The Challenges of Allocating Joint and Common Fixed Costs
An Example from the Northeast U.S.

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Fixed Costs: Why Bother?

• Northeast Fisheries Science Center (NEFSC)
  • Maine to North Carolina
  • 9 Fishery Management Plans

• What do we want?
  • The ability to communicate to decision makers the total costs fishermen face
  • Profitability analysis of segments of the Northeast commercial fleet
Joint and Common Fixed Costs: What’s The Problem?
NEFSC  Data Collection Efforts for the Total Costs of Commercial Fishing

• 2006 – 2008
  • Sent each year to the entire population of fishing vessel owners with permit applications

• 2011-2012
  • Sent to a stratified random sample of commercial fishing businesses
    • Strata defined by gear type and vessel size
Survey Response Rates

- **Completed/Partially Complete**
- **Valid Sample**
- **Response Rate**

- **2006**: 3500
- **2007**: 3000
- **2008**: 3000
- **2011***: 2000
- **2012***: 2000

*2011* and *2012* represent years with special data collection or survey responses.
What Does the NEFSC Cost Survey Collect?

• Vessel Information

• Repair/Maintenance & Upgrade/Improvement Costs

• Fishing Business Costs

• Operating Costs

• Crew Payment/Lay Systems
What’s Included in These Cost Categories?

• **Repair/Maintenance & Upgrade/Improvement Costs:**

  • Engine
  • Deck equipment
  • Hull
  • Gear
  • Wheelhouse and gear electronics,
  • Processing/refrigeration
  • Safety equipment
What’s Included in These Cost Categories?

• **Fishing Business Costs:**
  - Mooring/dockage fees
  - Workshop/storage
  - Office expenses
  - Permit and/or license fees
  - Business vehicle usage
  - Business travel
  - Association fees
  - Professional fees

• Insurance Premiums
• Quota or DAS lease
• Business loans
• Vessel activity/quota monitoring costs
• Advertising costs
How Has The Survey Cost Data Been Used?

- Economic impact of shifting at sea monitoring costs from NMFS to groundfish sectors

- Modeling of profitability, capacity utilization and efficiencies associated with scale

- Three-year performance review for the general access IFQ scallop fishery

- Estimation of fixed costs for the limited access general category scallop fishery for the 2015 SAFE report
Allocation Aggravation: Multiple Vessels

• To assess overall impacts of costs on owner(s) may need to take into account multiple vessels

• Data is convoluted and it’s often difficult to determine relationships

• Construct measures at vessel level and aggregate
Allocation Methods: Multiple Vessels

• For RM/UI and Crew data, prompt respondent to focus on one of their vessels (identified in survey)

• Fishing Business Costs: distributed equally
  
  • **2011**: Respondents were asked to divide costs by their number of vessels
  
  • **2012**: We did the division for them
Allocation Method: Average Costs Per Vessel (2012)

- **Fixed Costs**: 32%
- **Fuel**: 16%
- **Crew**: 41%
- **Operating**: 11%
- **Repair/Maint.**: 29%
- **Upgrade/Improve.**: 2%
- **Other Costs**: 8%
- **Business**: 61%
Allocation Aggravation: Multiple Fisheries

- Poses more potential management/policy implications

- Variety of potential methods:
  - Volume of landings
  - Value of landings
  - Days at Sea
  - Some combination
Continuing the Data Collection....

- Survey for 2015 costs is currently under way

- Lengthened (but simplified!) the survey
  - Divided into “vessel” and “overall business” sections
  - Asked about top fisheries by value and time spent in those fisheries

- Altered sampling strategy
  - One vessel per affiliate
Main Takeaways & Management Implications

• Tradeoff between more detailed information and high reporting burden for fishermen
  • non-mandatory survey

• Must provide guidance and caution as to
  • Known data collection problems & quality challenges
  • How data users apply these data in analyses
  • Interpretations and conclusions drawn from data and analyses by decision makers
Thank you!

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