

THE IMPACT OF REGIONAL ENVIRONMENTAL REGULATIONS ON EMPIRICAL VESSEL SPEEDS



Roar Adland, Gro Fønnes, Haiying Jia, Ove D. Lampe, Siri P. Strandenes

While there has been significant theoretical research on how introducing Emission Control Areas (ECA) to limit sulphur usage could affect vessel speed, empirical research on the subject has been largely underdeveloped. This study aims to fill this gap by providing the first empirical analysis of study of vessel behaviour in regions affected by the ECA regulations, and confirm whether the previous literature's assertions that increased sulphur regulation should lead to decreased vessel speed is correct.

APPROACH:

Data was collected from the Automatic Information System to examine high-frequency speed observations of nearly 7000 individual sailings through various ECA boundaries located within the North Sea region.

MAIN FINDINGS:

- The results from this study do not support the assertion that the introduction of Sulphur regulations inside Emission Control areas will affect vessel speeds in an economically significant manner.
 - Furthermore, the research indicates that vessel speeds are not generally affected by fuel prices or freight rates. Instead, the significant determinants are generally voyage-specific variables such as ship type, the traffic level of target and origin ports.
- For policy practitioners, the authors caution that the additional cost of low-sulphur fuels are generally borne by both consumers and vessel operators which may incentivize non-compliance with ECA regulations. This would weaken the potential for emission reductions, as well as create a market disadvantage for companies that do comply with regulations.
 - Consequently, strong enforcement of ECA regulations by relevant nations and authorities becomes crucial to ensure that their effects benefit associated environmental goals.