Bringing equity and distributional concerns into fisheries management

Lisa Björk, Håkan Eggert,
Thomas Sterner
University of Gothenburg

WCERE, 2018

ITQs

Traditional textbook: Cost reductions, but also

- First, gains in landings
  (Homans & Wilen, 2005)
- Reducing overcapacity without subsidies
- Timely harvests to maximize profits
  (Arnason, 2008; Sanchirico, 2008)
- Avoid accidents following race to catch
  (Pfeiffer, 2016)

Innovation and technical change in fisheries

- In open access it will increase equilibrium effort and further deplete stocks that likely are already overfished

- In a well-functioning ITQ fishery it will primarily increase the lease price and the value of a perpetum quota

Design of ITQ systems when equity matters

- Exclusion of fishers
- Initial allocation of quota
- Concentration effects
- Reduction of employment in fisheries
- Keeping small-scale fisheries

Case: Swedish pelagic fishery 2009 - 2016

Equity Challenges Related to Allocation

- Historical landings (Grandfathering)
- Vessel capacity (9%)
- Sweat equity (labor intensity)
- Equal shares to each fisher

Global survey (Lynham, 2014):
Grandfathering 54% solely, 91% some extent

Swedish shrimp fishery:
Grand fathered, 50-600% allocations

Equity Challenges Related to Allocation

Transitions to ITQ fisheries supported by a majority in e.g. New Zealand, Norway, Iceland, and Canada

Lynham (2014) claim that most economists promote auctions for allocating publicly held resources to private individuals

A built in royalty system, e.g. annual fee of 1% of perpetum quota price (Low values initially => low fee)

Equity Challenges Related to Allocation

Wilen's rule of thumb:

- 50% of landing values will be annual lease price
- Full perpetum quota price 10 times leasing price

Canadian halibut, lease price 60% of landing price and quota price 11 times leasing (Turris, 2010)

New Zealand 2014 landings & lease:
USD 320 millions and 3300 millions

Iceland 2012 landings € 850 millions,
fees > € 80 millions

Equity Challenges Related to Market Concentration and Participant Diversity

Pacific halibut 0.8% of total TAC
Swedish pelagic fishery 10%
Icelandic fisheries max 12%, single species 20%, red fish 35%

Returns to scale in fisheries, costly to limit transferability

No transfers of permanent quota during initial years to increase information among actors involved

Equity Challenges Related to Market Concentration and Participant Diversity

- Securing 10% small scale cod quota on Iceland solved political problem
- Sweden small scale Baltic Sea 7% set aside from pelagic ITQ, profitable => new entrants and race to catch
- Avoid “arm chair” fishers
- Cost of capital varies, permanent quotas facilitate using them as collateral
- Pool quotas for small scale fishers

The Swedish Pelagic ITQ fishery

- November 2009, grandfathered based on 2002-06
- Primarily to reduce overcapacity
- Herring, sprat, sand eel, mackerel, and blue whiting
- TAC negotiated within EU based on ICES advice
- Trading initiated by license holders, carried out by a broker working for the Fishers' Producer Organisation
- Prices are private both for fishers and regulator

The Swedish Pelagic ITQ fishery

Various policy ambitions

- Promote efficiency through capacity reduction
- Promote economically sustainable coastal communities

7% set aside for regional fishing

Pelagic quota holders cannot fish for other species

Concentration limitation, max 10% of pelagic quota

Trial period 2009 - 2019

The Swedish Pelagic ITQ fishery

2016, actors holding permanent quota - 40 %

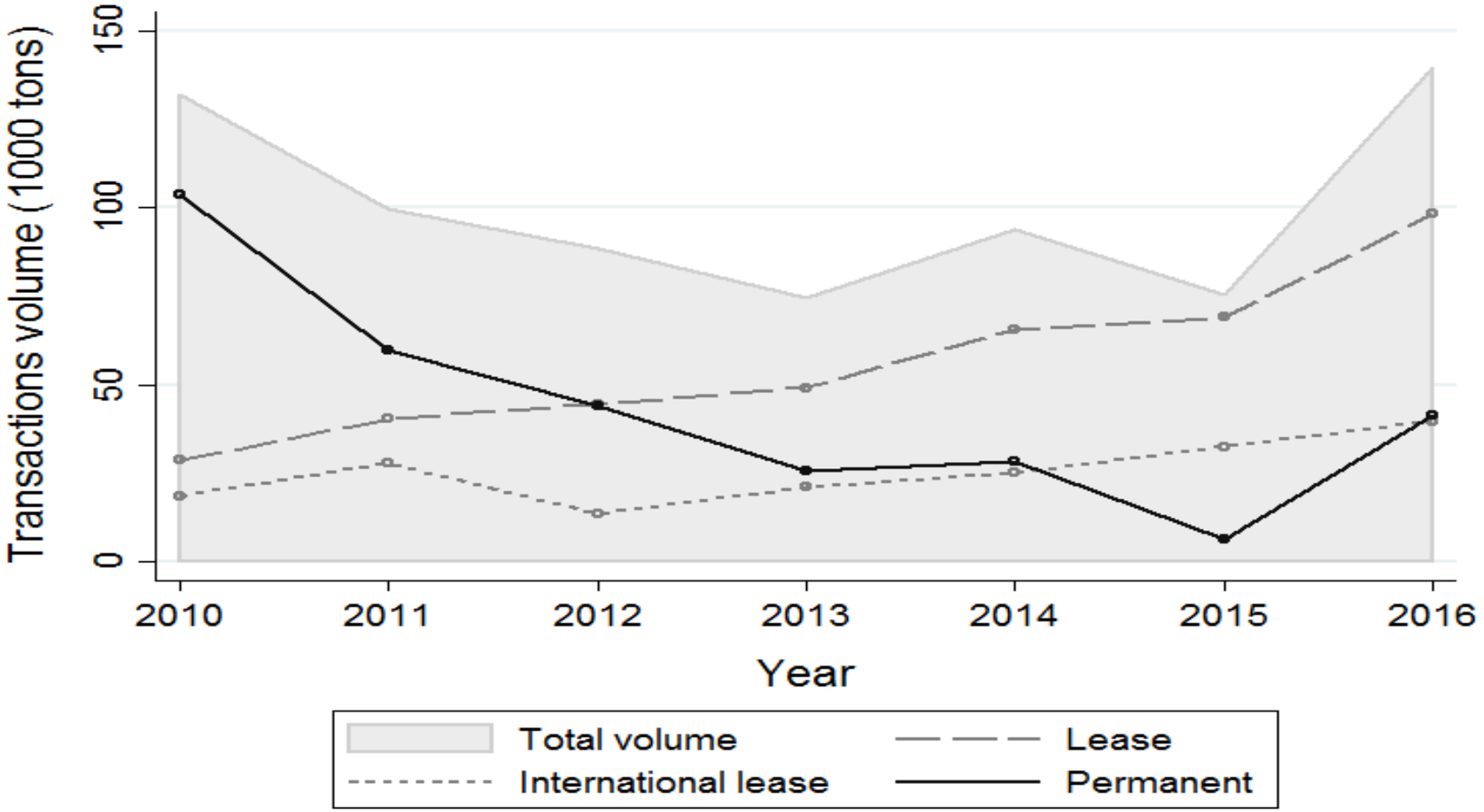
89 actors (81 vessels) to 49 actors (49 vessels)

Fleet capacity (kW) – 26%

Active vessels, down to 29 from 39 during 2010-2015

Large permanent quota trade first year, while lease market started low but increase threefold during the period (see next fig)

The Swedish Pelagic ITQ fishery



Gini coefficient total share of pelagic quota 2009 - 2016

	2009	2010	2011	2012	2013	2014	2015	2016
Gini coefficient (permanent holdings)	0.60	0.81	0.70	0.71	0.82	0.78	0.76	0.83

Australian Great Barrier Fin fishery (Innes et al., 2014)
Gini coefficients from 0.66 to 0.78 in 8 years

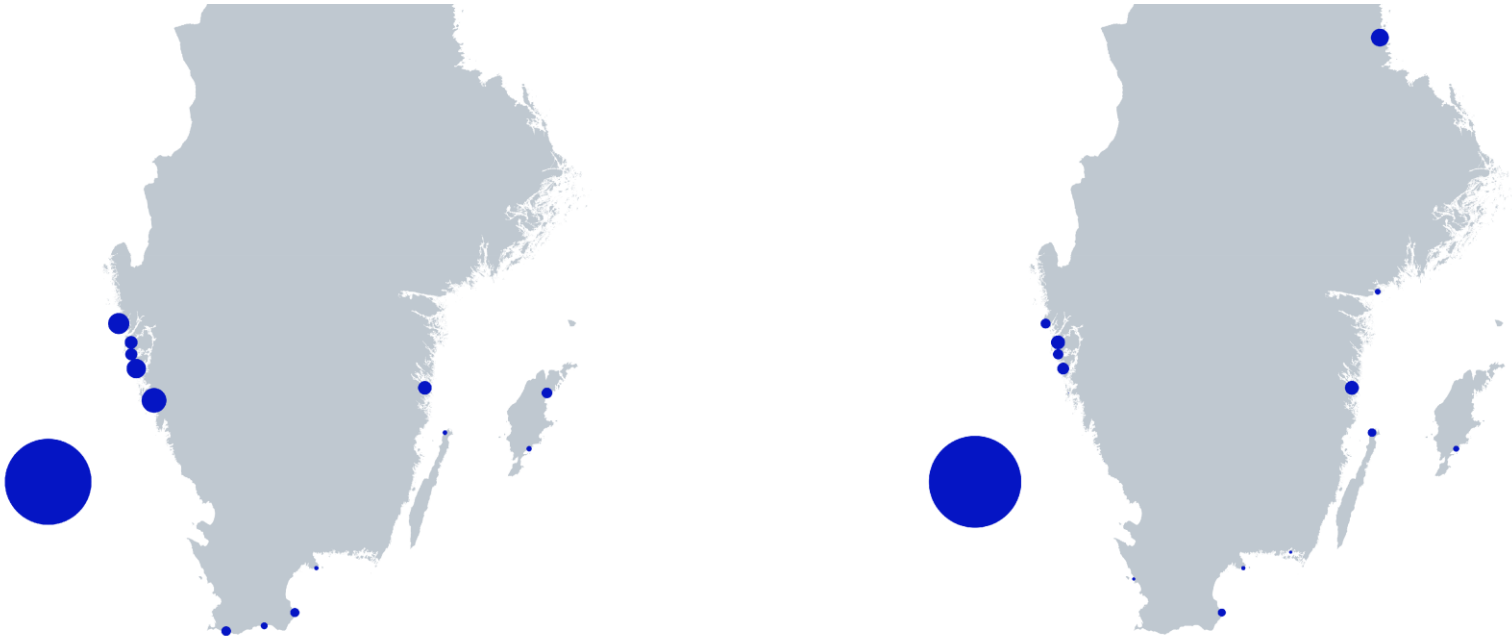
Tasmanian rock lobster ITQ fishery (Hamon et al., 2009)
concentration highly restricted, Gini coefficient 0.36

Gini coefficient (permanent holdings)

Share of total quota ownership by home port 2009 and 2016

Share of total landings by port in 2009 and 2015

Swedish and foreign (mostly Denmark)



Conclusion

Swedish pelagic fishery

- Substantial reduction, 26% capacity reduction
- Concentration increase over time and spatially
- Large quota owners have an important role in domestic lease market
- Lease trade linked to common buyer
- Concentration reflecting efficiency gains or potentially from initial allocation?
- Immature quota market, perpetum valued at 15-20% of potential value

Conclusion

Swedish pelagic fishery

- Quota prices should be collected and be public
- Establish value of quotas and make them usable as collateral
- Too lax restrictions on exceeding quota, slows capacity re-distribution down
- Understanding quota markets require data. Should be part of design.
- Concentration caps work

Conclusion

ITQs, receive critique based on equity grounds

- Good for stocks
- Spur efficiency and generate wealth
- Tend to involve fishers in a participatory management process

Make distributional decisions as part of the design when assigning property rights

Concentration caps work, but RTS imply increased costs

Wealth creation taxation should be part of the design before transferring rights