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THE PRICES FOR FOR-HIRE MARINE FISHING TRIPS IN THE SOUTHEASTERN U.S.  
COLLECTED FROM WEBSITES: 2014 and 2015

BY

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# 1 Introduction

Information on the prices for for-hire fishing services is needed to understand the economics of the industry.<sup>1</sup> Prices are used along with data on for-hire fishing trip costs and effort to calculate the profitability of the sector. Longer price series can be used to estimate demand and supply relationships for for-hire services that help to predict how trip activity is expected to change with proposed regulations. We can learn a lot about how much different trip features are worth to anglers by examining the variation in prices for for-hire services over space and time (Carter & Liese 2010). The reason is that prices for for-hire fishing trips are determined in the market and vary depending on the demand for trips by anglers and the supply of trips provided by the for-hire industry. Changes in factors that affect the demand and supply of for-hire services will cause for-hire prices to change over time and space. Therefore, data on prices for multiple periods and geographic locations will allow for better economic analyses.

Every summer since 2011 we have collected price data from the websites of for-hire vessels permitted to operate in the federal waters of the southeastern U.S. This approach is in line with recent efforts that use online prices to construct price indices that are more timely and, in some cases, more accurate than official price statistics (Cavallo 2013). A previous report summarized the data collected from 2011 to 2013 and discussed the advantages and challenges of collecting the price information from websites (Carter 2015). This report summarizes the data collected during the summers of 2014 and 2015. We repeat information on the methods from the previous report so that this document can stand alone. However, the methods have been streamlined and simplified to make the data collection and summary process easier.

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<sup>1</sup>Most of the introduction is repeated from the report describing the first three years of the data collection (Carter 2015). The information is repeated for easy reference.

As before we use the terms “Gulf of Mexico (GOM)” and “South Atlantic (ATL)” to refer to the jurisdictions of the fishery management councils with the same name. The ATL Fishery Management Council is responsible for the conservation and management of fish stocks within the federal 200-mile limit of the Atlantic off the coasts of North Carolina, South Carolina, Georgia and east Florida to Key West. The GOM Fishery Management Council manages fishery resources from where the marine waters of Texas, Louisiana, Mississippi, Alabama, and west Florida end, out to the federal 200-mile limit.

The intent of the report is to document the data collection process in 2014 and 2015 and to present summary statistics for reference. As such, the key results are presented in tables with little discussion. There is a brief summary section at the end of the report that summarizes some of the basic results and conclusions indicated by the data. The previous report compared the estimates of average prices from the website data collection to estimates from other data collections in the southeastern U.S. Later work will attempt to further interpret the results and use the database for more extensive analyses of the for-hire market in the southeastern U.S.<sup>2</sup>

## 2 Methods

We collected data for two types of for-hire vessels: charter boats and headboats. Charter boats charge by the boat whereas headboats charge per person. However, there are some vessels that use both of these pricing structures. We identified a headboat as any vessel that is included in the Southeast Headboat Survey that primarily charges per person.<sup>3</sup> The remaining vessels were divided into two categories: uninspected and

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<sup>2</sup>All calculations and graphics for this report were generated using **R** (R Core Team 2014) and the report was written using **knitr** (Xie 2013).

<sup>3</sup><http://www.sefsc.noaa.gov/labs/beaufort/sustainable/headboat/>



other vessels. The U.S. Coast Guard National Operator of Uninspected Passenger Vessel (OUPV) license is for boats less than 100 GRT (usually less than 65 feet). This is the license commonly used by uninspected passenger vessels which by law are limited to six or less passengers for hire. According to the license definition “these are usually smaller vessels and normally engage in charter fishing, whale watching, SCUBA diving, and tour cruises.”<sup>4</sup> Therefore, we define a charter boat as a federally permitted vessel with a capacity of six or less passengers that is not in the headboat survey. We focus on the prices for trips on these vessels that include up to six passengers.

A master list of for-hire fishing boats was compiled in 2014 and 2015 for the ATL and the GOM consisting of vessels that had at least one of the following federal permits:

- Atlantic dolphin-wahoo charter/headboat,
- ATL coastal migratory pelagic charter/headboat,
- ATL snapper-grouper charter/headboat,
- GOM charter/headboat for coastal migratory pelagics, and
- GOM charter/headboat for reef fish.

The permit files obtained from the NOAA Fisheries Southeast Regional Office (SERO) included information on the vessel name and mailing address that could be used to search the Internet to find the website of each operation if one existed. We also used information on the USCG vessel age, capacity, length, horsepower, and home port listed in the permit file.

The following information was collected about each type of trip listed in the website: trip price, length of trip in hours, number of passengers included in the trip price, and

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<sup>4</sup>[http://www.uscg.mil/nmc/credentials/charter\\_boat\\_capt/](http://www.uscg.mil/nmc/credentials/charter_boat_capt/)

the species, if any, associated with the trip price. In 2014 we considered five species categories: coastal migratory pelagic (CMP), highly migratory pelagic (HMP), dolphin-wahoo (DW), reef, and no species listed. The list was changed slightly in 2015 to the following six categories: CMP, HMP, reef, inshore, other species, and no species listed.

Charter prices were recorded as the cost of hiring the vessel out as a whole whereas prices for headboats were recorded as the price per individual. The price of charter trips generally varies according to the length of the trip with 4 hours (1/2 day), 6 hours (3/4 day), 8 hours (full day), 10 hours (full + 2), and 12 hours (full + 4) among the most common durations. Similarly, the price of headboat trips generally varies according to the length of the trip with 3-5.5 hours (1/2 day), 6-7.5 hours (3/4 day), and 8-9.5 hours (full day), and 10-12 hours (full day +) among the most common durations. We report the summary statistics for the prices associated with these common trip durations for charter and headboat operations. Only trips less than 13 hours are considered in the summary because the USCG implies that trips over 12hrs should have 2 captains and 2 deckhands.<sup>5</sup> The requirement of extra captain and crew increases the cost of these longer trips, effectively defining a product and market distinct from the trips of 12 hours or less.

In addition to information about trip prices, the following information was recorded, if it was listed on a vessel website: vessel capacity, length, and home port marina; and whether the vessel has regularly scheduled trips. In 2015 we also collected information on fuel surcharges.

There are other factors that influence the price of charter and headboat trips. Our examination of charter boat websites suggests that the prices can vary by home port

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<sup>5</sup>The USCG Marine Safety Manual, Vol. III: Marine Industry Personnel (p. B3-18) states: 46 U.S.C. 8104(b) provides that licensed individuals (credentialed officers) on oceangoing vessels of not more than 100 GRT “may not be required” to work more than 12 hours in a 24-hour period while at sea. Credentialed operators serving as OUPV may voluntarily work more than 12 hours in a 24-hour period. However, Officer in Charge, Marine Inspections should strongly encourage uninspected passenger vessels operating in excess of 12 hours to have at least two credentialed operators assigned to prevent fatigue.

state, species trip type, and, in 2015, whether or not all fuel is included. We evaluate the contribution of these factors to the variation in charter prices using a hedonic regression (Carter & Liese 2010). A hedonic regression is an econometric approach to estimating the relative value of different product characteristics. For example, for the GOM in 2015 we estimate the parameters of the following equation using ordinary least squares:

$$\begin{aligned}
Price_{ij} = & \beta_0 + \beta_1 \cdot Hours_{ij} + \beta_2 \cdot AL_{ij} + \beta_3 \cdot LA_{ij} + \beta_4 \cdot MS_{ij} + \beta_5 \cdot TX_{ij} \\
& + \beta_6 \cdot Length_{ij} + \beta_7 \cdot Horsepower_{ij} + \beta_8 \cdot Age_{ij} + \beta_9 \cdot FuelSurcharge_{ij} \\
& + \beta_{10} \cdot CMP_{ij} + \beta_{11} \cdot HMP_{ij} + \beta_{12} \cdot Reef_{ij} + \beta_{13} \cdot Inshore_{ij} \\
& + \beta_{14} \cdot Hours_{ij} \cdot AL_{ij} + \beta_{15} \cdot Hours_{ij} \cdot LA_{ij} \\
& + \beta_{16} \cdot Hours_{ij} \cdot MS_{ij} + \beta_{17} \cdot Hours_{ij} \cdot TX_{ij} \\
& + \beta_{18} \cdot Length_{ij} \cdot Horsepower_{ij} + \beta_{19} \cdot Length_{ij} \cdot Age_{ij} \\
& + \beta_{20} \cdot Horsepower_{ij} \cdot Age_{ij} + \epsilon_{ij}
\end{aligned}$$

where, for trip  $i$  offered on vessel  $j$ ,  $Price_{ij}$  is the price;  $Hours_{ij}$  is the duration;  $AL_{ij}$ ,  $LA_{ij}$ ,  $MS_{ij}$ , and  $TX_{ij}$  each equal to one for trips originating in the corresponding state and zero otherwise;  $Length_{ij}$ ,  $Horsepower_{ij}$  and  $Age_{ij}$  are the length, horsepower, and age of the vessel;  $FuelSurcharge_{ij}$  equals one if the website indicates separate charges for fuel;  $CMP_{ij}$ ,  $HMP_{ij}$ ,  $reef_{ij}$ , and  $inshore_{ij}$  each equal one if the website indicates that the trip targets the corresponding species group; the  $\beta$  terms are parameters to be estimated; and  $\epsilon_{ij}$  is an error term. The  $\beta$  parameters measure the relative contribution of the factor to the average price of a trip. The indicator for trips originating from Florida is taken as the base such that all state effects are relative to Florida. We also include the interaction between the hours and the state indicators to allow for the effect of trip duration on price

to vary by state and two-way interactions between *Length*, *Horsepower*, and *Age*. To simplify the interpretation of the regression coefficients we standardize the continuous regressors (*Hours*, *Length*, *Horsepower*, and *Age*) by subtracting off the grand mean. In this case, the intercept is the average price in the base state for the average length trip on the average length vessel for which the website does not indicate separate charges for fuel or specific species trip types. It is important to note that the trip type factors are simply used to control for trip prices where a type was explicit on the website. Not all vessels differentiated prices by trip type.

We estimate a similar equation for 2015 charter boat prices in the ATL, replacing the state indicator variables with indicators for Georgia, North Carolina, and South Carolina with east Florida taken as the base. The GOM and ATL hedonic equations are also estimated using the 2015 headboat data. The GOM and ATL hedonic equations for charter and head boats that are estimated using the 2014 data do not include the fuel surcharge variable and the species trip type indicators are changed to reflect the slightly different categories used in 2014.

## 3 Results

### 3.1 2014 Data

The breakdown of the for-hire permits in the GOM and ATL are shown in Table 1 by vessel type, homeport region, and permit region. The breakdown is shown for all permitted vessels and for the subset that had websites with price information. The shaded cells are the starting point for the summary of the price information.

The prices for for-hire trips are summarized in Tables 2 through 9. There are three types of tables presented for charter boats and head boats:

Table 1: 2014 Permits by vessel type, homeport region, and permit region

Boat Type	Permit	Homeports for All				Homeports for Web Rates			
		GOM	ATL	Other	All	GOM	ATL	Other	All
<b>Charter</b>									
	GOM	943	126	12	1081	263	50	4	317
	ATL	259	1047	213	1519	73	373	80	526
	ANY	997	1052	219	2268	271	374	81	726
<b>Head</b>									
	GOM	65	7	0	72	44	7	0	51
	ATL	19	51	2	72	9	40	1	50
	ANY	65	52	2	119	44	41	1	86
<b>Other</b>									
	GOM	128	4	3	135	53	2	3	58
	ATL	29	30	32	91	14	17	22	53
	ANY	129	31	32	192	53	17	22	92
<b>All</b>									
	ANY	1135	1191	253	2579	432	368	104	904

The shaded cells are the starting sample for the summary of the price information.

- Prices by trip duration,
- Summary statistics for the hedonic regressions, and
- Hedonic price regression results.

### 3.1.1 Charter Boats

Of the 263 charter boats with a homeport in the GOM and a GOM permit, 173 vessels offered prices that included up to six passengers on trips that are no longer than twelve hours. Similarly, 230 of the 373 charter boats with a homeport in the ATL and a ATL permit offered prices that included up to six passengers on trips that are no longer than twelve hours. The number of observations (N) in Table 2 is less than number of vessels

in the final sample because not all vessels offered every type of trip.

Table 2: 2014 6-Passenger Charter Prices by Trip Duration and Region

Hours (Duration)	Region	N	Mean	St. Dev.	Min	Median	Max
<b>4 (1/2 day)</b>							
	GOM	106	616	127	300	600	1000
	ATL	147	626	144	350	600	1200
	ALL	253	621	137	300	600	1200
<b>6 (3/4 day)</b>							
	GOM	120	929	228	575	895	1800
	ATL	117	857	235	450	800	2000
	ALL	237	893	234	450	850	2000
<b>8 (full day)</b>							
	GOM	145	1213	301	400	1200	2400
	ATL	164	1103	276	550	1065	2300
	ALL	309	1155	293	400	1100	2400
<b>10 (full + 2)</b>							
	GOM	88	1558	339	750	1500	2600
	ATL	47	1321	322	875	1200	2500
	ALL	135	1475	351	750	1400	2600
<b>12 (full + 4)</b>							
	GOM	82	1924	489	1050	1825	3500
	ATL	44	1662	394	1100	1550	2500
	ALL	126	1832	473	1050	1798	3500

Table 3: Summary Statistics for the 2014 6-Passenger Charter Prices in the Gulf of Mexico (N=582)

Statistic	Mean	St. Dev.	Min	Median	Max
Fee	1,180.98	528.01	300	1,100	3,500
Hours	7.57	2.68	2.00	8.00	12.00
FL	0.60	0.49	0	1	1
LA	0.04	0.19	0	0	1
MS	0.02	0.13	0	0	1
TX	0.14	0.35	0	0	1
Length	35.78	6.62	23	35	62
Horsepower	622.78	338.88	120	600	2,600
Age	25.33	13.13	0	26	52
CMP	0.69	0.46	0	1	1
HMP	0.51	0.50	0	1	1
DW	0.54	0.50	0	1	1
Reef	0.76	0.43	0	1	1

The number of observations in this table is greater than the sum of the price observations because additional trip durations are included.

Table 4: Summary Statistics for the 2014 6-Passenger Charter Prices in the South Atlantic (N=683)

Statistic	Mean	St. Dev.	Min	Median	Max
Fee	964.86	407.75	350	880	2,500
Hours	6.93	2.43	3.00	6.00	12.00
GA	0.03	0.17	0	0	1
NC	0.27	0.44	0	0	1
SC	0.17	0.38	0	0	1
Length	37.04	8.61	18	35	61
Horsepower	653.51	396.42	100	500	3,300
Age	22.02	12.64	0	24	77
CMP	0.74	0.44	0	1	1
HMP	0.82	0.39	0	1	1
DW	0.80	0.40	0	1	1
Reef	0.76	0.43	0	1	1

The number of observations in this table is greater than the sum of the price observations because additional trip durations are included.



Table 5: Hedonic Regressions with 2014 6-Passenger Charter Prices in the Gulf of Mexico and South Atlantic

	Gulf of Mexico	South Atlantic
Intercept	1130.47 (25.65)***	871.08 (24.00)***
Hours	139.49 (4.88)***	101.68 (4.94)***
AL	120.74 (27.34)***	
LA	197.64 (59.40)***	
MS	-74.74 (78.87)	
TX	220.43 (31.18)***	
GA		17.82 (47.00)
NC		-69.16 (20.30)***
SC		188.38 (23.27)***
Length(2ft)	27.03 (5.34)***	8.64 (3.09)**
Horsepower(10hp)	1.92 (0.56)***	2.43 (0.41)***
Age	9.28 (4.54)*	3.06 (3.37)
CMP	-14.04 (38.98)	-49.60 (22.92)*
HMP	30.47 (29.76)	167.90 (32.41)***
DW	83.04 (31.42)**	-8.74 (33.00)
Reef	-60.15 (43.70)	-26.79 (22.61)
Hours:AL	24.10 (9.06)**	
Hours:LA	20.28 (21.97)	
Hours:MS	6.12 (27.42)	
Hours:TX	36.40 (11.41)**	
Hours:GA		13.97 (16.86)
Hours:NC		31.70 (7.43)***
Hours:SC		42.06 (9.05)***
Length(2ft):Horsepower(10hp)	-0.01 (0.07)	0.01 (0.04)
Length(2ft):Age	-5.53 (2.05)**	-1.75 (1.28)
Horsepower(10hp):Age	0.41 (0.20)*	0.02 (0.13)
R <sup>2</sup>	0.81	0.77
Adj. R <sup>2</sup>	0.80	0.76
Num. obs.	582	683
RMSE	235.60	199.03

\*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$ . Blanks appear where there was not enough variation to identify a parameter.

### 3.1.2 Head Boats

Of the 35 head boats with a homeport in the GOM and a GOM permit, 31 vessels offered prices for trips that are no longer than twelve hours. Similarly, 30 of the 32 head boats with a homeport in the ATL and a ATL permit offered prices for trips that are no longer than twelve hours. The number of observations (N) in Table 6 is less than number of vessels in the final sample because not all vessels offered every type of trip.

Table 6: 2014 Head Boat Prices by Trip Duration and Region

Hours (Duration)	Region	N	Mean	St. Dev.	Min	Median	Max
<b>3-5.5 hours (1/2 day)</b>							
	GOM	17	55	11	30	57	70
	ATL	27	49	11	35	45	70
	ALL	44	51	12	30	54	70
<b>6-7.5 hours (3/4 day)</b>							
	GOM	14	75	13	60	71	110
	ATL	12	66	11	50	65	80
	ALL	26	71	13	50	70	110
<b>8-9.5 hours (full day)</b>							
	GOM	21	84	20	60	80	125
	ATL	8	84	19	58	80	120
	ALL	29	84	20	58	80	125
<b>10-12 hours (full+)</b>							
	GOM	10	113	30	75	112	155
	ATL	9	117	15	100	110	140
	ALL	19	115	24	75	112	155

Table 7: Summary Statistics for the 2014 Head Boat Prices in the Gulf of Mexico (N=62)

Statistic	Mean	St. Dev.	Min	Median	Max
Fee	78.76	26.65	30	70	155
Hours	7.03	2.39	4.00	7.25	12.00
FL	0.63	0.49	0	1	1
TX	0.21	0.41	0	0	1
Length	67.23	8.46	42	65	79
Horsepower	1,270.92	527.12	300	1,330	2,600
Age	30.24	10.83	8	31	45
CMP	0.73	0.45	0	1	1
HMP	0.35	0.48	0	0	1
DW	0.48	0.50	0	0	1
Reef	0.85	0.36	0	1	1

The number of observations in this table is greater than the sum of the price observations because additional trip durations are included.

Table 8: Summary Statistics for the 2014 Head Boat Prices in the South Atlantic (N=56)

Statistic	Mean	St. Dev.	Min	Median	Max
Fee	68.36	27.94	35	64	140
Hours	6.41	2.67	3.00	6.00	12.00
NC	0.32	0.47	0	0	1
SC	0.09	0.29	0	0	1
Length	61.71	10.16	42	60	83
Horsepower	1,071.23	373.85	600	975	1,875
Age	28.16	9.92	3	29	45
CMP	0.75	0.44	0	1	1
HMP	0.38	0.49	0	0	1
DW	0.62	0.49	0	1	1
Reef	0.86	0.35	0	1	1

The number of observations in this table is greater than the sum of the price observations because additional trip durations are included.

Table 9: Hedonic Regressions with 2014 Head Boat Prices in the Gulf of Mexico and South Atlantic

	Gulf of Mexico	South Atlantic
Intercept	68.24 (5.67) <sup>***</sup>	61.00 (4.33) <sup>***</sup>
Hours	9.37 (1.27) <sup>***</sup>	10.08 (0.92) <sup>***</sup>
AL	34.14 (7.12) <sup>***</sup>	
TX	3.74 (6.82)	
NC		1.77 (5.28)
SC		27.48 (12.76) <sup>*</sup>
Length(2ft)	0.49 (0.61)	-0.55 (0.52)
Horsepower(10hp)	-0.02 (0.05)	0.02 (0.07)
Age	-1.81 (1.26)	0.11 (0.93)
CMP	10.84 (9.53)	3.07 (7.69)
HMP	-9.33 (6.50)	-2.80 (5.48)
DW	-14.90 (5.89) <sup>*</sup>	-6.25 (5.75)
Reef	11.38 (9.91)	10.00 (8.58)
Hours:AL	4.57 (3.27)	
Hours:TX	-2.18 (1.91)	
Hours:NC		-0.85 (1.33)
Hours:SC		7.84 (5.58)
Length(2ft):Horsepower(10hp)	-0.02 (0.01)	0.02 (0.01)
Length(2ft):Age	0.55 (0.35)	-1.27 (0.32) <sup>***</sup>
Horsepower(10hp):Age	0.00 (0.03)	0.09 (0.04) <sup>*</sup>
R <sup>2</sup>	0.79	0.88
Adj. R <sup>2</sup>	0.72	0.84
Num. obs.	62	56
RMSE	14.05	11.29

<sup>\*\*\*</sup> $p < 0.001$ , <sup>\*\*</sup> $p < 0.01$ , <sup>\*</sup> $p < 0.05$ . Blanks appear where there was not enough variation to identify a parameter.

### 3.2 2015 Data

The breakdown of the for-hire permits in the GOM and ATL are shown in Table 10 by vessel type, homeport region, and permit region. The breakdown is shown for all permitted vessels and for the subset that had websites with price information. The shaded cells are the starting point for the summary of the price information.

Table 10: 2015 Permits by vessel type, homeport region, and permit region

Boat Type	Permit	Homeports for All				Homeports for Web Rates			
		GOM	ATL	Other	All	GOM	ATL	Other	All
<b>Charter</b>									
	GOM	964	118	12	1094	315	46	7	368
	ATL	250	1110	199	1559	84	434	88	606
	ANY	1018	1114	205	2337	325	434	92	851
<b>Head</b>									
	GOM	66	6	0	72	49	5	0	54
	ATL	21	55	2	78	15	48	1	64
	ANY	66	56	2	124	49	48	1	98
<b>Other</b>									
	GOM	128	3	4	135	69	2	2	73
	ATL	32	28	26	86	16	16	16	48
	ANY	129	29	27	185	69	16	17	102
<b>All</b>									
	ANY	1199	1213	234	2646	498	443	110	1051

The shaded cells are the starting sample for the summary of the price information.

The prices for for-hire trips are summarized in Tables 11 through 18. There are three types of tables presented for charter boats and head boats:

- Prices by trip duration,
- Summary statistics for the hedonic regressions, and

- Hedonic price regression results.

### **3.2.1 Charter Boats**

Of the 315 charter boats with a homeport in the GOM and a GOM permit, 192 vessels offered prices that included up to six passengers on trips that are no longer than twelve hours. Similarly, 269 of the 434 charter boats with a homeport in the ATL and a ATL permit offered prices that included up to six passengers on trips that are no longer than twelve hours. The number of observations (N) in Table 11 is less than number of vessels in the final sample because not all vessels offered every type of trip.

Table 11: 2015 6-Passenger Charter Prices by Trip Duration and Region

Hours (Duration)	Region	N	Mean	St. Dev.	Min	Median	Max
<b>4 (1/2 day)</b>							
	GOM	136	634	143	275	600	1225
	ATL	188	631	161	300	600	1200
	ALL	324	632	153	275	600	1225
<b>6 (3/4 day)</b>							
	GOM	153	953	224	550	900	1800
	ATL	131	858	226	450	800	2000
	ALL	284	909	230	450	895	2000
<b>8 (full day)</b>							
	GOM	181	1274	344	550	1200	2500
	ATL	206	1152	297	510	1100	2400
	ALL	387	1209	325	510	1195	2500
<b>10 (full + 2)</b>							
	GOM	111	1592	342	700	1600	2600
	ATL	66	1335	321	700	1300	2500
	ALL	177	1496	356	700	1400	2600
<b>12 (full + 4)</b>							
	GOM	114	1964	487	1100	1935	4500
	ATL	58	1711	406	1200	1600	3000
	ALL	172	1879	476	1100	1800	4500

Table 12: Summary Statistics for the 2015 6-Passenger Charter Prices in the Gulf of Mexico (N=778)

Statistic	Mean	St. Dev.	Min	Median	Max
Fee	1,215.54	544.99	275	1,115	4,500
Hours	7.56	2.70	2.00	8.00	12.00
FL	0.57	0.50	0	1	1
LA	0.05	0.22	0	0	1
MS	0.02	0.13	0	0	1
TX	0.11	0.32	0	0	1
Length	35.77	6.39	24	36	62
Horsepower	626.74	308.40	140	600	3,100
Age	26.14	13.51	0	28	53
Fuel Surcharge	0.20	0.40	0	0	1
CMP	0.05	0.21	0	0	1
HMP	0.01	0.09	0	0	1
Reef	0.06	0.24	0	0	1
Inshore	0.04	0.19	0	0	1

The number of observations in this table is greater than the sum of the price observations because additional trip durations are included.



Table 13: Summary Statistics for the 2015 6-Passenger Charter Prices in the South Atlantic (N=896)

Statistic	Mean	St. Dev.	Min	Median	Max
Fee	996.16	433.29	250	900	3,000
Hours	6.99	2.55	2.00	7.00	12.00
GA	0.02	0.14	0	0	1
NC	0.27	0.44	0	0	1
SC	0.15	0.35	0	0	1
Length	37.41	8.62	23	35	65
Horsepower	688.81	426.19	0	600	3,300
Age	24.64	12.45	0	25.5	78
Fuel Surcharge	0.26	0.44	0	0	1
CMP	0.04	0.19	0	0	1
HMP	0.02	0.15	0	0	1
Reef	0.06	0.25	0	0	1
Inshore	0.03	0.17	0	0	1

The number of observations in this table is greater than the sum of the price observations because additional trip durations are included.

Table 14: Hedonic Regressions with 2015 6-Passenger Charter Prices in the Gulf of Mexico and South Atlantic

	Gulf of Mexico	South Atlantic
Intercept	1110.41 (12.93)***	1005.65 (12.19)***
Hours	136.50 (4.31)***	102.45 (4.12)***
AL	179.91 (21.57)***	
LA	243.46 (49.92)***	
MS	-110.84 (64.11)	
TX	248.83 (31.57)***	
GA		1.34 (48.94)
NC		-71.38 (17.60)***
SC		75.40 (20.26)***
Length(2ft)	3.26 (4.56)	5.33 (2.79)
Horsepower(10hp)	3.70 (0.49)***	3.34 (0.36)***
Age	14.49 (3.80)***	0.83 (3.09)
fuelSurcharge	76.41 (25.22)**	9.25 (16.17)
CMP	22.11 (42.45)	-98.06 (38.28)*
HMP	-9.74 (92.25)	158.60 (45.26)***
Reef	93.15 (36.59)*	6.09 (27.78)
Inshore	-152.62 (44.73)***	-133.87 (40.06)***
Hours:AL	32.24 (7.26)***	
Hours:LA	-8.58 (15.92)	
Hours:MS	-3.57 (24.02)	
Hours:TX	26.65 (11.08)*	
Hours:GA		20.85 (16.75)
Hours:NC		36.58 (6.28)***
Hours:SC		47.58 (7.76)***
Length(2ft):Horsepower(10hp)	0.21 (0.06)***	-0.07 (0.04)
Length(2ft):Age	-0.60 (1.60)	-1.71 (1.08)
Horsepower(10hp):Age	-0.43 (0.16)**	0.03 (0.11)
R <sup>2</sup>	0.82	0.79
Adj. R <sup>2</sup>	0.82	0.78
Num. obs.	778	896
RMSE	232.12	201.01

\*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$ . Blanks appear where there was not enough variation to identify a parameter.

### 3.2.2 Head Boats

Of the 43 head boats with a homeport in the GOM and a GOM permit, 42 vessels offered prices for trips that are no longer than twelve hours. Similarly, 35 of the 37 head boats with a homeport in the ATL and a ATL permit offered prices for trips that are no longer than twelve hours. The number of observations (N) in Table 15 is less than number of vessels in the final sample because not all vessels offered every type of trip.

Table 15: 2015 Head Boat Prices by Trip Duration and Region

Hours (Duration)	Region	N	Mean	St. Dev.	Min	Median	Max
<b>3-5.5 hours (1/2 day)</b>							
	GOM	34	62	15.5	25	60	110
	ATL	31	55	15.1	35	50	85
	ALL	65	58	15.6	25	60	110
<b>6-7.5 hours (3/4 day)</b>							
	GOM	16	77	13.1	65	74	110
	ATL	15	66	9.4	55	65	80
	ALL	31	71	12.6	55	70	110
<b>8-9.5 hours (full day)</b>							
	GOM	29	87	22.2	35	84	135
	ATL	10	85	16.1	70	80	120
	ALL	39	87	20.7	35	84	135
<b>10-12 hours (full+)</b>							
	GOM	19	114	25.4	75	115	160
	ATL	12	120	32.6	70	110	175
	ALL	31	116	28.0	70	110	175

Table 16: Summary Statistics for the 2015 Head Boat Prices in the Gulf of Mexico (N=98)

Statistic	Mean	St. Dev.	Min	Median	Max
Fee	81.88	26.89	25	75	160
Hours	7.12	2.57	4.00	6.25	12.00
FL	0.53	0.50	0	1	1
MS	0.01	0.10	0	0	1
TX	0.34	0.48	0	0	1
Length	68.01	8.64	45	69	80
Horsepower	1,161.78	496.24	300	1,200	3,150
Age	30.54	12.94	1	29	52
Fuel Surcharge	0.18	0.39	0	0	1
CMP	0.00	0.00	0	0	0
HMP	0.00	0.00	0	0	0
Reef	0.00	0.00	0	0	0
Inshore	0.01	0.10	0	0	1

The number of observations in this table is greater than the sum of the price observations because additional trip durations are included.

Table 17: Summary Statistics for the 2015 Head Boat Prices in the South Atlantic (N=68)

Statistic	Mean	St. Dev.	Min	Median	Max
Fee	72.94	30.10	35	65	175
Hours	6.59	2.64	3.00	6.00	12.00
NC	0.21	0.41	0	0	1
SC	0.19	0.40	0	0	1
Length	59.04	11.29	38	60	85
Horsepower	1,029.97	399.04	475	975	1,950
Age	29.69	9.99	1	30	51
Fuel Surcharge	0.18	0.38	0	0	1
CMP	0.03	0.17	0	0	1
HMP	0.00	0.00	0	0	0
Reef	0.01	0.12	0	0	1
Inshore	0.00	0.00	0	0	0

The number of observations in this table is greater than the sum of the price observations because additional trip durations are included.

Table 18: Hedonic Regressions with 2015 Head Boat Prices in the Gulf of Mexico and South Atlantic

	Gulf of Mexico	South Atlantic
Intercept	76.77 (2.51) <sup>***</sup>	67.17 (2.84) <sup>***</sup>
Hours	7.27 (1.00) <sup>***</sup>	9.52 (0.89) <sup>***</sup>
AL	30.75 (6.59) <sup>***</sup>	
MS	28.37 (17.27)	
TX	0.24 (4.68)	
NC		4.83 (4.28)
SC		24.80 (6.02) <sup>***</sup>
Length(2ft)	-0.83 (0.61)	-0.78 (0.61)
Horsepower(10hp)	-0.02 (0.05)	0.00 (0.08)
Age	-0.96 (0.78)	-0.42 (0.99)
fuelSurcharge	11.67 (6.24)	3.93 (5.85)
Inshore	16.12 (15.72)	
CMP		14.68 (10.42)
Reef		-7.33 (16.41)
Hours:AL	7.39 (3.09) <sup>*</sup>	
Hours:TX	0.57 (1.36)	
Hours:NC		-1.56 (1.58)
Hours:SC		5.17 (1.77) <sup>**</sup>
Length(2ft):Horsepower(10hp)	-0.02 (0.01)	0.01 (0.01)
Length(2ft):Age	0.35 (0.16) <sup>*</sup>	-0.26 (0.28)
Horsepower(10hp):Age	0.01 (0.02)	0.05 (0.03)
R <sup>2</sup>	0.72	0.86
Adj. R <sup>2</sup>	0.67	0.82
Num. obs.	98	68
RMSE	15.43	12.82

<sup>\*\*\*</sup> $p < 0.001$ , <sup>\*\*</sup> $p < 0.01$ , <sup>\*</sup> $p < 0.05$ . Blanks appear where there was not enough variation to identify a parameter.

## 4 Summary

The average advertised price for a full day for-hire fishing trip during 2014 and 2015 in the GOM and ATL is around \$1100 for charter boats and \$80 head boats. Though no statistical tests were conducted, prices in the GOM are slightly higher than prices in the ATL for the same trip duration. Also, the per person price for a six-passenger charter trip is higher than the price for a head boat trip of the same duration.

The factors used in the hedonic regressions explained around 80 percent of the variation in the advertised prices for-hire trips. In general, the duration of the trip is most important determinant of price with each hour adding about \$100 to a six person charter trip and \$10 to the price of a head boat ticket. The hedonic regression results also indicate that, in some cases, average prices vary by state and vessel characteristics such as length or horsepower.

The advertised prices for for-hire services in the GOM and ATL have not increased much since we began collecting data in 2011. However, the increase, about 10 to 15% is greater than the general increase in consumer prices throughout the U.S. economy which only increased around 5% between 2011 and 2015.

## 5 References

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