

# A retrospective analysis of the effects of adopting Individual Transferable Quotas (ITQs) in the Tasmanian rock lobster fishery

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# Outline

- I. Context: the growing debate on access regulations in fisheries
- II. Central question: expected impacts of ITQs on fisheries?
- III. A case study: the Tasmanian rock lobster fishery
- IV. Assessing the impacts of adopting ITQs in the fishery: first empirical results

# I - Access regulations: a key issue in fisheries management

Fish = common pool resources → "race to fish"

- overcapacity, economic inefficiency
- competition, conflicts
- depletion of fish stocks

Typology of management measures

1. Conservation of resource: preservation of productive / reproductive capacity of stocks (and habitats)
2. Regulation of access to resource: Allocation of this capacity among harvesters

## The problem is recognized internationally

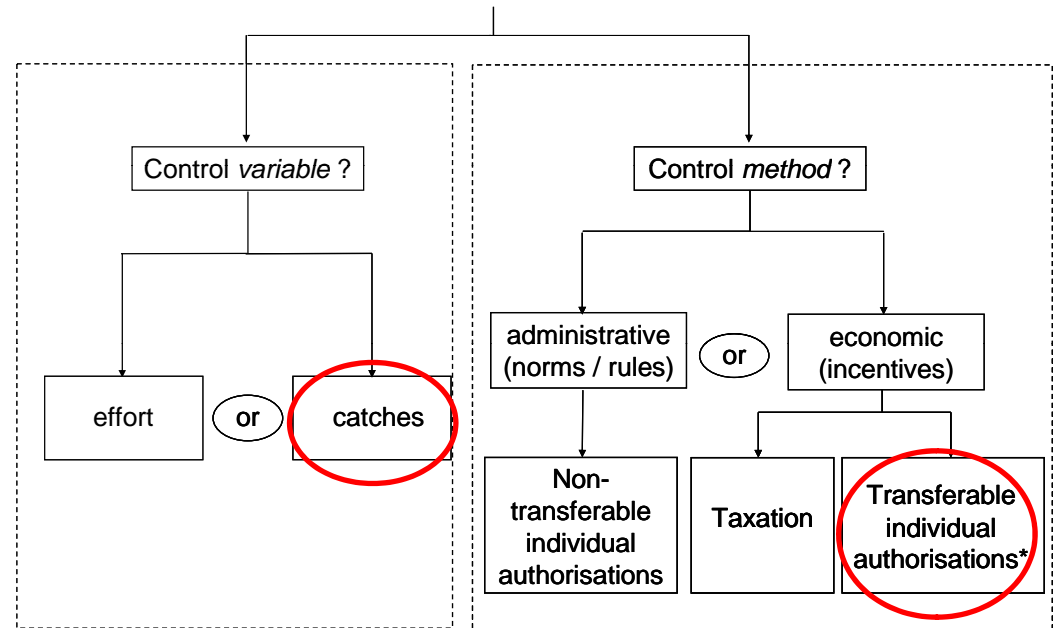
"The topic of allocation - how to share, portion, allot, distribute - is at the heart of any and all efforts around the world to manage fisheries.

There is worldwide recognition that the question of how to share limited fisheries resources must be addressed and that this means finding ways of determining who can catch what.

These are sensitive decisions, but there is growing recognition in both the private and public sectors that the longer fishing communities and fisheries managers avoid allocating fishing rights, the greater the risk of making decisions that, ultimately, do not lead to fisheries that are as healthy or as sustainably utilized as they could be"

(FAO, 2007. SOFIA, p85).

## Alternative approaches to access regulation



\* So-called « rights-based management »

ITQs

Country	Limited licences	Effort / vessel	Territ. Use Rights	Transferable limited licences	Transferable effort/vessel	Community quota	Quota / vessel	Individual quota	Transferable indiv. quota
Australia	X	X			X				X
Canada	X	X				X	X	X	X
Corea			X			X			
United-States	X	X	X		X	X	X	X	X
Iceland	X								X
Japan	X		X			X			
Mexico				X					
Norway				X			X	X	
New-Zealand									X
Germany							X	X	(X)
Belgium	X	X						X	
Denmark				X			X	X	X
Spain	X		X		X			X	
Finland			X						
France	X	X			(X)		X	X	
Greece	X								
Ireland							X		
Italy	X		X					X	
Netherlands	X	X		X					X
Poland									X
Portugal						X		X	
United-Kingdom	X	X		X			X	X	(X)
Sweden			X		X				

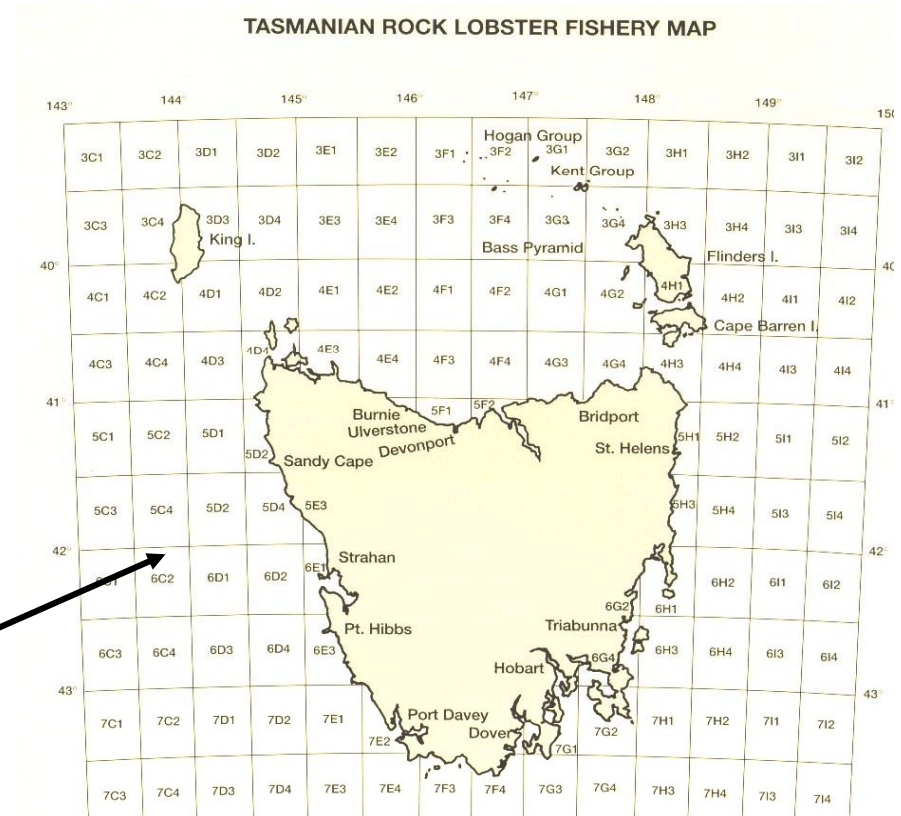
After OECD, 2006

## II - Expected impacts of ITQs

1. Individual allocations: allows fishers to develop harvesting strategies maximizing the returns from harvest
  2. Transferability: more efficient fishers buy out least efficient fishers → capacity reduction
  3. Social issues: in particular, concentration of quota ownership
- Lack of global consensus on these impacts: what can we learn from studies of the observed impacts of adopting ITQs ?

# III - A case study: the Tasmanian rock lobster fishery

Coastal fishery, single species



- 214 vessels, baited traps
- 2d Tasmanian fishery in value (50 million AUD)
- 1st for employment
- 75% of landings exported

# Details of the ITQ system

- ITQs introduced in 1998 (based on trap ownership)
- TAC ~ 1500 t since introduction
- Initial allocation :
  - based on trap ownership
  - minor account for catch history (9%, 5% and 3% in first 3 years)
- Aggregation limit:
  - 200 quota units for operators and owners
- Control:
  - fishermen, quota owners and processors
- Estimated value of quota units in June 2007 = 439 million AUD\$;  
lease price = 18-20 AUD\$/kg (Haddon & Gardner, 2008)



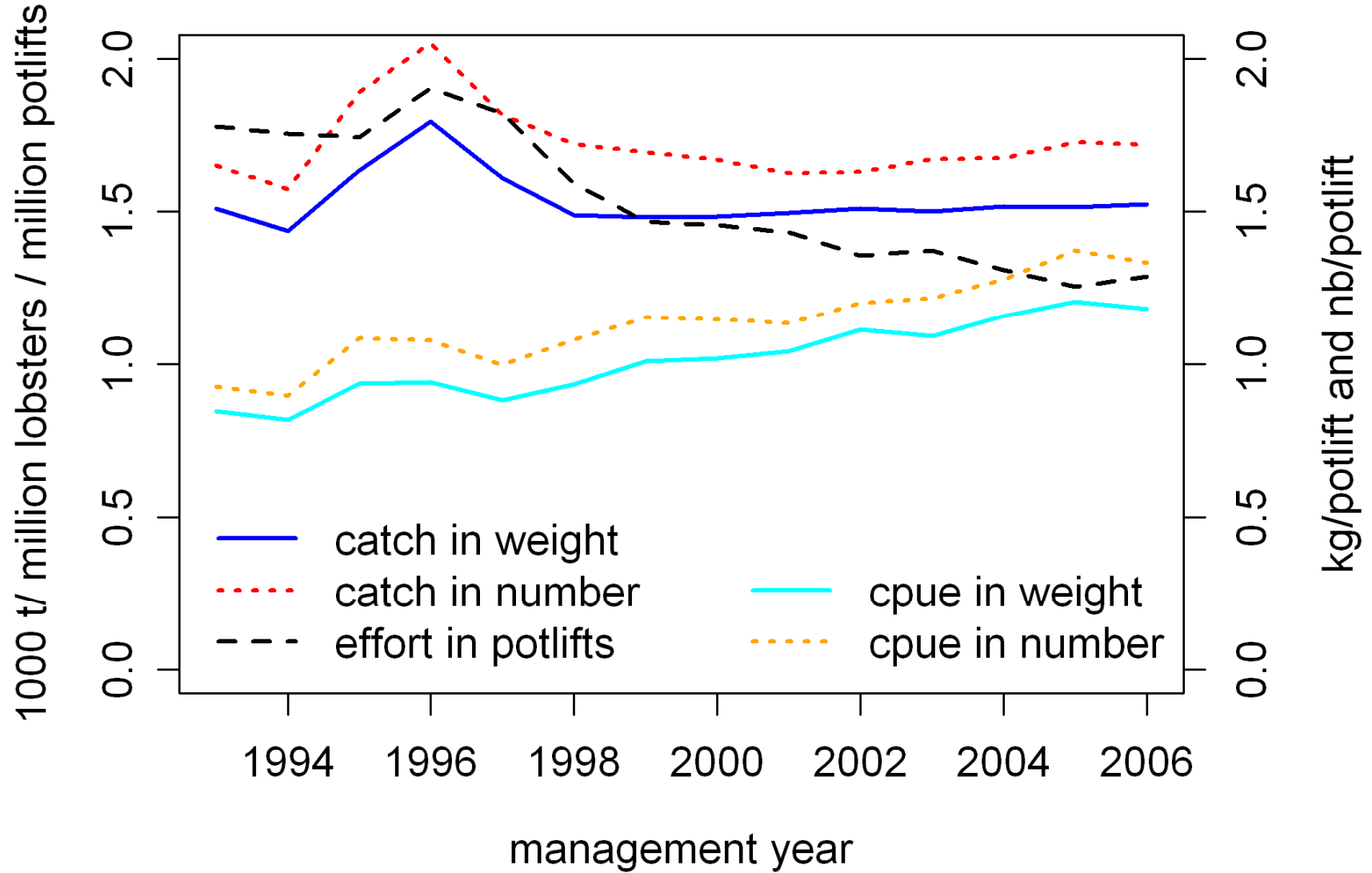
## IV - Assessing the impacts

Preliminary analysis of changes in the fishery with respect to the three broad categories of expected impacts:

1. Compilation of available data sets:
  - Spatialized catch and effort data at day level per vessel since 1993
  - Fleet characteristics (vessel length, tonnage and home port)
  - Ex-vessel price of lobster (monthly average per processor since 1990)
2. Descriptive statistics / indices for key variables (vessel numbers and characteristics, fishing effort, landings and ex-vessel prices of lobster)
3. Analysis of modifications in seasonality and trend in lobster prices

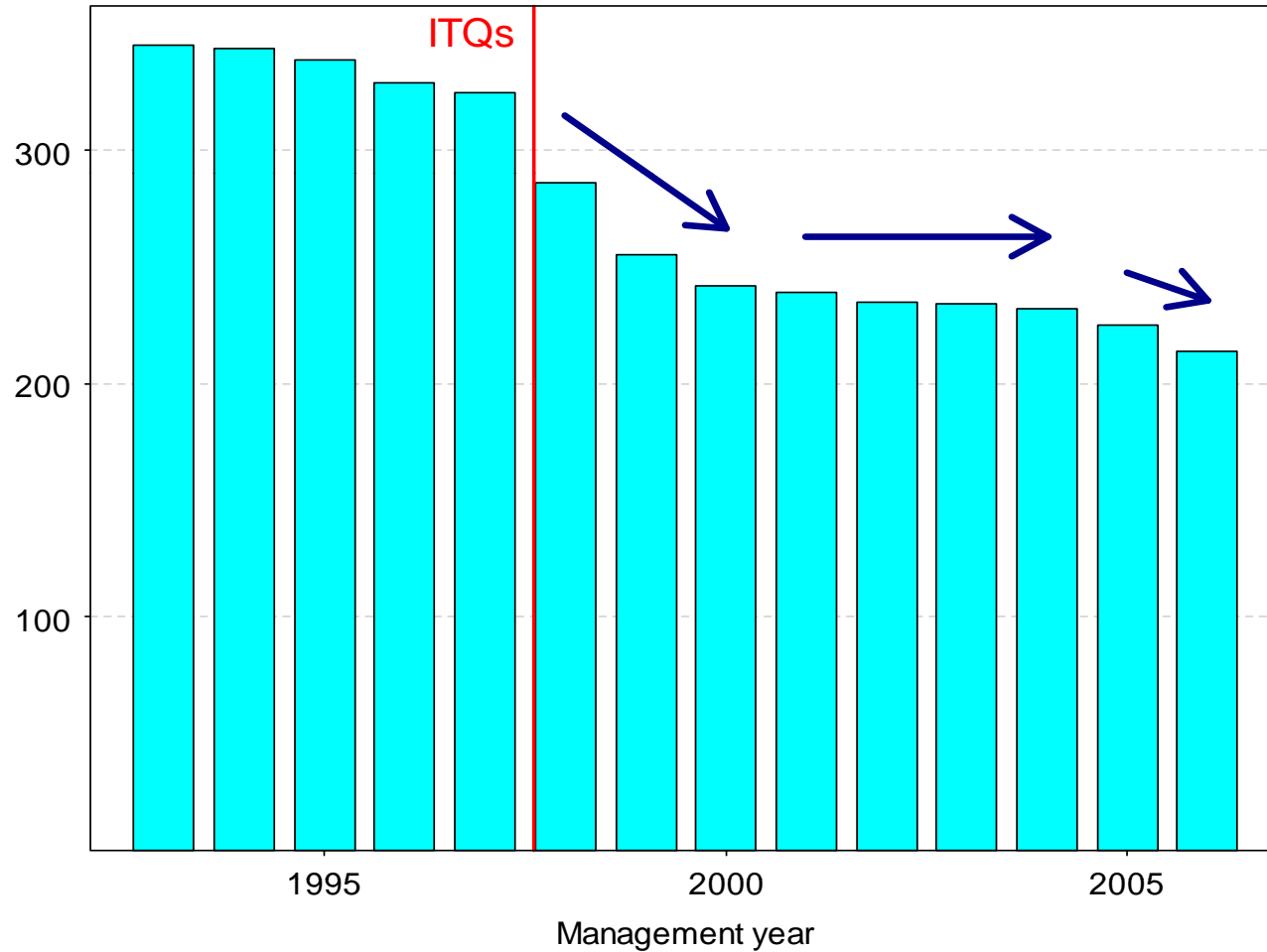


# Overall impacts



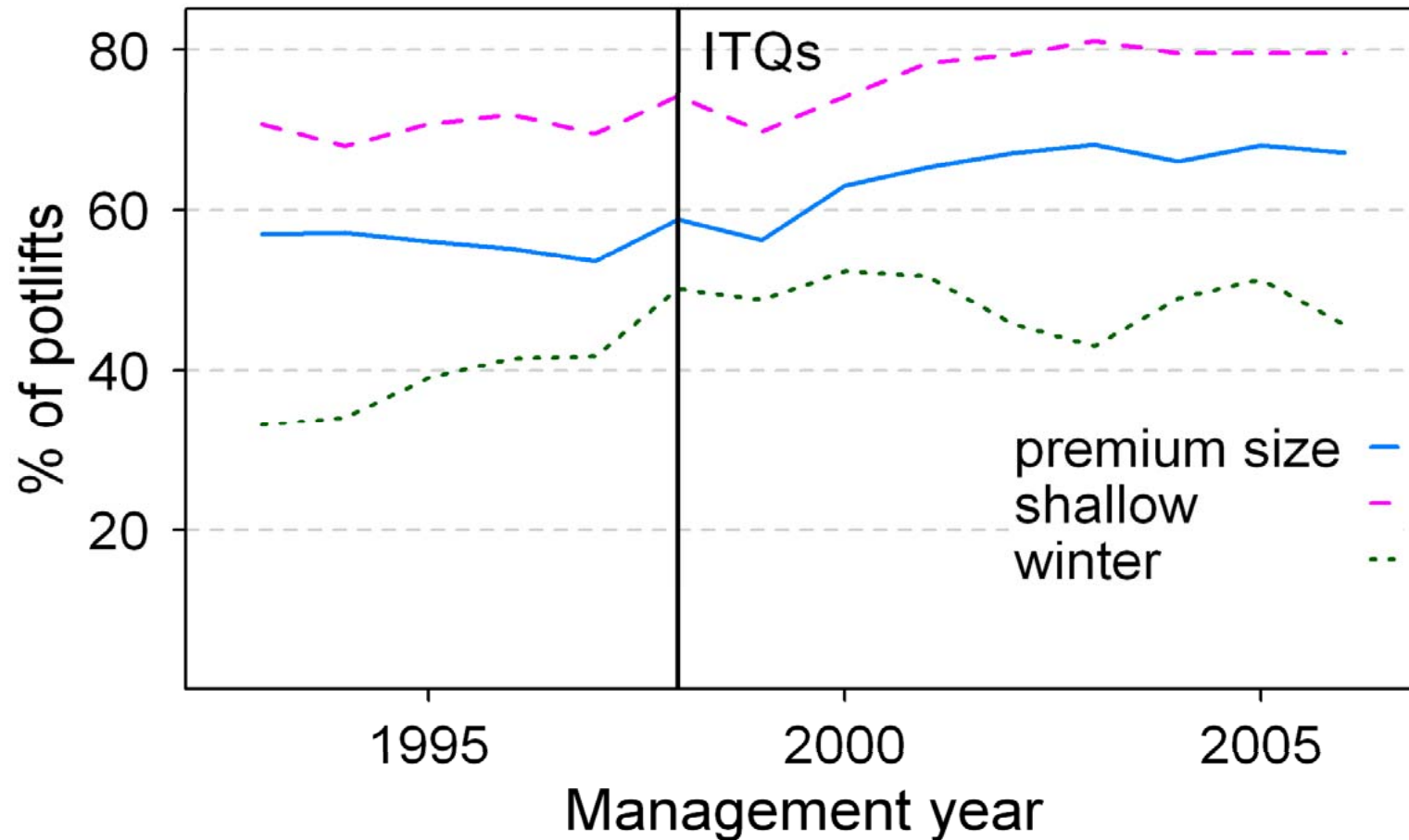
# Fleet rationalization

Number of vessels operating in the Tasmanian rock lobster fishery



- First 3 years: rapid exit of vessels from the fishery (-25%)
- Second round of vessel exits since 2005

# Change in fishing strategy



Increase in the proportion of « premium » lobster in landings:

- Hard shell (winter)
- Red color (shallow water)
- Size (weight between 0.8 and 2 kg)

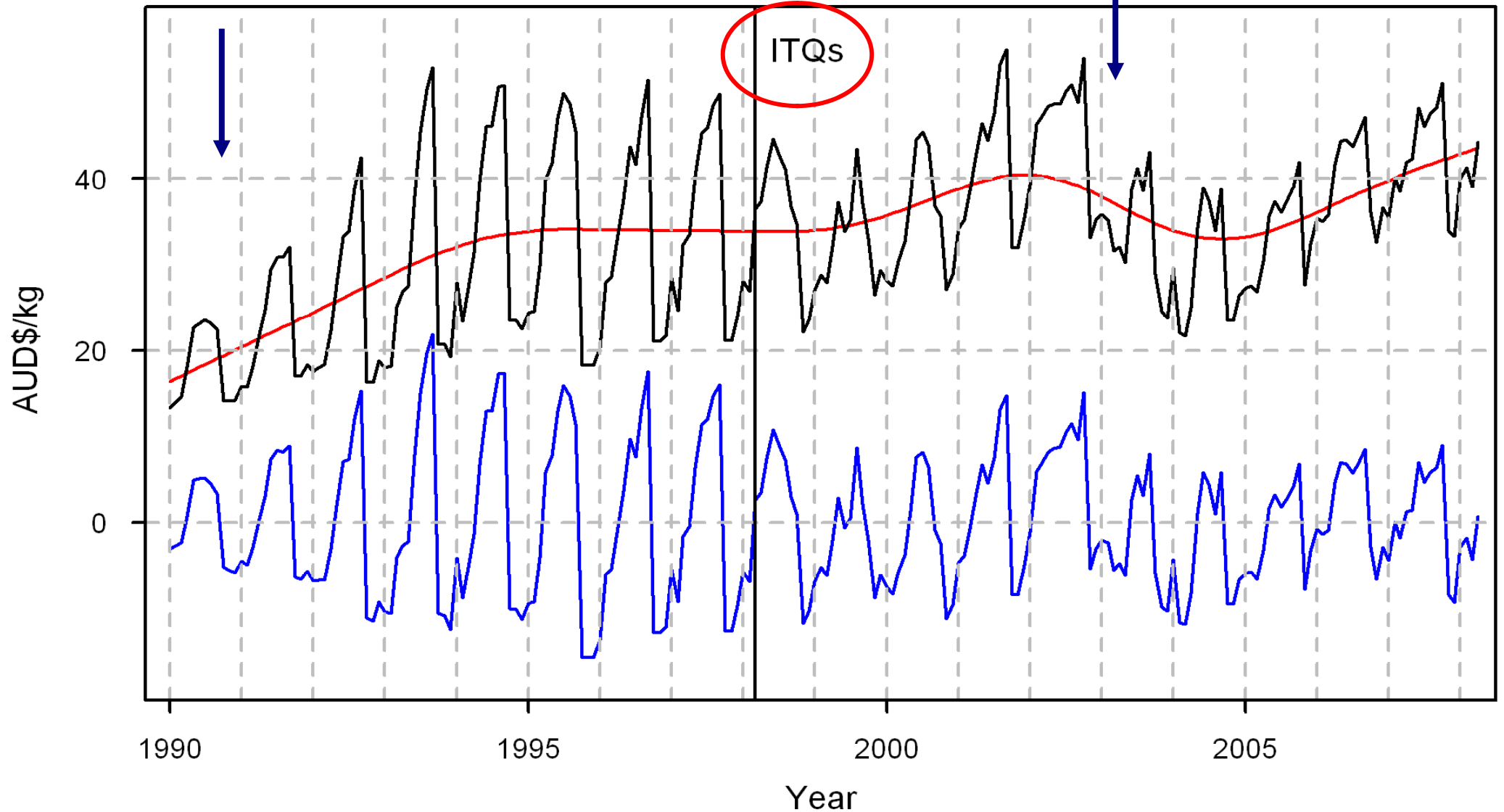
# Average price changes

Hodrick Prescott Filter

cycle — trend — price —

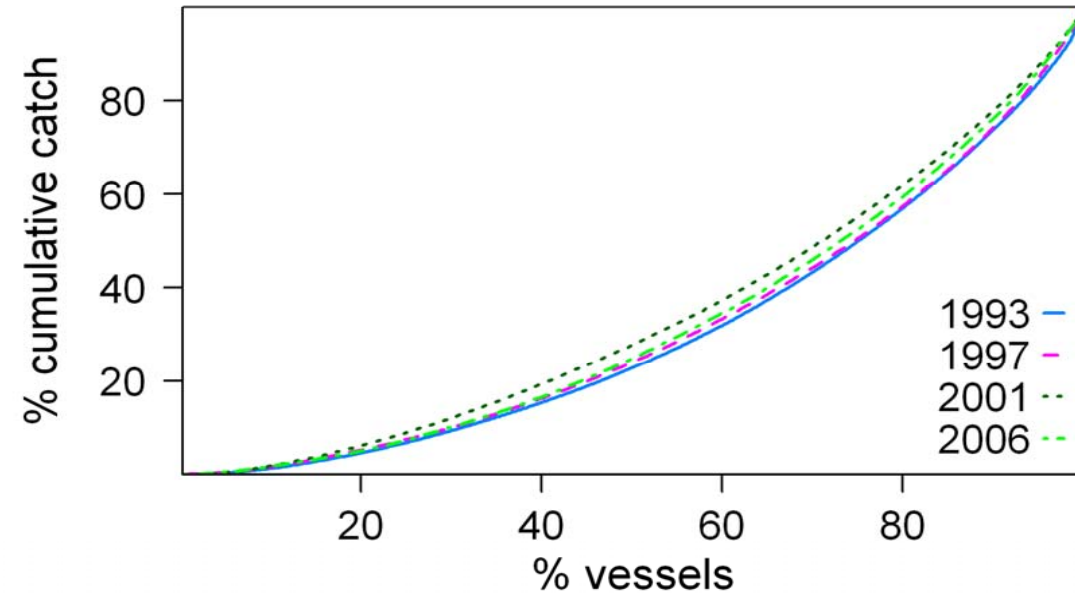
SARS

Asian demand

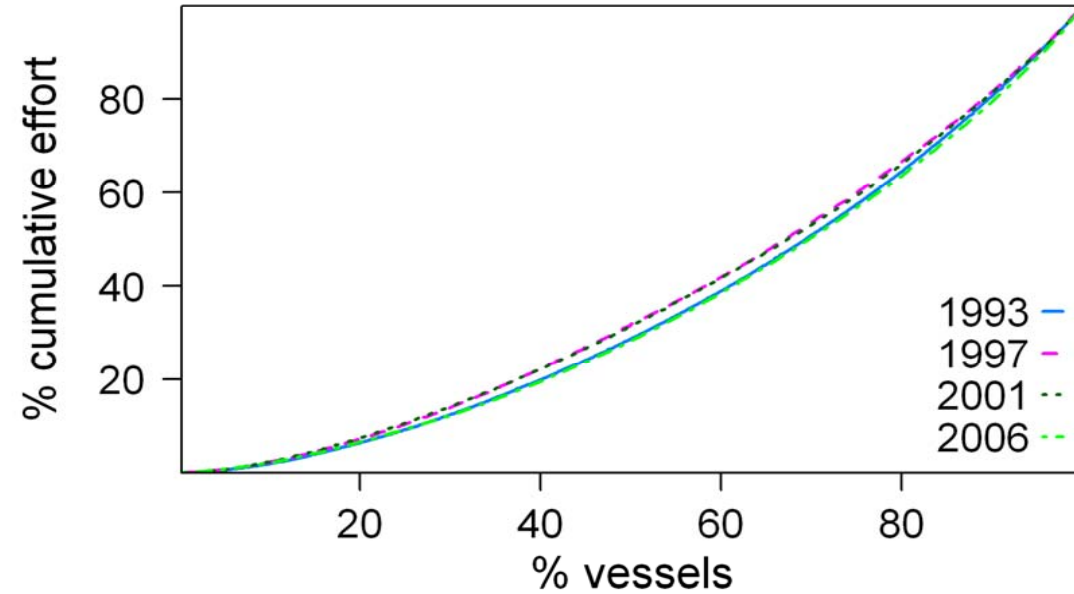


# Concentration of Activity

## Catch



## Effort



- Low Gini indices → relatively equal distribution
- no change in distribution among fishers

# Conclusion & Perspectives

1. Some of the expected impacts seem to be observed:
  - Reduction of excess capacity
  - Change of fishing strategies to increase returns on catch allocations
  - Overall increase in the efficiency of the fishery
  - Response was fairly rapid (~ 2 years)
2. Distribution of activity and catches among operators appears to have remained stable
3. Work in progress: further analysis of individual responses of fishers & integration in a bioeconomic model of the fishery including a model of the market for catch shares

Thank you for your attention

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