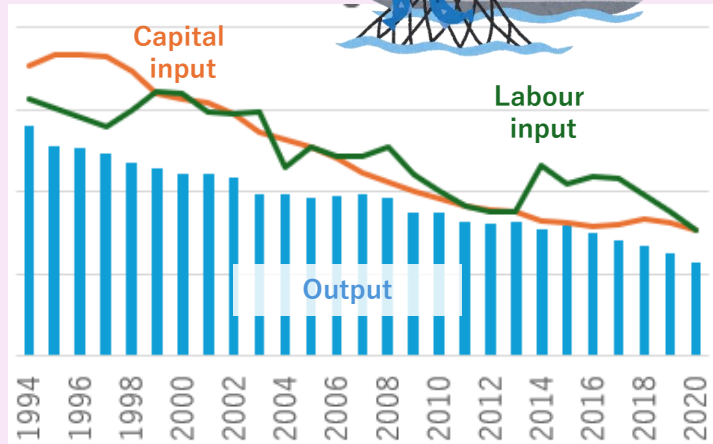


Scale Effects and Productivity Dynamics in Japan's Fisheries Sector



1. THE RESEARCH QUESTION & CONTEXT

Integrated Japanese Fishery Sector



Prolonged Contraction in Industry Scale (1994-2020)

RESEARCH QUESTION:

Do changes in scale elasticity contribute to TFP dynamics in a contracting fishery sector?



2. METHOD & EVIDENCE

Combined Production & Input Demand Analysis

No Assumption of Constant Returns-to-Scale

Translog Production Function

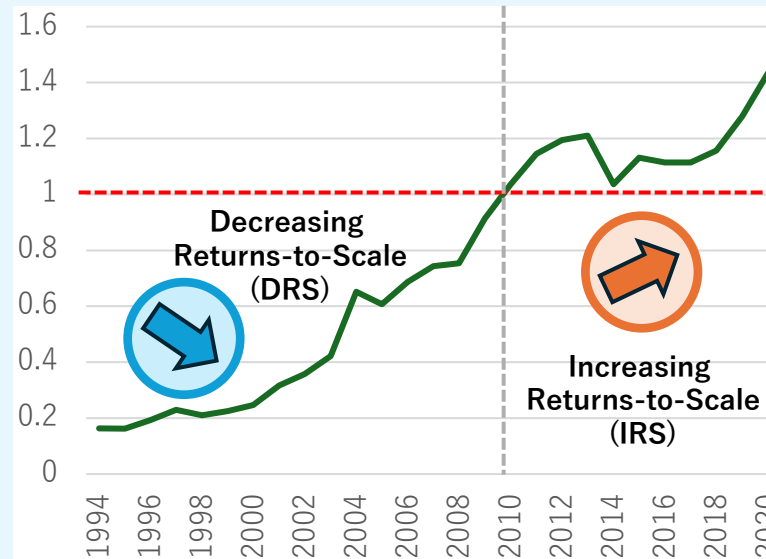
Focus: Structural Characteristics



Differential Production Approach (DPA)

Focus: Behavioral Responses

Scale elasticity shifted from DRS to IRS



3. KEY FINDINGS & POLICY IMPLICATIONS

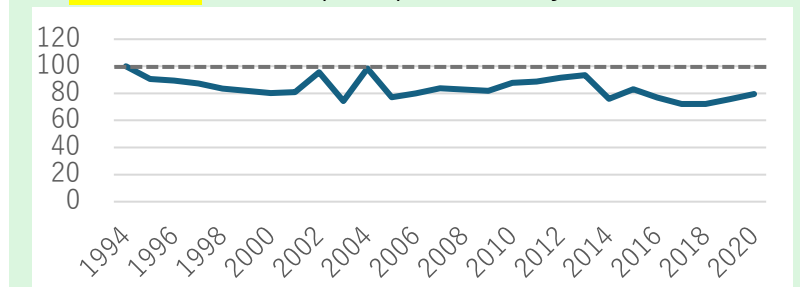
Input use continued to decline...

→ Contraction Trap (**Negative scale effects**)

Pre-2010	Post-2010
DRS mitigated TFP loss caused by scale contraction.	IRS exacerbated TFP loss caused by scale contraction.

Total Factor Productivity (TFP) Dynamics

- TFP growth remains largely negative.
- Labour productivity is more strongly associated with TFP than capital productivity.



POLICY IMPLICATIONS

- Maintaining adequate scale is key to realizing positive scale effects.
- Prioritize labour productivity and working conditions alongside capital investment.