged Rainfall	−0.018	−0.021	−0.017	−0.047	−0.047	−0.047
	(0.020)	(0.021)	(0.021)	(0.055)	(0.055)	(0.055)
Hurricane, prep	0.014	0.028	0.006	0.356	0.356	0.356
	(0.035)	(0.055)	(0.034)	(0.276)	(0.276)	(0.275)
Hurricane, land	0.135	0.186	0.103	1.123	1.135	1.132
	(0.061)	(0.144)	(0.062)	(0.414)	(0.413)	(0.416)
Hurricane, post	0.052	0.052	0.058	−0.008	−0.011	−0.013
	(0.090)	(0.110)	(0.098)	(0.463)	(0.464)	(0.460)
Saturday	−2.085	−2.943	−1.537	−18.712	−18.712	−18.712
	(1.628)	(2.789)	(1.843)	(9.197)	(9.197)	(9.245)
Sunday	−1.314	−1.735	−1.193	−11.308	−11.308	−11.308
	(2.306)	(2.838)	(2.444)	(8.862)	(8.862)	(8.812)
Age x Saturday	0.057	0.081	0.041	0.524	0.524	0.524
	(0.045)	(0.078)	(0.051)	(0.263)	(0.263)	(0.265)
Age^2 x Saturday	−0.000	−0.001	−0.000	−0.004	−0.004	−0.004
	(0.000)	(0.001)	(0.000)	(0.002)	(0.002)	(0.002)
Age x Sunday	0.026	0.037	0.022	0.292	0.292	0.292
	(0.062)	(0.076)	(0.065)	(0.250)	(0.250)	(0.248)
Age^2 Sunday	−0.000	−0.000	−0.000	−0.002	−0.002	−0.002
	(0.000)	(0.001)	(0.000)	(0.002)	(0.002)	(0.002)
λ		0.057	−0.050			
		(0.147)	(0.006)			
Elasticity	0.209	0.257	0.172	2.157	2.147	2.152
	(0.065)	(0.146)	(0.071)	(0.528)	(0.527)	(0.532)
Fishers	32	32	32	39	39	39
Lobster Trips	523	523	523	631	631	631
Choice Occassions				2,578	2,578	2,578

Notes: See Table E1.

Table E8 Retiring Fishermen with Any Amount of Experience

	Hours			Participation		
Selection-Correction:	None	Two-step	MLE	None	Two-step	MLE
$ln(\widehat{\text{hourly earnings}})$	0.157	0.207	0.158	1.372	1.366	1.369
	(0.057)	(0.162)	(0.055)	(0.274)	(0.275)	(0.277)
Wind speed, light	0.000	−0.008	0.000	−0.219	−0.217	−0.218
	(0.014)	(0.027)	(0.014)	(0.067)	(0.067)	(0.067)
Wind speed, moderate	−0.013	−0.048	−0.013	−0.795	−0.793	−0.794
	(0.040)	(0.079)	(0.040)	(0.103)	(0.105)	(0.107)
Wind speed, high	0.090	−0.014	0.088	−2.107	−2.097	−2.101
	(0.051)	(0.272)	(0.047)	(0.292)	(0.297)	(0.300)
Lagged wind speed, light	−0.025	−0.022	−0.025	0.048	0.049	0.049
	(0.021)	(0.025)	(0.021)	(0.090)	(0.090)	(0.090)
Lagged wind speed, moderate	−0.072	−0.069	−0.072	−0.011	−0.011	−0.011
	(0.031)	(0.034)	(0.032)	(0.110)	(0.110)	(0.110)
Lagged wind speed, high	−0.068	−0.061	−0.067	0.089	0.085	0.085
	(0.030)	(0.034)	(0.030)	(0.129)	(0.129)	(0.128)
Rainfall	−0.027	−0.029	−0.026	−0.107	−0.106	−0.106
	(0.021)	(0.026)	(0.021)	(0.067)	(0.067)	(0.067)
Lagged Rainfall	−0.016	−0.016	−0.016	−0.031	−0.031	−0.031
	(0.014)	(0.015)	(0.014)	(0.040)	(0.040)	(0.040)
Hurricane, prep	0.002	0.011	0.002	0.243	0.243	0.243
	(0.037)	(0.054)	(0.036)	(0.248)	(0.248)	(0.248)
Hurricane, land	0.167	0.214	0.168	0.965	0.976	0.973
	(0.059)	(0.136)	(0.053)	(0.366)	(0.365)	(0.367)
Hurricane, post	0.040	0.035	0.038	−0.059	−0.061	−0.062
	(0.060)	(0.075)	(0.061)	(0.334)	(0.335)	(0.334)
Saturday	−1.438	−2.338	−1.500	−18.853	−18.853	−18.853
	(1.966)	(3.319)	(1.977)	(8.064)	(8.064)	(8.050)
Sunday	−0.111	−0.614	−0.140	−12.991	−12.991	−12.991
	(1.618)	(2.335)	(1.608)	(7.059)	(7.059)	(7.020)
Age x Saturday	0.040	0.066	0.042	0.534	0.534	0.534
	(0.055)	(0.094)	(0.055)	(0.233)	(0.233)	(0.232)
Age^2 x Saturday	−0.000	−0.000	−0.000	−0.004	−0.004	−0.004
	(0.000)	(0.001)	(0.000)	(0.002)	(0.002)	(0.002)
Age x Sunday	−0.004	0.009	−0.003	0.342	0.342	0.342
	(0.044)	(0.063)	(0.043)	(0.203)	(0.203)	(0.202)
Age^2 Sunday	0.000	−0.000	0.000	−0.002	−0.002	−0.002
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
λ		0.062	0.002			
		(0.167)	(0.006)			
Elasticity	0.157	0.207	0.158	2.221	2.211	2.216
	(0.057)	(0.162)	(0.055)	(0.448)	(0.450)	(0.452)
Fishers	59	59	59	70	70	70
Lobster Trips	751	751	751	924	924	924
Choice Occassions				4,446	4,446	4,446

Notes: See Table E1.

Table E9 Non-Retiring Fishermen with 15+ Years of Experience

	Hours			Participation		
Selection-Correction:	None	Two-step	MLE	None	Two-step	MLE
$ln(\widehat{\text{hourly earnings}})$	0.045	0.019	0.044	0.867	0.863	0.865
	(0.021)	(0.045)	(0.022)	(0.166)	(0.166)	(0.168)
Wind speed, light	−0.007	−0.004	−0.007	−0.108	−0.107	−0.108
	(0.005)	(0.007)	(0.005)	(0.037)	(0.037)	(0.037)
Wind speed, moderate	−0.012	0.005	−0.011	−0.542	−0.540	−0.541
	(0.008)	(0.025)	(0.009)	(0.058)	(0.059)	(0.061)
Wind speed, high	−0.036	0.013	−0.035	−1.478	−1.471	−1.474
	(0.021)	(0.079)	(0.025)	(0.135)	(0.138)	(0.144)
Lagged wind speed, light	0.002	−0.002	0.002	0.101	0.101	0.101
	(0.008)	(0.009)	(0.008)	(0.052)	(0.052)	(0.052)
Lagged wind speed, moderate	0.011	0.007	0.011	0.097	0.097	0.097
	(0.009)	(0.010)	(0.009)	(0.062)	(0.062)	(0.062)
Lagged wind speed, high	0.009	−0.001	0.009	0.314	0.311	0.312
	(0.011)	(0.017)	(0.011)	(0.073)	(0.073)	(0.074)
Rainfall	−0.008	−0.006	−0.008	−0.048	−0.048	−0.048
	(0.006)	(0.007)	(0.006)	(0.038)	(0.038)	(0.038)
Lagged Rainfall	0.002	0.002	0.002	−0.012	−0.012	−0.012
	(0.003)	(0.003)	(0.003)	(0.018)	(0.018)	(0.018)
Hurricane, prep	0.001	0.005	0.001	−0.110	−0.110	−0.110
	(0.013)	(0.016)	(0.013)	(0.133)	(0.133)	(0.134)
Hurricane, land	0.073	0.083	0.073	−0.340	−0.332	−0.334
	(0.018)	(0.029)	(0.018)	(0.503)	(0.500)	(0.501)
Hurricane, post	0.005	0.006	0.005	−0.075	−0.077	−0.077
	(0.016)	(0.018)	(0.016)	(0.153)	(0.154)	(0.155)
Saturday	0.911	0.655	0.904	5.924	5.924	5.924
	(0.728)	(0.823)	(0.739)	(2.968)	(2.968)	(2.973)
Sunday	0.778	0.477	0.770	4.862	4.862	4.862
	(0.812)	(0.839)	(0.808)	(2.955)	(2.955)	(2.938)
Age x Saturday	−0.026	−0.019	−0.026	−0.182	−0.182	−0.182
	(0.020)	(0.023)	(0.021)	(0.084)	(0.084)	(0.084)
Age^2 x Saturday	0.000	0.000	0.000	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Age x Sunday	−0.021	−0.012	−0.021	−0.166	−0.166	−0.166
	(0.023)	(0.024)	(0.022)	(0.084)	(0.084)	(0.083)
Age^2 Sunday	0.000	0.000	0.000	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
λ		−0.044	−0.001			
		(0.070)	(0.011)			
Elasticity	0.045	0.019	0.044	1.122	1.117	1.119
	(0.021)	(0.045)	(0.022)	(0.216)	(0.216)	(0.219)
Fishers	107	107	107	124	124	124
Lobster Trips	5,435	5,435	5,435	7,310	7,310	7,310
Choice Occassions				25,228	25,228	25,228

Notes: See Table E1.

Table E10 Non-Retiring Fishermen with Any Amount of Experience

	Hours			Participation		
Selection-Correction:	None	Two-step	MLE	None	Two-step	MLE
$ln(\widehat{\text{hourly earnings}})$	0.066	0.007	0.064	0.850	0.846	0.848
	(0.021)	(0.045)	(0.036)	(0.144)	(0.144)	(0.147)
Wind speed, light	−0.008	0.001	−0.008	−0.132	−0.131	−0.131
	(0.005)	(0.007)	(0.007)	(0.031)	(0.031)	(0.032)
Wind speed, moderate	−0.024	0.011	−0.023	−0.503	−0.501	−0.502
	(0.008)	(0.025)	(0.019)	(0.053)	(0.054)	(0.056)
Wind speed, high	−0.076	0.025	−0.073	−1.364	−1.358	−1.360
	(0.025)	(0.072)	(0.054)	(0.123)	(0.125)	(0.132)
Lagged wind speed, light	−0.008	−0.012	−0.008	0.073	0.073	0.073
	(0.008)	(0.009)	(0.008)	(0.044)	(0.043)	(0.044)
Lagged wind speed, moderate	0.006	0.002	0.006	0.059	0.059	0.059
	(0.009)	(0.010)	(0.009)	(0.053)	(0.053)	(0.054)
Lagged wind speed, high	−0.005	−0.023	−0.005	0.269	0.267	0.267
	(0.011)	(0.016)	(0.014)	(0.065)	(0.065)	(0.066)
Rainfall	−0.006	−0.001	−0.006	−0.059	−0.059	−0.059
	(0.005)	(0.006)	(0.006)	(0.037)	(0.037)	(0.037)
Lagged Rainfall	0.001	0.000	0.001	−0.005	−0.005	−0.005
	(0.003)	(0.003)	(0.003)	(0.017)	(0.017)	(0.017)
Hurricane, prep	0.013	0.018	0.013	−0.077	−0.077	−0.077
	(0.019)	(0.020)	(0.019)	(0.113)	(0.113)	(0.113)
Hurricane, land	0.091	0.121	0.092	−0.412	−0.405	−0.406
	(0.023)	(0.039)	(0.024)	(0.478)	(0.475)	(0.476)
Hurricane, post	0.008	0.010	0.008	−0.048	−0.050	−0.050
	(0.017)	(0.019)	(0.017)	(0.136)	(0.137)	(0.138)
Saturday	0.804	0.110	0.787	8.076	8.076	8.076
	(0.539)	(0.716)	(0.638)	(2.359)	(2.359)	(2.358)
Sunday	1.435	0.570	1.414	7.453	7.453	7.453
	(0.757)	(0.814)	(0.873)	(2.242)	(2.242)	(2.231)
Age x Saturday	−0.025	−0.004	−0.024	−0.241	−0.241	−0.241
	(0.015)	(0.021)	(0.018)	(0.067)	(0.067)	(0.067)
Age^2 x Saturday	0.000	0.000	0.000	0.002	0.002	0.002
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age x Sunday	−0.040	−0.014	−0.039	−0.236	−0.236	−0.236
	(0.021)	(0.023)	(0.025)	(0.064)	(0.064)	(0.063)
Age^2 Sunday	0.000	0.000	0.000	0.002	0.002	0.002
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
λ		−0.099	−0.002			
		(0.071)	(0.040)			
Elasticity	0.066	0.007	0.064	1.154	1.149	1.151
	(0.021)	(0.045)	(0.036)	(0.197)	(0.197)	(0.201)
Fishers	156	156	156	179	179	179
Lobster Trips	7,438	7,438	7,438	9,507	9,507	9,507
Choice Occassions				35,898	35,898	35,898

Notes: See Table E1.

Table E11 Soon-to-Retire Fishermen Who Attain 15+ Years of Experience

	Hours			Participation		
Selection-Correction:	None	Two-step	MLE	None	Two-step	MLE
$ln(\widehat{\text{hourly earnings}})$	0.080	0.181	0.085	1.121	1.116	1.118
	(0.037)	(0.193)	(0.113)	(0.168)	(0.170)	(0.175)
Wind speed, light	−0.023	−0.033	−0.024	−0.138	−0.137	−0.137
	(0.009)	(0.026)	(0.015)	(0.038)	(0.038)	(0.038)
Wind speed, moderate	−0.020	−0.059	−0.022	−0.506	−0.505	−0.506
	(0.017)	(0.089)	(0.046)	(0.062)	(0.064)	(0.066)
Wind speed, high	−0.048	−0.123	−0.051	−0.996	−0.988	−0.991
	(0.035)	(0.190)	(0.096)	(0.114)	(0.120)	(0.135)
Lagged wind speed, light	0.002	0.003	0.002	0.023	0.023	0.023
	(0.012)	(0.016)	(0.012)	(0.055)	(0.055)	(0.055)
Lagged wind speed, moderate	0.013	0.005	0.013	−0.069	−0.069	−0.069
	(0.015)	(0.023)	(0.018)	(0.063)	(0.063)	(0.063)
Lagged wind speed, high	−0.009	−0.009	−0.009	0.010	0.007	0.007
	(0.020)	(0.027)	(0.021)	(0.090)	(0.091)	(0.091)
Rainfall	−0.017	−0.024	−0.017	−0.123	−0.122	−0.122
	(0.011)	(0.026)	(0.014)	(0.050)	(0.049)	(0.050)
Lagged Rainfall	0.008	0.007	0.008	−0.010	−0.010	−0.010
	(0.006)	(0.008)	(0.006)	(0.026)	(0.026)	(0.026)
Hurricane, prep	−0.024	−0.058	−0.026	−0.408	−0.408	−0.408
	(0.084)	(0.130)	(0.092)	(0.313)	(0.313)	(0.310)
Hurricane, land						
Hurricane, post	0.088	−0.030	0.081	−1.347	−1.350	−1.350
	(0.028)	(0.242)	(0.117)	(0.174)	(0.175)	(0.175)
Saturday	−0.653	−0.944	−0.667	−5.522	−5.522	−5.522
	(0.581)	(1.152)	(0.699)	(2.483)	(2.483)	(2.482)
Sunday	−0.813	−0.528	−0.799	−2.596	−2.596	−2.596
	(0.747)	(0.990)	(0.774)	(2.393)	(2.393)	(2.387)
Age x Saturday	0.019	0.027	0.019	0.153	0.153	0.153
	(0.017)	(0.033)	(0.020)	(0.074)	(0.074)	(0.074)
Age^2 x Saturday	−0.000	−0.000	−0.000	−0.001	−0.001	−0.001
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Age x Sunday	0.024	0.012	0.023	0.040	0.040	0.040
	(0.021)	(0.027)	(0.023)	(0.072)	(0.072)	(0.072)
Age^2 Sunday	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
λ		0.120	0.006			
		(0.248)	(0.109)			
Elasticity	0.080	0.181	0.085	1.298	1.292	1.295
	(0.037)	(0.193)	(0.113)	(0.196)	(0.198)	(0.204)
Fishers	34	34	34	39	39	39
Lobster Trips	3,243	3,243	3,243	4,220	4,220	4,220
Choice Occassions				12,880	12,880	12,880

Notes: See Table E1.

Table E12 Soon-to-Retire Fishermen Who Attain Any Amount of Experience

	Hours			Participation		
Selection-Correction:	None	Two-step	MLE	None	Two-step	MLE
$ln(\widehat{\text{hourly earnings}})$	0.105	0.031	−0.218	0.950	0.946	0.948
	(0.035)	(0.161)	(0.161)	(0.142)	(0.144)	(0.148)
Wind speed, light	−0.014	−0.005	0.022	−0.137	−0.136	−0.137
	(0.008)	(0.024)	(0.020)	(0.033)	(0.033)	(0.033)
Wind speed, moderate	−0.017	0.017	0.128	−0.496	−0.494	−0.495
	(0.014)	(0.085)	(0.072)	(0.053)	(0.054)	(0.056)
Wind speed, high	−0.027	0.043	0.272	−1.009	−1.002	−1.005
	(0.030)	(0.189)	(0.150)	(0.102)	(0.107)	(0.119)
Lagged wind speed, light	−0.003	−0.007	−0.020	0.054	0.054	0.054
	(0.010)	(0.016)	(0.015)	(0.047)	(0.046)	(0.047)
Lagged wind speed, moderate	0.007	0.009	0.010	−0.016	−0.016	−0.016
	(0.014)	(0.017)	(0.015)	(0.055)	(0.055)	(0.055)
Lagged wind speed, high	−0.010	−0.015	−0.025	0.066	0.064	0.064
	(0.017)	(0.024)	(0.021)	(0.077)	(0.077)	(0.077)
Rainfall	−0.013	−0.009	0.008	−0.093	−0.092	−0.092
	(0.009)	(0.019)	(0.014)	(0.036)	(0.035)	(0.036)
Lagged Rainfall	0.011	0.011	0.013	−0.004	−0.004	−0.004
	(0.004)	(0.006)	(0.006)	(0.021)	(0.021)	(0.021)
Hurricane, prep	−0.114	−0.086	0.032	−0.372	−0.372	−0.372
	(0.156)	(0.169)	(0.172)	(0.295)	(0.295)	(0.293)
Hurricane, land						
Hurricane, post	0.057	0.151	0.459	−1.292	−1.294	−1.295
	(0.023)	(0.225)	(0.181)	(0.164)	(0.164)	(0.165)
Saturday	−0.347	−0.056	1.025	−5.879	−5.879	−5.879
	(0.582)	(1.171)	(0.951)	(2.146)	(2.146)	(2.152)
Sunday	−1.287	−1.561	−2.039	−2.262	−2.262	−2.262
	(0.724)	(0.881)	(0.827)	(2.170)	(2.170)	(2.177)
Age x Saturday	0.010	0.002	−0.028	0.166	0.166	0.166
	(0.017)	(0.034)	(0.027)	(0.065)	(0.065)	(0.065)
Age^2 x Saturday	−0.000	−0.000	0.000	−0.001	−0.001	−0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age x Sunday	0.038	0.048	0.069	0.033	0.033	0.033
	(0.021)	(0.024)	(0.026)	(0.066)	(0.066)	(0.066)
Age^2 Sunday	−0.000	−0.000	−0.001	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
λ		−0.104	−0.372			
		(0.249)	(0.181)			
Elasticity	0.105	0.031	−0.218	1.165	1.159	1.162
	(0.035)	(0.161)	(0.161)	(0.176)	(0.178)	(0.183)
Fishers	56	56	56	63	63	63
Lobster Trips	4,142	4,142	4,142	5,324	5,324	5,324
Choice Occassions				17,630	17,630	17,630

Notes: See Table E1.

Table E13 Younger Non-Retiring Fishermen Who Attain 15+ Years of Experience

	Hours			Participation		
Selection-Correction:	None	Two-step	MLE	None	Two-step	MLE
$ln(\widehat{\text{hourly earnings}})$	0.050	0.103	0.053	0.866	0.862	0.864
	(0.024)	(0.064)	(0.053)	(0.109)	(0.111)	(0.116)
Wind speed, light	−0.020	−0.026	−0.020	−0.107	−0.106	−0.107
	(0.006)	(0.010)	(0.009)	(0.025)	(0.025)	(0.026)
Wind speed, moderate	−0.035	−0.056	−0.037	−0.371	−0.369	−0.370
	(0.010)	(0.026)	(0.022)	(0.043)	(0.044)	(0.046)
Wind speed, high	−0.035	−0.092	−0.038	−0.952	−0.945	−0.948
	(0.021)	(0.074)	(0.052)	(0.090)	(0.094)	(0.105)
Lagged wind speed, light	−0.007	−0.008	−0.007	0.033	0.033	0.033
	(0.009)	(0.011)	(0.009)	(0.041)	(0.041)	(0.041)
Lagged wind speed, moderate	0.001	−0.002	0.000	0.006	0.006	0.006
	(0.010)	(0.011)	(0.010)	(0.045)	(0.045)	(0.045)
Lagged wind speed, high	−0.011	−0.006	−0.011	0.100	0.097	0.097
	(0.012)	(0.015)	(0.013)	(0.061)	(0.061)	(0.060)
Rainfall	−0.009	−0.014	−0.010	−0.089	−0.088	−0.088
	(0.007)	(0.010)	(0.008)	(0.032)	(0.032)	(0.032)
Lagged Rainfall	−0.000	0.001	−0.000	0.003	0.003	0.003
	(0.003)	(0.003)	(0.003)	(0.014)	(0.014)	(0.014)
Hurricane, prep	0.018	0.011	0.017	−0.006	−0.006	−0.006
	(0.053)	(0.055)	(0.053)	(0.255)	(0.255)	(0.252)
Hurricane, land						
Hurricane, post	−0.003	−0.078	−0.008	−1.005	−1.007	−1.008
	(0.036)	(0.086)	(0.079)	(0.186)	(0.187)	(0.187)
Saturday	0.322	0.552	0.336	3.793	3.793	3.793
	(0.599)	(0.687)	(0.619)	(1.705)	(1.705)	(1.706)
Sunday	0.461	0.971	0.491	6.149	6.149	6.149
	(0.769)	(0.799)	(0.855)	(1.837)	(1.837)	(1.832)
Age x Saturday	−0.011	−0.018	−0.011	−0.116	−0.116	−0.116
	(0.017)	(0.020)	(0.018)	(0.051)	(0.051)	(0.051)
Age^2 x Saturday	0.000	0.000	0.000	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age x Sunday	−0.013	−0.030	−0.014	−0.201	−0.201	−0.201
	(0.023)	(0.024)	(0.026)	(0.055)	(0.055)	(0.055)
Age^2 Sunday	0.000	0.000	0.000	0.002	0.002	0.002
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
λ		0.082	0.005			
		(0.102)	(0.060)			
Elasticity	0.050	0.103	0.053	1.038	1.033	1.035
	(0.024)	(0.064)	(0.053)	(0.132)	(0.134)	(0.141)
Fishers	108	108	108	124	124	124
Lobster Trips	8,520	8,520	8,520	11,863	11,863	11,863
Choice Occassions				37,984	37,984	37,984

Notes: See Table E1.

Table E14 Younger Non-Retiring Fishermen Who Attain Any Amount of Experience

	Hours			Participation		
Selection-Correction:	None	Two-step	MLE	None	Two-step	MLE
$ln(\widehat{\text{hourly earnings}})$	0.067	0.085	0.068	0.849	0.845	0.847
	(0.022)	(0.060)	(0.032)	(0.096)	(0.099)	(0.104)
Wind speed, light	−0.024	−0.026	−0.024	−0.096	−0.095	−0.095
	(0.006)	(0.008)	(0.006)	(0.023)	(0.023)	(0.023)
Wind speed, moderate	−0.039	−0.046	−0.039	−0.369	−0.368	−0.368
	(0.010)	(0.026)	(0.014)	(0.039)	(0.040)	(0.043)
Wind speed, high	−0.028	−0.046	−0.028	−0.936	−0.929	−0.932
	(0.021)	(0.069)	(0.031)	(0.085)	(0.089)	(0.100)
Lagged wind speed, light	−0.007	−0.008	−0.007	0.029	0.030	0.030
	(0.008)	(0.009)	(0.008)	(0.036)	(0.035)	(0.036)
Lagged wind speed, moderate	0.002	0.001	0.002	−0.011	−0.011	−0.011
	(0.009)	(0.010)	(0.009)	(0.039)	(0.039)	(0.040)
Lagged wind speed, high	−0.014	−0.012	−0.014	0.088	0.086	0.086
	(0.012)	(0.013)	(0.012)	(0.055)	(0.055)	(0.055)
Rainfall	−0.010	−0.012	−0.010	−0.092	−0.092	−0.092
	(0.007)	(0.009)	(0.007)	(0.030)	(0.029)	(0.030)
Lagged Rainfall	−0.001	−0.000	−0.001	0.000	−0.000	−0.000
	(0.003)	(0.003)	(0.003)	(0.013)	(0.013)	(0.013)
Hurricane, prep	0.032	0.028	0.032	−0.073	−0.073	−0.073
	(0.077)	(0.078)	(0.079)	(0.244)	(0.244)	(0.243)
Hurricane, land						
Hurricane, post	0.108	0.084	0.107	−1.046	−1.048	−1.048
	(0.028)	(0.076)	(0.045)	(0.182)	(0.182)	(0.183)
Saturday	0.442	0.577	0.446	5.944	5.944	5.944
	(0.522)	(0.700)	(0.563)	(1.624)	(1.624)	(1.622)
Sunday	0.342	0.495	0.347	5.329	5.329	5.329
	(0.692)	(0.730)	(0.702)	(1.843)	(1.843)	(1.843)
Age x Saturday	−0.014	−0.017	−0.014	−0.175	−0.175	−0.175
	(0.015)	(0.021)	(0.017)	(0.049)	(0.049)	(0.049)
Age^2 x Saturday	0.000	0.000	0.000	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age x Sunday	−0.009	−0.014	−0.009	−0.175	−0.175	−0.175
	(0.021)	(0.022)	(0.021)	(0.056)	(0.056)	(0.056)
Age^2 Sunday	0.000	0.000	0.000	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
λ		0.028	0.001			
		(0.098)	(0.031)			
Elasticity	0.067	0.085	0.068	1.054	1.049	1.051
	(0.022)	(0.060)	(0.032)	(0.121)	(0.124)	(0.131)
Fishers	151	151	151	168	168	168
Lobster Trips	10,838	10,838	10,838	14,477	14,477	14,477
Choice Occassions				48,919	48,919	48,919

Notes: See Table E1.

Appendix F: Robustness Exercises

In this section, we explore the sensitivity of our results to several key data and modeling choices.

Table F1 presents estimates based on the alternative samples discussed in Appendix A. The panels in Table F1 correspond to the panels in Table A1. In Panel B, we extend the sample period to include the full lobster season and retain only those fishermen that exclusively fish for lobsters. The pattern in elasticity estimates is quite similar. However, estimates for the retiring samples and the full population are smaller and less precisely estimated. This is perhaps not surprising given that sample sizes are roughly cut in half. In Panel C, we include all fishermen, regardless of the type of gear used to harvest lobsters. Here, too, the pattern in elasticity estimates is quite similar, though the slightly larger total elasticity estimates for retiring fishermen and the slightly lower total elasticity estimate for the full population suggest a larger bias of 2.3. Finally, in Panel D, we do not apply an exit rule and include all choice occasions in each active fishing season. Again, the pattern in elasticity estimates is quite similar.

Table F2 presents estimates from models that include individual-by-season fixed effects, which allows for idiosyncratic variation in λ_i across seasons. Estimates of the IES for retiring fishermen remain around 2.5, though the estimated bias drops from to about 2.0 to about 1.8.

Table F3 presents our main results – Panel A of Table 2 – with original bootstrapped standard errors clustered by calendar date in parentheses and additional bootstrapped standard errors clustered by calendar date and individual in brackets. Adding the additional clustering dimension does not appreciably affect the standard errors. We take this as evidence that autocorrelation is not a significant concern for inference in our setting.

Finally, Table F4 presents a version of Table 2 in which we estimate the wage equation separately for each group. Point estimates are quite similar to those in Table 2, with the notable exception of the estimate for our preferred group of retiring fishermen in Panel C (1.92). In all panels, standard errors are larger for retiring and entering groups, reflecting the higher variance in imputed wages that arises from estimating the wage equation separately by group.

Overall, the results in Tables F1–F4 are qualitatively similar to those in Table 2: The IES for retiring fishermen varies from 1.92 to 2.73, and the estimated bias varies from 1.55 to 2.33.

Table F1 Elasticity Estimates for Retiring, All, and Entering Fishermen: Vary Sample Criteria

	Retiring		All	Entering	
	15+ Years	Any Years		3+ Years	2+ Years
			Panel B: Full Season		
Hours Elasticity	0.130	−0.055	0.058	−0.221	−0.143
	(0.160)	(0.179)	(0.026)	(0.178)	(0.168)
Participation Elasticity	2.160	2.064	1.121	0.345	0.258
	(1.274)	(0.910)	(0.237)	(0.682)	(0.652)
Total Elasticity	2.290	2.009	1.179	0.123	0.115
	(1.305)	(0.919)	(0.241)	(0.720)	(0.683)
Hours Regression:					
Fishermen	11	27	343	18	22
Lobster trips	249	422	17,615	405	458
Participation Regression:					
Fishermen	16	33	393	22	27
Lobster trips	364	577	22,484	554	613
Choice occassions	2,205	4,109	126,687	4,253	4,911
			Panel C: All Gear Types		
Hours Elasticity	0.212	0.181	0.038	−0.054	−0.005
	(0.081)	(0.069)	(0.015)	(0.096)	(0.093)
Participation Elasticity	2.418	2.435	1.090	0.045	0.224
	(0.664)	(0.533)	(0.158)	(0.589)	(0.542)
Total Elasticity	2.631	2.616	1.127	−0.009	0.219
	(0.677)	(0.541)	(0.160)	(0.595)	(0.550)
Hours Regression:					
Fishermen	37	80	1,161	48	57
Lobster trips	543	820	40,082	457	533
Participation Regression:					
Fishermen	44	94	1,292	55	67
Lobster trips	652	998	49,558	567	654
Choice occassions	2,718	5,310	231,580	3,184	3,740
			Panel D: No Exit Rule Applied		
Hours Elasticity	0.220	0.166	0.051	−0.063	−0.032
	(0.071)	(0.061)	(0.014)	(0.096)	(0.090)
Participation Elasticity	2.340	2.561	1.299	0.018	0.363
	(0.561)	(0.485)	(0.162)	(0.647)	(0.553)
Total Elasticity	2.560	2.727	1.350	−0.045	0.331
	(0.572)	(0.491)	(0.165)	(0.649)	(0.553)
Hours Regression:					
Fishermen	32	59	651	27	32
Lobster trips	523	751	30,196	319	386
Participation Regression:					
Fishermen	39	70	723	31	37
Lobster trips	631	924	36,702	387	462
Choice occassions	2,730	4,900	153,510	2,170	2,590

Notes: See Appendix A and Table A1 for details on sample construction. See also Table 2.

Table F2 Elasticity Estimates for Retiring, All, and Entering Fishermen: Models Include Individual-by-Season Fixed Effects

	Retiring		All	Entering	
	15+ Years	Any Years		3+ Years	2+ Years
	Panel A: Non-Selectivity Corrected				
Hours Elasticity	0.217	0.164	0.052	−0.062	−0.031
	(0.069)	(0.059)	(0.013)	(0.095)	(0.089)
Participation Elasticity	2.241	2.308	1.305	0.151	0.426
	(0.546)	(0.464)	(0.166)	(0.629)	(0.538)
Total Elasticity	2.457	2.471	1.357	0.089	0.395
	(0.556)	(0.469)	(0.168)	(0.631)	(0.538)
	Panel B: Regression Sample Size				
Hours Regression:					
Fishermen	32	59	651	27	32
Lobster trips	523	751	30,196	319	386
Participation Regression:					
Fishermen	39	70	723	31	37
Lobster trips	631	924	36,702	387	462
Choice occassions	2,578	4,446	145,171	2,036	2,399

Notes: See Table 2.

Table F3 Elasticity Estimates for Retiring, All, and Entering Fishermen: Standard Errors Clustered by Calendar Date and Individual

	Retiring		All	Entering	
	15+ Years	Any Years		3+ Years	2+ Years
	Panel A: Non-Selectivity Corrected				
Hours Elasticity	0.220	0.166	0.051	−0.063	−0.032
	(0.071)	(0.061)	(0.014)	(0.096)	(0.090)
	[0.077]	[0.058]	[0.015]	[0.096]	[0.086]
Participation Elasticity	2.278	2.346	1.240	0.154	0.433
	(0.559)	(0.472)	(0.159)	(0.640)	(0.548)
	[0.532]	[0.446]	[0.163]	[0.628]	[0.495]
Total Elasticity	2.499	2.513	1.291	0.091	0.401
	(0.570)	(0.477)	(0.162)	(0.642)	(0.548)
	[0.548]	[0.455]	[0.166]	[0.611]	[0.476]
	Panel B: Regression Sample Size				
Hours Regression:					
Fishermen	32	59	651	27	32
Lobster trips	523	751	30,196	319	386
Participation Regression:					
Fishermen	39	70	723	31	37
Lobster trips	631	924	36,702	387	462
Choice occassions	2,578	4,446	145,171	2,036	2,399

Notes: See Table 2.

Table F4 Elasticity Estimates for Retiring, All, and Entering Fishermen: Wage Equation Estimated Separately by Group

	Retiring		All	Entering	
	15+ Years	Any Years		3+ Years	2+ Years
	Panel A: Non-Selectivity Corrected				
Hours Elasticity	0.196	0.158	0.051	−0.114	−0.047
	(0.086)	(0.069)	(0.013)	(0.178)	(0.130)
Participation Elasticity	2.029	2.231	1.240	0.279	0.635
	(0.729)	(0.688)	(0.154)	(1.163)	(0.797)
Total Elasticity	2.225	2.390	1.291	0.165	0.588
	(0.780)	(0.723)	(0.157)	(1.164)	(0.805)
	Panel B: Heckman Two-Step				
Hours Elasticity	0.272	0.215	−0.004	−0.054	0.076
	(0.168)	(0.161)	(0.033)	(0.227)	(0.214)
Participation Elasticity	2.272	2.296	1.163	0.299	0.681
	(0.927)	(0.822)	(0.145)	(1.201)	(0.905)
Total Elasticity	2.544	2.511	1.159	0.245	0.756
	(1.031)	(0.890)	(0.144)	(1.272)	(1.042)
	Panel C: Maximum Likelihood				
Hours Elasticity	0.171	0.089	0.048	−0.096	−0.044
	(0.111)	(0.074)	(0.013)	(0.155)	(0.129)
Participation Elasticity	1.750	2.288	1.189	0.305	0.650
	(0.719)	(0.751)	(0.143)	(1.090)	(0.829)
Total Elasticity	1.921	2.377	1.237	0.210	0.606
	(0.904)	(0.828)	(0.146)	(1.030)	(0.814)
	Panel D: Regression Sample Size				
Hours Regression:					
Fishermen	32	59	651	27	32
Lobster trips	523	751	30,196	319	386
Participation Regression:					
Fishermen	39	70	723	31	37
Lobster trips	631	924	36,702	387	462
Choice occassions	2,578	4,446	145,171	2,036	2,399

Notes: See Table 2. Bootstrapped standard errors, based on 2,000 samples, are clustered by calendar date and are presented in parentheses below point estimates. To avoid dependence on a small number of influential outliers, bootstrap coefficients outside 1.5 times the interquartile range are excluded from the standard error calculation.

Appendix G: Labor Supply with Multiple Work Options

The model of fishermen's daily extensive margin labor supply decision presented in Section 4.2 assumes that fishermen choose between two options: fishing and leisure. In this appendix, we formally address the possibility of bias in our participation elasticity estimates when fisherman have the additional option of working in a second job. First, we specify a model with two work options and discuss how our participation elasticity estimates and conclusions might be affected by bias due to the presence of work options outside of fishing and how the severity of any bias depends on the specific nature of the problem and our empirical setting. Second, we present evidence from the US Current Population Survey that shows that workers who are older and near retirement are not more likely to work a second job or switch jobs. Third, we present evidence from the subsample of weekends in our data—based on the hypothesis that work outside fishing is less likely to be available on weekends while preferences for leisure are likely to be stronger—that indicates that there is no significant upward bias in our estimates due to unobserved outside options. Finally, we conduct a Monte Carlo experiment, in which we parameterize a labor supply model with two work options and measure the bias in estimates based on simulated data from the model.

G.1 Labor Supply with Multiple Work Options

We introduce the option for a fisherman to work in a non-fishing occupation each day into the extensive margin labor supply model of Section 4.2. To keep the analysis as simple as possible and focus on the effect of the second work option on our main estimation results, we ignore returns to experience in this section. Fishermen can choose among three options: fishing (job 1), a second job (job 2), and leisure. The individual maximizes

$$U_i = \sum_{t=0}^{T} \beta^t \left[u(c_{it}, \psi_{it}) - \frac{\omega}{1+\omega} \left(\chi_{it}^1 \, h_{it}^{1\,\frac{1+\sigma}{\sigma}} + \chi_{it}^2 \, h_{it}^{2\,\frac{1+\sigma}{\sigma}} \right)^{\frac{\sigma}{1+\sigma}\frac{1+\omega}{\omega}} \right],$$

subject to

$$A_{i0} + \sum_{t=0}^{T} R^{-t} \left[\max\{0, w_{it}(h_{it}^1 - \bar{h}_{it}^1)\} + \max\{0, w_{it}(h_{it}^2 - \bar{h}_{it}^2)\} - c_{it} \right] \geq 0,$$

where superscripts refer to jobs 1 and 2.

The fixed costs of embarking on a fishing trip are sufficiently high that we consider it unlikely that a fisherman would both fish and work another job on the same day. In this case, conditional on working on a given day, an individual's hours of work in each job will be *either*

$$h_{it}^1 = \left(\frac{(\beta R)^{-t} \lambda_i}{\chi_{it}^1} w_{it}^1 \right)^{\omega} \quad \text{and} \quad h_{it}^2 = 0$$

or

$$h_{it}^2 = \left(\frac{(\beta R)^{-t} \lambda_i}{\chi_{it}^2} w_{it}^2 \right)^{\omega} \quad \text{and} \quad h_{it}^1 = 0.$$

Importantly, this implies that our identification of the hours elasticity is unaffected by the presence of a second work option.

On a given day, the individual will engage in the activity that yields the highest net benefit. The net values of working in each job, measured in units of time t utility, are

$$V_{it}^1 = \lambda_i(\beta R)^{-t}\left[w_{it}^1(h_{it}^{*1} - \bar{h}_{it}^1)\right] - \tfrac{\omega}{1+\omega}\chi_{it}^1(h_{it}^{*1})^{\frac{1+\omega}{\omega}}$$

and

$$V_{it}^2 = \lambda_i(\beta R)^{-t}\left[w_{it}^2(h_{it}^{*2} - \bar{h}_{it}^2)\right] - \tfrac{\omega}{1+\omega}\chi_{it}^2(h_{it}^{*2})^{\frac{1+\omega}{\omega}},$$

where the net value of not working has been normalized to 0, and h_{it}^{*j} represents the optimal hours of work in job j conditional on working in that job. Intuitively, this value is equal to the net earnings for the day, scaled by the marginal utility of wealth, minus the utility cost of working h^* hours.

Substituting for h^* in each equation yields

$$V_{it}^1 = w_{it}^1\lambda_i(\beta R)^{-t}\left[\tfrac{1}{1+\omega}\left(\frac{(\beta R)^{-t}\lambda_i}{\chi_{it}^1}\right)^{\omega} w_{it}^{1\ \omega} - \bar{h}_{it}^1\right]$$

and

$$V_{it}^2 = w_{it}^2\lambda_i(\beta R)^{-t}\left[\tfrac{1}{1+\omega}\left(\frac{(\beta R)^{-t}\lambda_i}{\chi_{it}^2}\right)^{\omega} w_{it}^{2\ \omega} - \bar{h}_{it}^2\right].$$

Because λ_i, β, and R enter these equations symmetrically, we can simplify the analysis by defining

$$\tilde{V}_{it}^1 \equiv w_{it}^1\left[\tilde{\chi}_{it}^1\ w_{it}^{1\ \omega} - \bar{h}_{it}^1\right]$$

and

$$\tilde{V}_{it}^2 \equiv w_{it}^2\left[\tilde{\chi}_{it}^2\ w_{it}^{2\ \omega} - \bar{h}_{it}^2\right],$$

where $\tilde{V}_{it}^j = V_{it}^j/\lambda_i(\beta R)^{-t}$ is the net value of working in job j, measured in units of lifetime wealth, and $\tilde{\chi}_{it}^j = \frac{1}{1+\omega}\left(\frac{(\beta R)^{-t}\lambda_i}{\chi_{it}^j}\right)^{\omega}$.

In this model, the individual will fish on a given day if

$$\tilde{V}_{it}^1 > \max\left\{\tilde{V}_{it}^2, 0\right\}.$$

Taking logs and parameterizing the fixed costs of fishing as in Section 4.2 yields the following condition for fishing on a given day, analogous to equation (7):

$$\bar{\alpha}_i + \theta t + \mathbf{Z}_{it}\boldsymbol{\gamma} + \bar{\mathbf{Z}}_{it}\bar{\boldsymbol{\gamma}} + \omega\ln(w_{it}^1) + \varepsilon_{it} > \max\left\{\ln\left(1 + \tfrac{\tilde{V}_{it}^2}{w_{it}^1\bar{h}_{it}^1}\right), 0\right\}.$$

Mechanically, the bias due to an unobserved outside work option can be characterized as having an omitted variable that is correlated with the wage. Specifically, note that this equation can be written in the following form:

$$\bar{\alpha}_i + \theta t + \mathbf{Z}_{it}\boldsymbol{\gamma} + \bar{\mathbf{Z}}_{it}\bar{\boldsymbol{\gamma}} + \omega\ln(w_{it}^1) - \max\left\{\ln\left(1 + \tfrac{\tilde{V}_{it}^2}{w_{it}^1\bar{h}_{it}^1}\right), 0\right\} + \varepsilon_{it} > 0. \tag{7'}$$

Because the omitted term (which is nonnegative) enters negatively and is inversely related to w_{it}^1, its omission will tend to bias estimates of the participation elasticity upward.

However, there are several important factors that mitigate the magnitude of any bias. First, note that all components of $\tilde{V}_{it}^2$ and $\bar{h}_{it}^1$ are uncorrelated with the wage, when instrumented by the moon phase, so the only source of bias is the presence of w_{it}^1 in the omitted term.

Second, due to the discreteness of the decision, the omitted variable only appears on choice occasions when *both* $\tilde{V}_{it}^2 > 0$ *and* the net value of fishing falls into the range,

$$\tilde{V}_{it}^2 > \tilde{V}_{it}^1 > 0,$$

which is equivalent to

$$\ln\left(1 + \frac{\tilde{V}_{it}^2}{w_{it}^1 h_{it}^1}\right) > \bar{\alpha}_i + \theta t + \mathbf{Z}_{it}\boldsymbol{\gamma} + \bar{\mathbf{Z}}_{it}\bar{\boldsymbol{\gamma}} + \omega \ln(w_{it}^1) + \varepsilon_{it} > 0. \tag{A1}$$

Thus, there is a bounded range of values over which the presence of an outside work option affects our identification of the participation elasticity. Notably, all choice occasions for which *any* of (1) $\tilde{V}_{it}^1 > \tilde{V}_{it}^2$, (2) $\tilde{V}_{it}^1 < 0$, or (3) $\tilde{V}_{it}^2 < 0$ are the case contribute to an unbiased estimate of the elasticity because in these cases the individual would have chosen fishing or leisure as coded in the data. That is, the elasticity estimate is only biased if there are a significant number of choice occasions for which *both* the benefit of fishing is slightly greater than the fixed cost *and* job 2 is significantly preferred to leisure, because it is only on these occasions that we would mistakenly code working in job 2 as a preference for leisure.

Third, the omitted term is unlikely to be present at both low values and high values of the wage. In the former case, the middle term of (A1) is likely to be less than zero, and in the latter, the left term is likely to be less than the middle term or less than zero. This is important because choice occasions with moderate values of the wage tend not to contribute significantly to the identification of the elasticity because, intuitively, the probit estimator places low weight on choice occasions where the individual is close to indifferent between fishing and leisure. Therefore, the elasticity estimate will be less sensitive to miscoding a choice of job 2 as leisure for these choice occasions.

The characteristics of the fishery lend additional support to this conclusion. Hourly earnings in fishing fluctuate over a wide range, increasing more than 40% over the moon cycle. Given the large, predictable swings in earnings in fishing and the significant fixed costs, the benefit of fishing will often be either very high or significantly less than the fixed cost. Under these conditions, it could very plausibly be the case that even if a fisherman does often work in an outside job it does not significantly bias the estimation because it occurs on days when the fisherman would not have chosen to fish in any case. Other factors reinforce this argument. For example, variables such as wind speed are likely to affect preferences for fishing much more than other occupations. Also, the fact that fishermen typically own their own vessels and gear means that they have a significant financial investment in fishing in addition to their human capital investment. Thus, they are likely to treat fishing as their primary occupation and use a second job only to supplement their income on days when fishing is not lucrative.

G.2 Additional Jobs in the US Population

Any bias in our participation elasticity estimates due to unobserved outside work options is unlikely to affect our conclusions based on the differences in elasticities across groups, namely that there is substantial bias in estimates of the IES that do not account for returns to experience and that our results validate the predictions of labor supply models featuring returns experience. Because this form of bias affects the extensive margin labor supply estimation in the same way for all individuals, for it to affect these conclusions, it would have to be the case that the retiring fishermen in our sample were systematically more likely to be choosing between fishing and working in an outside

Table G1 CPS Sample Sizes by Category (2001-2005)

Category	Individuals
Not retiring and less than 60 years old	411,090
Not retiring and more than 60 years old	29,232
Retiring and less than 60 years old	1,874
Retiring and more than 60 years old	3,554
Total	445,750

Notes: Data are from the Current Population Survey, obtained from IPUMS (Flood et al., 2023). The sample includes all individuals who were first surveyed during 2001-2005, of working age, and employed in the month of their first interview.

job on a given day. Though we do not have information on the non-fishing work options of the fishermen in our data, which is based on marine life sales records, we use data from the Current Population Survey, obtained from IPUMS (Flood et al., 2023), to examine the work patterns of individuals from the overall U.S. population with similar characteristics to the groups of fishermen we use for our analysis.

The CPS is useful for our purposes for several reasons. First, it is a large sample of US households, so it contains sufficient observations for individuals of all demographic characteristics, especially for older individuals near retirement, as in our sample of retiring fishermen. Second, it contains detailed information regarding individuals' employment status. Third, it specifically identifies individuals who have retired from the labor force. Finally, because individuals are surveyed multiple times, it allows us to identify the employment status of individuals in the year immediately preceding their retirement, making it the most comparable to our data.

The CPS follows a rotating panel design. The CPS surveys individuals over four consecutive months, does not survey them for the next eight months, and then surveys them again in the subsequent four months, leading to 8 observations over a 16-month period. To identify a sample that is comparable to the fishermen in our data, we use observations for all individuals whose first four months of interviews occur during the years 2001-2005, who were of working age, and who were working in the month of their first interview. For comparability with our sample of older, retiring fishermen, we identify sub-samples of individuals who were at least 60 years old in the month of their first interview and individuals who retired during the last four months of the 16-month period over which they were interviewed. Thus, for the latter group, as with the retiring fishermen in our dataset, the first four months of interviews cover their employment status in the year prior to their retirement. Table G1 presents the number of individuals that fall into each group. For comparability across groups, we use data for only the first four months in which individuals appear in the CPS.

We identified three variables that indicate whether individuals work multiple jobs or switch occupation: (1) whether the individual reported working multiple jobs in any month, (2) whether the individual changed jobs in any month (i.e., reported working in a different job in the prior month), and (3) whether they ever became *voluntarily* unemployed (potentially indicating a plan to change jobs). Table G2 presents the results of a regression for the occurrence of these events on indicators for belonging to each group.

Because the groups are mutually exclusive, the coefficient on the constant represents the average occurrence for the omitted category (workers less than 60 years old who do not retire the following year), and the coefficients associated with the remaining categories represent the differences in rates

Table G2 Multiple Jobs and Job Changes in US Population

Dependent Variable:	Multiple Jobs	Changed Jobs	Voluntarily Unemployed
Constant	0.106	0.062	0.0051
	(0.001)	(0.000)	(0.0001)
Not retiring, 60+	−0.020	−0.013	−0.0042
	(0.002)	(0.002)	(0.0002)
Retiring, <60	−0.046	−0.022	0.0011
	(0.006)	(0.005)	(0.0022)
Retiring, 60+	−0.058	−0.003	−0.0032
	(0.004)	(0.005)	(0.0008)
Observations	445,750	406,034	445,750

Notes: Observations are weighted using person-level sampling weights (WTFINL) provided by the CPS. Robust standard errors are in parentheses. For the dependent variable "Changed Jobs", observations are excluded for which an individual is employed in consecutive months but has "Not in Universe" for whether they have the same job in the second month. Fujita, Moscarini and Postel-Vinay (2024) report that, while this is a consistent issue with the CPS, it was a relatively minor problem prior to 2007.

of occurrence relative to this group. In only one case is the difference positive, becoming voluntarily unemployed for younger retiring workers, and the coefficient is not statistically significant. Therefore, we conclude that, in the US population, older workers and workers near retirement are not more likely to work multiple jobs or change jobs than younger, non-retiring workers.

G.3 Evidence on Bias Due to Multiple Work Options

While we do not have information on the activities that the fishermen in our data engage in when not fishing, the likelihood of mistakenly coding working in an outside job as leisure likely varies across the many days over which we observe each fisherman. In particular, we hypothesize that (1) outside jobs are more likely to be available on weekdays than on weekend days, perhaps due to the need to coordinate with other workers, and (2) preferences for leisure are likely to be stronger on weekends, perhaps due to the desire to synchronize leisure activities with others. By contrast, the availability and returns to fishing do not depend on the day of the week. In the model in Appendix G.1, this means that on weekend days, (1) implies that it is more likely that $\tilde{V}_{it}^2$ is less than both $\tilde{V}_{it}^1$ and 0, and (2) implies that it is more likely that both $\tilde{V}_{it}^1$ and $\tilde{V}_{it}^2$ are less than 0. This means that mistakenly coding job 2 as leisure is less likely on weekend days because, if an individual is not observed participating in fishing, it more likely that $\tilde{V}_{it}^1 < 0$ and less likely that $\tilde{V}_{it}^2 > \tilde{V}_{it}^1 > 0$.

Based on this insight, we repeat our baseline estimation using only weekend days. Results are presented in Table G3, which is analogous to Panel A of Table 2. If there was significant upward bias in our estimates due the presence of outside options, we would expect the estimates for weekend days to be significantly be lower. While the weekend estimates are less precise due to the smaller sample size, the results do not indicate an upward bias in our main estimates.

Table G3 Elasticity Estimates for Retiring, All, and Entering Fishermen: Sample Includes Only Weekend Days

	Retiring		All	Entering	
	15+ Years	Any Years		3+ Years	2+ Years
	Panel A: Non-Selectivity Corrected				
Hours Elasticity	0.358	0.274	0.105	−0.390	−0.167
	(0.247)	(0.251)	(0.040)	(10.947)	(0.591)
Participation Elasticity	2.704	2.608	1.327	−1.105	−0.090
	(1.384)	(1.017)	(0.316)	(1.730)	(1.294)
Total Elasticity	3.062	2.882	1.431	−1.495	−0.257
	(1.409)	(1.030)	(0.321)	(11.157)	(1.461)
	Panel B: Regression Sample Size				
Hours Regression:					
Fishermen	28	45	544	20	25
Lobster trips	135	190	6,408	73	89
Participation Regression:					
Fishermen	35	55	620	25	30
Lobster trips	161	227	7,856	92	111
Choice occassions	657	1,004	35,351	500	600

Notes: See Table 2.

G.4 Monte Carlo Experiment

We have argued, based on theory, characteristics of our empirical setting, and available evidence that any bias in our elasticity estimates is likely to be small. To place some bounds on the likely magnitude of any bias, we conduct a Monte Carlo experiment in which we parameterize a labor supply model with two work options and measure the bias in estimates based on simulated data from the model.

G.4.1 Model Specification

To simulate data based on the model in section G.1, we must fully specify and parameterize the model. We do so by assuming that the individual solves

$$\max_{c_{it},h_{it},j_{it}} \sum_{t=0}^{T} \beta^t \left[\frac{c_{it}^{1-\kappa}}{1-\kappa} - v_{it}(j_{it}, h_{it}) \right] + \beta^{T+1} V^{\text{ret}}(A_{i,T+1}),$$

subject to

$$A_{i0} + \sum_{t=0}^{T} R^{-t}(y_{it} - c_{it}) \geq R^{-(T+1)} A_{i,T+1} \quad \text{and} \quad 0 \leq h_{it} \leq 1,$$

where the utility over consumption is a CRRA function with curvature parameter κ, v_{it} is the disutility of working h_{it} hours in job j on day t, y_{it} is labor income on day t, and $V^{\text{ret}}(A_{i,T+1})$ is the value of retiring with $A_{i,T+1}$ in assets. The addition of the continuation value of assets at date $T+1$ ensures that individuals in our simulations do not dissave all of their assets as they approach retirement.

The disutility of working on a given day is given by

$$v_{it}(j_{it}, h_{it}) = \begin{cases} 0 & \text{if } j_{it} = 0 \\ \chi^1_{it} \frac{h_{it}^{1+\frac{1}{\omega}}}{1+\frac{1}{\omega}} & \text{if } j_{it} = 1 \\ \chi^2_{it} \frac{h_{it}^{1+\frac{1}{\omega}}}{1+\frac{1}{\omega}} & \text{if } j_{it} = 2, \end{cases}$$

where ω is the IES over hours worked in the chosen job, and χ^j_{it} is a job-specific shock to the disutility of work. This specification assumes for simplicity that the individual works in at most one job each day.[1] Given this, income on day t is given by

$$y_{it} = \begin{cases} 0 & \text{if } j_{it} = 0 \\ w^1_{it} h_{it} - f^1_{it} & \text{if } j_{it} = 1 \\ w^2_{it} h_{it} - f^2_{it} & \text{if } j_{it} = 2, \end{cases}$$

where f^j_{it} is the fixed cost of working in job j.[2]

We assume that the continuation value of assets at date $T+1$ is

$$V^{\text{ret}}(A) = \sum_{s=0}^{S} \beta^s \frac{(p(A) + pens)^{1-\kappa}}{1-\kappa},$$

where

$$p(A) = A \frac{R-1}{1-R^{-S}}.$$

This is equivalent to the utility of setting daily consumption in retirement equal to the constant flow of income from a fixed-term annuity purchased with assets at the beginning of period T+1 plus a constant pension payment equal to *pens*.

G.4.2. Model Solution

Given parameter values and paths for the exogenous variables, we solve the individual's labor supply problem using a shooting algorithm. We use this method because it allows us to take advantage of the analytic expression for hours of work based on the intra-temporal first-order condition. This is in contrast to value function iteration over a grid of choices. Given that daily income is a small fraction of asset holdings, it is computationally challenging to specify an asset grid fine enough to avoid large approximation errors in daily hours worked.

The consumption Euler equation implies that the path of consumption follows

$$c_{it}^{-\kappa} = \beta R c_{i,t+1}^{-\kappa}.$$

Given an initial guess for c_{i0}, this implies that

$$c_{it} = (\beta R)^{\frac{t}{\kappa}} c_{i0}.$$

[1] The fixed costs of embarking on a fishing trip are sufficiently high that we consider it unlikely that a fisherman would both fish and work another job on the same day.

[2] This specification subsumes the one in section G.1, where $f^j_{it} = w^j_{it} \bar{h}^j_{it}$, because we allow f^j_{it} and w^j_{it} to be correlated in our simulations, and makes the calibration exercise more tractable by allowing us to directly specify the data generating process for f^j_{it}.

Given consumption in period t and conditional on working in job j, the intra-temporal first-order condition implies that hours of work is given by

$$h_{it}^{j*} = \left(\frac{w_{it}^{j}}{\chi_{it}^{j}} \right)^{\omega} c_{it}^{-\kappa\omega}.$$

Given the optimal hours in each job, the individual will choose the option that gives the greatest net benefit each day, which is approximated by

$$j_{it}^{*} = \arg\max_{j} V_{it}^{j},$$

where

$$V_{it}^{j} = \begin{cases} 0 & \text{if } j = 0 \\ c_t^{-\kappa} y_{it}^{*1} - v_{it}(1, h_{it}^{1*}) & \text{if } j = 1 \\ c_t^{-\kappa} y_{it}^{*2} - v_{it}(2, h_{it}^{2*}) & \text{if } j = 2, \end{cases}$$

and y_{it}^{*j} is the income earned in job j net of the fixed cost. This is an approximation because the job choice has a non-continuous effect on lifetime wealth. However, because daily earnings are small relative to lifetime wealth, the envelope condition holds with only a small approximation error. Notably, this approximation error only affects the job choice, not the daily consumption or hours worked in each job, given the sequence of job choices.[3]

Finally, the paths of consumption, job choices, and hours worked imply a path for assets, with the value of $A_{i,T+1}$ given by the budget constraint. The shooting algorithm checks whether the first order condition with respect to $A_{i,T+1}$ holds:

$$c_{iT}^{-\kappa} = \beta R V^{\mathrm{ret}\prime}(A_{i,T+1}).$$

It then adjusts the guess of c_{i0} and repeats these steps until this condition is satisfied.

G.4.3. Parameterization

The individual chooses the daily paths of consumption, whether to work and in which job, and hours of work, given an initial value of assets and the paths of the exogenous, time varying variables: wages, fixed costs, and preferences for work in each job. We assume that these variables are realizations of log-normal random variables, which we parameterize as follows:

$$\begin{aligned} \ln(w_{it}^{1}) &= \mu_{w^1} + B_{moon} \times moon_t + \sigma_{w^1} u_{w^1,it} \\ \ln(w_{it}^{2}) &= \mu_{w^2} + \sigma_{w^2} u_{w^2,it} \\ \ln(f_{it}^{1}) &= \mu_{f^1} + \sigma_{f^1} u_{f^1,it} \\ \ln(f_{it}^{2}) &= \mu_{f^2} + \sigma_{f^2} u_{f^2,it} \\ \ln(\chi_{it}^{1}) &= \mu_{\chi^1} + \sigma_{\chi^1} u_{\chi^1,it} \\ \ln(\chi_{it}^{2}) &= \mu_{\chi^2} + \sigma_{\chi^2} u_{\chi^2,it}. \end{aligned}$$

[3] To assess the likelihood of errors in job choices, we also computed the solution by value function iteration for a small number of cases. We found no differences in the job choices based on the two methods, but there were substantial approximation errors for hours worked based on value function iteration.

The variable $moon_t$ is the same lunar phase variable that we use in our main estimations, which takes values between zero and one over the course of the moon cycle, and B_{moon} determines the effect of the moon on fishing wages. The values of $u_{\cdot,it}$ are normally distributed with zero mean and variance equal to 1. Thus, for each variable, the respective values of μ and σ determine the mean and variance.

We construct $u_{w^1,it}$ as the sum of an individual component, a common daily component, and an individual- and time-varying component:

$$u_{w^1,it} = \tilde{u}_{w^1,i} + \tilde{u}_{w^1,t} + \tilde{u}_{w^1,it},$$

where the values of each $\tilde{u}$ are normally distributed with zero mean and variance equal to $\sqrt{1/3}$. The individual component generates variation in average wages in fishing across fishermen and necessitates the inclusion of individual fixed effects in the estimation. The common daily component induces correlation in daily wages across fishermen, as we observe in the data, consistent with common shocks to catch rates.

We allow for correlation between several pairs of exogenous variables. We generate endogeneity of the wage in the hours elasticity estimation by allowing $u_{w^1,it}$ and $u_{\chi,it}$ to be correlated, which necessitates the use of the moon cycle as an instrumental variable. Similarly, we allow $u_{w^1,it}$ and $u_{f^1,it}$ to be correlated, which further generates endogeneity in the participation equation. We also allow for correlation between $u_{f^1,it}$ and $u_{f^2,it}$ and between $u_{\chi^1,it}$ and $u_{\chi^2,it}$. The first allows the fixed costs of working in both jobs to be related, and the second allows preferences for work in both jobs to be related.

Table G4 summarizes our choices of parameter values. Where possible, we assign parameter values based on our estimates, or we assign values for which our simulations match key moments in our data. For the rest, we use two strategies. For parameters that do not materially affect our simulations of labor supply, we use conventional values from the literature or assign values consistent with other relevant data sources. For the remaining parameters, we report results for a range of values.

Assigned Parameters. Panel A of Table G4 summarizes the parameter values that we assign based on our estimates or values from the literature. We set ω equal to 0.2, in line with our estimates of the hours elasticity, and we set B_{moon} equal to our baseline estimate of -0.381. We set the parameters for both the correlation between the wage and disutility of work and the correlation between the wage and fixed cost in fishing to 0.5, implying significant endogeneity problems in both the participation and hours elasticity estimations. The remaining parameters in Panel A are of little importance for our simulations of labor supply as long as lifetime wealth is sufficiently high relative to daily earnings that it is negligibly affected by the choice over whether to work on a given day. We choose β and R to be consistent with a 5% annual interest rate. We set κ, the CRRA parameter for consumption, equal to 2. We set T to 70, the number of fishing days in our baseline sample, and we set S, the number of days spent in retirement, to the equivalent of 15 years. The initial asset value is set to match a net worth (excluding the value of Social Security and pension benefits) of approximately \$600,000, based on the mean asset holdings reported in Poterba, et al. (2011) for households headed by someone aged 65-69 in 2008. The pension payment is set to approximate an earnings replacement rate of 30%.[4]

[4] In the computational model, the average daily wage in fishing and the maximum length of the working day are both normalized to 1. In the parameterized model simulations, average daily earnings (across all possible working days) equal approximately 0.25. Assuming a 16 hour maximum working day and scaling to match observed wages in

Table G4 Model Parameters

Parameter	Description	Value
	A. Assigned Parameters	
Parameter	Description	Value
β	Discount factor	$0.95^{\frac{1}{365}}$
R	Gross interest rate	$0.95^{\frac{-1}{365}}$
κ	CRRA parameter for consumption	2.0
ω	Intertemporal elasticity of substitution	0.2
T	Work days remaining in career	70
S	Days spent in retirement	15×365
A_{i0}	Initial assets	400
$pens$	Retirement pension	0.075
B_{moon}	Effect of moon cycle on wage	-0.381
ρ_{w^1,χ^1}	Correlation between w^1 and χ^1	0.5
ρ_{w^1,f^1}	Correlation between w^1 and f^1	0.5
	B. Calibration Targets	
Moment		Value
Avg. log wage when fishing		4.71
Participation rate in fishing		0.245
Participation rate in job 2		0.470
Avg. hours when fishing		8.02
Avg. hours when working job 2		8.00
Estimated participation elasticity		2.30
Std. dev. of log wage when fishing		0.827
Std. dev. of hours when fishing		1.67
Std. dev. of hours in job 2		1.19
	C. Calibrated Parameters	
Parameter	Description	Baseline Value
μ_{w^1}	Mean of $\ln(w^1)$	4.43
μ_{f^1}	Mean of $\ln(f^1)$	-0.73
μ_{f^2}	Mean of $\ln(f^2)$	-2.78
μ_{χ^1}	Mean of $\ln(\chi^1)$	7.02
μ_{χ^2}	Mean of $\ln(\chi^2)$	5.69
σ_{w^1}	Std. dev. of $\ln(w^1)$	0.92
σ_{f^1}	Std. dev. of $\ln(f^1)$	1.06
σ_{χ^1}	Std. dev. of $\ln(\chi^1)$	1.18
σ_{χ^2}	Std. dev. of $\ln(\chi^2)$	0.90
	D. Free Parameters	
Parameter	Description	Baseline Value
μ_{w^2}	Mean of w^2	2.85
$\sigma_{w^2}/\sigma_{w^1}$	Relative variance of w^2	0.1
$\sigma_{f^2}/\sigma_{f^1}$	Relative variance of f^2	0.1
ρ_{f^1,f^2}	Correlation between f^1 and f^2	0.1
ρ_{χ^1,χ^2}	Correlation between χ^1 and χ^2	0.25

Calibrated Parameters. Panel B of Table G4 reports the data moments that we target in our simulations, and Panel C reports the parameters that we calibrate to match them. The targeted moments from our sample of retiring fishermen include the average log wage on days spent fishing, average hours when fishing, the daily participation rate in fishing, and the standard deviations of log wages and hours in fishing. We also target an estimated participation elasticity value of 2.3, consistent with our estimates. Though we do not observe any activity in other jobs by the fishermen in our data, we choose to match an average of 8 hours worked when working in the second job and a participation rate in the second job of 0.47. Together, these imply that the fishermen in our simulation work an average of 40 hours and 5 days per week, consistent with a typical full-time worker in the US.[5] We target a standard deviation in hours worked in job 2 of 1.19, which is the average standard deviation in hours worked across days for individuals in the 2005 Dutch Time Use Survey.[6]

Panel C also reports the values of the calibrated parameters in our baseline simulation. The values are consistent with our intuition. Lower values of the average disutility and the fixed cost of working in job 2, compared to fishing, account for the fishermen working similar hours per day and days per week in job 2 despite the lower wage. This is consistent with characteristics of the fishing industry, including that the work is demanding and that embarking on a trip entails significant fixed costs. The relatively high variance in shocks to the fishing variables is consistent with the variability in conditions in the industry. The somewhat high variance in the disutilty of working in job 2 reflects the target standard deviation in hours that is not far below that for fishing.

Free Parameters. Panel D lists the remaining parameters, for which we consider a range of values. For our baseline simulation, we chose values that we consider reasonably indicative of typical job opportunities outside of fishing for the fishermen in our sample. We set the baseline value of μ_{w^2} to target a mean hourly wage in job 2 of \$17.28, the value in US Census data for workers in south Florida during our sample period.[7] We set the variance parameters for the wage and fixed cost of working in job 2 to 10% of their values for fishing to, reflecting the fact that daily variation in wages and participation in most occupations is substantially lower than in fishing.[8] We set the correlation in daily shocks to fixed costs across jobs equal to 0.1, consistent with the notion that most of the determinants of daily variation in fixed costs of fishing are job-specific. We set the correlation in shocks to work preferences across jobs to a somewhat higher level, 0.25, to reflect the notion that preferences for work on both jobs are partly determined by variation in individual-specific factors that affect the value of leisure. But we choose a value well below one, consistent with the view that the hours choice in fishing is largely driven by distinct environmental factors, such as conditions at sea. The range of alternate values that we consider are presented in Section G.4.5.

fishing implies that nominal values are scaled by a factor of approximately 1,500.

[5] In the 2003 American Time Use Survey (https://www.bls.gov/tus/data/datafiles_2003.htm), full-time workers worked on average 4.98 days and 40.3 hours per week.

[6] The survey records hours of work for individuals over a seven day period. The Dutch Time Use Survey is the only time use survey we are aware of that records individuals' hours of work over multiple days. The data are available in the Multinational Time Use Survey compiled by the Centre for Time Use Research (https://www.timeuse.org/). We use the average standard deviation in hours across weekdays worked for full-time employees.

[7] According to the November, 2003, Occupational Employment and Wage Statistics, the average wage in the Miami, Florida, MSA was \$17.28. The 50th, 75th, and 90th percentiles were \$12.81, \$20.84, and \$31.72.

[8] For example, in the baseline parameterization, the interquartile range in the daily wage in job 2 is \$2.14, or about 12.5% of the mean wage.

G.4.4. Simulation

For comparability with our main estimates, we simulate data from our model in the following way. We draw data series for wages, fixed costs, and preferences for work for both jobs for 10,000 samples, which each consist of 70 fishermen and 70 working days. Because our actual estimation sample spans five fishing seasons, in the simulations, we randomly allocate each fisherman to one of five simulated seasons. Fishermen fishing in the same simulated season have common values of the moon phase and the common daily component of the wage shock.

Given the simulated exogenous data and model parameter values, we solve for each fisherman's daily labor supply decisions. We then use the simulated data for wages, participation, and hours worked in fishing to estimate hours and participation elasticities based on equations (6) and (9), as in our baseline estimation, using wages predicted by (11), with the moon cycle serving as an instrument. Consistent with our empirical setting, we do not use any observations regarding job 2 or information on wages or hours worked on days when the fishermen do not participate in fishing. As in our baseline estimation, we use a larger sample of 700 fishermen to estimate (11).[9]

To measure the potential bias in elasticity estimates due to the presence of an unobserved second job, we re-simulate the fishermen's labor supply decisions based on the same parameter values and exogenous data series but without the option to work in job 2. We then repeat the estimation of hours and participation elasticities for this simulated data series. Thus, the first set of elasticity estimates represents a simulated version of our empirical setting, under the assumption that *all* the fishermen in the sample are active in a second job and make a daily decision of which job to work in. And the second set of estimates represents the counterfactual world in which we remove this option. In other words, this experiment assumes that our empirical estimates were obtained in a worst-case scenario in which all of the fishermen in our sample spend a substantial amount of their time working in an unobserved second job, and it then estimates elasticities for a counterfactual sample of identical fishermen who do not have access to a second job. In this sense, the difference between the two sets of estimates represents an upper bound on the bias in our main estimates due to the possible presence of a second job.

G.4.5. Simulation Results

Panel A of Table G5 presents the elasticity estimates for our baseline simulation and 9 alternate cases. As expected, the hours elasticity estimates are all very close to 0.2, the specified value of ω, but the presence of a second job does lead to upward bias in the participation elasticity estimate. In our baseline case—in which all fishermen work full-time hours across the two jobs and earn the mean local wage in job 2, job 2 is considerably less volatile than fishing, and job 2 labor supply shifters are weakly correlated with fishing—we find that removing job 2 reduces the total elasticity by 0.25, indicating a bias of 10% of the value of our estimate. This suggests that some bias in our main estimates is likely to exist if fishermen are widely engaged in jobs outside fishing.

Panel B presents results for the same cases as Panel A, except that for the simulations in Panel B, we assume that 50% of the fishermen are engaged in a second job, while the rest are only engaged in fishing. Note that this is still well above the approximate value of 10% indicated in Table G2 for the retiring workers in the overall US population. These results suggest that the bias is roughly proportional to the share of fishermen engaged in an outside job. For example, in the baseline

[9] To reduce the computational burden, for each of the samples, we draw the 630 additional fishermen from the other 9,999 simulated samples.

Table G5 Elasticity Estimates from Model Simulated Data

A. Elasticity Estimates: 100% of Fishermen Engaged in Job 2

	Baseline	Alternate Case								
	Case	1	2	3	4	5	6	7	8	9
With second job option:										
Hours Elasticity	0.20	0.20	0.21	0.20	0.21	0.21	0.21	0.20	0.21	0.21
	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]
Participation Elasticity	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
	[0.53]	[0.53]	[0.54]	[0.53]	[0.55]	[0.54]	[0.54]	[0.53]	[0.57]	[0.57]
Total Elasticity	2.50	2.50	2.51	2.50	2.51	2.51	2.51	2.50	2.51	2.51
	[0.56]	[0.56]	[0.57]	[0.56]	[0.57]	[0.57]	[0.57]	[0.56]	[0.60]	[0.60]
Without second job option:										
Hours Elasticity	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
	[0.08]	[0.08]	[0.08]	[0.08]	[0.08]	[0.08]	[0.08]	[0.08]	[0.07]	[0.07]
Participation Elasticity	2.05	2.17	1.93	1.92	1.88	1.96	2.03	2.07	1.61	1.48
	[0.46]	[0.49]	[0.44]	[0.43]	[0.42]	[0.45]	[0.46]	[0.46]	[0.36]	[0.33]
Total Elasticity	2.25	2.37	2.13	2.12	2.08	2.16	2.23	2.26	1.81	1.67
	[0.49]	[0.52]	[0.46]	[0.45]	[0.45]	[0.47]	[0.49]	[0.49]	[0.39]	[0.35]

B. Elasticity Estimates: 50% of Fishermen Engaged in Job 2

	Baseline	Alternate Case								
	Case	1	2	3	4	5	6	7	8	9
With second job option:										
Hours Elasticity	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]	[0.09]
Participation Elasticity	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
	[0.52]	[0.52]	[0.53]	[0.52]	[0.53]	[0.53]	[0.53]	[0.52]	[0.53]	[0.53]
Total Elasticity	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
	[0.55]	[0.55]	[0.55]	[0.55]	[0.56]	[0.55]	[0.55]	[0.55]	[0.56]	[0.56]
Without second job option:										
Hours Elasticity	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
	[0.08]	[0.08]	[0.08]	[0.08]	[0.08]	[0.08]	[0.08]	[0.08]	[0.08]	[0.08]
Participation Elasticity	2.18	2.24	2.13	2.13	2.11	2.14	2.17	2.19	2.00	1.93
	[0.49]	[0.50]	[0.48]	[0.47]	[0.47]	[0.48]	[0.49]	[0.49]	[0.45]	[0.43]
Total Elasticity	2.38	2.43	2.32	2.32	2.31	2.34	2.37	2.38	2.19	2.13
	[0.52]	[0.53]	[0.50]	[0.50]	[0.50]	[0.51]	[0.52]	[0.52]	[0.47]	[0.45]

C. Free Parameter Values

	Baseline	Alternate Case								
	Case	1	2	3	4	5	6	7	8	9
Full-time/Part-time	FT	PT	FT	FT	FT	FT	FT	FT	FT	FT
Mean w^2	17.28	17.28	31.72	17.28	17.28	17.28	17.28	17.28	17.28	17.28
$\sigma_{w^2}/\sigma_{w^1}$	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.5	0.9
$\sigma_{f^2}/\sigma_{f^1}$	0.1	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.5	0.9
ρ_{f^1,f^2}	0.1	0.1	0.1	0.1	0.1	0.5	0.1	0.1	0.5	0.9
ρ_{χ^1,χ^2}	0.25	0.25	0.25	0.25	0.25	0.25	0.5	0.1	0.5	0.9

case, the bias falls to 0.12, or 5% of our empirical estimate.[10] Given that the bias scales with our assumption about the proportion of fishermen engaged in job 2, in the remainder of this section we focus on the upper-bound measures reported in Panel A for brevity.

The remaining cases, shown in columns 1-9 of Table G5, demonstrate how the magnitude of the bias depends on the assumptions we make about the features of the second job. In case 2, we assume that the fishermen work an average of 3.8 days and 25 hours per week across both jobs, consistent with the hours of an average part-time worker in 2003. In this case the bias is 0.13, or 5% of our empirical estimate. Thus, the bias is smaller if we believe the fishermen work fewer hours in the second job than in the baseline case.

In the remaining cases, we explore alternate parameter values that increase the bias relative to our baseline case. In case 3, we set the wage in job 2 to the 90th percentile in the local job market and find a bias of 0.37, or 15% of our empirical estimate.[11] In cases 3-6, we increase the variance of the job 2 wage, the variance of the job 2 fixed cost, and the correlations across jobs in shocks to the fixed costs and preferences for work, one by one, to 0.5. We find biases of 0.27-0.42, with the bias being most sensitive to the variance of the job 2 fixed cost and least sensitive to the correlation in work preference shocks. Cases 7-9 increase the values of all of these parameters together from 0.1 to 0.5 and 0.9. When all four parameters are set to 0.5, we find a bias of 0.69, indicating that the individual effects of increasing each parameter are partially cumulative. Increasing all four parameters to 0.9 increases the bias further, but by a smaller increment, to 0.83.

Figure G1 illustrates additional combinations of parameter values. It shows how the total elasticity, estimated after removing job 2, depends on the four free parameters in four cases: the baseline (case 1), when targeting part-time hours (case 2), and when the free parameters are all set to 0.5 (case 8) and 0.9 (case 9). Some interesting patterns emerge. The correlation in shocks to the disutility of work (Panel (d) of Figure G1) makes little difference. The effect of the job 2 wage variance depends on the values of the other parameters. Higher job 2 wage variance increases the bias for low values of the other parameters and decreases it for high values. By contrast, in all cases, the bias is higher for higher values of the job 2 fixed cost variance and the correlation in fixed costs.

Overall, the simulations imply a total elasticity between 2.0 and 2.5 for any deviation of a single parameter from the baseline case, and a value between 2.25 and 2.5 for any such deviation when targeting part-time hours. The elasticity is also generally above 2 when either the variance of the job 2 fixed cost or the correlation in fixed costs is low.[12] However, when both of these parameters approach 1, the elasticity estimate becomes smaller and more sensitive to the variance in the job 2 wage. For high values of the variance, the elasticity is generally above 1.5. But at the extreme, when (1) the job 2 fixed cost is highly variable, (2) the job 2 fixed cost is nearly perfectly correlated with the fishing fixed cost, and (3) the job 2 wage is constant—a case we consider to be very unlikely—the elasticity estimate falls to 1.1, as illustrated by case 9 in Panel (a).

These results are consistent with the intuition based on the theoretical model. The extensive margin elasticity estimate is biased if there are a significant number of observations for which the fishermen chose to work in job 2 (coded as non-participation in the data) but would have chosen fishing over

[10] If the share is 10%, as in the overall US population, then the bias falls to less than 1%.

[11] By contrast, lowering the wage to the median value of $12.81 reduces the bias to 0.20. Doing this together with targeting part-time hours further reduces the bias to 0.10.

[12] E.g., in Panels (b) and (c) of Figure G1, in cases 8 and 9, the elasticity is equal to 1.97 or greater when either of these parameters is less than or equal to 0.2, and in the baseline case, increasing either parameter to 1, while keeping the other at 0.1, results in a minimum elasticity 1.96.

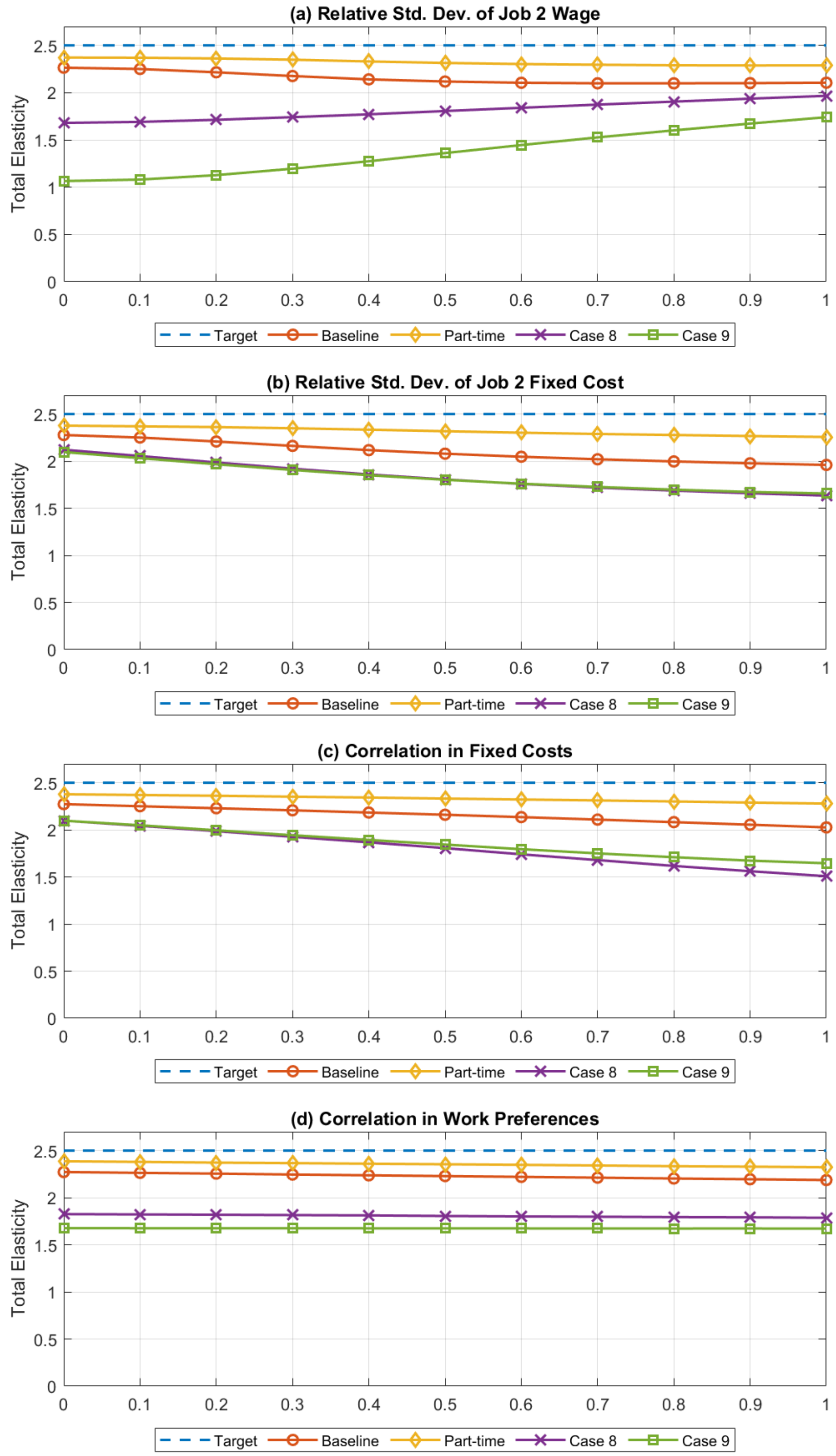

Figure G1 Elasticity Estimates Without Second Job Option leisure in the absence of job 2. This can occur on days when the fixed costs of both jobs are low and when the return to fishing is lower than job 2. Without all three, the fisherman either would be observed fishing on the day or would have chosen leisure over fishing in the absence of job 2. For this to be a common occurrence, there must be sufficient variation in the job 2 fixed cost and sufficient correlation with the fishing fixed cost for days in which the value of fishing relative to leisure is small and positive to coincide with days in which the net return to working in job 2 is relatively high. Any variation in the job 2 wage reduces this likelihood by allowing for instances in which the job 2 wage is low on days in which the fixed costs and fishing wage are also low.

We consider the cases with high variance of the job 2 fixed cost and, especially, high correlation between the fixed costs of the two jobs to be very unlikely. Factors that cause daily variation in the fixed cost of embarking on a fishing trip—such as weather and ocean conditions that affect vessel wear and tear and the time and cost of departing, returning, and offloading the vessel—are unlikely to be correlated with those that affect the fixed cost of working in another industry. While similar factors likely affect work in other fisheries, we have ruled out this possibility in our empirical setting by focusing on the first 70 days of each season during which all other relevant fisheries are closed. In scenarios that we consider to plausibly exist—in which the correlation in fixed costs is less than 0.5—the total elasticity estimate lies in a range of 1.7 to 2.5, and in most cases is above 2.0.

Overall, these results indicate that the presence of an outside job option has the potential to create an upward bias in our estimates. However, the bottom end of the range of implied underlying elasticity estimates is still well above typical micro estimates of the IES and within the range of estimates found by fully structural estimations that account for returns to experience. Therefore, considering that these estimates represent a lower bound in our empirical setting, we conclude that any bias in our estimates is small enough in magnitude not to meaningfully affect our main conclusion that micro estimates of the IES that ignore returns to experience are significantly biased *downward*.

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