MARITIME ECONOMICS

Edited by
Wayne K. Talley

CRITICAL CONCEPTS IN ECONOMICS

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Critical Concepts in Economics

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Roar Adland and Kevin Cullinane

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24 Ship scheduling and network design for cargo routing in liner shipping

Richa Agarwal and Özlem Ergun

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25 Investment timing and trading strategies in the sale and purchase market for ships

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26 Integrated maritime fleet deployment and speed optimization: case study from RoRo shipping

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27 Corporate governance, financial management decisions and firm performance: evidence from the maritime industry

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28 A frequency-based maritime container assignment model

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29 Ship routing and scheduling in the new millennium

Marielle Christiansen, Kjetil Fagerholt, Bjørn Nygreen and David Ronen

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30 Factors affecting the dynamics of yield premia on shipping seasoned high yield bonds

Costas Th. Grammenos, Amir H. Alizadeh and Nikos C. Papapostolou

Factors that explain the dynamics of yield premia on seasoned high yield bonds of shipping companies are investigated. The bonds' yield premia will be larger the lower the credit rating and the lower the earnings in the shipping market, all else held constant. A negative relationship exists between the bonds' yield premia and the term-to-maturity. The bonds' yield premia appear to be positively affected by changes in 10-year Treasury bonds and the Merrill Lynch single-B index.

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C.Th. Grammenos, N.K. Nomikos and N.C. Papapostolou

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Manolis G. Kavussanos and Dimitris A. Tsouknidis

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33 Economic spillovers between related derivatives markets: the case of commodity and freight markets

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34 A gam assessment of quality premia in the dry bulk time-charter market

Sebastian Köhn and Helen Thanopoulou

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35 Containership routing and scheduling in liner shipping: overview and future research directions

Qiang Meng, Shuaian Wang, Henrik Andersson and Kristian Thun

Studies (over a 30-year time period) that use operations research methods in investigating containership routing and scheduling problems at the strategic, tactical and operational planning levels are reviewed. The studies address, for example, containership fleet size and mix, network design, alliance strategy, frequency determination, schedule design and speed optimization. The problems are classified by model formulations, assumptions and algorithm design. A gap exists between academic studies and containership routing and scheduling in practice.

36 Distribution-free vessel deployment for liner shipping

ManWo Ng

A planning problem of the liner shipping industry is to determine the optimal deployment of vessels. Only until recently has this problem been addressed under uncertainty, requiring knowing the vessel deployment probability distribution. Since it is difficult to obtain this distribution, one has been assumed. Rather than the latter, a new distribution-free model is proposed for determining vessel deployment that only requires the specification of a mean, standard deviation and an upper bound on shipping demand.

37 The relative efficiency of shipping companies

Photis M. Panayides, Neophytos Lambertides and Christos S. Savva

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38 A survey on maritime fleet size and mix problems

Giovanni Pantuso, Kjetil Fagerholt and Lars Magnus Hvattum

A literature survey on the fleet size and mix (FSM) problem in maritime transportation is presented. Fluctuations in the shipping market and frequent mismatches between demands and fleet capacities highlight the relevance of the problem. The FSM problem consists of determining how many ships of each type to use in order to meet the demand. The literature has focused on static shipping systems. Future research should focus on renewal of the fleet that adapts to market situation changes.

39 Investor sentiment for real assets: the case of dry bulk shipping market

Nikos C. Papapostolou, Nikos K. Nomikos, Panos K. Pouliasis and Ioannis Kyriakou

Shipping sentiment proxies that capture market valuation, liquidity and expectations are used to construct sentiment indices for capsize, panama, handymax and handysize sectors of the dry bulk shipping market. Sentiment is a contrarian indicator of future vessel price returns on an individual sector basis and across all sectors. Sentiment plays an important role in the investment decisions for the sale and purchase of second-hand vessels. Cross-section sentiment contagion is possible in the dry bulk shipping market.

40 The effect of oil price on the optimal speed of ships

David Ronen

The tradeoff between ship fuel savings through slow steaming on the one hand versus the loss of ship revenues due to voyage extension on the other hand is analyzed. The deviation from a ship's optimal speed may be required to meet a deadline. Missing the deadline may result in the ship losing a contract. A ship's optimal speed over time may change due to changes in the cost of bunker fuel and ship cargo loading dates.

41 Maritime transport chains: carrier, port and shipper choice effects

Wayne K. Talley

A maritime transport chain is a network over which carriers, ports and shippers are involved in the movement of cargo. The effects of carrier chain profit, port

chain throughput and shipper chain logistics cost on the maritime transport chain choice by carriers, ports and shippers are investigated. Carrier (water and land) chain profit has positive direct and indirect effects on carrier choice. Port chain throughput has positive direct and indirect effects on port choice. Shipper logistics cost has negative direct and indirect effects on shipper choice.

42 Does quality pay? The case of the dry bulk market

Michael N. Tamvakis and Helen A. Thanopoulou

The possible existence of a two-tier spot freight market for medium and large bulk carriers of differing age is investigated. Specifically, is there any willingness for the market to remunerate quality tonnage through higher freight rates? The empirical results provide no clear indications of strong pecuniary incentives to owners for increasing fleet quality and improving safety in the dry bulk carrier market through vessel replacement.

43 A novel hybrid-link-based container routing model

Shuaian Wang

The routing of containers is a determination of how to transport containers from their origins to their destinations over a liner shipping network. A novel hybrid-link based container routing model is presented that nests the origin-link-based and destination-link-based models as special cases that is at least as compact as other link-based models, but can also be used to solve multi-commodity flow problems. An experiment is undertaken involving 20 ports, 5 shipping routes and 16,805 TEUs to be shipped.

44 Liner ship fleet deployment with container transshipment operations

Shuaian Wang and Qiang Meng

A liner ship fleet deployment problem is formulated as a mixed-integer linear programming model that allows container port transshipment operations without explicitly utilizing container transshipment variables. An application of the model for a global liner container shipping company utilizing the Asia–Europe–Oceania shipping network is presented. The model's optimal solutions cannot be captured by models that exist in the literature. In addition, they can be used to redesign liner container shipping services.