

REDUCING EMISSIONS IN INTERNATIONAL TRADE: A SUPPLY CHAIN PERSPECTIVE



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Recent pressures resulting from apprehension concerning climate change have led to new IMO regulations surrounding limiting the usage of sulphur by ship-owners. This study explores a new approach for reducing sulphur emissions in international trade by looking to incentivize the usage of larger vessels that are more efficient than smaller vessels in terms of sulphur emissions per mass.

APPROACH:

Using an original data set consisting of country pairs located in Europe, Africa, America, and Pacific Asia, this study uses an augmented gravity model to determine the relationship between the growth of trade and the demand for vessel sizes. The authors then analyze the implications of these findings for sulphur emission reduction.

MAIN FINDINGS:

- The evidence from this study suggests that investments in the upstream and downstream of shipping activity may lead to sufficient economic growth that average vessel size will increase.
 - As vessel size increases, the correlated sulphur emissions would become correspondingly more efficient per mass of cargo.
- Evidence suggests a positive relationship between trade, logistic performance, and connectivity variables. Furthermore, this paper also proves that increased trade can be supported by larger, more Sulphur efficient vessels.
 - A 1% increase in bilateral trade corresponds with a 0.003% increase in vessel size. Accordingly, increased trade between states can lead to more fuel efficient supply chains.
- This research has important implications for policy makers and shipping stakeholders as it outlines how well placed investments in supply chain growth will provide positive environmental impacts in the shipping sector.