The Hong Kong Polytechnic University
Department of Logistics and Maritime Studies
Research Seminar

Are AIS-based trade volume estimates reliable?
The case of crude oil exports

by

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(Conducted in English)

Abstract:

Most global trade statistics in the public domain refer to official customs data, which are not generally available on a micro (individual cargo) level. Moreover, customs data are not released simultaneously across countries and are often released several weeks after the reporting period. With the increasing availability and completeness of ship positioning data from the global Automated Identification System (AIS), it is possible to derive more timely and detailed trade statistics for homogeneous commodity groups. The objective of this paper is twofold: 1) to compare the accuracy of AIS-derived trade statistics to official customs data and 2) to add a breakdown of trade by vessel size over time. We find that while AIS-derived data for seaborne crude exports show good alignment with true exports in aggregate, there are substantial temporal and geographical differences across countries and time due to the use of pipelines and transshipment in parts of the supply chain. We highlight the challenges in properly structuring and aggregating micro-level cargo data.

Key Words: AIS, oil exports, tankers, maritime big data, trade statistics, trade flows

Bio:

Roar Ådland joined the Norwegian School of Economics as a professor in 2012. He is the holder of the Bergen Shipowners' Association Chair in shipping economics at the Center for Shipping and Logistics. Professor Ådland received his Ph.D. in Ocean Systems Management from the Massachusetts Institute of Technology (MIT) in 2003. He also holds a Master of Science degree in marine technology from NTNU, a M.Phil. in Business Economics from NHH and a Master of Science in Ocean Systems Management from MIT. Before becoming an academic, Roar Adland had a career in the shipping industry, first as an analyst with Clarkson Research Ltd. In London and since 2006 as a trader and portfolio manager of freight derivatives (FFAs) at Clarkson Fund Management Ltd., a shipping-focused hedge fund. Roar Adlands' research focuses on freight derivative pricing and trading, maritime big data, vessel valuation, shipping risk management and bulk freight market modeling.

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All are welcome!