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Economic Analysis for Determination of Excessive Share Limits for the Northeast Multispecies Fishery

Presentation to
New England Fishery Management Council
Groundfish Oversight Committee
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Agenda

- Assignment and Terms of Reference
- Analysis of Potential Competitive Issues
 - Market Power in the Market(s) for Fish
 - Market Power in the Market for ACE
 - Sectors
 - Individuals
 - Individual Control of PSC
 - Preliminary Assessment of Competition
- Pursuit of the Other Goals of Amendment 18

Scope of Work

Give independent advice to the NEFMC to help it determine an appropriate excessive shares limit in the Northeast Multispecies fishery, focusing on approaches that may achieve Goal #4 of Amendment 18.

Goal #4 of Amendment 18:

“To prevent any individual(s), corporation(s), or other entity(ies) from acquiring or controlling excessive shares of the fishery access privileges.”

Key Terms of Reference

- “Describe a theoretically sound method to specify the maximum possible allowable percentage share of the market for the fishery access privileges (permits, PSC) and/or the quota leasing (ACE trading) that would prevent an entity from obtaining an excessive share of the access privileges allocated under the Northeast Multispecies Fishery.”
- “Use the Herfindahl-Hirschman Index prescribed within the ‘US Department of Justice Horizontal Merger Guidelines’ or other accepted rule as appropriate.”
 - Comment: Herfindahl-Hirschman Index (“HHI”) is a measure of industry concentration and sometimes indicates market power
 - We may apply other metrics of market power

Key Terms of Reference

“Apply the process or rule developed to determine if excessive shares already exist in this fishery.”

“If excessive shares do not exist today, describe potential constraints that could prevent excessive shares from existing in the future.”

“Alternatively, if excessive shares do exist, describe a process or rule that will allow for a theoretically sound procedure to prevent future increase.”

“Identify conditions where entities could exert ‘inordinate control’ of quota as outlined in the National Standard 4 Guidelines.”

Key Terms of Reference

Alternate approaches to achieving the Amendment 18 goals (other than accumulation caps) may be proposed

Goals 1-3 of Amendment 18:

- *Promote a diverse groundfish fishery, including different gear types, vessel sizes, ownership patterns, geographic locations, and levels of participation through sectors and permit banks;*
- *“Enhance sector management to effectively engage industry to achieve management goals and improve data quality;*
- *Promote resilience and stability of fishing businesses by encouraging diversification, quota utilization and capital investment.*

Research

Interviews with

Vessel owners

Sector managers

Northeast Seafood Coalition

Auction house

Processors

Webinar (~25 Participants)

Data analysis underway

For purposes of our conclusions, the different sources of information are highly consistent.

Economics of Market Power

Firms are able to exercise market power when they can successfully withhold supplies of a good (e.g., fish, ACE) from the market to profitably raise prices

Identifying market power requires distinguishing scarcity and high prices that are artificially caused by withholding from natural scarcity

In the fishery, it may be possible to exercise market power through the control of potential sector contribution (PSC) or ACE

Markets for fish (downstream markets)

Markets for permits or ACE (upstream markets)

Economic Rents

Resource Rent:

- Value of resource above harvest cost (net resource value) is positive
- Harvest cost includes normal return on invested capital
- The owner of the resource permit/PSC should keep the resource rent

Competitive Value of Access to the Resource:

- Access rights (ACE) can be valuable either because
 - the species is valuable (high price at the dock)
 - being able to harvest that species allows for the harvest of other species that are valuable
- High prices for access rights can occur when the biological assessment dictates that certain species should have very limited harvests
- High prices could also occur if industry participants can exercise market power

Market Power—Seeking Disproportionate Rents

Downstream Market:

- Withhold access rights so that limited harvest leads to ex-vessel price above the competitive resource value
- This “monopoly” rent is possible only when there is limited access to competing alternative products (such as other species or imports)

Upstream market:

- Withhold access rights in order to increase price of ACE leases above the net resource value:
 - Extract excess rent from vessel operators through lease price
 - Capture disproportionate share of harvest by raising competitors’ costs
- This “monopoly” rent only possible when there is limited access to competing alternative sources of ACE

Analytical Process from the Surfclam and Ocean Quahog Fisheries Research

Step 1: Assess availability of requisite information on quota ownership and control

Step 2: Assess availability of requisite competitive information

Step 3: Establish whether threshold condition requiring no calculation of cap applies

Step 4: Establish appropriate concentration thresholds

Step 5: Determine relationship between the excessive-share cap and market concentration

Step 6: Identify regulatory and practical constraints

Step 7: Set the excessive-share cap

Ownership Information (Step 1)

Permit data identify persons sharing ownership

- Multiple individuals can share ownership
- Individuals can have ownerships shares among different groups
 - A and B own vessel 1
 - B and C own vessel 2
- No information on size of ownership shares in each vessel
 - No indication of who has *controlling* interest in the vessel/permit.

Broadest possible definition of ownership group is useful for estimating upper bound of concentration

- Combine all groups with common individual members
- This may *over-estimate* concentration
- More detailed information might be appropriate for setting accumulation limits

Availability of Competitive Information (Step 2)

Good information on ownership of permits

Good information on output and imports

Interviews generated consistent qualitative information

Threshold condition does NOT apply (Step 3)

If the annual catch limits were very restrictive, keeping output at or below the level that would be produced by a monopolist, then no accumulation limit is necessary

For groundfish, landings for most species in most years are well below the annual catch limits

This is not evidence of market power, but means we cannot immediately rule out the existence of market power

Landings as a Percentage of ACE

Species	Landings / ACE		
	2010	2011	2012
am_plaice	47.7%	46.4%	41.7%
cod	80.9%	81.5%	42.9%
haddock	21.0%	13.6%	4.1%
pollock	33.5%	53.8%	50.3%
redfish	28.7%	33.5%	49.3%
wh_hake	84.1%	100.9%	74.0%
winter_fl	74.4%	89.6%	53.1%
witch_fl	78.8%	75.9%	63.3%
yt_flounder	71.7%	78.2%	67.4%
Totals	35.8%	42.1%	32.8%

Preliminary

Maintaining Competition in the Fishery: Establishing Acceptable Concentration (Step 4)

Using the Herfindahl-Hirschman Index does not suggest low caps are necessary to maintain competition

HHI Range	Market Structure	No. Equal-Sized Firms	Implied Cap
Less Than 1000-1500	Unconcentrated	7-10	10-15%
1500-2500	Moderately Concentrated	4-7	15-25%
2500+	Highly Concentrated	Less Than 4	More Than 25%

Exercising Market Power in the Market(s) for Fish (Step 5)

At a high level, the market for fish appears to be highly competitive

Many species are traded globally

Fishery is a small share of total fish consumption

Prices have reportedly not increased with the reduction in output of the fishery

Exercising Market Power in the Market(s) for Fish (Step 5)

To fully assess the likelihood of market power in the markets for fish, we must determine what species of fish compete with one another and who can supply them

The price of fish varies by species and quality

We understand that the auction price of a species of fish depends largely on the supply of that species

There is some evidence for a local fresh market

It is not possible to rule out entirely the possibility that someone could exercise market power over a portion of the fishery's output under certain conditions

Exercising Market Power in the Market(s) for Fish

If we examine the concentration of landings of different species, we find that there is not evidence of market power in the fishery today

Landings are not highly concentrated even if we assume species do not compete

United States imports and exports of groundfish are large compared to landings from the fishery

If we were account for competition between species and import competition, the market would appear still more competitive

Low Concentration of Landings

Species	Landings HHI (by GroupID)		
	2010	2011	2012
am_plaice	435	511	479
cod	188	225	280
haddock	1,018	876	934
pollock	369	326	367
redfish	1,018	1,123	1,352
wh_hake	424	382	338
winter_fl	1,357	1,680	1,600
witch_fl	333	389	353
yt_flounder	531	930	309

There is no evidence of market power in the markets for fish

Exercising Market Power in the Leasing of ACE

Analysis of markets for fish indicate that they would be difficult to monopolized even if sufficient ACE were acquired to control the output of one or more species

The remaining concern is that control over ACE for one or more species could be used to limit fishing for other species

Control of ACE for a choke stock could allow someone to demand monopolistic prices for the choke stock's ACE

Others would pay monopolistic prices--having adequate choke stock ACE is a cost of doing business

The price of ACE for a choke stock would be higher if held by one or a few entities than if it were widely held

The exercise of market power transfers rents from one access right owner to another by influencing ACE prices

Market Power in the Leasing of ACE--Sectors

Can sectors control the market for ACE?

Sector managers have developed a system for sharing information on offers to buy and sell ACE

Sectors obtain ACE and dispose of ACE on behalf of their members

Operate *as if* ACE is owned by the permit owner contributing PSC to the sector

There is no evidence that concentration of ACE in a sector would be harmful

Institutionally, members rather than the sector control ACE

Market Power in the Leasing of ACE--Individuals

If PSC concentration is low (*i.e.*, competitive), could someone acquire market power within a season by leasing ACE?

General Considerations

- Interviews indicate that while there are expectations regarding what species' ACE will be in short supply during a fishing season, it is difficult to predict which stock's ACE might be profitably “cornered”
- If everyone recognizes that ACE for a stock will be in short supply, it would be difficult to acquire enough of it to profitably exercise market power
- Even if others did not initially expect a stock's ACE to be in tight supply, the price would rise during the acquisition of the large position
- Within-season adjustments to ACL's make it risky to acquire ACE to “speculate” on whether it will allow the exercise of market power
- At some cost, it is possible to avoid certain species if the price of ACE becomes too high

Market Power in the Leasing of ACE--Individuals

Exercising market power by acquiring ACE within a season requires guessing correctly about which ACE will be limiting in the fishery

Difficult to tell a story in which a competitive allocation of PSC develops through trading to an anticompetitive allocation of ACE within a fishing year

- Requires guessing correctly regarding which stock's ACE to acquire

- Difficult to acquire the position without driving up the price of ACE

Conclusion: Economic analysis does not support the use of caps on the acquisition of ACE in the course of a single season to control market power

Market Power Arising from Permanent Rights--Permits

Large permanent holdings (or long-term leases) of rights to harvest a particular stock could allow the exercise of market power

Control of PSC and ACE for a choke stock could allow someone to demand monopolistic prices for the choke stock's ACE

Others would pay monopolistic prices--having adequate choke stock ACE is a cost of doing business

The price of ACE for a choke stock would be higher if held by one or a few entities than if it were widely held

Key difference from the analysis of accumulation of ACE is the permanent nature of the ownership of rights—no need to acquire rights within the season

Low Concentration of PSC

Species	PSC HHI (by GroupID)		
	2010	2011	2012
am_plaice	228	199	201
cod	127	133	149
haddock	442	429	452
pollock	201	198	200
redfish	362	353	352
wh_hake	281	236	223
winter_fl	668	524	568
witch_fl	214	193	196
yt_flounder	193	159	132

Maintaining Competition in the Fishery (Step 6)

Caps that apply universally to all permit owners and stocks are not an ideal way to regulate competition in a fishery

Individual entities with high shares need not harm competition

If one entity has a large share of a stock or stocks, competition need not be threatened if the remainder is highly dispersed

If the large holder attempted to withhold from the market, the small holders would respond by releasing additional supply

Using the Herfindahl-Hirschman Index does not suggest low caps are necessary to maintain competition

Other Goals of Amendment 18

Accumulation limits are unlikely to effectively promote goals 1-3 of Amendment 18

The switch from days-at-sea regulation to catch limits has led to dramatic changes in the fishery and loss of some regulations that some viewed as promoting fairness

- Low ACLs have reduced income and virtually guaranteed exit of vessels and fishery consolidation

- Elimination of trip limits is perceived to have allowed larger vessels to fish more intensively inshore under the catch-limit regulations

Imposing even low caps (1%-5%) is unlikely to effectively address these issues

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