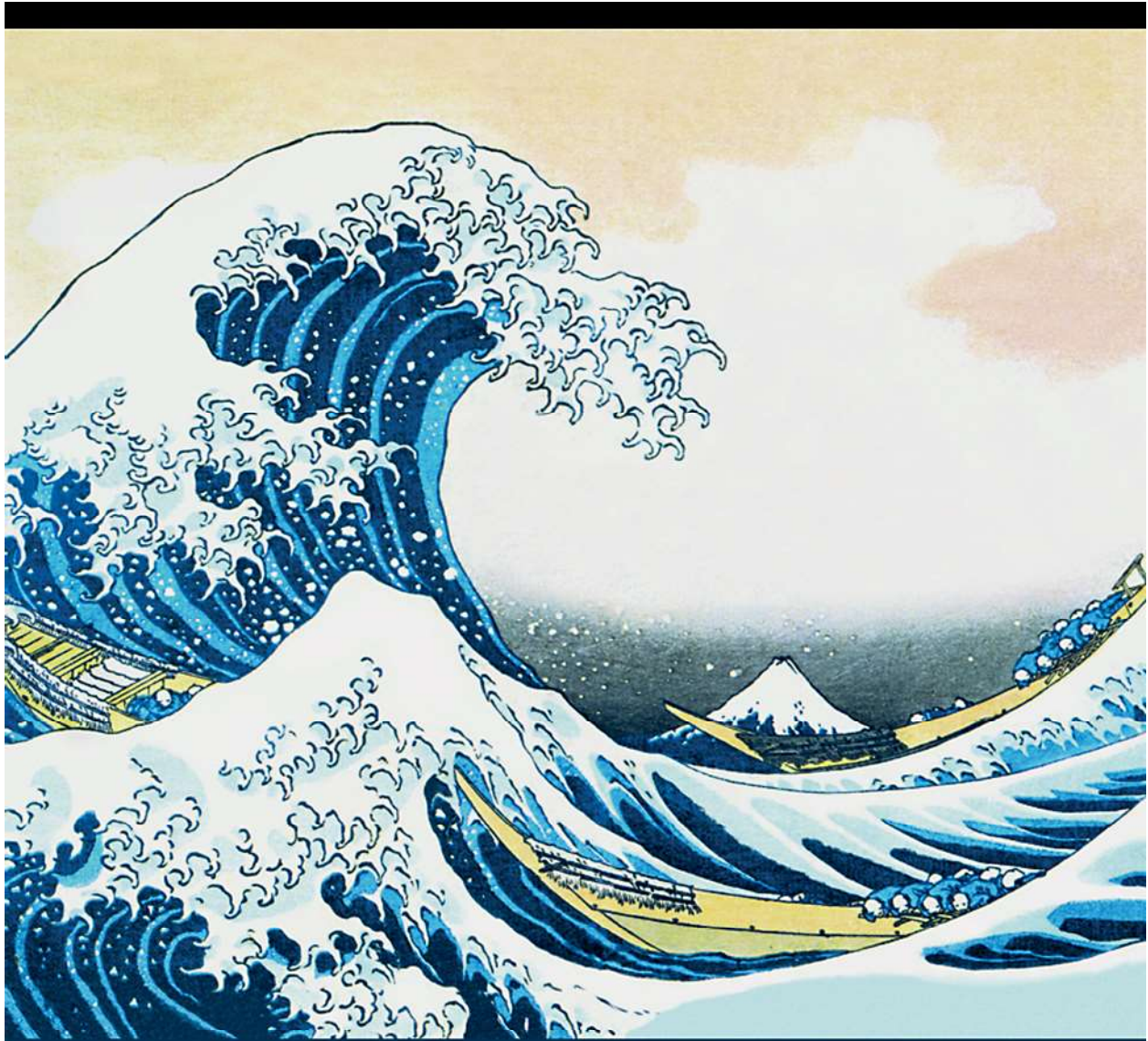




Maritime Economics

3rd edition

Martin Stopford

MARITIME ECONOMICS

Winner of the Chojeong Book Prize 2005 for ‘making a significant contribution to the development of maritime transport academically and practically’

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- shipping cycles back to 1741, with a year by year commentary;
- updated chapters on markets, shipping costs, accounts, ship finance and a new chapter on the return on capital;
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With over 800 pages, 200 illustrations, maps, technical drawings and tables, *Maritime Economics* is the shipping industry’s most comprehensive text and reference source, whilst remaining, as one reviewer put it, ‘a very readable book’.

Martin Stopford has enjoyed a distinguished career in the shipping industry as Director of Business Development with British Shipbuilders, Global Shipping Economist with the Chase Manhattan Bank N.A., Chief Executive of Lloyds Maritime Information Services, Managing Director of Clarkson Research Services and an executive Director of Clarksons PLC. He lectures regularly at Cambridge Academy of Transport and is a Visiting Professor at Cass Business School, Dalian Maritime University and Copenhagen Business School.

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THE SHIPS THAT PROVIDE THE TRANSPORT

Table 14.3 Economies of scale in bulk shipping (% cost per ton mile)

Round voyage (miles)	Ship size (dwt)			
	15,170	40,540	65,500	120,380
1,000	100	53	47	37
6,000	56	34	27	20
22,000	52	30	24	17

Source: Goss and Jones (1971, Table 3).

This suggests that economies of scale are only slightly influenced by the length of haul, and the fact that smaller ships are generally used on short routes must have another explanation.

In practice, big ships face two important restrictions. The first is the maximum size of delivery that the shipper is able or willing to accept at any one time. If stockpiles are only 10,000 or 15,000 tonnes, a delivery of 50,000 tonnes would be too large. Second, there is the constraint on ship size imposed by port draught since deep-draught vessels, have access to fewer ports than shallow-draught vessels, as shown in Table 14.4. Limits may also be placed on overall length or beam or both (either by ports or by canals). The measure of accessible ports is very crude, since some ports are more important than others in the bulk trades and depth varies substantially from berth to berth within ports, but the broad relationship is valid. At the lower end of the scale, a small bulk carrier of 16,000 dwt is likely to have a draught of 7–9 metres and is able to access about three-quarters of the world's ports. A final point is that ship designers can vary the draught–deadweight ratio within certain limits by changing other aspects of the design such as the beam.

Table 14.4 Relationship between ship draft and port access

Ship draught		Average size dwt	Standard deviation* dwt	% of world ports accessible
feet	metres			
25–30	7.6–9.1	16,150	3,650	73
30–35	9.2–10.7	23,600	3,000	55
36–38	10.8–11.6	38,700	5,466	43
39–44	11.7–13.4	61,000	5,740	27
45–50	13.5–15.2	89,200	8,600	22
51–55	15.3–18.5	123,000	9,000	19

Source: Sample of bulk carriers from the Clarkson *Bulk Carrier Register* and *Ports of the World*

*Standard deviation is the spread of the average size