

THE ALLOCATION OF FISHING PERMITS: A PROPERTY RIGHTS APPROACH

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THE BROAD QUESTIONS



Debates:

- Who should own and benefit from natural resources?
- How best to manage, conserve, and maximize returns?
- Private or political/bureaucratic?
- Stock, value of production independent of the answer?

ANSWERS ARE CRITICAL

Answers affect resource stock and long-term economic benefits, government revenues.

Fundamental points:

- ▶ Long-term economic returns determined by the allocation and security of property rights in the fishery.
- ▶ In general: Grandfathering is superior to auction reallocation.



OVERVIEW

Debate: ownership, management, and sharing of natural resource returns.

- ▶ Minerals and farm land: Data, literature.
- ▶ Fisheries—Shift to rights-based management(RBM).

Property Rights Theory.

- ▶ Economic value protected/generated.
- ▶ First possession rights.
- ▶ Allocation matters.

Compare auctions/grandfathering.

Conclusion.



THE DEBATE

One view: Public resources.

- ▶ Regulated entry/use.
- ▶ Returns taxed/distributed by government. Revenue objectives.
- ▶ Access spread among the population. Periodic reallocation. Distribution goal.
- ▶ *Key assumption:* Resource stock/economic returns unaffected by allocation.

Another view: Private resources with spin off benefits.

- ▶ Private property rights maximize long-term economic returns/government revenues.
- ▶ Entry/use restricted to owners. Stock protected.
- ▶ Economic decisions molded by market conditions.
- ▶ *Key assumption:* Private rights depend on security, minimized taxes, regulation.

DEBATE: GRANDFATHER VS. AUCTION



- ▶ Grandfathering: Private role dominant in resource use.
- ▶ Auction (Repeated): Government role dominant.
- ▶ *Outcome prediction*: Repeated auction reduces long-term fishery revenues. Less investment, innovation in new stock discovery and new methods.
- ▶ No empirical tests in fisheries. Look to other resources—theory and evidence.

EVIDENCE: OIL AND GAS, MINERALS

Countries face international competition. Mobile capital, labor.

- ▶ When firms granted long-term secure property/production rights, the economy benefits: jobs, service support, processing, tax/royalty revenues. Chile, Australia.
- ▶ Taxes affect exploration and production.
 - ▶ Royalty: % of production, gross returns, or net returns. Risk distribution varies (Leland, 1978). Firms shift from heavily taxed/regulated activities, reduce investment, long-term production (Smith 2014).
 - ▶ Taxes raise *short-term* government revenue, lower *long-term* (Daniel, Keen, McPherson, 2010; Otto, et al, World Bank, 2006; Ohanian, Taylor, Wright, 2012).
- ▶ Venezuela a cautionary example, oil nationalized, heavily taxed, low production, revenue.

EVIDENCE: FARM LAND

Agriculture successful with secure private property rights.

- ▶ Taxes on fixed assets, land; profits/income taxes.
- ▶ Production--small, family farms (Allen, Lueck. 2003

No repeated auctions, limited forced redistribution.

- ▶ Collectivization of agriculture in USSR, China, eastern Europe. Dropped.
- ▶ Redistribution---Mexico, Brazil, Zimbabwe—lower productivity, income.

Lessons from other resources suggests that safe, long-term property rights promote investment and maximization of the value of production.

EVIDENCE: FISHERIES



Fisheries: Tragedy of the Commons.

- ▶ No property rights. Common-pool resource.
- ▶ Rule of capture, race, short-time horizon, no incentive to conserve.
- ▶ Stock depletion, lost economic returns. World Bank (2015) \$83 billion/annually.

Initial response: Government Regulation/control—limited entry, season, equipment controls. Largely ineffective; fishery rents open for competition.

Recent: RBM. Private use/property rights. Share of TAC, quota. Change in incentives. Expect to share in the benefits of conservation, trade, investment.

Movement toward greater private role vs government.

EVIDENCE: FISHERIES

RBM: Vast improvement (Costello et al, 2008).

- ▶ Remains contentious (Hannesson, 2004; Leal, 2005).
- ▶ Debate over nature of property right, taxation, trade, grandfather, auction.
- ▶ Property rights insecurity lowers value (Grainger and Costello, 2014).

What does this mean? Review Property Rights Theory: Attributes, Benefits, Threats.



RBM: ADVANTAGES OF PRIVATE PROPERTY RIGHTS

Attributes:

- ▶ *Assign ownership of net economic benefits.* Residual claimants. Incentives.
- ▶ *Define time periods*—In decisions for investment, production.
- ▶ *Define security in decision making.* Security raises expected returns.
- ▶ *Facilitates trade/exchange*—Know the parties, security for trade.
- ▶ *Facilitate cooperation among owners.*
- ▶ *Promote investment, innovation/search*--New techniques, new resources.

RBM: ADVANTAGES OF PRIVATE PROPERTY RIGHTS

Benefits:

- ▶ Conservation, long-term wealth and economic growth—cross country/resource empirical evidence (Leonard and Libecap, 2016).
- ▶ Fisheries. Reduce entry; excessive harvest; over capitalization; improve value; exchange (Grafton et al, 2002).
- ▶ Fisheries. Innovation in markets and production, new fisheries. (Anderson and Libecap, 2010).
- ▶ Fishers capitalize the expected value of benefits with RBM.

Attributes/Benefits explain the move to RBM from larger government role.

RBM: ADVANTAGES OF PRIVATE PROPERTY RIGHTS

Threats that reduce benefits of private property rights.

- ▶ Short ownership time horizon. Less long-term investment, conservation incentive, trade, innovation; changes resource use practices.
- ▶ Uncertainty of ownership. Less security leads to less trade, investment, innovation, conservation incentive.
- ▶ Greater taxation of returns. Reduces expected returns of investment, innovation, production, trade. Depends on tax design.
- ▶ Greater regulation of ownership. Raises costs, reduce decision making authority.

Long-term, secure private property rights with limited taxation and regulation maximize long-term economic returns and therefore government revenue.

FISHERIES: AUCTION VS GRANDFATHER

How to allocate quota/shares in RBM?

Industry background influences answer.

- ▶ International competition. Firms price takers. Compete on quality or cost. Requires long-term commitment, expertise, investment.
- ▶ Typically, low profitability.
- ▶ High levels of uncertainty—stock, environment, market.
- ▶ Production scale often small. Labor and capital local, limited mobility.
- ▶ Variable skills from experience that are difficult to exchange.

AUCTION

When are auctions used?



- ▶ Well-defined owner.
 - ▶ Controls asset. No incumbent producers/users.
 - ▶ Sell asset or production rights.
 - ▶ Maximize the number of buyers/bidders.
 - ▶ Maximize sales revenue.
 - ▶ Open up resource to specific parties.
- ▶ Competitive auction reveals value.
- ▶ Complexity of design, size, allotments, collusion.

Examples

- ▶ US electronic spectrum. Complex. Political objectives.
- ▶ Air emission permits. California. EU ETS. Revenue imperative.

FISHERIES: AUCTION

Auction—Fishing right allocated based on winning bid. Characteristics determined by government officials--politicians/bureaucracy.

- ▶ Who can participate?
- ▶ Competition?
- ▶ Size of allotment?
- ▶ Duration?
 - ▶ One time auction?
 - ▶ Repeated?
- ▶ Trade? Consolidation?

Revenues to the state. Tax.

- ▶ Tax depends on auction design.



FISHERIES: AUCTION

New fisheries: Auction allocation?

- ▶ How discovered in the first place?
- ▶ Incumbents?
- ▶ Search incentives lower if required to submit to auction?

Single auction—allocate production rights.

- ▶ If tradable, free allocation or auction have same distributional outcome.
- ▶ Auction is a tax. Could lower investment, search.

Repeated auction-periodic reallocation.

- ▶ Tax.
- ▶ Efficiency effects. Short time horizons, uncertainty. Quota values fall as quota period ends.



FISHERIES: AUCTION

Auction open the industry to new fishers?

- ▶ New fishery?
- ▶ Existing fisheries with incumbent fishers?
- ▶ Difficulty in transferring skill and local knowledge to new winners.
- ▶ Potential to limit access to banking/capital. Specialized information. US farming example.
- ▶ Costs to those with less experience of forming sensible bids.

Cost to government of preparing/holding auctions to achieve objectives; complex design.

Could raise short-term government revenues, depending on cost.

Revenue goals dominate resource management.

May damage long-term wealth generation from the resource.

May not achieve distributional goal.

FISHERIES: AUCTION VS GRANDFATHER



Auctions very limited.

- ▶ Abandoned/scaled down. Russia, Estonia, New Zealand (Vetemaa, Eero, Hannesson, 2002; Anferova, Vetemaa, Hannesson, 2005; Lynham, 2014).
- ▶ Some new fisheries with no incumbents—Chile, Australia (Lynham, 2014).

Grandfathering dominates (Lynham, 2014).

- ▶ Usual explanation—political expediency.
- ▶ Universality implies efficiency gains.

FISHERIES: GRANDFATHER

Assigns limited ownership based on historical catch.

- ▶ Commitment to existing fishers with success in the fishery.
- ▶ Security for financing.
- ▶ Rewards most efficient fishers. Experience. Local, time and place specific knowledge. Insights into the stock.
- ▶ Rewards enterprising fishers, who discover new fisheries/fishing opportunities.
- ▶ Aligns incentives with stock value: Recognize that human and physical capital invested in the fishery depend upon the stock.
- ▶ Design cost: Limited potential for corruption in allocation—determine historical time period. There can be a rush to establish production histories.

FISHERIES: GRANDFATHER

Who benefits from grandfathering?

- ▶ Incumbents.
- ▶ Fishing labor on fixed (catch) shares.
- ▶ Society from long-term fishery revenues. Indirect to suppliers, processors.
- ▶ Resource stock.
- ▶ Private property rights reduce role for politicians and bureaucracies.

Who benefits from auctions?

- ▶ Possibly new fishers in some cases.
- ▶ Politicians. Redistribute fishery rents to constituencies. May raise short-term revenues. Auction costs.
- ▶ Regulatory agencies may gain more control over the fishery.

FISHERIES: GRANDFATHER

First Possession. Ownership based on priority in time, historical use/production.

- ▶ *Most* common property rights allocation mechanism.
- ▶ Civil and Common Law.

Efficiency advantages of first possession (Epstein 1979).

- ▶ Recognize existing users, most efficient outcompete.
- ▶ Reward local information generated from prior use.
- ▶ Reward search. Discoverers become owners.
- ▶ Market decides size of allotment. Efficiency criteria, rather than political or bureaucratic, determine allotment size. May not be so in auctions.

APPLICATION TO FAROE ISLANDS

Fishing industry: Pelagic, Demersal fisheries. Major contributors to GDP.

- ▶ Critical to do this right.
- ▶ Resource-based economy. Long-term protection of the stock and industry vital.
- ▶ Lessons: Protect property rights to encourage investment and long-term revenue.
- ▶ Major international competitors.
 - ▶ Competitive strategy--quality differentiation.
 - ▶ State of the art cooling; new vessels/equipment; training of labor.
 - ▶ Long-term commitment, investment by industry.
 - ▶ Requires financing. Safe property rights. Continuity. Relationships.
- ▶ Allocation of quota/tax policies influence long-term performance.

CONCLUSION

- ▶ Natural resources can be a blessing or a curse.
- ▶ World wide debate over ownership and distribution.
- ▶ Response affects incentives. Waste, short run, versus long term, wealth.
- ▶ Depends on property rights allocation, security, and returns.
- ▶ Objective is to promote industry development and long-term economic benefits.
- ▶ Secure property rights advance this objective.
- ▶ Grandfathering is consistent with secure property rights.



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