The Annual Economic Survey of Federal Gulf Shrimp Permit Holders: Implementation and Descriptive Results for 2008

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This report is formatted for double sided printing (tables spanning two pages).

Executive Summary

This report presents descriptive results of the Annual Economic Survey of Federal Gulf Shrimp Permit Holders (OMB Control # 0648-0476) for the calendar year 2008, and documents the survey's implementation and preparation of data. The data collection was designed by the NOAA Fisheries Southeast Fisheries Science Center Social Science Research Group to track the financial and economic status and performance by vessels holding a federal moratorium permit for harvesting shrimp in the Gulf of Mexico. A two page, self-administered mail survey collected total annual costs broken out into seven categories and auxiliary economic data. Since this was the third year for the survey, a section compares results from 2008, 2007, and 2006. The survey is repeated annually. The first technical memorandum (NMFS-SEFSC-584) is intended as the central report to describe the data collection methodology and should be consulted for details about the survey design. Changes made to the 2007 survey are documented in a second technical memorandum (NMFS-SEFSC-590). These reports and other information can be found at: www.sefsc.noaa.gov/shrimpecon.jsp

Between March and August 2008, 699 permits were randomly selected, stratified by state, from a population of 1,890 federal permits to shrimp in federal waters of the Gulf of Mexico. After many reminder and verification phone calls, 516 surveys were deemed complete, for a response rate of 83.9% after adjusting for vessels that were ineligible for the survey and vessels with terminated permits. The linking of each individual vessel's cost data to its revenue data from different data collections was imperfect, and hence the final number of observations used in the analyses is 497. By various measures and tests of validity throughout the report, the quality of the data is high. The results are presented in a standardized table format that links vessel characteristics and operations to simple balance sheet, cash flow, and income statements. In the text, results are discussed for the total fleet, the Gulf shrimp fleet, the active Gulf shrimp fleet, and the inactive Gulf shrimp fleet. Additional results for shrimp vessels grouped by state, by ownership structure, by vessel characteristics, and by landings volume are available in an appendix.

The general conclusion of this report is that for the average vessel in 2008, in all of the evaluated categories, financial and economic performance improved somewhat from the dismal level in 2007. The improvement did not return the fishery to the levels of 2006, which at the time we referred to as "bleak." The average net cash flow has turned positive again, but the negative net revenues from operations and the high "losses" continued to be non-sustainable. The results explain the continued shrinking of the industry. For active Gulf shrimp vessels in 2008, the average fixed costs accounted for just under a fifth of operating expenses (19.2%), labor costs for just under a quarter (24.2%), and the non-labor variable costs for over half (56.6%). The fuel costs alone accounted for 48.5% of total operating expenses. The average net revenue from operations was negative $8,666, and the economic return was negative 5%. Including non-operating activities, the loss before taxes was $10,034 which translates into a negative 9% return on equity.

From 2007 to 2008, the average shrimp price increased by only 11% while the fuel price surged by almost 30%. As a result, the economic conditions deteriorated in 2008. Paradoxically, the financial situation of the average vessel moved in the opposite

direction of the economic environment. In 2007, in spite of improvements in the economic environment, vessels did not expand production. On the contrary, they seemed to reduce effort. As a result, their fairly constant fixed costs led to a negative cash flow, negative net revenues from operations, and negative economic returns. In 2008, as the economic environment deteriorated and operations (as defined by landings, fuel use, costs) stayed roughly the same as in 2007, the cash flow, net revenues, and returns improved mostly due to the cutting of fixed costs, something the average vessel failed to do in 2007.

Table of Contents

1. Introduction 1
Purpose 3
2. Design 5
Financial Statements 5
Survey Instrument 8
Population and Sampling Frame 9
Sampling Design 11
3. Implementation 15
Outreach 15
Implementation Process 16
Response Rate and Data Validity 17
Data Cleaning 21
Additional Data: Revenue 23
4. Results for 2008 25
Standardized Data Presentation 25
Balance Sheet 27
Cash Flow 29
Income Statement 30
Categorizing Observations into Fleets by Fishery 31
Overview of Results Presented 32
2008 Financial and Economic Results for the Sub-Fleets (Summary Statistics) 34
Total Fleet 34
Gulf Shrimp Fleet 39
Active Gulf Shrimp Fleet 40
Inactive Gulf Shrimp Fleet 43
Comparison of Key Results across Fleets and Categories 45
Comments by Respondents 51
5. Comparison of Results for 2008, 2007, and 2006 53
6. Conclusion 61
Appendix 1: 2008 Survey Instrument 65
Appendix 2: 2008 Survey Instructions 69
Appendix 3: 2008 Survey Other Materials 73
Appendix 4: Data Cleaning Regressions (2008) 77
Appendix 5: Tables with 2008 Financial and Economic Results (Averages) 79

List of Tables

Table 1: Average and Total Gulf Shrimp Landings, Revenue, and Price for Active Inshore Boats, Active Federally Permitted Vessels, and Active Vessels in Analyses (2008) 10

Table 2: Average Vessel Operations, Characteristics, and State for the Population, Sample, and Surveys in Analyses (2008) 13

Table 3: Timeline: 2008 Survey Implementation 15

Table 4: Counts for Response Rate Calculations and Reasons for Non-Response (2008) 18

Table 5: Average Vessel Operations, Characteristics, and State for Sample with No Contact; Terminated Permit or Ineligible; Incomplete or Dropped Survey; and Survey in Analyses (2008) 21

Table 6: Vessel Count by Fleet and by Activity in Different Fisheries (2008) 31

Table 7: Overview of Tables with 2008 Financial and Economic (F&E) Results 33

Table 8: F&E Results: Summary Statistics for the Total Fleet (n=497) 35

Table 9: F&E Results: Summary Statistics for the Gulf Shrimp Fleet (n=463) 38

Table 10: F&E Results: Summary Statistics for the Active Gulf Shrimp Fleet (n=383) ..41

Table 11: F&E Results: Summary Statistics for the Inactive Gulf Shrimp Fleet (n=80) ..44

Table 12: Overview of 2008 Financial and Economic (F&E) Results 47

Table 13: Comparison of Results for the Active Gulf Shrimp Fleet: 2008, 2007, and 2006 56

Table 14: F&E Results: Averages for the Total Fleet by Fishery 80

Table 15: F&E Results: Averages for the Total Fleet by State 82

Table 16: F&E Results: Averages for the Gulf Shrimp Fleet by State and by Activity Status 84

Table 17: F&E Results: Averages for the Active Gulf Shrimp Fleet by State 86

Table 18: F&E Results: Averages for the Active Gulf Shrimp Fleet by Refrigeration and by Hull Material 88

Table 19: F&E Results: Averages for the Active Gulf Shrimp Fleet by Vessel Length ...90

Table 20: F&E Results: Averages for the Active Gulf Shrimp Fleet by Vessel Age 92

Table 21: F&E Results: Averages for the Active Gulf Shrimp Fleet by Landings Volume 94

Table 22: F&E Results: Averages for the Active Gulf Shrimp Fleet by Survey Quality ..96

Table 23: F&E Results: Averages for the Active Gulf Shrimp Fleet
by Ownership Structure; and of the Owner-Operated Sub-Fleet
by Captain's Share Structure 98

List of Figures

Figure 1: Balance Sheet “Balance” 6
Figure 2: Cash Flow “Balance” 7
Figure 3: Income Statement “Balance” 8

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1. Introduction

This technical memorandum presents descriptive results of the Annual Economic Survey of Federal Gulf Shrimp Permit Holders (OMB Control # 0648-0476) for the calendar year 2008. Since this was the third year this survey was conducted, a section compares results from 2008, 2007, and 2006. The survey is repeated annually, and the first technical memorandum (NMFS-SEFSC-584)[1] is intended as the central report describing the data collection methodology and should be consulted for details about the survey design. Changes to the survey in the second year are documented in a second technical memorandum (NMFS-SEFSC-590).[2] This third technical memorandum concentrates on documenting changes that occurred with the 2008 survey implementation. Nonetheless, we err on the side of including background information to insure proper use and interpretation of the aggregate data and results.[3,4]

The commercial penaeid shrimp fishery in the Gulf of Mexico is one of the most economically important fisheries in the Southeast Region. The fleet consists of: i) an inshore segment, mostly active in state waters and very diverse; and ii) an offshore segment, largely active in federal waters and almost always using trawl gear. The fishery is managed under the Gulf of Mexico Shrimp Fishery Management Plan, and a moratorium permit is required to harvest shrimp in federal waters.[5] The fishery is facing a range of difficulties that together are threatening the short-term and long-term viability of the industry. Existing regulations, high fuel and other input prices, and competition from foreign, aquacultured shrimp are squeezing the profit margin upon which Gulf shrimpers base their livelihood. Further, recent hurricanes have once again substantially impacted the Gulf of Mexico shrimp fishery.

This data collection program was designed by NOAA Fisheries (NMFS) Southeast Fisheries Science Center's Social Science Research Group in late 2006 to track the economic condition of the fishery. Because it is impossible to clearly delineate the inshore and offshore segments of the shrimp fishery, the data collection focuses on the federally permitted vessels, i.e. vessels that hold a federal moratorium permit for

[1] Liese, Christopher, Michael D. Travis, Diana Pina, and James R. Waters. 2009. The Annual Economic Survey of Federal Gulf Shrimp Permit Holders: Report on the Design, Implementation, and Descriptive Results for 2006. NOAA Technical Memorandum NMFS-SEFSC-584, 91 p.

[2] Liese, Christopher, Michael D. Travis, and James R. Waters. 2009. The Annual Economic Survey of Federal Gulf Shrimp Permit Holders: Implementation and Descriptive Results for 2007. NOAA Technical Memorandum NMFS-SEFSC-590, 97 p.

[3] Data for individual respondents are confidential.

[4] All technical memoranda and related material can be found on the NOAA Fisheries Southeast Fishery Science Center website: www.sefsc.noaa.gov/shrimpecon.jsp

[5] Federal waters of the Gulf of Mexico, i.e. the U.S. exclusive economic zone, begin 3 miles off the coast of Alabama, Louisiana, and Mississippi, and 9 miles off the coasts of Florida and Texas. A moratorium on federal permits for catching Gulf shrimp became effective March 26, 2007 (Final rule: 71 Federal Register 186 (26 Sept. 2006), p.56039).

harvesting Gulf shrimp.[6] The results in this report apply roughly to the offshore segment of the shrimp fleet. Shrimp vessels operating offshore are usually larger, full-time, and more sophisticated from a business perspective, and hence more capable of providing financial data. In 2008, 2007, and 2006, the federally permitted vessels accounted for two-thirds of annual Gulf shrimp landings and over three-quarters of total revenue generated by the fishery (Table 1). Focusing the data collection on vessels with moratorium permits has the added advantage that the population is known and that contact information is available. Also, this group is of most direct interest from a federal fishery management perspective.

The guiding principle for this data collection is to collect the minimum information necessary that still allows meaningful financial and economic analyses, and to collect this information in the least burdensome way for the shrimp industry.[7] We opted for a survey approach, thereby burdening only a fraction of permit owners each year. Further, a self-administered mail survey was deemed to be more convenient, less intrusive, and less time-consuming than one based on in-person interviews. The outcome is a two page survey instrument limited to collecting "bread and butter" economic data, but comprehensive enough to produce a meaningful annual report for the Gulf shrimp harvesting industry.

The survey intends to collect all annual expenditures grouped into less than ten variable and fixed cost categories. When combined with revenue from other data collections, we can calculate various measures of the financial and economic status and performance of the industry. Random sampling, stratified by state, was used to ensure that the results are representative and can be extrapolated to the population of all federal permit holders and any large sub-population, such as active shrimp vessels in Texas. The survey to collect annual data for calendar year 2008 was mostly implemented between March and August, 2009. Follow-up and verification phone calls took place during data entry, mostly between June and August, 2009. Further data cleaning, merging the cost data with revenue data from other databases, the analyses, and the report writing were conducted during the second half of 2009.

The results are basic descriptive statistics---arithmetic means---of the financial and non-financial data.[8] They are presented in a standardized table format that links vessel characteristics and operations to simple balance sheet, cash flow, and income statements. Besides reporting the averages for the total fleet of all permitted vessels, results are presented for the *Gulf shrimp* fleet by excluding permitted vessels engaged primarily in other fisheries, for the *active* Gulf shrimp fleet by further excluding idle, broken, or otherwise inactive vessels, and for the *inactive* Gulf shrimp fleet. More results are

[6] The distinction between vessels and owners/people is important because the Gulf shrimp moratorium permit is a *vessel* permit and thus vessels, not owners, are the unit of analysis.

[7] Given NMFS' experiences with in-person interviews of Gulf shrimpers, a low burden approach was thought necessary to get shrimpers' cooperation. Compliance with this data collection is a requirement for permit renewal. A large sample size and high levels of unbiased participation increase the validity and representativeness of the results.

[8] Extrapolation of the results to the population and a look at the distributional results will follow in a future report.

reported in an appendix for various categories of shrimp vessels, including those grouped by state, by vessel characteristics, by landings volume, and by ownership structure. When the results are interpreted as applying to the (sub-) population, they must be thought of as approximations of the activities and values associated with the average or representative vessel of that (sub-) population. In statistical terms, the results are mid-points of a confidence interval within which the true, but unknown, population mean would be found 95% of the time.

FEEDBACK NEEDED

Please let us know if you are using this technical memorandum, or if you have any suggestions how this data could be made to better serve you.

A quick email or call is much appreciated.

Sincerely,
-Christopher Liese

Email: Christopher.Liese@noaa.gov
Tel.: (305)-365-4109

The rest of this introduction briefly describes the purpose of economic data collections in the Gulf of Mexico shrimp fishery. Chapter 2 describes the accounting framework used to guide the overall survey design, and describes the survey instrument, the population and sampling frame, and the sampling design, focusing on changes made to the 2008 version. Chapter 3 documents the implementation of the survey for 2008, focusing on the response rate, the validity of the data, and preparation of data. Chapter 4 starts with an in-depth explanation and discussion of the variables in the standardized tables used to present the results. The rest of the chapter discusses the 2008 results and presents a selected number of written comments received from respondents. Chapter 5 briefly compares results for 2008, 2007, and 2006.

Purpose

Previous attempts to collect economic data in the Gulf shrimp fishery, in particular cost data, have been plagued by their limited duration, small geographic scope, and the industry's resistance to being surveyed. The size and relevance of the Gulf shrimp fishery and associated industry make the systematic and continuous collection of economic data critical and long overdue. Such data can serve many purposes. Foremost it is necessary to inform the fishery management process. The central goal of this survey is to collect up-to-date cost data for the commercial shrimp fishery in federal waters of the Gulf of Mexico in support of management by the Gulf of Mexico Fisheries Management Council and NOAA Fisheries (NMFS). A collection of economic information from fishermen affected by federal management is needed to ensure that national goals, objectives, and requirements of the Magnuson-Stevens Fishery Conservation and Management Act and other laws are met. By collecting such data annually, economic changes and trends through time can be identified and tracked.

Amendment 13 to the Fishery Management Plan for the Shrimp Fishery in the Gulf of Mexico introduced a moratorium on permits for shrimping in federal waters and provided for improved information collection programs.[9] In the past, NOAA Fisheries has collected catch and (limited) effort data on a continuous basis in this fishery through port agents, dealer reports, and more recently through the various Gulf States' trip ticket systems. With the move to more active management implied by the introduction of the moratorium permits, more and timelier data collections have become necessary. Further, tough economic conditions since 2000 have changed the industry to the point of making earlier economic data obsolete. It became imperative that new data be collected to accurately assess the economic and social conditions in the fishery and to predict the impacts of changes to the shrimp fishery management plans and regulations on shrimp fishing entities. The start-up of other complementary data collections in this fishery further increases the value of the economic data.[10]

[9] The fishery management amendment was approved February 21, 2006. A moratorium permit was required as of March 26, 2007 in order to harvest penaeid shrimp from federal waters, though shrimpers had until October 26, 2007 to apply for the permit.

[10] See the SE Fishery Bulletin in Appendix 3 for a listing of these data collections.

2. Design

In late 2006, the Social Science Research Group at the NMFS Southeast Fisheries Science Center in Miami, Florida, in close cooperation with the Fisheries Social Science Branch at the NMFS Southeast Regional Office in St. Petersburg, Florida, designed a program to collect annual socio-economic data for the Gulf shrimp fishery.[11] The first technical memorandum based on this data collection (NMFS-SEFSC-584) is intended as the central report describing the data collection methodology and should be consulted for the details and background on the survey design. Changes to the survey in the second year are documented in a second technical memorandum (NMFS-SEFSC-590). After a brief section covering the basics of financial statements, this chapter concentrates on the changes that were made to the 2008 survey instrument and documents the 2008 sampling frame and sample design.

Financial Statements

The central approach taken by this data collection was to minimize the number of variables collected from each respondent, while maintaining the ability to answer meaningful economic questions. To guarantee comparability across a diverse set of operations, we focused on collecting data about the harvesting component only, i.e. data on the financial flows directly associated with owning and operating a fishing vessel. Thus the basic unit is a shrimp vessel, ignoring any processing, wholesale, or retail components. Shrimp operations are commercial, for-profit businesses, and as such, we decided to collect only economic data, forsaking any demographic or social data tied more closely to the vessel operators and owners.

The type of economic data to be collected was based on an accounting framework of money flows and values associated with the productive activity of commercial shrimping---the "bread and butter" of economic data. With these data, three financial statements, the balance sheet, the cash flow statement, and the income statement, are prepared to give a comprehensive overview of the financial and economic situation of the offshore shrimp fishery. To keep the survey short and simple, only broad cost categories are collected; their delineation guided by reporting requirements on tax forms to minimize the reporting burden for fishermen. By collecting data about revenue flows, cost flows, and asset values, statistically valid financial statements can be developed for a representative or "average" shrimp vessel and for the industry as a whole.[12] The next paragraphs briefly illustrate the basic accounting framework used to identify the data that needed to be collected. More details about the financial statements specific to the data and to the shrimp fishery context are presented in the Results for 2008 chapter of this report.

[11] The focus is on annual data rather than trip level economic data.
[12] The Results for 2008 chapter provides the average results for the year 2008. Results extrapolated to the population will follow in a future report.

A balance sheet is a snapshot of a company's financial condition. A company's balance sheet has three parts: assets, liabilities, and the owner's equity. The asset side of a balance sheet lists all assets of a company and their value at a given point in time. The liability side lists the various sources of money invested to acquire these assets (the financial capital). Beyond investing their own capital (money), most company owners borrow financial capital from other sources, such as banks. The current equity, the net worth of the company to the owner, always equals the difference between the value of all assets and what is owed. Figure 1 illustrates this "balance." By collecting data about the value of the assets (market value of vessel and gear in our case) and the outstanding loans, the vessel owner's equity stake can be calculated.

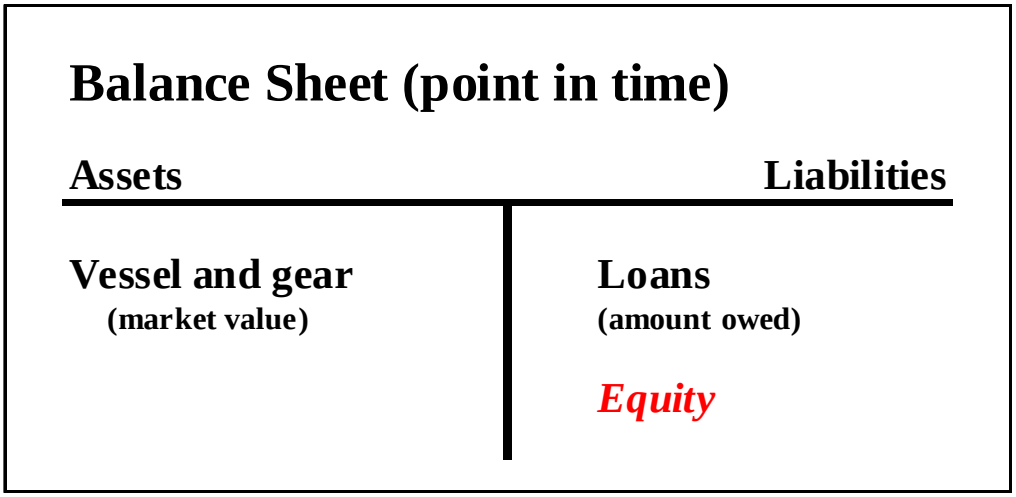

Figure 1: Balance Sheet "Balance"

The balance sheet summarizes the financial condition at a single point in time. In contrast, the cash flow statement and the income statement summarize a company's financial transactions over an interval of time. In an annual report, these two financial statements present slightly different perspectives of the revenues earned during one accounting year and the expenses made in order to generate these revenues.

The cash flow statement is a financial statement that shows a company's flow of money (Figure 2). Money accruing to the company is called cash inflow. In this study, the most important cash inflow is revenue generated through the sale of shrimp harvested by the sampled vessel. Money leaving the company is called cash outflow, which includes the various costs of owning and operating the shrimp vessel. Transactions that do not directly create cash receipts and payments are excluded. The difference between inflow and outflow---the net cash flow---reflects the vessel owner's liquidity or solvency and is useful in determining the short-term viability of a company. For the Gulf shrimp industry, we decided that three inflows (shrimp revenue, other fishing revenue, and government payments) and six cost categories (fuel, other supplies, crew (hired) costs, vessel/gear related fixed costs, overhead costs, and loan payments) would suffice in detail.

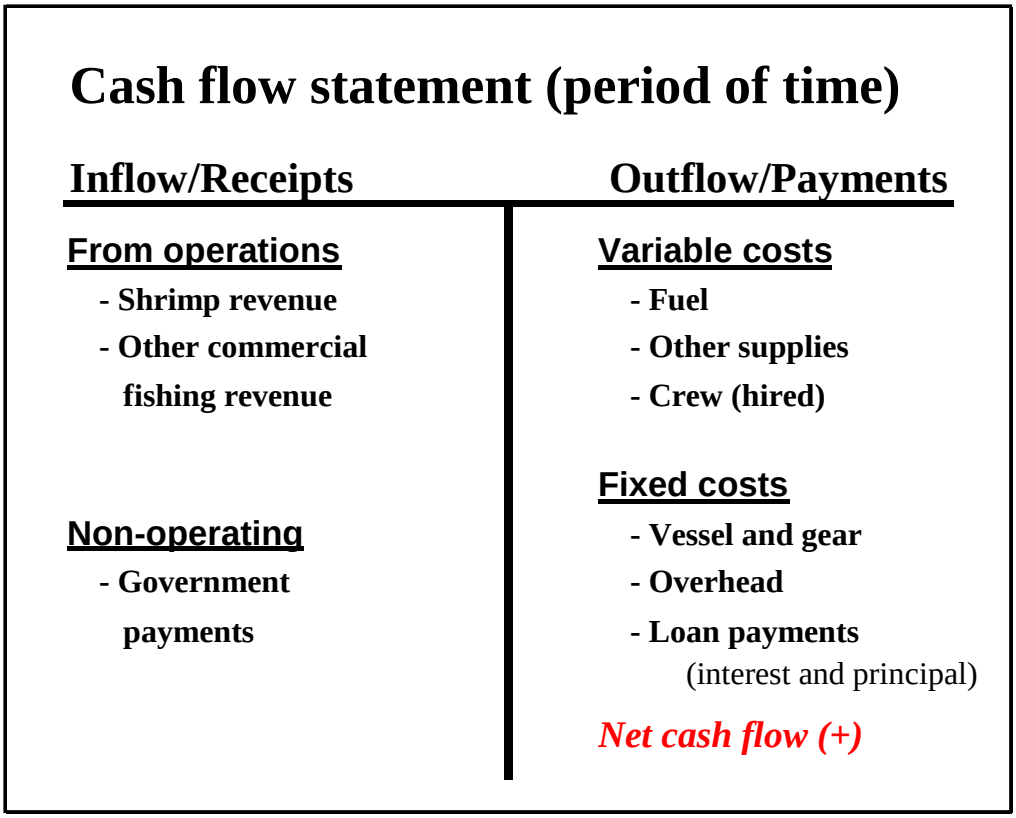

Figure 2: Cash Flow "Balance"

An income statement is intended to help owners and investors determine the true economic performance of a company over a specified period of time. The income statement is sometimes called the profit and loss statement. The income statement begins with the revenue generated from operations (sale of product or service) and subtracts all operating costs, including non-cash costs such as the value of owner's labor and depreciation (Figure 3). The result is the net revenue from operations. This is a measure of the true economic return to a productive activity. More relevant to the owners of a company is the net revenue before taxes, i.e. their actual profit or loss. This "bottom line" is calculated by subtracting financing costs (such as interest payments) and adding non-operating revenue, income, and costs to net revenue from operations.

Many variables are the same in the cash flow and income statements. The not-bold elements in Figure 3 indicate variables that are the same in the income statement and the cash flow statement. Text in bold signifies an element specific to the income statement. For the Gulf shrimp industry, revenue generated from operations includes revenue from the sale of shrimp and other fishing revenue, and excludes government payments. Operating costs include non-cash transactions such as depreciation and the value of the owner's labor used to generate the year's revenues.[13] Depreciation and the value of the

[13] In contrast to the cash flow statement, the income statement excludes cash payments that are not operating costs directly associated with generating *that year's* revenues. This includes payments for new investments and principal repayments which both impact the balance sheet (assets and liabilities) but do not constitute economic income or costs.

owner's labor are not explicit costs (in contrast to variables in the cash flow statement) and thus need to be estimated.

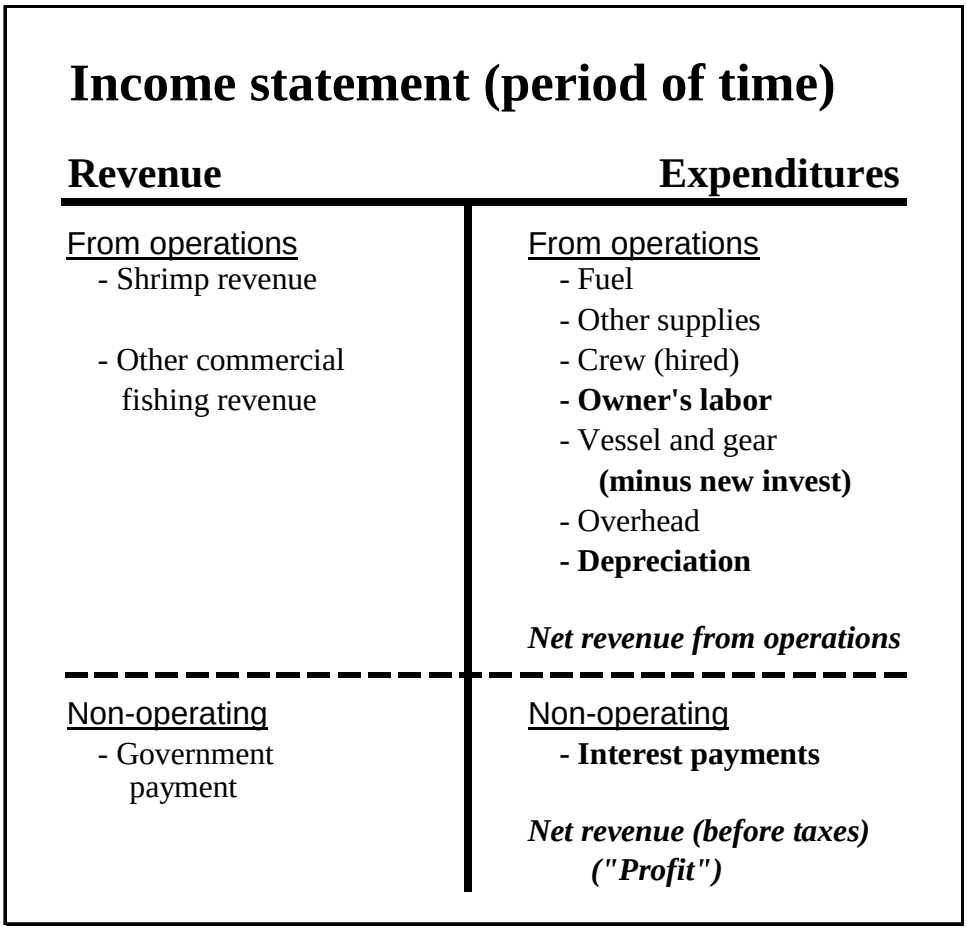

Figure 3: Income Statement "Balance"

Survey Instrument

The 2008 survey instrument and the detailed instructions are attached as Appendices 1 and 2. Details on all the questions and their intent can be found in the first and second memoranda. The survey effort started in 2007 and collected annual economic data for the calendar year 2006. As can be expected, lessons were learned that enabled us to clarify and simplify the survey instrument and streamline the overall survey process. Most changes were made after the first year and are documented in the second memorandum. Changes between the second year, the 2007 survey, and the third year were minor and are documented below.

The only content changes made to the 2008 survey instrument involved dropping the voluntary question to gauge the interest among respondents for completing the survey online. In its place, we added a question about receiving the 2008 survey results ("Would you like to receive the results (2008 fact sheet) when they become available?").

Further efforts were made to clarify and simplify the survey instrument's layout and language. We continued to evaluate the number and type of incoming calls and outgoing clarification calls and mail to determine which questions were the source of most problems. The resulting changes include:

- To the phrase at the top of the survey instrument "Even if this vessel was inactive in 2008 please complete this survey," we added "(especially Q7, Q8, and Page 2)."

- We also continued to adapt the sequence, skip pattern, and layout of the questions pertaining to owner operators, crew compensation, and captain's compensation. Former questions 2 and 3 switched places, and a 'not applicable' check box was added to the question concerning owner captain's share (new question 2).

- On question 11 c), pertaining to the original purchase price of the vessel, we added "(estimate original value if gift or self-built)."

As in the previous year, detailed instructions were prepared. The three pages of instructions spell out the exact intention behind each question. The instructions can be found in Appendix 2. Beyond cover letters, an information page clearly, concisely, and in large letters spelled out the intent, justification, and confidential nature of the survey.[14] The survey instrument, instructions, and information material were translated into Vietnamese, though every respondent received the full English version as well.

Population and Sampling Frame

The population of interest is all vessels potentially or actually fishing for penaeid shrimp during the 2008 calendar year in *federal waters* of the Gulf of Mexico, i.e. in federal waters off the States of Texas, Louisiana, Mississippi, Alabama, and Florida. This population is approximated by ownership of a federal shrimp permit for vessels fishing in the Exclusive Economic Zone of the Gulf of Mexico.

As of December 5, 2002, vessels were required to possess a federal permit in order to fish for penaeid shrimp in federal waters of the Gulf of Mexico. This permit was available to all, i.e. the federal Gulf shrimp fishery was open access. A fishery management amendment, approved February 21, 2006, limited entry to the fishery, and a moratorium permit was introduced. A moratorium permit was required as of March 26, 2007 to harvest penaeid shrimp from federal waters, though shrimpers did have until October 26, 2007 to apply for the permit. As a result, the 2008 and 2007 surveys were conducted based on a complete sampling frame of the population. In contrast, the 2006 survey was conducted with a somewhat incomplete frame.

[14] Appendix 3 contains the 2008 cover letter and a SE Fishery Bulletin announcing all federal data collections in the Gulf shrimp fishery. The information material did not change from the previous year and can be found in the first technical memorandum.

The complete sampling frame was provided by the permit office of the NMFS Southeast Regional Office. In early 2009, it included 1,890 permits as there has been some attrition since the moratorium permits were first issued.[15] The sampling frame contains most of the information provided on the permit application, including vessel registration number, vessel characteristics, and permit and contact information.

The Gulf shrimp fishery can be roughly divided into an inshore and offshore fishery. While the inshore fleet is comprised of a diverse set of vessels and operators,[16] the offshore fleet is (somewhat) more homogeneous. The offshore fleet consists of larger, otter-trawl vessels operated more frequently in federal waters on a full-time basis. Given the scale of these operations, a large majority maintain accounting records.

Table 1: Average and Total Gulf Shrimp Landings, Revenue, and Price for Active Inshore Boats, Active Federally Permitted Vessels, and Active Vessels in Analyses (2008)

(in USD)	Total	No Federal Permit	Federal Permit	Surveys in Analyses (active vessels)
# of Vessels	4,121	2,896	1,225	383
Average revenue per vessel ($)	84,899	24,170	228,470	230,719
Average landings per vessel (lbs)	28,221	12,251	65,977	67,562
Average price per pound (lbs basis)	3.01	1.97	3.46	3.41
Average price per pound (vessel basis)	2.38	1.97	3.34	3.28
Total revenue ($)	358 million	78 million	280 million	82 million
Total landings (lbs)	119 million	38 million	81 million	24 million
% of Total revenue	100%	21.7%	78.3%	23.0%
% of Total landings	100%	32.1%	67.9%	20.3%

Note: All values are for Gulf shrimp only, i.e., shrimp landed in ports on the Gulf of Mexico.
Shrimp landed in South Atlantic ports are excluded.
Vessels that were inactive are excluded.
Gulf shrimp landings and prices are reported on a heads off basis.

[15] The federal moratorium permit is issued for approximately one year. It expires each year during the month of the owner's birth date. When it expires, it becomes invalid for harvesting shrimp, but the owner retains the option to renew the permit for a period of one year after its expiration date. Thereafter, the permit permanently terminates. In the case of a limited entry fishery, this implies that the total number of permits is permanently reduced.

[16] The inshore segment consists of recreational, artisanal, and commercial shrimpers using different gears to catch food shrimp, bait shrimp, and other species. In collaboration with the federal survey discussed in this memorandum, a second Gulf-wide economic survey was conducted in 2009 by the Gulf States Marine Fisheries Commission to survey these inshore vessels.

Based on 2008 shrimp landings and revenue data from the Gulf Shrimp System data collection (GSS),[17] which by definition includes only vessels active in this fishery, Table 1 compares vessels with and without a federal Gulf shrimp moratorium permit (columns 2 and 3). Over 70% of all 4,121 active Gulf shrimp vessels do not have federal permits (restricting them to shrimping in state waters), yet these vessels account for only about 32% of total shrimp landings and only about 22% of the total shrimp revenue.[18] At the vessel level, non-federally permitted boats generate average annual revenue from Gulf shrimp of just $24,170. This contrasts with an average of $228,470 for federally permitted vessels. The higher revenue is due not only to more landings (on average, federally permitted vessels landed more than five times as much as vessels without federal permits), but also to a higher price per pound of shrimp. In offshore waters the shrimp are usually larger and hence command a higher price per pound.[19] Clearly the permitted vessels substantially differ from the non-permitted vessels. Columns 3 and 4 compare all active federally permitted vessels and all active vessels with a completed 2008 survey used in the analyses.[20]

Sampling Design

The sampling design for the 2008 survey consisted of all permits not previously sampled in the 2006 or 2007 surveys. That way, each moratorium permit (remaining) in the population will have been sampled once in three years. And, in tune with our promise not to sample a vessel two years in a row, no vessels were sampled two years in a row. Since the 2006 and 2007 surveys consisted of randomly sampling the population without replacement, the 2008 sampling "design" is statistically equivalent to simple random sampling.[21] A total of 699 permits were sampled out of the 1,890 permits in the population (as of February 2009). Similar to the 2007 survey, the sample was drawn in February/March.[22]

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[17] More information on this data collection is provided in Additional Data: Revenue section of the Implementation chapter.

[18] Actually, 4,121 vessels is an underestimate of the total population due to problems with the GSS. Some dealers report minor landings from multiple boats consolidated into a single record. In these cases, the landings cannot be assigned to a specific boat. Yet, Gulf-wide, consolidated records account for a little over 2% of total shrimp landings and revenue.

[19] Two measures of average price per pound of shrimp are provided in Table 1. The first is the price the *average pound* of shrimp was sold for. The second is the price per pound of shrimp received by the *average vessel*, i.e. averaging across all vessels the average price each vessel receives.

[20] These surveys or vessels are referred to throughout the rest of this document and the tables as "in-analyses" surveys or vessels.

[21] A slight, ex post irrelevant, bias was introduced by the fact that the 2006 sampling frame was incomplete at the time of sampling. Vessels that received a permit after the 2006 sample was drawn, slightly over 200, could only be sampled for the 2007 or 2008 surveys.

[22] Feedback from respondents about the 2006 survey (mailed late May 2007) indicated that mailing the survey earlier in the year, prior to the major shrimp season and during tax time, would be better. In order for the surveys to be mailed by mid-March, the active/inactive strata from the 2006 survey had to be dropped since the prior year's landings data on which the strata are based is not consistently available by then. Given that the response rate in the inactive stratum was quite high, no oversampling is necessary, and hence dropping the strata does not create a problem.

The first two columns in Table 2 provide average numbers about operations, vessel characteristics, and state of residence for the vessels in the population and the sample. It should be noted that the average revenue numbers in Table 1 for vessels with federal permits differs from the averages in Table 2 for the full population because Table 2 includes inactive vessels. As should be expected, the averages for the random sample are close to those of the population. In previous years, we had explicitly stratified the sample by state so it is of interest to verify that the 2008 sample remains representative in this regard.[23] Vessels from Florida and non-Gulf States are a little overrepresented in the sample, while vessels from Alabama and Mississippi are underrepresented. This slight skew also explains why average revenue from Gulf shrimp is slightly lower and revenue from other fisheries slightly higher for the sampled vessel when compared to the population. We still conclude that the sample is mostly representative of the population. The discussion of the comparison of the population with the vessels actually used in the analyses (column 3 in Table 2)---which somewhat compensates for the state bias---will follow in the Response Rate and Data Validity section in the next chapter.

[23] Throughout this technical memorandum, we continue to define the "State" of vessel or permit as the state of the (owner's) mailing address associated with each permit.

Table 2: Average Vessel Operations, Characteristics, and State for the Population, Sample, and Surveys in Analyses (2008)

	Population	Sample	Surveys in Analyses
# of Vessels	1,874 [1]	694 [1]	497
Actively (any) shrimping (%)	71.2%	71.2%	81.4%
Actively Gulf shrimping (%)[2]	66.3%	65.4%	75.5%
Gulf shrimp revenue ($)	152,243	145,748	176,649
Gulf shrimp landed (lbs)[3]	44,005	42,644	51,837
Gulf shrimp price per pound (lbs basis)[3]	3.46	3.42	3.41
Gulf shrimp price per pound (vessel basis)[3]	3.34	3.28	3.27
Other shrimp revenue ($)[4]	11,620	14,194	15,396
Non-shrimp fishing revenue ($)[5]	18,825	21,925	20,037
Length	67	67	67
Gross tons	105	102	101
Horse power	518	510	511
Year built	1985	1986	1986
Hull material - Steel (%)	73.5%	75.1%	76.3%
Refrigeration - Freezer (%)	54.5%	54.0%	56.7%
State - Florida (%)	16.5%	17.7%	15.5%
State - Alabama (%)	7.2%	6.6%	7.0%
State - Mississippi (%)	7.4%	6.6%	6.8%
State - Louisiana (%)	25.1%	24.9%	26.4%
State - Texas (%)	39.1%	38.2%	38.2%
State - Other (%)	4.6%	5.9%	6.0%

[1] The total permit number was 1,890 but 16 vessels were associated with two permits each. 5 of these vessels are in the sample of 699 permits.

[2] Activity in the S. Atlantic shrimp or the W. Florida bait shrimp fisheries is excluded.

[3] Gulf shrimp landings and prices are reported on a heads off basis.

[4] Other shrimp landings and prices are not reported since the weight measures for different species and regions are not always standardized.

[5] These averages are due to a few vessels with very high non-shrimp revenue.

3. Implementation

Table 3 gives the timeline for implementation of the 2008 survey. Numbers following a '#' sign are the number of surveys in the category described. We timed the mail-out of the survey to coincide with the low shrimp season and around tax time when business records are being consulted and financial concerns are "top of mind." The "deadline" for completing the survey was April 30, though extensions were always granted or exceptions made if selected individuals called us and explained their situation. To achieve as much consistency over time as possible, we followed our internal manual that describes the basic administration and processing of the survey.

Table 3: Timeline: 2008 Survey Implementation

February, 2009	Sample (#699) drawn from population (#1,890)
February, 2009	SE Fishery Bulletin: Notice of federal shrimp data collections in 2009
March, 2009	Sent out selection letters and first full survey package (#699)
April 30, 2009	Deadline for returning survey
May, 2009	Sent out second full survey package (#236)
May, 2009	Calls to attempt to contact non-responders started
June, 2009	Data entry started, including final processing and call-backs to clarify
July, 2009	Sent out third and final survey package (#110)
July, 2009	Send-backs of incomprehensible surveys (#22)
August, 2009	Stopped actively pursuing problem cases
August, 2009	Sent out 'Thank You' letters to previous years' respondents (#940)
September, 2009	Final processing and entry of late arriving surveys
October, 2009	Check on data quality (preliminary analysis)
Sept-Nov, 2009	2008 revenue data acquired (from external databases)
Oct-Dec, 2009	Data cleaning and descriptive analysis (#497)

Outreach

Given the number of data collections being conducted in the Gulf shrimp fishery in 2009, we decided that a notice providing an overview might be helpful to Gulf shrimp permit holders. In February 2009, a Southeast Fishery Bulletin was sent to all federal Gulf shrimp moratorium permit holders notifying them of and describing all the federal data collections in the Gulf shrimp fishery.[24] Further, and similar to the previous year, we set

[24] The bulletin and other survey material are attached as Appendix 3.

up a help telephone line dedicated specifically to this survey. Throughout the survey's implementation, we answered well over one hundred inquiries from shrimpers.[25]

Implementation Process

The full survey implementation, including mail handling and processing, was conducted at and by the staff of the NMFS Southeast Fisheries Science Center. A local graduate student was hired to help with the mail handling and data processing and entry. The main phase of the survey was implemented between March and August 2009, including follow-up calls and all mailings. The owner of each selected vessel was contacted at least twice by mail (excluding the Bulletin mentioned above) and, if not responding, up to four times by mail and many attempts by telephone.

The first letter was a single page selection letter notifying the respondents that they had been randomly selected to participate in the 2009 survey. It was quickly followed by the full survey package containing a cover letter, the information material, the instructions, the two page survey instrument, and a prepaid, return envelope. In cases where the owner (or any officer in the case of a company) had a Vietnamese language-based name, we included, in addition to the English version, a full translation. Respondents were asked to return the completed survey in the enclosed, prepaid envelope by April 30, 2009. A second and third round of survey packages were mailed to non-responding permit owners in mid-May and at the end of July, respectively (Table 3). At around the time of the second mailing, we also attempted to contact all non-responders by telephone and urged them to return the survey. These calls had the further advantage of being a different mode of contact and, as a result, errors in the address information were discovered.

We followed our 2006 survey protocol to track and process returned surveys and to manage and document telephone contact with respondents. After being scanned, surveys were entered into an MS Access database on a form that resembles the survey instrument. Validation routines in the data entry program simplified processing and helped spot problems. If needed, clarification phone calls were attempted immediately and, if unsuccessful, the record was marked as (temporarily) incomplete. We attempted to process and enter data soon after the survey was received.

The cumulative improvements to the survey instrument and implementation process since the first survey significantly reduced the number of problem cases. Nonetheless, given the detailed, technical nature of the economic survey questions, and this being a new data collection for all vessels sampled, and in spite of the prominently displayed statement "Enter '0' if you did not have any expenses in a category. Do not leave blank!", a large number of surveys still had some type of missing entry, inconsistency, or other problem. Given the limited number of follow-up calls that we could reasonably conduct, we continued to make some basic assumptions that allowed us to solve more trivial problems without calling the respondent. The most prominent example of this is the occurrence of empty fields in otherwise good surveys. Respondents often did not differentiate between

[25] For details about the outreach conducted during the design and first implementation of this data collection please see the first technical memorandum.

a response of zero dollars (i.e. no expenses in this category) and an item non-response (i.e. not applicable, refuse, or don't know). Following our protocols, we interpreted blank fields as zeros if: i) a respondent did not enter zeros in any fields throughout the entire survey; ii) the number of blank fields was limited; and iii) overall the survey was carefully filled out.[26] This assumption, and some others like it, allowed us to concentrate our manpower on incomplete surveys with more serious problems. Another check involved verifying activity status or magnitude of activities by comparing the fuel and cost numbers with revenue numbers from the GSS database. For example, a vessel claiming to use only 1,000 gallons of fuel on our survey but reporting $300,000 worth of shrimp landings was a prime candidate for a call-back.

Given the accounting framework of the survey, the hurdle for a returned questionnaire to be called complete is very high. No single blank field could be accepted on page 1 or on most questions on page 2. We did accept some non-response for individual questions deemed possibly too difficult to answer (such as vessel market values and depreciation). But all other fields had to either be a positive number or a zero for the application of the accounting framework to make any sense. As a result, about a hundred telephone follow-up calls were necessary to clarify and collect additional data to complete the returned surveys. In addition, another 22 surveys were deemed too problematic to solve over the phone and were sent back to the respondents for clarification.

Once entered, all numbers in the database were verified by the authors to the closest $1,000. Further processing of the entire data set is described below in the section Data Cleaning. Finally, vessels that did not return a survey to us and did not offer any reason for not responding were deemed not compliant with the survey effort, and their registration numbers were reported to the permit office. Vessels with incomplete surveys or with an excuse for not sending in the survey (e.g., tax extension, sickness) were deemed compliant.

Response Rate and Data Validity

Response rates can be calculated in a variety of ways. In order to allow readers to calculate their preferred measure, Table 4 presents the absolute numbers in each response and non-response category. The population at the time of the sample draw included 1,874 vessels with federal Gulf shrimp moratorium permits. The number of moratorium permit holders was 1,890, though 16 permits were not associated with a vessel at the time the data were obtained, bringing the number of permitted vessels to 1,874. We sampled 699 permits for the 2008 survey (on 694 vessels). We could not contact 129 vessels at all. As a percentage of the sample, this was a much larger share than in the previous years. As we would expect for a survey that is a requirement for permit renewal, no sampled individual explicitly said they refused to participate, and only a handful of respondents were openly annoyed about having to complete the survey. If a permit was sold or transferred, or a vessel destroyed or repossessed in late 2008 or in 2009, as was the case

[26] This was a trivial assumption on page 1 of the questionnaire, where all costs had to add up to the total in question 9. If the total added up correctly, the respondent had implicitly assumed a zero value for any blank fields he might have left. On page 2, the assumption was somewhat less trivial.

for 27 sampled vessels, we labeled the vessel as ineligible to participate in the survey. The old owner has no incentive to participate in the survey, and the new owner is unlikely to have the necessary 2008 financial records. Further, despite our best efforts, we were unable to complete 27 surveys through call-backs or send-backs. These were labeled permanently incomplete. The remaining 516 surveys were deemed complete, leading to a raw response rate of 73.8% (more on this below).[27] For the purpose of the financial analyses reported in the next chapter, another 19 complete surveys had to be dropped from the analyses.[28] The final number of surveys used in the analyses is 497.

Table 4: Counts for Response Rate Calculations and Reasons for Non-Response (2008)

	Count	Comments
Permits	1,890	Only 1,874 vessels (16 permits are not associated with a vessel)
Sample	699	
No Contact	72	No response. Contact information often incorrect and disconnected.
No Contact-Terminated	57	No response. By November 2009, permit had permanently terminated.
Ineligible	27	Vessels transferred, repossessed, or lost during late 2008 or in 2009.
Incomplete	27	Call-back/send-back unsuccessful; including oil sector vessels, recreational craft, vessels leased out, research work, etc.
Complete	516	Raw response rate: 73.8%
Dropped	-19	Inconsistent or implausible numbers (across databases).
In Analyses	497	

The category of 'No contact' was significantly higher in 2008 than in 2007 / 2006, both in absolute terms (129 vs. 50 / 16) and in relative terms (18.5% vs. 7.9% / 2.8%). After the 2008 survey was completed, in November 2009, we asked the Permit Office to identify those permits that had permanently terminated during the survey. It turned out that 57 non-responding vessels in our sample permanently lost their permit by not reapplying within the one-year grace period after the permit expired. Due to the length of the grace period, we expect other vessels with no intention to renew their permit to be among the remaining 72 non-responding vessels (but will not know until after this memorandum is published). The fact that so many shrimpers are allowing their limited entry permits to permanently expire---thereby giving up on the federal fishery for good---is a stark indicator of the difficult economic situation in this fishery. Two further reasons for a lower response rate are that the contact information in the sampling frame had "aged" by the time the 2008 sample was drawn compared to the 2006 draw, and, second,

[27] Many other survey efforts would have counted the incomplete surveys as well, given that most but not all of their fields are filled. In this case, the raw response rate would be 77.7%.
[28] This issue is discussed further in the Data Cleaning section.

we stopped actively pursuing 2008 and 2007 non-respondents sooner than for the 2006 survey.[29]

Among the 497 surveys used in the analyses,[30] 383 are from vessels active in the Gulf shrimp fishery in 2008. Turning back to column 4 of Table 1, we can see that these 383 vessels accounted for 23% of the *total* 2008 Gulf shrimp revenues, and just over 29% of the revenue generated by all federally permitted boats. This indicates that while the data are a sample, they do account for a very substantial fraction of the total industry and the population sampled, which in turn should reflect well on the validity of the results.

Next, we look at how representative the surveys used in the analyses are of the sample and, in turn, how representative the sample is of the population of permit holders. Based on the most up-to-date numbers of revenue (Fall 2009), the three columns in Table 2 present vessel averages and a break-up by state of: i) the vessels in the actual population of moratorium permit holders (1,874); ii) the vessels in the sample (694); and iii) the vessels in the analyses (497).

Overall, we can state that the in-analyses vessels are representative of the sample and of the population. The average vessel characteristics are all very similar, as is the average price of shrimp received. The distributions across the state strata show very minor variation, with Alabama and Mississippi vessels being very slightly underrepresented while Florida and non-Gulf state vessels (label: State - Other) are overrepresented in the sample. Factoring in response rates, the distribution across states for the surveys in the analyses actually compensate for the bias in the sample, but overcompensate for Florida and Louisiana. In percentage terms, the non-Gulf state vessels are overrepresented by 28%. But because many of these vessels are not engaged in Gulf shrimping, or any shrimping for that matter, this bias is deemed inconsequential for current purposes.

Yet in Table 2, the average shrimp revenues and landings do not match particularly well for vessels in the analyses and the sample. While the average Gulf shrimp revenue is $145,748 per vessel for the sample and $152,243 for the full population, it rises to $176,649 among the vessels in the analyses. Landings behave similarly. The primary reason is that active Gulf shrimp vessels are overrepresented among the in-analyses vessels, comprising 76% of that group while only accounting for 66% of the vessels in the sample and population. Adjusting for the activity difference lowers the excessive revenue among in-analyses vessels compared to sample vessels from 21% to 5%.

The difference in average revenue between the sample and the in-analyses vessels in Table 2 can be further explained by looking at Table 5. In light of the higher non-response compared to previous years, we somewhat changed the categories in Table 5, but otherwise the information categories are equivalent to Table 2 (fishing activity, vessel

[29] If we take account of the known terminated permits and ineligible sample, the adjusted response rate---the number of completed surveys (516) divided by the eligible sample (615)---goes up to 83.9%; if we count incomplete surveys, 88.3%.

[30] These surveys or vessels are referred to throughout the rest of this document and the tables as "in-analyses" surveys or vessels.

characteristics, distribution by state). We separated out those vessels in the sample with which we could not establish contact and then further divided this group into those with currently (November 2009) active or renewable permits ("No Contact" group) and those with terminated permits or those who were judged ineligible usually due to a permit transfer ("Terminated / Ineligible" group). The final group consists of the incomplete surveys and the observations dropped from the analyses ("Incomplete / Dropped" group). Vessel characteristics do not differ much among any of the categories, except for a slight bias toward smaller, less powerful vessels among the incomplete and dropped group of surveys.

As is quickly apparent from the table, the three groups all differ substantially from the surveys in the analyses in shrimping activity and landings and other fishing revenue. Generally, all groups of vessels not in the analyses exhibit more inactive vessels. Yet we can see that 61.1% of the 72 no contact vessels actually were active. We found this to be unexpectedly high, since we thought inactive vessels would dominate our non-response categories and that active vessels would participate in our survey. Once we accounted for the activity level (assuming inactive vessels have zero revenue), the average revenue from any shrimp among the no contact group did not vary too much from the surveys in the analyses. In short, the no contact group is fairly representative of the vessels in the analyses. The one exception might be that non-response was substantially higher among vessels from Mississippi, though given the same numbers involved, it is unlikely to be a statistically significant finding.

Among the terminated/ineligible vessels only 20.2% reported catching any shrimp, indicating that a large majority had left the shrimp fishery entirely.[31] Yet even if we account for the activity level, the active vessels in this group produce much less shrimp revenue than the vessels in the analyses. The same holds for the incomplete/dropped group. As a result, the bias toward less revenue among the active vessels not in the analyses further explains the upward bias on revenue for in-analyses vessels in Table 2.[32] Finally note that terminated/ineligible vessels occur much more frequently in Florida. Florida vessels comprise 27.4% of this group while they only comprise 15.5% of the surveys in the analyses (and 16.5% of the population (Table 2)).

Overall, we believe the data to be representative of the population of interest and proceed with the analyses without any adjustments or weighting of the observations. In other words, we maintain the assumption that each vessel in the population had the same probability of being included in the survey and, at the next step, to have the same probability of being included in the analyses.[33]

[31] Note that most of the shrimp among these vessels should have been harvested in state waters of the Gulf or in the S. Atlantic, not the Gulf EEZ, as most vessels no longer possessed the necessary permit.
[32] A further reason for the higher revenue numbers among the in-analyses vessels is discussed in the Additional Data: Revenue section later in this chapter.
[33] Only for extrapolations to the full population (across active and inactive boats) do we recommend taking account of the slight differences in activity levels between the final population of federal Gulf shrimp moratorium permit holders and the results from the analyses.

Table 5: Average Vessel Operations, Characteristics, and State for Sample with No Contact; Terminated Permit or Ineligible; Incomplete or Dropped Survey; and Survey in Analyses (2008)

	No Contact	Terminated / Ineligible	Incomplete / Dropped	Surveys in Analyses
# of Vessels	72	84	46	497
Actively (any) shrimping (%)	61.1%	20.2%	50.0%	81.4%
Actively Gulf shrimping (%)[1]	52.8%	19.0%	45.7%	75.5%
Gulf shrimp revenue ($)	106,662	18,752	61,372	176,649
Gulf shrimp landed (lbs)[2]	30,338	6,248	18,090	51,837
Gulf shrimp price per pound (lbs basis)[2]	3.52	3.00	3.39	3.41
Gulf shrimp price per pound (vessel basis)[2]	3.39	3.01	3.33	3.27
Other shrimp revenue ($)[3]	17,724	3,227	14,172	15,396
Non-shrimp fishing revenue ($)[4]	38,903	15,379	25,305	20,037
Length	67	66	65	67
Gross tons	111	108	97	101
Horse power	560	514	468	511
Year built	1985	1985	1986	1986
Hull material - Steel (%)	76.4%	71.4%	69.6%	76.3%
Refrigeration - Freezer (%)	51.4%	44.0%	52.2%	56.7%
State - Florida (%)	19.4%	27.4%	19.6%	15.5%
State - Alabama (%)	2.8%	8.3%	6.5%	7.0%
State - Mississippi (%)	12.5%	3.6%	2.2%	6.8%
State - Louisiana (%)	18.1%	20.2%	26.1%	26.4%
State - Texas (%)	38.9%	38.1%	37.0%	38.2%
State - Other (%)	8.3%	2.4%	8.7%	6.0%

[1] Activity in the S. Atlantic shrimp or the W. Florida bait shrimp fisheries is excluded.

[2] Gulf shrimp landings and prices are reported on a heads off basis.

[3] Other shrimp landings and prices are not reported since the weight measures for different species and regions are not always standardized.

[4] These averages are due to a few vessels with very high non-shrimp revenue.

Data Cleaning

After data entry and verification, the data set was tested in Excel and SAS for internal consistency and for consistency with external databases. Inconsistent records were given a closer look, including calling the respondent if necessary. If it was not possible to resolve the problem (or have reasonable faith that there was no problem) the record was dropped from the data set used for the analyses. As mentioned in the last section, 19 completed surveys were dropped in this manner. The primary reason was major inconsistency between the cost numbers collected by the survey and the revenue numbers

reported by the GSS, an issue more fully explored in the next section. In terms of shrimp revenue, the dropped vessels were on average not representative of the sample (Table 5). The rest of this section discusses the estimation of some missing values within the otherwise complete records.

Since financial statements must "add up" or "balance," missing values could not be tolerated in any observation used in the analyses. If acquiring the missing value from the respondent was not possible, the record was not used in the financial analyses. Exceptions were made for the vessel market value and depreciation variables. In the absence of a vessel sales transaction, the former value is a theoretical estimate by the respondent, and as such, a non-response is a valid response (unlike, for instance, purchase price which is an existing fact, but for the rare occasion when a vessel is given as a gift). As for the latter, after repeated attempts, it was decided that depreciation is too technical a concept to explain over the phone. In both cases, the missing values were estimated with the help of regression analysis on the rest of the data set.[34] A vessel's market value with permit was regressed on its purchase price, vessel characteristics (including age), and a "dummy" variable to differentiate vessels in the state of Texas from vessels in other states.[35] The 47 missing market values (among 516 otherwise complete records) were then predicted using the regression results. An equivalent approach was used to predict the 182 missing values for depreciation.[36]

During the survey design it was decided to ask a single simple question summing all dollar expenditures on vessel and gear maintenance, repair, replacement, and new investment. A follow-up question consisting of check-all-that-apply check boxes asked about the occurrence of particular categories of these activities, particularly maintenance or regular repairs, major repair or haul-out, and new purchase or upgrade. By regressing the total dollar expenditures of each vessel on three dummy variables for maintenance, major repair, and new investment, we were able to estimate the average percentage breakup of these costs across the three categories.[37]

Finally, in order to compare vessels owned by owner-operators and those owned by absentee owners who hire captains to run their vessels, the value of the owner-operator's labor as captain must be estimated and added as an additional crew expense. Otherwise, owner-operated vessels will seem too profitable since a substantial input into the production process, the captain's labor time, would not be counted.[38] Since a substantial part of the owner-operated vessels reported paying their owner an explicit captain's share, a regression approach could again be used to estimate the captain's share for those owner-operated vessels that did not report this value. Given that labor compensation is

[34] To maintain consistency with the analyses on the 2006 data, the same models with the same variables were used for the current analyses. Only the parameters were re-estimated based on the 2008 data.
[35] OLS; n=469; R^2=0.66. More details on this and other regressions can be found in Appendix 4.
[36] OLS; n=334; R^2=0.52. More details on this and other regressions can be found in Appendix 4.
[37] OLS, n=363 (vessels with non-zero vessel expenditures); R^2=0.049. More details on this and other regressions can be found in Appendix 4. Once the parameters are estimated, a bit of math is needed to derive the average breakup of the cost.
[38] A similar problem occurs and cannot be corrected for the few, mostly Vietnamese-American owned vessels, where the wife (or other family member) works as unpaid crew.

usually tied closely to the time spent working, it is not surprising that the best predictor of the captain's share is the crew share, i.e. the amount paid to crew plus a constant.[39]

Additional Data: Revenue

In general, the survey focused on the collection of annual cost data and did not collect shrimp revenue. As a result, the commercial fishing revenue data used in the analyses comes from a variety of other data collection efforts. Gulf shrimp revenues and pounds are from the Gulf Shrimp System (GSS) database as maintained by the Southeast Fisheries Science Center's laboratory in Galveston, Texas. The GSS database is a compilation of dealer reported data that comes from State trip tickets and dealer reports collected by federal port agents. It attempts to collect comprehensive trip level data on Gulf of Mexico food shrimp landings and prices, by shrimp size and species.[40] Most landings in this database, especially for the larger offshore vessels covered by this report, can be assigned to an individual vessel based on the vessel's U.S. Coast Guard or state registration number.[41]

These vessel identifiers were also used to query other commercial fishery databases throughout the southeast to find as many other revenue sources for these vessels as possible. Other databases include: i) the southeast fishery logbook system, which covers the majority of federally managed species in the southeast other than shrimp, including South Atlantic snapper-grouper, Gulf of Mexico reef fish, southeast coastal migratory pelagics (mackerels), Atlantic dolphin/wahoo, and sharks; ii) the trip ticket programs of the various Gulf and Atlantic States[42]; and iii) the data collections by the NMFS Northeast Fisheries Science Center.[43] Question 15 on the survey also elicited the total revenue from commercial fishing other than shrimp, and simply adding the revenue from the other databases would probably lead to double counting. We decided to always keep the higher value of revenue reported in question 15 or the sum of revenue in non-shrimp databases for each vessel.

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[39] OLS; n=71; R^2=0.68. More details on this and other regressions can be found in Appendix 4. The small sample size raises questions about using these estimates. Various consistency checks indicate that the general range of the estimates, especially averaged across a large number of vessels, appeared to be reasonable in 2006. For comparability reasons, we maintained this approach for the 2008 and 2007 analyses. Estimating the "opportunity cost of time," which this exercise amounts to, is a complex and much discussed topic in the economic literature and goes well beyond this simple descriptive analysis.

[40] As a result, "Gulf shrimp" are shrimp that are landed in Gulf ports and might, on the margins, include shrimp caught outside the Gulf of Mexico. Similarly, some shrimp caught in the Gulf might be unloaded, and hence counted, in S. Atlantic ports.

[41] The exceptions are "consolidated records" within the GSS. Some dealers report minor landings from multiple boats consolidated into a single record. In these cases, the landings cannot be assigned to a specific boat. In 2008, these records accounted for a little over 2% of landings and revenue in the GSS.

[42] Florida state trip tickets for food shrimp on the east coast (i.e., S. Atlantic) as well as bait shrimp and non-shrimp species on both coasts; and State trip tickets for Georgia, South Carolina, and North Carolina (as maintained by the Atlantic Coastal Cooperative Statistics Program (ACCSP)). The biggest known gap is revenue from the Texas bait shrimp fishery.

[43] As consolidated by ACCSP databases for the New England and Mid-Atlantic States (which contain State trip ticket data for States with such programs in those regions). Of particular importance is the Atlantic scallop fishery, where some vessels with federal Gulf shrimp permits are active.

In the course of the survey, due to a misunderstanding of question 15, a substantial minority of respondents revealed their total shrimp revenues to us. The respondent-supplied numbers were usually greater than the "equivalent" revenue numbers generated with the help of the GSS database.[44] It was decided that the respondent's numbers probably were a better reflection of reality. As a result, shrimp revenues (and landings on a proportional basis) were adjusted upward for a group of vessels in the analyses, thereby introducing an upward bias in the average revenue numbers. This selective upward adjustment to the revenue and landing of some vessels *in the analyses* can at least partly explain the difference in these variables observed in Table 2 between averages for in-analyses vessels and sampled vessels.

[44] A similar problem occurs when GSS landings and revenue numbers are compared to the self-reported "Gulf shrimp landings form." Except in a minor number of special cases, the GSS numbers were used. A project is underway to evaluate and reconcile the different shrimp databases, and adjustments might follow in future reports.

4. Results for 2008

Financial information for individual respondents is confidential. Hence, data collected by the survey can be released only as summary statistics. There are many different ways of summarizing data and reporting it for different groups. In light of this, the report must strike a balance between reporting low level summary statistics, such as the means of the answers to the survey questions, and more advanced statistics derived from the raw data, such as a mean rate of return. With the hope of satisfying as many audiences as possible, this technical memorandum will concentrate on the former and report only a limited number of derived statistics. The detail provided in the appendices, together with the documentation throughout this report, should enable the readers to answer many questions by constructing the necessary measures themselves.

The results are basic descriptive statistics---mostly arithmetic means---of the financial and non-financial data. They are presented in a standardized table format that links vessel characteristics and operations to simple balance sheet, cash flow, and income statements. Basic summary statistics are provided and discussed in the text for the total fleet (i.e. all permitted vessels), the *Gulf shrimp* fleet (i.e. excluding permitted vessels engaged solely in other fisheries), for the *active* Gulf shrimp fleet (i.e. further excluding idle, broken, or otherwise inactive vessels), and for the inactive Gulf shrimp fleet (i.e. those idle, broken, or otherwise inactive vessels). Further results (limited to means) are reported in an appendix for various categories of shrimp vessels, including those grouped by state, by vessel characteristics, by landings volume, by survey quality, and by ownership structure. The next chapter provides a comparison of results for 2008, 2007, and 2006.

Standardized Data Presentation

This report standardizes the presentation of the financial and economic results, guided by the annual report format. The trio of financial statements discussed in the Design chapter gives a comprehensive overview of the financial and economic situation of a productive enterprise such as owning and operating a shrimp vessel. Here, the basic design of the result-tables is explained, and quality, caveats, and idiosyncrasies associated with each data field are discussed. The general explanations and caveats discussed here apply to all equivalent data fields and variables throughout the report. They will not be repeated in the discussion of each table, unless especially and specifically relevant to the conclusion(s) drawn.

Due to the concerns about confidentiality mentioned above, this report generates financial statements based on the arithmetic mean (henceforth referred to simply as “average”) of the sampled vessels or a large specific subset thereof; e.g. Texas vessels. When these numbers are interpreted as applying to the representative “average vessel” of the population (or a large specific subset thereof) the numbers must be interpreted as being statistical in nature. They are estimates of the true (sub-) population average. In this case,

the numbers are mid-points of a confidence interval which includes the true population mean with a given probability defined by the confidence level.

For example, the average fuel expenditure of the 497 sampled vessels included in the analyses *is* $99,198 (to the extent that the survey question was correctly answered and the data correctly processed). When this number is used in the context of the average fuel expenditure for all federally permitted vessels, *it is an approximation or estimate* of the unknown true average for the full population of vessels. In particular, we estimate with 95% certainty that the true average fuel expenditure of all vessels lies somewhere between $89,761 and $108,634, with $99,198 being the mid-point of this confidence interval (e.g. Table 8).

As mentioned, each result-table reports survey results for a particular category or categories of sampled vessels. The number of observations in each category is given at the top of each column and below its identifying label.[45] The number of observations is an important indicator of the validity of the averages reported in that a larger sample size tightens the confidence interval around the estimated average, while small sample sizes often lead to large confidence intervals that reflect more uncertainty about the true value of the estimated average. When the sample size is less than 50 observations, the authors advise caution when using the numbers. For example, when reporting by state, the responses for Alabama and Mississippi have been collapsed into a single group to maintain a reasonable sample size that is in the same ball-park as the sample sizes for the other states. Beyond this validity aspect, the number of observations is useful as an orientation point across tables throughout this report.

Most types of costs appear in both the cash flow and income statements. To avoid redundant reporting and provide further useful information, we report the average dollar value for each type of cost in the cash flow statement, and we report the percentage contribution of each type of cost to the total expenses in the income statement. The most appropriate "point in time" that the reported balance sheets reflect is probably the "end of calendar year 2008." In contrast to the balance sheet, the cash flow statement and income statement summarize financial transactions over the whole calendar year 2008.

Vessel Characteristics

The first section of each result-table reports the average vessel characteristics and the distribution of the vessels across the states. The data underlying these numbers are collected on the permit application and were part of the initial sampling frame data set. They are reported as context for the financial statements. The first block of numbers reports average vessel length in feet, gross tons, horsepower of the engine(s), and the average year the vessels were built (from which the average age of the vessels can be calculated). The second block lists the percentage of vessels with steel hulls (as opposed to fiberglass or wood hulls) and the percentage with onboard freezers (as opposed to those that purchase ice to preserve their catch or used live wells in the case of bait shrimp) as well as the average fuel capacity. A third block of numbers gives the

[45] Exceptions are Table 8 through Table 11 that apply to a single category each, and where the number of observations is given in the table's title.

percentage distribution of vessels across the Gulf states. Note that these numbers do not always add up to 100% as the non-Gulf state category is not reported.

Balance Sheet

A balance sheet is a snapshot of the average vessel's financial condition. We wish to calculate the owner's equity, which is the *net* worth of the company and always equals the difference between the value of all assets and what is owed (the liabilities). The data collection and hence the financial statements focus exclusively on the harvesting component of any shrimping enterprise. In other words, we focus solely on the financial flows directly associated with owning and operating a fishing vessel. Hence we define the balance sheet's assets as the vessel including any fishing gear affixed to it. Land-based assets will sometimes comprise a substantial part of a fishing company's productive enterprise, but we purposefully exclude these assets in order to retain comparability across all permit holders. Generating consistent summary statistics for operations ranging from small owner operated catcher vessels to vertically integrated catcher-processor-wholesaler companies would be difficult.[46] Focusing solely on the fishing vessel is facilitated by the common practice, even among larger, complex companies, to legally treat each vessel as a single incorporated entity (such as an S-corporation). We use the current market value of the vessel (with permit) as reported by the respondent as **Asset (market value of vessel)** in the tables.[47]

The balance sheet's liabilities usually consist of loans from banks, ship builders, or individuals. Any amount owed is summarized as **Loan on vessel** in the tables. Business credit lines or homeowner debt are not included because these data were not collected from respondents, and because these liabilities are usually associated more with the land-based components of the fishing enterprise. In enabling a shrimper to "run his business," they represent critical financial capital. But since land-based assets are excluded from the asset side of the balance sheet, they need to be dropped from the liability side as well.

In conclusion, the balance sheets reported do not represent the average balance sheet of the actual companies involved in Gulf shrimping, but rather represent the value and liabilities associated with their harvesting components only. The total asset value reported in the balance sheets should be interpreted as a lower bound for the actual total asset value associated with the "shrimp related business" owned by the fishermen. **Owner's equity in the vessel**, or net-assets, was not asked for on the questionnaire, and hence is calculated by subtracting the loan amount from the vessel's market value.

For convenience, several more items from the questionnaire are reported, in italics, in the balance sheet section of the tables. **Original value of vessel (at purchase price)** comes directly from the survey questionnaire. Based on the phrasing of the question, it was not required that the vessel was purchased new, and the purchase price might reflect a

[46] A practical reason for excluding land-based assets is the fact that the necessary data were not, and in some cases cannot, be collected.

[47] Starting with the 2007 survey, we asked respondents for estimates of their vessel's value with or without permit. In the shrimp industry, it appears that the value with permit most closely resembles the value provided in 2006 when neither setting was specified.

recently purchased used vessel. Hence this variable reflects the capital invested by the current owner only. If the vessel was self-built or a gift, we asked to respondent to estimate the value at the time the vessel was first used. The **Implicit permit value** is derived by subtracting the respondent provided market value of vessel without permit from the value with permit.[48] **% of vessels with loan** is self-explanatory. Finally, two percentages are given to inform the reader about the fleet's situation regarding **Insurance coverage**.[49] The first, "% of vessels", is the percentage of vessels that have hull insurance, while the second, "% of assets," reports the percentage of the fleet's vessel assets that are insured with hull insurance.[50] The two usually differ substantially since newer, more expensive vessels are much more likely to be insured as lenders often demand it as a condition of granting a loan.

Vessel Operation

Before the tables turn to the cash flow and income statements, some context about vessel operations is provided. The percentage of vessels actively fishing for shrimp,[51] the average pounds of shrimp landed (heads-off or tail weight), and the average price per pound of shrimp (averaged across vessels) are derived from the GSS with some adjustments as described in the Additional Data: Revenue section of the Implementation chapter.[52] The rest of the numbers, including the percentage of owner-operated vessels, average annual fuel use and price (averaged across vessels), and two measures of fuel efficiency are either obtained directly from our survey or derived thereof. Fuel efficiency measures I and II are pounds of shrimp sold and shrimp revenue per gallon of fuel used, averaged on a vessel basis.

The price of shrimp, the price of fuel, and the fuel efficiency measures are ratios, and hence differ from the purely additive nature of most of the other entries in the result-table and the financial statements in particular. When we "average" a price, it matters quite a lot if we first derive the price at the vessel level by dividing the vessel's revenue by its quantity and *then* average across all vessels; *or* if we *first* add up all revenue and quantities across vessels, and then calculate the ratio of the aggregated numbers. In the latter case, we have the average price across all pounds of shrimp, i.e. the true average price of a pound of shrimp caught by the fleet. In the former case, we calculate the overall average price based on the average prices received by individual vessels regardless of the quantity each vessel produced. In this case, the importance of vessels that produce very little is equal to the importance of vessels that produce a lot when calculating the overall average price. Since the nature of the result-tables is the "average vessel," these values are reported for the prices and fuel efficiency, even though the quantity-weighted measures are more useful for many applications. But unlike the

[48] As the only exception, the average implicit permit value is based on fewer observations than the rest of the averages in the column. Observations were only used if the respondent supplied both a value with permit and a (reasonable) value without.
[49] Only the first percentage is provided in Table 8, Table 9, Table 10, and Table 11.
[50] Some respondents entered insurance payments rather than coverage levels (easily identified due to the different magnitudes). Follow-up calls were conducted to collect the correct value.
[51] Any shrimp, including food shrimp in the S. Atlantic or bait shrimp off the west coast of Florida.
[52] Technically, there are some very minor amounts of shrimp measured in units other than heads-off pounds in 2008. Practically, the amounts are trivial and the prices are within the range of Gulf shrimp.

quantity-weighted measures, the "per vessel" values cannot be derived from other numbers provided.[53] In the result tables in the appendix, both averages are provided for the price of shrimp, fuel, and the fuel efficiency measures.

Cash Flow

The cash flow section in the tables shows the average inflows and outflows of money coming into and leaving the shrimp enterprises over the course of 2008. Three sources of cash inflow are listed separately. Under the heading **Shrimp landings**, all revenue derived from selling shrimp is consolidated. Most of this revenue is generated by the catch and sale of Gulf of Mexico food shrimp, but minor contributions are also made by S. Atlantic food shrimp and by bait shrimp in the Gulf. Revenue from any seafood product other than shrimp is listed under **Non-shrimp landings**.[54] The third inflow, labeled **Government payments received (shrimp related)**, lists the government payments reported on the survey questionnaire. The most prominent transfers are the anti-dumping tariff disbursements to the shrimp harvesting and processing industry associated with the Byrd amendment.[55,56]

The cash outflows are listed roughly according to their appearance on the survey questionnaire. The averages presented are the arithmetic means of the answers to the survey questions. The expenses for the variable factors **Fuel** and **Other supplies** are self-explanatory.[57,58] **Crew & captain (hired)** lists crew expenses exclusive of any captain's share for an owner-operator. The cash outflows listed as i) **Regular maintenance (vessel and gear)**, ii) **Major repair and haul-out**, and iii) **New investments and upgrades (in vessel)** are values derived from questions 7 a) and 7 b) on the survey, and more details on this can be found in the Data cleaning section of the Implementation chapter. The remaining expenses for the fixed factors **Overhead (excluding loan payments)**, **Interest payments made (on vessel loans)**, and **Principal payments made (on vessel loans)** once again are self-explanatory. Finally, **Net Cash Flow** is calculated as the difference of the **Inflow - Total** and the **Outflow - Total**. Net cash flow reflects the liquidity or

[53] It is easy to calculate the prices and fuel efficiency measures on a per-pound or per gallon basis. Simply divide the appropriate (average) cash flow amount by the (average) quantity listed in the tables.

[54] See the Additional Data: Revenue section in the Implementation chapter for the various data sources and caveats associated with the revenue numbers.

[55] Antidumping duties (tariffs) are assessed on the imports of certain farmed shrimp from a variety of foreign countries. The Continued Dumping and Subsidy Offset Act of 2000, commonly referred to as the "Byrd Amendment," provides for the annual distribution of antidumping and countervailing duties assessed. The distribution is available to "affected domestic producers for qualifying expenditures." In part due to lawsuits, it can take a long time before the actual payment is received by a shrimper.

[56] A couple of vessels also reported being leased out for research or other work, or had income from non-commercial fishing activities (mostly in the oil sector services industry). In cases where this type of income did not materially affect the financial results of active fishing vessels, it was ignored throughout this report. Surveys from vessels which incurred a large portion of their cost from non-fishing activities were deemed incomplete and hence did not influence the results.

[57] Consult the survey instrument and instructions in Appendix 1 and 2 and the discussion in the Design chapter for more details on these data fields. In the 2006 survey, ice was a separate cost category but was collected as part of "other supplies" since 2007 due to its small magnitude.

[58] Some vessels have arrangements with fish houses where they receive ice for free. To the extent that the fish houses implicitly reduce the amount they pay for the shrimp to cover their cost, these arrangements will have little effect on the net revenue numbers we calculate.

solvency of the average shrimping enterprise and is useful in determining the short-term viability of the vessels in question.

Income Statement

The income statement in the tables presents the (estimated) average financial and economic performance of the vessel type in question over the course of 2008. The income statement first lists the revenue and expenses related to the **Operating Activities**, which for our purpose is commercial fishing. **Revenue (from commercial fishing)** lists the value of both shrimp and non-shrimp catch. Next, the total operating **Expenses** are given. These comprise most of the same expense categories making up the cash flow's Outflow - Total. Differences are the exclusion of expenses for Principal payments made and New investments and upgrades, and the inclusion of expenses for **Owner's vessel time** and **Depreciation**. Because the dollar values for each expense category have already been given in the cash flow, they are not repeated in the income statement. Rather, the values are expressed as the percentage contributions to total expenses. The expenses are grouped into variable costs for supplies (**Fuel** and **Other supplies**), variable costs for labor (**Crew and captain (hired)** and **Owner's vessel time**) and fixed costs (**Regular maintenance**; **Major repair and haul-out**; **Depreciation**; and **Overhead (excluding loan payments)**). The value of an owner-operator's time spent working as the vessel's captain is a derived value for the majority of (owner-operated) observations and was explained in more detail in the Data Cleaning section of the Implementation chapter. Depreciation comes from the questionnaire, but it too required some processing (also described in the Data cleaning section).

Net Revenue from Operations is calculated as the difference between **Revenue (from commercial fishing)** and total **Expenses**. This is a measure of the true economic return to a productive activity. More relevant to the owners of a company is the net revenue before taxes, i.e. their actual "profit" or "loss". This "bottom line" is calculated by adding or subtracting the revenue or costs associated with **Non-Operating Activities**, respectively. In particular, **Interest payments made (on vessel loans)** are subtracted and **Government payments received (shrimp related)** are added to net revenue from operations. This results in the final number, **Net Revenue (before taxes)**.

This standardized data presentation is adhered to in all result-tables. The general explanations and caveats will not be repeated in the discussion of each table, unless especially and specifically relevant to the conclusion(s) drawn. As a final note, below the income statement, two values *in dollars* are presented, **Owner's vessel time** and **Depreciation**. These two variables are not part of the cash flow statement where averages normally are presented. Because all the expense categories in the income statement itself are presented only as percentages of total expenses, the dollar values for these two variables are provided separately for readers who might wish to construct their own measures and calculations.

Categorizing Observations into Fleets by Fishery

The full set of observations in the analyses (497), labeled "total fleet" for the remainder of the report, includes vessels active solely or partly in other fisheries, vessels active solely or partly in the S. Atlantic shrimp fishery, vessels completely inactive, and vessels active in the Gulf shrimp fishery. As a reminder, surveys for vessels clearly not qualifying as commercial fishing vessels were marked as incomplete and are not included in the total fleet (see Table 4). To answer many questions, it makes sense to look at more homogeneous sub-groups, or sub-fleets, among the observations. For this purpose, we assign each vessel in the total fleet to four *mutually exclusive* fisheries, even though some vessels clearly engaged in multiple fisheries in 2008 (Table 6). The assignment was based on both question 14 on the survey instrument ("This vessel was active in…") and the reported revenue numbers collected from different fisheries. Sorting out the cases with contradictory numbers in different databases is a labor intensive process.

Table 6: Vessel Count by Fleet and by Activity in Different Fisheries (2008)

		Count of vessels reporting landings in:			
Sub-Fleet	# of Vessels	Gulf Shrimp Fishery	S. Atlantic Shrimp Fishery	Gulf Non-Shrimp Fishery	Other Non-Shrimp Fishery
Active Gulf Shrimp Fleet	383	383	4	28 [1]	4
S. Atlantic Shrimp Fleet	20	-	20	-	18
Other Fish Fleet	9	-	-	3	6
Inactive (Shrimp) Fleet	85 [2]	-	-	-	-
Total Fleet	497	383	24	23	28

[1] If non-shrimp revenue under $300 is counted, the total would be 43 vessels.

[2] Five inactive vessels are excluded from the 'inactive Gulf shrimp fleet' in all later analysis (#80). Two vessels had very high reinvestments and are part of the (very profitable) Atlantic scallop fishery. Two are from far outside the region (NY, WA), and one vessel (NC) is not a shrimp vessel.

Vessels that reported any non-trivial amount of Gulf shrimp landings in 2008 were assigned to the "active Gulf shrimp fleet" (383). Among these 383 vessels, 4 were also active in the S. Atlantic shrimp fishery, 28 in other non-shrimp *Gulf* fisheries, and 4 in non-shrimp fisheries not in the Gulf (Table 6). The 20 vessels in the total fleet that did not fish for Gulf shrimp but reported non-trivial amounts of S. Atlantic shrimp landings were assigned to the (active) "S. Atlantic shrimp fleet." Nearly all of these vessels (18) were also active to some degree in non-shrimp fisheries outside the Gulf in 2008. Of the total fleet, another 9 vessels were active solely in non-shrimp fisheries, both in the Gulf and beyond. These were assigned to the (active) "other fish fleet." The remaining 85

vessels were inactive in 2008 to the best of our knowledge, and all but five were assigned to the idle or "inactive Gulf shrimp fleet."[59] The "Gulf shrimp fleet" is defined as the sum of its active and inactive parts, and consists of 463 vessels (383 + 80).

Overview of Results Presented

Table 7 provides a systematic overview of all the different fleets, strata, and categories of vessels for which 2008 results are reported in this technical memorandum. Table 8 contains the (average) financial statements for all vessels whose surveys were judged complete and usable (the total fleet). Beyond the arithmetic mean for each variable, the table reports the standard deviation, the lower and upper bounds of the confidence interval (at a 95% certainty level), and the median. We also report these summary statistics for three other sub-fleets that are deemed important, the Gulf shrimp fleet (Table 9), the active Gulf shrimp fleet (Table 10), and the inactive Gulf shrimp fleet (Table 11). Note that unlike the four "primary" fishery fleets defined in the last section, the four fleets listed here are *not* mutually exclusive. The layout of the tables for these three sub-fleets mirror Table 8 (i.e. they include summary statistics), and the results are discussed in the next section. The rest of the tables (Table 14 through Table 23) can be found in Appendix 5 and only major findings, as summarized in Table 12, will be discussed in a section below. A comparison of 2008 results with previous years is provided in the next chapter.

The relevance of each table depends on the question at hand. Table 8 presents data for the average vessel that holds a federal Gulf shrimp permit. Since these observations were drawn at random from the full population of vessels holding this permit, any extrapolation or statement about *vessels with a federal Gulf shrimp moratorium permit* should begin with this table. In other words, while this sample includes, beyond active Gulf shrimp vessels, vessels fishing in the Atlantic scallop fishery, and broken and otherwise idle vessels, this is the best reflection of the actual status of all permit holding vessels.

Table 9 looks at the averages for Gulf shrimp vessels only, excluding vessels of the S. Atlantic shrimp and other fish fleets. By excluding these vessels, Table 9 better represents the economic situation that the federally permitted *Gulf shrimp vessels* are facing. For example, Gulf shrimpers exhibit lower revenue and cost than the numbers for the total fleet indicate, as more active (and profitable) vessels in other fisheries do not affect the results. Questions pertaining to *Gulf shrimp vessels* (with federal permits) should probably use these numbers.

Table 10 reports results for Gulf shrimp vessels that were active in 2008, thereby excluding the vessels in the inactive Gulf shrimp fleet. By excluding idle and not operational vessels, these numbers better reflect the actual revenue, cost, and return to actual shrimping in the Gulf of Mexico. Questions concerning the *production process of*

[59] Based on statistical probability and some secondary sources, most of these idle vessels are commercial shrimping vessels. See the note on Table 6 for the reasons why the five vessels were excluded.

trawling for shrimp should probably be based on these numbers. An example might include a question about the amount of fuel required to harvest a pound of shrimp.[60]

Table 7: Overview of Tables with 2008 Financial and Economic (F&E) Results

Table	Fleet	Stat.	Looks at by:	Category Levels
8	Total Fleet	yes	-	-
9	Gulf Shrimp Fleet	yes	-	-
10	Active Gulf Shrimp Fleet	yes	-	-
11	Inactive Gulf Shrimp Fleet	yes	-	-
14	Total Fleet	-	by Fishery	Other Fishing Fleet, S. Atlantic Shrimp Fleet, Gulf Shrimp Fleet
15	Total Fleet	-	by State	Florida, Alabama and Mississippi, Louisiana, Texas, Other
16	Gulf Shrimp Fleet	-	by State	Florida, Alabama and Mississippi, Louisiana, Texas
16	Gulf Shrimp Fleet	-	by Activity Status	Inactive, Active
17	Active Gulf Shrimp Fleet	-	by State	Florida, Alabama and Mississippi, Louisiana, Texas
18	Active Gulf Shrimp Fleet	-	by Refrigeration	Freezer, Ice
18	Active Gulf Shrimp Fleet	-	by Hull Material	Steel, Wood, Fiberglass
19	Active Gulf Shrimp Fleet	-	by Vessel Length	0-49 feet, 50-74 feet, 75-99 feet
20	Active Gulf Shrimp Fleet	-	by Vessel Age	Built: 1968-1979, 1980-1989, 1990-1999, 2000-2007
21	Active Gulf Shrimp Fleet	-	by Landings Volume	0-49,999 lbs, 50,000-99,999 lbs, 100,000-149,999 lbs, 150,000+ lbs
22	Active Gulf Shrimp Fleet	-	by Survey Quality	Medium Quality, High Quality
23	Active Gulf Shrimp Fleet	-	by Ownership Structure	Hired Captain, Owner-Operator
23	Owner-Operated Active Gulf Shrimp Fleet	-	by Captain's Share Structure	without Share, with Share (explicit)

Table 11 reports the averages for inactive Gulf shrimp vessels. The results apply to Gulf shrimp vessels that conducted no commercial fishing, anywhere, in 2008. Due to the limited sample size of this sub-fleet, caution is warranted when interpreting these numbers.

[60] Any extrapolation of results in Table 9 and Table 10 should be done with care! The numbers can definitely not be multiplied by 1,874 (the permitted vessel universe), since many of these vessels are not active Gulf shrimp vessels or even Gulf shrimp vessels. The most appropriate equivalent "population" numbers *might* be 1,746 for Gulf shrimp vessels holding a federal permit (proportional scaling, based on the survey results) and 1,225 for active Gulf shrimp vessels holding a federal permit (based on GSS data; Table 1), though the latter number is believed to be an undercount. A future report will address the extrapolation from the survey numbers to the population in more detail.

The result-tables in Appendix 5 report only the arithmetic mean for each variable. Table 14 reports averages for the total fleet by fishery. Results are also reported for each sub-fleet and by state in Table 15, Table 16, and Table 17.[61] Even within the active Gulf shrimp fleet there is much diversity. To explore the impact this diversity might have on financial and economic performance, results are also reported for different categories of vessels within the active Gulf shrimp fleet. Results are reported by various vessel characteristics (Table 18, Table 19, and Table 20), by landings volume (Table 21), by an indicator of survey quality (Table 22), by ownership structure (Table 23), and by captain's share structure (Table 23).[62] Consult the overview in Table 7 for the reported categories and category levels and the table number of each result-table.

2008 Financial and Economic Results for the Sub-Fleets (Summary Statistics)

This section discusses summary statistics for the total fleet, i.e. for all 497 usable observations in the sample. Discussions for the other three sub-fleets are limited to those results that materially differ from results for the total fleet.

Total Fleet

We now turn to the summary statistics in Table 8 as reported for the total fleet. According to the sample, the average federal Gulf shrimp moratorium permit holder owns a vessel that is on average 67 feet long, weighs 101 gross tons, is powered by a 511 hp engine(s), and was built in 1986 (24 years old). For the entire population (first column in Table 2), the average federal Gulf shrimp permit holder owns a vessel that is 67 feet long, weighs 105 gross tons, is powered by 518 hp engines, and was built in 1985. As we would expect, these true population values are within the estimated confidence intervals based on the sample. About three-quarters of the vessels have steel hulls and over half use freezers in both the sample and full population. Florida (-1 percentage point), Texas (-0.9 percentage points), Mississippi (-0.6 percentage points), and Alabama (-0.2 percentage points) are slightly underrepresented compared to the population, while Louisiana (+1.3 percentage points) and other states (+1.4 percentage points) are overrepresented.

[61] The sample size of the inactive Gulf shrimp fleet is too small to justify further dividing it into four state strata.

[62] A survey quality indicator, low, medium, or high, was assigned during the survey processing and data entry based on the overall appearance and internal consistency of the returned survey. Most surveys were assigned to the high quality category. Surveys that appeared particularly sloppy, rushed, rounded to a high digit, or involving many corrections were assigned a medium quality. Low quality was reserved for a few special cases which were later processed as incomplete surveys.

Table 8: F&E Results: Summary Statistics for the Total Fleet (n=497)

(in USD or unless noted)	Mean	Standard Deviation	95% Confidence Interval Lower	Upper	Median
Vessel Characteristics					
Length (feet)	67	16	66	69	69
Gross tons	101	50	97	105	104
Horse power	511	243	489	532	438
Year built	1986	11	1985	1987	1986
Hull material - Steel (%)	76%	-	73%	79%	-
Refrigeration - Freezer (%)	57%	-	53%	60%	-
Fuel capacity (gallons)	12,620	10,172	11,723	13,516	10,000
State - Florida (%)	15%	-	13%	18%	-
State - AL or MS (%)	14%	-	11%	16%	-
State - Louisiana (%)	26%	-	23%	30%	-
State - Texas (%)	38%	-	35%	42%	-
Balance Sheet (end of 2008)					
Assets - Market value of vessel	**204,786**	**352,120**	**173,753**	**235,819**	**118,000**
Original value of vessel (at purchase price)	*236,988*	*247,202*	*215,202*	*258,775*	*150,000*
Implicit permit value	*44,567*	*217,685*	*25,382*	*63,752*	*5,000*
Liabilities - Loan on vessel	**71,141**	**155,161**	**57,466**	**84,815**	**0**
% of vessels with loan	*42%*	-	*39%*	*46%*	-
Equity - Owner's equity in vessel	**133,645**	**277,408**	**109,197**	**158,094**	**75,000**
Insurance coverage (% of vessels)	*34%*	-	*31%*	*38%*	-
Vessel Operation (2008)					
Actively shrimping (%)	81%	-	78%	84%	-
Owner-operator (%)	49%	-	46%	53%	-
Shrimp landed (pounds)	58,110	55,570	53,213	63,008	44,885
Shrimp price per pound (vessels basis)	3.27	1.00	3.18	3.36	3.39
Annual fuel use (gallons)	32,020	33,720	29,048	34,992	20,798
Fuel price per gallon (vessels basis)	3.15	0.56	3.10	3.20	3.19
Fuel efficiency I (shrimp pounds/gallon)	2.8	3.1	2.5	3.1	1.9
Fuel efficiency II (shrimp revenue/gallon)	7.72	5.52	7.23	8.21	6.60
Cash Flow (2008)					
Inflow - Total	**214,702**	**223,337**	**195,019**	**234,385**	**151,464**
Shrimp landings	192,046	194,752	174,882	209,209	134,763
Non-shrimp landings	20,037	134,048	8,223	31,850	0
Government payments received (shrimp related)	2,620	5,320	2,151	3,089	0
Outflow - Total	**210,367**	**206,184**	**192,196**	**228,538**	**155,860**
Fuel	99,198	107,073	89,761	108,634	67,385
Other supplies	17,271	20,379	15,475	19,067	10,273
Crew & captain (hired)	48,107	62,692	42,582	53,632	27,248
Regular maintenance (vessel and gear)	17,032	22,409	15,057	19,007	10,000
Major repair and haul-out	3,437	9,746	2,578	4,296	0
Overhead (excluding loan payments)	11,992	17,668	10,435	13,549	5,000
Interest payments made (on vessel loans)	4,653	11,575	3,633	5,673	0
Principal payments made (on vessel loans)	8,258	19,354	6,552	9,963	0
New investments and upgrades (in vessel)	419	1,448	292	547	0
Net Cash Flow	**4,336**	**76,387**	**(2,397)**	**11,068**	**0**

Table 8: F&E Results: Summary Statistics for the Total Fleet (n=497), cont.

	Mean	Standard Deviation	95% Confidence Interval Lower	Upper	Median
Income Statement (2008)					
Operating Activities					
Revenue (from commercial fishing)	**212,082**	**223,464**	**192,388**	**231,776**	**146,733**
Expenses	**216,916**	**205,060**	**198,843**	**234,988**	**162,832**
Variable costs - Supplies	*53.7%*	-	-	-	-
Fuel	45.7%	-	-	-	-
Other supplies	8.0%	-	-	-	-
Variable costs - Labor	*25.3%*	-	-	-	-
Crew & captain (hired)	22.2%	-	-	-	-
Owner's vessel time	3.1%	-	-	-	-
Fixed costs	*21.0%*	-	-	-	-
Regular maintenance (vessel and gear)	7.9%	-	-	-	-
Major repair and haul-out	1.6%	-	-	-	-
Depreciation	6.0%	-	-	-	-
Overhead (excluding loan payments)	5.5%	-	-	-	-
Net Revenue from Operations	**(4,834)**	**74,568**	**(11,405)**	**1,738**	**(4,288)**
Non-Operating Activities					
Interest payments made (on vessel loans)	4,653		(see above)		
Government payments received (shrimp related)	2,620		(see above)		
Net Revenue (before taxes)	**(6,866)**	**73,483**	**(13,343)**	**(390)**	**(2,080)**
Owner's vessel time	*6,815*	*12,075*	*5,751*	*7,879*	*0*
Depreciation	*13,064*	*20,859*	*11,226*	*14,902*	*4,033*

The average market value in 2008 for a vessel in the total fleet is $204,786, only about $32,000 less than the original purchase price. The outstanding loans average $71,141, leading to an average equity of $133,645 for the owner. These asset and equity results materially differ from those reported later for the Gulf shrimp fleet. The confidence interval for the average equity is quite broad at just under fifty-thousand dollars, and the reader is reminded that the total fleet encompasses a very diverse set of operations. The median value for assets, purchase price, and liabilities are far below the mean values, suggesting the presence of large outliers skewing the distribution. The high implicit permit value is likely a reflection of a few respondents with valuable Atlantic scallop permits. The median value of $5,000 probably is more representative of the Gulf shrimp fishery.

Turning to the average vessel operation in 2008, 81% of the total fleet is actively shrimping for any shrimp, while 76% are actively Gulf shrimping (Table 2). This is higher than among the population (66% for Gulf shrimp; see the discussion associated with Table 2 and Table 5). This does not seem like much, but could have an effect on the average revenue numbers and net revenue numbers in particular. Just under half (49%) of

the vessels are owner-operated. The average vessel caught 58,110 lbs of shrimp (heads-off) and received $3.27 per pound. Note that, not listed in the table but easily calculated, the *average pound* was sold for $3.30, i.e. not averaged across vessels but across all shrimp landings of the total fleet. By the same token, the average gallon of fuel was purchased for $3.10, while the average vessel paid $3.15 per gallon. We are fairly confident in this latter mean as the confidence interval has a width of only 10 cents. The median fuel price is $3.19. The average vessel used 32,020 gallons of fuel and generated revenue of $7.72 for each gallon used. Analog to above, the fuel efficiency averaged across all gallons used rather than across vessels was $6.00, significantly less, and signifying the almost trivial relationship that the inefficient vessels use more fuel per dollar of shrimp landed.

Having looked at the vessel operations, we now turn to the average cash flow and income statements for the total fleet during 2008 (still in Table 8). The average inflow from shrimp landings is $192,046. On average, non-shrimp landings account for about 9.5% of inflow from commercial fishing. Note that the median for non-shrimp landings is zero, indicating that more than 50% of the fleet receives no cash inflow from other forms of commercial fishing. Similarly, the median government payment inflow is also zero, indicating that less than 50% of the vessels receive such payments at all. At just over 1%, average government payments are miniscule compared to total cash inflow in 2008. The average total outflow is $210,367 of which $99,198 is due to fuel expenses alone. The median fuel expense is lower at $67,385. The expense for hired crew and captains is on average $48,107 which indicates the importance of the industry as a source of wage income. The average net cash flow is $4,336 but has a (very large) standard deviation of $76,387. This leads to a broad confidence interval ranging from negative $2,397 to positive $11,068. Hence we cannot state with 95% certainty that the average net cash flow of the population is different from zero. Interestingly, the median net cash flow is zero.

Turning to the income statement, the average total revenue from commercial fishing operations for the total fleet is $212,082 with a confidence interval of +/- $19,694. The median is $146,733. Looking at the percentage break-up of costs, we note that fixed costs account for just over a fifth of operating expenses (21.0%); labor costs account for just over a quarter (25.3%);[63] and the non-labor variable costs for over half (53.7%). The fuel costs alone accounted for 45.7% of total operating expenses in 2008 at an average price of $3.10 per gallon. The average net revenue from operations is negative $4,834, while the average net revenue before taxes (the loss) is negative $6,866. Both measures of net revenue have very large standard deviations that produce large confidence intervals. Only in the case of average net revenue before taxes, can we reject with 95% certainty the possibility that the true mean is zero, i.e. we are pretty sure the population average is negative. The medians for both measures of net revenue are below zero, which indicates that economic costs in 2008 exceeded revenues for over 50% of the sample. More general financial and economic conclusions for the total fleet will be drawn in the "Key Results" section below.

[63] As a reminder, this category includes both the actual cash costs for hired labor and, to a lesser degree (~12%), the estimated opportunity cost of the owner-operator's labor input as captain.

Table 9: F&E Results: Summary Statistics for the Gulf Shrimp Fleet (n=463)

(in USD or unless noted)	Mean	Standard Deviation	95% Confidence Interval Lower	95% Confidence Interval Upper	Median
Vessel Characteristics					
Length (feet)	67	15	65	68	68
Gross tons	100	50	95	105	103
Horse power	507	245	485	529	425
Year built	1986	11	1985	1987	1985
Hull material - Steel (%)	77%	-	73%	80%	-
Refrigeration - Freezer (%)	58%	-	54%	62%	-
Fuel capacity (gallons)	12,622	10,229	11,688	13,557	10,000
State - Florida (%)	15%	-	12%	18%	-
State - AL or MS (%)	15%	-	12%	17%	-
State - Louisiana (%)	28%	-	25%	32%	-
State - Texas (%)	41%	-	37%	45%	-
Balance Sheet (end of 2008)					
Assets - Market value of vessel	**165,101**	**168,523**	**149,711**	**180,492**	**110,000**
Original value of vessel (at purchase price)	*226,638*	*234,340*	*205,237*	*248,040*	*140,000*
Implicit permit value	*21,242*	*48,511*	*16,812*	*25,672*	*5,000*
Liabilities - Loan on vessel	**61,274**	**120,841**	**50,238**	**72,310**	**0**
% of vessels with loan	*41%*	-	*38%*	*45%*	-
Equity - Owner's equity in vessel	**103,828**	**150,234**	**90,108**	**117,548**	**75,000**
Insurance coverage (% of vessels)	*33%*	-	*29%*	*37%*	-
Vessel Operation (2008)					
Actively shrimping (%)	83%	-	80%	86%	-
Owner-operator (%)	50%	-	46%	54%	-
Shrimp landed (pounds)	57,286	53,158	52,432	62,141	44,038
Shrimp price per pound (vessels basis)	3.32	0.99	3.23	3.41	3.46
Annual fuel use (gallons)	31,948	34,378	28,809	35,088	19,500
Fuel price per gallon (vessels basis)	3.15	0.57	3.09	3.20	3.17
Fuel efficiency I (shrimp pounds/gallon)	2.8	3.2	2.5	3.1	1.9
Fuel efficiency II (shrimp revenue/gallon)	7.78	5.61	7.26	8.29	6.60
Cash Flow (2008)					
Inflow - Total	**198,625**	**194,861**	**180,829**	**216,421**	**144,346**
Shrimp landings	194,697	195,356	176,856	212,538	134,763
Non-shrimp landings	1,188	10,442	234	2,141	0
Government payments received (shrimp related)	2,740	5,418	2,245	3,234	0
Outflow - Total	**197,310**	**188,780**	**180,070**	**214,551**	**134,728**
Fuel	98,498	108,766	88,565	108,431	62,218
Other supplies	16,393	19,054	14,653	18,133	10,000
Crew & captain (hired)	42,438	46,475	38,194	46,683	25,017
Regular maintenance (vessel and gear)	15,517	19,411	13,745	17,290	9,771
Major repair and haul-out	2,903	7,366	2,230	3,575	0
Overhead (excluding loan payments)	10,154	13,486	8,922	11,386	4,254
Interest payments made (on vessel loans)	3,899	8,923	3,084	4,714	0
Principal payments made (on vessel loans)	7,173	16,680	5,650	8,696	0
New investments and upgrades (in vessel)	334	974	245	423	0
Net Cash Flow	**1,314**	**64,081**	**(4,538)**	**7,167**	**0**

Table 9: F&E Results: Summary Statistics for the Gulf Shrimp Fleet (n=463), cont.

	Mean	Standard Deviation	95% Confidence Interval Lower	Upper	Median
Income Statement (2008)					
Operating Activities					
Revenue (from commercial fishing)	**195,885**	**195,006**	**178,076**	**213,694**	**136,917**
Expenses	**204,696**	**190,747**	**187,275**	**222,116**	**151,976**
Variable costs - Supplies	*56.1%*	-	-	-	-
Fuel	48.1%	-	-	-	-
Other supplies	8.0%	-	-	-	-
Variable costs - Labor	*24.0%*	-	-	-	-
Crew & captain (hired)	20.7%	-	-	-	-
Owner's vessel time	3.3%	-	-	-	-
Fixed costs	*19.8%*	-	-	-	-
Regular maintenance (vessel and gear)	7.6%	-	-	-	-
Major repair and haul-out	1.4%	-	-	-	-
Depreciation	5.9%	-	-	-	-
Overhead (excluding loan payments)	5.0%	-	-	-	-
Net Revenue from Operations	**(8,811)**	**61,827**	**(14,457)**	**(3,164)**	**(5,023)**
Non-Operating Activities					
Interest payments made (on vessel loans)	3,899		(see above)		
Government payments received (shrimp related)	2,740		(see above)		
Net Revenue (before taxes)	**(9,970)**	**62,250**	**(15,655)**	**(4,285)**	**(2,546)**
Owner's vessel time	*6,774*	*11,884*	*5,689*	*7,860*	*0*
Depreciation	*12,018*	*18,491*	*10,329*	*13,706*	*3,600*

Gulf Shrimp Fleet

Removing the 34 non-Gulf shrimp vessels from the 497 vessels in the total fleet has a noticeable impact on the balance sheet values (Table 9).[64] The average asset value drops by about $40,000 to $165,101, while average liabilities only drop by about $10,000 to $61,274. As a result, the average Gulf shrimper's equity is only $103,828, about $30,000 less than the average for the total fleet. On the other hand, the confidence intervals, while still large, narrow substantially. The implicit permit value among the Gulf shrimp fleet is $21,242, less than half for the total fleet. Yet the number is probably still inflated by outliers because permits were still being allowed to terminate by their owners throughout 2009. The median value of $5,000 is closer to the anecdotal amount of about $5,000 for a federal Gulf shrimp permit (if owners can find a buyer at all).

Focusing solely on the 463 Gulf shrimp vessels has little relevant qualitative and minimal quantitative effect on the rest of the financial and economic results discussed in the context of the total fleet. The only significant difference is the much lower average cash

[64] Table 14 in Appendix 5 also provides a side by side comparison of the means for the different sub-fleets, at the expense of the other summary statistics.

inflow from non-shrimp landings as would be expected. The average cash inflow from non-shrimp landings for the Gulf shrimp fleet ($1,188) is less than two-thirds of one percent of the total revenue from commercial fishing; much less than the 9.5% for the total fleet. The Gulf shrimp fleet generates an average net cash flow of $1,314; $3,022 less than for the total fleet. Again the confidence interval straddles zero, and hence we cannot state with 95% certainty that the average Gulf shrimper has net cash flow different from zero.

For the Gulf shrimp fleet, fuel costs comprise a somewhat larger percentage of total costs (48.1% vs. 45.7%), while labor costs and fixed costs comprise somewhat smaller percentages than for the total fleet. Accounting for all costs leads to average net revenue from operations of negative $8,811 and net revenue (before taxes) of negative $9,970 (the "loss"). The confidence intervals for these net-values are each entirely below zero, hence we can state with 95% certainty that these average net-values are negative for the Gulf shrimp fleet. The median net revenues barely differ for the two fleet definitions.

Active Gulf Shrimp Fleet

The active Gulf shrimp fleet of 383 vessels excludes about 23% of the 497 vessels that comprise the total fleet and about 17% of the 463 vessels that comprise the Gulf shrimp fleet. In this case, it is somewhat more surprising than in the last section that the results are quite similar, definitely from a qualitative perspective. This finding indicates that the results are robust with respect to noise and outliers in the data, and confirms our belief in the overall validity of the numbers. Again, we will only point out the differences rather than discuss all results.

The average vessel in the active Gulf shrimp fleet (Table 10) is somewhat larger both physically and "economically" than the average vessel in the total Gulf shrimp fleet. The average asset value is more than $18,500 larger, while the average liabilities are about $7,500 larger. As a result, the average equity of $114,842 for the active fleet is about $11,000 more than for the total Gulf shrimp fleet. Active Gulf shrimp vessels are slightly more likely to have a loan (45% vs. 41%) and insurance (38% vs. 33%). The shrimp landings for the average active Gulf shrimp vessel are 69,246 pounds, and the median is 63,572 pounds.[65] As would be expected after excluding inactive vessels, both measures of shrimp production are higher than for the total Gulf shrimp fleet. Average annual fuel use among active Gulf shrimp vessels is 38,619 gallons; about 6,671 gallons more than the average for the total Gulf shrimp fleet.

[65] For those looking for inconsistencies, note that the slight difference between the average shrimp price here and in Table 1 is due to the focus on exclusively Gulf shrimp landings in Table 1.

Table 10: F&E Results: Summary Statistics for the Active Gulf Shrimp Fleet (n=383)

(in USD or unless noted)	Mean	Standard Deviation	95% Confidence Interval Lower	95% Confidence Interval Upper	Median
Vessel Characteristics					
Length (feet)	68	15	67	70	70
Gross tons	105	50	100	110	110
Horse power	533	254	507	558	460
Year built	1987	11	1986	1988	1987
Hull material - Steel (%)	80%	-	76%	83%	-
Refrigeration - Freezer (%)	62%	-	58%	66%	-
Fuel capacity (gallons)	13,508	10,510	12,452	14,564	10,000
State - Florida (%)	15%	-	12%	18%	-
State - AL or MS (%)	15%	-	12%	18%	-
State - Louisiana (%)	28%	-	24%	32%	-
State - Texas (%)	41%	-	37%	45%	-
Balance Sheet (end of 2008)					
Assets - Market value of vessel	**183,639**	**176,580**	**165,898**	**201,379**	**125,000**
Original value of vessel (at purchase price)	*253,212*	*245,192*	*228,578*	*277,846*	*150,000*
Implicit permit value	*23,479*	*52,118*	*18,242*	*28,715*	*5,000*
Liabilities - Loan on vessel	**68,796**	**127,036**	**56,033**	**81,559**	**0**
% of vessels with loan	*45%*	-	*41%*	*49%*	-
Equity - Owner's equity in vessel	**114,842**	**159,258**	**98,842**	**130,843**	**80,000**
Insurance coverage (% of vessels)	*38%*	-	*34%*	*42%*	-
Vessel Operation (2008)					
Actively shrimping (%)	100%	-	100%	100%	-
Owner-operator (%)	52%	-	48%	56%	-
Shrimp landed (pounds)	69,246	50,868	64,135	74,357	63,572
Shrimp price per pound (vessels basis)	3.33	0.99	3.23	3.43	3.46
Annual fuel use (gallons)	38,619	34,221	35,181	42,057	30,000
Fuel price per gallon (vessels basis)	3.15	0.57	3.09	3.20	3.17
Fuel efficiency I (shrimp pounds/gallon)	2.8	3.2	2.5	3.1	1.9
Fuel efficiency II (shrimp revenue/gallon)	7.78	5.61	7.21	8.34	6.60
Cash Flow (2008)					
Inflow - Total	**239,983**	**189,726**	**220,922**	**259,044**	**195,810**
Shrimp landings	235,354	191,219	216,142	254,565	192,313
Non-shrimp landings	1,436	11,468	284	2,588	0
Government payments received (shrimp related)	3,193	5,748	2,616	3,771	0
Outflow - Total	**236,446**	**184,838**	**217,876**	**255,016**	**192,100**
Fuel	119,066	108,871	108,128	130,004	93,392
Other supplies	19,806	19,274	17,869	21,742	14,300
Crew & captain (hired)	51,277	46,462	46,609	55,945	35,956
Regular maintenance (vessel and gear)	17,918	20,179	15,891	19,946	12,474
Major repair and haul-out	3,331	7,949	2,532	4,129	0
Overhead (excluding loan payments)	11,784	14,062	10,371	13,197	7,052
Interest payments made (on vessel loans)	4,561	9,632	3,593	5,528	0
Principal payments made (on vessel loans)	8,327	17,910	6,528	10,127	0
New investments and upgrades (in vessel)	376	1,025	273	479	0
Net Cash Flow	**3,537**	**69,907**	**(3,486)**	**10,561**	**5,717**

Table 10: F&E Results: Summary Statistics for the Active Gulf Shrimp Fleet (383), cont.

	Mean	Standard Deviation	95% Confidence Interval Lower	Upper	Median
Income Statement (2008)					
Operating Activities					
Revenue (from commercial fishing)	**236,790**	**190,478**	**217,653**	**255,927**	**195,664**
Expenses	**245,456**	**185,272**	**226,842**	**264,070**	**208,108**
Variable costs - Supplies	*56.6%*	-	-	-	-
Fuel	48.5%	-	-	-	-
Other supplies	8.1%	-	-	-	-
Variable costs - Labor	*24.2%*	-	-	-	-
Crew & captain (hired)	20.9%	-	-	-	-
Owner's vessel time	3.3%	-	-	-	-
Fixed costs	*19.2%*	-	-	-	-
Regular maintenance (vessel and gear)	7.3%	-	-	-	-
Major repair and haul-out	1.4%	-	-	-	-
Depreciation	5.7%	-	-	-	-
Overhead (excluding loan payments)	4.8%	-	-	-	-
Net Revenue from Operations	**(8,666)**	**67,714**	**(15,470)**	**(1,863)**	**(5,623)**
Non-Operating Activities					
Interest payments made (on vessel loans)	4,561		(see above)		
Government payments received (shrimp related)	3,193		(see above)		
Net Revenue (before taxes)	**(10,034)**	**68,137**	**(16,879)**	**(3,188)**	**(3,430)**
Owner's vessel time	*8,189*	*12,617*	*6,922*	*9,457*	*0*
Depreciation	*14,085*	*19,605*	*12,115*	*16,055*	*5,836*

The average revenue from shrimp landings is $235,354, and the median is $192,313. Both measures are more than $40,000 larger than for the total Gulf shrimp fleet. The medians for all cost categories are larger among the active Gulf shrimp fleet (except for where they remain zero). This is logical when we consider that the active Gulf shrimp fleet excludes 80 inactive vessels with no or low costs in many categories. Average fuel costs of $119,066 are $20,568 more than for the total Gulf shrimp fleet. The average net cash flow is marginally better at $3,537 for the active Gulf shrimp fleet vs. $1,314 for the total Gulf shrimp fleet. Again, we cannot reject with 95% confidence that the true population mean is zero for the active fleet.

Finally, turning to the income statement, the average revenue from commercial fishing mirrors the revenue from shrimp landings due to the minimal contribution to revenue by non-shrimp landings. We note that the percentages of total cost for variable costs, labor costs, and fixed costs are essentially the same as for the total Gulf shrimp fleet, but that total expenses are higher. The net revenue from operations is negative $8,666. Because the upper bound of the 95% confidence interval is negative, the mean is statistically different and less than zero. With a median of negative $5,623, a majority of vessels

generate negative net revenue from operations. The average net revenue (before taxes) decreases to negative $10,034 compared to the net revenue from operations, while, oddly, the median increases to negative $3,430. As a last remark, we mention that the average estimated value of the owner's vessel time is $8,189 for the active Gulf shrimp fleet. Taking account of the fact that only 49% of these vessels are owner-operated, the average labor contribution (as captain) of an owner-operator is valued at only about $15,748.

Inactive Gulf Shrimp Fleet

Table 11 reports the averages for inactive Gulf shrimp vessels. The results apply to vessels that conducted no fishing in 2008, i.e. were idle or broken. Due to the limited sample size of this sub-fleet (80), caution interpreting the numbers is warranted. Instead of comparing the inactive fleet with the total fleet, we will compare the results of the inactive Gulf shrimp fleet with the active one.[66] In the next section, this comparison will be conducted for the key financial and economic results, and hence they will not be discussed here. We concentrate on the differences in the average vessel characteristics and among the individual cost categories in the financial statements.

The average inactive Gulf shrimp vessel is generally of a different scale than the average active vessel. The average inactive vessel is 9 feet shorter, weighs 30 gross tons less, and is 8 years older. Only 63% have steel hulls compared to 80% with steel hulls among active vessels, and less than 39% use freezers compared to 62% among active vessels. The distribution of the inactive Gulf shrimp vessels across the states is proportional to the active vessels. Owner-operators are less frequent (41% for inactive vessels vs. 52% for active vessels). As would be expected, the vessel market value and purchase price are significantly less than for the active fleet, as is the owner's equity. The implicit value associated with the shrimp permit is $9,165, less than half the value for active vessels. The median is $3,000.

In the cash flow, the largest cash inflow is government payments at an average of $567, while cash outflow averages $9,948. The largest cost categories are maintenance ($4,023), overhead ($2,350), principal payments ($1,647), major repair or haul-out ($853), and interest payments ($732). Fixed costs account for nearly 98% of the total operating costs compared to 19% for active Gulf shrimp vessels. Vessels in the inactive Gulf shrimp fleet have average net revenue from operations of negative $9,502, with an average loss before taxes of $9,667 (Table 11). The upper bounds of the confidence intervals for each of the net-values are negative, indicating that each mean is significantly lower than zero in spite of the small sample size. The median net cash flow is zero, while the net revenue medians are both negative. With an average net cash flow of negative $9,328, the inactive Gulf shrimp fleet has a liquidity problem. To sustain such losses and especially to survive the negative cash flow---if that is what they are doing---many of the owners must be subsidizing their shrimp vessels with the help of other sources of income or wealth.

[66] Table 16 in Appendix 5 provides a side by side comparison of the means, at the expense of the other summary statistics.

Table 11: F&E Results: Summary Statistics for the Inactive Gulf Shrimp Fleet (n=80)

(in USD or unless noted)	Mean	Standard Deviation	95% Confidence Interval Lower	95% Confidence Interval Upper	Median
Vessel Characteristics					
Length (feet)	59	14	56	62	63
Gross tons	75	44	66	85	87
Horse power	383	140	352	415	400
Year built	1979	11	1976	1981	1979
Hull material - Steel (%)	63%	-	53%	72%	-
Refrigeration - Freezer (%)	39%	-	29%	49%	-
Fuel capacity (gallons)	8,383	7,468	6,721	10,044	7,500
State - Florida (%)	16%	-	9%	24%	-
State - AL or MS (%)	15%	-	8%	22%	-
State - Louisiana (%)	28%	-	18%	37%	-
State - Texas (%)	41%	-	31%	51%	-
Balance Sheet (end of 2008)					
Assets - Market value of vessel	**76,355**	**75,318**	**59,594**	**93,116**	**50,000**
Original value of vessel (at purchase price)	*99,417*	*103,118*	*76,469*	*122,365*	*67,500*
Implicit permit value	*9,165*	*15,196*	*5,783*	*12,547*	*3,000*
Liabilities - Loan on vessel	**25,258**	**75,994**	**8,346**	**42,170**	**0**
% of vessels with loan	*26%*	*-*	*17%*	*35%*	*-*
Equity - Owner's equity in vessel	**51,097**	**77,118**	**33,935**	**68,259**	**35,000**
Insurance coverage (% of vessels)	*6%*	*-*	*1%*	*11%*	*-*
Vessel Operation (2008)					
Actively shrimping (%)	0%	-	0%	0%	-
Owner-operator (%)	41%	-	31%	51%	-
Shrimp landed (pounds)	30	189	-12	72	0
Shrimp price per pound (vessels basis)	2.01	0.42	1.92	2.11	2.25
Annual fuel use (gallons)	10	59	-3	23	0
Fuel price per gallon (vessels basis)	3.04	0.19	3.00	3.08	2.97
Fuel efficiency I (shrimp pounds/gallon)	-	-	-	-	-
Fuel efficiency II (shrimp revenue/gallon)	-	-	-	-	-
Cash Flow (2008)					
Inflow - Total	**620**	**2,717**	**16**	**1,225**	**0**
Shrimp landings	53	315	(17)	123	0
Non-shrimp landings	0	0	0	0	0
Government payments received (shrimp related)	567	2,475	16	1,118	0
Outflow - Total	**9,948**	**15,362**	**6,529**	**13,366**	**0**
Fuel	30	174	(8)	69	0
Other supplies	56	349	(22)	133	0
Crew & captain (hired)	123	840	(64)	310	0
Regular maintenance (vessel and gear)	4,023	8,532	2,125	5,922	0
Major repair and haul-out	853	2,561	283	1,423	0
Overhead (excluding loan payments)	2,350	5,734	1,074	3,626	0
Interest payments made (on vessel loans)	732	2,174	248	1,216	0
Principal payments made (on vessel loans)	1,647	6,227	261	3,032	0
New investments and upgrades (in vessel)	134	652	(12)	279	0
Net Cash Flow	**(9,328)**	**15,665**	**(12,814)**	**(5,841)**	**0**

Table 11: F&E Results: Summary Statistics for the Inactive Gulf Shrimp Fleet (80), cont.

	Mean	Standard Deviation	95% Confidence Interval Lower	Upper	Median
Income Statement (2008)					
Operating Activities					
Revenue (from commercial fishing)	**53**	**315**	**(17)**	**123**	**0**
Expenses	**9,555**	**13,503**	**6,550**	**12,560**	**3,060**
Variable costs - Supplies	*0.9%*	-	-	-	-
Fuel	0.3%	-	-	-	-
Other supplies	0.6%	-	-	-	-
Variable costs - Labor	*1.3%*	-	-	-	-
Crew & captain (hired)	1.3%	-	-	-	-
Owner's vessel time	0.0%	-	-	-	-
Fixed costs	*97.8%*	-	-	-	-
Regular maintenance (vessel and gear)	42.1%	-	-	-	-
Major repair and haul-out	8.9%	-	-	-	-
Depreciation	22.2%	-	-	-	-
Overhead (excluding loan payments)	24.6%	-	-	-	-
Net Revenue from Operations	**(9,502)**	**13,514**	**(12,509)**	**(6,494)**	**(3,001)**
Non-Operating Activities					
Interest payments made (on vessel loans)	732		(see above)		
Government payments received (shrimp related)	567		(see above)		
Net Revenue (before taxes)	**(9,667)**	**14,587**	**(12,913)**	**(6,421)**	**(2,539)**
Owner's vessel time	*0*	*0*	*0*	*0*	*0*
Depreciation	*2,119*	*4,590*	*1,098*	*3,141*	*0*

Comparison of Key Results across Fleets and Categories

Table 12 pulls together the key financial averages broken down by various categories within each fleet. Each row presents results for one category of vessel within a specific fleet, with tabulated entries from the corresponding result-table. Table 12 lists the number of observations in each category, the estimated average total assets per vessel, average total equity, average net cash flow, average net revenue from operations, and average net revenue before taxes, further referred to as “profit” or “loss.” All numbers are expressed in thousands of dollars and rounded off to the nearest thousand.

The final two columns in Table 12 are simple measures of return. The economic return is calculated by dividing net revenue from operations by the value of total assets. Economic return quantifies the fundamental or primary productivity/economic efficiency of the shrimp production activity. In the abstract, from a societal perspective, an economic activity is only worth undertaking if its economic return exceeds the true cost of capital. In contrast, the return on equity is the primary concern of the individual owner. The return on equity is calculated by dividing the “profit” by the total equity currently

invested by the owner.[67] This measure describes the actual profitability of the investment for the owner, and undertaking the economic activity is reasonable only if the return on equity exceeds the return his financial capital could have generated elsewhere.[68] Both measures of return are expressed as percentages. Negative values are enclosed in parentheses.

The general conclusion of Table 12 is that the financial and economic situation continues to be bleak for the average vessels in the total fleet, the Gulf shrimp fleet, and the active Gulf shrimp fleet, as well as for the average vessels in most of the various categories within these fleets. Unlike in 2007 and similar to 2006, we find that many categories once again have a positive cash flow. Yet the net revenue from operations and the profit remained negative for all but a very few categories of Gulf shrimping.

In 2008, the average net cash flow was positive for most Gulf shrimp sub-fleets, though often just barely. We would generally expect to find a positive cash flow. Commercial operations with a negative cash flow face an imminent liquidity problem. Unless they have access to some outside sources of cash, they will be unable to pay their bills, become insolvent and forced into bankruptcy, eventually to sell or lose their vessel and permit. For vessels from Alabama and Mississippi (net cash flow of negative $13,000 to $15,000) and those built in the 1990s (negative $9,000), the negative cash flow is large enough to raise questions about the validity of the numbers. On the other hand, negative cash flow for inactive vessels (negative $9,000) and those operated by hired captains (negative $2,000) seem reasonable and consistent with previous years.

In spite of the positive cash flow, once all costs are considered in the income statement, the average net revenue from operations is negative for nearly all Gulf shrimp categories in 2008. The exceptions are small, old, wooden vessels and a small group of vessels landing over 150,000 pounds of shrimp (a category that is inherently biased toward high liners). Hence, the average economic return to shrimping is also less than zero for all other groups, and the fundamentals of the industry are in doubt. In 2008, government payments generally did not offset financing costs (interest payments) and as a result "losses" (net revenue before taxes) and the return on equity fared worse than net revenue from operations and the economic return, respectively. Overall, an average return on equity of about negative 10% on the substantial financial (and entrepreneurial) capital invested in the average shrimping enterprise will lead to rapid shrinking of the industry.

[67] An alternative measure of return on equity could compare the profit to the total equity *actually* invested at the time of the vessel purchase. In a setting of irreversible investments and ill-functioning capital markets this measure might be more meaningful than the one reported, which is more analytically pure, but presents its own problems and biases. The reader is encouraged to calculate his preferred measure.

[68] It should be noted that, for owner-operators, the investment in a vessel might function more like an investment in education, enabling an employment opportunity that pays a higher wage than could otherwise be gotten. In this case, the return on equity might be a less important measure than the captain's compensation.

Table 12: Overview of 2008 Financial and Economic (F&E) Results (thousand dollars)

		Table #	# of Obs.	Assets	Equity	Net Cash Flow	Net Rev. from Operations	"Profit" - Net Revenue (before taxes)	Economic Return	Return on Equity
Total Fleet		**8**	**497**	**205**	**134**	**4**	**(5)**	**(7)**	**(2%)**	**(5%)**
by	Other Fish	14	9	1,582	1,081	162	197	162	12%	15%
	S. Atlantic Shrimp	"	20	397	317	47	29	24	7%	8%
	Gulf Shrimp	"	463	165	104	1	(9)	(10)	(5%)	(10%)
by	Florida	15	77	112	85	2	(10)	(11)	(9%)	(13%)
	Alabama and Mississippi	"	69	241	145	(13)	(23)	(26)	(9%)	(18%)
	Louisiana	"	131	165	122	9	(8)	(4)	(5%)	(3%)
	Texas	"	190	157	83	3	(3)	(8)	(2%)	(9%)
	Other	"	30	831	604	43	53	37	6%	6%
Gulf Shrimp Fleet		**9**	**463**	**165**	**104**	**1**	**(9)**	**(10)**	**(5%)**	**(10%)**
by	Florida	16	70	94	73	1	(9)	(9)	(9%)	(12%)
	Alabama and Mississippi	"	68	244	146	(13)	(23)	(26)	(9%)	(18%)
	Louisiana	"	130	167	123	9	(8)	(4)	(5%)	(3%)
	Texas	"	189	158	83	2	(4)	(8)	(2%)	(10%)
by	Inactive (Table 11 as well)	16	80	76	51	(9)	(10)	(10)	(12%)	(19%)
	Active	"	383	184	115	4	(9)	(10)	(5%)	(9%)
Active Gulf Shrimp Fleet		**10**	**383**	**184**	**115**	**4**	**(9)**	**(10)**	**(5%)**	**(9%)**
by	Florida	17	57	90	76	6	(5)	(5)	(6%)	(7%)
	Alabama and Mississippi	"	56	273	156	(15)	(27)	(31)	(10%)	(20%)
	Louisiana	"	108	189	137	11	(9)	(5)	(5%)	(3%)
	Texas	"	156	178	95	5	(3)	(8)	(1%)	(8%)
by	Freezer	18	237	238	137	0	(10)	(15)	(4%)	(11%)
	Ice	"	133	101	82	9	(7)	(3)	(7%)	(3%)
by	Steel	18	305	209	126	2	(10)	(13)	(5%)	(10%)
	Wood	"	22	57	48	14	4	6	6%	13%
	Fiberglass	"	55	88	78	8	(3)	0	(4%)	0%
by	< 50 feet	19	57	81	74	12	2	7	3%	9%
	< 75 feet	"	172	118	95	7	(4)	(2)	(3%)	(2%)
	<100 feet	"	154	295	152	(4)	(18)	(26)	(6%)	(17%)
by	1968+	20	100	88	71	9	0	1	0%	2%
	1980+	"	118	113	91	10	(4)	0	(3%)	0%
	1990+	"	87	278	196	(9)	(21)	(25)	(8%)	(13%)
	2000+	"	67	349	127	3	(14)	(25)	(4%)	(19%)
by	< 50k lbs	21	169	90	74	(6)	(18)	(15)	(20%)	(21%)
	<100k lbs	"	116	176	104	(1)	(14)	(15)	(8%)	(15%)
	<150k lbs	"	69	319	176	13	2	(6)	1%	(3%)
	>150k lbs	"	29	437	252	58	43	32	10%	13%
by	Hired Captain	23	184	208	120	(2)	(5)	(9)	(2%)	(7%)
	Owner-Operator	"	199	161	110	9	(12)	(11)	(8%)	(10%)

Looking more closely at the rows in Table 12 for the total fleet, we note the much higher average asset value for the other fish fleet and S. Atlantic shrimp fleet compared to the Gulf shrimp fleet. Because the other fish fleet's owners' average equity is also so much higher, high net revenue ($162,000) still "only" leads to a 15% return on equity. Some of these vessels are active in the currently very lucrative Atlantic scallop fishery.[69] In 2006, the S. Atlantic shrimp fleet (n=14) generated an economic return of 25% in contrast with the negative return of 5% generated by the Gulf shrimp fleet. In 2007, the performance of the S. Atlantic shrimp fleet (n=13) was equal to or worse than the Gulf shrimp fleet's (negative 15%). This year the economic return is 7% based on a sample of 20. Overall, this illustrates why sample averages based on small sample sizes do not reflect the population mean most of the time and should not be interpreted thus. Further, our sample is not representative of all vessels that participated in these other fisheries. [70]

Looking at the rows in Table 12 for the Gulf shrimp fleet, we compare the active and inactive Gulf shrimp vessels. The inactive vessels generate an average negative cash flow of about $9,000 compared to a positive cash flow of about $4,000 among the active vessels. Once all costs are included, both fleets incur substantial losses from operations, negative $10,000 for the average inactive vessel and negative $9,000 for the average active vessel. The average inactive vessel incurs a loss before taxes of about $10,000, which amounts to a negative 19% return on equity, while the average active vessel loses about $10,000, which amounts to a negative 9% return on equity. To sustain such losses and especially to survive the negative cash flow, the owners of the inactive vessels must be subsidizing their shrimp vessels with the help of other income sources or are consuming their equity at an unprecedented rate (negative returns are also unsustainable).

When looking at differences among states for active Gulf shrimp vessels, Table 12 indicates that the average vessel in all states exhibited negative rates of return in 2008. The Alabama and Mississippi fleets (which are reported jointly due to small sample sizes)---the only fleet with a negative cash flow (negative $15,000)---generate a negative net revenue from operations of $27,000, the largest loss among all the states. As a result they have the worst average returns, with a negative 10% economic return and, due to their high leverage ratio, a negative 20% return on equity.[71] Florida and Louisiana fleets generate an economic return of negative 6% and negative 5%, respectively. Due to by far the largest government payments ($7,983), the Louisiana fleet generates the "highest" return on equity of negative 3%. Texas vessels almost break even with a negative 1% economic return, but due to a high leverage ratio and minimal government payments ($454) the small negative economic return is amplified into a negative 8% return on equity.

[69] See Amendment 11 to the Atlantic Sea Scallop Fishery Management Plan for more information on this topic at: http://www.nefmc.org/scallops/index.html

[70] A valid comparison of the S. Atlantic and Gulf shrimp fisheries will have to wait until this survey is expanded to properly include and describe the S. Atlantic shrimp fishery.

[71] Leverage with respect to businesses is usually defined as the ratio of loans to equity (or assets).

The relative performance of vessel categories in Table 12 based on vessel characteristics among the active Gulf shrimp fleet continues to defy simple explanation. In 2006, less modern vessels using ice, vessels with hulls made of wood or fiberglass, vessels smaller than 75 feet, and vessels older than 20 years generally generated a higher economic return than their more modern, ferrous, larger, and younger counterparts. We hypothesized that the latter vessels were less profitable in an economic environment characterized by high fuel costs and low shrimp prices. In contrast to 2006, in 2007 the newer, larger vessels with freezers and steel hulls on average exhibited a higher---less negative---economic return than the less modern ones. Since the shrimp price improved relative to the fuel price in 2007, this might have been to the advantage of the larger scale vessels focused on volume production. Yet the "improvement" was only relative, i.e. in absolute terms the performance in all vessel categories deteriorated in 2007. In 2008, the situation reverses back to the 2006 situation of older, smaller vessels outperforming more modern, larger ones. Given that the price of fuel increased dramatically relative to the price of shrimp from 2007 to 2008, our above hypothesis is not rejected, but clearly much further research is needed to understand the relative performance of different vessel types given price fluctuations.[72]

Vessels were categorized by volume of shrimp landed in 2008 as follows: less than 50 thousands pounds, from 50 thousand to 100 thousand pounds, from 100 thousand to 150 thousand pounds, and more than 150 thousand pounds. Cash flow, net revenue from operations, net revenue (before taxes), economic return, and return on equity all improve as the volume of shrimp catch increases (Table 12). For the highest volume vessels the measures even turn positive. The group of vessels landing more than 150 thousand pounds consists of the largest operations (vessel size and value), with $58,006 in cash flow, and a return on equity of 13%. Further, over 51% of their total expenses were for fuel (Table 21). Yet in 2008, only 29 vessels made it into this category and hence the results should be interpreted with caution.

Table 12 also reports financial results for vessels operated by the owner (representing 52% of the sample) and those operated by hired captains (48% of the sample). Reference to the more detailed standardized information in Table 23 reveals that vessels with hired captains are somewhat larger, more expensive and valuable, generate more revenue and costs, and occur much more frequently in Texas and much less frequently in Louisiana. Owner-operators exhibit higher net cash flow (positive $8,716 vs. negative $2,064) since they have crew costs of only $34,084 compared to $69,872 by vessels with hired captains. This is not surprising as the latter payments include the compensation of the captain, while the former does not. When we add the estimated value of the owner's contribution of his time as captain ($15,762), as we do in the income statement, the situation reverses. Net revenue from operations for vessels with hired captains is negative $4,761, while owner-operators lose $12,278. Unlike in 2007, on average in 2008 owner-operated vessels did less well from an economic perspective than vessels with hired captains.

[72] Details on the various categories can be found in Table 18 about hull construction and refrigeration, in Table 19 about vessel size, and in Table 20 about age of vessel.

The last two columns of Table 23 consider the financial results for owner-operated vessels where the owner is not explicitly compensated for working as the captain and for vessels that reported paying a captain's share to the owner. Overall, the two groups exhibit roughly similar vessel characteristics and operations. Vessels that paid a captain's share to the owner-operator generate a cash flow of $6,931, while those that do not generate $9,664. Yet once we account for all costs---especially for the value of the captain's labor---the difference in the financial results are increased. Average net revenue from operations for vessels which did not explicitly pay the owner a captain's share was negative $9,887, compared to negative $16,781 for those that pay a share. This difference might disappear, since we might be underestimating the value of the owner-operator's time spent as captain for those not explicitly being paid a share. We estimated an average captain's salary of $13,494 for vessels that did not explicitly pay a captain's share, whereas vessels that paid a captain's share to the owner-operator reported an average payment of $20,033. If we had simply used the average from the vessels with an explicit share instead of estimating it with a regression approach, the net revenue numbers would be approximately equal.

The reader is encouraged to explore the above mentioned differences in more detail by going to the respective result-table. See the overview in Table 7 for the appropriate result-table. The first column in Table 7 also gives the table number for each sub-group of vessels. It should be noted that the tabulated results are averages and hence hide the variation that clearly exists within all fleets. The large standard errors in the tables with summary statistics make this clear. Many vessels are profitable, but many others are not.

Comments by Respondents

Many written comments were received together with the survey instrument, but less than in previous years. Of the comments about the status and future of the Gulf shrimp industry the large majority communicate a negative situation and outlook. The foremost concern among all comments about the fishery was a concern about the high price of fuel, followed closely by the concern about the low price of shrimp. The economics of the industry led many respondents to shrimp less in 2008 or not at all. A number of respondents reported being forced into bankruptcy or losing their boats due to foreclosure, while others still suffered from the consequences of Hurricanes Ike and even Katrina. The low price of shrimp was frequently blamed on foreign shrimp, and respondent called upon the government to restrict the import of shrimp.

Selected examples of comments below (edited for clarity):

"Last year was the worst year we ever had. We had to pay up to $4.20 a gallon for diesel fuel. The price of shrimp went down to $2.30 a pound for 26/30 shrimp."

"[I] was forced out of business due to [low-price, foreign shrimp] and cost of operating and maintaining vessel."

"Stop importing shrimp now so that we can get more money for our shrimp! That way we could help our country grow and help keep a way of life that we love to do. If not we will all be out of jobs and 'out' of shrimping."

"After hurricanes Cindy, Katrina, Rita, Gustav, and Ike, I have spent most of my time repairing my home and boats. Last year, I did not fish until fuel prices started to fall. […] because there was not much profit until fuel prices drop."

"[We] only shrimped when profitable."

"[Vessel] only worked for 38 days last year because of fuel cost […] our maintenance cost took any profit I would have received as owner/operator."

"Due to fuel costs stayed in harbor and shrimped within 15 miles of dock all year."

"We think all the regulations and management of the shrimp industry is a little late, since it is almost extinct!"

"Boat did not shrimp due to U.S. government. As you know the majority of the shrimping industry is gone. I am glad you are concerned. We need money. This survey does not do any good."

"Due to the economic state of the industry, the [vessel market] value is far less than what the vessel is actually worth."

“[I am] selling everything off the boat ‘Retail.’ […] 2009 might be the year we start to see a profit again! In my case, ‘fresh’ is the game […] for $6.00 per pound. [I] have fancy dock in new $12 million marina.”

5. Comparison of Results for 2008, 2007, and 2006

One intention of this data collection is to track the status and changes in the Gulf shrimp industry through time. Year 2008 is the third year for which these data have been collected. To the extent possible, we conducted the 2008 survey identically to the 2007 one in order to ensure comparability of the numbers and results. The changes between the 2008 and 2007 surveys were trivial, while the changes between the 2007 and 2006 surveys were a bit more substantial.[73] At 699 permits, the 2008 sample was somewhat larger than the previous years (636, 580). No vessel was sampled more than once in the three years, and together the surveys covered the entire population once. The response rates, here calculated as arrived surveys over the eligible sample, were 81%, 90%, and 94% in 2008, 2007, and 2006, respectively. The difference in response rates is entirely due to the 'No contact' non-response category which was significantly higher in 2008 than in 2007, which in turn was higher than in 2006 (129 vs. 50 vs. 16 surveys, respectively). In 2008, we were able to determine that nearly 45% of non-response was due to permanently terminated permits, i.e. moratorium permits not renewed within the one-year renewal period after permit expiration. These shrimpers have permanently left the federal fishery. Similar cases are probable among the other non-responders in 2008 and 2007, but are yet unknown to us because of the lag with which permits terminate. The difficult economic environment the industry is facing continues to lead shrimpers to simply "hang up their nets" and literally "move on."

For the data processing, cleaning, analysis, and creation of results, we followed our 2006 protocols and formats as closely as possible. Table 13 presents the 2008, 2007, and 2006 results side by side for the active Gulf shrimp fleet. No adjustments were made to any of the numbers to compensate for inflation. The standard deviation and statistical significance of changes across the years were calculated but are not shown. In general, the results discussed below were significant at the 95% confidence level or more unless otherwise noted.

In Table 13, the average vessel characteristics and distribution across states effectively do not change between 2006 and 2007 and 2008. This is in spite of the fact that the universe of *active* Gulf shrimp vessels decreased from 1,453 in 2006 to 1,388 in 2007 to 1,225 in 2008. Further, many permits terminated and hence the associated vessels left the industry. Table 5 provides a tentative indication that these vessels do not differ from the remaining vessels, in physical characteristics at least. Two insignificant changes among the active Gulf shrimp fleet with some possible relevance are the two foot decrease in the average length of the vessels and the two percentage point redistribution of vessels from Texas to Florida between 2006 and 2008.

[73] These changes are documented in the Design and Implementation chapter of the second technical memorandum. Beyond some wording changes on the survey instrument, the 2008 and 2007 surveys were conducted earlier in the year (March vs. May), and the sampling frame was improved (the deadline for moratorium permits had passed, finalizing the population) compared to the 2006 survey.

With the exception of insurance coverage (% of assets), the 2007 balance sheet numbers did not change from 2006 in a statistically significant manner, partly due to the large variances associated with these variables. By 2008, we see major significant changes, both compared to 2007 and 2006. First, and somewhat problematically, the average vessel purchase price (original value) dropped by nearly $50,000 from 2007 and 2006 to $253,212 in 2008. This drop is statistically significant at a 95% confidence level. Possible explanations include the above mentioned decrease in vessel length. In general, vessel value is quite progressively increasing in vessel size, so a two foot difference could easily account for $10,000 or more in purchase price. Another possible explanation could be that some vessels have been purchased during the last two to three years for very low prices, often after bankruptcies and foreclosures.

Average liabilities decrease by $10,617 from 2006 to 2007, and by a further $25,184 to 2008. The timing, magnitude, and significance of this drop are eerily similar to the major deleveraging of the (world) economy brought about by the financial crisis. A drop in outstanding loans could be due to shrimpers having difficulty financing their operations, i.e. less readily available credit. It could also be due to the bankruptcy and foreclosure process which---if the vessel reenters the fishery under new ownership---eliminates debt without changing much else. Alternatively, it could also be due to no brand new vessels, which historically carry proportionally more loans, entering this unprofitable fishery.

The only balance sheet number that does not significantly change across the years is the average market value of a vessel. While the average market value of the vessels decreased by 5% from 2006 to 2008, this is not statistically significant. To the extent that the market value of shrimp vessels, as estimated by the respondents, embodies (capitalizes) the financial potential of the fishery, it seems the (active) participants did not perceive any major changes in the economic conditions of the fishery between 2006, 2007, and 2008.

Since the reduction in liabilities is greater than the reduction in the value of the assets, the average owner's equity---somewhat paradoxically given the state of the fishery---actually increased from $88,340 in 2006 to $114,842 in 2008. It should be mentioned that this wealth increase is purely 'book value,' since it is embodied in the vessel. If the respondents are systematically overestimating the market value of their vessels, this increase in equity could shrink or disappear. Finally, note the large drop in the percentage of vessel assets covered by hull insurance, which decreased from 72% in 2006 to 55% in 2008. Since dropping insurance coverage is a short-term cost cutting measure (of questionable long-term merit in a hurricane prone area), this is an indicator of the difficult-to-desperate economic situation the industry faces.

Vessel operations exhibited major and statistically significant changes between 2006 and 2007, including a decrease in shrimp catch (pounds) and fuel use (gallons) and an increase in the prices of shrimp and fuel, each at the 99.9% confidence level. Between 2007 and 2008, only the shrimp and fuel prices significantly increased, with a moderate further decrease in fuel use, which is only significant at the 90% confidence level. The catch remained, statistically speaking, the same. We concluded last year that the effective

price environment for the shrimpers substantially improved in 2007 from 2006 due to a 21% increase in the price of shrimp while the price of fuel only increased by 16%. Also, the fuel price increase only applied to about 50% of the costs of shrimping compared to the shrimp price which applied to almost 100% of the benefits of shrimping (the revenue).[74] From 2007 to 2008, the shrimp price increased by 11%, while the fuel price surged by almost 30%. As a result, the economic conditions deteriorated substantially, moderated somewhat by a 17% improvement in the fuel efficiency I measure (pounds of shrimp caught per gallon of fuel used (vessel basis)), which was only marginally significant.[75]

Turning to expenses, unlike last year when the compensating drop in fuel *use* negated the effect of the fuel price increase on total fuel expenses, in 2008 the total fuel expenses were significantly higher than before. To compensate for the difficult economic environment, the shrimpers have been able to reduce average expenses for major repairs (by ~$3.500), overhead excluding loan payments (by ~$3,000), loan interest payments (by ~$2,500), and new investments (by ~$1,000) by statistically significant amounts between 2006 and 2008.[76] Expenses for other supplies, crew and captain, regular maintenance, and principal payments also generally decreased somewhat in magnitude, but the drop was not statistically significant.

Average shrimp revenue increased by $21,098 or about 10% from 2007 to 2008, but the change is marginally significant. Average government payments significantly and substantially decreased from $13,662 in 2006 to $3,193 in 2008, a 77% drop. The average total cash outflow increased marginally, but not significantly, by $7,725. As a result, the average net cash flow increased by $9,504, from negative $5,967 in 2007 to positive $3,537 in 2008, and in spite of a high standard deviation the increase is statistically significant at the 90% confidence level. This was still short of the positive net cash flow of $16,225 in 2006, a year in which a bumper harvest of shrimp was produced, but at least the cash flow was once again in positive territory.

[74] Note that prices and fuel efficiency averages are all in terms of vessel averages, not the overall population averages (see the Standardized Data Presentation section of the Results for 2008 chapter for a more detailed explanation).

[75] The industry-wide fuel efficiency measure I was 1.91 pounds of shrimp per gallon of fuel in 2006, 1.67 in 2007, and 1.79 in 2008. These changes somewhat compensated for the joint shrimp and fuel price movement.

[76] Note that the implied level of statistical significance is driven by the estimation and extrapolation procedure which assigned (based on regressions on the data) most of the reduction in vessel and gear expenses to the major repair and new investment categories. Vessel and gear expenses in aggregate, as collected on the survey, were $21,625 in 2008, $24,284 in 2007, and $27,373 in 2006.

Table 13: Comparison of Results for the Active Gulf Shrimp Fleet: 2008, 2007, and 2006

(in USD unless otherwise noted)	**2008** Means	**2007** Means	**2006** Means
# of Observations	383	388	386
Vessel Characteristics			
Length (feet)	68	70	70
Gross tons	105	108	111
Horse power	533	527	531
Year built	1987	1987	1986
Hull material - Steel (%)	80%	78%	80%
Refrigeration - Freezer (%)	62%	58%	63%
Fuel capacity (gallons)	13,508	14,086	14,184
State - Florida (%)	15%	14%	13%
State - Alabama or Mississippi (%)	15%	17%	16%
State - Louisiana (%)	28%	28%	27%
State - Texas (%)	41%	40%	43%
Balance Sheet			
Assets - Market value of vessel	**183,639**	**186,021**	**192,938**
Original value of vessel (at purchase price)	*253,212*	*299,193*	*300,185*
Implicit permit value	*23,479*	*22,308*	-
Liabilities - Loan on vessel	**68,796**	**93,980**	**104,597**
% of vessels with loan	*45%*	*51%*	*53%*
Equity - Owner's equity in vessel	**114,842**	**92,041**	**88,340**
Insurance coverage (% of assets)	*55%*	*64%*	*72%*
Vessel Operation			
Actively shrimping (%)	100%	100%	100%
Owner-operator (%)	52%	49%	46%
Shrimp landed (pounds)	69,246	71,380	101,268
Shrimp price per pound (vessel basis)	3.33	2.99	2.47
Annual fuel use (gallons)	38,619	42,841	52,931
Fuel price per gallon (vessel basis)	3.15	2.43	2.09
Fuel efficiency I (vessel basis)	2.8	2.4	2.6
Fuel efficiency II (vessel basis)	7.78	6.52	5.68
Cash Flow			
Inflow - Total	**239,983**	**222,753**	**259,640**
Shrimp landings	235,354	214,256	244,136
Non-shrimp landings	1,436	451	1,842
Government payments received (shrimp related)	3,193	8,046	13,662
Outflow - Total	**236,446**	**228,721**	**243,415**
Fuel	119,066	102,199	108,775
Other supplies	19,806	22,105	21,986
Crew & captain (hired)	51,277	49,268	54,866
Regular maintenance (vessel and gear)	17,918	19,480	18,988
Major repair and haul-out	3,331	4,702	6,833
Overhead (excluding loan payments)	11,784	14,277	14,746
Interest payments made (on vessel loans)	4,561	6,891	7,140
Principal payments made (on vessel loans)	8,327	9,698	8,528
New investments and upgrades (in vessel)	376	102	1,552
Net Cash Flow	**3,537**	**(5,967)**	**16,225**

Table 13: Comparison of Results for 2008, 2007, and 2006, cont.

(in USD unless otherwise noted)	2008 Means	2007 Means	2006 Means
# of Observations	383	388	386
Income Statement			
Operating Activities			
Revenue (from commercial fishing)	**236,790**	**214,707**	**245,978**
Expenses	**245,456**	**234,340**	**253,407**
Variable costs - Supplies	*56.6%*	*53.0%*	*51.6%*
Fuel	48.5%	43.6%	42.9%
Other supplies	8.1%	9.4%	8.7%
Variable costs - Labor	*24.2%*	*23.9%*	*25.3%*
Crew & captain (hired)	20.9%	21.0%	21.7%
Owner's vessel time	3.3%	2.9%	3.6%
Fixed costs	*19.2%*	*23.0%*	*23.1%*
Regular maintenance (vessel and gear)	7.3%	8.3%	7.5%
Major repair and haul-out	1.4%	2.0%	2.7%
Depreciation	5.7%	6.6%	7.1%
Overhead (excluding loan payments)	4.8%	6.1%	5.8%
Net Revenue from Operations	**(8,666)**	**(19,633)**	**(7,429)**
Non-Operating Activities			
Interest payments made (on vessel loans)	4,561	6,891	7,140
Government payments received (shrimp related)	3,193	8,046	13,662
Net Revenue (before taxes)	**(10,034)**	**(18,477)**	**(907)**
Owner's vessel time	*8,189*	*6,790*	*9,138*
Depreciation	*14,085*	*15,520*	*18,076*

Turning to the income statement, revenue, expenses, and net revenue from operations did not significantly change when comparing 2006 and 2008, though for both these years the numbers are significantly higher than in 2007 (Table 13). Based on this very limited time series, 2007 looks a bit like an outlier year. Both in 2006 and 2008, net revenue from operations was roughly around negative $8,000, though the composition of costs changed. Fuel accounted for 'only' 42.9% of all expenses in 2006 and rose to 48.5% in 2008. As previously mentioned, to compensate, fixed costs have fallen, and now account for 19.2% of total expenses, down from 23.1% in 2006. The similar net revenue from operations in 2006 and 2008 did not translate into similar net revenue (before taxes). After subtracting financing costs (loan interest payments) and adding government transfer payments, the average active Gulf shrimp vessel nearly broke even in 2006 with a loss of just $907. By 2008, finance costs had fallen, but government payments fell by much more, leading to a loss of $10,034. In percentage terms, the economic return was negative 4% in 2006 and negative 5% in 2008. In contrast, the return on equity was negative 1% in

2006 and negative 9% in 2008. The continuing negative economic return and the lower average return on equity clearly are not sustainable in any industry.

Finally, we note that for the average vessel the contribution that owner-operators make as captains of their vessels recovered somewhat in 2008, after dropping significantly (both statistically and economically) between 2006 and 2007. The percentage of owner operators among the sample has steadily increased, from 46% in 2006 to 52% in 2008, but this increase was not statistically significant. Based on Table 23, the captain's share for owner-operators was $15,762 in 2008, up from $13,938 in 2007, yet still down from $19,815 in 2006.[77] Last year, we interpreted the drop partly as a self-imposed "wage cut" due to the extremely difficult economic situation. Since fishing effort does not seem to have gone up by much in 2008 compared to 2007 (as proxied by fuel use or crew costs), the increase in the owner's wage is consistent with the improved (but not positive) financials.

Looking at the active Gulf shrimp fleet by state, 2008 looks much like 2006, and 2007 was the outlier, especially when ranking the states' fleets by average economic return. In 2006 and 2008, the Texas fleet did best, roughly breaking even (+/-1%), followed by the Louisiana and Florida fleets (around negative 5%), with the Alabama and Mississippi fleets (which are reported jointly due to small sample sizes) bringing up the rear (around negative 10%). The Alabama and Mississippi fleets have the highest assets on average. High leverage ratios in Alabama and Mississippi and in Texas amplify a positive or negative economic return into more extreme returns on equity. In 2008, Louisiana benefited from high government payments relative to other States, though they were much less than in earlier years.[78]

There are no big differences for inactive Gulf shrimp vessels between 2008, 2007, and 2006. Net cash flow, net revenue from operations, and the loss were roughly around negative $10,000 in all years. The economic return ranged from negative 10% to negative 15%, while the return on equity ranged from negative 9% to negative 19%. But given the small sample sizes, random variation cannot be ruled out.

In summary, the general conclusion of this comparison is that the financial and economic situation for the average vessel in the active Gulf shrimp fleet improved somewhat in 2008 after deteriorating sharply in 2007 from the already bleak outlook in 2006. As was apparent in the discussion to Table 12, these results roughly apply to all categories of

[77] Removing the possible distortion due to the estimation procedures by focusing on the vessels that paid an explicit captain's share to the owner-operator, the general relationship still holds up ($20,033 in 2008, $17,816 in 2007, and $23,150 in 2006).

[78] The Texas fleet---the sole profitable segment in 2006--- turned into the worst performer in 2007--- the outlier year. In contrast, the Alabama and Mississippi fleet, which was the worst performer ("doing terrible") in 2006, looked "middle of the road," i.e. the results did not deteriorate any further and even improved on some measures. The Louisiana fleet, which was "middle of the road" in 2006, turned in the best performance in 2007 (though still bad). In summary, most of the deterioration of economic performance in the overall active Gulf shrimp fleet in 2007 was driven by Texas vessels, followed by Florida vessels. Alabama, Mississippi, and Louisiana vessels contributed only marginally to the drop. Similarly, the bulk of the improvement in 2008 is due to the Texas and Florida fleets.

Gulf shrimp vessels. In 2008, the average vessel in most categories was again generating a positive cash flow, but making a small negative economic return (negative 5%), similar to 2006. Yet due to a drop in government transfer payments, the return on equity, nearly zero in 2006, was negative 9% in 2008, up from negative 20% in 2007.

Oddly---once again---the improvement in the financial situation of the average vessel comes *in spite of* a clear deterioration of the economic environment, as defined by shrimp and fuel prices. In 2007, the effective economic environment actually improved somewhat from 2006 as shrimp prices increased proportionally more than fuel prices. Yet vessels did not expand production; on the contrary, they seemed to reduce effort. As a result, their fairly constant fixed costs led to a negative cash flow and large negative net revenues and returns.[79] In 2008, the average shrimp price increased by 11%, while the fuel price surged by almost 30%. Since operations (as defined by landings, fuel use, and costs) stayed roughly the same as in 2007, the 30% fuel price increase outweighed the extra revenue due to a higher shrimp price. Hence, the improvement in the financial situation in 2008 was due primarily due to the cutting of fixed costs, something the average vessel failed to do in 2007. A somewhat better fuel efficiency (higher catch per gallon of fuel used) also contributed to the improvement.

[79] While the descriptive look at the data could not solve the issue, we hazarded some possible explanations. The negative cash flow in 2007 presented a major operational problem. A diesel "fill-up" for an average Gulf shrimp vessel would have run over $34,000 in 2007. If cash was tight, such an "investment" is hard to justify for an entrepreneur herself, much less for a creditor to an industry faced with bankruptcies and repossessions. With the liquidity constraint implied by a negative cash flow and after many marginal years, the average vessel might simply not have had the ability to exploit the improvement in the shrimp price leading to the cut in overall effort An alternative explanation could be that harvesting additional shrimp would not have been profitable anymore, and that liquidity did not pose a problem. Such a situation might occur if the amount of fuel needed per pound of catch increased with the cumulative catch (e.g. if vessels had to travel farther from port to find productive shrimp stocks). In such a scenario, the high price of fuel might limit total catch in a manner that is not obvious from aggregate, annual data.

6. Conclusion

The general conclusion of this report is that the financial and economic situation in 2008 somewhat improved from the dismal 2007 for the average vessels in all of the evaluated categories. The improvement did not return the fishery to its level of economic performance in 2006, which at the time we referred to as "bleak." With few exceptions, the net cash flow for the average vessel turned positive again, but the negative net revenue from operations and the high "losses" continue to be non-sustainable. The results explain the continued shrinking of the industry.

Vessels in the active and inactive Gulf shrimp fleets were, on average, 67 feet long, weighed 100 gross tons, were powered by 507 hp motor(s), and were built in 1986. Seventy-seven percent of the vessels have steel hulls and 58% used a freezer for refrigeration. The average market value of these vessels was $165,101 in 2008. The average original purchase price was $226,638. The outstanding loans averaged $61,274, leading to average owner equity of $103,828.

Based on the sample, 83% of the federally permitted Gulf shrimp fleet was actively shrimping in 2008. Of these 383 active Gulf shrimp vessels in the sample, just over half (52%) were owner-operated. On average, these vessels burned 38,619 gallons of fuel, landed 69,246 lbs of shrimp, and received $3.40 per pound of shrimp. Non-shrimp landings added a trivial amount to cash flow, indicating that the federal Gulf shrimp fishery was very specialized. The average total cash outflow was $236,446, of which $119,066 was due to fuel expenses alone. The expenses for hired crew and captains were on average $51,277 which indicates the importance of the industry as a source of wage income. The resulting average net cash flow was $3,537 but had a large standard deviation. Hence, we cannot state with 95% certainty that the average net cash flow was more than zero in 2008 for the population of active Gulf shrimp vessels. The median net cash flow was $5,717. All of these net cash flow numbers were negative in 2007.

Based on the income statement for active Gulf shrimp vessels, the average fixed costs accounted for just under a fifth of operating expenses (19.2%), labor costs for just under a quarter (24.2%), and the non-labor variable costs for over half (56.6%). The fuel costs alone accounted for 48.5% of total operating expenses in 2008. It should be noted that the labor cost category in the income statement includes both the actual cash payments to hired labor and an estimate of the opportunity cost of owner-operators' time spent as captain. The average net revenue from operations was negative $8,666, and was statistically different and less than zero in-spite of a large standard deviation. The economic return to Gulf shrimping was negative 5%. Including non-operating activities, this led to an average statistically significant loss before taxes of $10,034 for the vessel owners and a return on equity of negative 9%.

The average inactive Gulf shrimp vessel was generally physically smaller and less powerful; had a lower market value; was originally purchased for only $99,417; and only

6% of these vessels had hull insurance. The average net cash flow was negative $9,328, and, unlike for the active Gulf shrimp fleet, we are 95% certain that the average net cash flow for inactive vessels was less than zero. Fixed costs accounted for over 95% of the total operating expenses of $9,555. The average economic return was negative 12% and the return on equity was negative 19%.

When looking at differences among states for active Gulf shrimp vessels, we note that the average vessel in all states exhibited negative rates of return in 2008. The Alabama and Mississippi fleets (which are reported jointly due to small sample sizes) was the only group of vessels with a negative cash flow (negative $15,000) and generated a negative net revenue from operations of $27,000, the largest loss among all the states. As a result, they had the worst average returns with a negative 10% economic return and, due to their high leverage ratio, a negative 20% return on equity. The Florida and Louisiana fleets generated an economic return of negative 6% and negative 5%, respectively. The Louisiana fleet had the largest government payments and generated the "highest" return on equity, negative 3%. Texas vessels almost broke even with a negative 1% economic return, but the small negative economic return was amplified into a negative 8% return on equity due to a high leverage ratio and minimal government payments.

When comparing results for 2008, 2007, and 2006 for active Gulf shrimp vessels, we note that the average vessel characteristics effectively did not change. This is somewhat surprising given the number of vessels leaving the industry (terminated permit) or vessels turning inactive. However, major, statistically significant changes were seen in the balance sheet and among vessel operations. While the average market value of a vessel stayed roughly the same over time, the average liabilities decreased by $10,617 from 2006 to 2007 and by an additional $25,184 in 2008. The timing, magnitude, and significance of this drop are eerily similar to the major deleveraging of the economy brought about by the world financial crisis. Since the reduction in liabilities was greater than the very minor reduction in the value of the assets, the average owner's equity---somewhat paradoxically given the state of the fishery---actually increased from $88,340 in 2006 to $114,842 in 2008. It should be mentioned that this wealth increase was purely 'book value,' since it was embodied in the vessel.

Between 2007 and 2008, fuel and shrimp prices significantly increased, with only a moderate decrease in fuel use. The catch remained, statistically speaking, the same. In 2008, the average fuel expenses were significantly higher than before. To compensate, and unlike in 2007, the shrimpers were able to reduce in a statistically significant manner average expenses for major repairs, overhead excluding loan payments, loan interest payments, and new investments in 2008. Expenses for other supplies, crew and captain, regular maintenance, and principal payments also decreased in magnitude, but the declines were not statistically significant. Turning to the income statement, revenue, expenses, and net revenue from operations did not significantly change when comparing 2006 and 2008, though for both these years the numbers were significantly higher than in 2007. Both in 2006 and 2008, net revenue from operations was roughly negative $8,000, though the composition of costs had changed. Fuel accounted for 'only' 42.9% of all expenses in 2006 and rose to 48.5% in 2008. Fixed costs fell and accounted for 19.2% of

total expenses, down from 23.1% in 2006. The economic return was negative 4% in 2006 and negative 5% in 2008. In contrast, the return on equity was negative 1% in 2006 and negative 9% in 2008 due to a drop in government transfer payments.

The effective price environment for shrimpers substantially improved from 2006 to 2007 due to a 21% increase in the price of shrimp and only a 16% increase in fuel price. From 2007 to 2008, the average price of shrimp increased by 11%, while the price of fuel surged by almost 30%. As a result, the economic conditions deteriorated substantially in 2008. Paradoxically, the financial situation of the average vessel moved in the opposite direction of the economic environment. In 2007, in spite of improvements in the economic environment, vessels did not expand production. On the contrary, they seemed to reduce effort. As a result, their fairly constant fixed costs led to a negative cash flow and large and negative net revenues and returns. In 2008, as the economic environment deteriorated mostly due to fuel prices and operations (as defined by landings, fuel use, costs) stayed roughly the same as in 2007, the cash flow, net revenues, and returns improved mostly due to the cutting of fixed costs, something the average vessel failed to do in 2007.

These results are averages and hence hide the variation that clearly exists within all fleets and all categories. Although the financial situation for the average vessel is bleak, some vessels are profitable.

Appendix 1: 2008 Survey Instrument

OMB Control # 0648-0476 Expires 04/30/2010

2008 Annual Economic Survey of Federal Gulf Shrimp Permit Holders

Permit owner name: «Primary_Mailing_Recipient» Permit #: SPGM-«Permit»

Vessel name: «Vessel» Vessel ID: «VESID»

Even if this vessel was **inactive** in 2008 please complete this survey (especially Q7, Q8, and Page 2).

Enter "**0**" if you did not have any expenses in a category. **Do not leave blank!**

Total 2008 Expenses:

- On this page we would like you to enter the total **financial expenses** (actual dollar payments) you incurred during 2008 for the operation and keeping of the vessel listed above.
- For each question enter the **sum of all 2008 expenses**.
- Please **consult the detailed instructions** if you are unsure about any question.

1. Is the owner also the captain of this vessel? ☐ Yes ☐ No

2. If owner is captain, is the owner paid a captain's share? ☐ Yes ☐ No ☐ N/A

If Yes, total amount of captain's share: $ _ , _ _ _ , _ _ _ .00

3. Total amount paid to **HIRED** crew and captain(s) of this vessel: $ _ , _ _ _ , _ _ _ .00
(Not to Owner! For example: from IRS Form(s) 1099-MISC or equivalent)

4. Total amount paid for the fuel used by this vessel in 2008: $ _ , _ _ _ , _ _ _ .00

5. a) Estimated average price of fuel in 2008: $ _ . _ _ per gallon

b) Total amount of fuel purchased: _ _ _ , _ _ _ , _ _ _ gallons

6. Total amount paid for all ***trip related*** supplies or expenses (other than fuel): $ _ , _ _ _ , _ _ _ .00
(For example: ice, groceries, oil and lubricants, freezing, packaging, and cleaning supplies)

7. a) Total amount paid for any vessel maintenance, repair, replacement, new purchase or upgrade (including engine, gear, electronics, etc.) $ _ , _ _ _ , _ _ _ .00

b) The answer to Question 7. a) includes (check all that apply):

☐ Maintenance or regular repairs ☐ Major repairs or haul-out ☐ New purchase or upgrade

8. Overhead applicable to this vessel (**include Loan Payments and Insurance Premium**; exclude depreciation and income taxes): $ _ , _ _ _ , _ _ _ .00
(For example: loan payments, insurance, dockage, licenses, (share of) rent, utilities, prof. services, truck expenses)

9. **Total 2008 Expenses** (the above entries should sum to this value): **$ _ _ , _ _ _ , _ _ _ .00**

Other Important Economic Information (permit #: SPGM-«Permit»):

10. Vessel insurance in 2008 (check all that apply): ☐ None ☐ Hull ☐ P&I

If Hull insured, enter coverage level if vessel is lost: $ _ _, _ _ _, _ _ _.00
(do not enter monthly or annual insurance premium)

11. Appraised value of this vessel (if insured) or best estimate of this value (if not insured):

a) Market value of vessel including permit (anytime in 2008): $ _ _, _ _ _, _ _ _.00

b) Market value of vessel without permit (anytime in 2008): $ _ _, _ _ _, _ _ _.00

c) Original purchase price of vessel: $ _ _, _ _ _, _ _ _.00
(estimate original value if gift or self-built)

12. Did you have any loan(s) on your vessel at any time during 2008: ☐ Yes ☐ No

If Yes: a) Total amount you still owe at ***end of*** 2008: $ _ _, _ _ _, _ _ _.00

b) Total loan payments in 2008: $ _ _, _ _ _, _ _ _.00

Please split b) into: c) Interest paid in 2008: $ _ _, _ _ _, _ _ _.00

d) Principal repaid in 2008: $ _ _, _ _ _, _ _ _.00

13. Depreciation of vessel as claimed for tax purposes (2008): $ _ _, _ _ _, _ _ _.00

14. During 2008 this vessel was active in (check all that apply):
☐ Shrimp Fishery ☐ Other Commercial Fisheries ☐ Non-Fishing Income Activities ☐ Not Active

15. Total gross revenue generated by this vessel in commercial fisheries **OTHER than shrimp** in 2008 (if none enter "0") : $ _ _, _ _ _, _ _ _.00

16. Government payments received for this vessel in 2008; for example due to imports and low shrimp prices (tariff money; trade assistance adjustment payments) or hurricanes/disaster relief (if none enter "0"): $ _ _, _ _ _, _ _ _.00

I certify that the information contained on this form is accurate and complete to the best of my knowledge:

_____ _____
Signature of person completing report Date

_____ (_____)_____
Printed name of person signing report Phone number

Please return this completed form in the enclosed prepaid envelope!
[Mail to: NMFS; Miami Lab; P.O. Box 491500; Key Biscayne, FL 33149]

Thank You!

Other Questions (voluntary)
1. Would you like to receive future economic surveys in Vietnamese? ☐ Yes ☐ No
2. Would you like to receive the results (2008 fact sheet) when they becomes available? ☐ Yes ☐ No
3. Please use the reverse side or a separate piece of paper for any comments. We appreciate any comments concerning this survey effort and any ideas on how to improve or simplify it.

Appendix 2: 2008 Survey Instructions

Detailed Instructions

Please check that your information at the top of Page 1 is correct. If not, please clearly print the correct information in the white space.

Page 1 – Total 2008 Expenses

On **Page 1** we would like you to enter the total financial expenses you incurred during 2008 for the operation and keeping **of your vessel** with the registration number listed at the top of the page. This should correspond to actual dollar payments made. For each question enter the sum of all 2008 expenses in that category. If you had **NO expenses in a category, please enter "0"** and do not leave any spaces blank.

- Please be comprehensive: **Account for all the expenses** incurred by this boat in 2008 on **Page 1**.
- Please **avoid double counting**: Any expense should appear only a single time on **Page 1**.
- If an expense benefits this vessel as well as other vessel(s) and/or business operations (such as processing), **only list the share of the expense** that can be assigned to this vessel.
- Feel free to round numbers to the nearest $100, such as entering $ 3,600.00 rather than $ 3,643.00.

Question 1: Check the YES box, if you (the owner) also act as captain for this vessel. Check the NO box if you hired captain(s) to operate this vessel.

Question 2: If you checked NO on Question 1, check N/A (not applicable). Check the YES box, if you separately account for your income ***as captain*** (as opposed to *as owner*, i.e. business profit). If you checked Yes, enter the total amount you paid yourself on the following line. If you do not pay yourself a captain's share, simply check the No box and continue with question 4.

Question 3: Enter the sum of all hired crew and captains' shares paid during 2008. This should reflect the amount the crew and captain(s) actually received, including any bonuses, but excluding any contributions she/he made to cover operating costs. DO NOT include amounts paid to the owner!

Question 4: Enter the total amount spent on fuel in 2008. The total amount should reflect the actual amount paid for the fuel used by this vessel; including those portions "paid" out of the crew's or captain's shares.

Question 5: **a)** Please estimate, as best you can, the average price per gallon you paid for fuel in 2008 (in dollars and cents per gallon). **b)** Enter the total number of gallons of fuel you purchased in 2008 in order to operate this vessel and all its equipment (such as generators and freezers). If this number is not available, then divide the amount entered in Question 4 by the estimated price per gallon entered in a) and enter this amount in the space provided.

Question 6: Enter the sum of all remaining expenses incurred on a 'per fishing trip' basis in 2008. This should exclude all amounts already listed in the above questions, i.e. amounts paid to crew,

captain or fuel. Please sum all your expenses for: ice, groceries, oil and lubricants, freezing and packaging supplies, gloves, processing, storage, cleaning supplies or services, and any other trip related expense.

Question 7: **a)** Enter the total 2008 expenses, not already listed above, related to the vessel (hull and all) and associated equipment, such as fishing gear (nets, trawl doors, etc), engine(s), freezers and electronics. Include all expenses for maintenance, repair, replacement, upgrades and new purchases. Also include haul-outs, rebuilds, retrofits, etc.

b) This question asks about the type of expenses that are included in Question **7. a).** Please check all the boxes that apply. Check the first box if some or all the expenses listed in 7.a) were for normal maintenance or regular repairs and repeated replacements (such as worn out nets). Check "Major repairs and haul-out" if you incurred expenses in 2008 that occur less than annually, include haul-outs, repairs during haul-outs, and other major repairs or replacement; or unusual expenses resulting from unexpected events such as hurricanes, accidents or theft. Check "New investments or upgrades" if you spent money on the vessel that extend its functionality, such as increases in engine power, new electronic systems, increases or improvements to fishing gear, etc.

Question 8: Enter the total amount of overhead applicable to this vessel. Typical overhead expenses include: Dockage/mooring, rent, utilities, insurance, loan payments, commercial fishing licenses and permits, property taxes and other fees, (share of) car or truck expenses, (share of) office expenses, (share of) accountant, lawyer, other professional services fees, and any other annual expenditure paid by the vessel (not already included in Questions 1 through 7). **Very Important on Question 8:**

- ***Include***: **Loan Payments** (interest and principal) and **Insurance** premiums for the vessel!
- ***Exclude*****: Depreciation** and **Income Tax**!
- If an overhead expense benefits this vessel AND other vessel(s) and/or business operations (such as processing), then only list the **share of the expense** that can be assigned to this vessel.

End of Page 1: Please make sure you have accounted for all expenses associated with the operation and keeping of this vessel in 2008. **If there are expenses not yet accounted for, please add them to the category they fit best:**

- If they are trip-related, add them to Question 6.
- If they relate to the vessel, gear and equipment, add them to Question 7.
- If they fit in neither of the above categories, add them to Question 8 (overhead or business related costs).

Question 9: Enter the total financial expenses you incurred during 2008 for the operation and keeping of this vessel. This number should equal the sum of all $ dollar expenses entered on Page 1.

Page 2 – Other Important Economic Information

Question 10: Check the boxes for how your vessel was insured in 2008. Check all that apply or 'None' if your vessel was not insured. **If the hull was insured**, then enter the total amount the hull was insured for, i.e. the maximum dollar amount the insurance would have paid in case of a total loss of the vessel. Do not enter your monthly or yearly insurance premiums or payments!

Question 11: Enter the market value of your vessel in 2008. Please enter the most accurate number you have. If the vessel is insured, please consult your insurance records for these values. Otherwise, please give us your best estimate or guess. For market value including permit **(a)**, please enter the approximate amount you would expect to receive if you had sold your vessel and federal Gulf/S. Atlantic shrimp permit(s) together during 2008. For market value without permit **(b)**, please enter the amount you would expect to receive if you had sold your vessel in 2008 without the federal Gulf/S. Atlantic shrimp permit(s). **c)** Enter your purchase price of the vessel. If the vessel was a gift or self-built please estimate the approximate value at the time.

Question 12: Check YES if you had any outstanding loans on your vessel **at any time during 2008**. If Yes, enter: **a)** the amount of principal still needing to be paid back **at the end of 2008**; and **b)** your total loan payments for this vessel in 2008. Please split your total loan payments entered under b) into: **c)** the total sum of interest paid in 2008; and **d)** the total amount of principal repaid in 2008. Please estimate if you do not have the exact numbers.

Question 13: Enter the amount of depreciation you claimed for your vessel on your 2008 tax return.

Question 14: Please indicate in what fisheries or other income activities your vessel participated in during 2008. Please **check all the boxes that apply**. Check "Shrimp Fishery" if this vessel caught shrimp anywhere for commercial sale. Check "Other Commercial Fisheries" if your vessel participated in any commercial fisheries other than shrimp. Check "Non-Fishing Income Activities" if this vessel was used to generate income besides commercial fishing (oil work, charter, etc.).
Check "Not Active" if your vessel did not generate any revenue or income during 2008.

Question 15: Enter the total sum of all revenue generated by this vessel in 2008 in commercial fisheries **other than shrimp**. This can include revenue generated in the Gulf of Mexico as well as the rest of the Atlantic Ocean and elsewhere; from State, Federal or international waters; offshore or inshore; etc. It should not include any revenue generated by the sale of shrimp (caught anywhere).

Question 16: Enter the sum of all payments received by this vessel in 2008 from federal, state, and local governments. Such as payments resulting from low shrimp prices and the dumping of imports (for example, tariff monies received from U.S. Customs, trade assistance adjustment payments received from the U.S. Department of Agriculture, "kickbacks", incentives, etc.) and disaster relief (monies received for hurricane recovery).

If you have any questions, please call Todd Glodek or Christopher Liese at (305) 361-4263.

PAPERWORK REDUCTION ACT STATEMENT:

Public reporting burden for this collection of information is estimated to average 45 minutes per response, including the time for reviewing the instructions, searching the existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other suggestions for reducing this burden to Christopher Liese, National Marine Fisheries Service, Southeast Fisheries Science Center, 75 Virginia Beach Drive, Miami, Florida 33149. Information submitted will be treated as confidential in accordance with NOAA Administrative Order 216-100. Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection displays a currently valid OMB Control Number. This reporting is required for permit renewal. NMFS requires this information for the conservation and management of marine fishery resources. These data will be used to evaluate the economic effects of proposed regulations in the fishery.

Appendix 3: 2008 Survey Other Materials

Fishery Bulletin:

Southeast Fishery Bulletin

National Marine Fisheries Service, Southeast Regional Office, 263 13th Avenue South, St. Petersburg, Florida 33701

FOR INFORMATION CONTACT:
(See specific contacts for each program below)

February 20, 2009
FB09-013

Notice of Federal Data Collections in the Gulf Shrimp Fishery in 2009

NOAA Fisheries Service is working to improve the quality of information available for the Gulf of Mexico shrimp fishery. Having appropriate and current data enables the Gulf of Mexico Fishery Management Council and NOAA Fisheries Service to carry out responsive and timely fisheries management.

Since the implementation of the shrimp permit moratorium, NOAA Fisheries Service's Southeast Fisheries Science Center started several new data collections. This bulletin provides federal shrimp permit holders an overview of the data collection requirements related to the federal Gulf of Mexico moratorium shrimp permit.

Federal Gulf shrimp permits are renewed annually. The application for renewal needs to be received within one year of the permit's expiration date. The permit office can be reached by calling (877) 376-4877 (toll free). Permit related information also can be found on the Web at: http://sero.nmfs.noaa.gov.

Besides the annual permit renewal, **every federal shrimp permit holder is required** to complete and submit the following:

1. "Annual Landings Form" (Gulf of Mexico Shrimp Federal Permit Reporting Form):
This one-page form collects total annual shrimp landings in pounds and dollars by shrimp species harvested from state and federal waters of the Gulf of Mexico. This data collection is being continued this year, asking for 2008 information. In subsequent years, the request will continue to be for the previous year.

2. Gulf Shrimp Vessel & Gear Characterization Form:
This form collects information about total annual fishing effort (such as number of trips, days at sea, and crew), and about the gear most commonly used during the past year (such as details on typical gear configuration, bycatch reduction device and turtle excluder device used, and on-board electronics). This year, information will be requested for 2008. In subsequent years, the request will continue to be for the previous year.

Both of these forms are required for all permit holders. Please direct any questions to Rebecca Smith at (409) 766-3783. Forms are expected to be mailed in March 2009. The due date is April 30, 2009.

In addition to the above forms, **federal shrimp permit holders may be selected** to participate in one or more additional data collections. Only a limited number of vessels will be sampled to minimize the overall reporting burden on shrimp fishermen. **Federal shrimp permit holders will be notified if selected for any of the following data collections. If selected, participation is required for permit renewal.**

3. Annual Economic Survey of Federal Gulf Shrimp Permit Holders:
If selected, federal shrimp permit holders are required to provide data about operating expenses and the cost of owning shrimp vessels to determine the economic and social effects of regulations and other factors affecting the profitability of the fishery. The two-page survey will be sent annually to a random sample of about 30 percent of permitted vessels. Please direct any questions to Christopher Liese at (305) 365-4109. Selection letters are expected to be sent out in March 2009. The information requested in this survey should be readily available from tax or similar forms. The due date is April 30, 2009. Results for 2006 can be found on the Web at:
http://www.sefsc.noaa.gov/PDFdocs/ShrimpEconTM584.pdf

4. Electronic Logbook (ELB) Program:
If selected, a vessel will be equipped with an

electronic logbook provided by NOAA Fisheries Service. The ELB program collects information regarding the geographic location of effort. The memory units will be changed two to four times during the year, at no cost to the fisherman. The contacts for the program are Benny Gallaway or John Cole at LGL Ecological Research Associates, Inc., (979) 775-2000. Selection is an ongoing process, and notification is through the mail.

5. Onboard Observers Program:
If selected, federal shrimp permit holders will obtain a Commercial Fishing Vessel Examination decal and carry a NOAA Fisheries Service-approved observer on selected trips. Observers collect catch, effort, and other scientific information, as necessary. Please direct any questions to Elizabeth Scott-Denton at (409) 766-3571. Sampling is conducted for three periods in 2009, starting in January, May, and September. Notification is by certified letter.

6. Trip Interview Information:
If selected, federal shrimp permit holders need to provide information for any fishing trip, as requested by authorized statistical reporting agents of the NOAA Fisheries Service, including, but not limited to, vessel identification, gear, effort, amount of shrimp caught by species, shrimp condition (heads on/heads off), fishing areas and depths, and the person to whom the shrimp was sold.

Thank you for your past and future cooperation with these data collection efforts. The information is critical for more responsive and timely management of the fishery. All individual information will be treated strictly confidential.

How Can We Improve These Fishery Bulletins?
If you have any suggestions on how we may improve future fishery bulletins, please contact:
Kim Amendola, Communication Specialist
Phone: (727) 551-5707
FAX: (727) 824-5320

If you would like to receive these bulletins via e-mail as soon as they are published, please e-mail us at sero.communications.comments@noaa.gov. You will still receive a print copy of these bulletins through the mail.

National Marine Fisheries Service
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

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Cover Letter:

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Southeast Fisheries Science Center
75 Virginia Beach Dr.
Miami, Florida 33149

March 10, 2009

«Primary_Mailing_Recipient»
«Street_Address»
«City», «State» «Zipcode»

Dear Permit Owner:

Together with the introduction of the permit moratorium, the NOAA Fisheries Service started an **Annual Economic Survey of Federal Gulf Shrimp Permit Holders**. Each year we will randomly select about 30% of permitted vessels in order to collect data about operating expenses and the costs of owning and maintaining shrimp vessels.

You have been randomly selected to participate in this year's survey. Enclosed is a form asking about expenditures you made in 2008 for your vessel "«Vessel» with the registration number «VESID». **You must complete and submit this survey in order to be eligible for permit renewal**. Please look at the enclosed material for more details on this survey effort and why we need to collect this data.

Please complete the enclosed survey form and return it to us by April 30, 2009. A pre-addressed, postage-paid envelope is enclosed. All information you supply is confidential and will be combined with information from other fishermen to present an overall view of the economic status of the fishery and the problems it faces. If you wish receive the survey results once the data have been analyzed, please mark the appropriate check box on the survey questionnaire.

By accurately completing this survey, you will ensure that management decisions are based on correct information about the economic effects of regulations on fishermen. Please print all requested information clearly. A form with incomplete or unclear information cannot be entered into the database and will be returned for clarification. If you have any questions or require help filling out the survey, please contact Todd Glodek or Christopher Liese at (305) 361-4263.

Thank you very much for your cooperation with this data collection and Good Luck this shrimping season.

Sincerely yours,

Christopher Liese
Resource Economist

SPGM-«Permit»

Appendix 4: Data Cleaning Regressions (2008)

Regression to estimate missing market values of vessels

Dependent variable: Market value (log)
Number of observations: 469
F Value (Pr > F)): 182.93 (<.0001)
R-Squared: 0.6639

Variable	Parameter	Standard Error	t Value
Intercept	4.837	0.649	7.45
Value bought (log)	0.463	0.037	12.40
Horse power (log)	0.349	0.091	3.85
Age (log)	-0.253	0.067	-3.80
Hull insurance (dummy)	0.341	0.079	4.33
Texas (dummy)	-0.353	0.062	-5.74

Regression to estimate missing depreciation of vessels

Dependent variable: Depreciation
Number of observations: 334
F Value (Pr > F)): 70.57 (<.0001)
R-Squared: 0.5183

Variable	Parameter	Standard Error	t Value
Intercept	-2,542.726	4,814.048	-0.53
Value bought	0.060	0.005	11.70
Length	39.668	93.936	0.42
Horse power	-3.535	6.372	-0.55
Fuel use	0.064	0.045	1.42
Texas (dummy)	-4,521.252	2,021.163	-2.24

Regression to estimate value of owner's captain labor

Dependent variable: Captain's share (log)
Number of observations: 71
F Value (Pr > F)): 147.68 (<.0001)
R-Squared: 0.6816

Variable	Parameter	Standard Error	t Value
Intercept	2.349	0.602	3.90
Crew share (log)	0.708	0.058	12.15

Regression to estimate equipment cost breakup

Dependent variable: Equipment expenses
Number of observations: 363
F Value (Pr > F)): 9.31 (<.0001)
R-Squared: 0.0492

Variable	Parameter	Standard Error	t Value
Intercept	19,308	1,620	11.91
Major repair (dummy)	11,648	2,846	4.09
New investment (dummy	1,947	3,139	0.62

Appendix 5:
Tables with 2008 Financial and Economic Results (Averages)

Table 14: F&E Results: Averages for the Total Fleet by Fishery

(in USD unless otherwise noted)	Total Fleet	Total Fleet		
	Total Fleet	Other Fish	S. Atlantic Shrimp	Gulf Shrimp
# of Observations	497	9	20	463
Vessel Characteristics				
Length (feet)	67	69	75	67
Gross tons	101	111	116	100
Horse power	511	648	523	507
Year built	1986	1991	1988	1986
Hull material - Steel (%)	76%	89%	65%	77%
Refrigeration - Freezer (%)	57%	11%	50%	58%
Fuel capacity (gallons)	12,620	12,079	11,825	12,622
State - Florida (%)	15%	0%	35%	15%
State - Alabama or Mississippi (%)	14%	11%	0%	15%
State - Louisiana (%)	26%	11%	0%	28%
State - Texas (%)	38%	11%	0%	41%
Balance Sheet (end of 2008)				
Assets - Market value of vessel	**204,786**	**1,582,301**	**396,705**	**165,101**
Original value of vessel (at purchase price)	*236,988*	*594,849*	*342,308*	*226,638*
Implicit permit value	*44,567*	*864,125*	*147,889*	*21,242*
Liabilities - Loan on vessel	**71,141**	**501,020**	**79,620**	**61,274**
% of vessels with loan	*42%*	*67%*	*55%*	*41%*
Equity - Owner's equity in vessel	**133,645**	**1,081,282**	**317,085**	**103,828**
Insurance coverage (% of vessels / % of assets)	*34% / 49%*	*67% / 40%*	*55% / 52%*	*33% / 52%*
Vessel Operation (2008)				
Actively shrimping (%)	81%	0%	100%	83%
Owner-operator (%)	49%	22%	40%	50%
Shrimp landed (pounds)	58,110	0	117,856	57,286
Shrimp price per pound (vessel basis / pound basis)	3.27 / 3.30	-	2.27 / 2.25	3.32 / 3.40
Annual fuel use (gallons)	32,020	33,399	40,566	31,948
Fuel price per gallon (vessel basis / gallon basis)	3.15 / 3.10	3.50 / 3.63	3.19 / 3.19	3.15 / 3.08
Fuel efficiency I (vessel basis / gallon basis)	2.8 / 1.8	-	2.9 / 2.9	2.8 / 1.8
Fuel efficiency II (vessel basis / gallon basis)	7.72 / 6.00	-	6.64 / 6.53	7.78 / 6.09
Cash Flow (2008)				
Inflow - Total	**214,702**	**790,426**	**381,505**	**198,625**
Shrimp landings	192,046	0	265,094	194,697
Non-shrimp landings	20,037	786,659	116,411	1,188
Government payments received (shrimp related)	2,620	3,767	0	2,740
Outflow - Total	**210,367**	**628,078**	**334,596**	**197,310**
Fuel	99,198	121,310	129,238	98,498
Other supplies	17,271	40,893	31,276	16,393
Crew & captain (hired)	48,107	275,561	89,006	42,438
Regular maintenance (vessel and gear)	17,032	38,878	29,457	15,517
Major repair and haul-out	3,437	5,305	5,535	2,903
Overhead (excluding loan payments)	11,992	58,834	32,930	10,154
Interest payments made (on vessel loans)	4,653	39,056	4,416	3,899
Principal payments made (on vessel loans)	8,258	47,775	11,943	7,173
New investments and upgrades (in vessel)	419	466	793	334
Net Cash Flow	**4,336**	**162,348**	**46,909**	**1,314**

Table 14: F&E Results: Averages for the Total Fleet by Fishery, cont.

	Total Fleet	Total Fleet		
	Total Fleet	Other Fish	S. Atlantic Shrimp	Gulf Shrimp
# of Observations	497	9	20	463
Income Statement (2008)				
Operating Activities				
Revenue (from commercial fishing)	**212,082**	**786,659**	**381,505**	**195,885**
Expenses	**216,916**	**589,319**	**352,960**	**204,696**
Variable costs - Supplies	*53.7%*	*27.5%*	*45.5%*	*56.1%*
Fuel	45.7%	20.6%	36.6%	48.1%
Other supplies	8.0%	6.9%	8.9%	8.0%
Variable costs - Labor	*25.3%*	*46.8%*	*28.8%*	*24.0%*
Crew & captain (hired)	22.2%	46.8%	25.2%	20.7%
Owner's vessel time	3.1%	0.0%	3.5%	3.3%
Fixed costs	*21.0%*	*25.7%*	*25.8%*	*19.8%*
Regular maintenance (vessel and gear)	7.9%	6.6%	8.3%	7.6%
Major repair and haul-out	1.6%	0.9%	1.6%	1.4%
Depreciation	6.0%	8.2%	6.5%	5.9%
Overhead (excluding loan payments)	5.5%	10.0%	9.3%	5.0%
Net Revenue from Operations	**(4,834)**	**197,340**	**28,545**	**(8,811)**
Non-Operating Activities				
Interest payments made (on vessel loans)	4,653	39,056	4,416	3,899
Government payments received (shrimp related)	2,620	3,767	0	2,740
Net Revenue (before taxes)	**(6,866)**	**162,051**	**24,129**	**(9,970)**
Owner's vessel time	*6,815*	*0*	*12,520*	*6,774*
Depreciation	*13,064*	*48,537*	*22,996*	*12,018*

Table 15: F&E Results: Averages for the Total Fleet by State

(in USD unless otherwise noted)	Total Fleet				
	FL	AL+MS	LA	TX	Other
# of Observations	77	35 + 34	131	190	30
Vessel Characteristics					
Length (feet)	59	69	61	73	75
Gross tons	80	107	75	122	127
Horse power	387	535	492	549	611
Year built	1981	1988	1988	1985	1991
Hull material - Steel (%)	25%	77%	76%	96%	83%
Refrigeration - Freezer (%)	57%	55%	24%	81%	47%
Fuel capacity (gallons)	6,784	14,594	8,114	16,905	15,588
State - Florida (%)	100%	0%	0%	0%	0%
State - Alabama or Mississippi (%)	0%	100%	0%	0%	0%
State - Louisiana (%)	0%	0%	100%	0%	0%
State - Texas (%)	0%	0%	0%	100%	0%
Balance Sheet (end of 2008)					
Assets - Market value of vessel	**111,695**	**241,280**	**165,484**	**157,494**	**830,922**
Original value of vessel (at purchase price)	*150,125*	*286,768*	*177,812*	*269,229*	*399,655*
Implicit permit value	*6,158*	*23,810*	*20,905*	*26,000*	*343,893*
Liabilities - Loan on vessel	**27,018**	**96,224**	**43,820**	**74,216**	**226,521**
% of vessels with loan	*30%*	*43%*	*41%*	*47%*	*47%*
Equity - Owner's equity in vessel	**84,677**	**145,056**	**121,664**	**83,278**	**604,401**
Insurance coverage (% of vessels / % of assets)	*14% / 23%*	*45% / 62%*	*30% / 38%*	*35% / 58%*	*77% / 49%*
Vessel Operation (2008)					
Actively shrimping (%)	83%	81%	82%	82%	63%
Owner-operator (%)	43%	54%	73%	37%	27%
Shrimp landed (pounds)	49,041	57,664	53,556	64,226	63,567
Shrimp price per pound (vessel basis / pound basis)	3.63 / 3.02	3.19 / 3.56	2.36 / 2.49	3.85 / 3.89	2.69 / 2.60
Annual fuel use (gallons)	20,828	34,865	19,636	43,015	38,638
Fuel price per gallon (vessel basis / gallon basis)	3.14 / 3.19	3.27 / 3.17	3.29 / 3.15	3.00 / 3.01	3.28 / 3.32
Fuel efficiency I (vessel basis / gallon basis)	2.4 / 2.4	2.8 / 1.7	4.5 / 2.7	1.8 / 1.5	2.4 / 1.6
Fuel efficiency II (vessel basis / gallon basis)	8.67 / 7.10	8.35 / 5.89	8.45 / 6.78	6.79 / 5.81	6.15 / 4.28
Cash Flow (2008)					
Inflow - Total	**149,993**	**210,830**	**143,059**	**251,332**	**470,551**
Shrimp landings	147,952	205,474	133,195	249,803	165,517
Non-shrimp landings	1,056	2,035	3,020	1,134	304,177
Government payments received (shrimp related)	984	3,321	6,844	396	856
Outflow - Total	**148,377**	**223,574**	**134,501**	**248,671**	**427,788**
Fuel	66,426	110,635	61,876	129,471	128,248
Other supplies	11,321	14,869	15,184	19,889	30,593
Crew & captain (hired)	41,301	47,534	29,037	50,897	132,496
Regular maintenance (vessel and gear)	14,642	15,880	9,419	20,127	39,460
Major repair and haul-out	2,571	3,790	2,088	3,205	12,215
Overhead (excluding loan payments)	7,813	13,509	6,816	12,345	39,595
Interest payments made (on vessel loans)	1,250	6,431	3,138	4,482	17,001
Principal payments made (on vessel loans)	2,731	10,656	6,593	7,909	26,405
New investments and upgrades (in vessel)	323	271	350	346	1,775
Net Cash Flow	**1,615**	**(12,745)**	**8,559**	**2,662**	**42,762**

Table 15: F&E Results: Averages for the Total Fleet by State, cont.

	Total Fleet				
	FL	AL+MS	LA	TX	Other
# of Observations	77	35 + 34	131	190	30
Income Statement (2008)					
Operating Activities					
Revenue (from commercial fishing)	**149,009**	**207,509**	**136,215**	**250,936**	**469,695**
Expenses	**159,350**	**230,011**	**143,813**	**254,393**	**416,403**
Variable costs - Supplies	*48.8%*	*54.6%*	*53.6%*	*58.7%*	*38.1%*
Fuel	41.7%	48.1%	43.0%	50.9%	30.8%
Other supplies	7.1%	6.5%	10.6%	7.8%	7.3%
Variable costs - Labor	*30.1%*	*23.9%*	*26.5%*	*22.2%*	*32.9%*
Crew & captain (hired)	25.9%	20.7%	20.2%	20.0%	31.8%
Owner's vessel time	4.2%	3.2%	6.4%	2.1%	1.1%
Fixed costs	*21.1%*	*21.5%*	*19.9%*	*19.1%*	*29.0%*
Regular maintenance (vessel and gear)	9.2%	6.9%	6.5%	7.9%	9.5%
Major repair and haul-out	1.6%	1.6%	1.5%	1.3%	2.9%
Depreciation	5.4%	7.1%	7.1%	5.1%	7.1%
Overhead (excluding loan payments)	4.9%	5.9%	4.7%	4.9%	9.5%
Net Revenue from Operations	**(10,342)**	**(22,502)**	**(7,598)**	**(3,456)**	**53,292**
Non-Operating Activities					
Interest payments made (on vessel loans)	1,250	6,431	3,138	4,482	17,001
Government payments received (shrimp related)	984	3,321	6,844	396	856
Net Revenue (before taxes)	**(10,608)**	**(25,612)**	**(3,892)**	**(7,542)**	**37,146**
Owner's vessel time	*6,619*	*7,407*	*9,144*	*5,455*	*4,400*
Depreciation	*8,658*	*16,387*	*10,250*	*13,004*	*29,397*

Table 16: F&E Results: Averages for the Gulf Shrimp Fleet by State and by Activity Status

(in USD unless otherwise noted)	Gulf Shrimp Fleet				Gulf Shrimp Fleet	
	FL	AL+MS	LA	TX	Inactive	Active
# of Observations	70	35 + 33	130	189	80	383
Vessel Characteristics						
Length (feet)	57	70	62	73	59	68
Gross tons	76	108	75	122	75	105
Horse power	370	536	494	550	383	533
Year built	1980	1988	1988	1985	1979	1987
Hull material - Steel (%)	23%	76%	77%	96%	63%	80%
Refrigeration - Freezer (%)	56%	56%	25%	81%	39%	62%
Fuel capacity (gallons)	6,350	14,765	8,175	16,984	8,383	13,508
State - Florida (%)	100%	0%	0%	0%	16%	15%
State - Alabama or Mississippi (%)	0%	100%	0%	0%	15%	15%
State - Louisiana (%)	0%	0%	100%	0%	28%	28%
State - Texas (%)	0%	0%	0%	100%	41%	41%
Balance Sheet (end of 2008)						
Assets - Market value of vessel	**94,449**	**244,093**	**166,603**	**157,954**	**76,355**	**183,639**
Original value of vessel (at purchase price)	*126,281*	*290,147*	*179,102*	*269,860*	*99,417*	*253,212*
Implicit permit value	*5,445*	*24,253*	*21,019*	*26,000*	*9,165*	*23,479*
Liabilities - Loan on vessel	**21,447**	**97,639**	**43,968**	**74,609**	**25,258**	**68,796**
% of vessels with loan	*27%*	*44%*	*41%*	*47%*	*26%*	*45%*
Equity - Owner's equity in vessel	**73,002**	**146,453**	**122,635**	**83,345**	**51,097**	**114,842**
Insurance coverage (% of vessels / % of assets)	*14% / 25%*	*46% / 62%*	*30% / 38%*	*35% / 59%*	*6% / 11%*	*38% / 55%*
Vessel Operation (2008)						
Actively shrimping (%)	81%	82%	83%	83%	0%	100%
Owner-operator (%)	41%	53%	73%	38%	41%	52%
Shrimp landed (pounds)	39,091	58,512	53,968	64,566	30	69,246
Shrimp price per pound (vessel basis / pound basis)	3.80 / 3.32	3.19 / 3.56	2.36 / 2.49	3.85 / 3.89	2.01 / 1.78	3.33 / 3.40
Annual fuel use (gallons)	18,273	35,353	19,781	43,209	10	38,619
Fuel price per gallon (vessel basis / gallon basis)	3.14 / 3.20	3.28 / 3.17	3.29 / 3.15	3.00 / 3.01	3.04 / 2.99	3.15 / 3.08
Fuel efficiency I (vessel basis / gallon basis)	2.3 / 2.1	2.8 / 1.7	4.5 / 2.7	1.8 / 1.5	0.0 / 2.9	2.8 / 1.8
Fuel efficiency II (vessel basis / gallon basis)	8.88 / 7.10	8.35 / 5.90	8.45 / 6.79	6.79 / 5.81	0.00 / 5.23	7.78 / 6.09
Cash Flow (2008)						
Inflow - Total	**131,550**	**213,420**	**143,965**	**251,523**	**620**	**239,983**
Shrimp landings	129,724	208,496	134,220	251,124	53	235,354
Non-shrimp landings	743	1,716	2,906	1	0	1,436
Government payments received (shrimp related)	1,082	3,208	6,839	398	567	3,193
Outflow - Total	**130,755**	**226,590**	**135,438**	**249,333**	**9,948**	**236,446**
Fuel	58,436	112,185	62,331	130,035	30	119,066
Other supplies	8,925	15,047	15,273	19,920	56	19,806
Crew & captain (hired)	37,755	48,233	29,260	50,774	123	51,277
Regular maintenance (vessel and gear)	12,858	15,973	9,484	20,206	4,023	17,918
Major repair and haul-out	2,321	3,845	2,099	3,205	853	3,331
Overhead (excluding loan payments)	6,082	13,707	6,869	12,389	2,350	11,784
Interest payments made (on vessel loans)	1,284	6,525	3,148	4,506	732	4,561
Principal payments made (on vessel loans)	2,860	10,813	6,622	7,951	1,647	8,327
New investments and upgrades (in vessel)	233	261	352	348	134	376
Net Cash Flow	**795**	**(13,170)**	**8,527**	**2,190**	**(9,328)**	**3,537**

Table 16: F&E Results: Averages for the Gulf Shrimp Fleet by State and by Activity Status, cont.

	Gulf Shrimp Fleet				Gulf Shrimp Fleet	
	FL	AL+MS	LA	TX	Inactive	Active
# of Observations	70	35 + 33	130	189	80	383
Income Statement (2008)						
Operating Activities						
Revenue (from commercial fishing)	**130,468**	**210,213**	**137,126**	**251,125**	**53**	**236,790**
Expenses	**139,291**	**233,067**	**144,858**	**255,070**	**9,555**	**245,456**
Variable costs - Supplies	*48.4%*	*54.6%*	*53.6%*	*58.8%*	*0.9%*	*56.6%*
Fuel	42.0%	48.1%	43.0%	51.0%	0.3%	48.5%
Other supplies	6.4%	6.5%	10.5%	7.8%	0.6%	8.1%
Variable costs - Labor	*30.9%*	*23.9%*	*26.6%*	*22.1%*	*1.3%*	*24.2%*
Crew & captain (hired)	27.1%	20.7%	20.2%	19.9%	1.3%	20.9%
Owner's vessel time	3.8%	3.2%	6.4%	2.1%	0.0%	3.3%
Fixed costs	*20.7%*	*21.5%*	*19.9%*	*19.2%*	*97.8%*	*19.2%*
Regular maintenance (vessel and gear)	9.2%	6.9%	6.5%	7.9%	42.1%	7.3%
Major repair and haul-out	1.7%	1.6%	1.4%	1.3%	8.9%	1.4%
Depreciation	5.4%	7.1%	7.1%	5.1%	22.2%	5.7%
Overhead (excluding loan payments)	4.4%	5.9%	4.7%	4.9%	24.6%	4.8%
Net Revenue from Operations	**(8,824)**	**(22,854)**	**(7,732)**	**(3,945)**	**(9,502)**	**(8,666)**
Non-Operating Activities						
Interest payments made (on vessel loans)	1,284	6,525	3,148	4,506	732	4,561
Government payments received (shrimp related)	1,082	3,208	6,839	398	567	3,193
Net Revenue (before taxes)	**(9,026)**	**(26,172)**	**(4,041)**	**(8,053)**	**(9,667)**	**(10,034)**
Owner's vessel time	*5,331*	*7,516*	*9,214*	*5,484*	*0*	*8,189*
Depreciation	*7,583*	*16,559*	*10,329*	*13,058*	*2,119*	*14,085*

Table 17: F&E Results: Averages for the Active Gulf Shrimp Fleet by State

(in USD unless otherwise noted)	Active Gulf Shrimp	Active Gulf Shrimp Fleet			
		FL	AL+MS	LA	TX
# of Observations	383	57	27 + 29	108	156
Vessel Characteristics					
Length (feet)	68	58	72	63	75
Gross tons	105	78	116	79	128
Horse power	533	372	566	515	585
Year built	1987	1981	1989	1989	1987
Hull material - Steel (%)	80%	25%	80%	81%	98%
Refrigeration - Freezer (%)	62%	58%	61%	26%	88%
Fuel capacity (gallons)	13,508	6,613	15,998	8,775	18,141
State - Florida (%)	15%	100%	0%	0%	0%
State - Alabama or Mississippi (%)	15%	0%	100%	0%	0%
State - Louisiana (%)	28%	0%	0%	100%	0%
State - Texas (%)	41%	0%	0%	0%	100%
Balance Sheet (end of 2008)					
Assets - Market value of vessel	**183,639**	**90,378**	**272,643**	**189,264**	**177,903**
Original value of vessel (at purchase price)	*253,212*	*123,539*	*334,589*	*200,359*	*304,395*
Implicit permit value	*23,479*	*5,789*	*24,076*	*22,328*	*30,434*
Liabilities - Loan on vessel	**68,796**	**14,719**	**116,508**	**52,677**	**82,593**
% of vessels with loan	*45%*	*25%*	*50%*	*45%*	*51%*
Equity - Owner's equity in vessel	**114,842**	**75,659**	**156,135**	**136,587**	**95,310**
Insurance coverage (% of vessels / % of assets)	*38% / 55%*	*14% / 27%*	*54% / 67%*	*35% / 40%*	*42% / 62%*
Vessel Operation (2008)					
Actively shrimping (%)	100%	100%	100%	100%	100%
Owner-operator (%)	52%	44%	52%	77%	39%
Shrimp landed (pounds)	69,246	48,007	71,035	64,947	78,225
Shrimp price per pound (vessel basis / pound basis)	3.33 / 3.40	3.80 / 3.32	3.23 / 3.56	2.37 / 2.49	3.85 / 3.89
Annual fuel use (gallons)	38,619	22,437	42,929	23,810	52,345
Fuel price per gallon (vessel basis / gallon basis)	3.15 / 3.08	3.14 / 3.20	3.28 / 3.17	3.29 / 3.15	2.99 / 3.01
Fuel efficiency I (vessel basis / gallon basis)	2.8 / 1.8	2.3 / 2.1	2.8 / 1.7	4.5 / 2.7	1.8 / 1.5
Fuel efficiency II (vessel basis / gallon basis)	7.78 / 6.09	8.88 / 7.10	8.35 / 5.90	8.45 / 6.78	6.79 / 5.81
Cash Flow (2008)					
Inflow - Total	**239,983**	**161,428**	**258,996**	**173,020**	**304,702**
Shrimp landings	235,354	159,310	253,140	161,539	304,247
Non-shrimp landings	1,436	913	2,084	3,498	1
Government payments received (shrimp related)	3,193	1,205	3,772	7,983	454
Outflow - Total	**236,446**	**154,985**	**274,222**	**161,957**	**300,090**
Fuel	119,066	71,753	136,225	75,028	157,531
Other supplies	19,806	10,905	18,272	18,384	24,125
Crew & captain (hired)	51,277	46,243	58,569	35,221	61,497
Regular maintenance (vessel and gear)	17,918	13,667	19,010	11,317	23,401
Major repair and haul-out	3,331	2,818	4,558	2,511	3,509
Overhead (excluding loan payments)	11,784	5,601	16,494	8,197	14,591
Interest payments made (on vessel loans)	4,561	872	7,857	3,721	5,412
Principal payments made (on vessel loans)	8,327	2,984	12,958	7,156	9,607
New investments and upgrades (in vessel)	376	141	281	424	419
Net Cash Flow	**3,537**	**6,443**	**(15,226)**	**11,062**	**4,611**

Table 17: F&E Results: Averages for the Active Gulf Shrimp Fleet by State, cont.

	Active Gulf Shrimp	Active Gulf Shrimp Fleet			
		FL	AL+MS	LA	TX
# of Observations	383	57	27 + 29	108	156
Income Statement (2008)					
Operating Activities					
Revenue (from commercial fishing)	**236,790**	**160,223**	**255,224**	**165,037**	**304,248**
Expenses	**245,456**	**165,673**	**281,988**	**173,880**	**306,799**
Variable costs - Supplies	*56.6%*	*49.9%*	*54.8%*	*53.7%*	*59.2%*
Fuel	48.5%	43.3%	48.3%	43.1%	51.3%
Other supplies	8.1%	6.6%	6.5%	10.6%	7.9%
Variable costs - Labor	*24.2%*	*31.9%*	*24.0%*	*26.6%*	*22.2%*
Crew & captain (hired)	20.9%	27.9%	20.8%	20.3%	20.0%
Owner's vessel time	3.3%	4.0%	3.2%	6.4%	2.2%
Fixed costs	*19.2%*	*18.2%*	*21.2%*	*19.6%*	*18.6%*
Regular maintenance (vessel and gear)	7.3%	8.2%	6.7%	6.5%	7.6%
Major repair and haul-out	1.4%	1.7%	1.6%	1.4%	1.1%
Depreciation	5.7%	4.9%	7.0%	7.0%	5.1%
Overhead (excluding loan payments)	4.8%	3.4%	5.8%	4.7%	4.8%
Net Revenue from Operations	**(8,666)**	**(5,449)**	**(26,764)**	**(8,843)**	**(2,551)**
Non-Operating Activities					
Interest payments made (on vessel loans)	4,561	872	7,857	3,721	5,412
Government payments received (shrimp related)	3,193	1,205	3,772	7,983	454
Net Revenue (before taxes)	**(10,034)**	**(5,117)**	**(30,848)**	**(4,581)**	**(7,509)**
Owner's vessel time	*8,189*	*6,547*	*9,127*	*11,091*	*6,643*
Depreciation	*14,085*	*8,139*	*19,735*	*12,133*	*15,503*

Table 18: F&E Results: Averages for the Active Gulf Shrimp Fleet by Refrigeration and by Hull Material

(in USD unless otherwise noted)	Active Gulf Shrimp	Active Gulf Shrimp Fleet		Active Gulf Shrimp Fleet		
		Freezer	Ice	Steel	Wood	Fiberglass
# of Observations	383	237	133	305	22	55
Vessel Characteristics						
Length (feet)	68	76	58	73	54	49
Gross tons	105	132	66	118	56	52
Horse power	533	618	411	580	315	361
Year built	1987	1989	1984	1989	1975	1983
Hull material - Steel (%)	80%	90%	69%	100%	0%	0%
Refrigeration - Freezer (%)	62%	100%	0%	70%	36%	29%
Fuel capacity (gallons)	13,508	18,669	5,588	16,149	3,199	3,188
State - Florida (%)	15%	14%	8%	5%	45%	60%
State - Alabama or Mississippi (%)	15%	14%	17%	15%	36%	5%
State - Louisiana (%)	28%	12%	60%	29%	14%	31%
State - Texas (%)	41%	58%	14%	50%	5%	4%
Balance Sheet (end of 2008)						
Assets - Market value of vessel	**183,639**	**237,687**	**100,853**	**209,489**	**56,907**	**88,334**
Original value of vessel (at purchase price)	*253,212*	*347,619*	*105,921*	*295,272*	*68,268*	*95,824*
Implicit permit value	*23,479*	*30,322*	*13,131*	*26,735*	*7,000*	*14,720*
Liabilities - Loan on vessel	**68,796**	**100,212**	**18,923**	**83,822**	**8,555**	**10,402**
% of vessels with loan	*45%*	*57%*	*25%*	*51%*	*18%*	*20%*
Equity - Owner's equity in vessel	**114,842**	**137,475**	**81,930**	**125,667**	**48,352**	**77,931**
Insurance coverage (% of vessels / % of assets)	*38% / 55%*	*54% / 64%*	*14% / 20%*	*46% / 60%*	*0% / 0%*	*11% / 15%*
Vessel Operation (2008)						
Actively shrimping (%)	100%	100%	100%	100%	100%	100%
Owner-operator (%)	52%	38%	80%	51%	64%	49%
Shrimp landed (pounds)	69,246	87,982	40,779	78,241	30,584	35,775
Shrimp price per pound (vessel basis / pound basis)	3.33 / 3.40	3.63 / 3.62	2.64 / 2.50	3.37 / 3.46	3.00 / 3.00	3.22 / 2.84
Annual fuel use (gallons)	38,619	53,103	16,033	45,116	11,787	13,891
Fuel price per gallon (vessel basis / gallon basis)	3.15 / 3.08	3.04 / 3.06	3.36 / 3.23	3.14 / 3.08	3.17 / 3.09	3.16 / 3.15
Fuel efficiency I (vessel basis / gallon basis)	2.8 / 1.8	1.9 / 1.7	4.3 / 2.5	2.5 / 1.7	4.4 / 2.6	3.7 / 2.6
Fuel efficiency II (vessel basis / gallon basis)	7.78 / 6.09	6.65 / 6.00	9.04 / 6.37	7.04 / 5.99	12.13 / 7.77	10.13 / 7.30
Cash Flow (2008)						
Inflow - Total	**239,983**	**320,722**	**111,483**	**274,072**	**96,691**	**111,446**
Shrimp landings	235,354	318,538	102,063	270,458	91,612	101,469
Non-shrimp landings	1,436	275	3,626	537	1,874	6,270
Government payments received (shrimp related)	3,193	1,909	5,794	3,077	3,205	3,707
Outflow - Total	**236,446**	**320,264**	**102,608**	**272,040**	**82,637**	**103,652**
Fuel	119,066	162,404	51,841	138,919	36,458	43,784
Other supplies	19,806	25,316	11,632	22,476	8,631	9,723
Crew & captain (hired)	51,277	69,462	20,021	57,541	19,827	29,909
Regular maintenance (vessel and gear)	17,918	23,401	9,047	19,919	9,261	10,295
Major repair and haul-out	3,331	4,331	1,394	3,362	3,360	3,015
Overhead (excluding loan payments)	11,784	16,129	4,864	13,804	4,283	3,795
Interest payments made (on vessel loans)	4,561	6,583	1,401	5,589	594	507
Principal payments made (on vessel loans)	8,327	12,223	2,089	10,030	191	2,270
New investments and upgrades (in vessel)	376	414	318	401	31	354
Net Cash Flow	**3,537**	**458**	**8,876**	**2,032**	**14,055**	**7,794**

Table 18: F&E Results: Averages for the Active Gulf Shrimp Fleet by Refrigeration and by Hull Material, cont.

	Active Gulf	Active Gulf Shrimp Fleet		Active Gulf Shrimp Fleet		
	Shrimp	Freezer	Ice	Steel	Wood	Fiberglass
# of Observations	383	237	133	305	22	55
Income Statement (2008)						
Operating Activities						
Revenue (from commercial fishing)	**236,790**	**318,813**	**105,689**	**270,995**	**93,486**	**107,739**
Expenses	**245,456**	**329,008**	**112,702**	**281,480**	**89,959**	**110,987**
Variable costs - Supplies	*56.6%*	*57.1%*	*56.3%*	*57.3%*	*50.1%*	*48.2%*
Fuel	48.5%	49.4%	46.0%	49.4%	40.5%	39.4%
Other supplies	8.1%	7.7%	10.3%	8.0%	9.6%	8.8%
Variable costs - Labor	*24.2%*	*23.5%*	*25.9%*	*23.6%*	*28.5%*	*31.6%*
Crew & captain (hired)	20.9%	21.1%	17.8%	20.4%	22.0%	26.9%
Owner's vessel time	3.3%	2.4%	8.1%	3.2%	6.5%	4.6%
Fixed costs	*19.2%*	*19.4%*	*17.8%*	*19.1%*	*21.4%*	*20.2%*
Regular maintenance (vessel and gear)	7.3%	7.1%	8.0%	7.1%	10.3%	9.3%
Major repair and haul-out	1.4%	1.3%	1.2%	1.2%	3.7%	2.7%
Depreciation	5.7%	6.1%	4.2%	5.9%	2.6%	4.8%
Overhead (excluding loan payments)	4.8%	4.9%	4.3%	4.9%	4.8%	3.4%
Net Revenue from Operations	**(8,666)**	**(10,195)**	**(7,013)**	**(10,485)**	**3,528**	**(3,247)**
Non-Operating Activities						
Interest payments made (on vessel loans)	4,561	6,583	1,401	5,589	594	507
Government payments received (shrimp related)	3,193	1,909	5,794	3,077	3,205	3,707
Net Revenue (before taxes)	**(10,034)**	**(14,870)**	**(2,620)**	**(12,997)**	**6,139**	**(48)**
Owner's vessel time	*8,189*	*7,980*	*9,179*	*8,923*	*5,812*	*5,112*
Depreciation	*14,085*	*19,985*	*4,724*	*16,537*	*2,326*	*5,354*

Table 19: F&E Results: Averages for the Active Gulf Shrimp Fleet by Vessel Length

(in USD unless otherwise noted)	Active Gulf Shrimp	Active Gulf Shrimp Fleet <50 feet	<75 feet	<100 feet
# of Observations	383	57	172	154
Vessel Characteristics				
Length (feet)	68	40	66	82
Gross tons	105	23	90	152
Horse power	533	318	420	738
Year built	1987	1984	1981	1995
Hull material - Steel (%)	80%	30%	78%	99%
Refrigeration - Freezer (%)	62%	4%	56%	90%
Fuel capacity (gallons)	13,508	1,028	9,461	22,648
State - Florida (%)	15%	33%	16%	6%
State - Alabama or Mississippi (%)	15%	11%	11%	20%
State - Louisiana (%)	28%	53%	30%	18%
State - Texas (%)	41%	4%	42%	53%
Balance Sheet (end of 2008)				
Assets - Market value of vessel	**183,639**	**81,427**	**118,050**	**294,725**
Original value of vessel (at purchase price)	*253,212*	*62,058*	*142,781*	*447,301*
Implicit permit value	*23,479*	*14,381*	*11,454*	*42,257*
Liabilities - Loan on vessel	**68,796**	**7,849**	**22,828**	**142,696**
% of vessels with loan	*45%*	*21%*	*33%*	*66%*
Equity - Owner's equity in vessel	**114,842**	**73,579**	**95,222**	**152,029**
Insurance coverage (% of vessels / % of assets)	*38% / 55%*	*4% / 3%*	*23% / 23%*	*68% / 75%*
Vessel Operation (2008)				
Actively shrimping (%)	100%	100%	100%	100%
Owner-operator (%)	52%	67%	49%	49%
Shrimp landed (pounds)	69,246	24,990	57,050	99,249
Shrimp price per pound (vessel basis / pound basis)	3.33 / 3.40	2.86 / 2.30	3.14 / 3.09	3.72 / 3.70
Annual fuel use (gallons)	38,619	5,920	26,137	64,663
Fuel price per gallon (vessel basis / gallon basis)	3.15 / 3.08	3.27 / 3.17	3.10 / 2.90	3.16 / 3.16
Fuel efficiency I (vessel basis / gallon basis)	2.8 / 1.8	5.8 / 4.2	2.8 / 2.2	1.8 / 1.5
Fuel efficiency II (vessel basis / gallon basis)	7.78 / 6.09	13.12 / 9.72	7.40 / 6.75	6.22 / 5.68
Cash Flow (2008)				
Inflow - Total	**239,983**	**69,894**	**180,294**	**369,604**
Shrimp landings	235,354	57,569	176,301	367,112
Non-shrimp landings	1,436	7,506	501	233
Government payments received (shrimp related)	3,193	4,818	3,492	2,259
Outflow - Total	**236,446**	**57,686**	**173,059**	**373,406**
Fuel	119,066	18,787	75,723	204,591
Other supplies	19,806	7,615	18,896	25,333
Crew & captain (hired)	51,277	16,416	43,645	72,705
Regular maintenance (vessel and gear)	17,918	7,497	17,640	22,086
Major repair and haul-out	3,331	2,313	3,111	3,952
Overhead (excluding loan payments)	11,784	3,123	9,090	17,999
Interest payments made (on vessel loans)	4,561	325	1,234	9,843
Principal payments made (on vessel loans)	8,327	1,174	3,437	16,437
New investments and upgrades (in vessel)	376	437	282	459
Net Cash Flow	**3,537**	**12,208**	**7,235**	**(3,802)**

Table 19: F&E Results: Averages for the Active Gulf Shrimp Fleet by Vessel Length, cont.

	Active Gulf Shrimp	Active Gulf Shrimp Fleet <50 feet	<75 feet	<100 feet
# of Observations	383	57	172	154
Income Statement (2008)				
Operating Activities				
Revenue (from commercial fishing)	**236,790**	**65,076**	**176,802**	**367,346**
Expenses	**245,456**	**62,982**	**180,688**	**385,334**
Variable costs - Supplies	*56.6%*	*41.9%*	*52.4%*	*59.7%*
Fuel	48.5%	29.8%	41.9%	53.1%
Other supplies	8.1%	12.1%	10.5%	6.6%
Variable costs - Labor	*24.2%*	*34.5%*	*27.7%*	*21.8%*
Crew & captain (hired)	20.9%	26.1%	24.2%	18.9%
Owner's vessel time	3.3%	8.4%	3.6%	2.9%
Fixed costs	*19.2%*	*23.6%*	*19.9%*	*18.6%*
Regular maintenance (vessel and gear)	7.3%	11.9%	9.8%	5.7%
Major repair and haul-out	1.4%	3.7%	1.7%	1.0%
Depreciation	5.7%	3.1%	3.4%	7.1%
Overhead (excluding loan payments)	4.8%	5.0%	5.0%	4.7%
Net Revenue from Operations	**(8,666)**	**2,094**	**(3,886)**	**(17,988)**
Non-Operating Activities				
Interest payments made (on vessel loans)	4,561	325	1,234	9,843
Government payments received (shrimp related)	3,193	4,818	3,492	2,259
Net Revenue (before taxes)	**(10,034)**	**6,587**	**(1,628)**	**(25,573)**
Owner's vessel time	*8,189*	*5,302*	*6,464*	*11,185*
Depreciation	*14,085*	*1,929*	*6,119*	*27,482*

Table 20: F&E Results: Averages for the Active Gulf Shrimp Fleet by Vessel Age

(in USD unless otherwise noted)	Active Gulf Shrimp	Active Gulf Shrimp Fleet			
		1968+	1980+	1990+	2000+
# of Observations	383	100	118	87	67
Vessel Characteristics					
Length (feet)	68	63	62	76	79
Gross tons	105	92	80	125	145
Horse power	533	411	399	642	829
Year built	1987	1976	1985	1996	2001
Hull material - Steel (%)	80%	63%	77%	94%	91%
Refrigeration - Freezer (%)	62%	62%	35%	82%	84%
Fuel capacity (gallons)	13,508	9,059	7,739	18,226	24,025
State - Florida (%)	15%	31%	14%	6%	3%
State - Alabama or Mississippi (%)	15%	6%	13%	24%	16%
State - Louisiana (%)	28%	16%	42%	24%	31%
State - Texas (%)	41%	47%	30%	44%	46%
Balance Sheet (end of 2008)					
Assets - Market value of vessel	**183,639**	**87,502**	**112,834**	**278,172**	**349,213**
Original value of vessel (at purchase price)	*253,212*	*112,761*	*140,758*	*371,946*	*536,419*
Implicit permit value	*23,479*	*7,907*	*12,059*	*38,230*	*54,711*
Liabilities - Loan on vessel	**68,796**	**16,232**	**22,077**	**82,016**	**222,067**
% of vessels with loan	*45%*	*29%*	*31%*	*63%*	*73%*
Equity - Owner's equity in vessel	**114,842**	**71,270**	**90,757**	**196,156**	**127,147**
Insurance coverage (% of vessels / % of assets)	*38% / 55%*	*19% / 20%*	*19% / 23%*	*63% / 62%*	*75% / 81%*
Vessel Operation (2008)					
Actively shrimping (%)	100%	100%	100%	100%	100%
Owner-operator (%)	52%	47%	61%	52%	45%
Shrimp landed (pounds)	69,246	50,854	50,651	87,970	111,686
Shrimp price per pound (vessel basis / pound basis)	3.33 / 3.40	3.40 / 3.41	3.09 / 2.99	3.44 / 3.54	3.50 / 3.57
Annual fuel use (gallons)	38,619	25,693	23,203	53,654	69,254
Fuel price per gallon (vessel basis / gallon basis)	3.15 / 3.08	3.07 / 2.89	3.19 / 3.01	3.16 / 3.13	3.17 / 3.19
Fuel efficiency I (vessel basis / gallon basis)	2.8 / 1.8	2.6 / 2.0	3.2 / 2.2	2.5 / 1.6	2.7 / 1.6
Fuel efficiency II (vessel basis / gallon basis)	7.78 / 6.09	7.74 / 6.75	8.18 / 6.52	7.32 / 5.80	7.60 / 5.76
Cash Flow (2008)					
Inflow - Total	**239,983**	**176,832**	**159,060**	**314,162**	**403,022**
Shrimp landings	235,354	173,423	151,390	311,452	398,958
Non-shrimp landings	1,436	1,162	3,445	180	174
Government payments received (shrimp related)	3,193	2,247	4,226	2,530	3,889
Outflow - Total	**236,446**	**167,652**	**149,395**	**323,001**	**400,356**
Fuel	119,066	74,304	69,889	167,890	220,835
Other supplies	19,806	16,925	15,133	24,439	26,710
Crew & captain (hired)	51,277	43,476	35,362	67,130	74,989
Regular maintenance (vessel and gear)	17,918	16,405	16,318	20,814	20,541
Major repair and haul-out	3,331	2,810	3,025	5,297	2,242
Overhead (excluding loan payments)	11,784	9,548	5,580	16,204	20,492
Interest payments made (on vessel loans)	4,561	1,344	890	6,214	14,334
Principal payments made (on vessel loans)	8,327	2,544	2,907	14,506	19,695
New investments and upgrades (in vessel)	376	297	290	507	517
Net Cash Flow	**3,537**	**9,180**	**9,665**	**(8,838)**	**2,666**

Table 20: F&E Results: Averages for the Active Gulf Shrimp Fleet by Vessel Age, cont.

	Active Gulf Shrimp	Active Gulf Shrimp Fleet			
		1968+	1980+	1990+	2000+
# of Observations	383	100	118	87	67
Income Statement (2008)					
Operating Activities					
Revenue (from commercial fishing)	**236,790**	**174,585**	**154,835**	**311,633**	**399,132**
Expenses	**245,456**	**174,341**	**158,367**	**332,510**	**413,301**
Variable costs - Supplies	*56.6%*	*52.3%*	*53.7%*	*57.8%*	*59.9%*
Fuel	48.5%	42.6%	44.1%	50.5%	53.4%
Other supplies	8.1%	9.7%	9.6%	7.3%	6.5%
Variable costs - Labor	*24.2%*	*28.5%*	*27.1%*	*23.4%*	*20.6%*
Crew & captain (hired)	20.9%	24.9%	22.3%	20.2%	18.1%
Owner's vessel time	3.3%	3.6%	4.8%	3.2%	2.4%
Fixed costs	*19.2%*	*19.1%*	*19.2%*	*18.8%*	*19.5%*
Regular maintenance (vessel and gear)	7.3%	9.4%	10.3%	6.3%	5.0%
Major repair and haul-out	1.4%	1.6%	1.9%	1.6%	0.5%
Depreciation	5.7%	2.6%	3.5%	6.1%	9.1%
Overhead (excluding loan payments)	4.8%	5.5%	3.5%	4.9%	5.0%
Net Revenue from Operations	**(8,666)**	**244**	**(3,533)**	**(20,877)**	**(14,168)**
Non-Operating Activities					
Interest payments made (on vessel loans)	4,561	1,344	890	6,214	14,334
Government payments received (shrimp related)	3,193	2,247	4,226	2,530	3,889
Net Revenue (before taxes)	**(10,034)**	**1,147**	**(197)**	**(24,562)**	**(24,613)**
Owner's vessel time	*8,189*	*6,297*	*7,574*	*10,607*	*9,972*
Depreciation	*14,085*	*4,577*	*5,484*	*20,129*	*37,520*

Table 21: F&E Results: Averages for the Active Gulf Shrimp Fleet by Landings Volume

(in USD unless otherwise noted)	Active Gulf Shrimp	Active Gulf Shrimp Fleet			
		<50k lbs	<100k lbs	<150k lbs	>150k lbs
# of Observations	383	169	116	69	29
Vessel Characteristics					
Length (feet)	68	60	72	79	82
Gross tons	105	76	116	141	148
Horse power	533	410	541	697	820
Year built	1987	1983	1988	1994	1996
Hull material - Steel (%)	80%	64%	89%	93%	100%
Refrigeration - Freezer (%)	62%	36%	74%	93%	90%
Fuel capacity (gallons)	13,508	7,604	14,992	21,677	22,541
State - Florida (%)	15%	22%	9%	10%	7%
State - Alabama or Mississippi (%)	15%	16%	8%	22%	17%
State - Louisiana (%)	28%	34%	25%	16%	38%
State - Texas (%)	41%	27%	56%	51%	34%
Balance Sheet (end of 2008)					
Assets - Market value of vessel	**183,639**	**90,404**	**175,829**	**318,799**	**436,621**
Original value of vessel (at purchase price)	*253,212*	*117,274*	*262,486*	*454,443*	*529,511*
Implicit permit value	*23,479*	*9,910*	*20,068*	*47,091*	*58,476*
Liabilities - Loan on vessel	**68,796**	**16,253**	**72,121**	**143,182**	**184,716**
% of vessels with loan	*45%*	*24%*	*51%*	*72%*	*76%*
Equity - Owner's equity in vessel	**114,842**	**74,152**	**103,708**	**175,617**	**251,905**
Insurance coverage (% of vessels / % of assets)	*38% / 55%*	*11% / 19%*	*47% / 55%*	*75% / 77%*	*79% / 60%*
Vessel Operation (2008)					
Actively shrimping (%)	100%	100%	100%	100%	100%
Owner-operator (%)	52%	64%	42%	35%	59%
Shrimp landed (pounds)	69,246	23,369	77,219	122,644	177,657
Shrimp price per pound (vessel basis / pound basis)	3.33 / 3.40	3.21 / 3.17	3.34 / 3.36	3.60 / 3.62	3.34 / 3.29
Annual fuel use (gallons)	38,619	13,294	44,082	70,822	87,732
Fuel price per gallon (vessel basis / gallon basis)	3.15 / 3.08	3.29 / 3.20	3.01 / 3.02	3.04 / 3.05	3.14 / 3.16
Fuel efficiency I (vessel basis / gallon basis)	2.8 / 1.8	3.1 / 1.8	2.7 / 1.8	2.3 / 1.7	2.6 / 2.0
Fuel efficiency II (vessel basis / gallon basis)	7.78 / 6.09	8.28 / 5.58	7.57 / 5.88	7.10 / 6.26	7.26 / 6.65
Cash Flow (2008)					
Inflow - Total	**239,983**	**80,288**	**262,996**	**445,725**	**589,047**
Shrimp landings	235,354	74,166	259,314	443,415	583,809
Non-shrimp landings	1,436	2,257	910	162	1,786
Government payments received (shrimp related)	3,193	3,865	2,772	2,148	3,453
Outflow - Total	**236,446**	**86,684**	**264,060**	**433,015**	**531,041**
Fuel	119,066	42,587	133,336	215,893	277,292
Other supplies	19,806	9,064	22,046	33,821	40,093
Crew & captain (hired)	51,277	16,322	57,597	101,761	109,588
Regular maintenance (vessel and gear)	17,918	9,567	22,594	27,160	25,897
Major repair and haul-out	3,331	2,620	3,252	4,415	5,210
Overhead (excluding loan payments)	11,784	4,040	12,948	21,492	29,157
Interest payments made (on vessel loans)	4,561	834	4,350	9,745	14,786
Principal payments made (on vessel loans)	8,327	1,446	7,422	18,199	28,557
New investments and upgrades (in vessel)	376	204	515	529	461
Net Cash Flow	**3,537**	**(6,397)**	**(1,064)**	**12,710**	**58,006**

Table 21: F&E Results: Averages for the Active Gulf Shrimp Fleet by Landings Volume, cont.

	Active Gulf Shrimp	Active Gulf Shrimp Fleet			
		<50k lbs	<100k lbs	<150k lbs	>150k lbs
# of Observations	383	169	116	69	29
Income Statement (2008)					
Operating Activities					
Revenue (from commercial fishing)	**236,790**	**76,423**	**260,224**	**443,577**	**585,594**
Expenses	**245,456**	**94,742**	**273,848**	**441,916**	**542,751**
Variable costs - Supplies	*56.6%*	*54.5%*	*56.7%*	*56.5%*	*58.5%*
Fuel	48.5%	45.0%	48.7%	48.9%	51.1%
Other supplies	8.1%	9.6%	8.1%	7.7%	7.4%
Variable costs - Labor	*24.2%*	*22.9%*	*23.8%*	*25.4%*	*24.3%*
Crew & captain (hired)	20.9%	17.2%	21.0%	23.0%	20.2%
Owner's vessel time	3.3%	5.6%	2.7%	2.3%	4.2%
Fixed costs	*19.2%*	*22.6%*	*19.5%*	*18.1%*	*17.2%*
Regular maintenance (vessel and gear)	7.3%	10.1%	8.3%	6.1%	4.8%
Major repair and haul-out	1.4%	2.8%	1.2%	1.0%	1.0%
Depreciation	5.7%	5.5%	5.3%	6.1%	6.1%
Overhead (excluding loan payments)	4.8%	4.3%	4.7%	4.9%	5.4%
Net Revenue from Operations	**(8,666)**	**(18,319)**	**(13,624)**	**1,661**	**42,843**
Non-Operating Activities					
Interest payments made (on vessel loans)	4,561	834	4,350	9,745	14,786
Government payments received (shrimp related)	3,193	3,865	2,772	2,148	3,453
Net Revenue (before taxes)	**(10,034)**	**(15,288)**	**(15,202)**	**(5,936)**	**31,510**
Owner's vessel time	*8,189*	*5,329*	*7,522*	*10,286*	*22,541*
Depreciation	*14,085*	*5,213*	*14,554*	*27,089*	*32,973*

Table 22: F&E Results: Averages for the Active Gulf Shrimp Fleet by Survey Quality

(in USD unless otherwise noted)	Active Gulf Shrimp	Active Gulf Shrimp Fleet	
		Medium Quality	High Quality
# of Observations	383	49	334
Vessel Characteristics			
Length (feet)	68	73	68
Gross tons	105	118	103
Horse power	533	605	522
Year built	1987	1990	1987
Hull material - Steel (%)	80%	86%	79%
Refrigeration - Freezer (%)	62%	59%	62%
Fuel capacity (gallons)	13,508	15,137	13,269
State - Florida (%)	15%	8%	16%
State - Alabama or Mississippi (%)	15%	18%	14%
State - Louisiana (%)	28%	35%	27%
State - Texas (%)	41%	39%	41%
Balance Sheet (end of 2008)			
Assets - Market value of vessel	**183,639**	**175,349**	**184,855**
Original value of vessel (at purchase price)	*253,212*	*286,550*	*248,321*
Implicit permit value	*23,479*	*13,372*	*24,448*
Liabilities - Loan on vessel	**68,796**	**95,062**	**64,943**
% of vessels with loan	*45%*	*47%*	*44%*
Equity - Owner's equity in vessel	**114,842**	**80,287**	**119,912**
Insurance coverage (% of vessels / % of assets)	*38% / 55%*	*35% / 58%*	*39% / 55%*
Vessel Operation (2008)			
Actively shrimping (%)	100%	100%	100%
Owner-operator (%)	52%	53%	52%
Shrimp landed (pounds)	69,246	67,788	69,460
Shrimp price per pound (vessel basis / pound basis)	3.33 / 3.40	3.17 / 3.35	3.36 / 3.41
Annual fuel use (gallons)	38,619	39,383	38,507
Fuel price per gallon (vessel basis / gallon basis)	3.15 / 3.08	3.20 / 3.12	3.14 / 3.08
Fuel efficiency I (vessel basis / gallon basis)	2.8 / 1.8	3.0 / 1.7	2.8 / 1.8
Fuel efficiency II (vessel basis / gallon basis)	7.78 / 6.09	6.86 / 5.76	7.91 / 6.14
Cash Flow (2008)			
Inflow - Total	**239,983**	**230,576**	**241,363**
Shrimp landings	235,354	226,825	236,605
Non-shrimp landings	1,436	4	1,646
Government payments received (shrimp related)	3,193	3,747	3,112
Outflow - Total	**236,446**	**226,546**	**237,898**
Fuel	119,066	122,966	118,493
Other supplies	19,806	18,717	19,965
Crew & captain (hired)	51,277	44,531	52,267
Regular maintenance (vessel and gear)	17,918	12,071	18,776
Major repair and haul-out	3,331	443	3,755
Overhead (excluding loan payments)	11,784	10,704	11,942
Interest payments made (on vessel loans)	4,561	7,634	4,110
Principal payments made (on vessel loans)	8,327	9,231	8,195
New investments and upgrades (in vessel)	376	248	395
Net Cash Flow	**3,537**	**4,030**	**3,465**

Table 22: F&E Results: Averages for the Active Gulf Shrimp Fleet by Survey Quality, cont.

	Active Gulf Shrimp	Active Gulf Shrimp Fleet	
		Medium Quality	High Quality
# of Observations	383	49	334
Income Statement (2008)			
Operating Activities			
Revenue (from commercial fishing)	**236,790**	**226,829**	**238,251**
Expenses	**245,456**	**231,664**	**247,480**
Variable costs - Supplies	*56.6%*	*61.2%*	*55.9%*
Fuel	48.5%	53.1%	47.9%
Other supplies	8.1%	8.1%	8.1%
Variable costs - Labor	*24.2%*	*21.4%*	*24.6%*
Crew & captain (hired)	20.9%	19.2%	21.1%
Owner's vessel time	3.3%	2.1%	3.5%
Fixed costs	*19.2%*	*17.5%*	*19.4%*
Regular maintenance (vessel and gear)	7.3%	5.2%	7.6%
Major repair and haul-out	1.4%	0.2%	1.5%
Depreciation	5.7%	7.5%	5.5%
Overhead (excluding loan payments)	4.8%	4.6%	4.8%
Net Revenue from Operations	**(8,666)**	**(4,834)**	**(9,229)**
Non-Operating Activities			
Interest payments made (on vessel loans)	4,561	7,634	4,110
Government payments received (shrimp related)	3,193	3,747	3,112
Net Revenue (before taxes)	**(10,034)**	**(8,722)**	**(10,226)**
Owner's vessel time	*8,189*	*4,945*	*8,665*
Depreciation	*14,085*	*17,286*	*13,616*

Table 23: F&E Results: Averages for the Active Gulf Shrimp Fleet by Ownership Structure; and of the Owner-Operated Sub-Fleet by Captain's Share Structure

(in USD unless otherwise noted)	Active Gulf Shrimp	Active Gulf Shrimp Fleet		Own-Operator Act. Gulf Shr.	
		Hired Captain	Own-Operator	without Share	with Share
# of Observations	383	184	199	130	69
Vessel Characteristics					
Length (feet)	68	70	67	66	68
Gross tons	105	114	97	93	104
Horse power	533	534	531	510	570
Year built	1987	1987	1987	1987	1986
Hull material - Steel (%)	80%	80%	79%	78%	80%
Refrigeration - Freezer (%)	62%	80%	45%	40%	54%
Fuel capacity (gallons)	13,508	15,350	11,805	11,139	13,058
State - Florida (%)	15%	17%	13%	12%	13%
State - Alabama or Mississippi (%)	15%	15%	15%	13%	17%
State - Louisiana (%)	28%	14%	42%	40%	45%
State - Texas (%)	41%	52%	31%	34%	25%
Balance Sheet (end of 2008)					
Assets - Market value of vessel	**183,639**	**208,362**	**160,779**	**150,958**	**179,282**
Original value of vessel (at purchase price)	*253,212*	*282,285*	*226,330*	*215,890*	*246,000*
Implicit permit value	*23,479*	*21,889*	*25,167*	*31,034*	*15,948*
Liabilities - Loan on vessel	**68,796**	**88,138**	**50,913**	**37,910**	**75,410**
% of vessels with loan	*45%*	*53%*	*37%*	*31%*	*49%*
Equity - Owner's equity in vessel	**114,842**	**120,223**	**109,867**	**113,048**	**103,872**
Insurance coverage (% of vessels / % of assets)	*38% / 55%*	*47% / 61%*	*31% / 48%*	*25% / 42%*	*41% / 57%*
Vessel Operation (2008)					
Actively shrimping (%)	100%	100%	100%	100%	100%
Owner-operator (%)	52%	0%	100%	100%	100%
Shrimp landed (pounds)	69,246	76,393	62,638	58,478	70,475
Shrimp price per pound (vessel basis / pound basis)	3.33 / 3.40	3.58 / 3.57	3.10 / 3.21	3.11 / 3.19	3.09 / 3.25
Annual fuel use (gallons)	38,619	42,910	34,651	32,839	38,066
Fuel price per gallon (vessel basis / gallon basis)	3.15 / 3.08	3.01 / 2.98	3.27 / 3.20	3.29 / 3.23	3.24 / 3.15
Fuel efficiency I (vessel basis / gallon basis)	2.8 / 1.8	2.5 / 1.8	3.1 / 1.8	2.8 / 1.8	3.7 / 1.9
Fuel efficiency II (vessel basis / gallon basis)	7.78 / 6.09	8.07 / 6.35	7.51 / 5.80	7.06 / 5.67	8.35 / 6.01
Cash Flow (2008)					
Inflow - Total	**239,983**	**275,152**	**207,466**	**193,059**	**234,609**
Shrimp landings	235,354	272,461	201,043	186,351	228,725
Non-shrimp landings	1,436	1,166	1,686	1,845	1,387
Government payments received (shrimp related)	3,193	1,525	4,736	4,863	4,497
Outflow - Total	**236,446**	**277,216**	**198,749**	**183,394**	**227,678**
Fuel	119,066	127,846	110,947	106,131	120,022
Other supplies	19,806	25,297	14,728	13,543	16,960
Crew & captain (hired)	51,277	69,872	34,084	30,509	40,820
Regular maintenance (vessel and gear)	17,918	21,457	14,646	13,007	17,734
Major repair and haul-out	3,331	3,721	2,970	2,176	4,464
Overhead (excluding loan payments)	11,784	13,436	10,256	8,869	12,871
Interest payments made (on vessel loans)	4,561	5,528	3,667	3,151	4,639
Principal payments made (on vessel loans)	8,327	9,713	7,046	5,579	9,808
New investments and upgrades (in vessel)	376	345	405	429	360
Net Cash Flow	**3,537**	**(2,064)**	**8,716**	**9,664**	**6,931**

Table 23: F&E Results: Averages for the Active Gulf Shrimp Fleet by Ownership Structure; and of the Owner-Operated Sub-Fleet by Captain's Share Structure, cont.

	Active Gulf Shrimp	Active Gulf Shrimp Fleet		Own-Operator Act. Gulf Shr.	
		Hired Captain	Own-Operator	without Share	with Share
# of Observations	383	184	199	130	69
Income Statement (2008)					
Operating Activities					
Revenue (from commercial fishing)	**236,790**	**273,627**	**202,729**	**188,196**	**230,112**
Expenses	**245,456**	**278,388**	**215,007**	**198,083**	**246,893**
Variable costs - Supplies	*56.6%*	*55.0%*	*58.5%*	*60.4%*	*55.5%*
Fuel	48.5%	45.9%	51.6%	53.6%	48.6%
Other supplies	8.1%	9.1%	6.8%	6.8%	6.9%
Variable costs - Labor	*24.2%*	*25.1%*	*23.2%*	*22.2%*	*24.6%*
Crew & captain (hired)	20.9%	25.1%	15.9%	15.4%	16.5%
Owner's vessel time	3.3%	0.0%	7.3%	6.8%	8.1%
Fixed costs	*19.2%*	*19.9%*	*18.4%*	*17.4%*	*19.9%*
Regular maintenance (vessel and gear)	7.3%	7.7%	6.8%	6.6%	7.2%
Major repair and haul-out	1.4%	1.3%	1.4%	1.1%	1.8%
Depreciation	5.7%	6.0%	5.4%	5.2%	5.7%
Overhead (excluding loan payments)	4.8%	4.8%	4.8%	4.5%	5.2%
Net Revenue from Operations	**(8,666)**	**(4,761)**	**(12,278)**	**(9,887)**	**(16,781)**
Non-Operating Activities					
Interest payments made (on vessel loans)	4,561	5,528	3,667	3,151	4,639
Government payments received (shrimp related)	3,193	1,525	4,736	4,863	4,497
Net Revenue (before taxes)	**(10,034)**	**(8,764)**	**(11,208)**	**(8,175)**	**(16,923)**
Owner's vessel time	*8,189*	*0*	*15,762*	*13,494*	*20,033*
Depreciation	*14,085*	*16,757*	*11,614*	*10,354*	*13,990*