

UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT  
Geneva

# REVIEW OF MARITIME TRANSPORT, 2004

*Report by the UNCTAD secretariat*

UNITED NATIONS  
New York and Geneva, 2004

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UNCTAD/RMT/2004

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UNITED NATIONS PUBLICATION

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Sales No. E.04.II.D.34

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ISBN 92-1-112645-2

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ISSN 0566-7682

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**ABBREVIATIONS AND EXPLANATORY NOTES***Abbreviations*

<b>BAF</b>	bunkering adjustment factor
<b>c.i.f.</b>	cost, insurance and freight
<b>DMECs</b>	developed market-economy countries
<b>dwt</b>	deadweight tons
<b>ECLAC</b>	Economic Commission for Latin America and the Caribbean
<b>EEC</b>	European Economic Community
<b>EU</b>	European Union
<b>FDI</b>	foreign direct investment
<b>FIO</b>	free in and out
<b>f.o.b.</b>	free on board
<b>GDP</b>	gross domestic product
<b>grt</b>	gross registered tons
<b>IICL</b>	Institute of International Container Lessors
<b>IMF</b>	International Monetary Fund
<b>IMO</b>	International Maritime Organization
<b>IT</b>	information technology
<b>LDC</b>	least developed country
<b>LNG</b>	liquefied natural gas
<b>LPG</b>	liquefied petroleum gas
<b>mbpd</b>	million barrels per day
<b>NAFTA</b>	North American Free Trade Agreement
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OPEC</b>	Organization of the Petroleum Exporting Countries
<b>TEU</b>	20-foot equivalent unit
<b>ULCC</b>	ultra-large crude carrier
<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>VLCC</b>	very large crude carrier
<b>WS</b>	Worldscale
<b>WTO</b>	World Trade Organization



### Explanatory notes

- All references to dollars (\$) are to United States dollars, unless otherwise stated.
- “Tons” refers to metric tons, unless otherwise stated.
- Because of rounding, details and percentages presented in tables do not necessarily add up to the totals.
- Two dots (..) indicate that data are not available or are not separately reported.
- A hyphen (-) signifies that the amount is nil or less than half the unit used.
- In some tables, the data shown for earlier years have been revised and updated and therefore differ from those shown in previous issues of the *Review*. This relates in particular to the distribution of world tonnage according to country groups, specifically the classification of major open-registry countries. Up to the 1994 edition of the *Review*, the majority of tables included four countries and one territory in this group, namely the Bahamas, Bermuda, Cyprus, Liberia and Panama, while some tables also included Malta and Vanuatu. In 1995, Malta and Vanuatu were included in all tables referring to major open-registry countries. This reclassification primarily affected the share of developing countries in Europe in total world tonnage. As in the previous edition of the *Review of Maritime Transport*, coverage of open-registry countries covers nine countries and three territories. Separate data for six of them, namely the Bahamas, Bermuda, Cyprus, Liberia, Malta and Panama, are provided, while data for the other four countries and two territories, namely Antigua and Barbuda, the Cayman Islands, Gibraltar, Luxembourg, Saint Vincent and the Grenadines, and Vanuatu, are shown together in one group.
- In the tables and the text, the term *countries* refers to countries, territories or areas.

## INTRODUCTION

The *Review of Maritime Transport* is an annual publication prepared by the secretariat of the United Nations Conference on Trade and Development. Its purpose is to identify the main developments in world maritime transport and to provide relevant statistical data. It focuses on developments concerning maritime

activities in developing countries as compared with other groups of countries. It also highlights the correlation between the development of global trade and maritime transport activities in general. Regional developments in Asian are the subject of this year’s special chapter.

## SUMMARY OF MAIN DEVELOPMENTS

### Development of the world economy and seaborne trade

- World output grew in 2003 by 2.6 per cent over 2002, slightly below the 2.7 per cent average output growth for the period 1990–2000. The developed market-economy countries experienced growth of 2.0 per cent, while developing countries recorded an average increase of 4.5 per cent. For 2004, forecasts of output growth for the world are cautiously optimistic — around 3.5 per cent.
- Growth in the volume of world merchandise exports increased by 4.5 per cent compared with 3.0 in 2002. This growth was based on the performance of China and some developing countries.
- The total industrial production index of OECD increased by 1.2 per cent. The positive result was due to the performance of the United States, Japan and, to a lesser extent, OECD European countries.
- World seaborne trade (goods loaded) recorded another consecutive annual increase, reaching a record high of 6.17 billion tons. The annual growth rate increased to 3.7 per cent, well above the 1.0 per cent increase for 2002. Global maritime trade growth is likely to continue to grow during 2004.
- Total maritime activities measured in ton-miles increased to 24,589 billion ton-miles, compared with 23,217 billion ton-miles in 2002.

### Development of the world fleet

- The world merchant fleet expanded to 857.0 million deadweight tons (dwt) at the beginning

of 2004, a 1.5 per cent increase. Newbuilding deliveries increased marginally to 49.2 million dwt and tonnage broken up and lost declined by 16.1 per cent to 25.6 million dwt, leaving a net gain of 23.6 million dwt.

- The fleet of oil tankers and dry bulk carriers, which together make up 72.9 per cent of the total world fleet, increased by 4.1 per cent and 2.5 per cent respectively. There was a 9.3 per cent increase from 82.8 to 90.5 million dwt in the container ship fleet and a 7.6 per cent increase from 19.5 to 20.9 million dwt in the liquefied gas carriers fleet.
- The average age of the world fleet dropped marginally to 12.5 years, with almost 27.7 per cent of the fleet 20 years and over. General cargo vessels had the oldest average age at 17.4 years and container vessels were the youngest at 9.2 years.
- Registration of ships by developed market-economy countries and major open-registry countries accounted for 26.9 and 46.6 per cent of the world fleet respectively. Open registries increased their tonnage marginally, and two thirds of this beneficially owned fleet is owned by market-economies and developing countries. Developing countries' share reached 5.9 per cent or 181.4 million dwt, of which 136.0 million dwt is registered in Asia.

### World fleet productivity and supply and demand

- The main operational productivity indicators for the world fleet — tons carried per dwt and thousands of ton-miles per dwt — increased to 7.2 and 28.7 respectively. This was an increase of 2.9 per cent and 4.3 per cent from 2002.

- World total surplus tonnage continued to decrease and stood at 10.3 million dwt in 2003 or 1.2 per cent of the world merchant fleet. The surplus capacity in the tanker sector declined to 6.0 million dwt, while overcapacity in the dry bulk sector fell to 3.6 million dwt in 2003.

### Freight markets

- The year 2003 was a good year for the tanker market. Overall volume of seaborne crude oil trade increased by 3.4 per cent. The average freight indices for all types of tankers, except all-size clean carriers, were as good as those recorded in 2000, which was a good year for tanker owners. Average freight indices for VLCC/ULCC, medium-size crude carriers and small crude and product carriers increased by 83.3, 68.4 and 55.0 per cent respectively.

- In 2003, seaborne shipments of the main bulks, particularly iron ore and coal, increased by 9.1 per cent. The improved balance between supply and demand resulted in higher rates for both time- and trip-charters, with annual average increases in the indices of 44.0 per cent and 13.3 per cent.

- Again, by the end of 2003 the level of freight rates on the main containerized routes — trans-Pacific, transatlantic and Asia–Europe — were mostly above the levels that prevailed at the end of 2002. The trans-Pacific eastbound leg recorded the highest increase — 23.7 per cent — followed by the westbound routes Asia–Europe and Europe–United States, which recorded increases of 16.1 and 15.8 per cent respectively. The two other routes originating in the United States recorded single-digit reductions in freight rates.

### Total freight costs in world trade by groups

- World total freight payments as a proportion of total import value increased to 6.64 per cent in 2002 from 6.11 per cent in 2001. The freight factor was 5.76 per cent for developed market-economy countries compared with 5.12 per cent in 2001, while for developing countries it increased slightly to 8.80 per cent from 8.70 per cent in 2001. The freight factor for the developing countries in Africa actually decreased to 12.43 per cent, but for developing countries in the Americas it increased to 9.16

per cent. For Asian developing countries the freight rate factor stood at 8.33 per cent, while for developing countries in Oceania the factor decreased to 11.41 per cent.

### Port development

- World container port traffic continued to expand at a rate of 9.2 per cent over 2002, reaching 266.3 million TEUs. Ports of developing countries and territories handled 103.6 million TEUs or 38.9 per cent of the total. In 2002 there were 50 developing countries and territories with terminals that handled more than 100,000 TEUs. In 2003 the top 20 world container ports handled 144.9 million TEUs.

### Trade and transport efficiency

- An Expert Meeting on the Development of Multimodal Transport and Logistics Services, convened by UNCTAD, was held in Geneva from 24 to 26 September 2003. Experts called on UNCTAD to continue to review and analyse developments relative to efficient transport and trade facilitation, including support to developing countries in implementing security-related measures.

- Container production exceeded for the first time the 2 million TEU mark in 2003, with China being responsible for more than 90 per cent of this output.

### Review of regional developments

- Asian developing and socialist countries showed a rapid and sustained expansion of their economies. The growth rates for merchandise trade measured in value for most of the countries were indeed impressive. The average export and import growth rates for 40 selected economies reached 14.8 per cent in 2003. The highest growth rates for exports were registered for Kuwait (+40 per cent), Lebanon (+39 per cent), China (+35 per cent), Kazakhstan (+33 per cent) and Yemen (+26 per cent). The highest growth rates for imports were achieved by Azerbaijan (+58 per cent), China (+40 per cent), Qatar (+30 per cent), Kazakhstan (+27 per cent) and Viet Nam (+26 per cent).

- Asian countries were major players in world maritime transport, with sizeable shares in several activities. These countries accounted for 35.8 per cent of containership ownership, 45.7 per cent of containership operation, 60.4 per cent of seamen, 62.3 per cent of container port throughput, 64.7 per cent of container port operators, 83.2 per cent of containership shipbuilding and 99 per cent of ship demolition. In addition to being one of the focuses of the main east-west shipping routes articulated around world port leaders such as Hong Kong (China) and Singapore, it is also the focus of an intensive and significant intra-Asian shipping trade.
- In China, 70.5 per cent of port throughput (tons) is cabotage traffic, and 37.7 per cent takes place in inland

ports. Between 1980 and 2003, waterway transport increased its share from 45.6 per cent to 54.9 per cent of ton-km of national transport in China, reaching 2,972 billion ton-km in 2003. During these 23 years, waterway ton-km increased by an average annual growth rate of 7.8 per cent.

- The plight of Asian landlocked countries, such as the Lao People's Democratic Republic and several Central Asian countries, facing abnormal transport costs, is also present in this diverse region. Border crossings are lengthy and costly. At some borders, the average cost and time can be as much as \$650 and 280 hours. Further costs are added owing to the need for empty back hauling of trucks.

## Box 1

**Vessel and registry groupings used in the *Review of Maritime Transport***

As in the previous year's *Review*, five vessel groupings have been used throughout most shipping tables in this year's edition. The cut-off point for all tables, based on data from Lloyd's Register – Fairplay, is 100 gross registered tons (grt), except those tables dealing with ownership, where the cut-off level is 1,000 grt. The groups aggregate 20 principal types of vessel category, as noted below.

<b>Review group</b>	<b>Constituent ship types</b>
<b>Oil tankers</b>	Oil tankers
<b>Bulk carriers</b>	Ore and bulk carriers, ore/bulk/oil carriers
<b>General cargo</b>	Refrigerated cargo, specialized cargo, ro-ro cargo, general cargo (single- and multi-deck), general cargo/passenger
<b>Container ships</b>	Fully cellular
<b>Other ships</b>	Oil/chemical tankers, chemical tankers, other tankers, liquefied gas carriers, passenger ro-ro, passenger, tank barges, general cargo barges, fishing, offshore supply, and all other types
<b>Total all ships</b>	Includes all the above-mentioned vessel types

The following guidelines are offered by Lloyd's Register – Fairplay for the tables in this year's *Review* relating to fleet development.

*Former Yugoslavia*

Most ships have been allocated to either Croatia (CRT) or Slovenia (SLO), with very few left under Yugoslavia (YUG).

*Major open-registry countries*

Ships in this group fly the flag of the Bahamas, Bermuda, Cyprus, Liberia, Malta or Panama.

**Approximate vessel size groups referred to in the *Review of Maritime Transport*, according to generally used shipping terminology**

*Crude oil tankers*

ULCC	300,000+ dwt
VLCC	150,000–299,999 dwt
Suezmax	100,000–149,999 dwt
Aframax	50,000– 99,999 dwt

*Dry bulk carriers*

Cape-size	80,000 dwt plus
Panamax	50,000–79,999 dwt
Handymax	35,000–49,999 dwt
Handy-size	20,000–34,999 dwt

Source: Lloyd's Register – Fairplay.

# Chapter 1

## DEVELOPMENT OF INTERNATIONAL SEABORNE TRADE

*The first chapter provides an overview of the demand for global maritime transport services, together with background information on the world economic situation and a review and forecast of developments in world seaborne trade.*

### A. WORLD ECONOMIC BACKGROUND

#### 1. World output

##### *General*

During 2003 the growth of world output continued its recovery and reached 2.6 per cent, almost a whole 1 per cent increase over the 1.7 per cent finally recorded for 2002 (see table 1), with virtually all regions of the world experiencing a simultaneous economic recovery, albeit at different paces.

The economic recovery of developed countries led to a 2.0 per cent growth, well over the 1.2 per cent of the previous year. It was concentrated in the United States, fuelled by sustained domestic demand in the wake of the short-term impact of tax cuts and mortgage refinancing. These resulted in an accelerated rate of output growth, reaching 3.1 per cent. The Japanese economy rebounded strongly, also fuelled by stimulated domestic demand, and achieved an increase in output growth of 2.7 per cent. The European Union, however, continued its sluggish performance and output growth slowed for the third consecutive year, to 0.7 per cent. Economic deceleration was more pronounced in Italy, down to 0.3 per cent, and in France, down to 0.2 per cent, while Germany's economy actually contracted by 0.1 per cent. In the United Kingdom output increased by 2.2 per cent, slightly better than the figure recorded in 2001.

The growth in the economic output of developing economies reached 4.5 per cent, well above the world

average. The highest growth was recorded in a number of Asian countries, which reached 5.9 per cent after a disappointing performance during the first half of the year due to the impact of the Severe Acute Respiratory Syndrome (SARS). Performance was particularly good in South Asia, with India and Pakistan recording output growth of 7.4 and 5.5 per cent respectively. Output growth for countries located further east was less impressive: Malaysia reached 5.2 per cent, but the Republic of Korea managed only 3.1 per cent, about half the rate of the previous year.

The star performer of the year was undoubtedly China, whose output growth was 9.1 per cent, supported by strong domestic demand and remarkable export performance. This result was achieved in spite of the impact of SARS, with the output growth of Hong Kong (China) and Taiwan Province of China almost trebling.

The output growth of African economies reached 3.6 per cent. This was better than the figure for the previous but still below that of 2001. These countries benefited from an overall increase in the price of commodities, with output in Ghana, Cameroon and Nigeria growing at the rate of 4.7, 4.2 and 4.1 per cent respectively. Countries in North Africa fared particularly well, with Algeria's output expanding by 6.7 per cent and that of Morocco by 5.5 per cent. South Africa's output growth was only 1.5 per cent, while Zimbabwe contracted for a fifth consecutive year by 13.2 per cent.

The output growth of the economies in developing America rebounded to reach 1.6 per cent, also as a result of improved commodity prices. Argentina rebounded

Table 1

## World output growth, 2001–2003

(percentage)

Region/grouping	Average 1990–2000	2001	2002	2003 <sup>a</sup>
<b>World</b>	2.7	1.4	1.7	2.6
<b>Developed economies</b>	2.4	1.0	1.2	2.0
<i>of which:</i>				
<b>United States</b>	3.5	0.5	2.2	3.1
<b>Japan</b>	1.4	0.4	-0.3	2.7
<b>European Union</b>	2.1	1.7	1.0	0.7
<i>of which:</i>				
<b>Germany</b>	1.6	0.8	0.2	-0.1
<b>France</b>	1.8	2.2	1.2	0.2
<b>Italy</b>	1.6	1.8	0.4	0.3
<b>United Kingdom</b>	2.7	2.1	1.6	2.2
<b>Developing economies</b>	4.1	2.4	3.5	4.5
<i>of which:</i>				
<b>Africa</b>	2.5	3.6	3.1	3.4
<b>Latin America</b>	3.3	0.4	-0.6	1.6
<b>Asia</b>	6.2	3.2	5.4	5.9
<b>Economies in transition</b>	-2.5	4.7	4.1	5.9
<b>China</b>	10.3	7.5	8.0	9.1

Source: Calculations by the UNCTAD secretariat based on data in 1995 dollars, as published in UNCTAD (2004), *Trade and Development Report 2004*, United Nations publication, Sales No. E.04.II.D.29, New York and Geneva, table 1.1.

<sup>a</sup> Estimates.

after four years of contracting output to reach 8.7 per cent and was the best performer in the region. Peru, Colombia and Chile managed to grow at a rate less than half and reached 4.0, 3.6 and 3.2 per cent respectively. A lower output growth of 1.3 per cent was achieved by Mexico as a result of the relocation of export industries elsewhere. Brazil, the largest economy in South America, contracted by 0.2 per cent, while Venezuela's economy, afflicted by internal upheaval, contracted by 9.2 per cent for the second year running, in spite of good crude oil prices.

Economies in transition recorded the fifth consecutive year of economic growth with a 5.9 per cent increase, which was more than twice the world average. The Russian Federation and Belarus recorded output growth of 7.3 and 6.8 per cent respectively. The countries of Eastern Europe recorded output growth of around 5 per

cent, with three countries located further east — Armenia, Azerbaijan and Tajikistan — achieving double-digit output growth.

### Prospects

Forecasts of world economic output growth for 2004 have been cautiously optimistic and contingent on the level reached by the price of oil, the sustainability of Chinese growth and the development of the financial sector of the economy. Forecasts are around 3.5 per cent.

## 2. Merchandise trades

### *Recent developments in international trade*

During 2003 the volume of world exports expanded by 4.5 per cent (see table 2). Increased exports were

Table 2

**Growth in the volume of merchandise trade by geographical region, 2001–2003**  
(annual percentage change)

Exports			Countries/regions	Imports		
2001	2002	2003		2001	2002	2003
-1.5	3.0	4.5	<b>World</b> <sup>a</sup>	0.9	3.0	n.a.
n.a.	n.a.	n.a.	<b>Developed economies</b> <sup>a</sup>	0.3	n.a.	n.a.
			<i>of which:</i>			
-5.0	-3.0	3.0	<b>North America</b>	-3.8	4.0	5.5
1.1	0.5	0.9	<b>European Union</b>	0.3	-0.5	1.8
-5.0	8.5	n.a.	<b>Japan</b>	0.3	1.5	n.a.
0.5	n.a.	n.a.	<b>Developing economies</b> <sup>a</sup>	0.8	n.a.	n.a.
			<i>of which:</i>			
2.5	n.a.	n.a.	<b>Africa</b>	4.6	n.a.	n.a.
2.7	1.5	4.5	<b>Latin America</b>	0.5	-5.5	1.6
n.a.	n.a.	n.a.	<b>Middle East</b> <sup>b</sup>	n.a.	n.a.	n.a.
-3.7	10.5	n.a.	<b>Asia</b> <sup>c</sup>	-1.9	9.5	11.1
8.0	8.0	n.a.	<b>Economies in transition</b> <sup>a</sup>	14.7	11.5	10.9
5.0	n.a.	n.a.	<b>China</b>	11.3	n.a.	n.a.

Source: WTO News — World Trade 2003; Press Release, 5 April 2004; and WTO Statistics at [www.wto.org/english/res\\_e/statis\\_e/its2003\\_e/section1\\_e/i02.xls](http://www.wto.org/english/res_e/statis_e/its2003_e/section1_e/i02.xls).

<sup>a</sup> Excludes significant double counting.

<sup>b</sup> Includes Israel.

<sup>c</sup> Includes Japan, China, Hong Kong (China), Taiwan Province of China and developing countries in the Pacific.

particularly strong after a poor first quarter overshadowed by the effects of SARS and tensions in the Middle East. The expansion of exports indicated a clear recovery from the trade slump of two years ago. Among developed countries export volumes rebounded in North America and expanded by 3.0 per cent, and in European Union countries, export growth expanded by 0.9 per cent. The latter exports grew in spite of a currency that appreciated against the US dollar for most of the year. Export volumes for developing countries in Latin America expanded by 4.5 per cent aided by sustained imports in North America and Europe, and also by substantial Asian imports, notably from China.

The preliminary figures available for growth in import volumes indicate double-digit growth for countries in Asia, notably China, and countries with economies in transition, whose imports grew by 11.1 and 10.9 per cent

respectively. Among developed countries imports into North America expanded by 5.5 per cent and imports into countries of the European Union rebounded and expanded by 1.8 per cent. Imports of developing countries in Latin America also rebounded by a similar amount, 1.6 per cent, after a severe contraction of 5.5 per cent the previous year.

#### *Trends in imports and exports*

For 2004, prospects for export growth are good and expansion of up to 7.5 per cent can be expected. This forecast, however, is contingent on the behaviour of the United States economy in the face of an increased current account deficit, the effect of a lasting appreciation of the euro that would dampen European exports and steady or lower oil prices.



### 3. OECD countries' industrial output

The industrial production index (1995 = 100) for OECD countries, another fundamental indicator for the global maritime transport sector, averaged 119.7 in 2003. This represented a clear 1.2 per cent increase over the average of the previous year, when the index's increase was negligible (see figure 1).

The results for 2003 were due to the steady increase in industrial activity in the major economies. In the United States the index reached 124.5 in the first quarter, then eased slightly during the second and third quarter and peaked at 126 during the last quarter. The average index was 124.6, a good 2.4 per cent increase for the year. The evolution of the index for Japan mirrored that of the United States, but its increase was almost double. The average index for the year was 100.1 — a remarkable 4.1 per cent increase. The index for the 15 countries of the European Union followed a similar pattern: it started at 113.8 and after faltering during the second quarter it recovery steadily up to the end of the year. The average index for the year was 113.9, only increasing by 1.5 per cent. The highest increases in the industrial production index during the year were recorded in Ireland, which registered a 19.9 per cent increase to 255; Turkey, with an 18.4 per cent increase to 146.7;

Poland, with a 17.8 increase to 159.8; and the Republic of Korea, with a 9.7 per cent increase to 176.1. The OECD outlook for 2004 points to a strengthening of the upward trend.

## B. WORLD SEABORNE TRADE

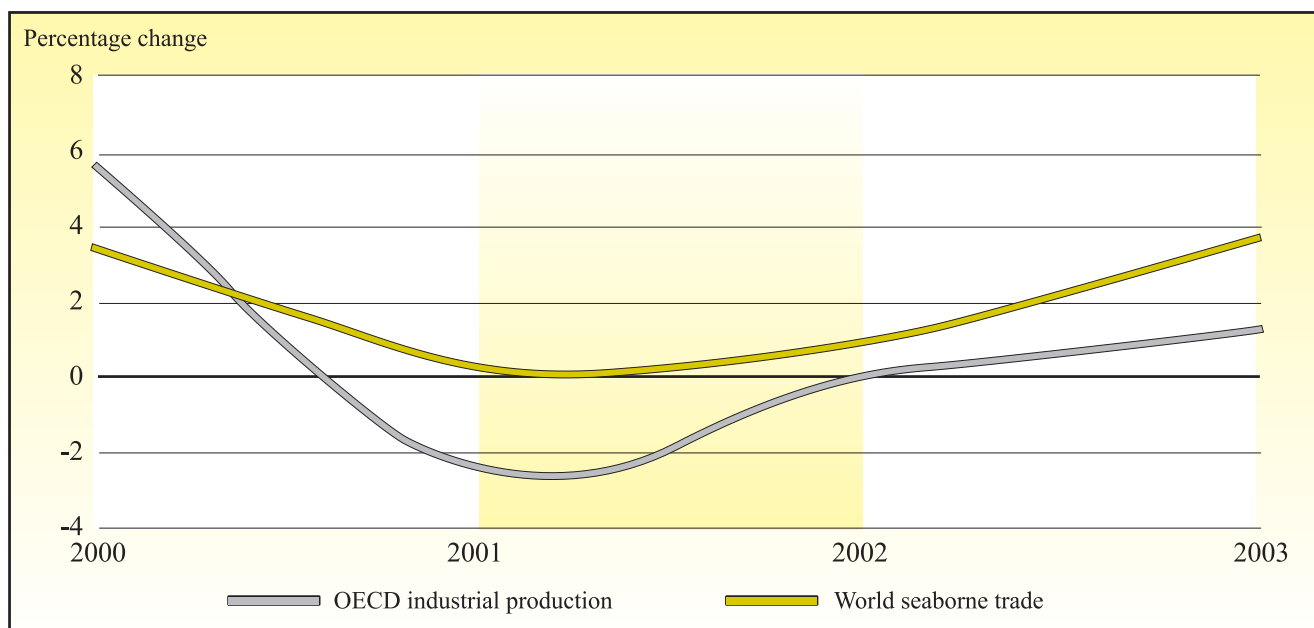
### 1. Overall seaborne trade

World seaborne trade increased strongly in 2003, reaching 6.17 billion tons of loaded goods. The annual growth rate, calculated with the provisional data available for 2003, reached 3.7 per cent, as shown in table 3 and figure 2.

The breakdown of world seaborne loaded goods by continent was as follows: Africa's share of world exports was 8.9 per cent, while America's was 20.7 per cent. Asia was by far the continent with the largest share of the world tonnage of seaborne loaded goods — 37.2 per cent. Europe's share was the second largest at 25.1 per cent, while Oceania's share was the smallest, representing only 8.0 per cent of world seaborne loaded goods. The breakdown for selected trading blocs was as follows: European Union (EU) 17.4 per cent; Gulf Cooperation Council (GCC) — 16.0 per cent; North American Free Trade Association (NAFTA) — 10.2 per cent; Association of South-East Asian Nations

Figure 1

#### Annual change in OECD industrial production and world seaborne trade, 2000–2003



Source: OECD (2004), *Main Economic Indicators*, April.

Table 3

**Development of international seaborne trade, selected years <sup>a</sup>**  
(goods loaded)

Year	Tanker cargo		Dry cargo				Total (all goods)	
	million tons	% change	million tons	% change	million tons	% change	million tons	% change
1970	1 442		1 124		448		2 566	
1980	1 871		1 833		796		3 704	
1990	1 755		2 253		968		4 008	
1999	2 068	-0.6	3 604	1.9	1 196	2.2	5 672	1.0
2000	2 163	4.6	3 709	2.9	1 288	7.7	5 872	3.5
2001	2 174	0.5	3 717	0.2	1 331	3.3	5 891	0.3
2002	2 129	-2.1	3 819	2.8	1 352	1.6	5 948	1.0
2003 <sup>c</sup>	2 203	3.4	3 965	3.8	1 475	9.1	6 168	3.7

Source: Estimated by the UNCTAD secretariat on the basis of annex II and data supplied by specialized sources.

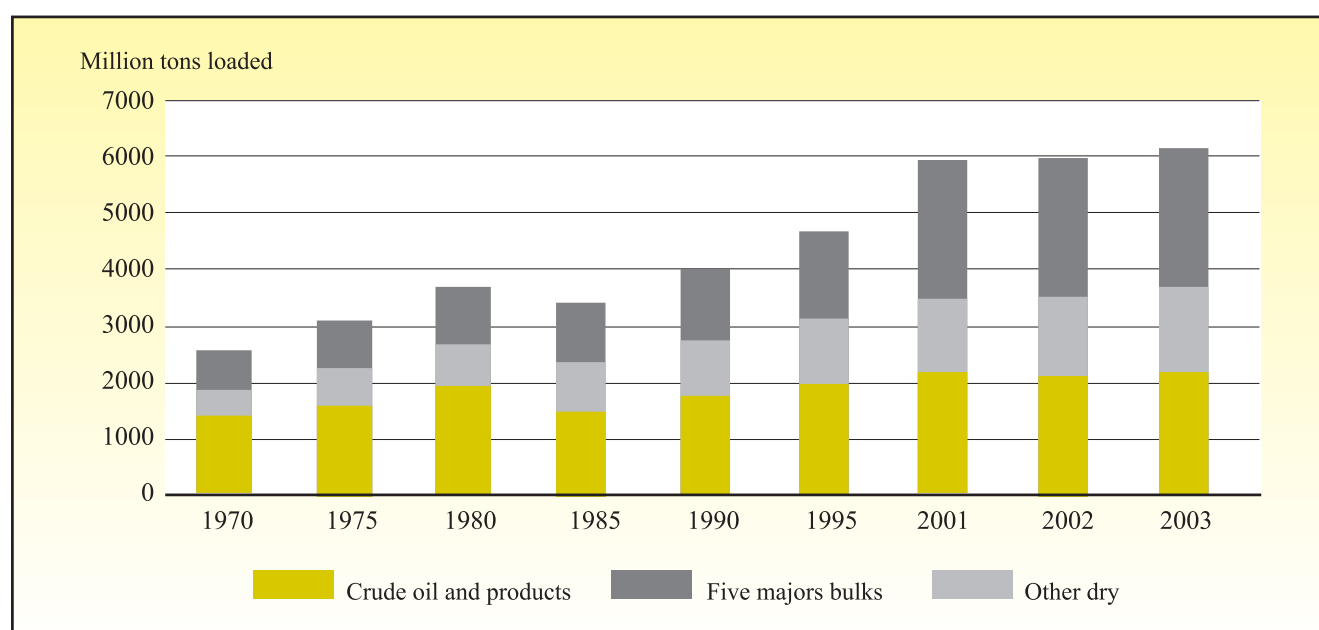
<sup>a</sup> Includes international cargoes loaded at ports of the Great Lakes and St. Lawrence system for unloading at ports of the same system.

<sup>b</sup> Iron ore, grain, coal, bauxite/alumina and phosphate.

<sup>c</sup> Estimates.

Figure 2

**International seaborne trade for selected years**



Source: *Review of Maritime Transport*, various issues.

(ASEAN) — 6.9 per cent; South Common Market (MERCOSUR) — 5.2 per cent; and Common Market of Eastern and Southern Africa (COMESA) — 1.6 per cent.

Forecasts for 2004 indicate that annual growth rates will probably be as good as those of last year, while the distributions of world tonnage by continent and for selected trading blocs are expected to fluctuate marginally.

## 2. Seaborne trade in tankers

### *General developments*

In 2003 the total world shipments of tanker cargoes reached 2.20 billion tons, after rebounding by 3.4 per cent during the year. About 76.5 per cent of this tanker trade was in crude oil, with the remainder as petroleum products. The share of tanker shipments in overall world seaborne trade decreased slightly to 35.7 per cent.

### *Crude oil production*

In 2002 crude oil production<sup>1</sup> averaged 73.9 million barrels per day (mbpd) — a marginal decrease of 0.7 per cent compared with the previous year. Oil production in OECD countries, notably the United States, Mexico, Norway and oil-producing countries within the EU, increased by 0.8 per cent to 21.5 mbpd, and this group therefore increased its market share to 29.1 per cent.

OPEC countries actually decreased their production by 6.4 per cent to 28.2 mbpd, the lowest level since 1996. Accordingly, their market share decreased from 41.7 to 38.2 per cent of world oil production in 2002. The remaining oil-producing countries, namely the Russian Federation, China, Brazil and a number of small producers, increased their average production by a remarkable 9.5 per cent to 24.2 mbpd. These countries therefore increased their market share to 32.7 per cent, an increase of 3.3 per cent over their share of the previous year.

Among OECD major producers, US production stood at 7.7 mbpd (the corresponding market share was 10.4 per cent), while that of Mexico was 3.6 mbpd (4.8 per cent). The figure for Norway was 3.3 mbpd (4.5 per cent), similar to that of the European Union countries, namely 3.2 mbpd (4.4 per cent). Among those countries the United Kingdom maintained its lion's share, 2.5 mbpd (3.4 per cent), the same as the previous year.

The oil output of two large OPEC producers — the Islamic Republic of Iran and Venezuela — declined by 8.5 and 8.3 per cent to reach 3.4 mbpd and 2.9 mbpd respectively. Their market shares were 4.6 and 4.0 per cent respectively. The output of the largest producer — Saudi Arabia — averaged 8.7 mbpd, a reduction of 3.5 per cent from the previous year's level. Its market share stood at 11.7 per cent. Other OPEC countries also cut production by less than 10 per cent: Nigeria's output just reached 2 mbpd (a decrease of 8.5 per cent), while that of Indonesia reached 1.3 mbpd (a reduction of 8.0 per cent). Two producers in the Middle East posted the highest reductions in output: Iraq by 14.4 per cent to 2.0 mbpd and Kuwait by 9.6 per cent to 1.9 mbpd.

Amongst the other oil-producing countries the output performance of the Russian Federation and Brazil was remarkable. The former increased production by 9.1 per cent to 7.7 mbpd (corresponding to a 10.4 per cent market share), while the latter increased production by 12.2 per cent to 1.5 mbpd (a 2.0 per cent market share). Chinese production rose by 2.5 per cent to 3.4 mbpd (a 4.6 per cent market share).

During 2003 the crude oil production level fluctuated in line with the quota decisions made by OPEC members in response to major events and quota compliance by them. At the beginning of the year the production quota was increased to 24.5 mbpd in response to shortages resulting from Venezuela's internal crisis, and then the quota was further relaxed to counter any oil shortage resulting from military operations that started in April in the Middle East Gulf. In June the production quota was reduced by 2 mbpd to 25.4 mbpd, while overproduction by members was put at 1.5 mbpd. During the summer concerns were expressed about the impact of Iraqi oil coming into the market owing to the lifting of UN and US sanctions and the end of oil monitoring exports. By November a reduction of 0.9 mbpd in the OPEC quota entered into force and measures to enforce production quotas were strengthened. A further 1 mbpd quota reduction was agreed in February 2004, to enter into force by April. Other producers, notably Mexico, Norway and the Russian Federation did not mirror OPEC decisions and actually boosted their production during 2003.

Prices evolved favourably during the year. The OPEC basket price of seven crude oil prices averaged \$28.10 per barrel during 2003, an increase of 15.4 per cent over the previous year and 21.6 per cent over the average of 2001. Prices peaked during the first quarter of 2003, reaching more than \$35 per barrel. Afterwards

they stood at around the \$30 level and started to climb again by the last quarter, reaching the \$35 mark again by mid-January 2004.

During the year there were reports that highlighted the increasing role of offshore production. Current world offshore production, estimated at 2.5 mbpd, is expected to treble in the next five years owing to annual investments of about \$11 billion. Early in the year, new discoveries at depths of 1,375 metres were announced by Brazil, one of the important offshore producers. Oil exploration and production were reaching deeper waters: some drilling rigs were probing the seabed beyond 3,000 metres and semi-submersible facilities for oil production were used in waters deeper than 2,000 metres. Some countries in West Africa (Angola, Cameroon, Equatorial Guinea, Nigeria and Mauritania) and in the Gulf of Mexico were targeted by these investments and techniques.

#### *Refinery developments*

World refineries' throughput reached 69.4 mbpd in 2002, a decrease of 0.7 per cent from the previous year. Refineries in the United States reduced throughput by 1.3 per cent, while those in Europe and the Russian Federation recorded a modest increase of 0.3 per cent. These two regions accounted for 49.8 per cent of world throughput. The largest increase in output was recorded by Chinese refineries, whose output reached 4.4 mbpd — an increase of 4.6 per cent. The largest output decreases were in refineries in the Asia-Pacific region and in Latin America, whose outputs decreased by 6.4 and 5.4 per cent respectively.

During 2003, Chinese refineries located along the Yangtze River boosted output to up to 90 per cent of capacity in spite of difficulties in transporting crude oil due to the unusually low levels of the river. Demand in the country continued to be fuelled by rising car sales and power for cities and massive infrastructure work. By mid-year, the largest Japanese oil refiner halted operations in two plants, representing a fifth of its refining capacity, to conduct safety inspections that had been overlooked.

#### *Natural gas production*

In 2002 production of natural gas reached 2,528 billion cubic metres<sup>2</sup> (bcm), an increase of 1.4 per cent over the 2001 level, but lower than the rate of growth achieved the previous year, which was finally 2.3 per cent. This production is equivalent to 2,275 million tons of oil or

47.3 mbpd. Major producers are the United States, with 547.7 bcm, and the Russian Federation, with 554.9 bcm, which together account for 43.7 per cent of total production. Lesser producers are Canada, with 183.5 bcm, the United Kingdom, with 103.1 bcm, Algeria, with 80.4 bcm, Indonesia, with 70.6 bcm, and the Islamic Republic of Iran, with 64.5 bcm. Other producers are scattered through the Middle East, Latin America and Asia, often obtaining natural gas as a result of oil production. About a fifth of natural gas production is exported, mainly by pipelines, which carry about three quarters of all exports.

Prospects for increasing natural gas production were good thanks to growing demand in the United States, Europe, Japan and China. It was estimated that demand would grow by 2.75 per cent for the next 20 years, and the corresponding annual capital expenditures to meet such demand were put at \$30 billion. Moreover, production and transport costs have been coming down. It was reported that the cost of production capacity fell by half to less than \$200 per ton during the last decade and the cost of sea transport and regasification plants dropped by a third and a quarter respectively.

The Saudi Arabian drive to develop gas production led to contracts that attracted production rivals (i.e. Lukoil from the Russian Federation) and consumers (i.e. Sinopec from China). The \$5 billion Qatargas3 project in neighbouring Qatar envisages the shipment of 1 bcm of gas daily to United States markets using 200,000 cubic metre gas carriers: this vessel size would be almost 50 per cent larger than the largest ones currently in operation. In South America, a \$2.1 billion investment in Venezuela (Plataforma Deltana project) was reported, as well as an 18-year supply contract from Peru to Mexico (Camisea project) and delays in starting the huge Margarita project in Bolivia.

#### *Crude oil shipments*

Crude oil seaborne shipments increased by 3.5 per cent to 1.66 billion tons in 2003 (see table 4). The major loading areas continued to be the developing countries in Western Asia, with 848.9 million tons, in West Africa, with 175.3 million tons, in North Africa, with 125.6 million tons, and around the Caribbean, with 207.2 million tons. The main discharging areas were located in developed market-economy countries in North America, with 532.3 million tons, in Europe, with 433.5 million tons, and in Japan, with 215.0 million tons. Developing countries in South and East Asia took 301.2 million tons during

Table 4

World seaborne trade <sup>a</sup> in 1970, 1980, 1990 and 1999–2003,  
by types of cargo and country groups <sup>b</sup>

Country group	Year	Goods loaded				Goods unloaded			
		Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods
		Crude	Products <sup>c</sup>			Crude	Products <sup>c</sup>		
<b>Trade in millions of tons</b>									
<b>World total</b>	1970	1 109	232	1 162	2 504	1 101	298	1 131	2 529
	1980	1 527	344	1 833	3 704	1 530	326	1 823	3 679
	1990	1 287	468	2 253	4 008	1 315	466	2 365	4 126
	1999	1 577	496	3 593	5 666	1 552	546	3 762	5 860
	2000	1 665	498	3 709	5 872	1 720	550	3 979	6 249
	2001	1 678	497	3 717	5 891	1 702	552	3 913	6 167
	2002	1 629	500	3 819	5 948	1 713	550	4 014	6 276
	2003	1 686	517	3 965	6 168	1 787	550	4 122	6 460
<b>Percentage share of trade by country groups</b>									
<b>World total</b>	1970	42.6	12.7	44.7	100.0	43.5	11.9	44.6	100.0
	1980	41.2	9.3	49.5	100.0	41.6	8.9	49.5	100.0
	1990	32.1	11.7	56.2	100.0	31.9	10.8	57.3	100.0
	1999	27.8	8.8	63.4	100.0	26.5	9.3	64.2	100.0
	2000	28.4	8.5	63.2	100.0	27.5	8.8	63.7	100.0
	2001	28.5	8.4	63.1	100.0	27.6	8.9	63.4	100.0
	2002	27.4	8.4	64.2	100.0	27.3	8.8	63.9	100.0
	2003	27.3	8.4	64.3	100.0	27.7	8.5	63.8	100.0
<b>DMECs</b>	1970	2.0	27.1	60.0	31.1	80.4	79.6	79.1	79.9
	1980	6.3	25.5	64.7	37.0	72.0	79.5	67.8	70.5
	1990	13.4	32.6	63.4	43.8	72.5	81.4	61.7	67.3
	1999	5.4	21.6	59.9	41.4	71.5	50.8	62.1	63.5
	2000	5.2	22.2	60.1	41.3	68.6	51.2	60.3	61.8
	2001	5.3	21.7	59.3	40.8	68.9	50.7	59.6	61.4
	2002	5.5	21.6	58.4	40.8	68.5	51.1	58.0	60.3
	2003	5.4	22.1	58.4	40.9	68.8	50.8	58.8	60.9
<b>Central and Eastern Europe <sup>d</sup></b>	1970	3.4	8.0	6.9	5.6	1.2	1.0	3.8	2.3
	1980	3.6	14.6	5.2	5.4	2.3	0.4	6.0	4.0
	1990	4.6	11.8	3.8	5.0	2.6	0.3	5.8	4.1
	1999	3.8	4.8	5.1	4.7	1.6	0.4	1.3	1.3
	2000	5.5	8.9	4.2	5.0	0.5	0.4	1.9	1.4
	2001	5.4	8.1	4.1	4.8	0.5	0.7	1.9	1.4
	2002	5.6	8.4	4.3	5.0	0.6	0.5	1.9	1.4
	2003	6.9	8.5	4.2	5.3	0.6	0.6	1.9	1.4

Table 4 (continued)

Country group Year	Goods loaded				Goods unloaded				
	Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods	
	Crude	Products <sup>c</sup>			Crude	Products <sup>c</sup>			
<b>Percentage share of trade by country groups</b>									
<b>Socialist countries of Asia<sup>e</sup></b>									
1970	-	-	1.2	0.5	0.5	0.1	2.0	1.2	
1980	1.4	1.7	1.0	1.2	1.4	1.6	4.0	2.7	
1990	2.7	0.9	2.0	2.0	0.3	0.3	3.4	2.1	
1999	1.1	1.2	5.5	3.9	2.4	4.7	5.8	4.8	
2000	1.0	1.1	6.7	4.6	4.1	4.1	7.3	6.1	
2001	1.0	1.1	7.2	4.9	3.6	4.8	8.0	6.5	
2002	1.1	2.1	7.6	5.4	4.1	4.6	9.3	7.4	
2003	1.1	2.2	8.0	5.6	5.0	5.0	9.7	8.0	
<b>Developing countries</b>									
1970	94.6	64.9	31.9	62.8	17.9	19.4	15.1	16.6	
1980	88.7	58.2	29.0	56.3	24.3	18.5	22.3	22.8	
1990	79.6	54.7	30.8	49.2	24.6	18.0	29.1	26.5	
1999	89.7	72.4	29.6	50.0	24.6	44.1	30.8	30.4	
2000	88.3	67.8	29.0	49.1	26.8	44.4	30.6	30.8	
2001	88.2	69.1	29.4	49.5	27.0	43.8	30.4	30.7	
2002	87.8	67.9	29.6	48.8	26.9	43.7	30.8	30.9	
2003	86.6	67.2	29.4	48.2	25.6	43.7	29.6	29.7	
<i>of which:</i>									
<b>Africa</b>									
1970	25.5	2.4	9.1	15.2	1.7	4.7	3.6	2.9	
1980	19.0	1.5	5.6	10.8	4.0	2.9	4.7	4.2	
1990	24.1	7.6	4.3	11.2	5.6	2.3	4.3	4.5	
1999	17.6	7.9	2.1	6.9	1.0	3.1	3.7	3.0	
2000	17.9	6.9	1.7	6.7	3.2	3.2	3.3	3.3	
2001	17.8	7.0	1.7	6.7	3.0	3.1	3.5	3.3	
2002	17.9	6.9	1.7	6.6	2.9	3.1	3.4	3.3	
2003	17.8	7.0	1.6	6.5	2.8	3.1	3.3	3.2	
<b>Americas</b>									
1970	12.2	35.4	13.8	16.0	10.5	5.6	4.4	7.2	
1980	12.4	28.4	13.2	14.3	13.3	4.9	5.4	8.7	
1990	13.3	11.9	13.2	13.1	5.7	3.8	4.0	4.5	
1999	16.1	18.8	10.9	13.1	5.6	11.5	4.6	5.5	
2000	15.2	18.8	10.8	12.7	5.1	11.2	5.3	5.8	
2001	15.2	19.0	11.0	12.9	5.2	10.9	5.1	5.6	
2002	15.5	18.7	10.8	12.7	5.2	10.4	5.0	5.6	
2003	14.5	17.9	10.7	12.3	5.0	10.4	4.9	5.4	

Table 4 (continued)

Country group	Year	Goods loaded				Goods unloaded			
		Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods
		Crude	Products <sup>c</sup>			Crude	Products <sup>c</sup>		
<b>Percentage share of trade by country groups</b>									
<b>Asia</b>	1970	56.9	27.0	8.1	31.3	5.5	8.5	6.7	6.4
	1980	57.3	28.1	9.7	31.0	6.9	9.8	12.0	9.7
	1990	42.2	34.9	12.6	24.7	12.6	10.9	19.9	16.6
	1999	55.7	45.3	16.1	29.7	17.6	28.1	22.0	21.4
	2000	54.9	41.6	16.0	29.2	18.2	28.5	21.5	21.2
	2001	55.0	42.5	16.2	29.4	18.5	28.3	21.4	21.2
	2002	54.1	41.8	16.7	29.1	18.4	28.7	22.0	21.6
	2003	54.0	41.9	16.6	28.9	17.4	28.6	21.0	20.7
<b>Europe</b>	1970	-	-	-	-	-	0.1	0.1	-
	1980	-	-	-	-	-	0.2	-	-
	1990	-	0.2	0.3	0.2	0.7	0.5	0.8	0.7
	1999	0.0	0.4	0.4	0.3	0.4	0.4	0.3	0.3
	2000	0.0	0.4	0.4	0.3	0.4	0.4	0.3	0.3
	2001	0.0	0.4	0.4	0.3	0.4	0.4	0.3	0.3
	2002	0.0	0.5	0.4	0.3	0.4	0.4	0.3	0.3
	2003	0.0	0.4	0.4	0.3	0.4	0.4	0.3	0.3
<b>Oceania</b>	1970	-	0.1	0.8	0.4	-	0.5	0.3	0.2
	1980	-	0.2	0.5	0.2	0.1	0.7	0.2	0.2
	1990	-	0.1	0.4	0.2	-	0.5	0.1	0.2
	1999	0.2	0.0	0.1	0.1	0	1.1	0.1	0.2
	2000	0.2	0.0	0.1	0.1	0.0	1.1	0.1	0.2
	2001	0.2	0.0	0.1	0.1	0.0	1.1	0.1	0.2
	2002	0.2	0.0	0.1	0.1	0.0	1.1	0.1	0.2
	2003	0.2	0.0	0.1	0.1	0.0	1.1	0.1	0.2

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by reporting countries and other specialized sources.

<sup>a</sup> Includes international cargoes loaded at ports of the Great Lakes and St. Lawrence system for unloading at ports of the same system.

<sup>b</sup> See annex I for the composition of these groups, and note d thereto regarding the recording of trade of landlocked countries. Since 1986, Yugoslavia, previously included among the “developed market-economy countries”, has been included in the group of “developing countries in Europe”.

<sup>c</sup> Includes liquefied natural gas (LNG), liquefied petroleum gas (LPG), naphtha, gasoline, jet fuel, kerosene, light oil, heavy fuel oil and others.

<sup>d</sup> Includes the former Soviet Union in data for 1970 and 1980.

<sup>e</sup> Estimates.

2002. The major events of the year were the substantial increases in Russian exports, to 116.9 million tons, and Chinese imports, to 90.2 million tons.

Crude oil from Russian and landlocked countries around the Caspian Sea (Azerbaijan, Kazakhstan and Turkmenistan) has traditionally used pipelines connected to port facilities in the Black Sea. Increasing export volumes poses the problem of adding to the number of transits through the Turkish Straits, through which about 150 vessels pass each day. In mid-2003 the first phase of the Vessel Traffic Service was commissioned over a 17-mile stretch of the Bosphorus; when completed, it will be 164 miles long and embrace access to the Straits and the Marmara Sea. In the meantime there have been periods of acute congestion compounded by bad weather, as the one in early 2004 that forced the closure of the Straits and resulted in up to 14 days delay for southbound crossings. Alternative routes to the Turkish Straits are the Baku–Ceyhan pipeline, which will provide access to the Mediterranean Sea on Turkish territory by 2005, and a more elaborate pipeline scheme leading to the port of Omisalj (Croatia) on the Adriatic Sea, where environmentalists have voiced opposition to the plan. A complementary Russian strategy is to boost port capacity on the Baltic and Barents Seas. Capacity at Primorsk, a recently built deepwater port located north of St. Petersburg, was increased from 18 to 30 million tons in late 2003, including the access pipeline. Capacity was also increased at the Izhevsky terminal in Kaliningrad. Shipments from Murmansk continue to use transshipment from the White Sea. Elsewhere, Venezuelan shipments reverted to almost normal conditions after an unsettled period in early 2003.

#### *Petroleum product shipments*

The global trade in petroleum products increased strongly in 2003 to 516.7 million tons. The pattern and volume of shipments were similar to those of past years, but developments in the Russian Federation might alter it in the future. Export terminal capacity is being enlarged on the Baltic Sea at Kaliningrad and around St. Petersburg, where, at Vysock, Lukoil has invested \$225 million. Late in the year Volgotanker, a domestic tanker owner-operator, started trial shipments from a new export facility near Arkhangelsk on the White Sea.

#### *LNG shipments*

LNG shipments increased by 4.9 per cent during 2002 to reach 150 bcm of natural gas. This is about 5.9 per

cent of world production. The largest importing area is located in the Far East, where major importers continued to be Japan, with 72.7 bcm, and the Republic of Korea, with 24.1 bcm. Supplies came from Indonesia, with 34.3 bcm, Malaysia, with 20.5 bcm, Qatar, with 18.6 bcm, and Australia, with 10 bcm. The share of Middle East Gulf supplies is poised to grow as Saudi Arabia and Qatar develop new export capacity for consumers in the Far East and North America.

Across the Mediterranean, Algerian exports (26.9 bcm) went to France (10.2 bcm) and to Spain (6 bcm). Nigeria also supplied the European market with 7.8 bcm and, marginally, the US market with 0.2 bcm. The largest share of the 5.2 bcm exports from Trinidad and Tobago went also to the US market. This market also takes almost 1 bcm from the Middle East (Qatar and Oman).

During 2003, there were indications that LNG shipments were poised to increase. A terminal and regasification plant were commissioned in Bilbao (Spain) and approval for other discharge facilities was obtained in Fos, close to Marseille (France), Altamira (Mexico) and Pelican (United States). Construction of an innovative terminal was started by El Paso, a US energy company. The terminal will be located 116 miles off Louisiana (United States) and remain underwater, about 9 metres above the seabed, except when receiving specialized vessels with an on-board regasification plant. It will be connected through submarine pipelines with a tank farm located on the coast. Other discharge terminals are under review in the United States, notably Cove Point in Maryland. In January 2004, the risks associated with these terminals were highlighted by the worst disaster in LNG history — the blast at Skikda (Algeria) that killed 30 people and injured 70, with estimated replacement costs of about \$1 billion.

### **3. Dry cargo shipments**

#### *General developments*

In 2003, overall dry cargo shipments increased by 3.8 per cent, reaching 3.97 billion tons (see table 3). The main five dry-bulk trades, namely iron ore, coal, grains, bauxite/alumina and rock phosphate, recorded a remarkable 9.1 per cent increase to reach 1.48 billion tons. The remaining dry cargo trades, minor bulks and liner cargoes increased modestly by 0.9 per cent to 2.49 billion tons. The share of dry cargo shipments in world seaborne trade was 64.3 per cent of total goods loaded during the year.



### *World crude steel production*

World crude steel production in 2003 increased by a record 6.6 per cent to reach 962.5 million tons, compared with 902.9 million tons in 2002. Undoubtedly the major event of the year was the remarkable expansion of steel production in China — up by 21.2 per cent, to reach 220.1 million tons. This was the second year in which production expanded by more than 20 per cent. In other regions and countries production increases were dissimilar. In the countries of the North American Free Trade Agreement (NAFTA) production declined marginally to reach 122.0 million tons, compared with 122.3 million tons in 2002. Production increased by 0.8 per cent in countries of the European Union, reaching 159.7 million tons. Japan increased production by 2.6 per cent to reach 110.5 million tons, and growth of production in South American countries was almost double — 4.5 per cent, with production at 42.7 million tons. Within these countries performance was also dissimilar: Ecuador's production increased by 20.8 per cent, but Venezuela's contracted by 12.0 per cent. The 1 per cent increase in steel production in Oceania to 8.4 million tons was mainly attributable to Australia since New Zealand production expanded by only 0.2 per cent. Countries of the Commonwealth of Independent States (the former Soviet Union) increased their production by 6 per cent to reach 105.9 million tons in 2003. Countries in Africa also increased production — by 2.4 per cent, to 16.1 million tons — but with dissimilar performances: a 57.1 per cent contraction of production in Tunisia, and a 30.5 per cent recovery of production in Zimbabwe. Countries in the Middle East also performed well, with production up by 8 per cent to 12.9 million tons: the largest producers — the Islamic Republic of Iran and Saudi Arabia — recorded increases of 7.5 and 10.5 per cent respectively.

In the same year, world pig iron production, another useful indicator for predicting dry-bulk trades, increased by a healthy 7.7 per cent to 689 million tons. Scrap-based production of pig iron increased by 4 per cent to 273 million tons.

### *World steel consumption*

Forecast apparent steel consumption for 2003 was 884 million tons, 6.4 per cent above the 2002 level. The main increase is expected in China, by 21.7 per cent to 257 million tons. Estimated annual average apparent steel consumption growth for the period 2002–2004 indicates solid expansion of consumption in Kazakhstan by 10 per

cent, Saudi Arabia by 6.3 per cent, Mexico by 5.6 per cent, the Russian Federation by 4.7 per cent and Argentina by 3.6 per cent. Other countries are forecast to record slower consumption growth: other Latin American countries by 2.7 per cent and South Africa by 2.6 per cent. Major economies — the United States, the European Union and Japan — are expected to have consumption growth of about 1 per cent.

Fears of overproduction led in 2002 to the imposition of import duties in a number of countries, but these were ruled illegal by the World Trade Organization in late 2003. However, the surge of exports as Chinese demand exceeded domestic production during 2003 and 2004 dispelled such fears. Chinese demand was fuelled by the construction industry, which accounted for about half of the steel demand. This industry caters for the growing urbanization needs of the country resulting from the liberalization of the “household registration system”, and its expansion could last for some time as the current urbanized population (38 per cent) is well below the average found in developing countries (50 per cent). During 2003, world steel prices reflected this improved balance between production and consumption and started to improve. Recent mergers aimed at consolidating producers have not altered the fragmented nature of steel production: the five largest steel makers control about a fifth of world output. Moves towards vertical integration were mixed. A proposal to include CVRD, one of the largest iron ore exporters, in a Brazilian steel holding did not attract enough support. In Western Australia, however, the \$564 million mine expansion of BHP Billiton, another large iron ore exporter, included a 20 per cent shareholding in Posco, the Republic of Korea's largest steel maker.

### *Iron ore shipments*

The booming production of steel was reflected in the 11.6 per cent increase in iron ore shipments during 2003, totalling 540 million tons. Brazil and Australia, which account for more than two thirds of world exports, recorded growth of 15 and 14 per cent respectively. Similarly, India and South Africa, which together account for 14.5 per cent of world exports, recorded expansion of 25 and 3 per cent respectively. Exports from Canada and Sweden recorded opposite trends, with the former contracting by 2 per cent and the latter expanding by 9 per cent. These two countries account for 6.5 per cent of world exports. About two thirds of world imports went to the Far East, with Japanese and Chinese imports accounting for fourth fifths of this share. The 5 per cent

growth in Japanese imports of iron ore in 2003 was overshadowed by the 32.7 per cent growth in Chinese imports, with Australia, Brazil and India taking advantage of the increase in demand. EU countries' imports of iron ore are about one quarter of world imports and in 2003 they increased at the rate of 4.3 per cent. Imports into the Middle East, the Americas and Africa were mostly steady.

Increased shipments of iron ore pushed up both commodity prices and freight rates. Negotiations conducted in early 2004 reported increases in prices close to 20 per cent. Long-term charters, such as the one agreed late in 2003 between Baosteel, the largest Chinese steel maker, and Mitsui OSK for importing iron ore from Australia were a measure to counter higher freight rates.

#### *Coal shipments*

Coal shipments increased by 7 per cent in 2003 and reached an all-time record of 610 million tons. As in previous years, thermal coal made up 70 per cent of world coal trade, and in 2003 shipments grew at a rate of 8.4 per cent to reach 430.7 million tons. Shipments of coking coal increased by almost 4 per cent.

Australia, by far the largest exporter of both thermal and coking coal in almost equal amounts, again accounted for slightly more than one third of world shipments. Over the first 10 months of 2003 it increased exports by 7 per cent to reach 178.4 million tons. The total for the year is estimated at 214 million tons. Up to the third quarter of 2003, shipments from the United States and Canada, which are mainly exporters of coking coal, contracted by 6 and 13 per cent respectively. China, Indonesia and South Africa, mainly exporters of thermal coal, account for about 33 per cent of world exports. China increased exports in the first 10 months of 2003 by about 14 per cent to 78 million tons. Similarly, coal exports from Indonesia increased by a remarkable 26 per cent to 50.6 million tons during the first seven months of the year. South Africa's exports, however, contracted by 6 per cent to 31.3 million tons for the same period.

The main importers are EU countries, with about 30 per cent of world imports, and Japan, which accounts for about a quarter of world imports. The share of thermal coal in their imports varies from three quarters of the total for EU countries to about 60 per cent for Japan. Other importers are the Republic of Korea and Taiwan Province of China, with 10 per cent each.

Prospects for coal trade are good. The \$2 per ton f.o.b. price reductions for thermal coal at the beginning of 2003 gave way to increases of \$10 to \$15 per ton one year later, when f.o.b. prices reached \$60 per ton. In Japan, energy and environmental taxes to be imposed on thermal coal imports did not deter demand, partly owing to the difficulty in speeding up nuclear power generation. Producers increased production. Rio Tinto and BHP Billiton introduced measures to increase output in their mines. Two Colombian producers — Drummond and Carbocol — also announced output expansion in spite of temporary interruptions of coal transport to the ports due to guerrilla activity. In South Africa pressure was put on Spoornet to ensure coal supplies to the ports. As domestic demand for coal increased in some countries, as was reported for Indonesian thermal coal and Chinese coking coal, other more elaborate schemes were planned, such as the one to connect remote Chinese mines to Russian seaports on the Pacific.

#### *Grain shipments*

World grain shipments reached 240 million tons in 2003, a decrease of 2 per cent from the previous year's 245 million tons, almost equally split between wheat and coarse grains, such as maize, barley, soybeans, sorghum, oats and rye. In 2002, the main loading areas were North America, which accounted for 46.9 per cent of world exports, and the east coast of South America, which accounted for 17.7 per cent. Australia and the European Union accounted for about 8 and 9 per cent respectively. In 2003, the largest exporter, the United States, decreased shipments over 10 months to 59.9 million tons, a decrease of 8 per cent from same period in the previous year, when exports reached 65.4 million tons. Over the same period, shipments from the EU recorded a remarkable increase of 25 per cent, while those from Canada decreased by 19 per cent and those from Argentina were steady. Shipment flows might change in the medium term. Increased demand for coarse grains within the EU could reduce exports, and this possibility was heralded by reduced grain production after the severe drought of 2003. The decision by Brazil to legalize genetically modified soya is expected to increase exports substantially.

#### *Other bulk shipments*

During 2003 shipments of bauxite and alumina, the primary inputs for the aluminium industry, are estimated to have increased by 1.9 per cent to reach 55 million tons. Final figures for 2002 indicate that bauxite shipments

from West Africa, almost half of the world total, were steady at 14.0 million tons, while bauxite and alumina exports from Jamaica surged by 19.3 per cent to reach 8.7 million tons, with all shipments going to the United States market. EU countries and some Eastern European countries are the largest importers of bauxite and alumina shipments. They imported 23.1 million tons in 2002, representing 42.2 per cent of world exports. Australia, the largest exporter of bauxite and alumina, shipped 18.1 million tons in 2002, about half of it to Asian countries.

During 2003, production of primary aluminium products increased by 3.5 per cent to 21.9 million tons. The expansion in production was remarkable in the Far East and South and West Asia, which recorded a 9.5 per cent increase to 2.4 million tons. Countries in Eastern Europe and Africa recorded similar growth rates — 4.5 and 4.1 per cent respectively. Elsewhere, including in the industrialized countries of North America and Western Europe, production was steady. In mid-2003, the Siberian-based smelter Rusal, the Russian Federation's largest, was reported to be improving its competitiveness by taking a stake in the port of Vanino, which is used to import alumina and export aluminium. In early 2004 there were reports that shortages in alumina imports would hamper aluminium exports from China, as annual growth in domestic demand was booming at 16 per cent.

Shipments of rock phosphate stood at 30 million tons in 2003, almost the same level as the previous year. The major exporter, accounting for about one third of world exports, continued to be Morocco, which shipped about 12 million tons. Other traditional exporters were Jordan, with 3.7 million tons, and Togo, with 1.3 million tons. China maintained its exports at close to 5 million tons. The European Union and other Asian countries were major importers.

The minor dry bulks, a heterogeneous mix of merchandise, was believed to have reached 840 million tons in 2003, almost 1 per cent above the recent estimates released for the previous year. Shipments of steel and forest products are estimated to be slightly above 350 million tons, with the trade of the former increasing more rapidly than that of the latter. By mid-2003, a call for trade liberalization made by leading manufacturers of forest products was dampened by the stalled WTO trade negotiations in Cancún (Mexico). Agriculture-related trades, including sugar, rice, tapioca and meals (oilseeds and soy) and fertilizers (phosphates, potash, sulphur and

urea), accounted for almost 240 million tons. The bumper crop in Brazil, the world largest sugar producer, pushed exports up to more than 13 million tons, about half of its production, owing to a weak currency and limited demand for sugar-based domestic ethanol. The EU, the second largest world producer, also had good production, which, being above the EU production quota, needed to be exported, thus weakening world prices. Promising areas for increased demand were located in South Asia and Africa. Trade in fertilizers was poised to increase as traditional rock phosphate producers, such as Morocco, went ahead with plans for fertilizer production. Again, promising areas for increased demand were located in South Asia and Africa. Shipments of a number of minerals (coke, non-ferrous ores, metals, salt, cement, etc.) are estimated at about 250 million tons. Overall forecasts for these cargoes indicate a similar volume of shipments for 2004, with agricultural trades fluctuating in the short term and industrial goods being affected by long-term investment decisions.

#### **4. Liner shipments of containerized cargoes**

The balance of 1.65 billion tons of dry cargoes is increasingly being carried in containers along the liner trade routes. In some regions, specialized unitized services, such as ro-ro, reefer and cars, coexist with traditional stand-alone general cargo services, with some of the latter serving to back up the main container trades. Although most container routes are mature, there was scope for growth: the 2 per cent increase in the reefer trade during 2002 to reach 88 million tons also benefited container trades, which make up about 60 per cent of the reefer trade. Shipments of containerized cargoes differ from the other dry-bulk cargoes in terms of the increased use of transshipment to complement the direct calls of larger vessels. Containers flow along east-west (trans-Pacific, Europe-Far East and transatlantic), north-south and regional routes.

On the largest east-west route, the trans-Pacific, the total flow was estimated to have reached 14.3 million TEU in 2003. Container flows on the dominant leg, Asia to North America, reached 10.1 million TEU, while in the opposite westbound direction the flow was less than half, at 4.2 million TEU. As a result, the past imbalance of container flows continued and repositioning of empty containers remained a major concern for carriers. The Asia-Europe route was estimated to have carried 11 million TEU during 2003. Again there was a gap between flows in the westward direction originating in

Asia, which reached 7 million TEU, and those flows heading eastward, which were estimated to total 4 million TEU. However, flow imbalance was less pronounced than that existing across the Pacific. In the transatlantic route, the smallest of the east–west ones, container flow was estimated to have reached 4.6 million TEU. As flows on the dominant leg from Europe to North America reached 2.9 million TEU and those in the opposite direction were almost static at 1.7 million TEU, the flow imbalance was less acute. Overall traffic flows in these three east–west routes almost reached 30 million TEU, with empty repositioning being an important feature in all of them.

North–south routes are articulated around major production and consumption centres of Europe, the Far East and North America, and link these centres with developing countries. In 2003, north–south routes were believed to have carried up to 16 million TEU, and flows expanded and contracted in line with economic conditions prevailing at both ends. Container flows on the routes linking Europe to Africa and Oceania were believed to have reached 0.7 and 0.6 million TEU respectively. Flows were almost evenly distributed between southward and northward directions. Container flows between Europe and Central and South America were about fourfold larger, 2.5 million TEU, and also more imbalanced, since southward flows totalled slightly less than 1 million TEU. Container flows between North America and Central and South America were larger still, about 3 million TEU, and similarly imbalanced, since southward flows were estimated at 1.3 million TEU. Container flows between Asia and Oceania were believed to have reached 1.7 million TEU.

Data for regional routes were difficult to come by. For the largest regional route, the intra-Asia one, container flows were estimated at 17 million TEU in 2003.

During 2003, the risks associated with some non-containerized shipping services were illustrated by the saga of the livestock carrier *Cormo Express*. This vessel sailed from Fremantle (Australia) on 5 August with more than 50,000 sheep and arrived as scheduled in Jeddah (Saudi Arabia) on 21 August. Discharge was forbidden by the authorities because more than 5 per cent of the sheep were infected with scabby mouth disease. As a result, the vessel looked for a port of discharge in the Middle East Gulf and the Pacific for 11 weeks before finally unloading at Massawa (Eritrea), with a loss of more than 10 per cent of the cargo.

## 5. World shipments by country groups

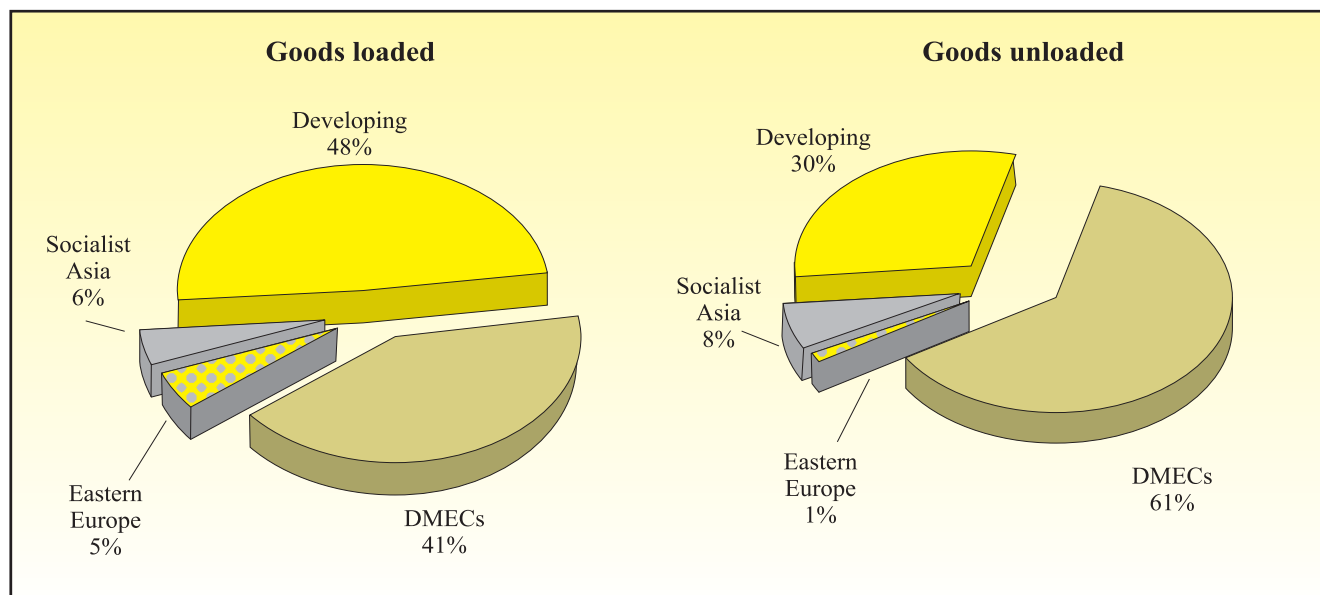
The split of the 6.17 billion tons of world seaborne trade by major cargo segments and country groups is shown in table 4 and figure 3. The shares of developed market-economy countries in goods loaded and unloaded in 2003 were 40.9 per cent and 60.9 per cent of the world total respectively. For these countries crude oil and petroleum products accounted for 5.4 and 22.1 per cent of total world exports, while imports accounted for 68.8 per cent for crude oil and 50.8 per cent for petroleum products. Further breakdowns in terms of regional groupings can be found in annex II. Among the market economies, Europe remains the most important exporter of crude oil and petroleum products, with a total of 110.9 million tons (5.0 per cent of world total). North America is the largest importer of crude oil and petroleum products, with 668.1 million tons (28.6 per cent), closely followed by Europe, with 537.2 million tons (23.0 per cent), and Japan, with 247.5 million tons (10.6 per cent).

In the dry-bulk segment, the share of global shipments of developed market-economy countries remained at 58.4 per cent for exports and increased slightly to 58.8 per cent for imports. Again, annex II gives an insight into regional distribution of these shipments. Europe remains the largest dry cargo market for exports and imports, with 1,090.9 million tons (27.5 per cent of world exports) and 1,474.5 million tons (37.2 per cent of world imports) respectively. Two countries in North America (United States and Canada) and in Oceania (Australia and New Zealand) were also large exporters of dry shipments, with shares of 11.1 per cent and 12.0 per cent respectively. This underlines their important shares in the shipping of the three major dry bulk commodities — iron ore, coal and grain.

During 2003 the share of developing countries in total seaborne exports was 48.2 per cent, while their share of seaborne imports was 29.7 per cent. For exports these percentages have been decreasing since 1998, while those corresponding to imports seem to be fairly stable. The trade structure for developing countries contrasts sharply with that of developed market-economy countries. The developing countries' combined share in crude oil and petroleum product exports was 86.6 per cent and 67.2 per cent respectively. For imports, the shares were 25.6 per cent for crude oil and 43.7 per cent for petroleum products. In the dry cargo sector, the share of developing countries' exports reached 29.4 per cent

Figure 3

**World seaborne trade by country groups**  
(percentage share of tonnage, 2004)



*Source:* Compiled by the UNCTAD secretariat on the basis of data supplied by reporting countries and other specialized sources.

of world exports, while their share of world imports decreased by less than 1 per cent to 29.6 per cent.

Regional variations among groups of developing countries were related to their GDP. Developing countries in Asia had the largest shares in exports and imports, reaching 28.9 per cent and 20.7 per cent of world exports and imports respectively. The share of developing countries in America was 12.3 per cent of world exports and 5.4 of world imports. The shares for African countries were about half of that for America: 6.5 per cent of world exports and 3.2 of world imports. The shares for developing countries of Europe (0.3 per cent of world exports and imports) and Oceania (0.1 per cent of world exports and 0.2 per cent of imports) were considerable smaller.

In specific trades there were also considerable variations. The shares of Asian developing countries in world exports of crude oil were 54.0 per cent and of petroleum products 41.9 per cent. This reflects the importance of Middle East oil producers and refining activity in the Far East. The share of African developing countries in exports of crude oil (17.8 per cent) was higher than that of

developing countries in America (14.5 per cent). For exports of petroleum products, however, the opposite was true — 7.0 per cent for developing countries in Africa and 17.9 per cent for those in America. Again, for exports of dry cargoes, Asian developing countries had the largest share (16.6 per cent), followed by American developing countries (10.7 per cent) and African developing countries (1.6 per cent).

For imports of crude oil, the share of developing countries in Asia was 17.4 per cent of the world total. The shares for developing countries in America and Africa were 5.0 per cent and 2.8 per cent respectively. For imports of petroleum products, the corresponding shares for developing countries in Asia, America and Africa were 28.6 per cent, 10.4 per cent and 3.1 per cent. Imports of crude oil into developing countries in Europe reached 0.4 per cent of world imports, on a par with the percentage for imports of petroleum products. Developing countries in Oceania had negligible imports of crude oil, in line with the scant refining capacity in the region, while the share of world petroleum product imports was 1.1 per cent.

The share of socialist countries in Asia in world exports for 2003 was 5.6 per cent and reached 8.0 per cent for world imports. In recent years, imports have risen in line with the increased role of trade in the economic development of China and its high rates of economic growth. The trade of countries of Central and Eastern Europe (including the former USSR) achieved its largest share for exports, 5.3 per cent, thanks to shipments of crude oil and petroleum products from the Black Sea and Baltic Sea. Seaborne imports for those countries reached 1.4 per cent of the world total, and they were complemented by other imports carried overland from other European countries.

## 6. Demand for shipping services

Table 5 provides data on total demand for shipping services in terms of ton-miles. World seaborne trade for 2003 reached 24,589 billion ton-miles, after growing at 5.9 per cent. As cargo transported increased by 3.7 per cent, the average transport distance increased during the year.

Increased demand for haulage of crude oil and oil products resulted in ton-miles for these commodities increasing by 5.9 per cent, a remarkable expansion after two years of contraction. This was an indication of crude oil supplies moving over longer distances, notably from sources close to the Black Sea and Baltic Sea, to destinations in Europe and, more important, to North America. It also reflected the temporary long-distance haulage of crude oil to replace Venezuela's supplies to the United States. For all dry cargoes the ton-miles also increased by 5.9 per cent, while tonnage transported increased by 3.8 per cent. This also suggests longer distances between cargo origins and destinations. However, the breakdown of dry cargo indicates that the reverse is true for the five main dry bulks, whose ton-miles increased by 8.0 per cent, as against a 9.1 per cent increase in cargo volume. For the remaining dry cargoes, minor bulks and liner cargo, supply lines were extended, as their ton-miles increased by 3.6 per cent to 6,675, while cargo shipments increased barely by 0.9 per cent.

Table 5

### World seaborne trade in ton-miles, selected years (billions of ton-miles)

Year	Oil			Iron ore	Coal	Grain <sup>a</sup>	Five main dry bulks	Other dry cargoes	World total
	Crude	Products	Crude plus products						
1970	5 597	890	6 487	1 093	481	475	2 049	2 118	10 654
1975	8 882	845	9 727	1 471	621	734	2 826	2 810	15 363
1980	8 385	1 020	9 405	1 613	952	1 087	3 652	3 720	16 777
1985	4 007	1 150	5 157	1 675	1 479	1 004	4 480	3 428	13 065
1990	6 261	1 560	7 821	1 978	1 849	1 073	5 259	4 041	17 121
1995	7 225	1 945	9 170	2 287	2 176	1 160	5 953	5 065	20 188
2000	8 180	2 085	10 265	2 545	2 509	1 244	6 638	6 113	23 016
2001	8 074	2 105	10 179	2 575	2 552	1 322	6 782	6 280	23 241
2002	7 848	2 050	9 898	2 731	2 549	1 241	6 879	6 440	23 217
2003 <sup>a</sup>	8 330	2 155	10 485	3 030	2 700	1 335	7 429	6 675	24 589

Source: Fearnleys, *Review 2003*.

<sup>a</sup> Includes wheat, maize, barley, oats, rye, sorghum and soya beans.



## Chapter 2

# STRUCTURE AND OWNERSHIP OF THE WORLD FLEET

*This chapter reviews the supply-side dynamics of the world maritime industry. The information and data cover comprehensively the structure and ownership of the world fleet. The chapter also reviews deliveries and demolition of vessels, tonnage on order, newbuilding prices and markets for second-hand tonnage.*

### A. STRUCTURE OF THE WORLD FLEET

#### 1. Principal types of vessel

Comparative time-series data on the world fleet for 2002, 2003 and 2004 are provided in figure 4 and table 6. The world merchant fleet stood at 857.0 million deadweight tons (dwt) on 1 January 2004. This represents a 1.5 per cent increase over 2003, at which time the world fleet had already expanded by 2.3 per cent over the tonnage in 2002. The latest increase is lower than the increases in the previous two years. Newbuilding deliveries represented 49.2 million dwt, while 25.6 million dwt were broken up and lost. The result was a net gain of 23.6 million dwt in 2003.

The tonnage of oil tankers in 2003 increased by a healthy 4.1 per cent and that of bulk carriers by 2.5 per cent. These two types of ships represented 72.9 per cent of total tonnage, a slight increase from 71.6 per cent in 2002. The fleet of general cargo ships decreased again in 2003 and at a slightly slower rate than that of the previous year, namely by 2.5 per cent; this category now represents 11.1 per cent of the total world fleet. In terms of deadweight tonnage, the fleet of containerships increased by 7.7 million dwt or 9.3 per cent, and now represents 10.6 per cent of the total world fleet. This relatively high rate of increase reflects the growing proportion of manufactured goods being traded, generally in containers. Deadweight tonnage of liquid gas carriers (mainly LNG and LPG carriers) and ferries/passenger ships has been increasing steadily.

#### 2. World containership fleet

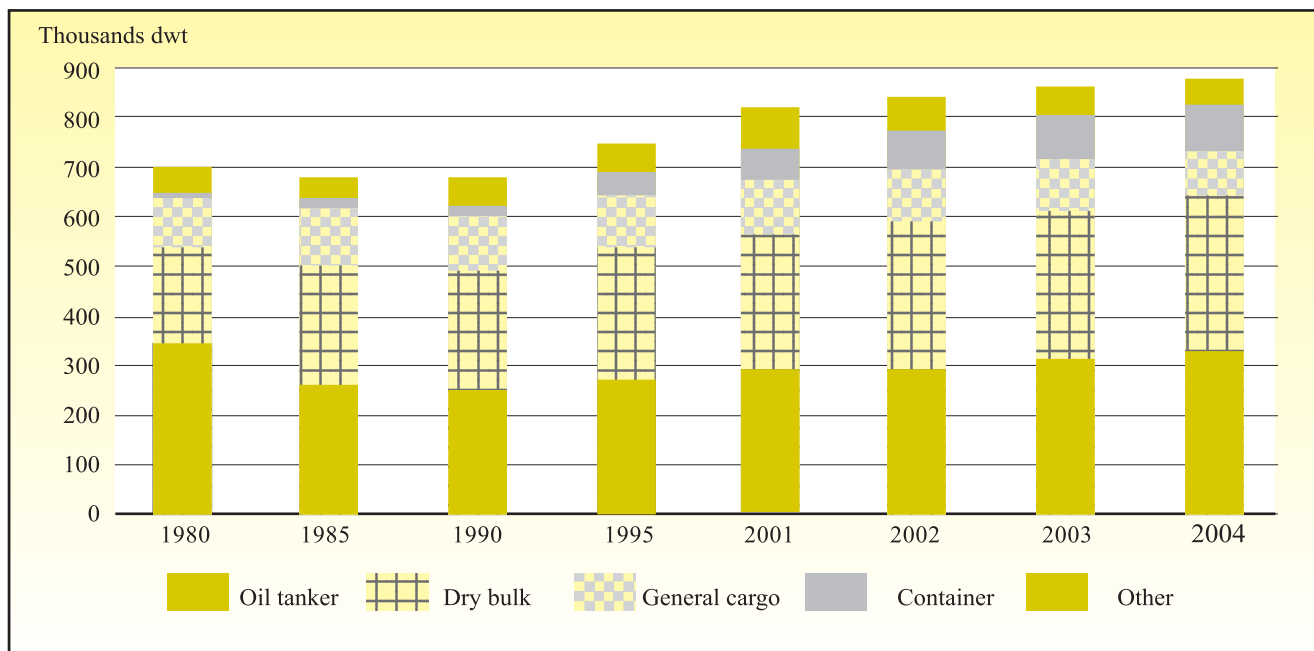
The world fleet of fully cellular containerships continued to expand substantially in 2003 in terms of both number of ships and their TEU capacity; by the beginning of 2004, there were 3,054 ships with a total capacity of 6,437,218 TEUs, an increase of 5.7 per cent in the number of ships and 9.2 per cent in TEU capacity over the previous year (see table 7). Ship sizes also continued to increase, with average carrying capacity per ship growing from 1,944 TEUs in 2002 to 2,108 TEUs in 2004, reflecting the building of larger vessels to achieve economies of scale. As of the end of 2003, the well-defined trend towards large container vessels was continuing unabated. Vessels of over 3,000 TEU capacity made up 70.5 per cent of total deliveries of cellular tonnage for the year and 81.6 per cent of the order book.

#### 3. Age distribution of the world merchant fleet

Table 8 provides data on the average age distribution of the world merchant fleet by types of vessels and by groups of countries and territories. The average age of the total world fleet in 2003 dropped marginally to 12.5 years. By type of vessel, the average age of tankers decreased by almost one year to 10.9 years in 2003. The share of tanker tonnage 15 years and older decreased to 29.9 per cent in 2003 from 33.5 per cent in 2002, reflecting a similar level of scrapping activities, which in 2003 reached 18.4 million dwt (compared with 18.1 million dwt in 2002). The average age of the dry bulk carrier fleet increased



Figure 4  
World fleet by principal types of vessel, selected years



Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Lloyd's Register – Fairplay.

marginally to 12.9 years in 2003. Containerships continued to be the youngest fleet in 2003, with an average age of 9.2 years, slightly above the 9.1 years average age of the previous year. This trend is reflected in the share of tonnage between 0 and 4 years of age — 32.3 per cent, the highest among all categories of vessels.

By country grouping, the fleet age of developed market-economy countries in 2003 was the lowest — at 10.9 years (11.7 years in 2002). These countries have continued the trend of lowering the average age of their fleet that has been apparent over the last few years. Also in this group, the average age of tankers decreased by more than a year to 9.0 years in 2003, as compared with 10.5 years in 2002. This reflects the European Union's ban on old tonnage, which came into effect after the sinking of the *Prestige*. The major open-registry countries had the second lowest average age of all ships (11.9 years in 2003 versus 12.1 years in 2002), even though the tendency to register newbuildings under open-registry flags abated. The average age of all ships registered in developing countries (excluding major open-registry countries) decreased by almost half a year in 2003 to 13.1 years as compared with 13.5 years in 2002. For this group, the average age of general cargo vessels decreased to 18.8 years, while that of containerships marginally increased to 8.8 years. The average age of tonnage registered in the socialist countries of Asia increased to 17.6 years in 2003. The countries of Central

and Eastern Europe continued to have the oldest fleet (20.7 in 2003 versus 20.1 years in 2002), with vessels built more than 15 years ago representing more than four fifths of the total fleet and bulk carriers constituting the oldest class of ships at 22.3 years.

#### 4. Delivery of newbuildings

Newbuilding activities attained the highest level ever recorded in terms of deadweight tons, with deliveries totalling 49.2 million dwt in 2003 (see table 9), a marginal increase over the already record deliveries in 2002 (49.0 million dwt). The total number of vessels delivered increased to 1,707 units from 1,539 units in 2002 (10.9 per cent). This high level of delivery was sustained primarily thanks to record tanker deliveries of 30.7 million dwt, an impressive 31.2 per cent increase over the 2002 level, with the number of newbuildings increasing to 293 units in 2003 from 182 units in 2002. The average size was 105,000 deadweight tons. Conversely, deliveries of bulk carriers were down by 2.0 million dwt, about 14.2 per cent, from the 2002 level. Another feature was the larger size of bulk carriers delivered in 2003. In the previous year, the average deadweight tonnage had been 62,400, whereas in 2003 it was 68,300. Newbuildings for other types of vessels, including general cargo ships and containerships, increased in number, but decreased in deadweight tonnage to 1,235 units and 6.2 million dwt in 2003.

Table 6

**World fleet size by principal types of vessel, 2002–2004 <sup>a</sup>**  
*(beginning-of-year figures, in thousands of dwt)*

<b>Principal types</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>Percentage change 2003/2004</b>
<b>Oil tankers</b>	285 519 <i>34.6</i>	304 396 <i>36.1</i>	316 759 <i>37.0</i>	4.1
<b>Bulk carriers</b>	294 588 <i>35.7</i>	300 131 <i>35.5</i>	307 661 <i>35.9</i>	2.5
<b>Ore/bulk/oil</b>	14 456 <i>1.8</i>	12 612 <i>1.5</i>	12 110 <i>1.4</i>	-4.0
<b>Ore/bulk</b>	280 132 <i>33.9</i>	287 519 <i>34.1</i>	295 551 <i>34.5</i>	2.8
<b>General cargo ships</b>	99 872 <i>12.1</i>	97 185 <i>11.5</i>	94 768 <i>11.1</i>	-2.5
<b>Containerships</b>	77 095 <i>9.3</i>	82 793 <i>9.8</i>	90 462 <i>10.6</i>	9.3
<b>Other types of ships</b>	68 578 <i>8.3</i>	59 730 <i>7.1</i>	47 324 <i>5.5</i>	-20.8
<b>Liquefied gas carriers</b>	19 074 <i>2.3</i>	19 469 <i>2.3</i>	20 947 <i>2.4</i>	7.6
<b>Chemical tankers</b>	7 974 <i>1.0</i>	8 027 <i>0.9</i>	8 004 <i>0.9</i>	-0.3
<b>Miscellaneous tankers</b>	785 <i>0.1</i>	906 <i>0.1</i>	947 <i>0.1</i>	4.5
<b>Ferries and passengers ships</b>	5 319 <i>0.6</i>	5 495 <i>0.6</i>	5 561 <i>0.6</i>	1.2
<b>Other</b>	35 426 <i>4.3</i>	25 833 <i>3.1</i>	11 865 <i>1.4</i>	-54.1
<b>World total</b>	825 652 <i>100.00</i>	844 235 <i>100.00</i>	856 974 <i>100.00</i>	1.5

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Lloyd's Register – Fairplay.

<sup>a</sup> Percentage shares are shown in italics.

Table 7

Distribution of the world fleet and TEU capacity of fully cellular containerships, by country groups, in 2002, 2003 and 2004 <sup>a</sup>  
(beginning-of-year figures)

Flags of registration by groups of countries	Number of ships			TEU capacity and percentage shares <sup>a</sup>		
	2002	2003	2004	2002	2003	2004
<b>World total</b>	2 755 <i>100.0</i>	2 890 <i>100.0</i>	3 054 <i>100.0</i>	5 356 650 <i>113.2</i>	5 896 154 <i>100.0</i>	6 437 218 <i>100.0</i>
<b>Developed market-economy countries</b>	759 <i>27.5</i>	798 <i>27.6</i>	824 <i>27.0</i>	1 785 609 <i>37.7</i>	2 019 918 <i>34.3</i>	2 147 550 <i>33.4</i>
<b>Major open-registry countries</b>	1 117 <i>40.5</i>	1 166 <i>40.3</i>	1 224 <i>40.1</i>	2 317 543 <i>49.0</i>	2 591 977 <i>44.0</i>	2 922 805 <i>45.4</i>
<b>Total developed market-economy and major open-registry countries</b>	1 876 <i>68.1</i>	1 964 <i>68.0</i>	2 048 <i>67.1</i>	4 103 152 <i>86.7</i>	4 611 895 <i>78.2</i>	5 070 355 <i>78.8</i>
<b>Countries in Central and Eastern Europe (including former USSR)</b>	30 <i>1.1</i>	29 <i>1.0</i>	35 <i>1.1</i>	24 590 <i>0.5</i>	23 486 <i>0.4</i>	26 813 <i>0.4</i>
<b>Socialist countries of Asia</b>	98 <i>3.6</i>	104 <i>3.6</i>	136 <i>4.5</i>	105 344 <i>2.2</i>	114 112 <i>1.9</i>	153 727 <i>2.4</i>
<b>Developing countries</b>	674 <i>24.5</i>	720 <i>24.9</i>	779 <i>25.5</i>	994 024 <i>21.0</i>	1 035 578 <i>17.6</i>	1 115 019 <i>17.3</i>
<i>of which:</i>						
<b>Africa</b>	10 <i>0.4</i>	9 <i>0.3</i>	9 <i>0.3</i>	10 674 <i>0.2</i>	8 237 <i>0.1</i>	9 131 <i>0.1</i>
<b>America</b>	231 <i>8.4</i>	249 <i>8.6</i>	282 <i>9.2</i>	273 893 <i>5.8</i>	301 618 <i>5.1</i>	361 472 <i>5.6</i>
<b>Asia</b>	432 <i>15.7</i>	462 <i>16.0</i>	488 <i>16.0</i>	708 883 <i>15.0</i>	725 723 <i>12.3</i>	744 416 <i>11.6</i>
<b>Europe</b>	1 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	574 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>
<b>Oceania</b>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>
<b>Other, unallocated</b>	77 <i>2.8</i>	73 <i>2.5</i>	56 <i>1.8</i>	129 540 <i>2.7</i>	111 083 <i>1.9</i>	71 304 <i>1.1</i>

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Lloyd's Register – Fairplay.

<sup>a</sup> Percentage shares are shown in italics.

Table 8

**Age distribution of the world merchant fleet, by types of vessel, as of 1 January 2004**  
(percentage of total dwt)

Country grouping	Types of vessel	0-4 years	5-9 years	10-14 years	15-19 years	20 years and over	Average age (years) 2003 <sup>a</sup>	Average age (years) 2002 <sup>a</sup>
<b>World total</b>	All ships	22.4	21.6	16.1	12.1	27.7	12.5	12.6
	Tankers	28.2	20.8	21.0	11.0	18.9	10.9	11.6
	Bulk carriers	19.2	23.8	13.9	14.5	28.7	12.9	12.7
	General cargo	7.8	14.4	10.3	13.5	53.9	17.4	17.0
	Containerships	32.3	30.5	15.1	9.5	12.6	9.2	9.1
	All others	15.9	13.7	12.9	7.8	49.8	15.8	16.0
<b>Developed market-economy countries</b>	All ships	27.6	23.8	16.4	12.4	19.7	10.9	11.7
	Tankers	35.6	23.9	18.7	10.8	11.0	9.0	10.5
	Bulk carriers	17.6	25.1	14.1	17.0	26.1	12.8	13.1
	General cargo	17.6	19.8	14.0	13.9	34.7	13.9	13.7
	Containerships	34.2	29.5	15.5	10.6	10.2	8.8	8.7
	All others	17.6	17.3	14.8	9.7	40.7	14.5	14.7
<b>Major open-registry countries</b>	All ships	23.7	23.0	16.7	11.8	24.9	11.9	12.1
	Tankers	27.3	20.5	23.1	10.9	18.2	10.9	11.6
	Bulk carriers	21.7	25.1	13.3	13.4	26.5	12.3	12.0
	General cargo	7.5	20.7	11.8	16.2	43.6	16.0	15.8
	Containerships	34.5	29.1	14.6	9.1	12.7	9.0	9.1
	All others	17.9	14.3	11.5	2.9	53.3	15.8	16.0
<b>Subtotal</b>	All ships	25.1	23.3	16.6	12.0	23.0	11.6	11.9
	Tankers	30.8	21.9	21.3	10.9	15.2	10.1	11.2
	Bulk carriers	20.7	25.1	13.5	14.3	26.4	12.4	12.2
	General cargo	11.5	20.4	12.7	15.3	40.1	15.2	15.0
	Containerships	34.4	29.3	14.9	9.8	11.6	8.9	9.0
	All others	17.7	15.9	13.2	6.5	46.6	15.1	15.3
<b>Countries of Central and Eastern Europe</b>	All ships	1.6	2.9	6.6	18.0	70.8	20.7	20.1
	Tankers	4.9	3.4	1.6	15.8	74.4	20.7	20.4
	Bulk carriers	0.0	0.0	0.2	17.5	82.3	22.3	20.6
	General cargo	1.1	3.2	9.0	17.2	69.5	20.6	20.2
	Containerships	0.0	19.1	12.5	27.0	41.4	17.2	15.9
	All others	1.2	2.2	13.3	21.5	61.8	20.0	19.6
<b>Socialist countries of Asia</b>	All ships	10.4	8.8	12.0	13.1	55.7	17.6	16.7
	Tankers	17.4	7.5	18.1	15.5	41.5	15.4	16.3
	Bulk carriers	6.7	12.5	8.8	11.4	60.5	18.2	17.2
	General cargo	3.1	4.8	4.8	11.1	76.2	20.8	20.6
	Containerships	23.1	9.5	25.8	17.7	23.9	12.9	13.4
	All others	17.4	7.5	18.1	15.5	41.5	15.4	16.3
<b>Developing countries (excluding open-registry countries)</b>	All ships	20.6	20.2	16.3	12.0	30.9	13.1	13.5
	Tankers	27.2	19.5	19.8	11.0	22.5	11.4	12.5
	Bulk carriers	17.6	21.9	17.0	15.7	27.8	13.1	12.8
	General cargo	6.2	10.5	8.1	10.8	64.4	18.8	19.1
	Containerships	28.9	40.0	12.9	5.7	12.4	8.8	8.7
	All others	14.1	8.5	12.3	9.1	55.9	17.0	17.5

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Lloyd's Register – Fairplay.

<sup>a</sup> To calculate the average age, it has been assumed that the ages of vessels are distributed evenly between the lower and upper limits of each age group. For the 20-years-and-over age group, the mid-point has been assumed to be 23.5 years.

Table 9

## Deliveries of newbuildings, selected years

Year	Oil tankers <sup>a</sup>		Combined carriers <sup>a</sup>		Dry bulk carriers <sup>a</sup>		Others <sup>b</sup>		Total	
	No. of vessels	Million dwt	No. of vessels	Million dwt	No. of vessels	Million dwt	No. of vessels	Million dwt	No. of vessels	Million dwt
1980	99	7.0	4	0.4	135	4.7	548	6.0	786	18.0
1985	72	3.9	10	0.7	339	14.7	529	5.0	950	25.0
1990	81	8.7	0	0.0	119	9.6	523	4.0	723	23.0
1997	69	7.5	3	0.3	299	18.8	696	10.2	1 067	36.8
1998	120	12.6	0	0.0	217	11.6	704	11.1	1 041	35.3
1999	161	19.1	4	0.4	195	13.0	585	8.4	940	40.5
2000	154	20.8	0	0.0	188	13.1	1 202	10.5	1 544	44.4
2001	112	14.4	0	0.0	310	21.0	1 048	9.8	1 470	45.2
2002	182	23.4	0	0.0	226	14.1	1 131	11.5	1 539	49.0
2003 <sup>c</sup>	293	30.7	2	0.2	177	12.1	1 235	6.2	1 707	49.2

Source: Compiled by the UNCTAD secretariat on the basis of data from Fearnleys, *Review 2003*.

<sup>a</sup> Vessels over 10,000 dwt.

<sup>b</sup> Sea-going, cargo-carrying vessels of over 1,000 gross registered tons (grt).

<sup>c</sup> Provisional.

## 5. Demolition of ships

Trends in the tonnage, types and average age of broken-up vessels are shown in tables 10, 11 and 12. In 2003, total tonnage sold for demolition decreased by 16.1 per cent from the tonnage of the previous year to 25.6 million dwt, equivalent to 3.0 per cent of world total deadweight tons, as compared with 3.6 per cent in 2002. Break-up of tankers accounted for the largest share of total demolition. Sales of tankers for break-up increased by 1.6 per cent to 18.4 million dwt and the combined effect of freight rate volatility and strong steel demand in China pushed demolition prices up over \$300 per ton. ULCC/VLCC demolition sales decreased from 35 units in 2002 to 28 units in 2003. Sales of Suezmaxes stood at 14 units in 2003, while those of Aframaxs increased substantially from 20 units in 2002 to 35 units in 2003. In the smaller category of crude oil tankers, demolition also increased: 66 ships were sold for scrap in 2002, while 80 units were sold in 2003. The average age of tankers sold for demolition was up by one year to 29.3 years in 2003. The number of dry bulk carriers sold for scrap decreased by 44.1 per cent to 3.3 million dwt in 2003, and the number

of combined carriers decreased by about two thirds to 0.5 million dwt in 2003. There was a decrease in the scrapping of all sizes of bulk carriers. Demolition sales of vessels over 120,000 dwt decreased from 5 units in 2002 to 2 units in 2003. For vessels in the range of 60,000 to 120,000 dwt, sales contracted from 26 units in 2002 to 8 units in 2003. For Handymax tonnage there was a slight decrease in demolition sales from 11 units in 2002 to 9 units in 2003. The average age of all dry bulk carriers broken up was 26.5 years in 2003, slightly lower than the previous year. Other ship types had a different trading life in 2003, with containerships being sold to breakers at an average age of 25.5 years and general cargo ships at an average age of 29.3 years. Ship demolition came into focus owing to environmental concerns. In October the *Hesperus*, sold for demolition in India, was not allowed by the Ministry of the Environment to beach at Alang (Gujarat), following allegations that it contained hazardous chemicals which had not been disposed of before entering the country. This followed a similar event in Turkey regarded as a violation of the Basel Convention, which, *inter alia*, provides against imports of hazardous waste. In November the United Kingdom's

Table 10

## Broken-up tonnage, 1990 and 1999–2003

Broken-up tonnage	1990	1999	2000	2001	2002	2003
Tonnage sold for breaking (million dwt)	16.9	30.7	22.2	27.8	30.5	25.6
Broken-up tonnage as a percentage of the total world fleet	2.4	3.9	2.7	3.4	3.6	3.0

Sources: Compiled by the UNCTAD secretariat on the basis of data supplied by Fearnleys, *Review*, various issues, and Lloyd's Register – Fairplay.

Table 11

## Tonnage reported sold for breaking, by types of vessel, 1999–2003

(millions of dwt and percentage shares)

Years	Million dwt						Percentage share					
	Tankers	Combined carriers	Bulk carriers	Others	Total	World fleet	Total	Tankers	Combined carriers	Bulk carriers	Others	Total
1999	16.7	1.1	9.7	3.25	30.7	799.0	3.8	54.2	3.7	31.5	10.6	100.0
2000	13.5	1.0	4.6	3.10	22.2	808.4	2.7	60.9	4.3	20.8	14.0	100.0
2001	15.7	0.8	8.1	3.24	27.8	825.7	3.4	56.5	2.7	29.1	11.7	100.0
2002	18.1	1.6	5.9	4.92	30.5	844.2	3.6	59.3	5.2	19.3	16.1	100.0
2003	18.4	0.5	3.3	3.4	25.6	857.0	3.0	71.9	2.0	12.9	13.3	100.0

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Fearnleys, *Review*, various issues.

Table 12

Average age of broken-up ships, by type, from 1999 to 2003 <sup>a</sup>

(years)

Year	Tankers	Dry bulk carriers	Containerships	General cargo ships
1999	26.2	25.0	24.8	26.7
2000	26.9	25.9	25.7	27.3
2001	28.0	26.7	26.9	27.4
2002	28.3	26.6	26.0	28.2
2003	29.3	26.5	25.5	29.3

Source: Compiled by the UNCTAD secretariat on the basis of data in Institute of Shipping Economics and Logistics (2004), *Shipping Statistics and Market Review*, Jan./Feb., table I-1.3.2.

<sup>a</sup> Ships of 300 grt and over.

Environmental Agency revoked on environmental grounds a licence to import from the United States 13 former naval reserve vessels for scrapping. At the end of the year, a feasibility study was conducted in the Netherlands for setting up a “green recycling dock” for ship demolition.

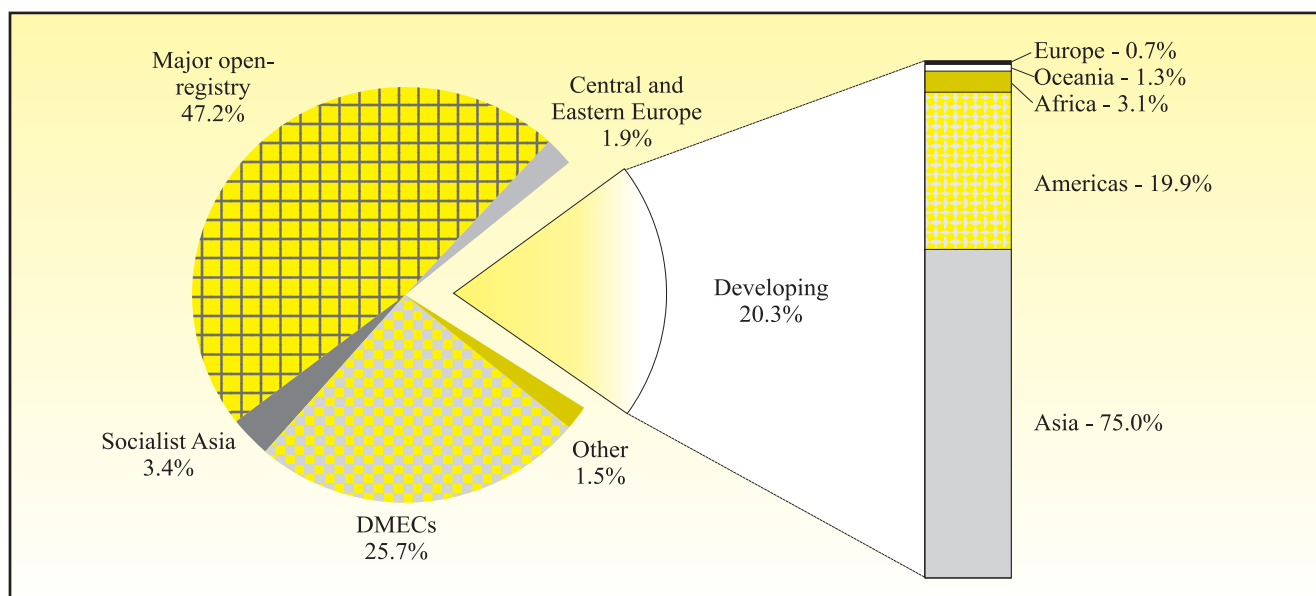
**B. OWNERSHIP OF THE WORLD FLEET**

**1. Distribution of world tonnage by country groups**

The total world fleet continued to expand in 2003, increasing by 1.5 per cent to 857.0 million dwt (see figure 5 and table 13). The rate of growth of the tonnage of developed market-economy countries was more than four times that of the total world fleet, reaching 6.1 per cent (an increase of 13.3 million dwt to 230.4 million dwt). This could reflect the steps taken in some European Union countries to apply tonnage taxes instead of standard tax rules to vessels registered in the country, as well as the guidelines for State aid approved by the European Union in October 2003. The tonnage of major open-registry countries in 2003 increased marginally by

1.0 million dwt to 399.5 million dwt. Approximately two thirds of these beneficially owned fleets are owned by developed market-economy countries and the rest by developing countries. The share of the world fleet registered in developing countries has continued to increase, rising by 10.1 million dwt (5.9 per cent) in 2003 to 181.4 million dwt. This increase resulted from investments made by shipowners in Asian developing countries, whose fleets expanded by 9.1 million dwt (7.2 per cent) to 136.0 million dwt, accounting for 75.0 per cent of the developing countries’ total fleet. The fleets of developing countries of Africa and America increased by the same amount (0.4 million dwt) to 5.7 and 36.0 million dwt respectively. A marginal decrease of 0.1 million dwt was seen in the fleet of developing countries in Europe, while the small fleet of developing countries in Oceania increased by 0.4 million dwt to 2.4 million dwt. The fleets of the socialist countries in Asia and the countries of Central and Eastern Europe evolved in the opposite direction during 2003, the former decreasing by 0.2 million dwt and the latter expanding by 1.6 million dwt.

Figure 5  
**World tonnage by country groups, as of 1 January 2004**  
*(percentage distribution of dwt)*



Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Lloyd’s Register – Fairplay.

Table 13

**Distribution of world tonnage (dwt) by groups of countries of registration,  
1980, 1990, 2002, 2003 and 2004 <sup>a</sup>**  
(beginning-of-year figures)

Flag of registration by group of countries	Tonnage and percentage shares <sup>b</sup> in millions of dwt				
	1980 <sup>c</sup>	1990 <sup>d</sup>	2002	2003	2004
<b>World total</b>	682.8 <i>100.0</i>	658.4 <i>100.0</i>	825.7 <i>100.0</i>	844.2 <i>100.0</i>	857.0 <i>100.0</i>
<b>Developed market-economy countries</b>	350.1 <i>51.3</i>	219.0 <i>33.3</i>	207.5 <i>25.1</i>	217.1 <i>25.7</i>	230.4 <i>26.9</i>
<b>Major open-registry countries</b>	212.6 <i>31.1</i>	224.6 <i>34.1</i>	402.4 <i>48.7</i>	398.5 <i>47.2</i>	399.5 <i>46.6</i>
<b>Countries of Central and Eastern Europe (including former USSR)</b>	37.8 <i>5.5</i>	44.3 <i>6.7</i>	15.4 <i>1.9</i>	15.9 <i>1.9</i>	15.7 <i>1.8</i>
<b>Socialist countries of Asia</b>	10.9 <i>1.6</i>	22.1 <i>3.4</i>	26.5 <i>3.2</i>	28.3 <i>3.4</i>	29.9 <i>3.5</i>
<b>Developing countries</b>	68.4 <i>10.0</i>	139.7 <i>21.2</i>	159.0 <i>19.3</i>	171.3 <i>20.3</i>	181.4 <i>21.2</i>
<i>of which:</i>					
<b>Africa</b>	7.2	7.3	5.7	5.3	5.7
<b>Americas</b>	21.8	25.5	34.6	35.6	36.0
<b>Asia</b>	39.1	89.5	117.0	126.9	136.0
<b>Europe</b>	0.2	13.8	1.1	1.3	1.2
<b>Oceania</b>	0.1	3.6	0.6	2.0	2.4
<b>Other, unallocated</b>	3.0 <i>0.4</i>	8.7 <i>1.3</i>	14.8 <i>1.8</i>	13.1 <i>1.6</i>	0.0 <i>0.0</i>

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Lloyd's Register – Fairplay.

<sup>a</sup> Excludes the United States Reserve Fleet and the United States and Canadian Great Lakes fleets, which in 2003 amounted respectively to 4.3, 1.8 and 1.6 million dwt.

<sup>b</sup> Percentage shares are shown in italics.

<sup>c</sup> Mid-year figure.

<sup>d</sup> End-of-year figure.



## 2. Distribution of world tonnages by types of vessel by country groups

Table 14 provides more detailed data on fleet distribution by types of vessel and country groups for 1970, 1980, 1990, 2000, 2002 and 2003. The share of oil tankers in the total world fleet increased by 0.9 per cent in 2003 compared with 2002. This reinforced the trend of the previous year and reflected the high level of tanker deliveries during 2003. There was a 0.3 per cent increase in the share of bulkers in the total world fleet, which reached 35.9 per cent — the highest for the years selected. The share of general cargo vessels in the world fleet continued to decrease, falling to 11.1 per cent, while that of container vessels continued its upward trend to 10.6 per cent. The share of other types of vessels decreased to 5.5 per cent. In the oil tanker sector, the share of developed market-economy countries continued its upward trend to 32.2 per cent in 2003 from 30 per cent in 2000. Conversely, the open-registry countries' share decreased to 45.7 per cent, as compared with 48.6 per cent the previous year. These fluctuations for the two country groups contrast with the traditional tendency for owners in developed market-economy countries to register tanker tonnage under open registry. The share of developing countries also increased again in 2003 — to 19.4 per cent — maintaining the upward trend of the previous year. The share of Asian developing countries increased by 1.9 per cent in 2003 to 15.8 per cent of the world tanker fleet, while that of the developing countries of America increased marginally to 3.0 per cent.

In the dry bulk carrier sector, the tonnage share of developed market-economy countries in the total world fleet increased by 2.1 per cent in 2003 to 19.0 per cent, considerably less than its share in 1980 (52.7 per cent). Major open-registry countries reduced their share to 54.1 per cent in 2003, as compared with 54.6 per cent in 2002 (31.7 per cent in 1980). The developing countries' share increased by 1.0 per cent to 21.8 per cent. The shares of countries in Central and Eastern Europe and socialist countries in Asia changed by 0.1 per cent but in opposite directions, with the share of the former reduced to 1.0 per cent and that of the latter expanded to 4.1 per cent of the world fleet respectively.

In the sector of general cargo ships, the fleet developments for developed market-economy countries and open-registry countries mirrored those in the tanker and dry bulk carrier sectors. Developed market-economy

countries increased their share to 22.7 per cent of the world fleet, while open-registry countries recorded a drop to 33.6 per cent. Developing countries reduced their share by 0.8 per cent to 28.3 per cent, with increases spread among all regions. General cargo ships continued to be the largest of the five principal types of vessel for developing countries.

Developed market-economy countries decreased their share of containership deadweight tonnage in 2003 by 0.3 per cent to 33.6 per cent. The major open-registry countries' share increased by 0.7 per cent, reaching 45.1 per cent, approximately two thirds of which represented containerships beneficially owned by owners in developed market-economy countries. Thus developed market-economy countries own about 60 per cent of the fleet. The share of developing countries decreased slightly to 17.9 per cent, with the share of Asian developing countries decreasing to 12.3 per cent, while developing countries in America increased their share by 5.4 per cent and those in Africa maintained their share at 0.1 per cent.

## 3. Fleet structure of main country groups

Table 15 provides data on the structure of the merchant fleet of the main country groups as of 1 January 2004. Developed market-economy countries' tonnage in tankers increased in 2003 by 5.8 million dwt and reduced marginally its share of the group's total fleet to 44.3 per cent. The share of dry bulk carriers increased to 25.4 per cent owing to the increase of 7.8 million dwt. General cargo ships' and containerships' share of their fleet registered similar upward movements, to 9.3 per cent for the former and to 13.2 per cent for the latter, as compared with 9.1 per cent and 12.9 per cent in 2002. Major open-registry countries increased their total fleets by 1.0 million dwt. The greater proportion of their fleets was in the oil tanker and dry bulk carrier sectors, these two sectors accounting for 77.9 per cent of their fleet at the beginning of 2004. The proportion of oil tankers decreased in 2003 by 3.2 million dwt to 36.2 per cent of the group's total fleet, while the share of dry bulk carriers increased in the same year by 2.8 million dwt to 41.7 per cent as compared with 41.1 per cent the previous year. The share of general cargo ships decreased in 2003 by 1.2 million dwt, accounting for 8.0 per cent of the group's total fleet, down from 8.3 per cent in 2002. These countries' containership fleet expanded in 2003 by 4.0 million dwt to 10.2 per cent of their total fleet (up from 9.2 per cent in 2002).

Table 14

Percentage shares of world tonnage, by types of vessel and country groups, in 1970, 1980, 1990, 2000, 2002 and 2003 <sup>a b</sup>

	Year	Total dwt		Oil tankers	Bulk carriers <sup>c</sup>	General cargo	Container ships	Other ships
		Million dwt	Percentage of world total					
<b>World total</b>	1970	326.1	100.0	39.4	20.2	30.2	0.9	9.3
	1980	682.8	100.0	49.7	27.2	17.0	1.6	4.5
	1990	658.4	100.0	37.4	35.6	15.6	3.9	7.5
	2000	808.4	100.0	35.3	34.8	12.7	8.6	8.6
	2002	844.2	100.0	36.1	35.6	11.5	9.8	7.1
	2003	857.0	100.0	37.0	35.9	11.1	10.6	5.5
<b>Developed market-economy countries</b>	1970	211.9	65.0	63.9	69.2	65.6	99.0	61.3
	1980	350.1	51.3	52.5	52.7	43.4	74.3	50.4
	1990	219.0	33.3	37.3	29.5	23.1	46.5	45.2
	2000	203.4	25.2	30.0	16.9	19.6	34.4	37.6
	2002	217.1	25.7	31.7	16.9	20.4	33.9	37.3
	2003	230.4	26.9	32.2	19.0	22.7	33.6	38.0
<b>Open-registry countries</b>	1970	70.3	21.6	26.4	24.1	7.6	1.0	3.6
	1980	212.5	31.1	36.2	31.7	20.8	13.5	17.0
	1990	224.6	34.1	41.6	33.2	26.2	21.1	24.2
	2000	392.2	48.5	50.8	55.0	36.5	40.6	38.2
	2002	398.5	47.2	48.6	54.6	34.1	44.4	28.3
	2003	399.5	46.6	45.7	54.1	33.6	45.1	33.1
<b>Central and Eastern Europe</b>	1970	20.5	6.2	4.6	2.1	12.0	-	28.8
	1980	37.8	5.5	2.8	4.2	12.3	2.9	19.2
	1990	44.3	6.7	3.2	6.1	15.5	3.2	10.9
	2000	16.3	2.0	1.0	1.4	6.3	0.6	3.7
	2002	15.9	1.9	1.0	1.1	6.7	0.5	4.5
	2003	15.7	1.8	1.0	1.0	6.5	0.5	6.0
<b>Socialist countries of Asia</b>	1970	1.2	0.4	0.1	-	1.1	-	0.3
	1980	10.9	1.6	0.6	1.6	4.7	0.1	1.3
	1990	22.1	3.4	1.1	3.6	8.5	4.2	2.2
	2000	26.1	3.2	1.4	4.0	7.6	2.6	1.8
	2002	28.3	3.4	1.5	4.0	8.4	2.6	2.1
	2003	29.9	3.5	1.7	4.1	8.8	2.9	2.0

Table 14 (continued)

	Year	Total dwt		Oil tankers	Bulk carriers <sup>c</sup>	General cargo	Container ships	Other ships
		Million dwt	Percentage of world total	Percentage share by vessel type <sup>d</sup>				
<b>Developing countries</b>	1970	20.5	6.3	4.7	4.3	12.6	-	5.9
	1980	68.4	10.0	7.7	9.2	17.6	7.6	12.0
	1990	139.7	21.2	16.3	25.6	26.2	16.0	17.4
	2000	157.0	19.4	16.1	20.7	27.1	18.7	17.3
	2002	171.3	20.3	17.3	20.8	29.1	18.0	22.0
	2003	181.4	21.2	19.4	21.8	28.3	17.9	20.9
<i>of which:</i>								
<b>Africa</b>	1970	1.1	0.3	0.2	-	1.3	-	0.7
	1980	7.1	1.0	1.1	0.1	2.3	..	2.1
	1990	7.3	1.1	1.0	0.5	2.3	0.2	2.9
	2000	6.0	0.7	0.5	0.4	1.7	0.2	1.8
	2002	5.3	0.6	0.4	0.4	1.5	0.1	2.1
	2003	5.7	0.7	0.6	0.4	1.4	0.1	2.2
<b>America</b>	1970	8.7	2.7	2.8	1.4	4.3	-	2.5
	1980	21.8	3.2	2.3	3.3	5.6	0.1	3.7
	1990	25.5	3.9	3.0	3.8	6.2	1.4	4.7
	2000	34.1	4.2	2.7	3.5	9.6	5.1	4.5
	2002	35.6	4.2	2.9	3.25	9.5	4.9	6.0
	2003	36.0	4.2	3.0	3.2	9.6	5.4	5.8
<b>Asia</b>	1970	10.7	3.3	1.7	2.9	6.9	-	2.6
	1980	39.1	5.7	4.3	5.7	9.8	2.7	5.7
	1990	89.5	13.6	10.7	17.6	13.7	13.5	9.1
	2000	115.7	14.3	12.9	16.5	15.5	13.3	10.9
	2002	126.9	15.0	13.9	16.5	17.1	12.8	13.4
	2003	136.0	15.9	15.8	17.4	16.6	12.3	11.9
<b>Europe</b>	1970	-	-	-	-	-	-	-
	1980	0.2	-	-	-	0.1	-	-
	1990	13.8	2.1	1.4	2.8	3.2	0.6	0.4
	2000	1.0	0.1	0.0	0.3	0.2	0.0	0.0
	2002	1.3	0.2	0.0	0.3	0.2	0.0	0.2
	2003	1.2	0.1	0.0	0.3	0.2	0.0	0.1
<b>Oceania</b>	1970	-	-	-	-	-	-	-
	1980	0.2	-	-	-	0.1	-	-
	1990	3.6	0.5	0.2	0.9	0.8	0.3	0.3
	2000	0.2	0.0	0.0	0.0	0.1	0.0	0.1
	2002	2.0	0.2	0.1	0.3	0.7	0.0	0.3
	2003	2.4	0.3	0.0	0.4	0.6	0.0	0.9

Table 14 (continued)

	Year	Total dwt		Oil tankers	Bulk carriers <sup>c</sup>	General cargo	Container ships	Other ships
		Million dwt	Percentage of world total	Percentage share by vessel type <sup>d</sup>				
<b>Unallocated</b>	1970	1.7	0.5	0.3	0.3	1.1	-	0.1
	1980	3.0	0.4	0.2	0.6	0.9	1.6	0.1
	1990	8.7	1.3	0.5	2.0	0.5	9.0	0.1
	2000	13.4	1.7	0.7	1.9	2.9	3.1	1.3
	2002	13.1	1.6	0.0	2.6	1.3	0.7	5.8
	2003	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Lloyd's Register – Fairplay. See annex III(b) for details.

<sup>a</sup> Excludes the United States Reserve Fleet and the United States and Canadian Great Lakes fleets.

<sup>b</sup> Data up to 1990 were as at 1 July and from 1991 onwards as of 31 December.

<sup>c</sup> Ore and bulk carriers, including combined ore/oil and ore/bulk/oil carriers.

<sup>d</sup> Percentages for 1970 were calculated on the basis of grt.

Table 15

**Structure of the merchant fleets of the main country groups as of 1 January 2004 <sup>a</sup>**  
(millions of dwt and percentage shares)

	World fleet		Developed market-economy countries		Open-registry countries		Developing countries		Central and Eastern Europe		Socialist countries of Asia	
	Million dwt	%	Million dwt	%	Million dwt	%	Million dwt	%	Million dwt	%	Million dwt	%
<b>Total fleet</b>	857.0	100.0	230.4	100.0	399.5	100.0	181.4	100.0	15.7	100.0	29.9	100.0
<b>Oil tankers</b>	316.8	37.0	102.2	44.3	144.6	36.2	61.5	33.9	3.1	19.9	5.4	17.9
<b>Bulk carriers</b>	307.7	35.9	58.4	25.4	166.6	41.7	66.9	36.9	3.1	20.0	12.6	42.0
<b>General cargo ships</b>	94.8	11.1	21.5	9.3	31.9	8.0	26.9	14.8	6.2	39.5	8.4	27.9
<b>Containerships</b>	90.5	10.6	30.4	13.2	40.8	10.2	16.2	8.9	0.4	2.7	2.7	8.9
<b>Other ships</b>	47.3	5.5	18.0	7.8	15.7	3.9	9.9	5.5	2.8	17.9	1.0	3.2

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Lloyd's Register – Fairplay.

<sup>a</sup> Ships of 100 grt and over, excluding the United States Reserve Fleet and the United States and Canadian Great Lakes fleets.

In developing countries, tonnage distribution was characterized by a comparatively high proportion of oil tankers and dry bulk carriers, which represented 33.9 per cent and 36.9 per cent respectively in 2003. In absolute terms, these countries' 2003 tonnage in oil tankers and dry bulk carriers was 61.5 million dwt and 66.9 million dwt as compared with 102.2 million dwt and 58.4 million dwt for developed market-economy countries. The share of general cargo ships in this group decreased in 2003 to 26.9 million dwt compared with 28.3 million dwt in 2002, while containerships increased in tonnage by 1.3 million dwt and in percentage terms to 8.9 per cent in 2003 from 8.7 per cent the previous year. In the countries of Central and Eastern Europe, general cargo ships were relatively dominant, accounting for 39.5 per cent in 2003, as compared with 41.1 per cent in 2002. On the other hand, containerships have remained unchanged at 0.4 million dwt, or around 2 per cent of the total, since the early 1990s. The socialist countries of Asia continued to have a predominant share of both dry bulk carriers and general cargo ships. The absolute tonnage of these types of vessel increased in 2003 to 12.6 million dwt and 8.4 million dwt respectively. However, their share of the total decreased marginally to 42.0 per cent (42.9 per cent in 2002) for dry bulk carriers and 27.9 per cent (29.0 per cent in 2002) for general cargo ships. The absolute tonnage of containerships increased in 2003 to 2.7 million dwt, or 8.9 per cent (compared with 7.6 per cent in 2002).

### C. REGISTRY OF VESSELS

#### 1. The 35 most important maritime countries and territories

Rankings in terms of deadweight for the 35 most important maritime countries and territories are provided in table 16. In 2003, these 35 countries and territories controlled 97.5 per cent of the world merchant fleet (2.6 per cent more than in the previous year). Croatia and Chile, which had been 34<sup>th</sup> and 35<sup>th</sup> in 2002, were replaced in 2003 by the new entrants, Thailand and Ukraine respectively. There were several movements in the ranks for the other countries: Malaysia moved up by five places and Canada, Sweden and Cyprus by three places, Germany and Belgium by two places, and Singapore, the Russian Federation, India, the Islamic Republic of Iran and Spain by 1 place; other countries moved down by one place (China, United States, Taiwan Province of China, Denmark, Saudi Arabia, Kuwait, Monaco, Australia and Indonesia), two places (Turkey, Philippines and France) and three places (Netherlands and Brazil).

Among these most important maritime countries and territories, registration under a foreign flag continued in 2003. The total tonnage registered under foreign flags in 2003 increased to 489.3 million dwt, representing 64.6 per cent of the 35 countries' total fleet, as compared with 465.8 million dwt or 64.0 per cent in 2002. For developing countries and territories, the trend in favour of registering their tonnage under foreign flags is a recent one. In 2003, the 12 developing countries and territories listed in the table (including Hong Kong (China) but excluding Taiwan Province of China) had 45.2 per cent of their total tonnage registered under foreign flags. In spite of the continuous trend towards flagging out among developing countries, there are significant differences among the countries concerned. The foreign registries of Saudi Arabia and Hong Kong (China) amounted to 92.5 per cent and 65.9 per cent respectively, while the Islamic Republic of Iran and the Philippines made significantly less use of foreign flag facilities, which accounted for only 5.8 and 19.4 per cent respectively of their fleets. For developed market-economy countries, the share of foreign-registered tonnage increased to 71.3 per cent in 2003.

#### 2. Open registries

The share of the world merchant fleet in major open registries increased only by 0.5 per cent in 2003 after contracting by 4.7 per cent the previous year. This could reflect changes in the fiscal rules of developed market-economy countries and registration of vessels in other open registries. The tonnage distribution of the six major open-registry countries by principal types of vessel is shown in table 17, together with the corresponding totals for six minor open-registry countries. The total tonnage registered in 2003 in the six major registries increased by less than 1 per cent to 357.8 million dwt from 356.1 million dwt the previous year, when the tonnage contracted by 4.7 per cent. Panama continued to head the list in 2003 with a minimum expansion of 0.2 million dwt. The bilateral maritime agreement concluded between Panama and the Russian Federation by mid-2003 was expected to lead to a more equitable treatment of foreign vessels flying the Panamanian flag in Russian ports and to the recognition of the Russian register as a classification society. The charges of between \$1,500 and \$3,000 for evaluating ship security plans in accordance with the International Ship and Port Facility Security (ISPS) Code levied by the specialized company appointed by Panama gave rise to some complaints late in the year. Liberia's fleet expanded by 8.3 per cent. This registry decided to train its own inspectors and deploy them in key locations around the world for verifying

Table 16

The 35 most important maritime countries and territories as of 1 January 2004 <sup>a</sup>

Country of domicile <sup>b</sup>	Number of vessels			Deadweight tonnage				
	National flag <sup>c</sup>	Foreign flag	Total	National flag <sup>c</sup>	Foreign flag	Total	Foreign flag as a % of total	Total as a % of world total
<b>Greece</b>	751	2 361	3 112	50 159 627	107 179 349	157 338 976	68.12	20.26
<b>Japan</b>	732	2 216	2 948	13 054 209	97 036 098	110 090 307	88.14	14.17
<b>Norway</b>	840	813	1 653	21 828 640	29 926 150	51 754 790	57.82	6.66
<b>Germany</b>	307	2 161	2 468	6 739 997	42 247 135	48 987 132	86.24	6.31
<b>China</b>	1 627	788	2 415	24 206 132	23 195 756	47 401 888	48.93	6.10
<b>United States</b>	592	948	1 540	10 587 584	35 240 739	45 828 323	76.90	5.90
<b>Hong Kong (China)</b>	254	238	492	15 375 679	15 507 833	30 883 512	50.21	3.98
<b>Republic of Korea</b>	485	380	865	8 584 810	16 651 656	25 236 466	65.98	3.25
<b>Singapore</b>	449	291	740	11 703 683	11 574 617	23 278 300	49.72	3.00
<b>Taiwan Province of China</b>	111	426	537	5 199 044	17 678 913	22 877 957	77.27	2.95
<b>United Kingdom</b>	391	392	783	9 192 550	10 430 365	19 622 915	53.15	2.53
<b>Russian Federation</b>	2 142	391	2 533	8 317 313	8 507 445	16 824 758	50.57	2.17
<b>Denmark</b>	323	338	661	8 606 789	7 685 160	16 291 949	47.17	2.10
<b>Italy</b>	531	121	652	8 785 816	3 674 335	12 460 151	29.49	1.60
<b>India</b>	353	45	398	10 919 675	1 470 437	12 390 112	11.87	1.60
<b>Saudi Arabia</b>	50	76	126	908 754	11 175 137	12 083 891	92.48	1.56
<b>Malaysia</b>	262	73	335	5 985 287	3 782 960	9 768 247	38.73	1.26
<b>Iran, Islamic Republic of</b>	147	9	156	8 232 477	505 645	8 738 122	5.79	1.12
<b>Turkey</b>	405	171	576	6 471 308	2 210 446	8 681 754	25.46	1.12
<b>Switzerland</b>	14	267	281	770 220	7 788 365	8 558 585	91.00	1.10
<b>Netherlands</b>	549	196	745	3 785 658	3 524 525	7 310 183	48.21	0.94
<b>Belgium</b>	43	122	165	1 192 165	5 197 185	6 389 350	81.34	0.82
<b>Canada</b>	219	104	323	2 584 240	3 330 933	5 915 173	56.31	0.76
<b>Sweden</b>	162	157	319	1 460 911	4 374 954	5 835 865	74.97	0.75
<b>Philippines</b>	313	37	350	4 455 395	1 073 077	5 528 472	19.41	0.71
<b>Brazil</b>	140	11	151	3 823 338	1 609 053	5 432 391	29.62	0.70
<b>France</b>	154	103	257	2 607 750	2 358 553	4 966 303	47.49	0.64
<b>Spain</b>	80	255	335	232 358	4 675 988	4 908 346	95.27	0.63
<b>Indonesia</b>	515	101	616	3 362 462	1 282 311	4 644 773	27.61	0.60
<b>Cyprus</b>	41	68	109	1 061 970	2 519 319	3 581 289	70.35	0.46
<b>Kuwait</b>	32	0	32	3 359 448	0	3 359 448	0.00	0.43
<b>Monaco</b>	0	95	95	0	3 032 474	3 032 474	100.00	0.39

Table 16 (continued)

Country of domicile <sup>b</sup>	Number of vessels			Deadweight tonnage				
	National flag <sup>c</sup>	Foreign flag	Total	National flag <sup>c</sup>	Foreign flag	Total	Foreign flag as a % of total	Total as a % of world total
<b>Australia</b>	46	42	88	1 383 636	1 455 419	2 839 055	51.26	0.37
<b>Thailand</b>	221	33	254	1 895 071	298 436	2 193 507	13.61	0.28
<b>Ukraine</b>	298	91	389	1 077 447	1 105 126	2 182 573	50.63	0.28
<b>Total (35 countries)</b>	13 579	13 920	27 499	267 911 443	489 305 894	757 217 337	64.62	97.49
<b>World total</b>	14 840	14 951	29 791	276 166 653	500 564 528	776 731 181	64.45	100.00

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Lloyd's Register – Fairplay.

- <sup>a</sup> Vessels of 1,000 grt and above, excluding the United States Reserve Fleet and the United States and Canadian Great Lakes fleets.
- <sup>b</sup> The country of domicile indicates where the controlling interest (i.e. parent company) of the fleet is located. In several cases, determining this has required certain judgements to be made. Thus, for instance, Greece is shown as the country of domicile for vessels owned by a Greek owner with representative offices in New York, London and Piraeus, although the owner may be domiciled in the United States.
- <sup>c</sup> Includes vessels flying the national flag but registered in territorial dependencies or associated self-governing territories. For the United Kingdom, British flag vessels are included under the national flag, except for Bermuda (listed in table 17 as an open-registry territory).

Table 17

Tonnage distribution of open-registry fleets <sup>a</sup> as of 1 January 2004

Flag	Oil tankers		Bulk carriers		General cargo		Container ships		Others		Total		Total as of 1.1.2003
	Number	Thousand dwt	Number	Thousand dwt	Number	Thousand dwt	Number	Thousand dwt	Number	Thousand dwt	Number	Thousand dwt	Thousand dwt
<b>Panama</b>	616	46 627	1 299	83 289	1 186	11 217	537	19 249	473	8 329	4 111	168 710	168 508
<b>Liberia</b>	363	37 611	263	16 371	181	3 104	367	12 572	162	4 425	1 336	74 083	68 413
<b>Bahamas</b>	177	22 790	144	8 662	384	5 883	58	1 764	263	3 453	1 026	42 552	44 122
<b>Malta</b>	225	14 296	396	17 283	342	2 889	32	613	25	268	1 020	35 348	36 649
<b>Cyprus</b>	110	6 291	370	19 238	310	3 054	104	2 826	44	296	938	31 706	32 097
<b>Bermuda</b>	4	629	25	3 579	19	228	18	526	18	484	84	5 446	6 293
<b>Subtotal</b>	1 495	128 243	2 497	148 422	2 422	26 375	1 116	37 549	985	17 255	8 515	357 845	356 082
<b>St. Vincent and the Grenadines</b>	29	241	98	3 896	263	2 022	22	163	78	240	490	6 562	6 554
<b>Antigua and Barbuda</b>	7	27	18	382	589	2 546	222	4 260	15	92	851	7 306	6 039
<b>Cayman Is.</b>	40	2 053	23	1 159	44	580	0	0	29	293	136	4 086	3 321
<b>Luxembourg</b>	14	718	0	0	8	62	9	147	18	346	49	1 273	1 990
<b>Vanuatu</b>	0	0	25	1 236	16	288	1	29	87	232	129	1 785	1 381
<b>Gibraltar</b>	19	349	2	30	80	423	14	195	8	70	123	1 068	1 261
<b>Total</b>	1 604	131 630	2 663	155 126	3 422	32 296	1 384	42 343	1 220	18 528	10 293	379 923	376 628
<b>Total six major open registries as of 1 January 2003</b>													
1 538 134 277 4 286 145 514 2 527 27 794 1 007 31 817 1 005 16 680 8 563 356 081													
<b>Total six major open registries as of 1 January 2002</b>													
1 267 132 382 2 684 151 764 2 946 31 892 1 014 30 574 1 646 26 921 9 557 373 533													
<b>Total six major open registries as of 1 January 2001</b>													
395 164													

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Lloyd's Register – Fairplay.

<sup>a</sup> Ships of 1,000 grt and above. This table is not fully comparable with tables 13 and 15, which list ships of 100 grt and above as the base.



security audits mandated by the ISPS Code. The combined tonnage of Panama and Liberia amounts to 67.8 per cent of the total tonnage of the six major open-registry countries. In 2003, Bermuda, the smallest of the six major registries, reduced its fleet by 13.5 per cent to 5.4 million dwt, lower than those tonnages registered under Saint Vincent and the Grenadines and Antigua and Barbuda. The remaining three major open registries — the Bahamas, Malta and Cyprus — recorded a reduction in tonnages of 3.6, 3.5 and 1.2 per cent respectively.

Four of the minor open registries are located in developing countries of America (three) and Oceania (one), while the two others are located in developed market-economy countries of Europe. A number of other developing countries (i.e. Belize, Cambodia, Honduras, Sri Lanka, etc.) also have open registries, albeit with less coverage. Maintaining a good flag reputation is not always easy, as was shown when the US Coast Guard discovered that some officers aboard a vessel flying the flag of Saint Vincent and the Grenadines had improper certificates, which had been endorsed by flag authorities. Elsewhere, Cambodia reported positive results in respect of its registry and the Marshall Islands and Gibraltar reported significant increases in registered tonnages.

Analysis by type of vessel for the six major registries indicated that tankers reduced their share of the total deadweight in 2003 to 35.8 per cent as compared with 37.7 per cent in 2002, while dry bulk carriers increased their share to 41.5 per cent. For the six major open registries, the combined tonnage of these two types of vessels accounts for 77.3 per cent of the total deadweight and 75.5 per cent when the minor registries are included. General cargo ships (3,422 ships) accounted for 33.2 per cent of the total number of ships, followed by dry bulk carriers (2,663 ships or 25.9 per cent of the total). These figures reflect the importance of open registries for the maritime industry.

### 3. Nationality of vessels

Table 18 indicates the participation of nationals in the registry of a number of open and international registers for the three most recent years. The data compare the total tonnage registered in the listed countries of registry with the tonnage owned by nationals of, and registered in, the countries of registry. The 20 countries or territories of registry have been divided into three groups: six major open registers, six minor open registers and eight

international registers. In open registers, the share of tonnage owned by nationals of open-registry countries is minimal, well below 10 per cent. For international registers, however, two factors are noted. First, nationals of the country or territory of the registry have a significant share of the tonnage registered — as is the case with Denmark, Norway, Hong Kong (China) and Singapore. Second, nationals of a country that have a privileged relationship with the territory of registry have a significant share of the tonnage registered — as is the case with the United Kingdom with the Isle of Man, the United States with the Marshall Islands, France with the French Antarctic Territory (the Kerguelen Islands) and the Netherlands with the Netherlands Antilles.

In those international registers, the share of tonnage owned by nationals of international registers and of nationals of countries that have a privileged relationship with the territory of registry is high, well above 30 per cent and in some cases above 80 per cent. Some countries and territories with the highest share, namely Denmark, Norway and Hong Kong (China), were ranked 13<sup>th</sup>, 3<sup>rd</sup> and 7<sup>th</sup> respectively of the 35 most important maritime countries in 2003.

The true nationalities of the vessels registered in the 12 open registries are analysed in table 19. In 2003, 35 countries or territories accounted for 89 per cent of the total tonnage of the 12 open-registry fleets. This percentage was the same as that in 2002. Ownership is particularly concentrated in 10 countries or territories, which control 75.0 per cent of the deadweight of vessels registered in these open-registry countries, while the top five countries or territories control 58.0 per cent. Greece was ranked first in 2003 for the tenth consecutive year with the largest share (22.0 per cent) of the open-registry fleets. Greece also had the largest foreign-flag ownership, representing 107.2 million dwt or 21.4 per cent of the total world foreign-flag tonnage, followed by Japan with 97.0 million dwt or 19.4 per cent of the total tonnage. The two countries' combined foreign-flag tonnage accounted for 40.8 per cent of the total world tonnage under foreign flags.

Table 19 also provides an overview of the way in which the 35 countries were registering their vessels at the beginning of 2004 under open registries. Overall, the share of the six major open registers stands at 93.9 per cent, with the share of the minor open register considerably less — only 6.1 per cent.

Table 18

Tonnage owned by nationals of, and registered in, the country or territory of registry in the total fleet of the most important open and international registers, as of 1 January <sup>a</sup>  
(thousands of dwt)

Country or territory of registry	Total tonnage registered country of registry			Participation of nationals of country of registry and of nationals of countries having a privileged relationship with country of registry					
				in tonnage of registered fleet			in percentage of registered fleet (%)		
	2002	2003	2004	2002	2003	2004	2002	2003	2004
<i>Six major open registries</i>									
<b>Panama</b>	171 874	168 508	168 710	0	0	0	0.0	0.0	0.0
<b>Liberia</b>	73 180	68 413	74 083	0	0	0	0.0	0.0	0.0
<b>Bahamas</b>	45 327	44 122	42 552	0	0	0	0.0	0.0	0.0
<b>Malta</b>	42 130	36 649	35 348	36	0	0	0.1	0.0	0.0
<b>Cyprus</b>	32 940	32 097	31 706	756	824	1 062	2.3	2.6	3.3
<b>Bermuda</b>	8 082	6 293	5 446	0	0	0	0.0	0.0	0.0
<i>Six minor open registries</i>									
<b>St. Vincent and the Grenadines</b>	8 602	6 554	6 562	0	0	0	0.0	0.0	0.0
<b>Antigua and Barbuda</b>	5 856	6 039	7 306	0	0	0	0.0	0.0	0.0
<b>Cayman Islands</b>	2 539	3 321	4 086	0	0	0	0.0	0.0	0.0
<b>Luxembourg</b>	2 101	1 990	1 273	0	0	0	0.0	0.0	0.0
<b>Vanuatu</b>	1 534	1 381	1 785	0	0	0	0.0	0.0	0.0
<b>Gibraltar</b>	999	1 261	1 068	0	0	0	0.0	0.0	0.0
<b>Total open registries</b>	395 164	376 628	379 923	0	0	0	0.0	0.0	0.0
<i>Eight international registries</i>									
<b>Singapore</b>	32 082	31 246	36 486	11 826	12 627	11 704	36.9	40.4	32.1
<b>Norwegian International Ship Registry (NIS)</b>	28 709	27 373	24 007	24 532	23 654	19 873	85.5	86.4	82.8
<b>Hong Kong (China)</b>	20 333	24 892	34 468	16 530	13 207	15 376	81.3	53.1	44.6
<b>Marshall Islands</b>	18 058	21 860	31 625	8 023	8 667	11 018	44.4	39.6	34.8
<b>Isle of Man</b>	9 552	8 830	9 355	5 070	4 827	5 255	53.1	54.7	56.2
<b>Danish International Ship Registry (DIS)</b>	8 167	8 830	8 976	7 986	8 493	8 547	97.8	96.2	95.2
<b>French Antarctic Territory</b>	5 055	4 748	5 043	2 379	2 073	1 811	47.1	43.7	35.9
<b>Netherlands Antilles</b>	1 335	1 442	1 940	469	592	626	35.1	41.1	32.3

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Lloyd's Register – Fairplay.

<sup>a</sup> Ships of 1,000 grt and above. This table is not fully comparable with tables 13 and 15, which list ships of 100 grt and above as the base.

Table 19

## True nationality of major open-registry fleets as of 1 January 2004

Country or territory of domicile	Panama			Liberia			Bahamas			Malta			Cyprus		
	No. of vessels	000 dwt	%	No. of vessels	000 dwt	%	No. of vessels	000 dwt	%	No. of vessels	000 dwt	%	No. of vessels	000 dwt	%
<b>Greece</b>	548	22 250.0	11.9	166	9 702.7	11.8	166	8 171.8	17.1	571	27 640.7	67.4	480	21 499.6	60.9
<b>Japan</b>	1 807	82 795.2	44.3	109	4 863.2	5.9	43	1 644.5	3.4	3	105.0	0.3	18	262.4	0.7
<b>Norway</b>	85	2 621.6	1.4	66	5 442.1	6.6	250	9 248.3	19.4	37	582.2	1.4	16	72.9	0.2
<b>Germany</b>	19	947.1	0.5	510	17 175.4	20.9	17	773.3	1.6	47	907.2	2.2	220	5 452.5	15.4
<b>China</b>	262	8 735.6	4.7	59	2 871.6	3.5	7	221.8	0.5	16	248.1	0.6	12	215.8	0.6
<b>USA</b>	134	2 566.4	1.4	107	5 792.4	7.1	173	9 896.3	20.7	9	532.6	1.3	3	9.6	0.0
<b>Hong Kong (China)</b>	129	8 631.3	4.6	26	1 862.8	2.3	8	283.7	0.6	0	0.0	0.0	2	37.4	0.1
<b>Republic of Korea</b>	300	15 072.0	8.1	8	538.5	0.7	1	16.6	0.0	1	11.3	0.0	3	98.0	0.3
<b>Singapore</b>	67	2 149.6	1.2	35	4 176.6	5.1	13	798.5	1.7	2	209.8	0.5	1	29.9	0.1
<b>Taiwan Province of</b>															
<b>China</b>	313	11 695.3	6.3	42	1 847.3	2.3	0	0.0	0.0	1	22.3	0.1	0	0.0	0.0
<b>United Kingdom</b>	30	611.5	0.3	24	742.1	0.9	89	1 275.3	2.7	4	72.5	0.2	13	530.3	1.5
<b>Russian Federation</b>	7	34.8	0.0	65	5 429.3	6.6	3	13.3	0.0	91	1 082.8	2.6	67	1 215.4	3.4
<b>Denmark</b>	14	415.5	0.2	5	275.6	0.3	59	555.2	1.2	3	12.5	0.0	0	0.0	0.0
<b>Italy</b>	4	57.7	0.0	10	897.5	1.1	9	344.5	0.7	25	598.6	1.5	1	5.1	0.0
<b>India</b>	9	180.8	0.1	6	506.6	0.6	2	106.8	0.2	0	0.0	0.0	5	106.4	0.3
<b>Saudi Arabia</b>	8	93.6	0.1	24	7 077.1	8.6	13	2 974.6	6.2	0	0.0	0.0	0	0.0	0.0
<b>Malaysia</b>	15	159.5	0.1	0	0.0	0.0	13	81.7	0.2	0	0.0	0.0	0	0.0	0.0
<b>Iran, Islamic Rep. of</b>	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	4	272.7	0.7	3	225.0	0.6
<b>Turkey</b>	9	51.7	0.0	3	141.2	0.2	5	62.5	0.1	99	1 254.0	3.1	0	0.0	0.0
<b>Switzerland</b>	148	5 203.6	2.8	13	373.1	0.5	2	105.9	0.2	43	852.2	2.1	5	101.9	0.3
<b>Netherlands</b>	22	295.7	0.2	9	130.4	0.2	40	1 946.6	4.1	6	33.5	0.1	22	219.1	0.6
<b>Belgium</b>	10	573.8	0.3	5	792.7	1.0	14	178.1	0.4	10	126.8	0.3	2	9.4	0.0
<b>Canada</b>	1	15.3	0.0	4	265.5	0.3	11	373.7	0.8	8	30.6	0.1	7	313.8	0.9
<b>Sweden</b>	4	19.7	0.0	12	1 024.3	1.2	13	680.6	1.4	1	8.4	0.0	7	29.9	0.1
<b>Philippines</b>	14	278.1	0.1	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	2	31.2	0.1
<b>Brazil</b>	4	561.6	0.3	5	762.5	0.9	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
<b>France</b>	10	276.6	0.1	4	92.2	0.1	25	634.3	1.3	0	0.0	0.0	2	26.3	0.1
<b>Spain</b>	42	300.7	0.2	1	94.5	0.1	6	682.7	1.4	0	0.0	0.0	4	124.8	0.4
<b>Indonesia</b>	47	555.5	0.3	1	79.0	0.1	2	82.2	0.2	2	25.6	0.1	0	0.0	0.0
<b>Cyprus</b>	9	636.3	0.3	1	96.1	0.1	10	521.8	1.1	3	54.5	0.1	41	1 062.0	3.0
<b>Kuwait</b>	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
<b>Monaco</b>	16	648.2	0.3	10	508.4	0.6	24	668.7	1.4	7	163.0	0.4	0	0.0	0.0
<b>Australia</b>	5	166.0	0.1	3	417.7	0.5	7	191.3	0.4	2	64.1	0.2	0	0.0	0.0
<b>Thailand</b>	11	50.1	0.0	0	0.0	0.0	1	16.9	0.0	0	0.0	0.0	0	0.0	0.0
<b>Ukraine</b>	8	60.1	0.0	3	104.9	0.1	0	0.0	0.0	25	437.0	1.1	2	27.0	0.1
<b>Subtotal</b>	4 111	168 710.4	90.3	1 336	74 083.4	90.3	1 026	42 551.5	89.1	1 020	35 347.8	86.2	938	31 705.5	89.7
<b>Others</b>	2 190	18 149.6	9.7	225	8 001.6	9.7	264	5 198.5	10.9	285	5 650.2	13.8	246	3 626.5	10.3
<b>Total</b>	6 301	186 860.0	100.0	1 561	82 085.0	100.0	1 290	47 750.0	100.0	1 305	40 998.0	100.0	1 184	35 332.0	100.0

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Lloyd's Register – Fairplay.

Table 19 (continued)

Bermuda			Six minor open registries			Subtotal			Total foreign flag fleet		Country or territory of domicile
No. of vessels	000 dwt	%	No. of vessels	000 dwt	%	No. of vessels	000 dwt	%	No. of vessels	000 dwt	
4	506.0	7.8	155	4 420.7	17.0	2 090	94 191.6	22.1	2 361	107 179.3	Greece
0	0.0	0.0	27	751.9	2.9	2 007	90 422.2	21.3	2 216	97 036.1	Japan
5	58.2	0.9	53	620.6	2.4	512	18 645.9	4.4	813	29 926.2	Norway
1	22.3	0.3	928	8 413.2	32.4	1 742	33 691.0	7.9	2 161	42 247.1	Germany
0	0.0	0.0	111	1 561.7	6.0	467	13 854.6	3.3	788	23 195.8	China
14	171.4	2.6	163	1 475.8	5.7	603	20 444.5	4.8	948	35 240.7	USA
4	593.0	9.1	14	246.8	1.0	183	11 654.9	2.7	238	15 507.8	Hong Kong (China)
0	0.0	0.0	4	11.1	0.0	317	15 747.5	3.7	380	16 651.7	Republic of Korea
0	0.0	0.0	2	33.0	0.1	120	7 397.4	1.7	291	11 574.6	Singapore
0	0.0	0.0	4	15.7	0.1	360	13 580.5	3.2	426	17 678.9	Taiwan Province of China
29	2 601.7	40.1	33	314.9	1.2	222	6 148.4	1.4	392	10 430.4	United Kingdom
0	0.0	0.0	26	139.6	0.5	259	7 915.2	1.9	391	8 507.4	Russian Federation
0	0.0	0.0	23	487.1	1.9	104	1 745.9	0.4	338	7 685.2	Denmark
0	0.0	0.0	30	688.4	2.7	79	2 591.7	0.6	121	3 674.3	Italy
0	0.0	0.0	10	86.1	0.3	32	986.6	0.2	45	1 470.4	India
0	0.0	0.0	5	40.8	0.2	50	10 186.1	2.4	76	11 175.1	Saudi Arabia
0	0.0	0.0	0	0.0	0.0	28	241.3	0.1	73	3 783.0	Malaysia
0	0.0	0.0	0	0.0	0.0	7	497.7	0.1	9	505.6	Iran, Islamic Republic of
0	0.0	0.0	12	42.6	0.2	128	1 552.0	0.4	171	2 210.4	Turkey
1	2.9	0.0	23	441.2	1.7	235	7 080.7	1.7	267	7 788.4	Switzerland
1	273.4	4.2	39	154.1	0.6	139	3 052.8	0.7	196	3 524.5	Netherlands
0	0.0	0.0	31	1 018.9	3.9	72	2 699.8	0.6	122	5 197.2	Belgium
16	499.0	7.7	6	304.0	1.2	53	1 802.0	0.4	104	3 330.9	Canada
5	576.1	8.9	19	175.6	0.7	61	2 514.6	0.6	157	4 375.0	Sweden
0	0.0	0.0	2	38.9	0.1	18	348.2	0.1	37	1 073.1	Philippines
0	0.0	0.0	0	0.0	0.0	9	1 324.1	0.3	11	1 609.1	Brazil
1	6.7	0.1	28	325.9	1.3	70	1 362.0	0.3	103	2 358.6	France
0	0.0	0.0	3	15.3	0.1	56	1 217.9	0.3	255	4 676.0	Spain
1	1.9	0.0	1	4.0	0.0	54	748.2	0.2	101	1 282.3	Indonesia
0	0.0	0.0	5	49.6	0.2	69	2 420.3	0.6	68	2 519.3	Cyprus
0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	Kuwait
0	0.0	0.0	9	57.6	0.2	66	2 045.9	0.5	95	3 032.5	Monaco
2	133.8	2.1	5	39.8	0.2	24	1 012.9	0.2	42	1 455.4	Australia
0	0.0	0.0	0	0.0	0.0	12	67.1	0.0	33	298.4	Thailand
0	0.0	0.0	7	103.6	0.4	45	732.7	0.2	91	1 105.1	Ukraine
84	5 446.5	83.9	1 778	22 078.7	85.1	10 293	379 923.8	89.3	13 920	489 305.9	Subtotal
21	1 041.5	16.1	1 111	3 865.3	14.9	4 342	45 533.2	10.7	1 031	11 260.1	Others
105	6 488.0	100.0	2 889	25 944.0	100.0	14 635	425 457.0	100.0	14 951	500 566.0	Total

## D. SHIPBUILDING AND THE SECOND-HAND MARKET

### 1. Newbuilding orders

In 2003, 1,159 newbuilding contracts were placed for the six major ship types — an increase of 5.0 per cent in comparison with 2002 (see table 20). In the tanker sector, optimism prevailed, with 456 orders, as compared to with 447 units in 2002. The peak was reached in October with 75 orders, followed by January and July with 48 orders each. The 2003 newbuilding orders for dry bulk carriers decreased to 193, about 30 per cent less than the orders of the previous year (275 contracts).

Newbuilding orders for containerships more than doubled — 325 contracts in 2003 as compared with 135 in 2002. These newbuilding contracts continued to reflect the recent trend for post-Panamax containerships. The newbuilding orders for general cargo ships decreased by a third in 2003 to 91 contracts, compared with 136 units in 2002. Orders for passenger ferries decreased by 15 per cent to 94 contracts (111 in the previous year).

### 2. Tonnage on order

World tonnage on order, by groups of countries of registry and by principal types of vessel, is shown in table 21. World tonnage on order at the beginning of 2004 stood at 180.1 million dwt, representing an impressive increase of 51.6 per cent over the previous year. Tonnage on order by developed market-economy countries amounted to 47 million dwt, accounting for 26.1 per cent of the total world tonnage on order, as compared with 40 million dwt or 33.7 per cent at the beginning of 2003. Major open-registry countries had 87.2 million dwt or 48.4 per cent of world tonnage on order, as compared with 60.7 million dwt or 51.1 per cent at the beginning of last year. The share of the countries of Central and Eastern Europe in 2002 stood at 0.4 million dwt or 0.2 per cent of the world total on order, while the tonnage on order of the socialist countries in Asia almost doubled in 2003, ending the year with 6.1 million dwt or 3.3 per cent of the world total on order.

Developing countries' tonnage on order recorded a 41.6 per cent increase over the previous year, reaching 19.7 million dwt or 10.9 per cent of the total world tonnage on order at the beginning of 2004. Tonnage on order by Asian developing countries rose at a higher rate

to 18.4 million dwt at the beginning of 2004, which accounted for 93.3 per cent of the developing countries' total tonnage on order. African newbuilding orders doubled to 403,000 dwt at the beginning of 2004, while the developing countries in America's orders contracted by 42 per cent to 0.8 million dwt.

In 2003, oil tanker orders rose by 15.1 per cent to 69.9 million dwt, accounting for 38.8 per cent of the world total on order. Developing countries had 8.8 million dwt on order, representing 12.6 per cent of the total tankers on order, with Asian developing countries representing 8.7 million dwt or 98.9 per cent of the developing countries' total. The number of dry bulk carriers on order at the beginning of 2004 increased from 2003 by a remarkable 71.4 per cent to 52.3 million dwt, accounting for 29.0 per cent of the world total on order. For this type of vessel, developed market-economy countries and major open-registry countries accounted for 15.1 per cent and 59.0 per cent, representing a combined share of 74.1 per cent. The volume of containerships on order doubled in 2003 to 32.9 million dwt at year's end, representing 18.3 per cent of the world total on order. For containerships on order, developed market-economy countries accounted for 28.4 per cent and major open-registry countries accounted for over 54.5 per cent. At the beginning of 2004 developing countries' containership orders increased by 22.3 per cent to 2.3 million dwt, or 7.1 per cent of the total containerships on order. Asian developing countries had 2.1 million dwt or 93.3 per cent of the developing countries' total on order.

### 3. Prices of newbuildings and second-hand tonnage

Table 22 indicates newbuilding prices for the main types of vessel. In 2003, prices for all the main types and sizes of newbuildings, with the exception of LNG and LPG carriers, increased significantly over those of the previous year. Price increases were more pronounced for bulk carriers and reflected the high demand for transporting dry bulk. Newbuilding prices for Cape-sized dry bulk carriers fared particularly well with a 51.6 per cent increase in 2003, while prices for handy-sized Panamax increased by 46.7 and 25.0 per cent respectively. Major shipbuilding countries continued to discuss measures to align shipbuilding capacity with forecast demand. Increases in oil tanker newbuilding prices for all sizes were all double-digit in 2003 in sharp contrast with the 2002 price reductions. Prices of 2,500 TEU cellular

Table 20

**Newbuilding contracts placed for the main types of ship <sup>a</sup> during 1993–2003**  
(number of ships, thousands of dwt)

Year	Tankers		Bulk carriers		Combined carriers		General cargo ships		Container vessels		Passenger ferries		Total <sup>b</sup>	
	Number	Thousand dwt	Number	Thousand dwt	Number	Thousand dwt	Number	Thousand dwt	Number	Thousand dwt	Number	Thousand dwt	Number	Thousand dwt
<b>1993</b>	267	17 327	299	18 303	1	83	261	2 102	182	5 057	122	163	1 132	43 035
<b>1994</b>	256	13 833	339	19 896	2	220	227	1 493	242	6 497	118	159	1 184	42 098
<b>1995</b>	243	9 143	381	22 418	4	440	345	2 449	345	8 562	144	224	1 462	43 236
<b>1996</b>	274	13 875	271	14 250	-	-	257	2 107	292	6 978	144	155	1 238	37 365
<b>1997</b>	428	32 516	282	17 983	2	220	299	2 701	166	3 618	96	149	1 273	57 187
<b>1998</b>	280	21 922	166	11 835	0	0	333	2 488	178	5 975	117	231	1 074	42 451
<b>1999</b>	206	16 822	346	23 934	-	-	162	1 323	170	7 183	116	348	1 000	49 610
<b>2000</b>	446	41 865	344	20 081	-	-	255	2 534	373	15 025	136	308	1 554	80 121
<b>2001</b>	550	34 260	165	9 496	-	-	142	1 222	180	6 564	101	80	1 138	51 622
<b>2002</b>	447	23 979	275	20 799	-	-	136	1 593	135	6 223	111	131	1 104	52 725
<b>2003</b>														
<b>Jan</b>	48	..	23	..	0	..	14	..	33	..	14	..	132	..
<b>Feb</b>	21	..	15	..	0	..	6	..	16	..	14	..	72	..
<b>Mar</b>	33	..	30	..	0	..	16	..	19	..	6	..	104	..
<b>Apr</b>	32	..	6	..	0	..	2	..	32	..	4	..	76	..
<b>May</b>	40	..	3	..	0	..	12	..	17	..	9	..	81	..
<b>Jun</b>	33	..	2	..	0	..	1	..	19	..	13	..	68	..
<b>Jul</b>	48	..	18	..	0	..	5	..	44	..	8	..	123	..
<b>Aug</b>	30	..	18	..	0	..	3	..	21	..	12	..	84	..
<b>Sept</b>	46	..	23	..	0	..	6	..	29	..	9	..	113	..
<b>Oct</b>	75	..	22	..	0	..	4	..	27	..	0	..	128	..
<b>Nov</b>	22	..	11	..	0	..	1	..	39	..	3	..	76	..
<b>Dec</b>	28	..	22	..	0	..	21	..	29	..	2	..	102	..
<b>Total</b>	456	..	193	..	0	..	91	..	325	..	94	..	1 159	..

Sources: Compiled by the UNCTAD secretariat. For figures up to 2002 based on data from Institute of Shipping Economics and Logistics (2004), *Shipping Statistics and Market Review*, Jan./Feb., table II-1.1.1.1. For 2003, based on data published in Institute of Shipping Economics and Logistics (2004), *Shipping Statistics and Market Review*, January/February 2004, page 70, from monthly data provided by Baird Publications (Australia).

<sup>a</sup> Ships of 300 grt and over.

<sup>b</sup> Total does not include data on newbuilding contracts for other types of ship.

Table 21

**World tonnage on order as of 1 January 2004**  
(thousands of dwt)

Country groups of registry	Total	Oil tankers	Bulk carriers	General cargo	Container ships	Other ships
<b>World total</b>	160 379	61 076	46 560	3 020	30 584	19 139
<b>Developed market-economy countries</b>	47 017	20 079	7 920	1 059	9 350	8 609
<b>Major open-registry countries</b>	87 172	29 597	30 862	1 169	17 952	7 592
<b>Countries of Central and Eastern Europe</b>	410	58	0	154	0	198
<b>Socialist countries of Asia</b>	6 087	2 529	2 030	66	951	511
<b>Developing countries, total</b>	19 692	8 813	5 748	572	2 330	2 229
<i>of which:</i>						
<b>Africa</b>	403	1	0	10	0	392
<b>Americas</b>	819	87	82	256	157	237
<b>Asia</b>	18 375	8 725	5 666	306	2 173	1 504
<b>Europe</b>	95	0	0	0	0	95
<b>Oceania</b>	0	0	0	0	0	0

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Lloyd's Register – Fairplay.

Table 22

**Representative newbuilding prices in selected years <sup>a</sup>**  
(millions of dollars)

Type and size of vessels	1980	1985	1990	1995	2000	2002	2003	% change 2002/2003
<b>30-50,000 dwt bulk carrier</b>	17	11	24	25	20	15	22	46.7
<b>32-45,000 dwt tanker</b>	19	18	29	34	29	26	30	15.4
<b>70-74,000 dwt bulk carrier</b>	24	14	32	29	23	20	25	25.0
<b>80-105,000 dwt tanker</b>	28	22	42	43	41	35	41	17.1
<b>120,000 dwt bulk carrier</b>	32	27	45	40	40	31	47	51.6
<b>250-280,000 dwt tanker</b>	75	47	90	85	76	67	75	11.9
<b>125-138,000 m3 LNG</b>	200	200	225	245	165	164	155	-5.5
<b>75,000 m3 LPG</b>	77	44	78	68	60	60	59	-1.7
<b>15,000 dwt general cargo</b>	14	12	24	21	19	16	16	0.0
<b>2,500 TEU full containership</b>	-	26	52	50	35	28	38	35.7

Source: Compiled by the UNCTAD secretariat on the basis of data from *Lloyd's Shipping Economist*, various issues.

<sup>a</sup> From 1995 on, prices correspond to the large vessel size.

containerships also fared well, increasing by 35.7 per cent, while prices for general cargo vessels were steady. Modest price reductions of 5.5 and 1.7 per cent were observed for LNG and LPG gas carriers. In general, the upward trend of shipbuilding prices during the year reflected increased ship ordering.

As table 23 indicates, average second-hand prices for tankers and bulk carriers recorded substantial increases. Dry bulk carriers recorded gains above 40 per cent, with

the largest one being for Panamax vessels. The number of transactions was also up — to 359 from the 2002 level of 325, with Panamax and Cape-size being most popular and the small handy-size vessels accounting for 116 transactions. In the tanker sector, double-digit price increases were seen during the year, with Aframax tonnage recording 26.7 per cent increases. A record number of transactions were reported for 2003, when 348 units changed hands (138 units the year before), with 229 units being over 50,000 dwt.

Table 23

**Second-hand prices for five-year-old vessels, 1998–2003**  
(as of year's end, in millions of dollars)

Vessel	1998	1999	2000	2001	2002	2003	% change 2002/2003
40,000 dwt tankers	20	20	27	26	24	28	16.7
80-95,000 dwt tankers <sup>a</sup>	25	26	39	33	30	38	26.7
130-150,000 dwt tankers <sup>a</sup>	37	36	50	43	42	48	14.3
250-280,000 dwt tankers <sup>a</sup>	50	50	71	60	53	75	41.5
45,000 dwt dry bulk carrier	13	16	15	12	15	21	40.0
70,000 dwt dry bulk carrier	15	17	16	14	17	28	64.7
150,000 dwt dry bulk carrier	24	28	25	22	26	41	57.7

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by Fearnleys, *Review 2003*.

<sup>a</sup> Prices correspond to the larger vessels in the range.





## Chapter 3

# PRODUCTIVITY OF THE WORLD FLEET AND SUPPLY AND DEMAND IN WORLD SHIPPING

*This chapter provides information on the operational productivity of the world fleet and an analysis of the balance between supply and demand for tonnage. Key indicators are the comparison of cargo generation and fleet ownership, tons of cargo carried and ton-miles performed per dwt, and the analysis of tonnage oversupply in the main shipping market sectors.*

### A. OPERATIONAL PRODUCTIVITY

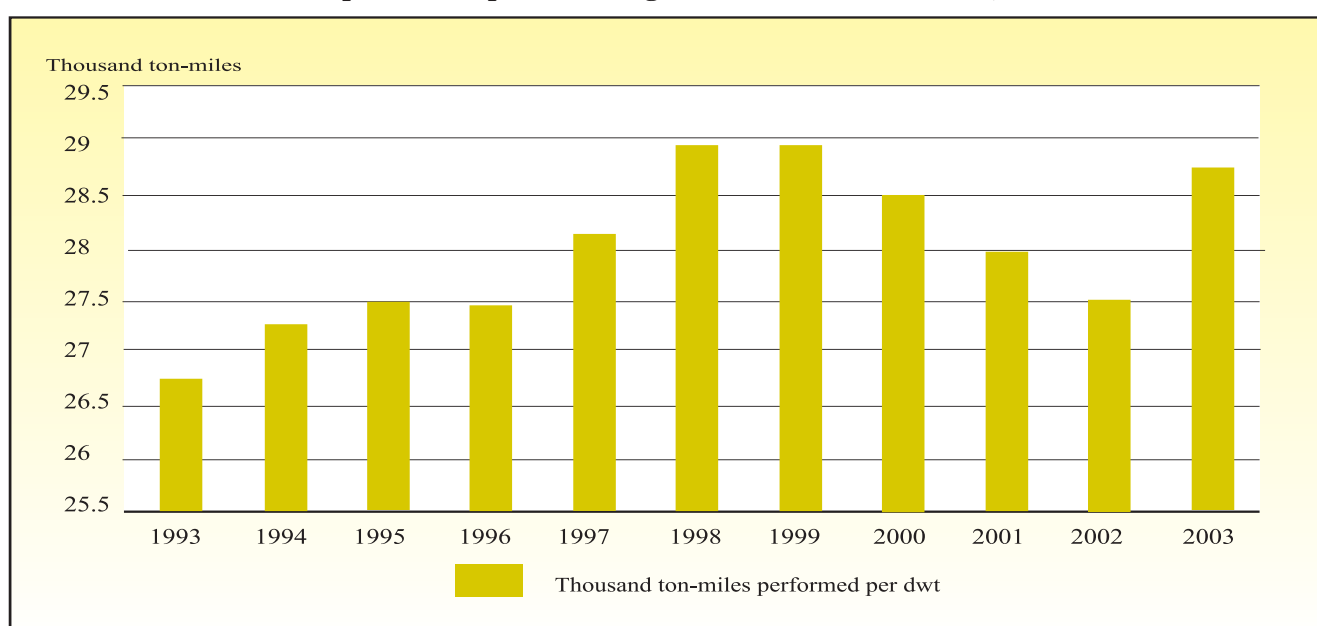
The main indicators of operational productivity for the world fleet in tons and ton-miles per dwt are shown in figure 6 and table 24. Tons of cargo carried per deadweight ton (dwt) in 2003 increased slightly to 7.2, and thousands of ton-miles performed per deadweight ton also increased to 28.7. The increase in productivity measured in tons of cargo carried per deadweight ton (dwt) reflects the faster rate of increase in cargo carried relative to fleet expansion. The increase in productivity measured in ton-miles per deadweight ton results from

the enlarged carriage distance of seaborne trade, notably crude oil, and extended sea routes going around western Europe owing to environmental concerns.

Table 25 provides supplementary data on operational productivity in terms of cargo carried per deadweight ton by type of vessel. Productivity in terms of tons carried per deadweight ton for oil tankers was steady at 6.7, while that corresponding to dry bulk and combined carriers increased to 4.9 and 8.6 tons per dwt respectively. The cargo volumes carried per deadweight ton of the residual fleet also increased — to 10.7 tons per dwt.

Figure 6

**Ton-miles performed per deadweight ton of total world fleet, 1993–2003**



Source: UNCTAD calculations.

Table 24

**Cargo carried and ton-miles performed per deadweight ton (dwt) of the total world fleet, selected years**

Year	World fleet (million dwt)	Total cargo (million tons)	Total ton-miles performed (thousands of millions of ton-miles)	Tons carried per dwt	Thousands of ton-miles performed per dwt
1990	658.4	4 008	17 121	6.1	26.0
1995	734.9	4 651	20 188	6.3	27.5
2000	808.4	5 871	23 016	7.3	28.5
2002	844.2	5 888	23 251	7.0	27.5
2003	857.0	6 168	24 589	7.2	28.7

Sources: World fleet: Lloyd's Register – Fairplay (mid-year data for 1990, year-end data for all other years shown); total cargo carried: UNCTAD secretariat; ton-miles: Fearnley's, *Review*, various issues. Data compiled by the UNCTAD secretariat.

Table 25

**Estimated productivity of tankers, bulk carriers, combined carriers <sup>a</sup> and the residual fleet, <sup>b</sup> selected years**  
(tons carried per dwt)

Year	Tons of oil carried by tankers of over 50,000 dwt (millions)	Tons carried per dwt of tankers	Tons of dry cargo carried by bulk carriers of over 18,000 dwt (millions)	Tons carried per dwt of bulk carriers	Tons of oil and dry bulk cargo carried by combined carriers of over 18,000 dwt (millions)	Tons carried per dwt of combined carriers	Tons carried by the residual fleet <sup>a</sup> (millions)	Tons carried per dwt of the residual fleet
1970	1 182	8.6	403	8.4	97	6.8	800	6.3
1980	1 564	4.8	396	2.9	282	5.8	1 406	8.3
1990	1 427	6.0	667	3.3	203	6.3	1 680	9.1
2000	2 077	7.3	1 255	4.6	122	7.9	2 415	10.0
2002	2 059	6.8	1 333	4.6	100	7.9	2 395	10.0
2003	2 119	6.7	1 455	4.9	104	8.6	2 490	10.7

Sources: Compiled by the UNCTAD secretariat on the basis of data from Fearnley's *Review*, various issues; *World Bulk Trades* and *World Bulk Fleet*, various issues; and other specialized sources.

<sup>a</sup> Tankers, bulk carriers and combined carriers indicated in table 6.

<sup>b</sup> The residual fleet refers to general cargo, container and other vessels included in table 6.

Indicative data on ton-miles performed by oil tankers, dry bulk carriers, combined carriers and the residual fleet are provided in table 26. The thousands of ton-miles per deadweight ton of oil tankers increased in 2003 by 1.6 per cent to 31.8, while the ton-miles per deadweight ton of dry bulk carriers and combined carriers increased by 5.1 and 10.7 per cent to reach 24.8 and 41.4 respectively. The residual fleet increased its productivity by 7.1 per cent to 28.8 ton-miles per dwt.

## B. SUPPLY AND DEMAND IN WORLD SHIPPING

### 1. Surplus tonnage

A summary of the balance of tonnage supply and demand for 1990 and the period 1999–2003 is provided in table 27. The total surplus tonnage in 2003 was about half that of the previous year — 10.3 million dwt. This was largely attributable to the high level of vessel scrapping over the last few years and increased employment of ships.

### 2. The supply and demand mechanism by type of vessel

Tonnage supply in the oil tanker sector increased in 2003 by 18.3 million dwt to 286.0 million dwt as newbuildings delivered outweighed the tonnage scrapped, laid up or lost (see table 28 and figure 7). This, combined with increased shipments and extended haulage, brought down overcapacity to 6.0 million dwt or 2.1 per cent of the total world tanker fleet. In 2003, the total dry bulk fleet supply increased by 38.7 million dwt to 297.5 million dwt. Overtonnage for this type of vessel reached 3.6 million dwt, equivalent to 1.2 per cent of the dry bulk fleet. For the conventional general cargo fleet, overcapacity marginally increased in 2003, with supply exceeding demand by only 0.7 million dwt or 1.6 per cent of the world fleet of this sector. The surplus tonnage of general cargo vessels has been under 1.0 million dwt for the last three years.

Table 26

### Estimated productivity of tankers, bulk carriers, combined carriers <sup>a</sup> and the residual fleet, <sup>b</sup> selected years

(thousands of ton-miles performed per dwt)

Year	Ton-miles of oil by tankers (thousands of millions)	Ton-miles per dwt of tankers	Ton-miles of dry bulk cargo by dry bulk carriers (thousands of millions)	Ton-miles per dwt of bulk carriers	Ton-miles of oil and dry bulk cargo by combined carriers (thousands of millions)	Ton-miles per dwt of combined carriers	Ton-miles of the residual fleet (thousands of millions)	Ton-miles per dwt of the residual fleet
1970	6 039	43.8	1 891	39.4	745	52.5	1 979	15.7
1980	9 007	27.6	2 009	14.5	1 569	32.4	4 192	24.8
1990	7 376	30.8	3 804	18.8	1 164	36.0	4 777	26.0
2000	9 840	34.5	6 470	23.9	593	38.5	6 159	25.5
2002	9 572	31.4	6 766	23.5	473	37.5	6 452	26.9
2003	10 087	31.8	7 326	24.8	501	41.4	6 687	28.8

Source: Compiled by the UNCTAD secretariat on the basis of data from Fearnley's *Review*, various issues; *World Bulk Trades* and *World Bulk Fleet*, various issues; and other specialized sources.

<sup>a</sup> Tankers, bulk carriers and combined carriers indicated in table 6.

<sup>b</sup> The residual fleet refers to general cargo, container and other vessels included in table 6.

Table 27

**Tonnage oversupply in the world merchant fleet, 1990 and 1999–2003**  
(end-of-year figures)

	1990	1999	2000	2001	2002	2003
<b>Million dwt</b>						
<b>World merchant fleet</b>	658.4	799.0	808.4	825.6	844.2	857.0
<b>Surplus tonnage<sup>a</sup></b>	63.7	23.7	18.4	21.5	21.7	10.3
<b>Active fleet<sup>b</sup></b>	594.7	775.3	790.0	804.1	822.5	846.7
<b>Percentages</b>						
<b>Surplus tonnage as percentage of world merchant fleet</b>	9.7	3.0	2.3	2.6	2.6	1.2

Sources: Compiled by the UNCTAD secretariat on the basis of data supplied by Lloyd's Register – Fairplay and *Lloyd's Shipping Economist*, various issues.

<sup>a</sup> Estimates of average year figures. Surplus tonnage is defined as tonnage that is not fully utilized because of slow steaming or lay-up status, or because it is lying idle for other reasons.

<sup>b</sup> World fleet minus surplus tonnage.

Table 28

**Analysis of tonnage surplus by main type of vessel, 1997–2003<sup>a</sup>**  
(average annual figures in millions of dwt)

	1997	1998	1999	2000	2001	2002	2003 <sup>b</sup>
<b>World tanker fleet</b>	290.6	291.0	281.8	279.4	280.2	267.7	286.0
Total tanker fleet surplus <sup>c</sup>	17.0	17.3	14.0	13.5	17.9	19.1	6.0
Share of surplus fleet in world tanker fleet (%)	5.8	5.9	5.0	4.8	6.4	7.1	2.1
<b>World dry bulk fleet</b>	260.9	257.1	245.7	247.7	255.3	258.8	297.5
Dry bulk fleet surplus <sup>c</sup>	10.3	5.8	7.9	3.8	2.9	2.2	3.6
Share of surplus in world dry bulk fleet (%)	3.9	2.3	3.2	1.5	1.1	0.9	1.2
<b>World conventional general cargo fleet</b>	62.0	60.5	59.9	59.3	57.8	57.3	43.4
Conventional general cargo fleet surplus	1.7	1.6	1.8	1.1	0.7	0.4	0.7
Share of surplus in world conventional general cargo fleet (%)	2.7	2.6	3.0	1.8	1.2	0.7	1.6
<b>World unitized fleet<sup>d</sup></b>	65.7	73.1	76.1	83.6	91.2	98.6	-
Surplus of unitized fleet	0.0	0.0	0.0	0.0	0.0	0.0	-
Share of surplus in world unitized fleet (%)	0.0	0.0	0.0	0.0	0.0	0.0	-

Source: Compiled by the UNCTAD secretariat on the basis of data from *Lloyd's Shipping Economist*, various issues.

<sup>a</sup> Aggregates for all sectors shown in this table are averages for the years indicated and therefore differ from the world figures in table 27. This table excludes tankers and dry bulk carriers of less than 10,000 dwt and conventional general cargo/unitized vessels of less than 5,000 dwt.

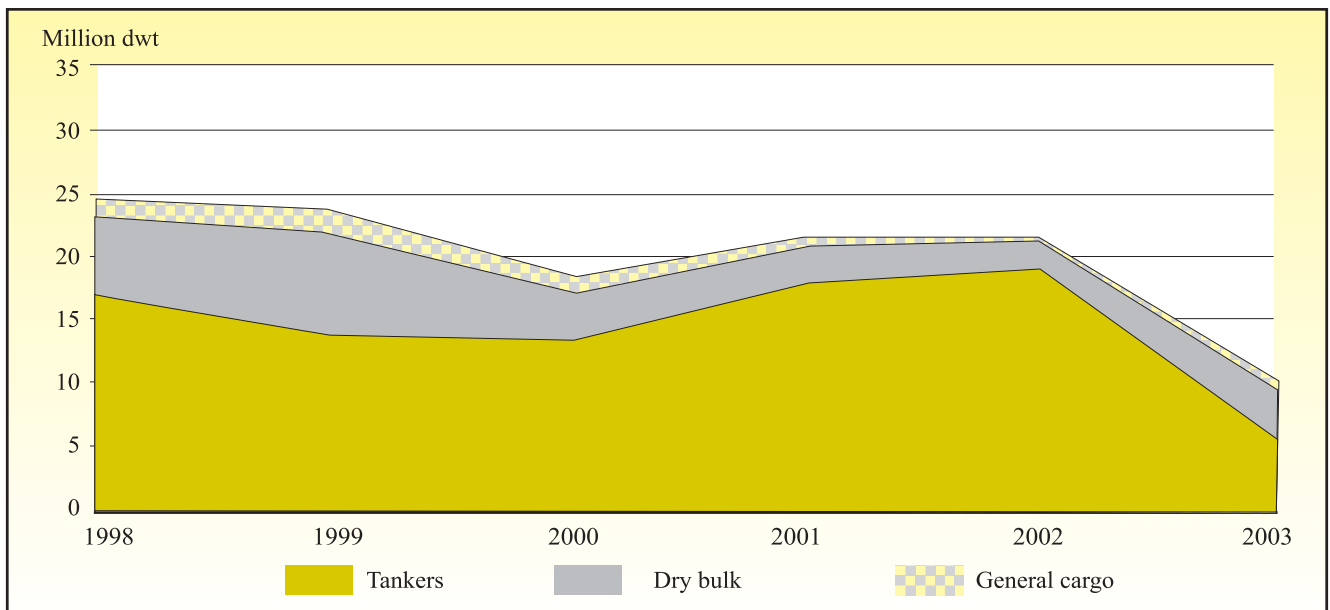
<sup>b</sup> Data for 2003 correspond to figures up to October 2003 as compiled in December 2003.

<sup>c</sup> Including 50 per cent of combined ore/bulk/oil carriers.

<sup>d</sup> Unitized fleet includes here fully cellular container ships, partly cellular container ships, ro-ro ships and barge carriers.

Figure 7

## Trends in surplus capacity by main vessel types, selected years



Source: Compiled by the UNCTAD secretariat on the basis of data from Lloyd's Shipping Economist, various issues.

### C. COMPARISON OF CARGO TURN-OVER AND FLEET OWNERSHIP

The correlation between cargo volume generated by different country groups and their fleet ownership is summarized in table 29. Developed market-economy countries generated 51.1 per cent of world seaborne trade in 2003, compared with 53.7 per cent in 1980. Over the same period, the tonnage share of the fleet of developed market-economy countries fell, from about 51 per cent in 1980 to about 27 per cent in 2003. However, in addition to tonnage under national flags, there is also the tonnage of vessels owned by nationals of a particular country but registered under foreign flags, and the two together bring the share of developed market-economy countries to 65 per cent. The share of developing countries in world cargo turnover has remained at about 40 per cent. Their tonnage owned and registered under national flags increased from 10 per cent of the world fleet in 1980 to about 21 per cent at the beginning of 2004. Tonnage beneficially owned by developing countries has expanded to nearly one third of the total beneficially registered tonnage, bringing the total tonnage owned by developing countries to about 36 per cent of the world fleet. The share of world cargo turnover generated by the countries of Central and Eastern Europe remained at about 3 per cent in 2003, unchanged from the levels of previous years, but significantly less than the 4.7 per cent level of 1980. These countries' fleet position also declined from 5.5 per cent to less than 2 per cent in 2003. The socialist countries in Asia increased their share in

world trade to almost 7 per cent in 2003, while they improved their share in world tonnage from 1.6 per cent in 1980 to 3.5 per cent in 2003. In addition, these countries have a small share of their fleet registered in the open registries.

Information on the fleet ownership of the major trading nations is provided in table 30. It will be noted that the major trading nations are also major owners of tonnage, which reflects an aspect of trade-supporting policies involving exploiting maritime transport as a complement to trade. It is generally considered that maritime capabilities, specifically the ownership of substantial tonnage, are essential for a country's trade support and promotion. The table also highlights the similarities and differences in the shipping services of the leading trading nations. Major trading countries such as Japan, China (including Hong Kong), the Republic of Korea, Denmark and Sweden are outstanding among the nations with maritime services for cross trades. Other major trading nations are major importers or users of shipping services while maintaining a relevant ownership position and, to a lesser extent, a national flag position. The United States and France come into this group. In 2003 the United States generated about 13.0 per cent of world trade while it owned 5.9 per cent of world tonnage, with only about one fourth of such tonnage flying the national flag. Similarly, France generated 5.0 per cent of world trade as compared with a tonnage ownership position of 0.6 per cent, with the national flag having a share of one half of this percentage.

Table 29

Comparison between total cargo turnover and fleet ownership, by country groups, in 1970, 1980, 1990 and 2000–2003

Country grouping	Year	Total of goods loaded and unloaded (million tons)	Percentage of world total	Merchant fleet (million dwt)	Percentage of world total
<b>Developed market-economy countries</b>	1970	2 812.1	54.8	282.2	86.5
	1980	3 965.0	53.7	350.1	51.3
	1990	4 529.0	55.7	219.0	33.3
	2000	6 285.1	51.9	203.2	25.1
	2001	6 186.8	51.3	207.5	25.1
	2002	6 210.8	50.8	217.1	25.7
	2003	6 455.3	51.1	230.4	26.9
<b>Major open-registry countries</b>	1970	a	a	70.3	21.6
	1980	a	a	212.6	31.1
	1990	a	a	224.6	34.1
	2000	a	a	384.7	47.6
	2001	a	a	402.4	48.7
	2002	a	a	398.5	47.2
	2003	a	a	399.5	46.6
<b>Developing countries</b>	1970	2 074.9	40.4	20.5	6.3
	1980	2 926.0	39.6	68.4	10.0
	1990	3 065.0	37.7	139.7	21.2
	2000	4 804.0	39.6	157.0	19.4
	2001	4 806.9	39.9	159.0	19.3
	2002	4 840.8	39.6	171.3	20.3
	2003	4 891.7	38.7	181.4	21.2
<b>Countries of Central and Eastern Europe (including former USSR)</b>	1970	202.8	4.0	20.5	6.3
	1980	346.0	4.7	37.8	5.5
	1990	235.9	2.9	44.3	6.7
	2000	377.5	3.1	16.3	2.0
	2001	372.7	3.1	15.4	1.9
	2002	387.1	3.2	15.9	1.9
	2003	417.3	3.3	15.7	1.8

Table 29 (continued)

Country grouping	Year	Total of goods loaded and unloaded (million tons)	Percentage of world total	Merchant fleet (million dwt)	Percentage of world total
<b>Socialist countries of Asia</b>	1970	43.6	0.9	1.2	0.4
	1980	146.0	2.0	10.9	1.6
	1990	167.7	2.1	22.1	3.4
	2000	654.4	5.4	26.1	3.2
	2001	691.8	5.7	26.5	3.2
	2002	785.8	6.4	28.3	3.4
	2003	863.5	6.8	29.9	3.5
<b>World total <sup>b</sup></b>	1970	5 134.4	100.0	326.1	100.0
	1980	7 383.0	100.0	682.8	100.0
	1990	8 133.3	98.3	658.4	100.0
	2000	12 121.0	100.0	808.4	100.0
	2001	12 058.2	100.0	825.6	100.0
	2002	12 224.5	100.0	844.2	100.0
	2003	12 627.8	100.0	856.9	100.0

Source: As per annexes II and III(b).

<sup>a</sup> All goods loaded and unloaded are included in the volume of developing countries.

<sup>b</sup> Including unallocated tonnage indicated in annex III(b).



Table 30

**Maritime engagement of 25 major trading nations**  
(as of the end of 2003)

Country/territory	Percentage share of world trade generated, in terms of value	Percentage share of world fleet in terms of dwt
United States	13.0	5.9
Germany	8.7	6.3
Japan	5.5	14.2
China	5.5	6.1
France	5.0	0.6
United Kingdom	4.4	2.5
Italy	3.7	1.6
Netherlands	3.6	0.9
Canada	3.3	0.8
Belgium	3.1	0.8
Hong Kong (China)	2.9	4.0
Republic of Korea	2.4	3.3
Spain	2.3	0.6
Mexico	2.2	0.0
Taiwan Province of China	1.8	3.0
Singapore	1.7	3.0
Russian Federation	1.3	2.2
Switzerland	1.3	1.1
Malaysia	1.2	1.3
Sweden	1.2	0.8
Austria	1.2	0.0
Thailand	1.0	0.3
Australia	1.0	0.4
Brazil	0.8	0.7
Denmark	0.8	2.1
<b>Total</b>	<b>78.8</b>	<b>62.3</b>

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by the World Trade Organization.

## Chapter 4

# TRADE AND FREIGHT MARKETS

*This chapter describes conditions and trends in trade and freight markets, covering the major liner and bulk cargo sectors; it gives liner freight rates as a percentage of commodity prices, and it estimates freight payments and freight costs as a percentage of import value in world trade.*

### A. CRUDE OIL AND PETROLEUM PRODUCTS SEABORNE FREIGHT MARKET

#### 1. Seaborne trade in crude oil and petroleum products

During 2003 tanker freight rates fluctuated widely in response to OPEC decisions concerning production levels, increased demand from major consumer countries and unforeseen events such as civil unrest in Venezuela and strikes in Nigeria at the beginning of the year, military operations in the Middle East Gulf during the second quarter, increased demand in Japan due to temporary summer closure of nuclear-fuelled power plants for inspection and, at the end of the year, bad weather and congestion in the Bosphorus Straits. The impending European proposal for accelerated phase-out of single-skin tankers, which was finally approved during the fourth quarter, also contributed to rate volatility.

In 2004, the demand for shipments of crude oil and oil products is likely to be affected by uncertainty about production levels in the Middle East and the duration of the extended haulage to US markets.

#### 2. Tanker freight rates

Overall, 2003 was a good one for tanker owners. As table 31 indicates, all freight indices for the five groups of vessels engaged in transporting crude oil and petroleum products went up during the year. The increase in the freight index for small crude and product carriers was

most impressive — it doubled during the year to reach 333. For medium-size crude carriers the freight index increase was also remarkable — from 162 to 279 during the year. For VLCC/ULCC the freight index increase was less impressive but still good — from 99 to 125. Freight indices recorded modest increases during the year for handy-size dirty carriers and all-size clean carriers — from 266 to 246 and from 231 to 243, respectively.

The extent of rate recovery was highlighted by the fact that the 2003 average freight indices for all categories of vessels, except all-size clean carriers, were above the average freight rates corresponding to the previous two years and as good as those recorded for 2000, which was a good year for tanker owners. The comparison of average freight rates for 2003 with those of the previous year was particularly favourable for VLCC/ULCC and medium-size crude carriers, which reached 88 (48 in 2002) and 165 (98 in the previous year), respectively. Similar increases in average freight rates were recorded for the three other categories of vessels, namely small crude and product carriers (203 in 2003 as against 131 the previous year), handy-size dirty carriers (246 in 2003 as opposed to 173) and all-size clean carriers (243 against 166 in 2002).

#### *Very large crude carriers (VLCC)*

In January 2003 the spot rates from the Middle East Gulf to Japan and the Republic of Korea were both at WS126 and dipped in February, but recovered during March only to dip again in April to WS84 and WS82 respectively. The subsequent months were downhill until

Table 31  
**Tanker freight indices, <sup>a</sup> 2001–2004 <sup>b</sup>**  
*(monthly figures)*

Period	VLCC/ULCC				Medium-size crude carriers				Small crude & product carriers				Handy-size dirty carriers				All-size clean carriers			
	2001	2002	2003	2004	2001	2002	2003	2004	2001	2002	2003	2004	2001	2002	2003	2004	2001	2002	2003	2004
<b>January</b>	152	40	99	125	217	90	162	268	346	100	166	345	277	165	266	285	371	148	231	266
<b>February</b>	117	41	133	146	206	87	181	179	230	126	187	306	323	168	267	285	400	150	246	357
<b>March</b>	87	39	114		158	86	225		239	116	276		295	159	290		348	150	273	
<b>April</b>	95	36	129		171	91	240		272	117	294		299	164	290		264	149	328	
<b>May</b>	81	36	80		160	105	150		190	144	218		296	194	200		263	179	294	
<b>June</b>	61	50	85		132	90	156		183	159	201		242	204	235		264	177	231	
<b>July</b>	52	40	51		112	97	110		141	130	133		230	201	250		224	158	221	
<b>August</b>	53	45	53		114	83	103		130	132	168		224	167	198		214	171	221	
<b>September</b>	51	36	58		111	84	92		148	110	138		204	158	209		218	175	233	
<b>October</b>	74	41	58		111	84	120		154	118	153		210	153	202		187	155	180	
<b>November</b>	44	73	70		98	108	158		136	138	164		163	154	258		192	174	213	
<b>December</b>	39	103	125		94	172	279		128	176	333		141	193	290		149	208	243	
<b>Annual average</b>	76	48	88		140	98	165		191	131	203		242	173	246		258	166	243	

<sup>a</sup> Compiled and published by *Lloyd's Ship Manager*. World scale = 100, as effective in each year. For tankers, vessel size groups are as follows: VLCC/ULCC – 150,000 dwt and upwards; medium-size crude carriers – 70,000–150,000 dwt; small crude and product carriers – 30,000–70,000 dwt; handy-size dirty carriers – below 35,000 dwt; and all sizes clean carriers.

<sup>b</sup> All indices have been rounded to the nearest whole number. No data are available from March 2004 onwards.

August, when the depths of WS49 and WS51 were reached. The September recovery was short-lived, but the dip of October did give way to a good recovery to the end of the year when both rates were at WS148 — 17.5 per cent up from the level prevailing at the beginning of the year.

The fluctuations in rates from the Middle East Gulf to the West mirrored the fluctuations in the rates for the routes to the east. Rates to Europe started the year at WS103, double dipped until April when they were at WS72 and then fell in August to WS48. Again, the short-lived September recovery gave way to a WS52 dip in October, but afterwards there was a strong recovery to end the year at WS124 — up by 20.4 per cent over the year. Rates to the Caribbean and East Coast of North America started at WS85, the August dip was at WS46 and the October dip was followed by a recovery that reached WS113 in December — a good 32.9 per cent rate increase over the year.

On the West Africa to the Far East route, rates showed similar volatility. They started at WS105, fell to WS74 in April and to WS46 in August. After this they recovered in September to WS128 only to fall back the following month to WS51 and peak again in November at WS130, but eased out to WS120 by the end of the year. The overall rate increase was 14.3 per cent during 2003.

During the first quarter of 2004 all rates slid. The corresponding rates from the Middle East Gulf to Japan, the Republic of Korea, Europe and the Caribbean/US East Coast were WS89, WS87, WS78 and WS79 respectively. In March, however, there was a brief interlude of optimism and there were some good fixtures. For instance, the *Mitsumine* was chartered for NGT to carry 252 500 tons of crude oil from the Middle East Gulf to Japan at WS100. Similarly, Hyundai chartered *Al Shegaya* to carry 265,000 tons of crude oil to Daesan at WS98. Moreover, KPC chartered *Falkonera* at WS105 to carry 260,000 tons from Kuwait to the US Gulf. Rates from the Middle East Gulf were better to other destinations: Chevtex chartered *Navarin* to carry 255,000 tons of crude oil to South Africa at WS138. However, this interlude was not sustainable and rates continued to slide in April. They recovered during the subsequent months. Two fixtures for July to carry parcels of 265,000 tons of crude oil from the Middle East Gulf fetched WS135 for the *Universal Brave* chartered by NGT for destinations in Japan, and WS117 for the *New Vitality* chartered by Hyundai for destinations in Daesan.

#### *Medium-sized crude carriers*

Rate fluctuation for medium-size crude carriers reflected the particular conditions that prevailed in the routes served by these vessels. Suezmax rates for West Africa shipments to Europe and the Caribbean/US East Coast started in January 2003 at WS180 and WS175 respectively. Rates moved downwards in subsequent months to bottom in August at WS82 and WS80 and then recovered, reaching WS206 and WS199 at the end of the year. The corresponding rate increases during the year were 14.4 per cent to European destinations and 13.7 per cent to destinations across the Atlantic. Suezmax tonnage trading across the Mediterranean started the year at WS200 and bottomed in August at WS89 before it recovered until November at WS147 and rose by the end of the year to WS246 — an overall increase of 23 per cent during 2003.

Rate improvement was also good for Aframax tonnage. Tankers trading across the Mediterranean started the year at WS213, but in August they fetched only WS84. Rates recovered in the subsequent months to reach WS196 in November and WS241 in December — a 13.1 per cent increase over the year. Across the Atlantic Aframax tonnage trading between the Caribbean and the East Coast of North America recorded a stellar performance. Rates started at WS146 at the beginning of the year and, after peaking at WS306 in March, fell to WS149 in August. Afterwards the recovery was strong and the year ended at WS290 — almost double the rates at the beginning of the year.

Suezmax rates from West Africa peaked in January 2004 at WS268 for destinations in Europe and at WS264 for destinations in the Caribbean/US East Coast and then eased until April. For instance, Stentex chartered the *North Star* at WS260 in January to take 130,000 tons of crude oil to the east coast of North America while a similar parcel fetched WS160 in March when CSSSA chartered the *Genmar Phoenix*. Also in March, the same rate was agreed by CEPESA to charter the *Iran Sarvestan* to take 135,000 tons from Ceyhan (Turkey) to Spain. By June rates had eased somewhat. For instance, two parcels of 130,000 tons from West Africa fetched about the same rate. Sun Oil chartered *Calm Sea* at WS140 for destination in US East Coast while Navion agreed to WS137 for *Monte Toledo* for destination in Europe.

Rates for Aframax tonnage also peaked in January 2004 and then the trend was downwards. For routes across

the Mediterranean, however, there was a rebound in March. For instance, in that month Sibneft chartered the *Iran Abadeh* for a 80,000 ton parcel with destination in the Mediterranean at WS220. Rates in the Caribbean were far lower: BP Amoco chartered the *Chemtrans Lyra* for a 70,000 ton parcel at WS128, while Hess agreed to WS165 for a similar parcel from Coveñas (Colombia) to St. Croix. By June rates had slid in the Mediterranean and recovered in the Caribbean. Exxon Mobil chartered *Antarctica* to take 80,000 tons across the Mediterranean at WS175, and only WS165 was fetched by *Meribel* under charter with Petrogal for taking a similar parcel from Mediterranean to Portugal. Across the Atlantic Premcor chartered *Genmar Minotaur* at WS200 to take 70,000 tons from Coveñas to the US East Coast.

#### *Small crude and product carriers*

Average dirty spot rates for vessels in the range 40–70,000 dwt trading from the Caribbean to the North American Gulf and East Coast started the year at WS183 and peaked in March at WS366, and then rates decreased steadily until August at WS125. Afterwards rates improved — in October they had reached WS177 and by the end of the year they fetched WS290, an increase of 58.5 per cent during the year. Rates peaked in January 2004 at WS380 and were above the WS300 mark the following month. In March, rates eased. In that month, two fixtures were reported by Colonial and Hess for carrying 50,000 ton parcels — the rates were WS215 and WS240 respectively. By April rates were clearly below the WS200 mark. By April they were clearly below the WS200 mark but recovered in mid-year. For instance, Conoco chartered the *Amazon Explorer* at WS257 to take 50,000 tons from the Caribbean to the US East Coast.

Vessels of the same capacity trading in the Mediterranean and from there to the Caribbean and East Coast of North America recorded similar rate fluctuations. Rates started the year at WS219 and WS198 respectively. They peaked in March 2003 at WS334 and WS316 and then fell to their lowest level in September at WS142 and WS147 respectively. Again, recovery was achieved during the last quarter of the year: in November rates were at WS254 and WS209, and then continued their upward trend to fetch WS363 and WS284 in December. The rate increases for these two routes during 2003 were 65.7 and 43.4 per cent respectively. Again, the rates peaked in January 2004 at WS387 and WS331 but then eased, staying around the WS200 mark during late March

and early April. Rates were similar elsewhere: in March Stusco chartered *Maya* for carrying 50,000 tons from Ecuador to the US Gulf at WS265. Two fixtures by mid-year indicated that rates were holding steady. In June, Chevron Texaco chartered *Chimborazo* to take 50,000 tons from Ecuador to the US East Coast at WS237, while the following month Vitol secured *Jill Jacob* at WS240 to take a similar parcel from the Mediterranean to US East Coast.

#### *Handy-size dirty*

Rates for these tankers with a capacity of less than 35,000 dwt broadly followed the evolution of rates for small crude and product carriers. In April, Europetrol chartered *Baltic Commander I* to take 30,000 tons from the Baltic Sea to Western Europe at WS405, but in July Western was able to charter *Mar* for carrying 27,500 tons along the same route at WS260. A similar rate was agreed by Enel during this month: it took 30,000 tons from the United Kingdom to Italy on the *Sea Explorer* at WS250. Agip chartered the *Trinity* for a trip from North-West Europe to the Mediterranean with 33,000 tons at WS222. In November rates were higher. CEPSA chartered the *Maersk Riga* and the *Sea Promise*, at WS320 and WS350 respectively, for two 30,000 ton parcels from Spain to Northern Europe and the Mediterranean. Rates eased somewhat in early 2004: Stasco chartered the *Isola Magenta* at WS280 in March to carry 30,000 tons across the Mediterranean. Rates eased further by mid-year. In June, Enichem chartered *Seamusic* at WS250 to take 33,000 tons from the Black Sea to Italy, while Petrus chartered *Madison* at WS237 to take 30,000 tons from St. Petersburg to the United Kingdom.

#### *All clean carriers*

The rates for large clean carriers, in the range 70,000 to 80,000 dwt, trading from the Middle East Gulf to Japan started the year at WS242 and drifted down until June to WS180; rates recovered during the summer to WS222 in August and declined through November when they reached WS149. In December there was a recovery to WS158, but overall rates declined by an impressive 34.7 per cent during 2003. A similar trend was observed for tankers of an average size of 55,000 dwt, for which the year started at WS263 and peaked in April at WS283 and then decreased to WS156 in November. Again, the December recovery fetched WS185 but still left a net decline in rates of 29.6 per cent for the year. The corresponding time charter equivalent earnings for these

small tankers were \$32,000 in January, \$35,500 in April, \$16,400 in November and \$20,800 in December.

For these two vessel sizes the rates increased in early 2004 and peaked in February at WS232 and WS256 respectively. During the first week of March there were still some good fixtures, such as the one reported for the one-year-old *Energy Century* chartered by Addax to carry a 62,000 ton parcel of oil products from the Middle East Gulf to Japan at WS267. Afterwards the trend was clearly downwards. For instance, in June PDI chartered *Maersk Princess* at WS205 to carry 75,000 tons along the same route.

Freight rates for tankers in the range 35,000–50,000 dwt trading from the Caribbean to the Gulf and East Coast of North America started the year with rates at WS190, and these climbed during March and April to WS271 and WS267 respectively. The following months saw substantial volatility with depths in June–July and September–October; but the recovery started in November continued in December when rates fetched WSWS267. Overall, there was a 40.5 per cent rate increase during the year. Rates continued to increase during early 2004 and peaked in February at WS341. In March, there were good fixtures such as those recorded for *Galahad*: one for 38,000 tons at WS350 for Citgo and the other for 40,000 tons at WS330 for Hess. But then rates eased. In June the same charterer concluded a fixture for *Elka Glory* at WS265 to take 40,000 tons from the Caribbean to the US East Coast.

Smaller tankers in the range of 25,000–35,000 dwt trading out of Singapore to East Asian destinations started the year at WS275. Rates also peaked in April at WS346 and then they drifted downwards with a minor recovery in August at WS293 at the time of increased demand from Japan. Rates bottomed out in October at WS175 and climbed to WS267 in December. Overall, there was a 2.9 per cent decrease in rates during the year. A similar pattern was recorded by rates for tankers of the same size trading from the Caribbean to the Gulf and East coasts of North America. Rates started at WS248, peaked in March at WS363, then drifted downwards in the following months with a minor recovery in August at WS256 and reached WS330 in December. On this route there was a 33 per cent rate increase during the year. The corresponding time charter equivalents on this route were \$14,600 in January, \$25,000 in March, \$15,900 and \$22,600 in December. The recovery at the end of the year continued during early 2004 and peaked in February at WS346 for shipments from Singapore to East Asian

destinations and at WS418 for Caribbean trading. For the latter in March two fixtures were reported that suggested that rates had started to ease: the *Akritas* was chartered at WS325 by PMI to carry 30,000 tons to the east coast of Mexico and the *Ocean Fidelity* fetched WS410 to take 28,000 tons to the east coast of North America. The trend continued until mid-year, as shown by two fixtures in June. Royal Dutch Shell chartered *Sheng Chi* at WS250 to carry 30,000 tons from Singapore to Japan. Global chartered *Shannon* at WS300 to take 28,500 tons from the Caribbean to the US East Coast.

#### *Tanker-period charter market*

Chartering activity was particularly substantial during the first five months of 2003, with over 1.5 million dwt being traded every month. The peak months were April and May, with 2.3 and 2.5 million dwt respectively. In April 49.5 per cent of the charters were for more than two years and 44.2 per cent corresponded to Aframax tonnage. In May, 67.8 per cent of the charters were for durations of less than six months and 53.9 per cent were Suezmax and larger vessels. During subsequent months chartering activity was above 1.0 million dwt, except in November and December when reached only 0.8 million dwt. ULCC tankers were almost exclusively chartered in March and May and during this period a five-year-old vessels chartered for one year and for prompt delivery fetched above \$31,000 per day, with a peak of \$40,000 per day in March. By December rates again approached these levels, although chartering activity was low. Suezmax and larger tankers made up 54 per cent of chartering activity during that month.

Chartering activity for Aframax tonnage was particularly significant during June, when it made up 61.3 per cent of the total chartering activity of the month, which reached 1.1 million dwt. Estimated period charter rates for 10-year-old tankers on a one-year contract and for prompt delivery fluctuated around \$17,000 per day during most of the year. Rates for five-year-old tankers were slightly higher — in the \$18,000–19,000 range.

During early 2004 chartering activity was particularly good in February, when it reached 2.4 million dwt, of which 48 per cent were VLCC over 200,000 dwt. By April chartering activity had dropped to a low 0.4 million dwt, almost half of it being Aframax tonnage. It was above 1.0 million dwt until June, with most of it being Suezmax and VLCC tonnage during that month.

## B. DRY BULK SHIPPING MARKET

### 1. Dry bulk trade

For large Capesize vessels, the main activity in this market was along the iron ore routes from Australia to the Far East and from Brazil to the Far East and Europe. During the year the remarkable increase in China's iron ore imports and to a lesser extent the growth of Japan's thermal coal imports pushed up demand for these vessels in the Pacific. Panamax vessels were deployed on several routes, including the transatlantic coal and iron ore routes from the East Coast of North America and Canada respectively and those from South Africa. Panamax tonnage was also deployed on iron ore and coal routes within Asia, such those originating in India, China and Indonesia, and within Europe originating in Sweden. Some Panamax tonnage was deployed from the United States Gulf and the East Coast of South America for carrying grain.

Smaller vessels, such as handy-sized ones, were employed for carrying grain to several destinations, notably those that have ports with restricted drafts. These vessels were also used on bauxite, alumina and rock phosphate routes.

### 2. Dry bulk freight rates

The freight rates for all sectors and sizes of dry bulk carriers finished the year 2003 at levels well above those prevailing at the beginning of it. The Baltic Dry Index recorded a remarkable increase of 174 per cent during the year to 4,765, with increases being particularly steep during the last quarter.

As shown in table 32, the dry cargo tramp time-charter increased during the year to 459 — an increase of 39.1 per cent over the year. The dry cargo tramp trip-charter stood over the 200 mark during the year and

Table 32

### Dry cargo freight indices, 2001–2004 <sup>a</sup> (monthly figures)

Period	Dry cargo tramp time-charter <sup>b</sup> (1971 = 100)				Dry cargo tramp trip-charter <sup>c</sup> (July 1965 to June 1966 = 100)			
	2001	2002	2003	2004	2001	2002	2003	2004
January	264	228	330	431	193	194	216	244
February	267	232	344	507	198	199	216	244
March	260	223	339		195	199	216	
April	258	259	354		200	194	226	
May	262	229	366		206	207	235	
June	272	244	352		205	202	230	
July	272	240	374		205	201	230	
August	253	240	377		192	201	229	
September	248	244	361		193	204	235	
October	249	268	381		195	204	244	
November	227	343	402		194	215	244	
December	231	337	459		195	215	244	
<b>Annual average</b>	255	257	370		198	203	230	

<sup>a</sup> All indices have been rounded to the nearest whole number. No data are available from March 2004 onwards.

<sup>b</sup> Compiled by the German Ministry of Transport.

<sup>c</sup> Compiled and published by *Lloyd's Ship Manager*.

ended at 244 points — an increase of 13.0 per cent from the level at the beginning of the year. The average time-charter index for 2003 was more than 100 points higher than that for the previous year, while the average trip-charter index was almost 30 points above the average for the previous year.

Owners of dry cargo vessels benefited from increased demand due to congestion in several bulk ports and to a lesser extent from bunker prices. Over the year bunker prices — the average posted prices for IFO 180 at nine ports collected by Lloyd's Ship Manager — went down from \$197 to \$174. During the year there was increased concern about the cost impact of implementing security measures (see box 2).

The substantial improvement in freight rates dissipated any enthusiasm that shipowners may have had about staying in pools. Early in the year Cape-size Asian

owners held inconclusive discussions about setting up a pool. Existing pools were maintained notably for serving niche markets, such as the 60-ship Panamax pool Baumarine, which accounted for about half of the shipments of bauxite and alumina. Flaring spot prices during the last quarter of the year triggered a search for extended time-charters, with durations being progressively extended as spot freight rates increased. This particularly affected larger vessels as Cape-size newbuildings were unlikely to be commissioned in the next two years and little Panamax tonnage was delivered during the year. By the end of 2003, the two-year charter for Cape-size vessels was at \$52,500 per day, while for Panamax it was \$30,000 per day. In early 2004, this upward trend continued unabated — it was reported that as Cape-size freight rates hit \$100,000 per day, the three-year charters were secured at \$50,000 per day and five-year ones were at \$37,000 per day.

#### Box 2

##### Secure ship operation

*Estimates prepared by the OECD in July 2003 put the total bill to ship operators for implementing security measures at \$1,279 million initially and \$730 million thereafter.*

*Crew management was also an area of concern for operators. The cancellation of the crew visa procedure for seamen on board ships calling at ports in the United States prompted negotiations for a workable arrangement for seamen. In the representations made by BIMCO to the US authorities it was explained that additional staff had been posted to deal with visa backlog and that seamen were able to ask for US visas outside their own countries and without specifying the entry port or vessel.*

*The issue for seamen having positive (i.e. the holder of the document is the person to whom it was issued) and verifiable (i.e. the document is authentic by reference to an issuer) identification was discussed at the 91<sup>st</sup> ILO Conference when the C185 Seafarers' Identity Documents Convention (Revised), 2003 was adopted on 19 June. This Convention replaced the C108 Seafarers' Identity Documents Convention, 1958. Doubts about the usefulness of this Convention were raised a few months afterwards because of incompatibility with Schengen rules of the EU and the lack of agreed technical standards for biometric technology, which was deemed to delay application of the Convention.*

*By mid-2003 there were differing views on the way in which Part B of the ISPS Code should be implemented with some countries (i.e. China) deeming it voluntary and selectively applicable by maritime administrations, while others (i.e. the United States) regarded it as an integral and essential part of the Code. Late in the year, the American Bureau of Shipping reissued its guideline for ship security to reflect IMO clarifications in the ISPS code and recent US requirements from the Coast Guard. Moreover, BIMCO designed a standard clause for charter parties to clarify doubts arising from costs of implementing the ISPS code.*

*Source: Lloyd's List Daily News.*



*Dry bulk time-charter (trips)*

Some representative fixtures concluded for vessels of different sizes on typical routes illustrate the evolution of rates during 2003. At the beginning of the year the recovery of rates that had started at the end of 2002 continued unabated. Cape-size tonnage was chartered for round trips over the transatlantic and Singapore–Japan to Australia routes at rates of \$24,050 and \$22,050 per day. By September the corresponding rates were \$39,850 and \$36,325 per day and in December they were as high as \$74,045 and \$78,615 per day respectively. On both routes the rates more than trebled over the year.

Panamax tonnage chartered at the beginning of the year for round trips from Northern Europe to the East Coast of South America fetched \$11,650 per day; rates moved up steadily, reached \$17,500 per day in September and flared up in October at \$27,500 per day, by December standing at \$33,590 — an increase of 188.3 per cent in 2003. The pattern was slightly different for Panamax tonnage engaged for round trips from the Far East to the eastern coast of Australia: rates started the year at \$13,850 per day and slid backwards during the following two months to \$12,000 per day. In April rates recovered and reached \$16,675 per day in September and peaked in October at \$39,400 but dropped in November to \$38,400. In December rates rebounded to \$40,070 per day; overall, it was an 189.3 per cent increase for the year.

Handymax tonnage chartered for Far East to Australia round trips secured \$10,000 per day in January and rate gains were modest until September when they fetched \$13,770, and then they almost doubled to \$25,645 in December — an increase of 156.4 per cent for the year. Handy-size tonnage chartered for trips from Northern Europe to the West Coast of Africa achieved less impressive gains over the same period: at the beginning of the year rates were \$8,500 per day and progressed steadily to reach \$18,000 in December — an increase of 111.8 per cent for the year.

In early 2004 rates for all these vessel sizes were high until early March and by April they were lower than the levels reached in December. There was a further decline in rates in subsequent months, although with considerable volatility.

*Dry bulk time-charter (periods)*

Estimates of rates for chartering vessels for a 12-month period and prompt delivery indicate that rate increases were slightly less pronounced for smaller vessels. Five-year-old Cape-size vessels in the range of 150,000–160,000 dwt were getting \$18,750 per day in January 2003; this figure almost trebled by December, rising to \$56,000 per day. Freight rates for a five-year-old Panamax started at \$12,250 in January and increased by almost two and a half times in December to reach \$32,500 per day. The increase was only marginally lower for 15-year-old vessels, whose rates went up from \$11,000 to \$26,000 per day during the same period. Rate improvement for a 15-year-old Handymax tonnage was also remarkable, from \$9,000 per day in January to \$24,500 per day in December, and very similar to the rate gains achieved by five-year-old vessels — from \$7,500 per day in January to \$20,500 per day in December. Handy-size tonnage aged about 15 years also recorded similar rate increases: \$6,750 per day in January and \$15,000 per day in December.

Rates for chartering vessels continued to rise during early 2004; some of them peaked in February, but in April they were all higher than those prevailing in December 2003. Afterwards they declined until mid-year.

*Dry bulk trip-charter*

Over the year rates for Cape-size tonnage improved substantially, notably during the fourth quarter. Iron ore freight rates from Brazil to China started the year at \$13.60 per ton and moved up steadily to \$17.20 in June; from September increases were greater, rising to \$33.20 per ton in December. The evolution for coal rates from Richards Bay (South Africa) to Western Europe was similar — they started at \$9.65 per ton in January, slowly moved up to \$13.40 per ton in September and then almost doubled by December to \$25.75 per ton. Panamax tonnage trading with grain between the North America Gulf and Western Europe was getting \$15.85 per ton in January, \$20.10 per ton in August and \$29.65 in December. There were lesser rate increases for handy-size tonnage: scrap was moved from the US West Coast to the Republic of Korea at \$30.65 per ton in January and this increased to \$46.60 by the end of the year.

During the period until April 2004 the rates for grain and scrap continued to rise, while the rate for iron ore held steady. There was a one-third drop in coal rates during the same period. By June all rates pointed downwards.

## C. LINER SHIPPING MARKET

### 1. Development in liner markets

#### *General developments*

The impact of containerization in liner trades is greater than that implied by the size and growth of the fully cellular containership fleet analysed in table 7 of chapter 2. Total seaborne container carrying capacity during 2003 rose by 0.6 million TEUs to reach 8.6 million TEUs — an increase of 7.5 per cent. Fully cellular containerships increased their share of this total by 1 per cent to 74.7 per cent at the beginning of 2004, totalling 6.4 million TEUs. The share of general cargo ships reached almost 18 per cent. Single-deck vessels accounted for 0.9 million TEUs — 10.4 per cent — while multi-deck ships added 0.61 million TEUs — about 8 per cent. During the year single-deck tonnage increased by 4 per cent while multi-deck tonnage actually decreased by 3 per cent. Ro-ro cargo and ro-ro passenger ships accounted for 0.33 million TEUs and increased by 1 per cent during the year. Their share of total container carrying capacity is 3.8 per cent. Bulk carriers maintained their container carrying capacity at 0.21 million TEUs, with their share of the total decreasing to 2.5 per cent. The balance of about 1 per cent was TEU carrying capacity available in reefer, tanker, specialized and passenger vessels.

Moreover, the growth of the fully cellular containership fleet mentioned in chapter 2 continued, albeit at a slightly slower pace. As indicated in table 33, additions to the

fleet during 2003 totalled 622,000 TEUs, while 44,000 TEUs were retired from operations and broken up. Scrapping was lower than that of the previous year owing to the good freight rates achieved by small and, generally old, tonnage. The growth of the cellular fleet is poised to accelerate, with larger vessels increasing their share. During 2003, compared with the previous two years, ship orders increased more than fourfold to a record of 1,995,000 TEUs, with a fifth of this total achieved in September. For that month, post-Panamax vessels made up over half of the total and ordering vessels having capacity over 8,000 TEUs became commonplace — two German owners ordered ten ships and a further eight were ordered by two East Asian owners.

The push for larger vessels has kept alive the question of their deployment, which would be restricted to the main east–west mainline routes because of the volumes required to fill such vessels. One view is that these very large vessels should call exclusively at a few very large transshipment hubs at both ends of the route. Another view, on the basis of diminishing economies of scale for vessels above the 2,500 to 3,000 TEU size, is that there should be direct services, with smaller vessels calling at multiple ports at both ends of the route. Large carriers operating along mainline routes espouse the former view and continue to rely on dedicated transshipment terminals and feeder services provided by their subsidiaries. The implementation of security initiatives in a number of major ports would work in favour of transshipment hubs. In any case, the influx of larger containerships on the main routes heralds the deployment of larger vessels in feeder routes too.

Table 33

#### **Growth of the world cellular container fleet** (in thousand TEU at the beginning of the year)

Year	Broken up	Additions	Fleet as of 1 January	Orders as of 1 January
2002	29	639	5 285	407
2003	65	625	5 845	481
2004	44	622	6 423	1 995

Source: UNCTAD secretariat on the basis of *Containerisation International*, issues February 2003 and 2004, p. 19.

### *Concentration in liner shipping*

The concentration process of recent years is resulting in increased carrying capacity being deployed by the largest liner operators. As table 34 indicates, over a one-year period ending 30 September 2003 the top 10 liner operators increased their carrying capacity by 13.0 per cent to 3.8 million TEUs — 45.7 per cent of the world total container carrying capacity. Similarly, the share of the top 20 liner operators increased by 12.8 per cent to 5.4 million TEUs — 64.4 per cent of the world total container carrying capacity. A clear reflection of the momentum being gained by industry consolidation is the lack of new entrants for the list of the top 20 carriers. Only three carriers — AP Moller, MSC and K Line — maintained their positions in the table. AP Moller, the parent company of Maersk-Sea Land, confirmed its dominance among container carriers by marginally increasing its share of world TEU capacity from 10 to 10.1 per cent. MSC tried to catch up and increased its share from 5.4 to 6.2 per cent. Seven carriers moved up the list with CMA-CGM Group being the most successful (up by three places), followed by NYK and Yang Ming (each up by two places) while Evergreen Group, OOCL, Hapag Lloyd and CSAV went up by only one place. Half of the carriers on the list went down by one place, except China Shipping, which slipped back by two places.

Mid-2003 financial indicators announced for some of the above carriers were encouraging. Maersk and CP Ships recorded average revenue increases of 5 per cent. P&O Nedlloyds did even better with a 7.5 per cent increase, while NOL/APL recorded an impressive 17 per cent increase in average revenue. The latter seemed to be targeting high-value cargo as the volume carried decreased by 2 per cent during the same period. All other carriers reported double-digit increases in cargo volumes, except P&O Nedlloyd, which reported only a 7 per cent increase. Satisfactory financial results highlighted a clear recovery from the dismal results of the past two years, but this was not the case for all companies — the Taiwan Province of China shipowner Kien Hung went bankrupt in May, with most of its vessels being seized by banks and other creditors. Other carriers faced specific difficulties. NYK, MOL and K Line enforced strict cost-cutting measures to counter appreciation of the yen as about 80 per cent of their revenues were in US dollars.

By the end of 2003 the positive financial results made it attractive to list some companies on the stock exchanges. The parent company of P&O Nedlloyd stated its readiness to list the shipping arm on the Amsterdam stock

exchange, and Hapag Lloyd and China Shipping were said to be ready to float 33 and 25 per cent of shares respectively. In a separate development Zim was fully privatized at the beginning of 2004.

A number of carriers provide services on several routes, being part of conferences, alliances and/or agreements, which imply some degree of agreement on operational and marketing issues, notably pricing and number of sailings. Traditionally, regulators of many countries have provided anti-trust exemption to carriers participating in these agreements on the understanding that the benefits are greater than the disadvantages. Late in 2003 the European Commission started a formal review of Regulation 4056/86, which exempts carriers from some rules of competition law. A panel of academics reported that competition restrictions, in the form of shipping conferences, are a low-cost way to ensure that the liner market is sustainable, and suggested a compromise between abolishing price-setting immunity and ensuring conditions that safeguard liner shipping alliances. Carriers set up a European Liner Affairs Association to argue their case, and the Commission asserted that the burden of proof rested with the carriers. Shippers welcomed the review and noted that there was no automatic review period for the regulation. The first hearing was conducted in December 2003.

## **2. Freight level of containerized services**

### *Chartering of containership*

Global liner shipping market developments are best reflected in movements of the containership charter market. This market is largely dominated by German owners, and more particularly by members of the Hamburg Shipbrokers' Association (VHSS), who control some 75 per cent of all containership charter tonnage available in the free market. Since 1998, the association<sup>3</sup> had published the "Hamburg Index", which provides a market analysis of containership time charter rates with a minimum of three months. For the period from 1998 until June 2002, rates on 14-ton slot (TEU) per day have been published on a monthly basis for three gearless and six geared size group and compared with those obtained on average in 1997. The year 1997 was chosen as the reference year because it was the last year when a remunerative rate level could be achieved. Since July 2002, rates have been published for two types of gearless vessels up to 500 TEU capacity, two types of gearless/geared vessels over 2,000 TEU capacity and six types of geared vessels up to 1,999 TEU capacity.

Table 34

Leading 20 container service operators as of 30 September on the basis of number of ships and total shipboard capacity (TEUs)

Ranking	Operator	Country/territory	No. of ships in 2003	TEU capacity in 2003	TEU capacity in 2002
1	A.P. Moller Group	Denmark	328	844 626	773 931
2	MSC	Switzerland	217	516 876	413 814
3	Evergreen Group	Taiwan Province of China	152	442 310	403 932
4	P&O Nedlloyd	UK/Netherlands	157	419 527	406 654
5	CMA-CGM Group	France	150	299 174	225 436
6	Hanjin/DSR-Senator	Republic of Korea/Germany	76	290 677	304 409
7	COSCO	China	148	274 128	255 937
8	NOL/APL	Singapore	82	273 573	227 749
9	NYK	Japan	91	233 934	177 700
10	MOL	Japan	72	222 533	188 326
<b>Total 1-10</b>			<b>1 473</b>	<b>3 817 358</b>	<b>3 377 888</b>
11	CP Ships Group	Canada	85	201 706	187 890
12	K Line	Japan	63	186 017	168 413
13	OOCL	Hong Kong (China)	55	185 502	157 493
14	Zim	Israel	79	174 480	164 350
15	Hapag Lloyd	Germany	41	154 850	135 953
16	Yang Ming	Taiwan Province of China	55	153 783	120 319
17	China Shipping	China	94	143 655	148 212
18	Hyundai	Republic of Korea	35	136 548	122 713
19	CSAV	Chile	55	123 378	90 625
20	PIL Group	Singapore	92	106 508	97 827
<b>Total 1-20</b>			<b>2 127</b>	<b>5 383 785</b>	<b>4 771 683</b>
<b>World fleet estimated at 1 July 2003 and 2002</b>				<b>8 354 000</b>	<b>7 713 000</b>

Source: UNCTAD secretariat, compiled from *Containerisation International*, January, p. 12, and November 2003, p. 57; and *International Shipping and Logistics* (Bremen), January/February 2004, p. 36.

Note: All subsidiaries are consolidated.

The development of time charter rates is reflected in table 35.

The average time charter rates for all types of containerships rose in 2003. The largest increase has been for geared/gearless containerships with a capacity in the range 2,000–2,299 TEUs, whose average time charter rate for 2003 fetched \$9.75 per 14-ton slot per day — almost double the average rate for the previous year. The average rate for larger vessels with a capacity in the range 2,300–3,400 TEUs also fared well — 55.8 per cent increase over the previous year. The best average rate improvement for geared vessels was for vessels with a capacity in the range 1,600–1,999 TEUs, which recorded a 77.1 per cent increase for 2003. Average rate improvement decreased with vessel size: the rate for vessels with a capacity in the range 1,000–1,299 TEUs was up by 67.7 per cent, while the corresponding increases for vessels with a capacity in the range 200–299 TEUs was only 11.3 per cent. The average rate increase for small gearless containerships, with a capacity of less than 500 TEUs, was around 16 per cent.

There was a positive and steady evolution of the monthly average time charter rates for vessels of all types and sizes. Time charter rates for geared/gearless containerships in the range 2,000–2,299 TEUs fetched \$11.04 per 14-ton slot/day in December 2003 — an increase of 84.3 per cent from levels prevailing in January. Similarly, larger geared/gearless containerships in the range 2,300–3,400 TEUs obtained \$10.16 per 14-ton slot/day in December, which represents an increase of 33.7 per cent for the year. Rates for geared vessels with a capacity in the range 1,600–1,999 TEUs also fared well — up by 75.5 per cent to \$11.3 per 14-ton slot/day by December 2003. All other monthly rates also recorded double-digit percentage increases, with the lower ones of 18.5 per cent corresponding to small geared vessels with a capacity in the range 300–500 TEUs.

The rates reached in September by geared 2,500 TEU vessels were around \$25,000 per day and those for gearless 3,500 TEU ships were \$29,000 per day. These increased rates in the chartering market led carriers to seek fixtures in private deals by the fourth quarter of the year. Rates also went up in early 2004 when a record rate of \$43,500 per day was paid for MOL. Moreover, the relevance of the chartering market is poised to increase in the years ahead. In June it was

reported that up to 70 per cent of the newbuildings were made by charterers such as Costamare, which the following month placed an order for five vessels with a capacity of 8,200 TEUs.

#### *Freight rates for main routes*

By the end of 2003 the level of freight rates for the main containerized routes — trans-Pacific, transatlantic and Asia–Europe — were mostly above the levels that prevailed at the end of 2002 (see table 36). The Asia–Europe route did particularly well, with freight rates increasing by 27.5 and 5.9 per cent in the westward and eastward directions respectively. For the westward direction the rate corresponding to the fourth quarter of 2003, \$1,662 per TEU, was as good as that corresponding to the third quarter of 2000 (\$1,673 per TEU), a particularly good year for container shipping, and highlighted the extent of freight rate recovery on this route. The rates across the Pacific increased by 24.5 per cent eastbound and by 6 per cent westbound. The eastbound rate at the end 2003 was \$1,892 per TEU, above the rates reached during the last two years but still well below the peak rate of \$2,000 per TEU reached in 2000. Over the transatlantic and between the fourth quarters of 2002 and 2003 the evolution of rates was less impressive. On the dominant westbound route to the United States freight rates rose by 20.9 per cent to \$1,469 per TEU, while in the opposite direction rates continued to fall — by 1.1 per cent to \$834 per TEU.

On the trans-Pacific route, where cargo flows are largest, the upward trend of rates that had started in 2002 continued unabated during the most part of 2003. The dominant eastbound leg recorded double-figure rate increases for the second and third quarter before a minor reduction during the last quarter. Rate evolution was less impressive for the westbound leg, which recorded rate reductions for the third and fourth quarters. During the first half of the year, the Trans-Pacific Stabilization Agreement (TSA), which accounts for 90 per cent of the trade, sought rate increases of about \$700 per FEU in the negotiations of annual service contracts. Peak season surcharges that apply between June and October were said to be \$300 per FEU. These surcharges were imposed in the wake of 95 per cent vessel utilization eastbound and was needed to offset up to \$2 billion losses said to have been incurred by carriers during the previous year owing to depressed freight rates. In a separate development the Federal Maritime Commission extended its probe into price-fixing of the Indian sub-continent and United States trade to cover action by TSA in the 2003–2004 contract seasons.

Table 35

**Containership time charter rates**  
(*\$ per 14-ton slot/day*)

Ship type	Yearly averages				Monthly averages for 2003												Monthly averages for 2004							
	1997	2001	2002	2003	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	
<b>Gearless</b>																								
<b>200-299</b>	21.8	16.0	16.9	19.6	17.7	17.4	19.3	18.8	20.3	19.2	17.9	19.6	20.0	21.2	21.0	22.5	22.2	21.1	22.2	22.5	22.0	23.0	23.3	
<b>300-500</b>	16.8	14.7	15.1	17.5	14.1	16.1	17.6	17.3	17.4	17.7	18.6	17.6	17.8	17.8	19.3	18.3	18.5	17.9	19.4	20.7	20.7	21.9	20.8	
<b>Gearless/Gearless</b>																								
<b>2,000-2,299</b>	9.7	8.0	4.9	9.8	6.0	6.6	8.1	9.1	10.1	11.0	11.4	10.9	10.7	11.2	10.8	11.0	11.1	15.4	15.4	13.7	13.7	13.7	13.7	13.7
<b>2,300-3,400<sup>a</sup></b>			6.0	9.3	7.6	7.2	7.6	9.1	9.7	9.7	10.3	10.3	10.4	9.7	9.7	10.2	10.6	12.0	12.0	14.5	14.5	14.5	12.9	
<b>Gearless</b>																								
<b>200-299</b>	22.0	17.8	17.0	18.9	17.3	17.7	17.7	18.1	20.3	19.5	18.8	18.4	18.2	19.1	21.5	20.6	21.5	22.9	23.3	25.2	25.2	23.9	26.1	
<b>300-500</b>	17.2	14.9	13.4	15.6	13.8	14.5	14.6	14.5	15.6	15.5	14.7	17.0	16.4	16.6	17.2	16.3	19.5	18.3	18.8	21.9	20.3	19.8	22.1	
<b>600-799<sup>b</sup></b>			9.3	12.3	9.9	10.4	10.7	11.9	12.0	12.7	12.0	13.4	13.9	13.6	13.2	13.5	14.3	14.8	16.2	19.0	17.7	19.5	20.6	
<b>600-799<sup>c</sup></b>					9.3	9.9	10.1	11.2	11.7	12.2	12.5	13.0	13.2	14.0	14.4	13.2	14.1	15.0	15.8	16.8	19.5	19.2	20.4	
<b>1,000-1,299</b>			12.5	8.8	6.9	11.6	7.7	8.4	9.8	11.4	12.2	12.4	13.7	13.9	15.1	14.0	13.7	15.5	16.6	17.6	19.0	20.2	19.4	
<b>1,600-1,999</b>			10.5	8.0	5.7	10.0	6.4	7.0	8.5	9.7	11.1	10.0	11.2	11.8	11.7	11.3	12.5	13.2	14.3	13.9	17.9	16.2	14.0	

<sup>a</sup> This category was created in 2002. Data for the first half of the year correspond to cellular vessels in the range 2,300–3,900 TEU sailing at 22 knots minimum.

<sup>b</sup> Sailing at 16–18 knots.

<sup>c</sup> Sailing at over 18 knots.

Table 36

**Freight rates (market averages) on the three major liner trade routes, 2002–2004**  
(US dollars per TEU)

	Trans-Pacific		Europe-Asia		Transatlantic	
	Asia–USA	USA–Asia	Europe–Asia	Asia–Europe	USA–Europe	Europe–USA
<b>2002</b>						
First quarter	1 540	751	601	1 073	866	1 180
Change (%)	-4.2	4.2	-8.9	-6.9	-3.7	-3.9
Second quarter	1 463	749	646	1 105	805	1 154
Change (%)	-5.0	-0.3	7.5	3.0	-7.0	-2.2
Third quarter	1 476	757	694	1 208	815	1 181
Change (%)	0.9	1.1	7.4	9.3	1.2	2.3
Fourth quarter	1 529	817	712	1 304	843	1 215
Change (%)	3.6	7.9	2.6	7.9	3.4	2.9
<b>2003</b>						
First quarter	1 529	826	704	1 432	899	1 269
Change (%)	0.0	1.1	-1.1	9.8	6.6	4.4
Second quarter	1 717	861	762	1 570	924	1 400
Change (%)	12.3	4.2	8.2	9.6	2.8	10.3
Third quarter	1 968	834	777	1 629	817	1 426
Change (%)	14.6	-3.1	2.0	3.8	-11.6	1.9
Fourth quarter	1 892	810	754	1 662	834	1 469
Change (%)	-3.9	-2.9	-3.0	2.0	2.1	3.0
<b>2004</b>						
First quarter	1 850	802	733	1 686	778	1 437
Change (%)	-2.2	-1.0	-2.8	1.4	-6.7	-2.2
Second quarter	1 871	822	728	1 739	794	1 422
Change (%)	1.1	2.5	-0.7	3.1	2.1	-1.0

Notes: Information from six of the trades' major liner companies. All rates are all-in, including the inland intermodal portion, if relevant. All rates are average rates of all commodities carried by major carriers. Rates to and from the US refer to the average for all three coasts. Rates to and from Europe refer to the average for North and Mediterranean Europe. Rates to and from Asia refer to the whole of South-East Asia, East Asia and Japan/Republic of Korea.

In the dominant westward leg of the Asia–Europe route freight rates recorded single-digit and positive evolution during the year. Rates increased particularly well, close to a 10 per cent increase, during the first and second quarter of 2003 with a noticeable slowdown during the second half of the year. This reflected recommended increases of \$150 per TEU in April, July and October made by the Far Eastern Freight Conference (FEFC). In the eastbound leg to Asia the first and fourth quarters witnessed rate deterioration of 1.1 and 3 per cent respectively and only the second quarter recorded a good rate increase of 8.2 per cent to \$762 per TEU. Over the year westbound vessel utilization was close to 97 per cent and FEFC was said to be looking for additional rate increases for 2004. Also, it was reported that the duration of service contracts appeared to be shortened to a period of a few months.

Freight rate movements on the transatlantic route were mostly positive, apart from the 11.6 per cent drop in the third quarter of 2003 for the United States–Europe leg. For the dominant leg originating in Europe the best result was in the second quarter, a 10.3 per cent rate increase to \$1,400 per TEU, with further increases in the following quarters being modest in comparison. For this leg, the Transatlantic Conference Agreement (TACA), whose remaining seven carriers account for about half of the trade on the route, announced rate increases of \$400 and \$500 per TEU for April and October respectively as well as a 3 per cent BAF from July. Overall, rate evolution was good, against the background of a falling US dollar and strong appreciation of the euro. In October the European Court of First Instance revoked the \$318.5 million fines imposed on TACA members by the European Commission, but upheld the view that the Commission was guilty of abuse of power in prohibiting individual service contracts.

Concerning other charges applied in liner shipping, the issue of terminal handling charges (THC) was again under scrutiny in Hong Kong (China). Shippers and carriers met in November to discuss the high level of these charges compared with mainland Chinese ports. It was said that up to \$274 per TEU was charged in Hong Kong (China) for boxes going to the United States and about \$230 per TEU for intra-Asian routes. These were almost \$100 per TEU more than the corresponding charges in Shenzhen and not offset by cheaper freight rates available from Hong Kong (China).

### 3. Supply and demand in respect of main liner services

During 2003 the demand for containerized services showed a healthy recovery. All the estimates of the cargo flows on the three major containerized routes for the first nine months of 2003 indicated in table 37 showed increases. In fact, these aggregates may mask some intraregional trades and transshipment activity. Nevertheless, the aggregates point to an expansion of traffic from the Far East, notably from mainland China, as well as reduced activity across the Atlantic.

In the trans-Pacific trade, 2003 witnessed a booming trade, particularly in the eastward direction. The reason for this impressive 15.7 per cent increase in trade in the face of modest US economic growth was the production of industrial and consumer goods by factories relocated in mainland China with access to the US market: import quotas for clothing were reduced and the 30 per cent import duty on steel products was discontinued by the end of the year. Not even the severe acute respiratory syndrome (SARS) scare early in 2003 dampened demand, and major US retailers such as Wal-Mart and Target Stores were said to have increased import volumes by 25 and 40 per cent respectively. For coping with the additional eastbound demand new services were launched, for instance the PNX string started by the CHKY alliance (Cosco, Hanjin, K Line and Yang Ming), and existing ones were upgraded by deploying larger vessels — Wan Hai replaced all five 1,600 TEU capacity vessels with 2,700 TEU capacity ones. The increase in cargo flows in the westward direction was considerably less, about one third, and vessels sailed with plenty of spare capacity, with carriers sometimes preferring to reposition empty containers rather than seek low-value cargo for destinations far away from China.

On the Europe–Asia trade route, the traffic from Asia increased by 10 times the increase in the opposite direction. This exacerbated the already acute problem of repositioning empty boxes. These were said to total 50 per cent for European destinations and up to 75 per cent for those in the United Kingdom. Carriers sometimes resorted to the practice already mentioned for the trans-Pacific route: shipping empty boxes was preferred to low-value freight cargo. The poor growth of eastbound cargo from Europe was due to cheaper alternatives — for instance, Asian importers started to



Table 37

**Estimated cargo flows along major trades routes**  
(millions of TEU)

Year	Trans-Pacific		Europe-Asia		Transatlantic	
	Asia-USA	USA-Asia	Europe-Asia	Asia-Europe	USA-Europe	Europe-USA
<b>2002</b>	8.81	3.90	3.94	6.13	1.50	2.59
<b>2003</b>	10.19	4.12	4.00	7.06	1.58	2.56
<b>% change</b>	15.7	5.6	1.5	15.2	5.3	-1.0

Source: Compiled by the UNCTAD secretariat from *Containerisation International*, several issues.

source waste paper from North America. The Far Eastern Freight Conference (FEFC) continued to account for about two thirds of the trade. Table 38 indicates that the combined share of the five major groupings of FEFC operators decreased marginally by 0.5 per cent, although there were large percentage fluctuations for some groups of operators.

The transatlantic route was lacklustre in 2003. Flows heading east increased by only 5.3 per cent while those in the opposite direction actually dropped by 1 per cent. The devaluation of the US dollar against the euro for most of the year explained this performance. Demand was stronger during the first half but not such as to cause carriers to add capacity, which had been reduced in the previous year. As about 80 to 90 per cent of the cargo

was reported to be carried under annual service contracts the issue of lack of slots did not arise and the repositioning of empty containers was not as acute as on the other two routes.

In the secondary North-South and regional trades the situation was mixed. The highest rates of growth were achieved by containers flowing between North-East and South-East Asia at a rate of 6.9 per cent. Container flows between Europe and South and Central America increased by 5.7 per cent and those between Asia and Oceania increased at a slightly slower rate — 5.2 per cent. Trade flows between North and South America and the Caribbean increased by 4.3 per cent. The laggards were trade between Europe and Oceania and West Africa, which were steady and contracted by

Table 38

**Capacity share for the trans-Pacific trade**  
(percentages)

Operator	mid-2003	mid-2002
<b>Grand Alliance</b>	22.3	21.7
<b>New World Alliance</b>	12.9	13.8
<b>Maersk Sealand</b>	15.6	16.2
<b>K Line and Yangming</b>	9.0	8.9
<b>CMA CGM / Norasia and others</b>	5.3	5.0
<b>Total</b>	65.1	65.6

Source: UNCTAD secretariat from *Lloyd's Shipping Economist*, September 2003, p. 9.

4.4 per cent respectively. For the latter OTAL, one of the largest independent carriers, reduced services in mid-2003 as cargo volumes from Europe dropped along with euro appreciation and West African importers started to source goods from Asia or South America.

#### 4. Liner freight index

Table 39 indicates the development of liner freight rates on cargoes loaded or discharged by liners at ports in the Antwerp/Hamburg range for the period 2001–2003. The average overall index for 2003 went up by six points from the 2002 level to reach 101 points (1995 base year 100), reflecting the improved rates in both the homebound and the outbound trade. In the homebound trade, the average level in 2003 increased by 11 points to reach 95 points. The peak was reached during April when the index fetched 100, and in August and September that peak was almost achieved. This upward trend was due to the increased volumes from the Far East and, to a lesser extent, across the Atlantic. It also reflects the diminished role of spot cargo. The improvement of the average

outbound index was barely noticeable — only up by 1 point to 106 over the year. The peak outbound index was reached in April at 114, with values for the period July–October being above average.

#### 5. Liner freight rates as percentage of prices for selected commodities

Table 40 provides data on freight rates of liner services as a percentage of market prices for selected commodities and trade routes for certain years between 1970 and 2002. For rubber sheet, the average f.o.b price increases more than offset the increases in freight rates and BAF surcharges and resulted in a decreased freight ratio of 8.3 per cent for 2003. The f.o.b price for jute came down by about 11 per cent, the lowest of all prices in table 40 for that year, while freight rates moved up by almost 20 per cent, which explains the increase in freight ratio to 29 per cent for 2003. The minor price reduction for cocoa beans shipped from Ghana, about 2 per cent, was more than compensated by the almost 18 per cent increases in freight rates, resulting in an increase in the

Table 39

#### Liner freight indices, 2002-2004

(monthly figures: 1995 = 100)

Month	Overall index			Homebound index			Outbound index		
	2002	2003	2004	2002	2003	2004	2002	2003	2004
January	93	96	93	81	91	88	104	101	98
February	93	96	93	81	91	88	103	100	98
March	95	101	96	80	94	92	109	107	101
April	95	107	100	82	100	96	108	114	104
May	94	99	99	82	92	96	106	105	103
June	94	101	99	81	90	95	106	111	103
July	94	103	100	85	97	97	103	107	103
August	94	104	100	85	99	97	102	109	102
September	93	104	100	85	99	98	100	108	102
October	99	102		88	96		109	107	
November	99	100		90	96		108	105	
December	97	96		88	92		105	100	
Annual average	95	101		84	95		105	106	

Source: UNCTAD secretariat on the basis of the Liner Index of the German Ministry of Transport. Monthly weighted assessments of freight rates on cargoes loaded or discharged by liners of all flags at ports of the Antwerp/Hamburg range.

Table 40

## Ratio of liner freight rates to prices of selected commodities

Commodity	Route	Freight rate as percentage of price <sup>a</sup>					
		1970	1980	1990	2001	2002	2003
Rubber	Singapore/Malaysia–Europe	10.5	8.9	15.5	13.9	13.5	8.3
Jute	Bangladesh–Europe	12.1	19.8	21.2	15.5	21.7	29.0
Cocoa beans	Ghana–Europe	2.4	2.7	6.7	4.1	25.8	3.3
Cocoa beans	Brazil–Europe	7.4	8.6	11.0	n.a.	n.a.	n.a.
Coconut oil	Sri Lanka–Europe	8.9	12.6	n.a.	15.5	10.0	11.5
Tea	Sri Lanka–Europe	9.5	9.9	10.0	5.3	6.8	7.8
Coffee	Brazil–Europe	5.2	6.0	10.0	6.9	7.6	6.8
Coffee	Colombia (Atlantic)–Europe	4.2	3.3	6.8	5.9	3.9	3.9
Coffee	Colombia (Pacific)–Europe	4.5	4.4	7.4	6.2	4.6	4.8

Sources: UNCTAD secretariat on the basis of data supplied by the Royal Netherlands Shipowners' Association (data for 1970–1989) and conferences engaged in the respective trades (data for 1990–2001).

<sup>a</sup> C.i.f. (cost, insurance and freight) prices are quoted for coffee (Brazil–Europe and Colombia–Europe) and coconut oil. For cocoa beans (Ghana–Europe and Brazil–Europe) the average daily price in London is quoted. For tea, the Kenya auction prices are quoted. Prices of the remaining commodities are quoted f.o.b. terms. The freight rates include, where applicable, bunker surcharges and currency adjustment factors, and a tank cleaning surcharge (for coconut oil only). Conversion of rates to other currencies is based on parities given in the *Monthly Commodity Price Bulletin*, published by UNCTAD. Annual freight rates were calculated by taking a weighted average of various freight quotes during the year, weighted by their period of duration. For the period 1990–2002, the prices of the commodities were taken from UNCTAD, *Monthly Commodity Price Bulletin*, January 2003.

freight ratio from 2.8 in 2002 to 3.3 in 2003. The year 2003 was the fourth year in which no cocoa beans were shipped from Brazil. The c.i.f. price of coconut oil recorded an increase of about 11 per cent in 2003, which coupled with the 27 per cent increase in freight rates during the year resulted in a freight ratio of 11.5 per cent, slightly higher than the ratio of the previous year. The ratio of liner freight rate to f.o.b. price for tea increased from 6.8 to 7.8 per cent, owing to an 8 per cent increase in prices and a 25 per cent increase in freight rates during 2003. The price for coffee from Brazil to Europe recovered by almost 13 per cent in 2003, while freight rates were roughly steady, resulting in a decrease of the freight factor from 7.6 per cent in 2002 to 6.8 per cent in 2003. The price of Colombian coffee exported to Europe from Atlantic and Pacific ports improved marginally by about 3 per cent during 2002, while freight rates went up by 3 and 7 per cent respectively. These changes resulted in the freight ratio being steady for exports from the Atlantic and slightly higher, at 4.8 per cent, for the Pacific ratios.

## D. ESTIMATES OF TOTAL FREIGHT COSTS IN WORLD TRADE

### 1. Trends in global import value and freight costs

International trade involves various services such as sourcing, production, marketing, transaction and transport and the related flow of information thereon. For the transport sector, table 41 provides estimates of total freight payments for imports and the percentage of total import value by country groups. In 2002, the world total value of import (c.i.f) increased by 4.1 per cent, while total freight paid for transport services increased by 13.1 per cent, reflecting the upward trend of freight rates that prevailed during that year. The share of global freight payments in import value stood increased to 6.6 per cent from 6.1 per cent in 2001. In 1980, the share of freight costs in import value stood at 6.6 per cent or nearly 30 per cent higher than the average ratio in 1990. The regional comparison indicates that freight costs incurred in the

Table 41

Estimates of total freight costs for imports in world trade<sup>a</sup> by country groups

(millions of dollars)

Year	Country group	Estimate of total freight costs of imports	Value of imports (c.i.f)	Freight costs as % of import value
1980	World total	123 264	1 856 834	6.64
	Developed market-economy countries	78 286	1 425 979	5.49
	Developing countries – total	44 978	430 855	10.44
	<i>of which:</i>			
	Africa	10 432	77 757	13.42
	America	10 929	123 495	8.85
	Asia	21 979	211 089	10.41
	Europe	1 320	16 037	8.23
	Oceania	318	2 477	12.84
1990	World total	173 102	3 314 298	5.22
	Developed market-economy countries	117 004	2 661 650	4.40
	Developing countries – total	56 098	652 648	8.60
	<i>of which:</i>			
	Africa	9 048	81 890	11.05
	America	9 626	117 769	8.17
	Asia	35 054	427 926	8.19
	Europe	1 909	21 303	8.96
	Oceania	461	3 760	12.26
2001	World total	364 008	5 960 595	6.11
	Developed market-economy countries	221 248	4 320 511	5.12
	Developing countries – total	142 760	1 640 084	8.70
	<i>of which:</i>			
	Africa	13 806	109 125	12.65
	America	33 895	395 439	8.57
	Asia	92 023	1 102 663	8.35
	Europe	2 428	27 665	8.78
	Oceania	608	5 192	11.71
2002	World total	411 855	6 205 670	6.64
	Developed market-economy countries	255 531	4 430 379	5.77
	Developing countries – total	156 324	1 775 291	8.81
	<i>of which:</i>			
	Africa	15 253	122 669	12.43
	America	37 740	379 225	9.95
	Asia	102 969	1 263 543	8.15
	Europe	2 718	31 201	8.71
	Oceania	645	5 653	11.41

Source: UNCTAD secretariat estimates based on data supplied by the IMF.

<sup>a</sup> The estimate for the world total is not complete, since data for countries that are not members of the IMF, the countries of Central and Eastern Europe and republics of the former Soviet Union, and the socialist countries of Asia are not included for lack of information or other reasons.

imports of developed market-economy countries continue to be lower than those of developing countries, with the difference between the two groups fluctuating slightly (see figure 8). For 2002, the total value of imports by developed market-economy countries increased by 2.5 per cent while total freight costs increased by 15.5 per cent; thus freight cost as a percentage of import value increased to 5.8 per cent (5.1 per cent in 2001) as compared with 8.8 per cent (8.7 per cent in 2001) for developing countries. This difference is mainly attributable to global trade structures, regional infrastructure facilities, logistics systems and the more influential distribution strategies of shippers from developed market-economy countries.

## 2. Regional trends

The total freight costs of developing countries increased from 8.7 per cent in 2001 to 8.8 in 2002. Within this group, African developing countries continued their downward trend in freight costs from 12.7 per cent in 2001 to 12.4 per cent in 2002. This is a reflection of lower freight rates and improvements in terminal handling that offset insufficient infrastructure facilities and inadequate management practices, specifically for transit

transport, and low productivity of inland transport and terminal equipment.

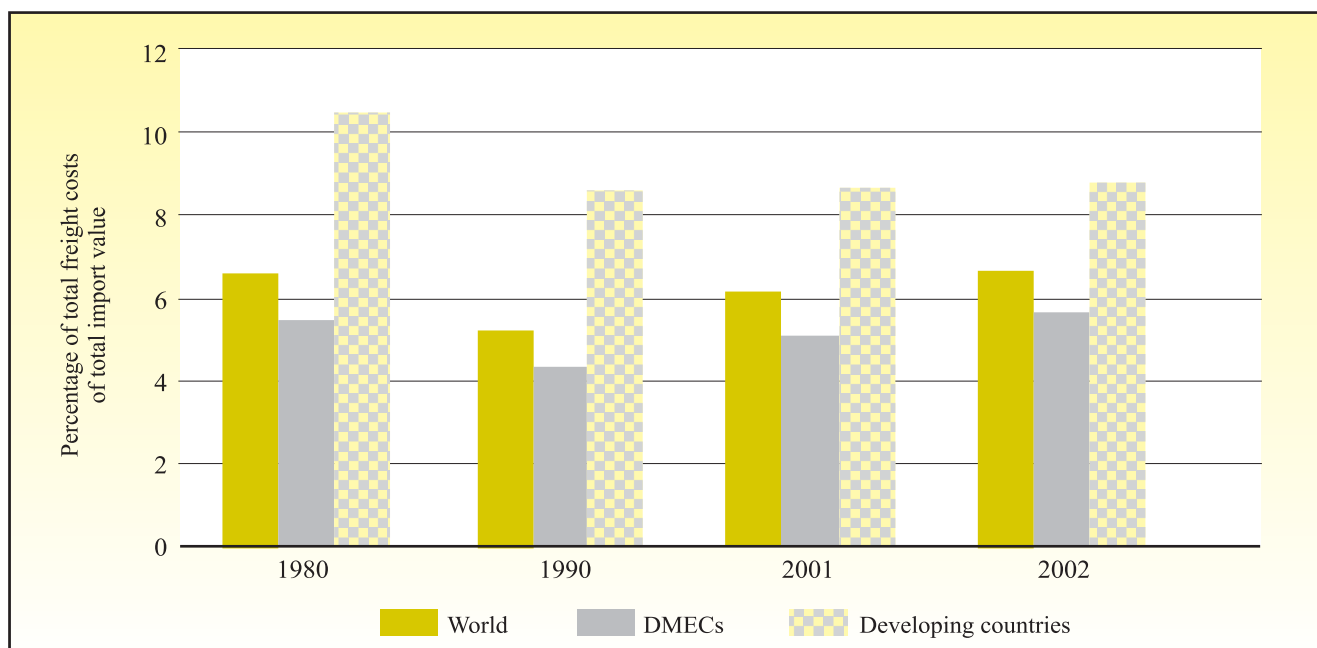
Developing countries in Asia accounted for 69.6 per cent of import value and 65.9 per cent of freight payments of all developing countries in 2002 as compared with 67.2 and 64.4 per cent respectively for 2001. The freight factor of this region has fluctuated by about 8 per cent since 1990 and was 8.3 per cent in 2002 — the same as in 2001.

Developing countries in America had their freight cost ratio increased to 10.0 per cent in 2002, as against 8.6 per cent in 2001.

Developing countries in Europe for the year 2002 had a slight decrease in freight rates to 8.7 per cent, down from 8.8 per cent in 2001. Small island developing countries in Oceania also had reduced freight rates payments at 11.4 per cent, less than the previous year's figure of 11.7 per cent. The long distance from major trading partners, low cargo volumes and high transshipment and feeder costs also contribute to the high levels of freight costs for island developing countries.

Figure 8

### Estimates of total freight costs for imports in world trade, by groups



Source: Table 41.

## Chapter 5

### PORT DEVELOPMENT

*This chapter covers container port throughput for developing countries, improving port performance, institutional changes in ports and security measures in ports.*

#### A. CONTAINER PORT TRAFFIC

Table 42 gives the latest available figures on reported world container port traffic in developing countries and territories for the period from 2000 to 2002. The world growth rate for container port throughput (number of movements measured in TEUs) increased by a remarkable 9.2 per cent in 2002. This was almost double the growth of the previous year — 5.2 per cent — and reflects the recovery of liner traffic during 2002. The throughput for 2002 reached 266.3 million TEUs, an annual increase of 22.5 million TEUs, from the level of 243.8 million TEUs reached in 2001.

The rate of growth for developing countries and territories was 9.3 per cent, with a throughput of 103.6 million TEUs, which corresponds to 38.9 per cent of world total throughput. The rate of growth was considerably higher than that reached in 2001 — 4.5 per cent — when developing countries' throughput was 94.7 million TEUs. Countries with double-digit growth in 2001 and 2000 were India, the Islamic Republic of Iran, Malaysia, Saudi Arabia and Venezuela — a total of five countries, less than the number recorded for the years 2001 and 2000. The growth rate in developing countries is uneven from year to year, owing sometimes to strong fluctuations in trade and sometimes to improved reporting of data or lack of data for some years.

Figures for 2003 are available for the leading 20 ports of the world that handle containers and the results are set out in table 43. Container throughput in those ports reached 144.9 million TEUs after recording a double-digit growth rate in the last two years. There were 11 ports of developing countries and territories and

socialist countries of Asia on the list, with the remaining nine located in market-economy countries. Of the latter, there were five in Europe, three in the United States and one in Japan. Eleven ports were located in east Asia, five in China and one in west Asia, while five were located in Europe and the remaining three in North America.

Hong Kong (China) maintained its leadership, with an 8.8 per cent increase, followed by Singapore, which recorded a slightly lower growth rate of 8.7 per cent. Mainland Chinese ports fared particularly well: Shanghai moved up one position to occupy the third place on the list, with an outstanding 29.1 per cent increase; Shenzhen fared even better — it moved up two places after traffic expanded at the almost incredible rate of more than 40 per cent in two consecutive years; and Qingdao moved from 15<sup>th</sup> to 14<sup>th</sup> place after traffic increased by more than 20 per cent in two consecutive years. Kaoshiung dropped one place to sixth place after growing at a modest rate of 3.8 per cent, and Busan, hit by a typhoon, moved down on the list by two places after traffic expanded at the respectable rate of 9.7 per cent.

Other ports recording gains were Dubai and Tokyo: each moved up two places in the table. There were two new entries — Tanjung Pelepas and Laem Chabang — which replaced Manila and Felixstowe. Among the ports moving down the list were Gioia Tauro, down three places, Bremerhaven and Long Beach, down two places, and New York, down one place. The remaining ports, namely Rotterdam, Los Angeles, Hamburg, Antwerp and Klang, maintained their respective ranks. These top 20 ports accounted for 48.0 per cent of the world container port traffic for 2002 (45.4 per cent in 2001).

Table 42

Container port traffic of 50 developing countries and territories in 2002, 2001 and 2000  
(TEUs)

Country or territory	TEUs 2002	TEUs 2001	TEUs 2000	% change 2002/2001	% change 2001/2000
Hong Kong (China)	19 140 000	17 900 000	18 100 000	6.9	-1.1
Singapore	16 800 000	15 520 000	17 040 000	8.2	-8.9
Republic of Korea	11 542 733	9 827 221	9 030 174	17.5	8.8
Malaysia	7 541 725	6 224 913	4 642 428	21.2	34.1
United Arab Emirates	5 872 244	5 081 964	5 055 801	15.6	0.5
Indonesia	4 539 884	3 901 761	3 797 948	16.4	2.7
Thailand	3 800 929	3 387 071	3 178 779	12.2	6.6
Philippines	3 270 796	3 090 952	3 031 548	5.8	2.0
India	3 242 989	2 764 757	2 450 656	17.3	12.8
Brazil	2 923 120	2 323 801	2 413 098	25.8	-3.7
Saudi Arabia	1 930 051	1 676 991	1 502 893	15.1	11.6
Sri Lanka	1 764 717	1 726 605	1 732 855	2.2	-0.4
Mexico	1 561 929	1 358 136	1 315 701	15.0	3.2
Oman	1 415 498	1 331 686	1 161 549	6.3	14.6
Malta	1 288 775	1 205 764	1 082 235	6.9	11.4
Panama	1 248 369	2 376 045	2 369 681	-47.5	0.3
Egypt	1 233 133	1 708 990	1 625 601	-27.8	5.1
Chile	1 147 172	1 080 545	1 253 131	6.2	-13.8
Venezuela	1 078 000	924 119	674 558	16.7	37.0
Jamaica	1 065 000	983 400	765 977	8.3	28.4
Pakistan	965 610	878 892	159 919	9.9	449.6
Bahamas	860 000	570 000	572 224	50.9	-0.4
Iran, Islamic Republic of	808 821	618 195	415 382	30.8	48.8
Colombia	603 070	577 041	791 588	4.5	-27.1
Côte d'Ivoire	579 055	543 846	434 422	6.5	25.2
Argentina	500 171	663 811	1 144 834	-24.7	-42.0
Ecuador	462 509	414 355	414 104	11.6	0.1
Dominican Republic	430 561	487 827	566 479	-11.7	-13.9
Yemen	388 436	377 367	248 177	2.9	52.1
Trinidad and Tobago	385 233	352 758	282 487	9.2	24.9
Morocco	375 837	346 724	328 808	8.4	5.4
Guatemala	360 161	322 136	495 809	11.8	-35.0
Algeria	338 152	311 111	267 530	8.7	16.3
Lebanon	298 876	299 400	n.a.	-0.2	n.a.
Uruguay	292 962	301 641	287 298	-2.9	5.0
Jordan	277 307	241 037	n.a.	15.0	n.a.
Ghana	270 878	221 468	n.a.	22.3	n.a.
Syrian Arab Republic	257 586	222 698	n.a.	15.7	n.a.
Cyprus	233 400	235 100	257 020	-0.7	-8.5
Cuba	214 760	258 264	185 055	-16.8	39.6

Table 42 (continued)

Country or territory	TEUs 2002	TEUs 2001	TEUs 2000	% change 2002/2001	% change 2001/2000
<b>Mauritius</b>	198 177	161 574	157 420	22.7	2.6
<b>Djibouti</b>	178 405	147 908	157 990	20.6	-6.4
<b>Senegal</b>	164 341	136 076	133 325	20.8	2.1
<b>Reunion</b>	162 636	159 006	154 394	2.3	3.0
<b>United Republic of Tanzania</b>	149 223	135 632	133 660	10.0	1.5
<b>Martinique</b>	146 771	140 034	140 062	4.8	0.0
<b>Cameroon</b>	146 737	139 587	n.a.	5.1	n.a.
<b>Guam</b>	140 990	140 158	132 689	0.6	5.6
<b>Sudan</b>	126 236	120 701	94 182	4.6	28.2
<b>Slovenia</b>	114 863	93 187	85 742	23.3	8.7
<b>Total</b>	102 838 828	94 012 255	90 265 213	9.4	4.2
<b>Other reported <sup>a</sup></b>	738 828	722 544	356 078	2.3	102.9
<b>Total reported <sup>b</sup></b>	103 577 656	94 734 799	90 621 291	9.3	4.5
<b>World total</b>	266 337 242	243 814 545	231 689 448	9.2	5.2

Source: Derived from information contained in *Containerisation International Yearbook 2003* and from information obtained by the UNCTAD secretariat directly from terminal operators and port authorities.

<sup>a</sup> Comprises developing countries and territories where less than 95,000 TEUs per year were reported or where a substantial lack of data was noted.

<sup>b</sup> Certain ports did not respond to the background survey. While they were not among the largest ports, total omissions may be estimated at 5 to 10 per cent.



Table 43

**Top 20 container terminals and their throughput, 2003-2001***(millions of TEUs and percentage change)*

Port	TEUs 2003	TEUs 2002	TEUs 2001	2003/2002	2002/2001
<b>Hong Kong (China)</b>	20.82	19.14	17.80	8.78	7.53
<b>Singapore</b>	18.41	16.94	15.57	8.68	8.80
<b>Shanghai</b>	11.37	8.81	6.33	29.06	39.18
<b>Shenzhen</b>	10.7	7.61	5.08	40.60	49.80
<b>Busan</b>	10.37	9.45	8.07	9.74	17.10
<b>Kaoshiung</b>	8.81	8.49	7.54	3.77	12.60
<b>Rotterdam</b>	7.1	6.52	6.10	8.90	6.89
<b>Los Angeles</b>	6.61	6.11	5.18	8.18	17.95
<b>Hamburg</b>	6.14	5.37	4.69	14.34	14.50
<b>Antwerp</b>	5.44	4.78	4.22	13.81	13.27
<b>Dubai</b>	5.15	4.19	3.50	22.91	19.71
<b>Port Klang</b>	4.8	4.50	3.76	6.67	19.68
<b>Long Beach</b>	4.66	4.52	4.46	3.10	1.35
<b>Qingdao</b>	4.24	3.41	2.64	24.34	29.17
<b>New York</b>	4.04	3.75	3.32	7.73	12.95
<b>Tanjung Pelepas</b>	3.5	2.67	2.05	31.09	30.24
<b>Tokyo</b>	3.28	2.71	2.77	21.03	-2.17
<b>Bremenhaven</b>	3.19	3.03	2.92	5.28	3.77
<b>Laem Chabang</b>	3.18	2.66	2.34	19.55	13.68
<b>Gioia Tauro</b>	3.06	3.28	2.49	-6.71	31.73
<b>Total top 20</b>	144.87	127.94	110.83	13.23	15.44

Sources: *Container Intelligence Monthly*, Clarkson Research (London), March 2004.

## B. IMPROVING PORT PERFORMANCE

The improved performance of container terminals was said to have contributed to attracting some direct calls at Indian ports and thus decreasing the reliance of India's international trade on feeder services. In the ports of Jawaharlal Nehru, Tuticorin and Chennai the number of container movements per hour at quay increased from 14, before privatization, to more than 25 in late 2002. Improved performance was reported for Salalah (Oman), where gross crane productivity averaged 30.4 moves per hour with peaks of 33 moves per hour. Annual throughput for this port in 2003 increased by 56 per cent to 1.9 million TEUs and reflected callings by carriers other than Maersk, including COSCO, MOL and Norasia. Increased annual container throughput was also good in Djibouti, up by 70 per cent in two years to 0.2 million TEUs. Increased performance resulted from the deployment of additional handling equipment (rubber-tyred yard gantry cranes, reach stackers, etc.) and implementation of computerized yard planning system and integrated billing procedures. In 2003, this port moved a total of 4.3 million tons for the Horn of Africa and continued to be the main gateway for Ethiopian international trade.

During 2003 performance in some ports was hampered for several reasons and affected some or all users. In May 2003, up to five Evergreen containerships were stranded in Port Elizabeth (New York, United States) owing to a strike related to the right to unionize for some of the Evergreen staff in ports of the United States. In November, a strike paralysed Israeli ports for 10 days as labour opposed government plans to modify current legislation. This resulted in about 2,000 containers being discharged in Port Said (Egypt) and a \$450 compensation transshipment fee paid by the Government. Commercial sources deemed the fee to be insufficient and work resumed after a Court banned the strike. In the same month there were strikes in the port of Gijon (Spain) due to a dispute over workers' manning levels. Early in 2004, a collision between a containership and a offshore support vessel closed the lower Mississippi affecting the port of New Orleans — about 40 vessels were reported to be idled on either side of the collision site. A similar number of vessels were left on the roads off Santos (Brazil) owing to a strike by health inspectors.

In South Africa the influx of car-parts for the new manufacturing facilities was partly responsible for the increase in containerized imports through Durban during 2003 and highlighted shortages of handling equipment as

well as investment delays. In May, average vessel waiting times of 37 hours triggered a \$100 congestion surcharge per TEU, which container carriers promised to lift after the average vessel delay was reduced below 16 hours. The port authority announced remedial measures — a \$85 million investment in quay gantry cranes, agreement to guarantee berthing slots for some carriers and approval for a second container terminal in Durban. There was an underlying concern for the latter due to the role to be assigned to the private sector in operating it. Moreover, a global terminal operator proposed to develop a container terminal in Coega, the new industrial bulk port under construction 30 km east of Port Elizabeth, and car manufacturers drew up plans to use Maputo (Mozambique) as an alternative import outlet.

From mid-2003, congestion surcharges were also applied by the Europe West Africa Trade Agreement to a number of ports in West Africa — Luanda (Angola), Tema (Ghana), Port Harcourt (Nigeria), Cotonou (Benin), and Malabo (Equatorial Guinea). In March 2004, sea carriers imposed a \$70 per TEU vessel delay surcharge on Mombasa because of poor productivity. This resulted from the combined effect of damaged equipment (a power surge was alleged to have affected quay gantry cranes and computer equipment a few months before) and protracted procurement of new cargo-handling equipment. Elsewhere, relief and commercial operations resumed in Umm Qasr (Iraq) by mid-2003 after the military authorities transferred the port's operations to civilian management. A few months later capital expenditures for rehabilitating this port were estimated at \$50 million.

The importance of land-based transport for smooth door-to-door operations was highlighted by the challenges facing a number of ports in the United States. During the year, Savannah and New Orleans were affected by truckers' strikes. Truckers move containers from sea terminals to off-dock warehouses and rail yards on a per trip basis, and were seeking higher pay to compensate for rising fuel costs and excessive delays at sea terminals. Pick-up times of up to two hours inside the terminals were common and added to time spent in queuing outside the terminals; they resulted in a reduced number of trips per day. In California, vehicle appointment schemes put in place by environmental regulation provided some relief to truckers because terminals could be fined \$250 for each truck waiting outside the terminal for more than 30 minutes. A vehicle appointment scheme was put into place in Southampton in November and was under consideration in Felixstowe in the following months.

Increasing the market share of rail transport for freight passing through ports was sometime laborious. The 30-km-long Alameda Corridor connecting the ports of Los Angeles and Long Beach to the transcontinental interchange railroad yards managed to maintain the traditional 36 per cent market share for containers moving through these ports basically by handling long-distance freight moving through them. Plans for achieving a 50 per cent market share would be contingent on fresh investment targeted to attracting short-distance freight currently based in distribution centres located 90 km to the east of these ports and which rely solely on truckers for their movements.

Increasing demand in the Far East was responsible for the commissioning of port facilities and plans for developing new ones. In July 2003, the first berth of the \$1 billion development of Terminal Nine opened for business in Hong Kong (China), with the other five berths being scheduled for commissioning until 2005. The berth can accommodate 8,000-TEU-plus vessels in its 15.5-metre draft and will be equipped with four quay gantry cranes able to work 17 boxes across. Three major container operators (HPH, Modern Terminals and Asian Terminals) were to operate in this terminal, which will add 4 million TEU capacity to Hong Kong (China). Announcement of details for developing a Terminal Ten on Lantau Island was scheduled for 2004. Port development also proceeded apace in mainland China. Modern Terminals announced plans to invest up to \$1 billion until the end of this decade and unveiled plans for the first phase of the \$854 million new container port of Dachan, located 60 km west of Hong Kong (China), where it owns a 65 per cent share. China Merchants, another port operator, invested \$132 million in adding three more berths in Shekou, one of the large terminals in Shenzhen across the border from Hong Kong (China). Container carriers also participated in this investment drive. In mid-2003, P&O, Maersk and COSCO started the first phase of the Qingdao expansion estimated at \$172 million. When completed in the next six years the port will increase capacity from the current 1.3 to more than 6 million TEUs. Meanwhile, late in the year Shanghai asked for authorization to change the status of its large Yangshan deepwater development to that of a free port.

Reconstruction needs also required investment. In September 2003 Pusan was hit by typhoon Maemi, which caused losses totaling \$58 million (12 of the 52 quay gantry cranes collapsed or were derailed). All parties concerned worked around the clock to resume operations. The port

also brought forward by five years, to 2007, the construction deadline for upgrading facilities to facilitate transshipment operations, which accounted for about 40 per cent of the 9.1 million TEU throughput in 2003. During the year three global carriers — MSC, Zim and China Shipping — relocated their operations to Chinese ports, with a consequent estimated revenue loss of \$33 million. In late 2003, the Democratic People's Republic of Korea was reported to be constructing its first container terminal on the Daedong River.

Several transshipment investments were announced or were under way during the year. Naha Port (Okinawa, Japan) invited a tender late in the year to serve mainland China and cut mainline vessel schedules. PSA reduced its exposure in Hibiki (Japan) to a one-third share, with this port seeking to have a triangular network linking Dalian (China) and Inchon (Republic of Korea). Similar schemes were advancing in the Caribbean: construction proceeded apace for Caucedo port in the Dominican Republic, and Port of America, located near Ponce (Puerto Rico), was reported to be seeking funding.

Investments were also announced in European ports. Dunkirk boosted its container handling capabilities by adding two container berths with a draft of 16.5 metres, a new dry port, cold storage and about 30 hectares of land for the industrial park. Plans for the \$350 million Jade container port, close to Bremerhaven, were under way, with reported private finance to come from Russian and Baltic interests together with Eurogate, a German-based global operator. The privatization of the Baltic Container Terminal in Gdynia (Poland) fetched \$42 million in May 2003 and a further \$80 million was to be invested in the next five years by the successful bidder, ICTSI, to raise capacity to 0.9 million TEUs. In Southern Europe, the \$819 million development of Punta Langosteira in Spain was promoted as a refuge and industrial bulk port for revitalizing the north-west corner of the country. Algeciras started the \$500 million extension of Isla Verde Exterior, which will add 2.3 km of berth and 112 ha of land, and announced the lease of plots of water for maintaining the competitiveness of bunkering activities. Across the Strait, the Government of Morocco started the \$264 million development of the port of Tangier, which will include areas for industrial and logistics activities.

Other measures were also called for to remain competitive. PSA (Singapore) announced a cut in salaries of between 8 and 14 per cent for senior executives, between 4 and 7 per cent for managers and less than

4 per cent for non-executive staff, with the aim of remaining competitive against neighbouring low-cost competitors. Also, a joint venture with COSCO was announced whereby two dedicated berths with an annual capacity of 1 million TEUs will be operated at Singapore.

In Port Klang (Malaysia) bundled tariffs for marine services (pilotage and towage) were raised by 42 per cent; this was opposed by ship agencies, which had suggested spreading the increase over a number of years. In Jakarta (Indonesia), the Commission for Supervision of Business was reported to be cancelling the clause, which allowed near monopoly powers to HPH, the operator of the two largest container terminals in Tanjung Priok, in the wake of a six-month investigation that determined that the company was controlling 75 per cent of the market. The Chamber of Commerce had complained of high handling tariffs, about \$93 per 20' box, and poor service quality.

Elsewhere, port fees were reduced and free-storage periods extended to promote Turkish ports as a viable alternative for relief and commercial cargo to Iraq. Ukraine ended its two-tier ship tariff systems that discriminated against vessels flying open-registry flags, which paid up to 70 per cent more. In Brazil ship agents sought an injunction to stop the Government imposing an import tax on transhipped containers.

### C. INSTITUTIONAL CHANGE

During the year the role of global container terminal operators in ports was highlighted. There were 325 port investment opportunities reported for private investors, of which about 25 per cent were privatization projects. The modalities of these investment opportunities varied from region to region. In Northern Europe acquisition of current facilities made up 44 per cent of the opportunities, while in South Asia up to 79 per cent were greenfield, build-operate-transfer (BOT) and joint partnership opportunities.

Moreover, concentration was a feature of terminal operators as the top five global container terminal operators (HPH, PSA, APM Terminals, P&O Ports and Eurogate) made up 33.6 per cent of the total 160 million TEUs handled by all operators in 2002. The corresponding shares for the top 10 and top 20 were 46.1 and 56.6 per cent respectively. In June 2003, P&O Ports and CMA CGM, a French sea carrier, completed negotiations to take 80 per cent of Egis, the largest

French terminal operator. HPH and the terminal operator subsidiary of COSCO were reported to be teaming up to bid in the Bayonne Terminal (New Jersey, United States), conveniently located close to the New York and New Jersey conurbation. Elsewhere, a consortium of seven companies took control of Ghana's two main ports — Tema and Takoradi — and pledged to invest up to \$200 million for upgrading current facilities.

The involvement of the private sector continued in ports in spite of occasional opposition. In Arica (Chile) opposition to a government decision to concession the port as a single unit sparked violence in August. The local population favoured splitting the port into two or more units to foster competition, and this was also the view of small terminal operators. Late in 2003, the Nigerian Government started pre-qualification of bidders for the privatization process, which would reportedly make redundant up to two thirds of the 12,000-strong workforce.

The relationship between private sector terminal operators and public sector port authorities was not always smooth. In the ports of Paranagua and Rio Grande (Brazil), port authorities were reported to be boosting container handling capability in the public berths to avoid monopolies being secured by current private sector operators of container terminals. In Yemen, PSA sold back to the Government its 60 per cent stake in Aden Container Terminal. In India two global container operators were precluded from bidding for the container expansion of Jawaharlal Nehru Port. The Hong Kong-based HPH was disqualified on internal security grounds, while P&O Ports, which currently operates the container terminal in the port, was banned on the grounds that it was undesirable to have a private monopoly in the port. HPH, however, continued to invest elsewhere — in Panama, after converting a fixed concession fee into a variable one per box, and in Mexico, where it took control of Lazaro Cardenas, a port on the Pacific Coast, in August 2003. P&O Ports acquired container facilities in Mundra (Gujarat, India) from the private port developer Adani for \$195 million.

In some countries port authorities gained recognition while in others measures were taken to improve their efficiency and competitiveness. In Peru a law established a national port authority in control of all ports of the country. In Brazil plans to transfer control of the largest port, Santos, from the Federal to the State Government

stalled during most of the year. In India work proceeded on developing a comprehensive land policy for all 12 major ports. In Spain a law on the financial regime for ports clarified the legal nature of port tariffs. In France the longstanding issue of the status of crane drivers was solved by mid-2003: their contracts with the port authority were suspended while staff were on transfer to the terminal operator and reactivated whenever the latter was unable to keep the staff on the payroll. An updated environmental code of practice following the one published in 1994 was issued for the European Sea Port Organization in September 2003.

Individual port authorities were also given recognition and sought measures to remain competitive. A new port authority took over in Pusan (Republic of Korea) in early 2004. Constantza (Romania) was granted free-port status whereby ships would be exempted from Customs controls before starting unloading, and import duties for cargoes would be paid when goods actually exit port premises and enter the country. Antwerp threatened legal action in international courts if negotiations with the Netherlands for dredging the Scheldt were not conducted in time. The port authorities of Osaka and Kobe (Japan) agreed to become a single authority so that vessels would have to file entrance applications and pay entrance dues only once. This heralded the move into the super-hub strategy whereby Japanese ports would integrate into four larger entities such as Tokyo and Yokohama, Nagoya, Kobe and Osaka, and Kitakyushu and Hakata.

The issue of a national port policy was highlighted by four applications for port development presented in the United Kingdom. ABP, the port authority for more than 20 British ports, had proposed new facilities at Dibden Bay, close to Southampton, and this generated opposition from environmental groups and nearby residents during the year as the inquiry progressed. P&O Ports proposed the London Gateway Shell Haven development in the Thames estuary and, finally, HPH proposed to expand capacity in Felixstowe and build a new facility at Bathside Bay, in Harwich. Late in the year a report by the transport committee of the House of Commons agreed with the need to have additional port capacity in the country and called for an integrated approach instead of relying solely on market forces. The Government, however, rejected calls for a national port plan, stating that it would be unacceptable to delay decisions on applications currently under consideration, and this was welcomed by the industry. Early in 2004, timing for the decision became

controversial as HPH requested simultaneous decision-making and in late April the proposed Dibden Bay proposal was rejected on environmental grounds.

The controversial directive of the European Commission on port services was defeated in November 2003 in the European Parliament. It had caused strikes in ports of the European Union during most of the year, notably because of labour opposition to self-handling. Afterwards, the Commission started to look at competition law as a way to regulate ports and early in 2004 suggested that a proposed draft directive designed to eliminate obstacles to the freedom of establishment for service providers and the free movement of services between member States could serve this purpose.

#### D. SECURITY MEASURES IN PORTS

During the year many ports started to take steps to implement the measures required by the International Ship and Port Facility Security Code (ISPS Code), which is set to enter into force by July 2004. This involved conducting security audits to determine the measures to be taken and their cost, and identifying the sources for funding. Also, major world ports implemented measures prescribed by the United States' security initiatives. Agreements were worked out for the latter, such as the one reached, at the end of 2003, between the European Commission and the United States concerning the procedures to be applied in connection with the Container Security Initiative (CSI). This agreement followed the acceptance by some European ports that US Customs officers inspect containers bound to the United States. The agreement sought to strike a balance between the rights of port operators on both sides of the Atlantic as well as to prevent differential treatment in European ports that might cause trade diversion within the European Union. A working group was created to develop all the technical elements of the agreement.

Moreover, the European Commission published a security proposal aimed at strengthening security in ports beyond the ship-port interface and embracing port premises. The proposal was intended to complement current maritime security measures and avoid fragmentation.

The progress of the security audits and the implementation of specific measures were uneven in the 1,500 ports estimated to be taking part in this task worldwide. A number of ports outsourced these audits to specialized companies and the recommendations included

procurement of specialized equipment as well as training for key personnel. In ports of the United Kingdom security inspectors from the Department of Transport started to carry out the risk assessments mandated by the ISPS Code, but it appeared towards the end of the year that they would be hard pressed to comply with the deadline for the 60 priority ports selected. Some small ports in the country, visited by one-day cruises, doubted the feasibility of costly measures, such as fencing, recommended by experts. Major world ports indicated that they were confident they would have the measures required by the ISPS Code in place by the agreed deadline. Rotterdam reported that up to 134 terminal security plans would have to be prepared, and offered to share expertise with ports in developing countries in this endeavour. Singapore and Hong Kong (China) stated that auditing of the facilities were on track. In March 2004, the Japanese authorities gave assurances that 110 ports would comply with the ISPS Code deadline. In other countries priority was given to ports engaged in international trade: only five of the Indonesian ports were taking steps to comply with the ISPS Code. In some countries the security task was deemed to be of national importance. In Mauritius the commitment shown by authorities and commercial parties in Port Louis was backed by the Prime Minister.

The cost of implementing security measures could be significant for ports. It was estimated that terminal operators in the United States might have to disburse about \$936 million. For the fiscal year 2003–2004 the port of Los Angeles allocated \$17.7 million for safety and security but recognized that that amount fell short of what federal security initiatives required. The joint management for the ports of Copenhagen and Malmö estimated an initial cost of \$1 million and annual disbursements of \$0.4 million. Procurement procedures were started: Puertos de Estado, the port authority for Spanish ports, issued a tender for procuring scanners for several ports, and the port of Valencia reported that a new depot was under construction to install the necessary equipment.

Container traffic was one of the areas addressed by the security audits and featured prominently in the recommendations. This seemed to be justified in

March 2004 by the terrorist attack in the port of Ashdod (Israel), which left 10 dead and 20 wounded, as the perpetrators were said to have entered the heavily guarded port hidden in a container.

There were questions relating to the equipment recommended for implementing the security measures. It was reported that gamma ray scanners did not provide enough penetration to assess suspect items within a container while X-ray would detect a 1-mm-thick wire and would therefore have a superior performance. Also, questions were raised in relation to the use of fixed or mobile equipment as close inspection would need a controlled environment. Some equipment was said to provide advantages in passing through US Customs — containers equipped with metal seals and sensors to detect tampering were supposed to allow fast-track passage. Moreover, new equipment was introduced in ports: in March 2004 radiation detection monitors were installed in the port of New York heralding the deployment of similar units in other ports of the United States and major ports in other parts of the world, Rotterdam having stated it would also install such a monitor.

The issue of recovering security expenses emerged in early 2004 in several ports. HPH, the largest global container operator, sought to impose a security charge on containers passing through Felixstowe (United Kingdom) for additional security measures mandated by the ISPS Code. The surcharge was to be effective from July 2004 and would reach \$9.20 per export container and \$17.50 per import box. Both cargo-owners and sea-carriers voiced opposition to the surcharge. In Rotterdam, the Dutch Association of Ship Brokers and Agents also stated carriers' opposition to the surcharge. Two Malaysian port authorities, Port Klang and Tanjung Pelepas, stated that no security charge was to be imposed on container trade, but some weeks later two terminal operators, Northport and Westport, in Port Klang started to charge \$34 per TEU as "extra movement charges" for boxes selected for scanning under the Container Security Initiative. In Charleston (United States), after inconclusive negotiations between the port authority, carriers and terminal operators, the port authority stated that it would impose a surcharge of \$1 per foot of length for every vessel calling at the port.



## Chapter 6

# TRADE AND TRANSPORT EFFICIENCY

*This chapter provides information on latest developments in the fields of transport, trade facilitation and multimodal transport and information on the status of the main maritime Conventions.*

### A. EFFICIENT TRANSPORT AND TRADE FACILITATION

The Expert Meeting on the Development of Multimodal Transport and Logistics Services was convened by UNCTAD and held in Geneva from 24 to 26 September 2003. Its objective was to help Governments and the trade and transport industry examine policy alternatives and actions in the wake of new developments so as to promote the development of multimodal transport and logistics services.

The wide range of issues discussed by experts was grouped into the following six topics: transport services and developments; infrastructure and technology; security and safety; facilitation; the legal framework; and finally market structure and market access.

Experts noted that a reduction in transport costs would give considerable impetus to the development process of developing countries, and some examples were provided: in one country each additional day of ship waiting time in its ports cost shippers \$1 million; inefficient port and Customs operations in Latin America were estimated to cost \$4 billion. In this context the introduction of multimodal transport and logistics services would increase the competitiveness of traders from developing countries. For instance, reducing transit times would represent savings of billions of dollars in reduced interest rate payments. It would also trigger a virtuous cycle by encouraging trade, which in turn would foster additional multimodal transport and logistics services.

The experts also recognised that the availability of transport infrastructure and information and

communication technologies is a precondition for multimodal transport and logistics services. It was apparent that national long-term policies for infrastructure development and their integration into regional initiatives were essential for reaping benefits from increased trade due to globalization. Also, experts reviewed the impact of security measures proposed within the framework of the SOLAS Convention (ISPS Code) and those that stem from US initiatives such as CSI (Container Security Initiative) and C-TPAT (Customs Trade Partnership Against Terrorism) in the operation of multimodal and logistics operators.

Furthermore, experts agreed that the existence of an appropriate legal framework is paramount for multimodal transport and its development. In many countries existing laws and regulations were outdated and in need of modernization. In others there was no specific legal framework for multimodal operators. Some countries relied on regional or subregional solutions to overcome these limitations, and different sets of rules, for example, in Latin America, have started to emerge with a consequent uncertainty.

On the issue of market structure and market access the experts recognised the difficulties of Governments in striking a fair balance between the interests of traders regarding the provision and availability of cost-effective and adequate multimodal transport services and those of local carriers in need of support for the provision of competitive services. The bottom line was, however, to maintain shippers' freedom of choice. There were calls to the international community to help countries in building competitive multimodal transport services through exchange of know-how, increasing managerial capability,



and promotion of the use of information and communication technologies.

It was recognised that operational improvements in the private sector need to be matched by corresponding improvements in public administration and regulatory bodies. Experts pointed out that competition in the transport services should be encouraged for achieving cost reduction and promoting development of logistics providers. In this context market access, which is being negotiated in WTO as part of GATS, was deemed an important issue that could stimulate transport service providers in developing countries and their evolution into suppliers of logistics services.

The agreed recommendations of the meeting called on UNCTAD to review and analyse developments relative to efficient transport and trade facilitation, including multimodal transport and logistics services; to provide guidance and assistance to developing countries on the use of information and communication technologies for international transport services, in particular through its programmes ASYCUDA (Automated System for Customs Data) and ACIS (Advance Cargo Information System); to review the impact of security initiatives on international trade and transport; to cooperate with other intergovernmental organizations in their work on developing international legal instruments affecting international transport and trade; and to continue the analysis and assistance to countries in the field of trade facilitation, in particular for the implementation of the Almaty Plan of Action.

An International Ministerial Conference of Landlocked and Transit Developing Countries and Donor Countries and International Financial and Development Institutions on Transit Transport Cooperation was convened by the United Nations to discuss the specific problems facing landlocked developing countries, including issues related to developing transit agreements to improve their connectivity with trading partners. The conference was held in Almaty (Kazakhstan) from 28 to 29 August 2003. It reviewed the current situation of transit transport systems, including of the Global Framework for Transit Transport Cooperation of 1995. The special needs of landlocked developing countries were also addressed, and this led to a formulation of policy measures and a programme of action, known as the Almaty Programme of Action (A/CONF.202/3 Annex I), which set out a new global framework for action to develop efficient transit transport systems in landlocked and transit developing countries that accommodate the interests of both

landlocked and transit developing countries. The characteristics of such systems would include secure access to and from the sea by all means of transport according to applicable rules of international law, reduced costs and improved services so as to increase the competitiveness of exports from the region, reduced import costs, reduced delays and uncertainties in trade routes, adequate national networks, a low rate of loss, damage and deterioration en route, an opportunity for export expansion, and lastly, improved safety of road transport and security of people along the corridors.

## **B. LEGAL FRAMEWORK FOR INTERNATIONAL TRANSPORT**

### **1. The use of transport documents in international trade**

The negotiable bill of lading has traditionally played a key role in international trade, as it fulfils a number of functions facilitating trading in an international environment. It operates as a receipt providing evidence that goods conforming to the contract have been shipped as agreed and are in the physical possession of the carrier for delivery to the consignee at destination. The bill of lading also contains or evidences the terms of contract with the carrier. Most importantly, however, it operates as a transferable document of title, and it is this aspect that sets the document apart from non-negotiable seawaybills. Thus, while goods are in the physical possession of a carrier during transit, a seller is able to pass possession and property in the goods to a subsequent buyer simply by passing on the negotiable document of title.<sup>4</sup> By the same token, the document can be pledged to a bank and thus may be used as security to raise finance.

However, as the document needs to be physically transferred to the final consignee, possibly along a chain of buyers and banks, a number of problems may be associated with the use of negotiable bills of lading. These include high administrative costs related to the issue, processing and transfer of paper documentation and additional costs due to delayed arrival of the document at the port of discharge, in particular where travel times are fast, for example in short-sea shipping. While in practice, a carrier may frequently agree to release the goods against a letter of indemnity, this may seriously compromise the position of an unpaid seller or bank and may expose the carrier to a claim for misdelivery.<sup>5</sup> The successful development of an electronic alternative to the negotiable bill of lading would potentially avoid these

problems to a large extent. At the same time, any efforts in this direction are made more difficult by the need for (a) secure “electronic replication” of the unique document of title function and (b) full legal equivalence of any electronic alternatives.

In order to assess the extent to which negotiable bills of lading remain necessary for modern-day international trade and the extent to which they could be replaced by non-negotiable documents and electronic alternatives, the UNCTAD secretariat prepared a questionnaire, which was circulated widely to the industry. The questionnaire focused on (a) the current rate and pattern of use of different types of transport documents and factors relevant to the choice of document; (b) the degree to which electronic alternatives are used or their use is being contemplated; and (c) the main obstacles and advantages perceived to be associated with the use of electronic alternatives.

The survey confirms that negotiable rather than non-negotiable transport documents are still used in the majority of transactions, although in some trades and routes the use of seawaybills is common. It is interesting to note that while security concerns and/or requirements arising from finance arrangements appear to be a major factor in the choice of negotiable transport documents by commercial parties, in many cases these types of documents are also used as a matter of standard practice without there being a need for the use of a document of title. Moreover, legal or regulatory requirements imposed by some Governments currently necessitate the use of negotiable transport documents even in cases where the commercial parties may not require a document of title. These are clearly areas where review of the relevant commercial practices and governmental requirements would be appropriate. As regards the successful transition to an electronic environment, the results of the survey confirm that electronic alternatives are not yet in widespread use. In this context, it is worth noting that one of the major obstacles identified by respondents is the fact that the legal framework is not sufficiently clear or is otherwise inadequate.

The full results of the survey are presented, together with an overview of the relevant issues and some recent developments, in a report entitled “The use of transport documents in international trade” (UNCTAD/SDTE/TLB/2003/3).<sup>6</sup> Table 44 provides a breakdown of the responses received to the questionnaire.

## 2. Container security: Major initiatives and related international developments

Following the events of 11 September 2001, safety and security considerations have been at the forefront of international concerns and a variety of different unilateral and multilateral security measures regulations and legislative initiatives have been developed or are under consideration. Given that world trade is largely dependent on maritime transport, much of the focus has been directed to enhancing maritime transport security and addressing the particular challenges posed by containerized transport. The different sets of rules and measures, which have been implemented or are being considered internationally, need to be properly understood and their potential impacts on trade and transport need to be assessed.

Against this background, the UNCTAD secretariat has recently published a report,<sup>7</sup> which provides a first step in this direction. The report focuses on the main measures relevant to maritime container security, namely those initiated by the United States, including the Customs Trade Partnership Against Terrorism (C-TPAT), the Container Security Initiative (CSI) and the 24-Hour Advance Manifest Rule or the 24-Hour Rule.

Also considered in the report are related legislative developments in the United States<sup>8</sup> and elsewhere, for instance in Canada and the European Union, and some of the most important international developments at the IMO (International Maritime Organization), ILO (International Labour Organization), World Customs Organization (WCO) and OECD (Organisation for Economic Co-operation and Development).

In particular, the report presents in some detail the recent amendments to the 1974 Safety of Life at Sea Convention (SOLAS), including the new International Ship and Port Facility Security Code (ISPS Code).<sup>9</sup> This new security regime enters into force in July 2004 and its timely implementation is mandatory for all SOLAS member States, without any distinction as to their level of development. Owing to its central importance for all involved in maritime transport, the main requirements of the new regime imposed on Governments, vessel-owning and/or operating companies, as well as port facilities, are presented in overview and cost implications as well as other potential impacts are briefly discussed.

Table 44

**Breakdown of responses to UNCTAD questionnaire on transport documents in international trade**

*(N.B. Where indicated (\*), percentages relate to the overall number of answers (= 100%) received in respect of a question)*

1. Which transport documents do you mainly use/issue/require?	
- negotiable bill of lading	88%
- non-negotiable seawaybill	51%
- multimodal/combined transport document	53%
negotiable	37%
non-negotiable	27%
- other	20%
2. Please indicate the reasons why you may use/issue/require a negotiable document (more than one answer possible)	
- document is required as security under a letter of credit (or other finance requirement)	75%
- goods covered by the document are intended for sale during transit	25%
- document ensures application of rules of mandatory transport legislation	31%
- no particular reason / standard practice	20%
- requested / suggested by trading party	35%
- to be on the safe side	14%
- other	5%
3. * If possible, please provide an estimate of the percentage of negotiable transport documents, which are in fact negotiated to at least one other party (more than one answer possible)	% of answers
None	8%
1% – 19 %	27%
20% – 49 %	17%
50% – 79 %	16%
80% – 99 %	22%
100 %	10%
4. To what extent is, in your view, the use of negotiable bills of lading still required in modern international trade?	N/A
5. Please indicate in respect of which transactions (e.g. trades and/or routes) you regularly use/issue/require non-negotiable transport documents, such as seawaybills?	N/A
6. Which characteristics of these transactions make the use of non-negotiable transport documents desirable or advantageous?	N/A
7. If you do not use/issue/require non-negotiable transport documents, please indicate why, by marking one or more choices:	
- prohibited by law	15%
- other documents required by law	15%
- government requirements make use inappropriate	17%
- banking requirements make use inappropriate	31%
- non-negotiable character of document	14%
- inadequate security	28%
- lack of interest/knowledge	9%
- otherwise not suitable or advantageous	4%
8. Do you currently:	Yes No
(a) use any electronic alternative to traditional transport documents?	22% 79%
(b) consider the use of electronic alternatives to traditional transport documents or are you investing or taking other measures in this respect?	32% 68%

9. If your answer to question 8 is no, please indicate if you consider one or more of the following as obstacles:			
- infrastructure/market/trading partners not yet ready for use of electronic alternatives			51%
- legal framework is not clear enough or is not adequate			44%
- technology and/or switch to electronic environment is too costly			12%
- electronic equivalents to transport documents are not sufficiently secure			25%
- concerns about confidentiality			10%
- other			2%
10. Do you currently use any electronic means of communication in your trading relations? If so, to what extent and for which purpose?			N/A
11. What in your view are potentially the main benefits of substituting traditional paper transport documents with electronic equivalents?			
- speed			84%
- cost			68%
- competitiveness			43%
- avoiding liability arising from late arrival of documents			56%
- other			6%
12. * Do you believe that the transition to an electronic environment is easier for non-negotiable than for negotiable transport documents?	Yes	No	
	85%	15%	
13. * What are the features of a negotiable transport document? (under the law of your country and/or under the law typically chosen to govern the transaction)	% of answers		
- document is made out "to order"			18%
- document is made out to "named consignee or order"			22%
- document is made out to "bearer" or no party is indicated in consignee box			7%
- document contains a statement that goods will be delivered against surrender of the document			13%
- document is <u>not</u> marked "non-negotiable" or "not negotiable"			10%
- document <u>is</u> marked "negotiable"			14%
- title of the document			15%
- other			1%
14. * What are the effects of using a negotiable transport document? (under the law of your country and/or under the law typically chosen to govern the transaction)	% of answers		
- the right to demand delivery of the goods from the carrier may be transferred by endorsement and/or transfer of the document			22%
- the property of the goods may be transferred by endorsement and/or transfer of the document			19%
- only the lawful holder of the document is entitled to demand delivery of the goods from the carrier. The document provides security.			22%
- the goods may be sold in transit and endorsement and/or transfer of the document to another party has the same effect as physical delivery of the goods			16%
- the carrier is only entitled to release the goods against surrender of the document			20%
- other			1%
15. * Is there a clear difference between a seawaybill and a so-called "straight" bill of lading?	Yes	No	Don't know
(a) under the law of your country	51%	20%	29%
(b) under the law typically chosen to govern the transaction, if different	19%	19%	62%
16. * In your view, should there be a difference in the evidentiary effect of statements regarding the goods (e.g. weight, quantity, container contents) in a non-negotiable as opposed to a negotiable transport document?	Yes	No	
	7%	93%	

The report concludes by stating that:

“As has become evident, a variety of different unilateral and multilateral security measures, regulations and legislative initiatives have been developed or are under consideration. These impose diverse and wide-ranging requirements on all actors involved in international maritime transport.

While there is universal agreement on the need to enhance maritime transport security, it is clear that security requirements may have serious impacts. Concerns, particularly for developing countries, fall broadly into four categories, namely

Costs and expenses, both direct and indirect;

Delays and disruption of legitimate trade;

Difficulty in the implementation of diverse and detailed requirements, due to lack of technical infrastructure, expertise and know-how;

Competitive imbalances and marginalization resulting from the above...”

The report goes on to say that:

“There is general consensus on the need for enhancement of maritime and transport security. However, there is also consensus that measures should be internationally uniform<sup>10</sup> and be developed in international cooperation, that they should be based on risk-assessment, be proportionate and balanced and should disrupt legitimate trade as little as possible.<sup>11</sup> Finally, there is consensus that security measures should not serve as a pretext for protectionism and create unnecessary barriers to trade.<sup>12</sup> While some efforts have already been made to analyse security related costs and their impacts,<sup>13</sup> as well as possible international strategies,<sup>14</sup> much more work is required in this respect.

In view of the fact that transport security measures are going to form an integral part of the international trading environment, it is important that considerations such as the above are taken into account in any further discussions on the subject. In this context, particular attention may need to be paid to the position of developing countries.”

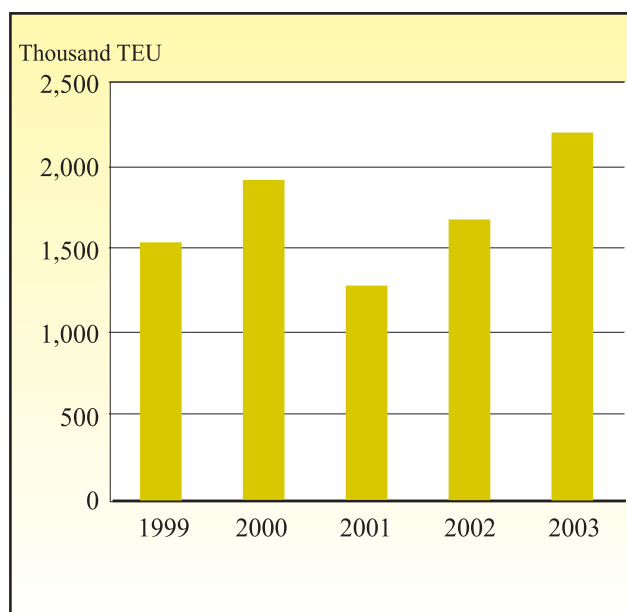
The full report is available on the UNCTAD website.<sup>15</sup>

## C. PRODUCTION AND LEASING OF CONTAINERS

For the past three years, production of new containers (see figure 9) has followed an upward trend in line with the expansion of the world fleet, and for the first time worldwide production was over the 2 million TEU mark in 2003. The standard freight container made up about 90 per cent of worldwide production, with the balance being non-standard boxes (see figure 10), mainly integral reefer containers whose production exceeded 120,000 TEUs in 2003. In that year production increased slightly for other categories of non-standard containers, such as non-ISO European and North American boxes and tank containers, and decreased for dry-freight special boxes.

Figure 9

### Annual production of containers

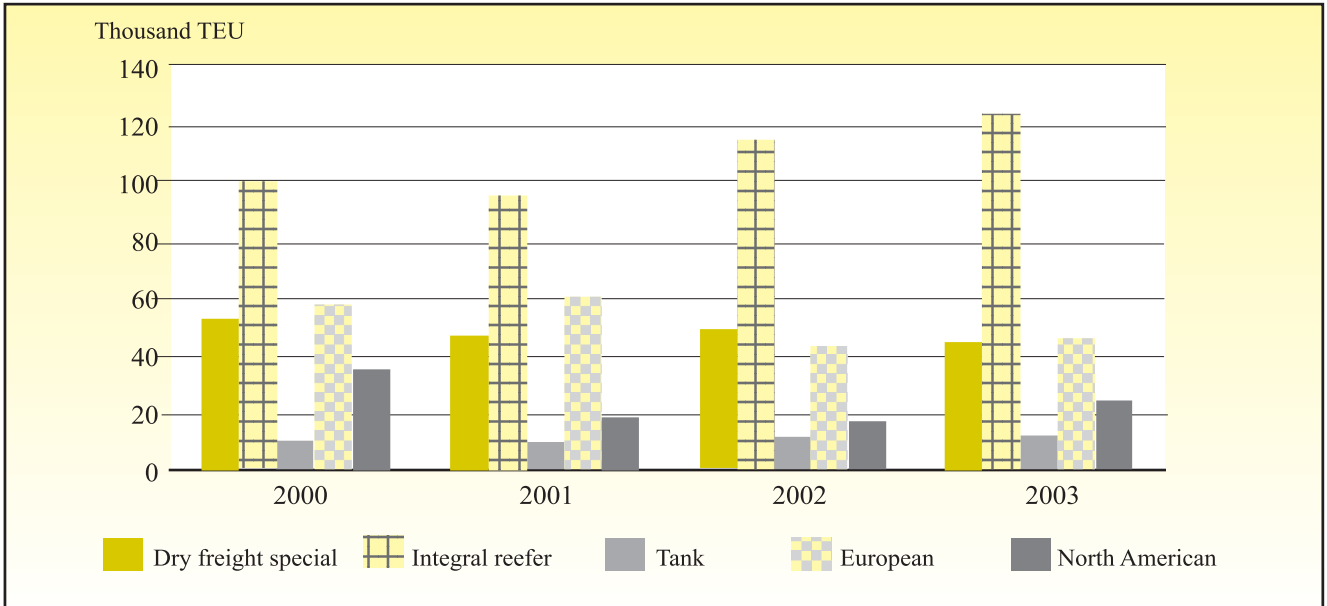


Source: *Containerisation International* and *World Cargo News*, 1999-2004 issues.

Container production continued to be concentrated in China, which accounted for slightly above 90 per cent of world production in 2003 (see figure 11). Existing factories resumed full production and several new factories were established to meet the growing demand. Lower labour costs and cheap materials and intermediate

Figure 10

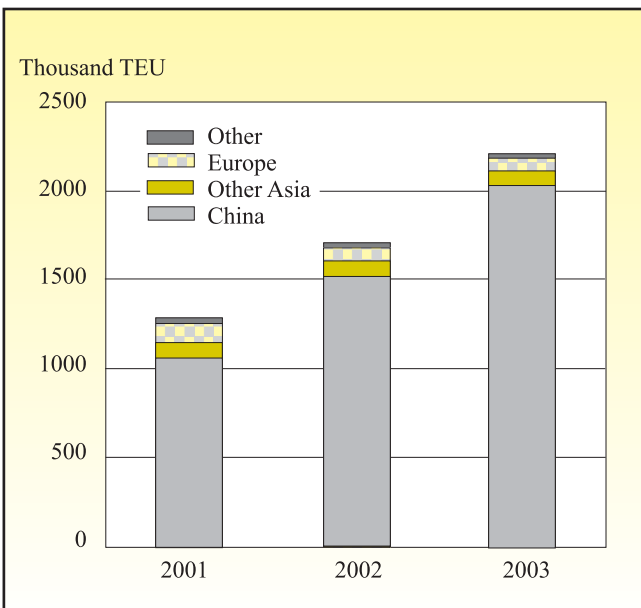
Output of non-standard boxes



Source: Containerisation International, 2000-2004 issues.

Figure 11

Output of new boxes by region



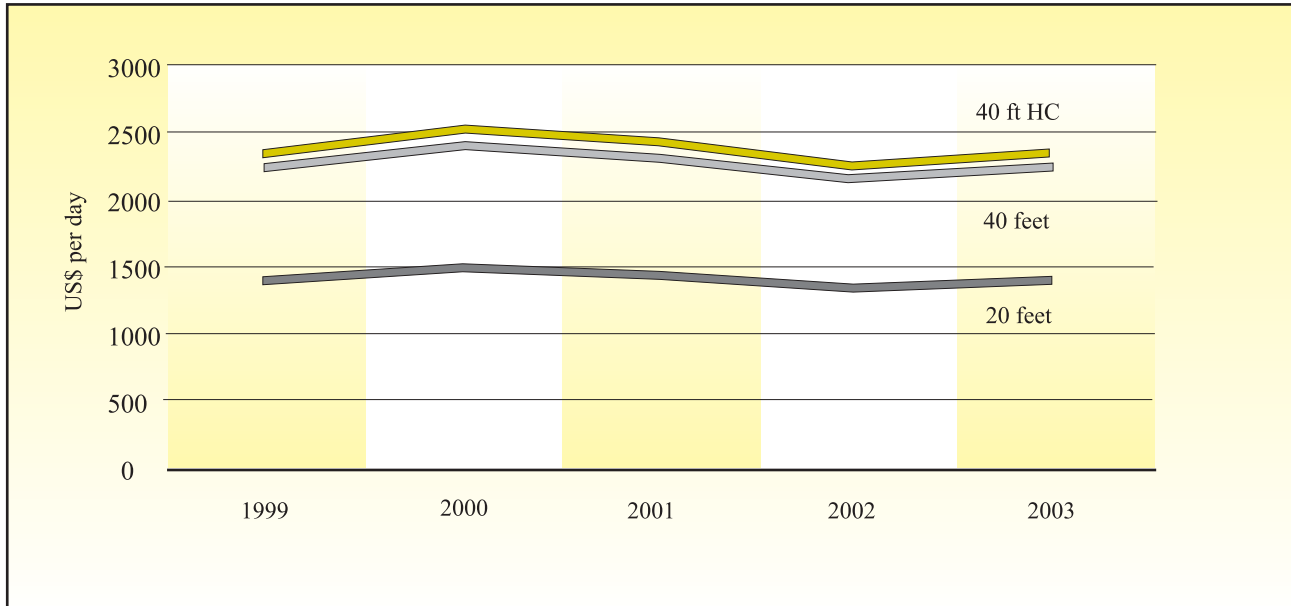
Source: Containerisation International, 2001-2004 issues.

inputs explain China’s dominance of this market. In 2003 euro appreciation and depreciation of the US dollar, to which the yuan is pegged, added to Chinese competitiveness.

Prices of new boxes have been decreasing steadily since 2000, reflecting production in low-cost areas and economies of scale reaped by larger factories. The upward turn of prices in 2003 (see figure 12) was attributed to the increased cost of raw materials to satisfy a buoyant market and reaction to suggestions for a more flexible exchange rate between the yuan and the US dollar. It also anticipated forthcoming changes in VAT on Chinese exports due to be introduced in 2004.

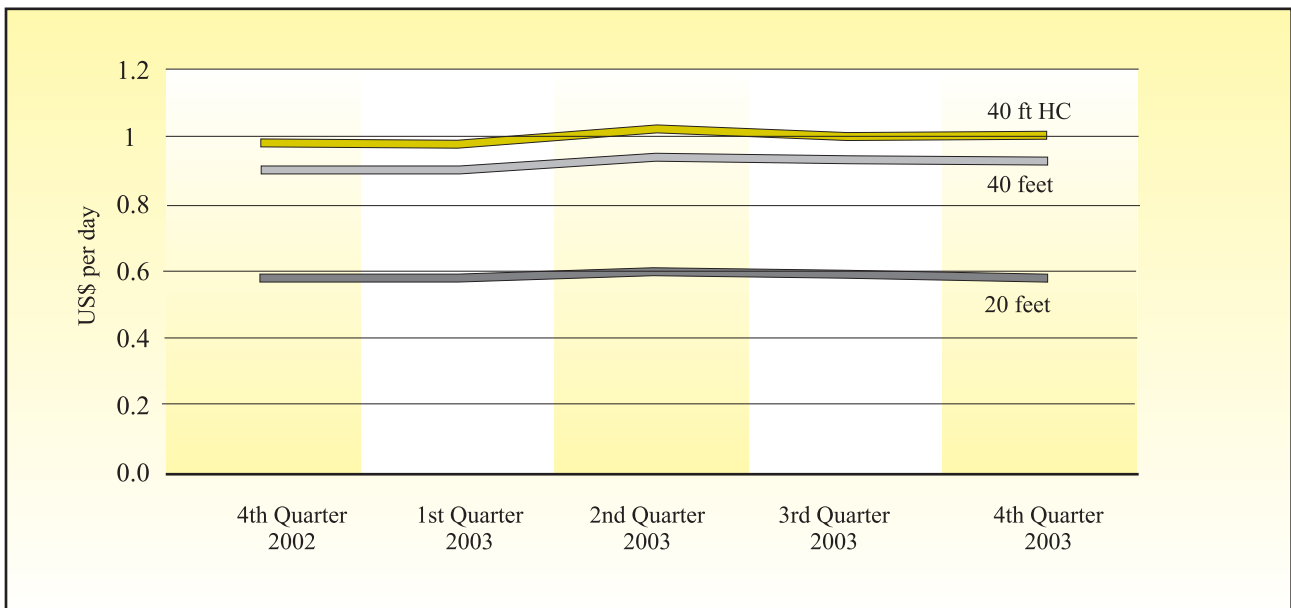
A share of container demand stems from lessors that supply sea carriers and other transport operators with appropriate containers. Average lease rates for 2003 (see figure 13) increased during the second and third quarters, falling back during the last quarter almost to the levels that prevailed early in the year. The upward trend for prices of new boxes towards the end of 2003 might herald an increase in rental strategies in 2004.

Figure 12  
Average price of new box



Source: Containerisation International, 1999-2004 issues.

Figure 13  
Quarterly average lease rates, 2003



Source: Containerisation International, 2002-2004 issues.

#### D. INLAND TRANSPORT DEVELOPMENTS

The forthcoming enlargement of the European Union in 2004 gave an impetus to sustainable inland transport. In July 2003 EU transport ministers reiterated the priority given to two long-standing alternatives to road freight transport — the promotion of short sea shipping and transport liberalization. The former was under way in several countries through measures such as tonnage tax and crew tax exemptions. The latter meant allowing international rail freight to be carried across borders of member States under the second railway liberalization package. This would build upon a previous agreement to carry international freight only through main cross-border routes. EU member States agreed that rail performance standards should be prepared by the industry and in the terms used for recognizing drivers' licences and working conditions across borders. However, in early 2004, the Council of member States and representatives of the European Parliament failed to reach agreement at the Conciliation Committee and the second railway liberalization package was therefore postponed.

Some railway companies took steps to become providers of logistics services. For instance, DB (Germany) had purchased Schenker, a large freight forwarder, and SNCF (France) started to give priority to international trains in its network. However, individual shippers were critical of expensive and rigid rail services. A survey conducted during the fourth quarter of 2003 with 1,500 senior logistics managers of retailers and manufacturers in Europe indicated that companies can make substantial improvements in selecting third-party logistics providers. In most cases selection was national and made from a few known companies whose performance was deemed reactive and lacking in innovation and IT capabilities. Nevertheless, some major freight forwarders and logistics service providers continued to prosper. The Swiss-based Kuehne & Nagel reported booming business for 2002 when it moved 1 million TEUs. This company and the

UK-based Exel are the world leaders, with revenues exceeding \$6 billion each.

The difficulties in reducing the share of road transport in EU member countries were illustrated by events in Germany and the United Kingdom. A well-publicized effort to introduce a computerized system for collecting tolls from trucks on German highways (LKW Maut charge) was delayed because of technical problems facing the concessionaire. The Sensitive Lorry Miles did not manage to remove much traffic from heavily congested UK motorways. In fact, there was recognition that new road investment was needed when the UK Government announced more than \$11 billion expenditure on motorway and truck road widening.

Road investment was also a priority in the Safe, Accountable, Flexible and Efficient Transportation Act 2003 (SAFETEA) proposed by the US Secretary of Transportation. In this draft legislation it is mandated that states spend 2 per cent of federal funds on intermodal connectors, which would be up to 90 per cent funded by federal monies. Additionally, partnerships with the private sector are also encouraged by this legislation.

#### E. STATUS OF CONVENTIONS

There are a number of international conventions affecting the commercial and technical activities of maritime transport. Box 3 gives the status of international maritime conventions adopted under the auspices of UNCTAD as of September 2004. Comprehensive and updated information about these and other relevant conventions is available on the United Nations website at [www.un.org/law](http://www.un.org/law). This site also provides links to, *inter alia*, the following organizations' websites, which contain information on the conventions adopted under the auspices of each organization — the International Maritime Organization (IMO) ([www.imo.org/home.html](http://www.imo.org/home.html)), the International Labour Organization ([www.ilo.org](http://www.ilo.org)) and the United Nations Commission on International Trade Law ([www.uncitral.org](http://www.uncitral.org)).



## Box 3

## Contracting States parties to selected conventions on maritime transport as of 30 September 2004

Title of Convention	Date of entry into force or conditions for entry into force	Contracting States
<b>United Nations Convention on a Code of Conduct for Liner Conferences, 1974</b>	Entered into force 6 October 1983	Algeria, Bangladesh, Barbados, Belgium, Benin, Bulgaria, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chile, China, Congo, Costa Rica, Côte d'Ivoire, Cuba, Czech Republic, Democratic Republic of the Congo, Denmark, Egypt, Ethiopia, Finland, France, Gabon, Gambia, Germany, Ghana, Guatemala, Guinea, Guyana, Honduras, India, Indonesia, Iraq, Italy, Jamaica, Jordan, Kenya, Kuwait, Lebanon, Madagascar, Malaysia, Mali, Mauritania, Mauritius, Mexico, Morocco, Mozambique, the Netherlands, Niger, Nigeria, Norway, Pakistan, Peru, the Philippines, Portugal, Qatar, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Senegal, Serbia and Montenegro, Sierra Leone, Slovakia, Somalia, Spain, Sri Lanka, Sudan, Sweden, Togo, Trinidad and Tobago, Tunisia, United Kingdom, United Republic of Tanzania, Uruguay, Venezuela, Zambia (78)
<b>United Nations Convention on the Carriage of Goods by Sea, 1978 (Hamburg Rules)</b>	Entered into force 1 November 1992	Austria, Barbados, Botswana, Burkina Faso, Burundi, Cameroon, Chile, Czech Republic, Egypt, Gambia, Georgia, Guinea, Hungary, Jordan, Kenya, Lebanon, Lesotho, Malawi, Morocco, Nigeria, Romania, Senegal, Sierra Leone, Syrian Arab Republic, Saint Vincent and the Grenadines, Tunisia, Uganda, United Republic of Tanzania, Zambia (29)
<b>International Convention on Maritime Liens and Mortgages, 1993</b>	Entered into force 5 September 2004	Ecuador, Estonia, Monaco, Nigeria, Russian Federation, Saint Vincent and the Grenadines, Spain, Syrian Arab Republic, Tunisia, Ukraine, Vanuatu (11)
<b>United Nations Convention on International Multimodal Transport of Goods, 1980</b>	Not yet in force – requires 30 contracting parties	Burundi, Chile, Georgia, Lebanon, Malawi, Mexico, Morocco, Rwanda, Senegal, Zambia (10)
<b>United Nations Convention on Conditions for Registration of Ships, 1986</b>	Not yet in force – requires 40 contracting parties with at least 25 per cent of the world's tonnage as per Annex III to the Convention	Bulgaria, Côte d'Ivoire, Egypt, Georgia, Ghana, Haiti, Hungary, Iraq, Libyan Arab Jamahiriya, Mexico, Oman, Syrian Arab Republic (12)
<b>International Convention on Arrest of Ships, 1999</b>	Not yet in force – requires 10 contracting parties	Albania, Algeria, Bulgaria, Estonia, Latvia, Spain, Syrian Arab Republic (7)

Source: For the current official status of these conventions see [www.un.org/law](http://www.un.org/law)

## Chapter 7

### REVIEW OF REGIONAL DEVELOPMENTS: ASIA

*This chapter focuses on developments in Asia.<sup>16</sup> It consists of four sections: (1) economic background; (2) maritime trade and the demand for liner shipping services; (3) the supply of maritime businesses; and (4) the situation in selected cases, covering China, South-East Asian LDCs and Central Asian landlocked countries*

#### A. ECONOMIC BACKGROUND

##### *Economic growth*

Most Asian countries continued reporting high positive growth rates in 2003. The average of 20 developing countries (table 45) increased from 4.6 per cent in 2002 to 5.2 per cent in 2003. Twelve of the 20 countries recorded higher growth in 2003 than in 2002. The highest growth rates were reported by Kazakhstan (9.5 per cent), followed by China (9.1), India (7.4), the United Arab Emirates (7.0), Thailand (6.7) and Saudi Arabia (6.4). The highest positive change between 2002 and 2003 was achieved by Saudi Arabia (an increase of 5.4 percentage points), followed by the United Arab Emirates (+5.2), India (+2.8), Pakistan (+2.6) and Lebanon (+2.0).

##### *Trade growth*

Trade growth in 2003 has been positive for the large majority of the 40 Asian economies covered by table 46. Only four countries (Iraq, Myanmar, Syrian Arab Republic and Bhutan) recorded negative export growth, and only one country (Iraq) negative import growth. By contrast, in 2001, the majority of Asian countries reported negative trade growth rates. The average export growth rate of the 40 countries increased from 5.2 per cent in 2002 to 14.8 per cent in 2003, and the average import growth rate from 5.6 per cent to 14.8 per cent. Of the 40 economies in the table, 32 had higher export growth in 2003 than in 2002.

In 2003, the highest export growth rates were recorded for Kuwait (+40 per cent), Lebanon (+39 per cent), China

(+35 per cent), Kazakhstan (+33 per cent) and Yemen (+26 per cent). The highest import growth rates were recorded for Azerbaijan (+58 per cent), China (+40 per cent), Qatar (+30 per cent), Kazakhstan (+27 per cent) and Viet Nam (+26 per cent).

##### *Direction of trade*

On average, just over half of the exports of the 42 Asian countries covered by table 47 go to other Asian countries, that is they represent intraregional trade. For 29 countries, Asia is the most important region of destination, followed by Europe, which is the most important for nine countries, and America, which is the main destination region for four countries. Oman (88.5 per cent), Qatar (88) and Yemen (93.3) are the Asian countries that most depend on exports to Asia. Azerbaijan (79.7 per cent), Turkmenistan (70.6) and Turkey (70.7) are the countries that most depend on exports to Europe, and Cambodia (61.6 per cent), Iraq (58.8) and Maldives (45.4) have the highest share of exports to America.

Between 1990 and 2003, on average, the share of intraregional exports and of exports to America increased slightly, the share of exports to Africa and Europe decreased, and the share of exports to Oceania remained practically unchanged. Some individual countries, however, have experienced far greater changes in their export patterns. Jordan, for example, in 1990 exported 83.4 per cent of its trade to Asia and only 0.7 per cent to America; in 2003, exports to Asia decreased to 63 per cent and the share of exports to America increased almost 30-fold to reach 22.7 per cent. During the same period, the share of Chinese exports to America more

Table 45

**Growth of output of Asian countries**  
(percentage change)

	1998	1999	2000	2001	2002	2003
<b>China</b>	7.8	7.1	8.0	7.5	8.0	9.1
<b>Hong Kong (China)</b>	-5.0	3.4	10.2	0.5	2.3	3.3
<b>India</b>	6.0	7.1	4.0	5.5	4.6	7.4
<b>Indonesia</b>	-13.1	0.8	4.9	3.4	3.7	4.1
<b>Iran, Islamic Republic of</b>	2.0	2.5	5.9	4.8	6.7	5.9
<b>Jordan</b>	3.0	3.0	4.2	4.3	4.9	3.2
<b>Kazakhstan</b>	-1.9	2.7	9.8	13.5	9.8	9.5
<b>Korea, Republic of</b>	-6.7	10.9	9.3	3.1	6.4	3.1
<b>Lebanon</b>	3.0	1.0	0.0	1.3	1.0	3.0
<b>Malaysia</b>	-7.4	6.1	8.5	0.3	4.1	5.2
<b>Pakistan</b>	2.5	3.7	4.3	2.5	2.9	5.5
<b>Philippines</b>	-0.6	3.4	4.0	3.4	4.4	4.5
<b>Saudi Arabia</b>	2.8	-0.7	4.9	1.3	1.0	6.4
<b>Singapore</b>	-0.9	6.4	9.4	-2.4	2.3	1.1
<b>Taiwan Province of China</b>	4.6	5.4	5.9	-2.2	3.6	3.2
<b>Thailand</b>	-10.5	4.4	4.6	1.8	5.4	6.7
<b>Turkey</b>	3.1	-4.7	7.4	-7.5	7.9	5.8
<b>United Arab Emirates</b>	1.4	4.4	12.3	3.5	1.8	7.0
<b>Viet Nam</b>	5.8	4.8	6.8	6.9	7.0	6.0
<b>Yemen</b>	6.5	2.7	6.5	4.7	3.6	3.8
<b>Arithmetic average</b>	0.1	3.7	6.5	2.8	4.6	5.2

Source: UNCTAD.

Note: Arithmetic averages are unweighted.

than doubled to reach 25.1 per cent, while its share of exports to Asia decreased to 50.8 per cent. Likewise, the share of Cambodian exports to America multiplied by 80, whereas its share of exports to Asia decreased by 90 per cent. India, on the other hand, increased its share of intra-Asian exports by 40 per cent, while its share of exports to Europe decreased by almost half from 49.5 per cent to 26.6 per cent.

Regarding imports (table 48), the trade patterns are similar to those of Asian exports. For the majority of countries, the share of intraregional imports has increased since 1990, reaching an average of 57.1 per cent in 2003. Cambodia (92.8 per cent), the Lao People's Democratic Republic (92.2) and Myanmar (95.1) are the countries that most depend on other Asian countries for their

imports. The Republic of Korea (17.5 per cent), Kuwait (16.8) and the Philippines (20.1) have the highest shares of imports from America, and Kazakhstan (66.6 per cent), Lebanon (61.9) and Turkey (69.3) are the countries with the highest shares of imports from Europe. Indonesia, Iraq and Kuwait have the highest shares of imports from Oceania; and Sri Lanka, Turkey and Yemen have the highest shares of imports from Africa.

Between 1990 and 2003, China increased its share of intraregional imports from 54.2 to 63.9 per cent, while its share of imports from America decreased from 18 per cent to 13.7 per cent. Similarly, India too increased its share of imports from Asia, reaching 43.8 per cent in 2003, while reducing its share of imports from America to 13 per cent and from Europe to 32.9 per cent.

Table 46

**Asian countries' growth rates for merchandise trade**  
(in US dollars and percentages)

Merchandise trade annual growth	Exports			Arithmetic average 1995–2003	Imports			Arithmetic average 1995–2003
	2001	2002	2003		2001	2002	2003	
Afghanistan	-48.6	-5.3	16.7	-2.5	0.0	72.7	4.7	14.2
Azerbaijan	32.6	-6.3	19.6	20.5	22.1	16.4	57.6	16.2
Bahrain	-10.0	-3.7	17.7	8.4	-7.1	15.8	2.3	4.1
Bangladesh	-4.9	-0.1	12.2	10.2	-0.1	-5.2	22.1	9.3
Bhutan	2.9	13.2	-3.3	8.0	-5.9	0.0	7.3	10.0
Cambodia	15.4	11.3	12.5	17.2	2.2	5.8	11.9	11.1
China	6.8	22.4	34.6	16.0	8.2	21.2	39.9	16.0
Hong Kong (China)	-5.7	5.7	11.0	4.7	-5.6	3.0	11.8	4.3
India	2.3	13.8	11.0	9.4	-2.2	12.2	23.4	11.5
Indonesia	-9.1	1.3	6.1	5.3	-7.5	0.9	3.5	2.2
Iran, Islamic Republic of	-16.3	18.8	18.4	9.5	25.5	23.7	24.3	9.0
Iraq	-22.8	-16.1	-15.0	n.a.	-1.4	-27.2	-17.7	n.a.
Jordan	20.7	20.8	8.3	9.0	5.4	3.6	11.1	6.1
Kazakhstan	-5.4	12.3	32.9	19.5	27.9	2.1	26.5	11.0
Korea, Republic of	-12.7	8.0	19.6	8.8	-12.1	7.8	17.5	8.8
Kuwait	-16.6	-5.1	40.2	10.9	9.9	14.4	24.0	6.4
Kyrgyzstan	-5.6	2.1	19.8	7.1	-15.7	25.7	22.1	13.9
Lao People's Dem. Rep.	0.3	-10.0	24.5	2.9	-1.3	-18.4	17.9	-0.3
Lebanon	21.7	20.2	39.4	17.1	17.1	-11.6	9.1	2.5
Malaysia	-10.4	6.0	8.0	6.7	-9.9	8.1	1.5	4.8
Maldives	0.0	18.4	25.6	11.2	1.0	-0.3	17.3	8.8
Mongolia	-3.9	0.4	14.7	5.6	2.4	9.7	13.9	14.3
Myanmar	44.7	27.9	-8.0	16.7	19.8	-18.4	7.1	14.7
Nepal	-8.3	-22.9	14.4	8.1	-6.4	-3.7	21.9	5.7
Oman	1.7	1.8	6.6	10.9	15.0	3.6	1.7	5.5
Pakistan	2.3	7.3	20.1	5.7	-6.2	10.2	16.0	5.2
Philippines	-17.9	11.7	1.5	13.0	-5.7	6.5	5.7	7.1
Qatar	-6.2	1.0	12.8	18.1	15.6	7.8	29.9	15.1
Saudi Arabia	-5.4	-2.0	23.0	11.3	3.3	3.5	5.5	4.5
Singapore	-11.6	2.8	15.1	5.2	-13.8	0.4	9.8	3.5
Sri Lanka	-11.3	-2.4	7.7	5.6	-16.8	2.2	5.7	3.9
Syrian Arab Republic	13.2	18.7	-4.0	9.2	6.2	5.6	13.0	-0.6
Taiwan Province of China	-16.9	7.3	11.5	6.1	-23.3	4.9	13.1	5.5
Tajikistan	-17.2	13.5	8.1	7.4	1.9	4.8	22.2	6.9
Thailand	-5.7	5.6	16.7	7.0	0.2	4.2	17.0	5.4
Turkmenistan	7.7	5.6	19.4	15.6	26.0	-5.8	18.7	8.1
United Arab Emirates	-2.1	1.7	17.1	9.6	12.6	4.1	9.9	6.3
Uzbekistan	-3.7	-14.8	10.8	2.7	6.0	-18.9	5.1	2.5
Viet Nam	4.5	9.5	18.9	19.7	2.3	18.8	26.4	18.1
Yemen	-21.2	7.5	26.0	26.9	-0.6	12.8	11.0	4.7
<b>Arithmetic average of 40 economies</b>	<b>-3.1</b>	<b>5.2</b>	<b>14.8</b>	<b>10.4</b>	<b>2.2</b>	<b>5.6</b>	<b>14.8</b>	<b>7.9</b>

Source: UNCTAD, based on data provided by WTO database.

Note: Arithmetic averages are unweighted.

Table 47

**Direction of trade, merchandise exports**  
(percentage share of exports)

Region of destination: Country of origin:	Africa			America			Asia			Europe			Oceania		
	1990	2002	2003	1990	2002	2003	1990	2002	2003	1990	2002	2003	1990	2002	2003
Afghanistan	0.3	4.6	2.8	4.5	8.5	28.7	21.1	62.1	37.5	<b>73.9</b>	24.6	30.9	0.3	0.3	0.1
Armenia	..	0.0	0.0	..	9.3	7.4	..	38.2	29.2	..	52.3	63.4	..	0.1	0.0
Azerbaijan	..	0.2	0.3	..	2.9	0.9	..	19.4	19.1	..	<b>77.5</b>	<b>79.7</b>	..	0.0	0.0
Bahrain	0.9	<b>8.1</b>	<b>8.6</b>	18.0	14.8	12.2	70.4	62.3	63.6	10.4	13.4	13.4	0.3	1.4	2.2
Bangladesh	4.2	1.2	0.9	32.8	35.7	32.7	19.0	10.4	9.3	42.1	52.4	56.7	2.0	0.4	0.4
Cambodia	0.2	0.3	0.3	0.8	<b>60.6</b>	<b>61.6</b>	<b>90.9</b>	14.0	12.7	7.8	25.0	25.2	0.2	0.1	0.1
China	2.1	2.1	2.3	10.5	25.7	25.1	71.7	52.6	50.8	14.9	17.9	20.1	0.9	1.6	1.6
Georgia	..	1.7	1.5	..	4.0	7.9	..	37.8	39.7	..	56.4	50.9	..	0.0	0.1
Hong Kong (China)	1.7	0.6	0.7	28.0	25.0	21.4	48.2	58.4	62.0	20.4	14.6	14.6	1.8	1.4	1.4
India	2.7	5.0	5.0	17.2	28.0	25.9	29.5	39.2	41.1	49.5	26.5	26.6	1.2	1.3	1.3
Indonesia	0.7	2.1	2.0	14.0	15.6	15.4	70.5	63.6	63.6	12.9	14.9	15.0	1.9	<b>3.8</b>	<b>4.0</b>
Iran, Islamic Republic of	0.0	1.7	1.5	6.5	1.1	0.9	37.4	68.1	68.0	56.1	28.8	29.3	0.0	0.3	0.2
Iraq	2.3	4.6	5.2	<b>39.7</b>	<b>50.0</b>	<b>58.8</b>	28.4	19.2	19.3	29.5	26.0	16.2	0.0	0.2	0.5
Jordan	<b>8.1</b>	<b>7.0</b>	<b>6.5</b>	0.7	17.4	22.7	83.4	67.2	63.2	7.7	8.3	7.5	0.0	0.1	0.1
Kazakhstan	..	0.5	0.4	..	23.0	20.9	..	26.7	24.3	..	49.8	54.4	..	0.0	0.0
Korea, Republic of	2.0	2.4	2.4	<b>37.3</b>	27.2	25.1	41.7	52.4	55.4	17.1	16.2	15.2	1.9	1.7	1.9
Kuwait	2.1	2.1	2.2	9.7	12.1	12.3	60.3	75.1	74.3	26.8	10.0	10.3	1.1	0.7	0.9
Kyrgyzstan	..	0.0	0.0	..	8.4	4.2	..	47.0	52.4	..	44.6	43.4	..	0.0	0.0
Lao People's Dem. Rep.	1.0	0.1	0.1	2.3	1.7	2.5	<b>85.5</b>	57.8	59.5	11.1	40.2	37.6	0.1	0.1	0.1
Lebanon	<b>9.4</b>	<b>11.3</b>	<b>11.4</b>	5.6	7.5	9.1	44.2	50.8	49.8	40.4	29.9	29.2	0.5	0.5	0.5
Malaysia	0.8	1.1	1.1	18.4	21.9	22.1	62.2	61.1	60.5	16.6	13.3	13.6	2.0	2.7	2.7
Maldives	0.0	2.9	3.3	26.3	<b>53.2</b>	<b>45.4</b>	47.0	34.6	42.1	26.5	9.3	9.1	0.2	0.0	0.0
Mongolia	<b>20.7</b>	0.0	0.0	2.4	32.0	34.1	31.7	48.3	53.8	45.2	16.3	11.4	0.0	3.4	0.7
Myanmar	1.2	0.4	0.4	2.9	15.7	12.0	82.8	67.4	70.4	12.3	16.1	16.7	0.8	0.4	0.4
Nepal	0.1	0.0	0.0	24.2	29.4	27.6	15.6	53.7	56.2	60.0	16.6	16.0	0.1	0.3	0.3
Oman	4.4	1.3	1.3	3.7	4.5	6.5	78.9	<b>88.2</b>	<b>88.5</b>	13.0	4.6	2.4	0.0	1.4	1.3
Pakistan	2.3	4.7	5.3	15.1	28.4	25.7	38.3	36.6	38.3	42.8	28.8	29.4	1.4	1.5	1.4
Philippines	0.3	0.2	0.2	<b>40.6</b>	27.0	23.1	38.6	53.1	60.0	19.0	18.6	15.3	1.6	1.1	1.4
Qatar	0.7	1.1	1.1	10.8	4.8	2.8	<b>85.6</b>	<b>88.6</b>	<b>88.0</b>	2.4	4.0	6.8	0.5	1.5	1.3
Saudi Arabia	4.0	5.2	5.0	28.3	21.0	23.0	47.6	56.6	55.0	19.2	16.0	16.1	1.0	1.2	0.9
Singapore	1.6	1.1	1.2	23.9	17.6	16.4	52.9	63.7	63.3	17.7	14.0	14.9	<b>4.0</b>	<b>3.5</b>	<b>4.2</b>
Sri Lanka	5.7	1.0	1.0	30.6	43.5	39.5	29.8	24.1	25.5	32.2	30.1	32.5	1.7	1.3	1.5
Syrian Arab Republic	2.8	3.7	4.3	1.0	3.0	5.3	19.3	28.9	34.1	<b>76.9</b>	64.4	56.3	0.0	0.0	0.0
Taiwan Province of China	1.1	0.9	0.9	37.3	24.0	21.7	40.8	59.3	61.6	18.6	14.4	14.2	<b>2.3</b>	1.4	1.5
Tajikistan	..	0.0	0.0	..	0.1	1.0	..	34.8	47.6	..	65.1	51.3	..	0.0	0.0
Thailand	2.5	2.1	2.0	25.6	22.7	19.7	44.6	55.7	58.3	25.5	16.7	16.8	1.9	2.8	3.1
Turkey	5.7	5.1	4.6	8.3	11.5	10.1	19.1	14.6	14.3	<b>66.7</b>	<b>68.4</b>	<b>70.6</b>	0.2	0.4	0.4
Turkmenistan	..	0.0	0.0	..	2.6	3.5	..	24.0	25.8	..	<b>73.4</b>	<b>70.7</b>	..	0.0	0.0
United Arab Emirates	3.1	3.1	3.0	5.8	3.2	3.1	77.9	84.4	83.1	10.9	8.3	8.8	<b>2.3</b>	0.9	2.0
Uzbekistan	..	0.3	0.3	..	5.1	4.4	..	43.5	51.0	..	51.1	44.3	..	0.0	0.0
Viet Nam	0.2	1.1	1.0	0.7	17.2	23.4	45.6	45.9	42.6	53.2	27.9	25.2	0.3	<b>7.9</b>	<b>7.8</b>
Yemen	1.4	3.1	2.6	24.2	5.4	1.3	15.5	<b>89.7</b>	<b>93.3</b>	57.3	1.8	2.4	1.5	0.0	0.4
<b>AVERAGE (unweighted)</b>	<b>2.8</b>	<b>2.2</b>	<b>2.2</b>	<b>16.4</b>	<b>18.4</b>	<b>18.3</b>	<b>49.3</b>	<b>49.5</b>	<b>50.2</b>	<b>30.5</b>	<b>28.8</b>	<b>28.2</b>	<b>1.0</b>	<b>1.1</b>	<b>1.1</b>

Source: UNCTAD, on the basis of IMF Direction of Trade Statistics, CD-ROM, June 2004.

Note: The three highest percentages per import region are marked in bold.

Table 48

**Direction of trade, merchandise imports**  
(percentage share of imports)

Region of origin: Destination country:	Africa			America			Asia			Europe			Oceania		
	1990	2002	2003	1990	2002	2003	1990	2002	2003	1990	2002	2003	1990	2002	2003
Afghanistan	0.0	<b>5.6</b>	<b>5.3</b>	1.6	8.9	5.7	<b>81.1</b>	66.4	66.5	17.1	18.8	22.2	0.1	0.2	0.2
Armenia	..	0.1	0.1	..	15.6	11.7	..	32.7	32.9	..	51.6	55.2	..	0.0	0.1
Azerbaijan	..	0.3	0.2	..	6.7	6.4	..	42.7	38.7	..	49.6	54.3	..	0.7	0.3
Bahrain	0.1	0.7	1.4	8.8	14.1	13.8	67.4	55.3	55.7	18.0	28.3	27.3	5.7	1.7	1.7
Bangladesh	0.3	0.7	0.7	11.4	5.2	5.0	60.8	77.5	79.3	25.4	14.0	12.8	2.1	2.7	2.2
Cambodia	0.1	0.0	0.0	0.6	1.4	2.3	68.3	<b>92.9</b>	<b>92.8</b>	28.5	5.3	4.5	2.5	0.4	0.4
China	0.7	1.9	2.2	18.0	14.0	13.7	54.2	63.1	63.9	24.3	18.6	18.0	2.8	2.4	2.2
Georgia	..	0.2	0.1	..	13.7	13.8	..	28.6	27.8	..	57.1	57.8	..	0.5	0.5
Hong Kong (China)	0.6	0.3	0.4	9.2	6.9	6.7	76.6	81.3	81.9	12.4	10.6	10.1	1.1	0.9	0.8
India	3.1	<b>6.7</b>	<b>6.7</b>	14.6	13.1	13.0	37.3	43.7	43.8	41.5	33.4	32.9	3.4	3.2	3.6
Indonesia	0.7	<b>5.4</b>	4.6	15.7	11.6	9.1	54.9	62.8	66.5	22.5	14.3	14.2	<b>6.0</b>	<b>5.9</b>	<b>5.6</b>
Iran, Islamic Republic of	0.0	0.6	0.5	6.9	6.6	5.5	30.9	34.9	36.3	<b>62.2</b>	56.2	56.8	0.0	1.7	1.0
Iraq	2.1	5.1	<b>6.5</b>	15.9	3.1	10.1	26.2	41.2	41.6	52.7	43.7	37.9	3.1	<b>6.8</b>	<b>3.9</b>
Jordan	3.0	2.6	2.6	18.6	11.2	10.7	39.2	48.9	48.5	37.8	35.6	36.3	1.4	1.6	1.9
Kazakhstan	..	0.3	0.3	..	9.8	4.0	..	17.8	29.1	..	<b>71.9</b>	<b>66.6</b>	..	0.2	0.0
Korea, Republic of	0.9	1.4	1.4	<b>30.9</b>	<b>18.8</b>	<b>17.5</b>	48.2	61.0	64.5	15.0	14.2	13.1	4.9	4.5	3.5
Kuwait	0.1	0.9	0.8	15.4	14.5	<b>16.8</b>	33.7	42.2	41.7	49.6	38.6	36.9	1.3	3.8	<b>3.9</b>
Kyrgyzstan	..	0.0	0.0	..	10.6	5.4	..	51.2	60.9	..	38.2	33.6	..	0.1	0.0
Lao People's Dem. Rep.	0.1	0.0	0.0	1.0	0.6	0.6	<b>88.3</b>	<b>91.2</b>	<b>92.2</b>	9.7	6.3	6.0	0.9	1.8	1.2
Lebanon	1.4	2.2	2.0	6.1	7.7	6.5	33.9	30.3	29.4	58.7	<b>59.5</b>	<b>61.9</b>	0.1	0.3	0.3
Malaysia	0.5	0.4	0.4	19.7	18.2	13.3	57.5	66.0	72.2	18.0	13.2	12.3	4.3	2.2	1.8
Maldives	0.0	0.5	0.4	0.6	2.2	2.2	<b>85.8</b>	81.0	79.8	13.3	11.7	14.3	0.3	<b>4.7</b>	3.2
Mongolia	0.7	0.0	0.0	0.1	3.9	3.0	33.1	48.1	45.2	<b>66.0</b>	46.2	49.7	0.1	1.8	2.2
Myanmar	0.5	0.1	0.1	3.2	0.4	0.3	69.3	<b>90.9</b>	<b>95.1</b>	23.4	8.0	4.2	3.7	0.6	0.3
Nepal	0.2	0.1	0.1	3.2	2.9	2.2	70.6	82.5	82.7	20.1	12.2	12.7	<b>5.8</b>	2.3	2.3
Oman	0.5	0.5	0.5	10.0	8.7	7.5	54.4	62.0	62.9	32.4	26.6	26.5	2.7	2.2	2.6
Pakistan	2.4	3.3	2.8	15.3	8.1	8.0	50.1	65.5	67.8	29.8	20.5	19.6	2.4	2.6	1.8
Philippines	0.7	0.2	0.2	<b>23.6</b>	<b>22.6</b>	<b>20.1</b>	58.2	66.1	68.1	13.2	8.8	9.4	4.3	2.3	2.2
Qatar	0.4	0.2	0.2	12.1	10.3	10.2	38.7	36.1	33.0	46.3	52.1	54.9	2.7	1.3	1.7
Saudi Arabia	2.0	1.3	2.1	19.1	16.7	15.2	33.1	34.2	35.4	44.2	43.8	43.7	1.6	4.0	3.6
Singapore	0.6	0.6	0.6	18.0	15.7	15.4	63.2	66.9	66.5	16.0	14.7	15.5	2.2	2.1	1.9
Sri Lanka	<b>4.4</b>	0.6	0.6	9.8	4.6	3.4	65.0	76.4	76.1	18.0	14.4	17.0	2.8	4.0	2.9
Syrian Arab Republic	2.9	2.6	2.5	15.2	9.5	7.7	21.2	36.9	38.0	<b>60.7</b>	50.7	51.5	0.0	0.3	0.3
Taiwan Province of China	0.5	1.9	1.9	<b>27.7</b>	<b>19.0</b>	16.5	50.3	62.8	67.2	18.0	13.3	12.1	3.5	3.0	2.4
Tajikistan	..	0.9	0.9	..	0.1	6.4	..	53.2	56.5	..	45.6	36.1	..	0.1	0.1
Thailand	1.0	1.4	1.3	14.0	12.1	12.2	63.2	69.5	71.1	19.9	14.2	12.7	2.0	2.8	2.6
Turkey	<b>5.9</b>	5.3	5.0	13.3	8.1	6.2	23.7	19.5	19.1	56.4	<b>66.4</b>	<b>69.3</b>	0.6	0.6	0.3
Turkmenistan	..	0.0	0.0	..	8.0	2.1	..	43.5	44.1	..	48.5	53.9	..	0.0	0.0
United Arab Emirates	0.6	1.3	1.2	10.8	9.4	9.2	49.5	47.4	45.4	37.0	39.4	41.4	2.2	2.3	2.8
Uzbekistan	..	0.0	0.0	..	7.5	11.3	..	36.5	37.5	..	55.9	51.0	..	0.0	0.1
Viet Nam	0.1	0.3	0.2	0.7	4.7	6.8	61.6	79.6	78.0	36.9	13.6	13.3	0.7	1.9	1.6
Yemen	<b>5.4</b>	4.7	3.8	6.6	11.2	10.8	40.6	64.0	60.9	41.4	18.6	22.5	<b>6.0</b>	1.5	2.0
<b>AVERAGE (unweighted)</b>	<b>1.2</b>	<b>1.5</b>	<b>1.4</b>	<b>11.7</b>	<b>9.5</b>	<b>8.8</b>	<b>52.7</b>	<b>56.1</b>	<b>57.1</b>	<b>32.0</b>	<b>31.1</b>	<b>31.0</b>	<b>2.5</b>	<b>2.0</b>	<b>1.7</b>

Source: UNCTAD, on the basis of IMF Direction of Trade Statistics, CD-ROM, June 2004.

Note: The three highest percentages per export region are marked in bold.

### *Regional integration in Asia*

As shown above, a majority of Asian countries is increasingly importing and exporting with other Asian countries. This growth of trade is at the same time the cause and effect of the general progress of regional integration in Asia. The region covers very diverse economies, including LDCs, landlocked countries and the most populous developing countries, as well as highly advanced countries such as Japan. In such a context, where regional integration may seem difficult, it has nevertheless made important progress.

As regards South-East Asia, in January 2003, countries belonging to the ASEAN free trade area renewed their commitment to promote regional trade by signing the Protocol to Amend the Agreement on the Common Effective Preferential Tariff (CEPT) Scheme, whereby import duties would be eliminated. Under this amendment, the pioneering signatories of ASEAN (Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore and Thailand, also called ASEAN-6) will eliminate all import duties on the products in their Inclusion Lists no later than 1 January 2010. The remaining member States — Cambodia, the Lao People's Democratic Republic, Myanmar and Viet Nam — will follow suit no later than 1 January 2015. The ASEAN secretariat reports that since 1 January 2003, tariffs on 99.55 per cent of products in the 2003 Inclusion List of the ASEAN-6 have been reduced to the 0–5 per cent tariff range. The average tariff for ASEAN-6 under the CEPT Scheme is now down to 2.39 per cent from 12.76 per cent when the tariff reduction started in 1993. The newer members of ASEAN still have to reach the 0–5 per cent tariffs for intra-ASEAN trade – Viet Nam in 2006, the Lao People's Democratic Republic and Myanmar in 2008, and Cambodia in 2010. Overall, in 2003, 87.85 per cent of all products in the Inclusion List of the 10 member countries tentatively have tariffs of between 0 and 5 per cent, and about 11 per cent of these products have tariffs of above 5 per cent. Ultimately, tariffs will be completely abolished by 2010 for ASEAN-6 and by 2015 for the newer members, with flexibility on some sensitive products until 2018.<sup>17</sup>

With regard to neighbouring countries, on 8 October 2003, both India and China signed a Treaty of Amity and Cooperation, ensuring their participation in mutual cooperation towards developing and sustaining the prosperity and security of the region. On the same day, the commitment for economic cooperation between

ASEAN States and China, Japan, and India was also affirmed in the form of framework agreements and partnerships.<sup>18</sup> The agreements cover various aspects of trade, including matters classified under trade facilitation such as customs cooperation, non-tariff measures, mutual recognition arrangements, conformity assessment, accreditation procedures, and standards and technical regulations.

In Central and West Asia, the Economic Cooperation Organization (ECO) comprises the signatory States of the Islamic Republic of Iran, Pakistan and Turkey, as well as Afghanistan, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, which joined ECO in 1992. Regarding multimodal transport and trade facilitation in the ECO region, a three-day workshop was held in May 2004. During the workshop, ECO's Secretary-General stated that ECO gave high priority to the development of transport and communications in the region. During the workshop, partnerships between the public and private sectors were recommended, as well as the establishment of border links and the institution of business linkages between associations dealing with trade and transport, raising standards of service and simplification of customs procedures. The workshop concluded with a set of recommendations which include harmonization of trade and tariff policies, customs procedures, training of customs officials, establishing linkages between trade associations in the trade transport and transit areas, and preparation of a trade guide and website giving information on trade, transport, transit and customs facilitation institutions and activities.

In South Asia, member States of the South Asian Association for Regional Cooperation (SAARC), Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka, signed an agreement in January 2004 to establish the South Asian Free Trade Area (SAFTA). The Agreement sets out a Trade Liberation Programme that contains general schedules and categories for reducing a variety of barriers to trade for the next two decades. As a first step, the nominal tariff of all intra-regionally traded goods must progressively be reduced to a range of 0–5 per cent by 2016. This reduction process is scheduled to start soon after the agreement comes into effect in January 2006. The Non-LDC member countries must reduce all tariffs to 20 per cent or below over the next two years after the agreement enters into force. During the subsequent 5 years, their tariffs must be reduced further to the range of 0–5 per cent. The

LDC member countries must lower their tariffs down to 30 per cent or less over the next two years after January 2006 and to 0–5 per cent during the subsequent eight years.

Already in 1993, the SAARC Preferential Trading Arrangement (SAPTA) agreement was signed and entered into force two years later. The Agreement was designed to help improve intra-regional trade by granting certain preferential status to countries according to their development needs. Unlike the SAPTA agreement, the new agreement to establish SAFTA also envisages trade facilitation measures needed to support and complement the Trade Liberation Programme and other initiatives toward realizing SAFTA. One aim of these measures is to ensure smooth and rapid cross border procedures that would allow for lowest delay possible on any traded goods and operators crossing the borders of SAARC member States. Included in the list of measures is a transit facilitation agreement that aims at ensuring the full benefits of intra-regional trade also for the landlocked member countries of Bhutan and Nepal.

## B. MARITIME TRADE AND THE DEMAND FOR MARITIME TRANSPORT SERVICES IN ASIA

### *Containerized trade*

Twelve major South and East Asian exporters (tables 49 to 51) together accounted for 49.3 per cent of the world's containerized exports in 2003. This share is forecast to increase to 52.1 per cent in 2005, assuming an average annual growth rate of 11.2 per cent in 2004 and 2005.

China is by far the world's largest exporter of containerized cargo, with 14.4 million TEUs in 2003. This is expected to grow further to 18.6 million TEUs in 2005, assuming an annual growth rate of almost 18 per cent, which is also the region's highest. China will then account for 24 per cent of the world's containerized exports. In fact, globally, the largest bilateral containerized trade flow is that of Chinese exports to the United States. In 2003, these increased by 13 per cent to 4.6 million TEUs.<sup>19</sup>

Table 49

### Containerized trade among South and East Asian countries, 2003 (TEU)

Import country	China	Indonesia	India	Hong Kong, (China)	Japan	Malaysia	Philippines	Singapore	Republic of Korea	Taiwan Province of China	Thailand	Viet Nam	Totals
China		57 872	71 869	720 734	1 041 961	144 926	91485	156 711	354 039	205 680	59 389	53 105	2 957 771
Indonesia	154 312		29 728	60 745	184 992	62 571	39 468	161 317	68 969	65 357	28 341	23 542	879 342
India	29 962	8 102		17 053	18 811	56 716	12 608	14 244	27 880	7 912	7 234	3 638	204 160
Hong Kong (China)	80 669	2 788	1 222		6 761	3 114	9 171	3 503	2 207	5 510	4 245	1 543	120 733
Japan	502 895	72 111	32 850	349 081		105 933	76 813	113 090	224 358	223 735	121 695	36 007	1 858 568
Malaysia	126 816	21 914	93 846	100 454	117 646		69 223	0	35 711	65 577	36 060	34 508	701 755
Philippines	43 791	3 093	1 561	23 241	121 514	8 605		15 133	33 078	24 667	8 378	1 899	284 960
Singapore	116 799	54 474	54 272	78 472	41 710	80 762	42 972		13 653	59 354	76 003	24 501	642 972
Republic of Korea	504 081	43 675	34 878	139 308	174 896	43 073	55 745	50 468		60 366	35 067	72 484	1 214 041
Taiwan Province of China	688 334	33 295	8 846	228 297	157 070	80 214	56 006	43 734	32 808		39 165	0	1 367 769
Thailand	114 917	32 054	24 663	119 830	155 149	47 375	29 838	57 284	30 949	46 823		14 046	672 928
Viet Nam	17 744	1 577	1 065	5 495	32 754	8 189	21 965	9 351	30 442	0	892		129 474
<b>Totals</b>	<b>2 380 320</b>	<b>330 955</b>	<b>354 800</b>	<b>1 842 710</b>	<b>2 053 264</b>	<b>641 478</b>	<b>505 294</b>	<b>624 835</b>	<b>854 094</b>	<b>764 981</b>	<b>416 469</b>	<b>265 273</b>	<b>11 034 473</b>

Source: Global Insight, April 2004, Robert.West@GlobalInsight.com.



Table 50

**Forecast containerized trade among South and East Asian countries, 2005**  
(TEU)

Export country	China	Indonesia	India	Hong Kong, (China)	Japan	Malaysia	Philippines	Singapore	Republic of Korea	Taiwan Province of China	Thailand	Viet Nam	Totals
<b>China</b>		79 843	112 682	867 439	1 572 209	202 627	130 472	218 453	535 560	305 410	84 355	75 420	<b>4 184 470</b>
<b>Indonesia</b>	201 304		34 762	66 042	197 285	68 666	43 095	174 253	78 599	72 960	31 336	26 087	<b>994 389</b>
<b>India</b>	36 142	8 969		18 513	19 715	60 932	13 795	15 605	31 462	8 444	8 066	4 006	<b>225 649</b>
<b>Hong Kong (China)</b>	91 617	2 942	1 318		7 123	3 338	9 515	3 828	2 424	5 938	4 580	1 665	<b>134 288</b>
<b>Japan</b>	687 059	77 546	36 995	363 853		112 353	79 911	119 746	251 228	240 263	131 537	37 846	<b>2 138 337</b>
<b>Malaysia</b>	162 597	23 923	108 632	109 549	126 409		72 095	0	41 317	71 668	41 841	37 239	<b>795 270</b>
<b>Philippines</b>	57 597	3 288	1 794	25 514	124 738	9 582		17 002	36 309	27 356	9 350	2 027	<b>314 557</b>
<b>Singapore</b>	151 345	56 340	63 355	87 120	44 420	89 778	46 529		15 641	67 883	85 837	26 814	<b>735 062</b>
<b>Republic of Korea</b>	615 627	48 020	38 253	154 794	185 722	48 959	60 302	55 306		68 703	39 853	80 359	<b>1 395 898</b>
<b>Taiwan Province of China</b>	805 815	34 594	8 955	240 460	162 214	86 758	58 622	47 519	35 974		42 258	0	<b>1 523 169</b>
<b>Thailand</b>	152 273	34 852	28 401	131 078	165 595	51 686	32 641	63 873	35 039	52 321		15 403	<b>763 162</b>
<b>Viet Nam</b>	24 223	1 693	1 231	5 866	36 302	8 912	25 073	10 211	34 799	0	1 023		<b>149 333</b>
<b>Totals</b>	<b>2 985 599</b>	<b>372 010</b>	<b>436 378</b>	<b>2 070 228</b>	<b>2 641 732</b>	<b>743 591</b>	<b>572 050</b>	<b>725 796</b>	<b>1 098 352</b>	<b>920 946</b>	<b>480 036</b>	<b>306 866</b>	<b>13 353 584</b>

Source: Global Insight, April 2004, *Robert.West@GlobalInsight.com*.

The second largest Asian exporter is Japan, whose containerized exports are expected to grow annually by 6.2 per cent between 2003 and 2005, to reach 4.5 million TEUs in the latter year. The second highest growth rate in the region, with almost 9 per cent, is that of Viet Nam, whose containerized exports are expected to reach 442,000 TEUs in 2005. India's containerized exports are expected to grow annually by a relatively low 3.8 per cent, which will leave the country in eighth position among the leading South and East Asian exporters.

Trade among the 12 main South and East Asian exporters accounts for more than half of containerized exports for Singapore (66.7 per cent), the Philippines (54.4 per cent) and Taiwan Province of China (50.9 per cent). It is least important for India (14 per cent of Indian exports), Hong Kong (China) (20.3 per cent) and also for China (22.1 per cent). The latter's trade is dominated by its exports to North America.

The most important intra-Asian containerized trade flows in 2003 are Chinese exports to Japan (1,041,961 TEUs), followed by Chinese exports to Hong Kong, China

(720,734 TEUs), Taiwan Province of China exports to China (688,334 TEUs), Republic of Korea exports to China (504,081 TEUs) and Japanese exports to China (502,895 TEUs). Chinese imports and exports from other Asian countries are also those with the highest growth rates. In 2004 and 2005, Chinese exports to India are forecast to grow at 25.2 per cent annually, exports to Republic of Korea by 23 per cent and exports to Japan by 22.8 per cent. Viet Nam's exports to the 11 main other South and East Asian countries are forecast to grow by 7.4 per cent, Japan's exports by 7.3 per cent and the Republic of Korea's exports by 7.2 per cent. With an annual rate of 13.4 per cent, Japan and the Republic of Korea are the two countries with the highest forecast growth of imports from the other 11 main South and East Asian exporters (see table 52).

#### *Ports and liner shipping services*

Sixty-two per cent of global container port throughput takes place in Asia (estimation based on data for 2002). In 2003, 20 of the world's top 30 container ports were located in Asia (table 53).

Table 51

**Containerized exports of South and East Asian countries, 2003 and 2005 forecast**  
(TEU and percentages)

	Total exports 2003	Total exports 2005	Annual growth, 2003–2005	Exports to 11 Asian countries, percentage of total, 2003	Exports to 11 Asian countries, percentage of total, 2005
<b>China</b>	13 398 646	18 621 399	17.89	22.08	22.47
<b>Indonesia</b>	2 209 628	2 514 987	6.69	39.80	39.54
<b>India</b>	1 452 672	1 564 897	3.79	14.05	14.42
<b>Hong Kong (China)</b>	594 667	681 825	7.08	20.30	19.70
<b>Japan</b>	3 954 325	4 456 581	6.16	47.00	47.98
<b>Malaysia</b>	1 679 098	1 931 752	7.26	41.79	41.17
<b>Philippines</b>	524 438	587 277	5.82	54.34	53.56
<b>Singapore</b>	964 371	1 101 162	6.86	66.67	66.75
<b>Republic of Korea</b>	2 764 818	3 133 394	6.46	43.91	44.55
<b>Taiwan Province of China</b>	2 689 246	2 982 094	5.30	50.86	51.08
<b>Thailand</b>	1 790 701	2 023 801	6.31	37.58	37.71
<b>Viet Nam</b>	372 531	442 387	8.97	34.76	33.76
<b>Total 12 countries</b>	32 395 141	40 041 556	11.18	34.06	33.35
<b>12 countries, percentage of world</b>	49.33%	52.10%			
<b>World</b>	65 666 521	76 859 314	8.19		

Source: UNCTAD secretariat, based on data provided by Global Insight, April 2004.

Shenzhen is the port that in 2003 registered the highest absolute growth of all ports in the world, with an annual increase of 3 million TEUs. Salalah (Oman), ranked 34th in the world, registered the highest annual growth rate among the world's top 70 ports, with an increase of over 65 per cent between 2002 and 2003.

Hong Kong (China) and Singapore continue to be by far the largest container ports in the world. Most intercontinental liner shipping routes that link Asia with Europe or North America will call at both of them. Nevertheless, there are also an increasing number of additional hub ports and secondary direct calling ports, and most liner shipping alliances tend to offer alternative routes, as illustrated in figure 14. Port Klang and Tanjung Pelepas in the first box, for example, have become hub ports with dense feeder networks. Laem Chabang mostly attracts direct calls on interregional trunk routes and also intraregional coastal services.

Compared with the competition in neighbouring economies, the ports of Singapore and Hong Kong (China) have the advantage of already attracting the highest

number of liner shipping services. This in itself helps to generate economies of scale and achieve the highest levels of connectivity, which in turn increases these locations' attractiveness as ports of call.

Nevertheless, new entrants have been able to take business from the traditional main hub ports. Port Klang in Malaysia, for example, has managed to attract transshipment traffic that used to go through Singapore, and Shenzhen has been able to cater for Chinese international trade that would in previous years have gone through Hong Kong (China).

In order to be competitive in the transshipment business, Malaysia has effectively lifted cabotage restrictions for the main liner shipping routes. International liner shipping companies are allowed to pick up cargo in Malaysian secondary ports and trans-ship, for example, in Port Klang or Tanjung-Pelepas. Further to the north, GwangYang (Republic of Korea) expects to benefit from cabotage restrictions in neighbouring countries. In particular, it has ambitions to serve as a major transshipment centre for the trade of Japanese and

Table 52

**Forecast containerized trade growth among South and East Asian countries, 2003-2005,  
annual growth rate  
(percentages)**

Export country	China	Indonesia	India	Hong Kong, (China)	Japan	Malaysia	Philippines	Singapore	Republic of Korea	Taiwan Province of China	Thailand	Viet Nam	Totals
<b>China</b>		17.5	25.2	9.7	22.8	18.2	19.4	18.1	23.0	21.9	19.2	19.2	<b>18.9</b>
<b>Indonesia</b>	14.2		8.1	4.3	3.3	4.8	4.5	3.9	6.8	5.7	5.2	5.3	<b>6.3</b>
<b>India</b>	9.8	5.2		4.2	2.4	3.7	4.6	4.7	6.2	3.3	5.6	4.9	<b>5.1</b>
<b>Hong Kong (China)</b>	6.6	2.7	3.9		2.6	3.5	1.9	4.5	4.8	3.8	3.9	3.9	<b>5.5</b>
<b>Japan</b>	16.9	3.7	6.1	2.1		3.0	2.0	2.9	5.8	3.6	4.0	2.5	<b>7.3</b>
<b>Malaysia</b>	13.2	4.5	7.6	4.4	3.7		2.1	n.a.	7.6	4.5	7.7	3.9	<b>6.5</b>
<b>Philippines</b>	14.7	3.1	7.2	4.8	1.3	5.5		6.0	4.8	5.3	5.6	3.3	<b>5.1</b>
<b>Singapore</b>	13.8	1.7	8.0	5.4	3.2	5.4	4.1		7.0	6.9	6.3	4.6	<b>6.9</b>
<b>Republic of Korea</b>	10.5	4.9	4.7	5.4	3.0	6.6	4.0	4.7		6.7	6.6	5.3	<b>7.2</b>
<b>Taiwan Province of China</b>	8.2	1.9	0.6	2.6	1.6	4.0	2.3	4.2	4.7		3.9	n.a.	<b>5.5</b>
<b>Thailand</b>	15.1	4.3	7.3	4.6	3.3	4.5	4.6	5.6	6.4	5.7		4.7	<b>6.5</b>
<b>Viet Nam</b>	16.8	3.6	7.5	3.3	5.3	4.3	6.8	4.5	6.9	n.a.	7.1		<b>7.4</b>
<b>Totals</b>	<b>12.0</b>	<b>6.0</b>	<b>10.9</b>	<b>6.0</b>	<b>13.4</b>	<b>7.7</b>	<b>6.4</b>	<b>7.8</b>	<b>13.4</b>	<b>9.7</b>	<b>7.4</b>	<b>7.6</b>	<b>10.0</b>

Source: UNCTAD, based on data provided by Global Insight, April 2004.

Northern Chinese ports. In the first four months of 2004, GwangYang grew by 24 per cent as compared with the same period in 2003.

The position of Asian countries and their ports in global liner shipping networks is further illustrated in table 54, which depicts TEU capacity assignment by liner shipping companies and their vessel deployment. China (3.7 million TEUs), Hong Kong, China (3.5 million TEUs) and Singapore (2.4 million TEUs) are the three economies with the highest total fleet assignment. Ports in these economies as well as in Malaysia and Taiwan Province of China are the only ones that are currently being used as ports of call by the world's largest container vessels in service, which have a reported capacity of 8,063 TEUs. Although Singapore attracts the world's largest container ships, the average vessel size in Singapore is actually relatively low (2,606 TEUs). This reflects the fact that Singapore is mostly a transshipment port that depends heavily on the connection of main-haul services with regional feeding services, and

the latter tend to use relatively smaller vessels. Hong Kong (China), on the other hand, has the highest average vessel size because this port moves a far lower proportion of transshipment cargo and instead caters for imports and exports from mainland China, as well as re-exports from its Free Zone.

If we look at the fleet deployment on the major intra-Asian routes (table 55), we find that the largest capacity (741,879 TEUs) has been assigned between East Asia and North East Asia, followed by the Far East–Mid-East route. The latter is part of the main East–West trunk route and thus registers very high average vessel sizes. The smallest vessel sizes are registered on the routes that mainly cater for feeding services such as South-East Asian coastal shipping and services connecting North-East and South-East Asia.

As already discussed in chapter 4, freight rates for Asian trade with Europe and North America are strongly

Table 53

## Twenty largest Asian container ports in 2001, 2002 and 2003

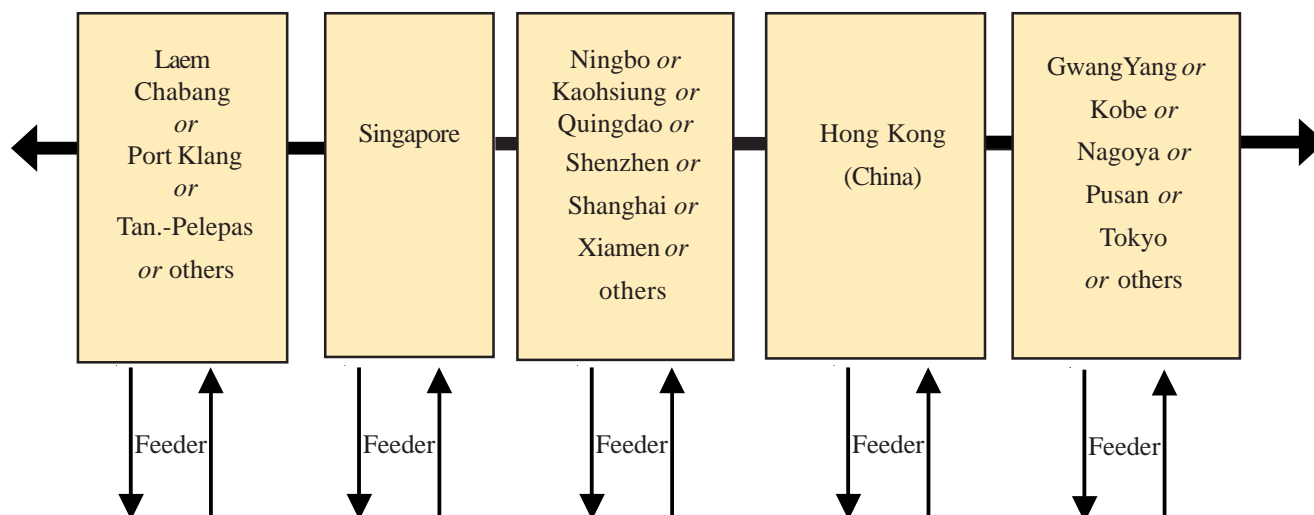
Rank		Port	Country	2001 TEU	2002 TEU	2003 TEU	Percentage growth 2002–2003
World	Asia						
1	1	Hong Kong	China	17 900	19 144	20 450	6.82
2	2	Singapore	Singapore	15 520	16 941	18 100	6.84
3	3	Shanghai	China	6 330	8 612	11 370	32.03
4	4	Shenzhen	China	5 079	7 614	10 650	39.87
5	5	Busan	Republic of Korea	8 073	9 453	10 368	9.68
6	6	Kaoshiung	Taiwan Province of China	7 540	8 493	8 844	4.13
11	7	Dubai	United Arab Emirates	3 502	4 194	5 152	22.84
12	8	Port Kelang	Malaysia	3 760	4 533	4 840	6.77
14	9	Qingdao	China	2 639	3 410	4 230	24.05
16	10	T. Pelepas	Malaysia	2 049	2 669	3 487	30.65
17	11	Tokyo	Japan	2 750	3 028	3 314	9.45
19	12	Laem Chab.	Thailand	2 367	2 749	3 180	15.68
21	13	Tianjin	China	2 011	2 408	3 020	25.42
22	15	Ningbo	China	1 213	1 859	2 772	49.11
23	14	Guangzhou	China	1 628	2 173	2 760	27.01
24	16	Jakarta	Indonesia	2 222	2 398	2 758	15.01
26	17	Manila	Philippines	2 296	2 462	2 561	4.02
28	18	Yokohama	Japan	2 304	2 365	2 503	5.84
29	19	Xiamen	China	1 295	1 754	2 330	32.84
30	20	J. Nehru Port	India	1 462	1 946	2 269	16.60

Source: Cargo Systems, August 2004; Dyna Liner, May 2004; Ministry of Communication of the People's Republic of China; company websites.

Note: Singapore includes PSA Corp and Jurong port. Shenzhen includes Chiwan, Shekou and Yantian.

Figure 14

## Structure of port calls in South-East and East Asia



Source: UNCTAD, based on a concept presented by Shigeru Yoshida in “Structural changes of container route network in East Asia”, at the III International Port Forum, GwangYang, Republic of Korea, April 2004.

influenced by global demand and supply as well as by trade imbalances. The trade surplus of Asia with North America and with Europe is reflected in freight rates that are twice as high for Asian exports as for Asian imports.

### C. THE SUPPLY OF MARITIME BUSINESSES IN ASIA

Asian countries have a significant presence in most maritime sectors (figure 15). However, not all countries participate equally in all sectors; rather, different countries specialize in different maritime sectors. The situation in various maritime sectors and the participation of Asian countries and companies will be reviewed below, with a special focus on container shipping.

#### *Liner shipping companies*

Sixteen of the world’s top 25 liner shipping companies, and 28 of the top 50, are based in Asia. Table 56 provides a list of the 16 Asian liner shipping companies with the largest operated TEU capacity.

The largest Asian companies in terms of operated container carrying capacity are Evergreen (Taiwan Province of China), APL (Singapore), Hanjin (Republic of Korea), NYK (Japan) and COSCO (China). The largest order books are

those of China Shipping (China), Evergreen, COSCO, K-line (Japan) and MOL (Japan). In terms of fleet on order relative to the existing operated fleet, those with the highest projected growth are China Shipping, COSCO, K-line (Taiwan Province of China) and MOL. China Shipping is the only company among the world’s top 25 whose order book is actually bigger than its existing owned or operated fleet.<sup>20</sup>

Hyundai (Republic of Korea), Hanjin, OOCL (Hong Kong, China), APL and MOL are the companies with the largest average vessel size of the existing fleet. With regard to vessels on order, the companies with the largest average ship sizes are NYK, Hanjin, OOCL, MOL and Evergreen. IRISL (Islamic Republic of Iran), PIL (Singapore), Wan Hai and China Shipping have the smallest existing vessel sizes, as they specialize in regional and feeder traffic. IRISL and China Shipping are, however, also among the companies with the highest projected growth of average vessel sizes, together with COSCO, NYK and Evergreen.

Together, the top 16 Asian liner shipping companies operate 41 per cent of the existing TEU carrying capacity. The average vessel size of the ships on order is 5,567 TEUs, which is more than twice the existing average vessel size.

Table 54

## Containership allocation to Asian countries, May 2004

Country	Fleet assignment		TEU capacity per ship		No. of regular liner services
	TEUs	Vessels	Maximum	Average	
<b>Bahrain</b>	14 088	9	2 672	1 565	9
<b>Bangladesh</b>	22 209	37	1 034	600	20
<b>Brunei Darussalam</b>	7 478	18	802	415	12
<b>Cambodia</b>	8 999	15	1 158	600	16
<b>China</b>	3 678 340	1 188	8 063	3 096	827
<b>Cyprus</b>	64 617	72	3 250	897	44
<b>Georgia</b>	3 000	6	700	500	6
<b>Hong Kong (China)</b>	3 544 505	1 115	8 063	3 179	717
<b>India</b>	435 954	237	6 420	1 839	184
<b>Indonesia</b>	256 692	189	3 842	1 358	175
<b>Iran, Islamic Republic of</b>	84 916	50	3 300	1 698	31
<b>Iraq</b>	886	6	380	148	9
<b>Israel</b>	175 137	99	4 992	1 769	60
<b>Japan</b>	1 860 586	752	6 600	2 474	540
<b>Jordan</b>	46 232	34	3 091	1 360	24
<b>Korea, Republic of</b>	1 967 683	699	6 978	2 815	546
<b>Kuwait</b>	14 878	10	2 672	1 488	13
<b>Lebanon</b>	47 327	62	1 911	763	36
<b>Malaysia</b>	1 773 835	621	8 063	2 856	452
<b>Maldives</b>	6 624	10	1 158	662	7
<b>Myanmar</b>	6 933	15	712	462	10
<b>Oman</b>	213 712	79	6 420	2 705	34
<b>Pakistan</b>	224 614	109	4 038	2 061	82
<b>Philippines</b>	122 806	131	1 923	937	117
<b>Qatar</b>	3 809	11	841	346	4
<b>Saudi Arabia</b>	791 020	280	6 750	2 825	144
<b>Singapore</b>	2 381 624	914	8 063	2 606	656
<b>Sri Lanka</b>	725 181	263	5 774	2 757	167
<b>Syrian Arab Republic</b>	32 589	48	1 911	679	29
<b>Taiwan Province of China</b>	1 959 434	629	8 063	3 115	403
<b>Thailand</b>	362 511	202	6 200	1 795	145
<b>Turkey</b>	221 410	208	4 350	1 064	139
<b>United Arab Emirates</b>	724 792	276	6 750	2 626	177
<b>Viet Nam</b>	85 702	93	1 888	922	95
<b>Yemen</b>	117 821	46	5 762	2 561	35

Source: www.ci-online.co.uk, 30 April 2004.

Note: "Fleet assignment" shows the number of ships and the total TEU capacity of all vessels being deployed on regular liner services that call at the countries' ports.

Table 55

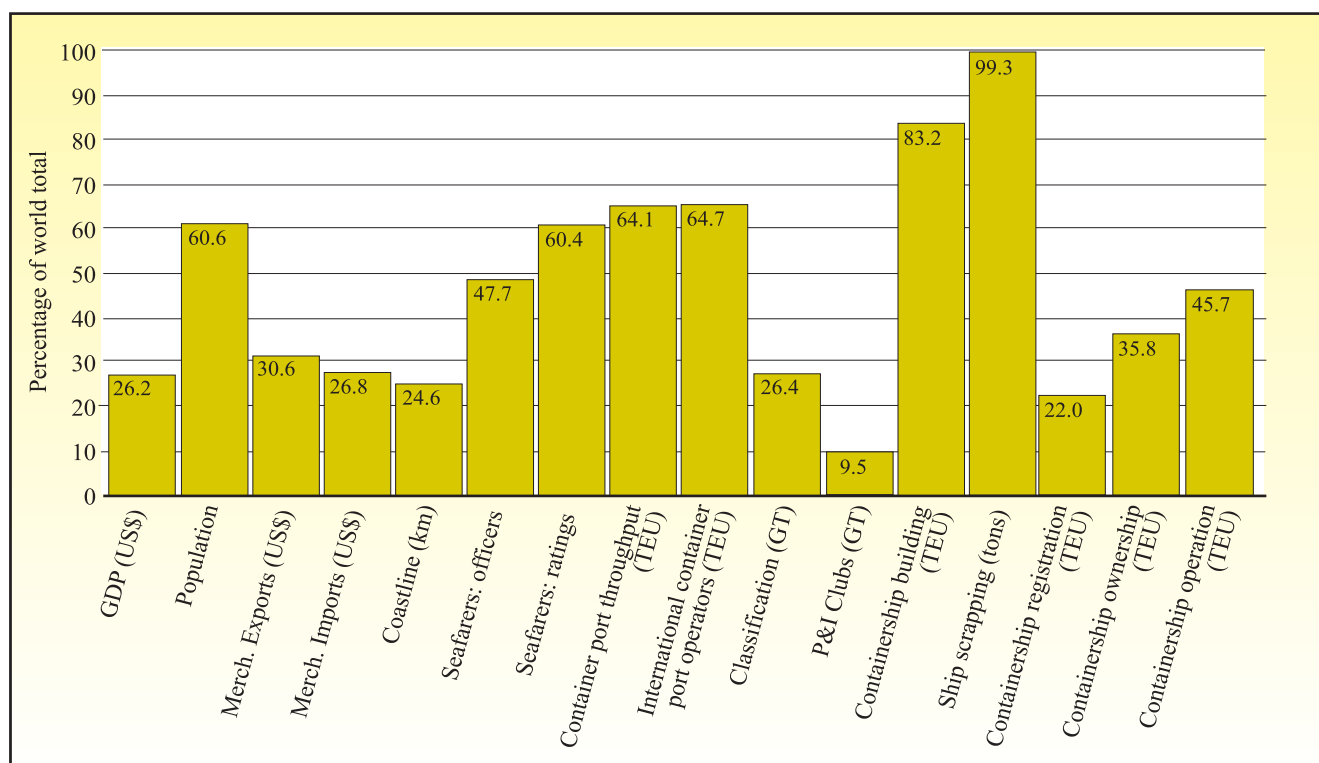
## Container vessel fleet deployment on intra-Asian routes, April 2004

Route	Vessels deployed	TEUs deployed	Average vessel size
East Asia – North-East Asia	374	741 879	1 984
Far East – Mid-East	186	632 201	3 399
Far East – Indian subcontinent	233	631 196	2 709
East Asian coastal	274	622 246	2 271
East Asia – South-East Asia	305	616 414	2 021
Indian subcontinent – South-East Asia	145	320 148	2 208
Indian subcontinent – Mid-East	125	291 363	2 331
North East Asia – South-East Asia	177	283 543	1 602
Far East – Red Sea	71	244 854	3 449
South-East Asian coastal	192	236 349	1 231

Source: www.ci-online.co.uk, 30 April 2004.

Figure 15

**Maritime profile of Asia**  
(percentage of world totals)



Source: UNCTAD, based on data provided by a variety of sources. See accompanying text for details. The data are for 2004 or the latest year available. See text for specific sources and years.

Table 56

## Asian liner shipping companies

World ranking	Company name	Country/territory	Existing TEU	Existing TEU, % of world total	Existing containerships	Average vessel size of existing ships	TEU on order	TEU on order as % of existing TEU	Containerships on order	Average vessel size of ships on order	Average vessel size on order as % of average vessel size of existing fleet
3	Evergreen	Taiwan Province of China	455 000	5.91	158	2 880	152 000	33	22	6 909	240
6	APL	Singapore	287 000	3.73	87	3 299	29 000	10	6	4 833	147
7	Hanjin	Republic of Korea	287 000	3.73	78	3 679	72 000	25	10	7 200	196
8	NYK	Japan	260 000	3.38	95	2 737	82 000	32	10	8 200	300
9	COSCO	China	232 000	3.01	107	2 168	131 000	56	20	6 550	302
10	China Shipping	China	218 000	2.83	102	2 137	239 000	110	38	6 289	294
11	OOCL	Hong Kong (China)	204 000	2.65	56	3 643	79 000	39	11	7 182	197
12	K-line	Japan	198 000	2.57	66	3 000	107 000	54	19	5 632	188
14	ZIM	Israel	187 000	2.43	85	2 200	28 000	15	6	4 667	212
15	MOL	Japan	181 000	2.35	58	3 121	83 000	46	12	6 917	222
18	Yang Ming	Taiwan Province of China	160 000	2.08	58	2 759	64 000	40	18	3 556	129
20	Hyundai	Republic of Korea	141 000	1.83	37	3 811	34 000	24	5	6 800	178
21	PIL	Singapore	117 000	1.52	91	1 286	26 000	22	12	2 167	169
22	Wan Hai	Taiwan Province of China	97 000	1.26	67	1 448	52 000	54	18	2 889	200
23	UASC	United Arab Emirates	76 000	0.99	34	2 235	-	0	-	n.a.	n.a.
25	IRISL	Iran, Islamic Republic of	53 000	0.69	57	930	19 000	36	8	2 375	255

Source: UNCTAD calculations, based on data provided by Dyna Liners 20/2004, May.



### *Ownership of containerships*

Liner shipping companies tend to charter a large proportion of their vessels from “non-operating” owners, many of which are based in Europe. The proportion of capacity that is owned by the liner shipping company itself tends to be larger in Asia than in Europe. The largest Asian ship owning companies at the beginning of 2004 are Evergreen (Taiwan Province of China), COSCO (China), APL (Singapore), NYK (Japan) and K-Line (Japan).<sup>21</sup>

### *Nationally flagged vessels*

With regard to Asian developing countries (table 57), Indonesia has the largest number of nationally-flagged vessels (1,405 units), followed by Singapore (916), the Philippines (872), the Republic of Korea (810), Hong Kong, China (699) and Cambodia (591). In terms of cargo carrying capacity, the largest nationally-flagged fleets are those of Singapore (34.8 million dwt), followed by Hong Kong, China (34.2), India (10.7), the Republic of Korea (9.6), Iran (8.2) and the Philippines (6.6).

Regarding average vessel sizes in dwt, the largest ships are those of Kuwait (73,516 dwt average vessel size), followed by the Islamic Republic of Iran (53,491), Hong Kong, China (48,946), Jordan (42,122), Singapore (38,033) and Qatar (33,051). Concerning ship age, Qatar has the largest proportion of new vessels, that is vessels between 0 and 4 years of age (26.1 per cent), followed by Hong Kong, China (23.2 per cent), Islamic Republic of Iran (19 per cent), Singapore (13.8 per cent) and Brunei (11.1 per cent). All vessels under the flags of Iraq, Oman and Yemen are 20 years or older.

### *Containership building*

Nine of the top 10 containership builders are from Asia. The five largest companies are in the Republic of Korea (Hyundai H.I., Samsung S.B., Hyundai Samho, Hanjin H.I. and Daewoo S.B.). Other Asian shipbuilders among the top 10 are Ishikawajima-Harima Heavy Industries (Japan), CSBS (Taiwan Province of China), Hyundai Mipo (Republic of Korea) and Mitsubishi H.I. (Japan). Together, all Republic of Korea shipyards today account for 62.3 per cent of TEU on order, and all Asian shipyards together have a market share of 83.2 per cent. Japan is the world’s second largest shipbuilding country, and China the fourth.<sup>22</sup>

### *Classification societies*

Ten of the 25 largest classification societies are based in Asia. Together, they are responsible for 26 per cent of the world’s classifications of commercial vessels. The largest Asian society is based in Japan, followed by societies in China, the Republic of Korea, Indonesia, Taiwan Province of China and India.<sup>23</sup>

### *P&I clubs*

Most of the major Protection and Indemnity (P&I) clubs are based in the United Kingdom. The largest Asian club is based in Japan.<sup>24</sup>

### *Container manufacturing*

Approximately 90 per cent of all containers are being built in China. The two leading companies are CIMC and Singamas.<sup>25</sup>

### *Ship-to-shore crane manufacturing*

At the beginning of 2004, there were around 250 such cranes on order globally. By far the biggest supplier is ZPMC, based in Shanghai, China. The company now has a market share of 55 per cent, up from 32 per cent a year ago. The other three main producers are Europe-based, although production often takes place in China, Malaysia and other Asian countries.<sup>26</sup>

### *Container port operators*

The market share of global port operators has been growing in recent years mainly owing to concessions of previously State-run facilities, and also through mergers and acquisitions. Half of the top 10 port operating companies are linked to shipping lines. Among these, Evergreen, Cosco and Hanjin are the three largest Asian port-operating companies. Other operators originate from a major container port. Hutchison, the world’s largest port operating company, started in Hong Kong (China), PSA in Singapore and ICTSI in the Philippines.<sup>27</sup>

### *Ship scrapping*

Almost all global ship scrapping takes place in Asia. India, Bangladesh, China and Pakistan together accounted for 97 per cent of the world’s ship scrapping activity between 1994 and 2002. Other Asian economies with some participation in this sector are Turkey, Viet Nam,

Table 57

## Nationally flagged fleet of Asian developing countries, January 2004

Flag State		Ship age					Grand total
		0-4 years	5-9 years	10-14 years	15-19 years	20 years and over	
Bahrain	Number of ships	7%	13%	0%	0%	80%	15
	Dwt	48%	31%	0%	0%	20%	317 248
	Average vessel size, dwt	153 019	49 924			5365	21 150
Brunei	Number of ships	11%	11%	33%	11%	33%	9
	Dwt	8%	16%	47%	4%	26%	3 105
	Average vessel size, dwt	250	500	482	118	264	345
Cambodia	Number of ships	1%	0%	3%	9%	87%	591
	Dwt	0%	0%	2%	3%	95%	2 831 501
	Average vessel size, dwt	2 835	3 000	2 655	1 739	5 191	4 791
Hong Kong, China	Number of ships	23%	28%	17%	10%	22%	699
	Dwt	32%	27%	21%	9%	12%	34 213 042
	Average vessel size, dwt	66 671	46 959	60 825	45 099	25 915	48 946
India	Number of ships	5%	14%	15%	18%	48%	374
	Dwt	9%	11%	19%	27%	35%	10 690 939
	Average vessel size, dwt	50 459	21 154	36 018	44 072	20 557	28 585
Indonesia	Number of ships	1%	3%	6%	5%	85%	1405
	Dwt	2%	2%	4%	10%	82%	4 416 795
	Average vessel size, dwt	7 364	1 948	2 076	5 944	3 052	3 144
Iran, Islamic Republic of	Number of ships	19%	16%	4%	18%	43%	153
	Dwt	49%	26%	0%	10%	15%	8 184 165
	Average vessel size, dwt	139 030	85 885	3 530	28 967	18 210	53 491
Iraq	Number of ships	0%	0%	0%	0%	100%	19
	Dwt	0%	0%	0%	0%	100%	140 727
	Average vessel size, dwt					7 407	7 407
Jordan	Number of ships	0%	0%	0%	33%	67%	9
	Dwt	0%	0%	0%	13%	87%	379 095
	Average vessel size, dwt				16 793	54 786	42 122
Korea, Republic of	Number of ships	2%	8%	14%	24%	52%	810
	Dwt	1%	21%	18%	34%	26%	9 592 313
	Average vessel size, dwt	4 694	29 835	15 492	17 141	5 977	11 842
Kuwait	Number of ships	2%	9%	13%	15%	62%	47
	Dwt	3%	21%	33%	12%	31%	3 455 275
	Average vessel size, dwt	105 857	180 165	189 920	58 554	37 219	73 516
Lebanon	Number of ships	0%	1%	0%	3%	96%	72
	Dwt	0%	0%	0%	13%	87%	238 062
	Average vessel size, dwt		800		15345	2994	3 306
Malaysia	Number of ships	3%	20%	15%	10%	53%	457
	Dwt	9%	42%	19%	9%	21%	6 528 753
	Average vessel size, dwt	41 269	30 798	18 061	12 714	5 745	14 286
Maldives	Number of ships	0%	0%	7%	4%	89%	45
	Dwt	0%	0%	1%	2%	97%	80 455
	Average vessel size, dwt			277	966	1 942	1 788

Table 57 (continued)

Flag State		Ship age					Grand total
		0–4 years	5–9 years	10–14 years	15–19 years	20 years and over	
Myanmar	Number of ships	4%	20%	0%	10%	66%	50
	Dwt	23%	39%	0%	23%	15%	637 002
	Average vessel size, dwt	72 917	24 897		29 497	2 870	12 740
Oman	Number of ships	0%	0%	0%	0%	100%	7
	Dwt	0%	0%	0%	0%	100%	1 017
	Average vessel size, dwt					145	145
Pakistan	Number of ships	0%	0%	12%	18%	71%	17
	Dwt	0%	0%	0%	38%	61%	485 195
	Average vessel size, dwt			542	62 247	24 781	28 541
Philippines	Number of ships	4%	9%	8%	12%	67%	872
	Dwt	30%	28%	10%	9%	23%	6 598 746
	Average vessel size, dwt	51 909	23 702	10 277	5 303	2 578	7 567
Qatar	Number of ships	26%	17%	9%	4%	43%	23
	Dwt	18%	34%	18%	12%	18%	760173
	Average vessel size, dwt	22 255	64 788	69 058	91 717	13 766	33051
Saudi Arabia	Number of ships	0%	6%	0%	9%	85%	65
	Dwt	0%	11%	0%	3%	86%	1 722 728
	Average vessel size, dwt		48 560		8 257	26 890	26504
Singapore	Number of ships	14%	25%	18%	12%	31%	916
	Dwt	21%	27%	27%	9%	16%	34 838 480
	Average vessel size, dwt	5 7191	40 316	58 076	28 369	19 717	38 033
Sri Lanka	Number of ships	0%	0%	0%	17%	83%	23
	Dwt	0%	0%	0%	9%	91%	175 362
	Average vessel size, dwt				3 771	8 436	7 624
Syrian Arab Republic	Number of ships	1%	1%	0%	3%	95%	166
	Dwt	2%	1%	0%	9%	88%	687 546
	Average vessel size, dwt	6 175	8 650		12 616	3 819	4 142
Thailand	Number of ships	6%	5%	3%	13%	74%	421
	Dwt	1%	9%	5%	23%	61%	3 271 847
	Average vessel size, dwt	1 653	14 065	14 018	14 291	6 467	7 772
United Arab Emirates	Number of ships	2%	7%	6%	7%	78%	101
	Dwt	12%	12%	4%	2%	70%	868 837
	Average vessel size, dwt	53 266	14 898	5 170	2 506	7 715	8 602
Yemen	Number of ships	0%	0%	0%	0%	100%	9
	Dwt	0%	0%	0%	0%	100%	114 771
	Average vessel size, dwt					12 752	12 752

Source: Lloyd's Register – Fairplay. Includes all types of commercial vessels of 100 grt and above.

Philippines and Taiwan Province of China. In 2003, ship scrapping in China doubled, partly as a result of a surge in national demand for steel. At the beginning of 2004, prices for vessels for scrap have increased substantially as a consequence of overall soaring vessel prices (see chapter 4), and Bangladesh and China have both purchased more large tankers for their scrap yards than India.<sup>28</sup>

### *Crewing*

Sixty per cent of the world's ratings are from Asia, the largest providers being the Philippines, followed by Indonesia, Turkey, China and India. Regarding officers, the Philippines and Indonesia are again the most important providers, followed by Japan, Indonesia, Turkey and India. Globally, there are twice as many ratings working at sea than officers. Asian countries on average supply 2.5 times as many ratings as officers; only the Republic of Korea, Japan and Taiwan Province of China supply more officers than ratings.<sup>29</sup>

### *Maritime country profiles*

As shown above, different maritime businesses are concentrating their activities in selected Asian countries. This development leads to a situation where some Asian countries are specializing in certain sectors, and other countries in other sectors. Table 58 shows Asian countries' participation in different maritime sectors, as a percentage of the world total.

A high percentage of the world's seafarers are nationals of the Philippines, Indonesia and Turkey. For some smaller countries, such as Georgia and Sri Lanka, the supply of seafaring personnel is also relatively important that is, these countries have a greater participation in the supply of seafarers than in any other maritime business. Lebanon and the Syrian Arab Republic have a relatively strong participation in the supply of officers.

China is the country with by far the most container port throughput in Asia. Singapore and Hong Kong (China) have their largest maritime participation through their respective international port operating companies — Port of Singapore Authority and Hutchison Port Holdings — which not only operate in their traditional home port, but have also expanded and invested in concessions and port privatizations abroad.

Japan has its highest market share with its classification society Nippon Kaiji Kyokai. The Republic of Korea has by far its highest market share in containership building.

India, Bangladesh and Pakistan have their highest market shares in ship scrapping.

Except for Singapore, most Asian countries have a large proportion of their fleet registered under foreign flags. A few smaller countries, notably Cambodia, are open registries.

Taiwan Province of China, mostly through the Evergreen group, has its highest market share in containership operation. Just like other major operators from China, the Republic of Korea and Japan, these liner shipping companies tend to operate fleets that are only partly owned by them and a large proportion of the vessels are chartered in. Singapore and Hong Kong (China), on the other hand, have a higher market share in container ship owning than in container ship operation.

## **D. FOCUS ON SELECTED CASES**

### *Transport developments in China*

In several of the previous chapters, developments in China were mentioned as particularly noteworthy with regard to the supply of, and demand for, shipping services. On the supply side, Chinese shipping companies (table 56) are among the fastest growing, and the country is host to the most important container and crane manufacturers. On the demand side, Chinese containerized exports are growing at almost 18 per cent annually and today make up almost one quarter of the world total (table 51). As a result of these developments, Chinese ports too are among the fastest growing in the world, with annual increases of port throughput of between approximately 18 and 153 per cent in major ports (table 59).

In terms of volume, 70.5 per cent of Chinese port throughput is cabotage traffic, and 37.7 per cent takes place in inland ports (figure 16). In 2003, port throughput of foreign trade grew by 23.7 per cent, and cabotage port throughput by 15.5 per cent. Year-on-year growth in Shanghai for the first quarter of 2004 has been reported to be 26.5 per cent.

China is among the few Asian countries that participate in almost all maritime sub-sectors, as depicted in table 58. To put this participation into perspective, figure 17 shows a maritime profile of China, including the country's participation in global production, trade and containerized exports.

Table 58

Participation of Asian economies in different maritime businesses  
(percentage of world total)

Country or economy	Seafarers: officers	Seafarers: rating	Container port throughput (TEU)	International container port operators (TEU)	Classification (GT)	Containership building (TEU)	Ship scrapping (tons)	Containership registration (TEU)	Containership ownership (TEU)	Containership operation (TEU)
Azerbaijan								0.01	0.01	<b>0.01</b>
Bahrain			0.06					<b>0.10</b>		
Bangladesh	1.06	0.61	0.20				<b>23.47</b>	0.15	0.17	0.09
Brunei Darussalam			<b>0.03</b>							
Cambodia			0.06					<b>0.20</b>	0.04	0.01
China	8.47	5.81	<b>20.92</b>	2.90	2.30	6.14	13.75	2.85	3.75	5.99
Georgia	0.34	<b>0.50</b>						0.10	0.00	0.00
Hong Kong (China)	0.31	0.08	7.19	<b>24.46</b>				2.79	4.31	3.39
India	2.90	5.22	1.22		0.10		<b>48.91</b>	0.20	0.29	0.22
Indonesia	3.84	<b>8.26</b>	1.71		0.15			0.40	0.39	0.39
Iran, Islamic Republic of	0.66	<b>0.76</b>	0.30			0.37		0.48	0.49	0.59
Israel	0.13	0.15	0.55					0.74	1.24	<b>1.82</b>
Japan	4.66	1.48	5.07	5.18	<b>18.93</b>	10.08	0.10	0.43	5.81	9.47
Jordan	0.09	0.01	<b>0.10</b>					0.03	0.03	0.01
Kazakhstan								0.01	<b>0.01</b>	
Korea, Democratic People's Republic of	0.28	<b>0.31</b>	n.a.					0.09	0.02	0.01
Korea, Republic of	2.36	0.85	4.33	4.13	1.77	<b>62.31</b>		0.73	2.22	6.35
Kuwait	0.02		0.07					0.18	0.74	<b>0.88</b>
Lao People's Democratic Republic	0.00	<b>0.00</b>								
Lebanon	<b>0.28</b>	0.17	0.11						0.03	0.07
Malaysia	1.05	1.03	<b>2.83</b>					0.83	0.66	0.76
Maldives	0.02	<b>0.24</b>	0.01					0.01	0.01	0.00
Mongolia								<b>0.02</b>		
Myanmar	1.49	<b>2.79</b>	0.02					0.04	0.04	0.05
Oman	0.01	0.01	<b>0.53</b>							
Pakistan	0.70	1.13	0.36				<b>10.68</b>	0.07	0.08	0.09
Philippines	12.39	<b>21.86</b>	1.23	1.23			0.14	0.26	0.27	0.30
Qatar			n.a.					<b>0.18</b>	0.02	0.03
Saudi Arabia			<b>0.73</b>					0.27	0.14	0.15
Singapore	0.16	0.07	6.31	<b>18.79</b>		0.44		4.36	5.13	4.61
Sri Lanka	0.15	<b>1.21</b>	0.66					0.04	0.03	0.01

Table 58 (continued)

Country or economy	Seafarers: officers	Seafarers: rating	Container port throughput (TEU)	International container port operators (TEU)	Classification (GT)	Containership building (TEU)	Ship scrapping (tons)	Containership registration (TEU)	Containership ownership (TEU)	Containership operation (TEU)
Syrian Arab Republic	<b>0.29</b>	0.20	0.10					0.10	0.11	0.03
Taiwan Province of China	1.07	0.33	4.36	4.74	0.13	3.90	0.09	0.67	5.35	<b>7.52</b>
Turkey	3.54	<b>5.85</b>	0.67		0.02		1.10	0.67	0.89	0.80
Turkmenistan								0.00	0.00	<b>0.00</b>
United Arab Emirates			2.21	<b>3.27</b>				0.19	0.20	0.10
Viet Nam	0.62	0.50	0.53		0.00		<b>1.08</b>	0.12	0.13	0.10
Yemen	0.01	0.00	<b>0.15</b>					0.00	0.00	0.00

Source: UNCTAD, based on data provided by a variety of sources. See accompanying text for details. The figures provided are estimations based on data for 2004 or the latest year available. Each economy's estimated maximum participation is highlighted in bold.

Table 59

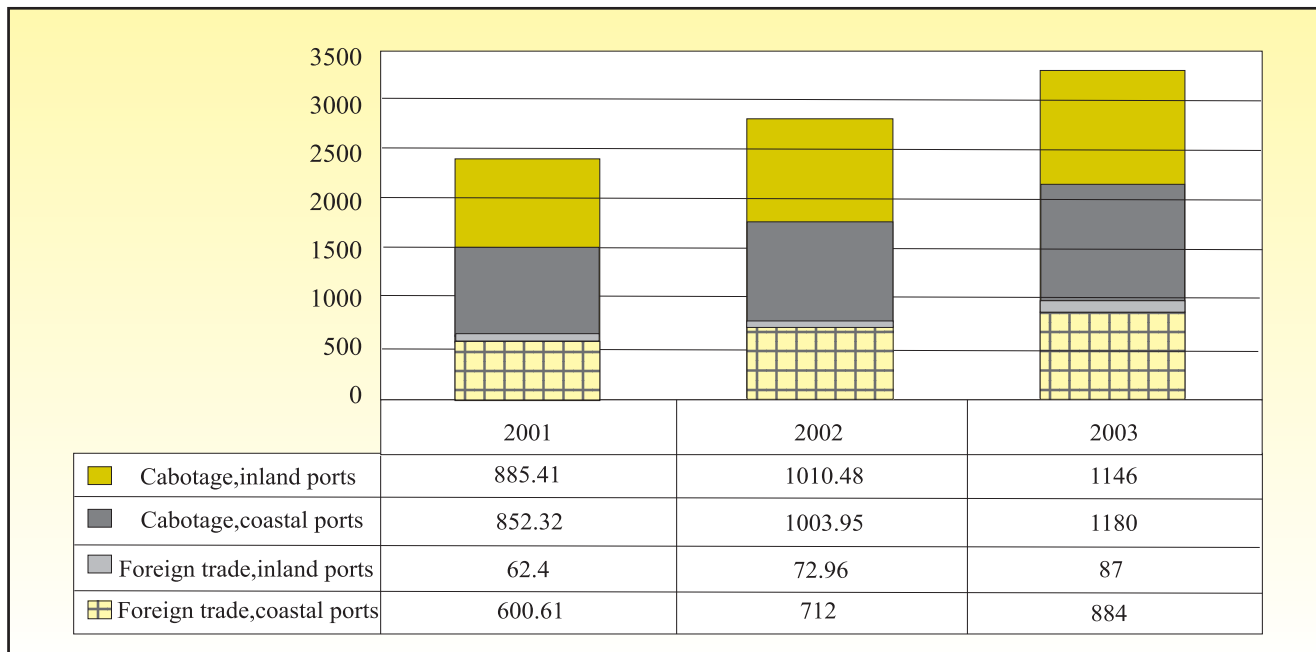
**Top 10 container ports of mainland China, 2002 and 2003**  
(TEU)

Rank	Port	2002	2003	Growth
1	Shanghai	8 611 890	11 370 000	31.00%
2	Shenzhen	7 613 754	10 650 000	39.30%
3	Qingdao	3 410 000	4 230 000	24.30%
4	Tianjin	2 408 100	3 020 000	25.20%
5	Ningbo	1 859 000	2 772 200	48.60%
6	Guangzhou	2 172 800	2 760 000	27.10%
7	Xiamen	1 754 370	2 330 000	32.90%
8	Dalian	1 367 192	1 670 590	23.50%
9	Zhongshan	642 400	756 100	17.70%
10	Jiangmen	468 000	744 200	153.30%

Source: Ministry of Communication of the People's Republic of China, and Cargo Systems, August 2004.

Figure 16

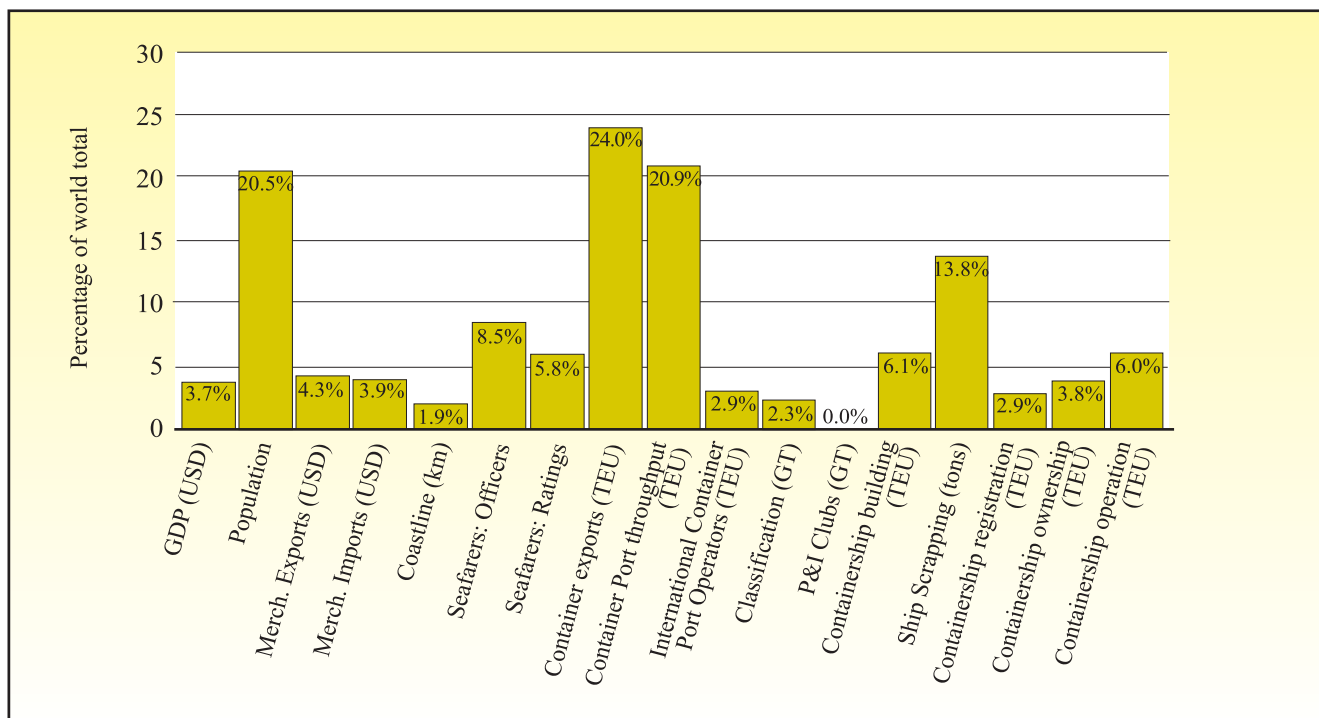
**Chinese port throughput, 2001–2003**  
(millions of tons)



Source: Ministry of Communication of the People’s Republic of China, 2003 and 2004.

Figure 17

**Maritime profile of China**  
(percentages of world totals)



Source: UNCTAD estimations based on data for 2004 or latest available year.

In spite of its important role in absolute terms, when compared with its relative weight in the world population, China is actually maintaining a relatively low market share in many maritime sectors. It is very strong in containerized exports, mostly owing to its trade with North America. It also has strong participation in containerized port throughput, albeit not quite as strong as might be expected given its trade volumes. The reason for this lies in still low transshipment volumes, which is where neighbouring economies such as those of Singapore, Hong Kong (China) and also Sri Lanka have a far higher market share.

China also has a remarkable market share in ship scrapping, which has grown further in recent months due to the country's demand for steel.

Concerning containership registration, ownership and operation, China has a relatively typical industry structure for a country that hosts important liner shipping companies. These companies are likely to own only between half and two thirds of their vessels and the remainder of the operated capacity is chartered in. Owned and chartered tonnage is often registered in foreign open registry countries.

As regards national transport in China, figure 18 depicts its modal split among waterway, road, rail and air transport.

Between 1980 and 2003, waterway transport increased its share from 45.6 per cent to 54.9 per cent of ton-km of national transport in China, reaching 2,972 billion ton-km in 2003. During these 23 years, waterway ton-km have increased by an average annual rate of 7.8 per cent.

Rail was still the most important mode of transport in the 1980s. It has, however, lost market share since then and in 2003 accounted for only 31.5 per cent of ton-km. Rail transport has grown by an average of 4.7 per cent annually since 1980, albeit with stronger growth since 2000, thus recovering some of its lost market share. In fact, with an increase of 9.3 per cent in 2003, rail registered the highest growth rate of all main modes of transport in that year.

In relative terms, airborne cargo has recorded the highest growth, with almost 19 per cent annually since 1980, but still accounts for only 0.1 per cent of overall ton-km in China. In 2003, its output grew by 5.5 per cent.

Road transport has grown by 14.5 per cent annually since 1980, accounting for 13.6 per cent of all ton-km in 2003. In 2003, it grew by 4.7 per cent.

Combining all modes of transport, cargo turnover in China has grown at an average of 7 per cent annually since 1980, reaching 5,234 billion ton-km in 2003.

#### *Transport developments in South East Asia: Cambodia and the Lao People's Democratic Republic*

Cambodia and the Lao People's Democratic Republic are among the LDCs in South-East Asia. Whereas Cambodia has been able to benefit from recent improvements in its port infrastructure, the Lao People's Democratic Republic has to overcome additional obstacles owing to its landlocked situation.

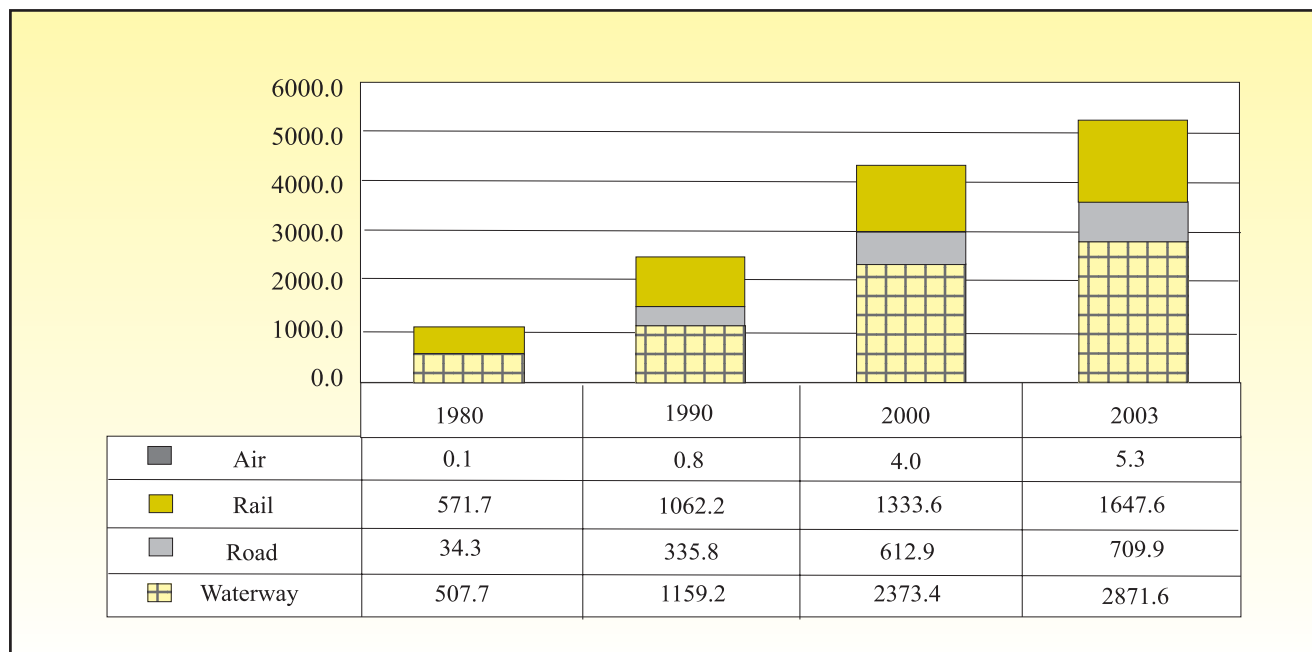
Cambodia's trade structure has changed over the last years from that of a country that mainly exported commodities and imported finished goods, to that of a country that also imports unfinished goods so as to participate in global production processes. This participation would not have been possible without improvements in its transport infrastructure and services, which allowed Cambodia to take advantage of the Multifibre Arrangement. Exports of garments from Cambodia, like the required imports of components, are mostly transported as maritime containerized cargo. During the five years to 2003, containerized imports (in tons) passing through Cambodian ports grew by 66 per cent and containerized exports by 81 per cent. At the same time, the export of timber has practically ceased, whereas the import of cement through national ports has increased by 160 per cent. Overall, during the five years to 2002, Cambodia's GDP (in US dollars) grew by 24 per cent, while its foreign trade increased by 108 per cent. In 2003, exports and imports grew by 12.5 per cent and 11.9 per cent respectively.

Foreign and national investors in the Cambodian garments industry had previously exerted strong pressure on ports to improve efficiency and reduce bureaucracy. Consequently, administrative procedures in the two main ports of Phnom Penh and Sihanoukville have now been streamlined. However, obstacles appear to persist in the port administration, as well as in customs and other public authorities, as is claimed by importers and exporters. For transit cargo that enters Cambodia via Vietnamese ports, even if transported via waterway transport on the river Mekong, the border crossing continues to involve lengthy



Figure 18

**National transport in China**  
(billion ton-km)



*Source:* UNCTAD, based on data from Ministry of Communications of the People's Republic of China: "The 2002 Report on China's shipping development" and 2003 updates.

*Note:* Includes inland and coastal transport of imports and exports.

controls. These controls effectively reduce the competition between Cambodian and Vietnamese ports, leaving most importers and exporters without real choices between alternative ports. For continued development of the garment industry or other industries in Cambodia, port and customs procedures as well as border controls will need to be further streamlined.

Until the beginning of the 1990s, Cambodia had hardly any containerized trade, mostly because of insecure inland transport. Most imports and exports for the capital city of Phnom Penh reached its river port at the Mekong River on barges, that is via waterway transport. Cargo had to be transhipped in terminals near Ho Chi Minh City, as the Mekong river transits Viet Nam. Improved security and a new 214-km toll road between the country's only deep sea port of Sihanoukville and Phnom Penh have in recent years led to a surge of international cargo at Sihanoukville, originating in or bound for Phnom Penh. Container throughput in Sihanoukville has almost doubled during the last five years to reach 181,286 TEUs

in 2003. At the same time, Phnom Penh port has benefited from improvements concerning transit agreements with Viet Nam as well as investments in container handling equipment in the port itself, leading to an increase in container handling from practically zero to around 1,000 TEUs per month in 2004. This also includes the transshipment of containers that arrive on barges from smaller river ports located further upstream. However, many rural parts of the country are not connected by adequate roads or waterways to any port at all, and containerization has only just started to reach a few economic centres.

The Lao People's Democratic Republic is the only landlocked country in South-East Asia, sharing borders with Thailand, Viet Nam, Cambodia and China. The country has limited basic infrastructure and no railway network. The major modes of transportation are land and inland waterway. The Lao People's Democratic Republic relies mainly on its neighbouring countries for exports and imports. In 2002, almost half of their export

volumes of \$443 million were destined for neighbouring countries, Viet Nam being the main export destination with a share of 26 per cent. Regarding imports, the reliance on neighbouring countries was even greater. Out of a total of \$763 million, more than 80 per cent of imports by the Lao People's Democratic Republic came from neighbouring countries, with Thailand being the major import origin with a share of 58 per cent.<sup>30</sup>

Ninety-five per cent of the country's transit trade moves through ports in Thailand and the remainder through ports in Viet Nam. Approximately 670 kilometres away from Vientiane (Lao People's Democratic Republic), Bangkok (Thailand) port is considered to be the most convenient transit choice. For exports, the total cost and time to move shipments from Vientiane to Bangkok port by road ranges from 17 to 31 hours with costs of \$700 per TEU. Border-crossing time and costs account for approximately 30 per cent and 20 per cent, respectively, towards the total figures. For imports, the total cost and time were estimated to be much higher. Border crossing for imports from Thailand to the Lao People's Democratic Republic can take more than a month for customs clearance. The cost of land transportation from Bangkok port to Vientiane, at around \$1,200–1,500, is almost double that of exports, as the trucking freight rate usually needs to cover empty backhauling. An alternative route would be via ports in Viet Nam. However, this remains unpopular owing to inadequate infrastructure, administrative barriers and limited port traffic. The average time required from Vientiane to Danang (Viet Nam) port is about 3 days, three times the average of the Bangkok port corridor. The cost is estimated at \$1,650 per TEU, which is more than double the cost to Bangkok port. At the same time, imports through this port have been subject to unpredictable delays in the port itself.<sup>31</sup>

Efforts by the Lao People's Democratic Republic to improve transit transport have been made through cooperation at the bilateral level, such as bilateral transit agreements with Thailand and Viet Nam, as well as at the multilateral level, for example through ASEAN and the Greater Mekong Subregion transit transport agreements. However, there are still important obstacles to overcome.

#### *Landlocked countries in Central Asia*

Central Asian landlocked countries are particularly strongly affected by high transport costs and lengthy transit times as well as by low frequencies and reliability of services.

Border crossing costs between Kazakhstan and the Russian Federation are estimated at \$200 and between Uzbekistan and Turkmenistan at \$650 (figure 19). Border crossing between Uzbekistan and Turkmenistan is estimated to last an average of 280 hours.<sup>32</sup> Uzbekistan is the only country in the world that is separated from any seaport by at least two international borders.

In many cases, containers that arrive at a transit country's seaport with final destination in a landlocked country are unstuffed and stuffed by the transit country's Customs; this is perceived as a non-tariff trade barrier. Such impediments, together with long and costly Customs procedures and other inspections in the transit country and in the landlocked country itself, amount to between 10 and 15 per cent of the goods' value for road transport and 2 to 10 per cent for rail transport.<sup>33</sup>

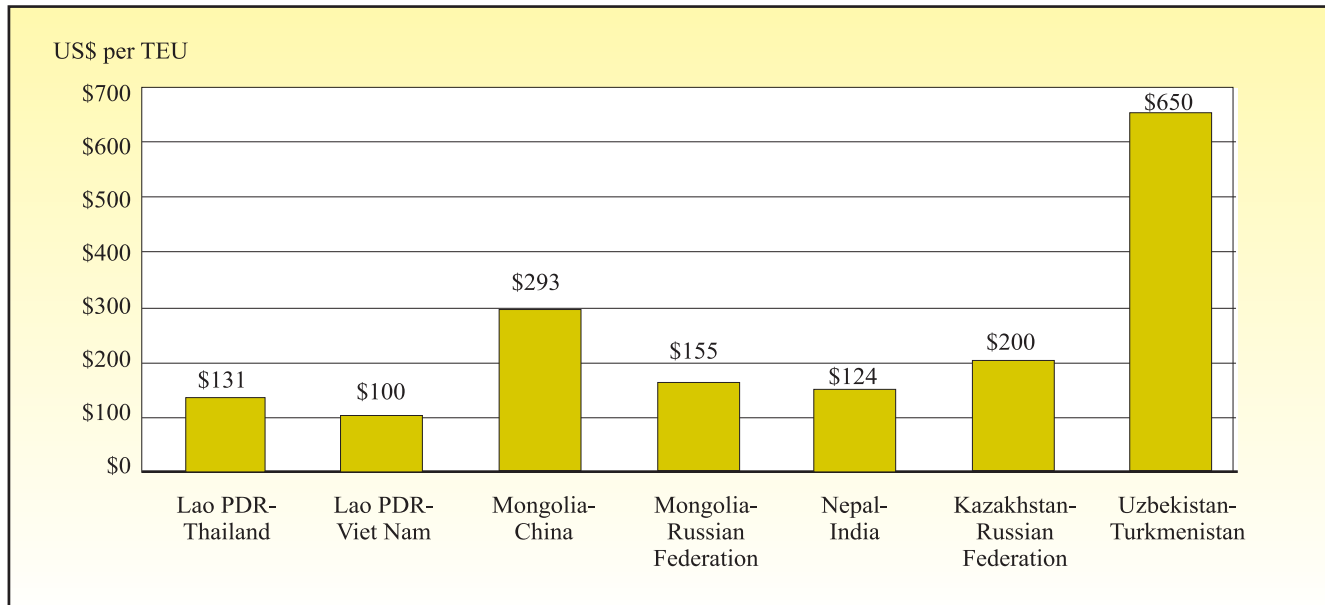
For the case of Almaty in landlocked Kazakhstan, a comparison of four corridors shows that the costs per TEU per km vary between \$0.26 for a rail connection to Moscow and \$1.90 for a connection by truck to Urumqi (China).<sup>34</sup> On average, rail costs are one third of those of road transport. In absolute terms, among the four corridors, road transport from Almaty to Baku is the most expensive at \$5,300 and transport by rail on the same corridor the one that takes the longest — 18 days.

There is a lack of coordination between countries in the region, and suggested reforms include a regional approach to trade and transport policies as well as Customs procedures. Countries should work towards common and transparent transit fees and also the implementation of international freight handling standards such as TIR and ASYCUDA.<sup>35</sup>

With regard to Afghanistan, this country is important as a potential transit country for other members of the Economic Cooperation Organization, and it itself also depends heavily on transit through neighbouring countries for its own trade. Concerning transit, road links are still sporadic, maps are mostly missing, and multiple controls are continuing. Spare parts and repair shops for trucks are practically non-existent. The country will need to create an institutional and regulatory framework, in harmony with international conventions and protocols on transit trade and transport.

Figure 19

Comparison of border crossing costs  
(US\$ per TEU)



Source: UNESCAP, "Transit transport issues in landlocked and transit developing countries", New York, 2003.

- <sup>1</sup> The totals reported by the BP Annual Report 2002 include crude oil, shale oil, oil sands and natural gas liquids (NGL) – the liquid content of natural gas when this is recovered separately.
- <sup>2</sup> Measured at 15 degrees C and 1013 mbar.
- <sup>3</sup> See [www.vhss.de/englisch/hax.html](http://www.vhss.de/englisch/hax.html).
- <sup>4</sup> In some jurisdictions, the negotiable bill of lading is truly negotiable in the sense of providing any transferee with good title, i.e. property in the goods, free from any existing defect in ownership. In other jurisdictions, such as the United Kingdom, the same effect is achieved through statutory provisions, but the document itself is not considered to have the same inherent proprietary value.
- <sup>5</sup> Where delivery is made against a letter of indemnity to the wrong consignee, or to a consignee who has failed to pay his seller, the carrier faces a claim for misdelivery and may not in all cases be able to enforce the indemnity.
- <sup>6</sup> See footnote 4 above.
- <sup>7</sup> *Container Security: Major Initiatives and Related International Developments* (UNCTAD/SDTE/TLB/2004/1), available on the UNCTAD website ([www.unctad.org](http://www.unctad.org)) at [www.unctad.org/en/docs/sdtetlb20041\\_en.pdf](http://www.unctad.org/en/docs/sdtetlb20041_en.pdf).
- <sup>8</sup> Such as the Maritime Transportation Security Act of 2002 and the Public Health Security and Bioterrorism Preparedness and Response Act of 2002.
- <sup>9</sup> See also O. Özcayir, *The ISPS Code*, *Journal of International Maritime Law* 9 [2003] 6, 578.
- <sup>10</sup> See on this issue, for instance, D. Stasinopoulos, *Maritime security: The need for a global agreement*, *Maritime Economics & Logistics*, 2003, 5, 311–320.
- <sup>11</sup> See a recent United Nations General Assembly resolution: “*Recognizing* that countries take appropriate and necessary security measures, but also *underlining* the importance of these being taken in a manner that is least disruptive of normal trade and related practices” (A/C.2/58/L.32 at X).
- <sup>12</sup> See, for instance, Advance Written Questions on the WTO’s *Trade Policy Review United States*, available as part of the relevant documentation on the discussions which took place on 14 and 16 January 2004 on the WTO website ([www.wto.org](http://www.wto.org)).
- <sup>13</sup> See, for example, OECD Report *Security in Maritime Transport: Risk Factors and Economic Impact*, July 2003 ([www.oecd.org](http://www.oecd.org)); WCO-commissioned study, P. Dulbecco and B. Laporte, *How can the security of the international supply chain be financed?*, April 2003, [www.wcoomd.org](http://www.wcoomd.org).
- <sup>14</sup> For instance, the Netherlands Customs has prepared a discussion document for consideration within WCO, *Supply Chain Security: Where Do We Want to Go?*
- <sup>15</sup> See footnote 7 above.
- <sup>16</sup> “Asia” comprises all countries grouped in Codes 7 and 10 of annex I, as well as Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Turkey and Uzbekistan (Code 6) and Israel (Code 5).
- <sup>17</sup> <http://www.aseansec.org/12021.htm>
- <sup>18</sup> See <http://www.aseansec.org/15157.htm> for the Protocol to Amend the Framework Agreement on Comprehensive Economic Cooperation Between the Association of South-East Asian Nations and the People’s Republic of China; <http://www.aseansec.org/15274.htm> for the Framework for Comprehensive Economic Partnership Between the Association of South-East Asian Nations and Japan, and <http://www.aseansec.org/15278.htm> for the Framework Agreement on Comprehensive Economic Cooperation Between the Republic of India and the Association of South-East Asian Nations.
- <sup>19</sup> *Journal of Commerce*, 7 May 2004
- <sup>20</sup> The order book can only be an indicator of projected growth because once vessels are delivered they may be sold or chartered, or replace currently operated TEU carrying capacity.
- <sup>21</sup> *Source*: Clarkson Research Studies, March 2004.

- 22 *Source:* UNCTAD, based on data from Clarkson Research Studies, April 2004.
- 23 *Source:* UNCTAD, based on data from Lloyd's Register–Fairplay, January 2003.
- 24 *Source:* UNCTAD, based on data from Bow Wave E-newsletter, March 2004.
- 25 See chapter 6.
- 26 *Source:* UNCTAD, based on data from Cargo Systems, February 2004.
- 27 *Source:* UNCTAD, based on data from Dyna Liners (2004), which quotes Drewry shipping consultants (2003).
- 28 *Source:* UNCTAD, based on data from Danish Environmental Protection Agency, [http://www.mst.dk/udgiv/publications/2003/87-7972-588-0/html/kap02\\_eng.htm](http://www.mst.dk/udgiv/publications/2003/87-7972-588-0/html/kap02_eng.htm). Data are for 1994–2002 totals. 2003 and 2004 information is from CI-Online, 30 April 2004, and Lloyd's List, 16 April 2004.
- 29 *Source:* UNCTAD, based on data from BIMCO/ISF manpower update 2000. In recent months, more stringent visa requirements for seafarers from some predominantly Muslim countries have led to certain shifts in the traditional employment patterns.
- 30 *Source:* ADB Key Indicators 2003.
- 31 *Source:* UNESCAP, "Transit transport issues in landlocked and transit developing countries", New York, 2003.
- 32 *Ibid.*
- 33 H. Kerali, World Bank, "Transport and trade linkages", presentation to 1st Expert Group Meeting on Developing Euro-Asian Transport Linkages, March 2004, Almaty, Kazakhstan.
- 34 H. Kerali, *op.cit.*
- 35 These recommendations were mentioned during the Expert Group Meeting on Developing Euro-Asian Transport Linkages, March 2004, Almaty, Kazakhstan. For information about TIR see <http://www.unece.org/trans/bcf/tir>. For information about ASYCUDA see <http://www.asycuda.org>.

## Annex I

Classification of countries and territories <sup>a b c d</sup>

<b>Code 1</b>	Canada	United States
<b>Code 2</b>	Austria	Italy
	Belgium	Luxembourg
	Denmark	Monaco
	Faeroe Islands	Netherlands
	Finland	Norway
	France	Portugal
	Germany	Spain
	Gibraltar	Sweden
	Greece	Switzerland
	Iceland	Turkey
	Ireland	United Kingdom of Great Britain and Northern Ireland
	Israel	
<b>Code 3</b>	Japan	
<b>Code 4</b>	Australia	New Zealand
<b>Code 5</b>	South Africa	
<b>Code 6</b>	Albania	Latvia
	Armenia	Lithuania
	Azerbaijan	Poland
	Belarus	Republic of Moldova
	Bulgaria	Romania
	Czech Republic	Russian Federation
	Estonia	Slovakia
	Georgia	Tajikistan
	Hungary	Turkmenistan
	Kazakhstan	Ukraine
	Kyrgyzstan	Uzbekistan
<b>Code 7</b>	China	Viet Nam
	Democratic People's Republic of Korea	
<b>Code 8–8.1</b>	<i>Northern Africa</i>	
	Algeria	Morocco
	Egypt	Tunisia
	Libyan Arab Jamahiriya	

## Annex I (continued)

**Code 8.2***Western Africa*

Angola	Guinea
Benin	Guinea-Bissau
Burkina Faso	Liberia
Cameroon	Mali
Cape Verde	Mauritania
Congo	Nigeria
Côte d'Ivoire	Saint Helena
Democratic Republic of the Congo	Sao Tome and Principe
Equatorial Guinea	Senegal
Gabon	Sierra Leone
Gambia	Togo
Ghana	

**Code 8.3***Eastern Africa*

Burundi	Mozambique
Comoros	Reunion
Djibouti	Seychelles
Eritrea	Somalia
Ethiopia	Sudan
Kenya	Uganda
Madagascar	United Republic of Tanzania
Malawi	Zambia
Mauritius	

**Code 9–9.1***Caribbean and North America*

Anguilla	Guadeloupe
Antigua and Barbuda	Haiti
Aruba	Jamaica
Bahamas	Martinique
Barbados	Montserrat
Bermuda	Saint Kitts and Nevis
British Virgin Islands	Saint Lucia
Cayman Islands	Saint Pierre and Miquelon
Cuba	Saint Vincent and the Grenadines
Dominica	Trinidad and Tobago
Dominican Republic	Turks and Caicos Islands
Greenland	United States Virgin Islands
Grenada	

**Code 9.2***Central America*

Belize	Honduras
Costa Rica	Mexico
El Salvador	Nicaragua
Guatemala	Panama

## Annex I (continued)

<b>Code 9.3</b>	<i>South America – Northern Seaboard</i>	
	French Guiana	Suriname
	Guyana	Venezuela
	Netherlands Antilles	
<b>Code 9.4</b>	<i>South America – Western Seaboard</i>	
	Chile	Ecuador
	Colombia	Peru
<b>Code 9.5</b>	<i>South America – Eastern Seaboard</i>	
	Argentina	Falkland Islands (Malvinas) <sup>e</sup>
	Bolivia	Paraguay
	Brazil	Uruguay
<b>Code 10–10.1</b>	<i>Western Asia</i>	
	Bahrain	Oman
	Cyprus	Qatar
	Iran, Islamic Republic of	Saudi Arabia
	Iraq	Syrian Arab Republic
	Jordan	United Arab Emirates
	Kuwait	Yemen
	Lebanon	
<b>Code 10.2</b>	<i>Southern and Eastern Asia</i>	
	Bangladesh	Maldives
	Bhutan	Myanmar
	Brunei Darussalam	Pakistan
	Cambodia	Philippines
	Hong Kong (China)	Republic of Korea
	India	Singapore
	Indonesia	Sri Lanka
	Macao (China)	Thailand
	Malaysia	
<b>Code 11</b>	Bosnia and Herzegovina	Slovenia
	Croatia	Yugoslavia
	Malta	
<b>Code 12</b>	American Samoa	Papua New Guinea
	Christmas Island (Australia)	Samoa
	Fiji	Solomon Islands
	French Polynesia	Tonga
	Guam	Tuvalu
	Kiribati	Vanuatu
	Nauru	Wake Island
	New Caledonia	



## Annex I (continued)

*Notes*

- <sup>a</sup> This classification is for statistical purposes only and does not imply any judgement regarding the stage of development and the political situation of any country or territory.
- <sup>b</sup> The following are groups of countries or territories used for presenting statistics in this *Review*:
- Developed market-economy countries: Codes 1, 2, 3, 4 and 5  
Countries of Central and Eastern Europe and Republics of the former Soviet Union: Code 6  
Socialist countries in Asia: Code 7  
Developing countries and territories: Codes 8, 9, 10, 11 and 12  
*of which:*  
In Africa: Codes 8.1, 8.2 and 8.3  
In America: Codes 9.1, 9.2, 9.3, 9.4 and 9.5  
In Asia: Codes 10.1 and 10.2  
In Europe: Code 11  
In Oceania: Code 12
- <sup>c</sup> In certain tables, where appropriate, open-registry countries are recorded in a separate group. The group comprises the Bahamas, Bermuda, Cyprus, Liberia, Malta, Panama and Vanuatu.
- <sup>d</sup> Trade statistics are based on data recorded at the ports of loading and unloading. Trade originating in or destined for neighbouring countries is attributed to the country in which the ports are situated; for this reason, landlocked countries do not figure in these tabulations. On the other hand, statistical tabulations on merchant fleets include data for landlocked countries that possess fleets.
- <sup>e</sup> A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

## Annex II

World seaborne trade <sup>a</sup> by country groups, 1970, 1980, 1990 and 2000–2003

(millions of tons)

Area <sup>b</sup>	Year	Goods loaded				Goods unloaded			
		Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods
		Crude	Products <sup>c</sup>			Crude	Products <sup>c</sup>		
<b>Developed market-economy countries</b>									
North America	1970	0.7	5.3	308.0	314.0	73.4	103.6	170.0	347.0
	1980	0.5	6.9	498.0	505.3	274.3	71.4	170.1	515.7
	1990	1.4	25.8	515.1	542.3	274.9	100.8	227.6	603.3
	2000	15.2	59.7	438.9	513.8	502.2	122.3	311.8	936.3
	2001	14.8	56.9	456.9	528.6	492.2	125.2	306.2	923.5
	2002	14.8	56.9	445.8	517.5	486.4	123.8	303.7	913.9
	2003	15.1	61.7	441.1	517.9	532.3	135.8	324.0	992.1
Europe	1970	28.6	82.3	244.8	355.7	621.0	100.4	469.0	1 190.4
	1980	95.7	79.3	387.4	562.3	585.5	145.1	680.5	1 411.1
	1990	162.1	124.2	482.2	768.5	446.8	172.7	763.2	1 382.7
	2000	59.9	44.5	1 099.6	1 204.0	419.6	103.4	1 494.7	2 017.7
	2001	64.6	44.1	1 064.2	1 172.9	424.7	101.8	1 444.4	1 970.9
	2002	64.5	44.0	1 068.9	1 177.4	425.4	101.9	1 446.6	1 973.8
	2003	65.3	45.6	1 090.9	1 201.9	433.5	103.7	1 474.5	2 011.8
Japan	1970	-	0.3	41.6	41.9	170.4	30.4	235.1	435.9
	1980	-	..	83.6	83.6	216.3	35.0	361.5	612.8
	1990	-	1.2	81.9	83.1	201.2	82.0	440.7	723.9
	2000	0.0	3.8	126.3	130.1	215.0	49.1	542.4	806.5
	2001	0.0	4.5	135.6	140.1	209.0	45.2	529.6	783.8
	2002	0.0	4.3	149.3	153.6	213.0	47.9	523.9	784.7
	2003	0.0	4.2	158.3	162.5	215.0	32.5	572.6	820.1
Australia and New Zealand	1970	-	1.3	92.3	93.6	18.8	2.9	15.4	37.1
	1980	-	1.5	148.4	150.0	9.8	6.6	13.5	29.9
	1990	9.2	1.5	266.3	277.0	8.6	7.2	18.1	33.9
	2000	10.7	2.5	430.6	443.8	32.1	6.7	29.2	68.0
	2001	9.4	2.5	411.6	423.5	32.1	6.7	29.8	68.6
	2002	10.8	2.7	433.1	446.6	32.1	6.7	31.1	69.9
	2003	10.9	2.7	475.4	489.1	32.4	6.7	31.5	70.6
South Africa	1970	-	-	13.2	13.2	8.8	2.6	6.2	17.6
	1980	-	0.1	68.9	69.0	15.0	1.0	9.7	25.7
	1990	-	-	82.5	82.5	21.9	0.3	9.6	31.8
	2000	0.0	0.0	133.3	133.3	11.4	0.0	20.1	31.6
	2001	0.0	0.0	135.6	135.6	15.4	0.9	22.9	39.2
	2002	0.0	0.0	134.2	134.2	15.4	0.9	22.9	39.2
	2003	0.0	0.0	150.4	150.4	15.4	0.9	22.7	39.0
<b>Subtotal: Developed market- economy countries</b>	1970	29.3	89.2	699.9	818.4	892.4	239.9	895.7	2 028.0
	1980	96.2	87.8	1 186.3	1 370.3	1 100.9	259.1	1 235.3	2 595.2
	1990	172.7	152.7	1 428.0	1 753.4	953.4	363.0	1 459.2	2 775.6
	2000	85.8	110.5	2 228.6	2 424.9	1 180.4	281.5	2 398.3	3 860.1
	2001	88.8	108.0	2 203.9	2 400.7	1 173.4	279.7	2 333.0	3 786.1
	2002	90.1	107.9	2 231.3	2 429.3	1 172.2	281.1	2 328.2	3 781.5
	2003	91.3	114.2	2 316.1	2 521.7	1 228.7	279.6	2 425.3	3 933.6

## Annex II (continued)

Area <sup>b</sup>	Year	Goods loaded				Goods unloaded			
		Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods
		Crude	Products <sup>c</sup>			Crude	Products <sup>c</sup>		
<b>Countries of Central and Eastern Europe</b>									
Countries of Central and Eastern Europe <sup>d</sup>	1970	38.2	26.3	80.8	145.3	13.3	3.0	41.1	57.4
	1980	55.0	50.2	95.6	200.8	35.5	1.3	108.6	145.4
	1990	58.6	55.3	85.2	199.1	34.2	1.3	137.2	172.7
	2000	91.9	44.2	156.0	292.1	8.0	2.0	75.5	85.5
	2001	91.3	40.1	153.6	285.0	8.0	4.0	75.8	87.8
	2002	91.3	41.9	164.4	297.6	10.0	3.0	76.4	89.4
	2003	116.9	44.0	166.6	327.5	10.2	3.1	76.5	89.8
<b>Socialist countries of Asia</b>									
Socialist countries of Asia <sup>e</sup>	1970	-	0.1	13.3	13.4	5.4	0.4	24.4	30.2
	1980	22.1	5.7	18.3	46.1	21.6	5.1	72.9	99.6
	1990	32.0	4.0	46.1	82.1	3.9	1.3	80.4	85.6
	2000	17.0	5.5	250.0	272.5	70.0	22.3	289.6	381.8
	2001	17.2	5.6	267.1	289.8	60.5	26.6	314.8	401.9
	2002	17.6	10.7	291.3	319.6	69.4	25.4	371.4	466.2
	2003	18.1	11.2	317.9	347.2	90.2	27.5	398.6	516.3
<b>Developing countries and territories</b>									
Developing countries of Africa									
Northern Africa	1970	221.4	5.6	28.3	255.3	9.9	5.9	17.9	33.7
	1980	187.7	2.5	30.0	220.2	50.0	2.0	44.9	96.9
	1990	182.7	31.5	32.0	246.2	63.4	4.3	57.8	125.5
	2000	125.6	32.7	35.6	193.9	49.8	8.5	75.9	134.2
	2001	127.2	33.3	35.8	196.3	45.8	8.1	77.1	131.0
	2002	120.6	33.1	35.7	189.4	44.7	8.0	77.8	130.5
	2003	125.6	34.6	36.2	196.5	46.5	8.2	79.6	134.3
Western Africa	1970	60.5	1.0	61.5	123.0	3.6	4.0	14.8	22.4
	1980	102.6	1.9	66.8	171.3	4.3	5.5	30.8	40.6
	1990	127.1	3.4	55.2	185.7	4.0	3.2	27.7	34.9
	2000	173.0	1.8	19.9	194.7	4.0	4.1	38.4	46.5
	2001	170.6	1.7	19.9	192.2	3.7	4.1	39.9	47.8
	2002	171.3	1.6	19.9	192.8	3.6	4.0	39.8	47.5
	2003	175.3	1.5	19.6	196.4	3.3	4.0	39.4	46.7
Eastern Africa	1970	-	1.2	16.1	17.3	5.5	2.6	8.3	16.4
	1980	-	0.9	6.3	7.2	6.2	2.0	9.9	18.1
	1990	-	0.6	9.3	9.9	6.4	2.6	16.0	25.0
	2000	0.0	0.0	7.2	7.2	0.7	4.8	19.0	24.5
	2001	0.0	0.0	8.4	8.4	0.7	4.9	19.8	25.4
	2002	0.0	0.0	8.9	8.9	0.7	5.1	20.2	26.0
	2003	0.0	0.0	8.3	8.3	0.7	5.1	18.6	24.5
<b>Subtotal: Developing countries in Africa</b>	1970	281.9	7.8	105.9	395.6	19.0	12.5	41.0	72.5
	1980	290.3	5.3	103.1	398.7	60.5	9.5	85.6	155.6
	1990	309.8	35.5	96.5	441.8	73.8	10.1	101.5	185.4
	2000	298.6	34.5	62.7	395.8	54.5	17.4	133.3	205.2
	2001	297.8	35.0	64.1	396.9	50.2	17.1	136.8	204.2
	2002	292.0	34.7	64.5	391.2	49.0	17.2	137.8	204.0
	2003	300.9	36.1	64.1	401.1	50.5	17.3	137.7	205.4

## Annex II (continued)

Area <sup>b</sup>	Year	Goods loaded				Goods unloaded			
		Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods
		Crude	Products <sup>c</sup>			Crude	Products <sup>c</sup>		
<b>Developing countries in America</b>									
Caribbean,	1970	-	5.1	40.3	45.4	29.5	10.0	17.7	57.2
Central and	1980	53.5	29.6	53.5	136.6	62.8	8.9	30.2	102.0
North America	1990	95.3	18.8	47.5	161.6	33.7	11.2	35.4	81.1
	2000	91.6	28.8	41.4	161.8	33.0	36.4	71.8	141.3
	2001	97.8	29.6	42.1	169.6	34.2	34.7	74.7	143.7
	2002	97.4	29.6	41.7	168.7	33.9	31.4	77.4	142.6
	2003	99.3	30.9	41.9	172.1	34.2	31.5	76.0	141.7
South America:	1970	131.2	12.9	90.3	234.4	81.9	4.0	26.5	112.4
Northern and	1980	127.8	64.5	162.3	354.6	136.2	5.8	54.5	196.5
Eastern	1990	58.4	28.5	214.8	302.0	37.8	4.3	45.7	87.8
Seaboard	2000	122.8	61.3	274.3	458.4	39.3	20.0	75.4	134.6
	2001	123.0	61.5	282.9	467.5	39.6	20.1	67.5	127.3
	2002	120.7	60.7	284.7	466.1	39.8	20.2	67.7	127.7
	2003	110.2	57.9	295.3	463.4	40.2	20.4	66.9	127.5
South America:	1970	4.6	1.6	29.8	36.0	4.1	1.5	5.9	11.5
Western	1980	7.6	3.4	26.7	37.7	4.9	1.4	13.7	20.1
Seaboard	1990	17.4	8.2	36.0	61.6	3.5	1.3	14.4	19.2
	2000	39.3	3.4	84.4	127.1	15.1	5.3	64.0	84.4
	2001	34.9	3.4	84.3	122.6	15.3	5.4	56.7	77.4
	2002	34.9	3.5	84.7	123.1	15.4	5.5	57.2	78.0
	2003	35.1	3.5	87.1	125.7	15.6	5.5	57.6	78.7
<b>Subtotal:</b>	1970	135.8	19.6	160.4	315.8	115.5	15.5	50.1	181.1
<b>Developing</b>	1980	188.9	97.5	242.5	528.9	203.9	16.1	98.4	318.6
<b>countries in</b>	1990	171.1	55.5	298.3	524.9	75.0	16.8	95.5	187.5
<b>America</b>	2000	253.7	93.5	400.1	747.3	87.5	61.7	211.2	360.4
	2001	255.7	94.6	409.4	759.7	89.1	60.3	198.9	348.3
	2002	253.0	93.8	411.1	757.9	89.1	57.1	202.2	348.4
	2003	244.6	92.3	424.2	761.1	90.0	57.4	200.5	347.9
<b>Developing countries in Asia</b>									
Western Asia	1970	588.7	65.6	3.3	657.6	0.1	1.0	13.1	14.2
	1980	800.6	54.5	12.3	867.4	8.6	50.0	54.9	68.4
	1990	463.9	74.8	30.5	569.2	15.6	7.1	107.0	129.7
	2000	854.7	105.7	63.3	1 023.7	7.0	8.7	121.7	137.4
	2001	863.1	109.3	65.9	1 038.3	7.1	8.3	121.4	136.8
	2002	820.6	106.5	68.5	995.6	7.5	8.1	121.0	136.5
	2003	848.9	109.1	69.0	1 027.0	9.5	7.9	120.0	137.3
Southern and	1970	35.0	23.7	89.3	148.0	54.7	23.3	61.9	139.9
Eastern Asia	1980	74.3	42.2	165.9	282.4	97.4	26.9	163.5	287.8
(n.e.s.)	1990	78.6	88.4	253.0	420.0	150.4	41.6	362.9	554.9
	2000	59.1	101.6	531.0	691.7	306.3	148.1	734.3	1 188.7
	2001	59.6	102.0	535.0	696.7	307.3	147.7	716.2	1 171.2
	2002	60.3	102.5	570.0	732.8	308.5	150.0	760.3	1 218.8
	2003	61.1	107.3	588.8	757.2	301.2	149.4	747.3	1 198.0

## Annex II (continued)

Area <sup>b</sup>	Year	Goods loaded				Goods unloaded			
		Oil		Dry cargo	Total all goods	Oil		Dry cargo	Total all goods
		Crude	Products <sup>c</sup>			Crude	Products <sup>c</sup>		
<b>Subtotal:</b>	1970	623.7	89.3	92.6	805.6	54.8	24.3	75.0	154.1
<b>Developing countries in Asia</b>	1980	874.9	96.7	178.2	1 149.8	106.0	31.9	218.5	356.2
	1990	542.5	163.2	283.5	989.2	166.0	48.7	469.9	684.6
	2000	913.8	207.3	594.3	1 715.4	313.3	156.8	856.0	1 326.1
	2001	922.7	211.3	601.0	1 735.0	314.4	156.0	837.6	1 308.0
	2002	880.9	208.9	638.5	1 728.4	315.9	158.0	881.4	1 355.3
	2003	910.0	216.4	657.8	1 784.2	310.7	157.3	867.3	1 335.3
<b>Developing countries in Europe</b>	1970 <sup>f</sup>	..	-	-	..	-	0.3	0.7	1.0
	1980 <sup>f</sup>	-	-	0.1	0.1	-	0.5	0.6	1.1
	1990	0.3	1.1	7.4	8.8	8.7	2.4	17.7	28.8
	2000	0.0	2.2	15.5	17.7	6.6	2.1	10.4	19.0
	2001	0.0	2.2	15.8	18.0	6.7	2.1	10.6	19.4
	2002	0.0	2.3	16.1	18.4	6.8	2.2	10.8	19.8
	2003	0.0	2.3	16.6	18.9	6.9	2.2	10.9	20.0
<b>Developing countries in Oceania (n.e.s.)</b>	1970	-	0.2	9.5	9.7	0.6	1.6	2.9	5.1
	1980	-	0.7	8.4	9.1	1.6	2.3	3.5	7.4
	1990	-	0.3	8.0	8.3	-	2.3	3.6	5.9
	2000	4.0	0.1	2.0	6.1	0.0	5.9	5.2	11.1
	2001	4.0	0.1	2.0	6.2	0.0	6.0	5.3	11.3
	2002	4.1	0.1	2.0	6.2	0.0	6.0	5.3	11.3
	2003	4.1	0.1	2.1	6.3	0.0	6.1	5.4	11.5
<b>Subtotal:</b>	1970	1 041.4	116.9	368.4	1 526.7	184.9	54.2	169.7	413.8
<b>Developing countries</b>	1980	1 354.1	200.2	532.3	2 086.6	372.0	60.3	406.6	838.9
	1990	1 023.9	255.6	693.7	1 973.0	323.5	80.3	688.2	1 092.0
	2000	1 470.1	337.6	1 074.5	2 882.2	461.8	243.9	1 216.1	1 921.8
	2001	1 480.3	343.2	1 092.3	2 915.7	460.4	241.5	1 189.3	1 891.2
	2002	1 430.0	339.8	1 132.2	2 902.0	460.9	240.5	1 237.4	1 938.8
	2003	1 459.6	347.2	1 164.7	2 971.6	458.0	240.3	1 221.8	1 920.1
<b>World total</b>	1970	1 108.9	232.5	1 162.4	2 503.8	1 101.0	297.5	1 130.9	2 529.4
	1980	1 527.4	343.9	1 832.5	3 703.8	1 530.0	325.8	1 823.3	3 679.1
	1990	1 287.2	467.6	2 253.0	4 007.4	1 315.0	445.9	2 365.0	4 125.9
	2000	1 664.8	497.8	3 709.1	5 871.8	1 720.2	549.7	3 979.4	6 249.2
	2001	1 677.5	496.8	3 716.9	5 891.2	1 702.3	551.9	3 912.8	6 167.0
	2002	1 629.0	500.3	3 819.3	5 948.5	1 712.5	550.0	4 013.5	6 276.0
	2003	1 685.9	516.7	3 965.3	6 168.0	1 787.1	550.4	4 122.2	6 459.8

Sources: Compiled by the UNCTAD secretariat on the basis of data supplied by reporting countries and specialized sources.

<sup>a</sup> Including international cargoes loaded at ports of the Great Lakes and St. Lawrence River system for unloading at ports of the system.

<sup>b</sup> See Annex I for the composition of groups.

<sup>c</sup> Including LNG, LPG, naphtha, gasoline, jet fuel, kerosene, light oil, heavy fuel oil and others.

<sup>d</sup> Including the former Soviet Union.

<sup>e</sup> Estimates.

<sup>f</sup> Yugoslavia was classified as a developing country in Europe from 1986 onwards. Data for 1970 and 1980 for this country were recorded under "Developed market-economy countries: Europe."

## Annex III (a)

Merchant fleets of the world by flag of registration,<sup>a</sup> groups of countries and types of ship<sup>b</sup>  
as at 31 December 2003  
(in thousand grt)

	Total fleet	Oil tankers	Bulk carriers	General cargo <sup>c</sup>	Container ships	Other types
<b>World total<sup>d</sup></b>	594 593	180 041	169 593	87 264	77 486	80 209
<b>Developed market-economy countries</b>						
Australia	1 906	277	581	124	7	917
Austria	32	0	0	30	2	0
Belgium	1 393	332	176	2	293	590
Canada	2 723	445	1 210	148	2	919
Denmark	7 704	1 841	50	431	4 262	1 121
Finland	1 452	314	60	439	10	629
France	4 859	2 250	354	224	566	1 465
Germany	6 112	178	1	289	5 073	571
Gibraltar	993	298	19	365	233	78
Greece	32 203	17 677	10 401	396	1 947	1 782
Iceland	187	0	0	2	0	185
Ireland	471	11	88	163	10	198
Israel	766	1	0	2	753	10
Italy	10 246	2 791	1 396	2 045	801	3 213
Japan	13 562	3 083	2 729	1 974	462	5 313
Luxembourg	1 006	427	0	115	116	348
Netherlands	7 213	439	166	2 891	1 760	1 958
New Zealand	223	52	12	12	0	146
Norway	20 509	7 404	4 079	3 980	62	4 984
Portugal	1 159	473	173	221	35	257
South Africa	171	3	0	0	27	140
Spain	2 651	722	27	444	176	1 283
Sweden	3 579	397	43	2 085	0	1 054
Switzerland	589	0	477	24	83	4
Turkey	4 951	622	2 532	1 223	261	312
United Kingdom	17 261	4 685	1 731	1 566	4 478	4 801
United States	28 055	13 380	4 239	2 242	4 520	3 675
<b>Subtotal</b>	171 975	58 103	30 543	21 435	25 941	35 954
<b>Major open-registry countries</b>						
Bahamas	34 752	14 039	5 512	5 911	1 838	7 452
Bermuda	4 844	572	1 851	247	506	1 669
Cyprus	22 054	3 985	12 119	2 823	2 592	534
Liberia	52 435	23 361	10 345	3 573	11 209	3 947
Malta	25 134	9 195	11 361	3 113	1 018	447
Panama	125 722	29 582	51 132	17 220	18 554	9 233
<b>Subtotal</b>	264 941	80 735	92 320	32 887	35 717	23 282

## Annex III (a) (continued)

	Total fleet	Oil tankers	Bulk carriers	General cargo <sup>c</sup>	Container ships	Other types
<b>Central and Eastern Europe and former USSR</b>						
Albania	70	0	0	69	0	1
Armenia	..	..	..	..	..	..
Azerbaijan	638	178	0	99	0	361
Belarus	..	..	..	..	..	..
Bulgaria	748	22	527	107	57	35
Czech Republic	..	..	..	..	..	..
Estonia	358	9	33	111	0	206
Georgia	815	38	223	451	3	99
Hungary	8	0	0	8	0	0
Kazakhstan	15	0	0	4	0	11
Kyrgyzstan	..	..	..	..	..	..
Latvia	91	3	0	10	0	78
Lithuania	442	4	80	180	0	179
Moldova, Republic of	..	..	..	..	..	..
Poland	282	11	126	23	0	122
Romania	563	64	145	186	0	168
Russian Federation	10 431	1 766	805	3 615	273	3 973
Slovakia	29	0	23	6	0	0
Tajikistan	..	..	..	..	..	..
Turkmenistan	47	6	3	17	0	22
Ukraine	1 379	34	100	621	40	584
Former USSR <sup>e</sup>	..	..	..	..	..	..
Uzbekistan	..	..	..	..	..	..
<b>Subtotal</b>	<b>15 917</b>	<b>2 135</b>	<b>2 065</b>	<b>5 506</b>	<b>372</b>	<b>5 838</b>
<b>Socialist countries of Asia</b>						
China	18 428	3 008	7 171	4 736	2 209	1 304
Democratic People's Republic of Korea	959	20	120	713	17	89
Viet Nam	1 251	259	172	709	18	94
<b>Subtotal</b>	<b>20 638</b>	<b>3 286</b>	<b>7 463</b>	<b>6 158</b>	<b>2 244</b>	<b>1 487</b>
<b>Developing countries of Africa</b>						
Algeria	872	31	173	124	0	545
Angola	45	1	0	10	0	33
Benin	1	0	0	0	0	1
Cameroon	187	170	0	1	0	16
Cape Verde	21	2	0	10	0	9
Comoros	417	79	145	149	0	44
Congo	3	0	0	0	0	3
Côte d'Ivoire	9	1	0	0	0	8

## Annex III (a) (continued)

	Total fleet	Oil tankers	Bulk carriers	General cargo <sup>c</sup>	Container ships	Other types
Democratic Republic of the Congo	..	..	..	..	..	..
Djibouti	4	0	0	2	0	2
Egypt	1 151	223	432	309	48	139
Equatorial Guinea	31	0	0	4	0	27
Eritrea	..	..	..	..	..	..
Ethiopia	82	2	0	79	0	0
Gabon	13	1	0	4	0	8
Gambia	2	0	0	0	0	2
Ghana	121	8	0	19	0	95
Guinea	14	2	0	1	0	11
Guinea-Bissau	6	0	0	1	0	5
Kenya	18	5	0	3	0	10
Libyan Arab Jamahiriya	157	7	0	69	0	81
Madagascar	35	5	0	16	0	14
Malawi	..	..	..	..	..	..
Mauritania	48	0	0	0	0	47
Mauritius	68	0	10	17	0	41
Morocco	504	84	0	86	55	279
Mozambique	36	0	0	6	0	30
Nigeria	419	302	10	33	0	73
Saint Helena	2	0	0	0	0	2
Sao Tome and Principe	84	5	17	60	0	3
Senegal	46	0	0	1	0	44
Seychelles	64	23	0	18	0	23
Sierra Leone	23	9	0	0	0	13
Somalia	6	1	0	3	0	3
Sudan	24	1	0	21	0	2
Togo	15	0	0	4	0	11
Tunisia	174	51	17	3	0	103
Uganda	..	..	..	..	..	..
United Republic of Tanzania	39	8	0	21	0	10
<b>Subtotal</b>	<b>4 742</b>	<b>1 020</b>	<b>803</b>	<b>1 075</b>	<b>103</b>	<b>1 740</b>
<b>Developing countries of America</b>						
Anguilla	1	0	0	1	0	0
Antigua and Barbuda	6 005	31	376	2 095	3 427	77
Argentina	434	51	34	77	0	272
Barbados	468	129	192	69	0	78
Belize	1 534	142	171	741	19	460
Bolivia	420	262	9	95	2	53



## Annex III (a) (continued)

	Total fleet	Oil tankers	Bulk carriers	General cargo <sup>c</sup>	Container ships	Other types
Brazil	3 258	1 368	1 217	306	160	207
British Virgin Islands	87	63	0	20	0	3
Cayman Islands	2 802	1 508	672	508	0	114
Chile	964	259	196	201	42	266
Colombia	71	6	0	40	0	25
Costa Rica	5	0	0	0	0	5
Cuba	90	20	5	17	0	49
Dominica	40	11	0	15	0	13
Dominican Republic	13	0	0	9	0	4
Ecuador	324	220	0	2	0	102
El Salvador	6	0	0	0	0	6
Falkland Islands <sup>f</sup>	52	0	0	1	0	52
Grenada	3	0	0	1	0	2
Guatemala	5	0	0	0	0	5
Guyana	32	1	0	17	0	13
Haiti	1	0	0	1	0	0
Honduras	813	172	68	313	5	253
Jamaica	57	2	45	0	0	10
Mexico	973	531	9	75	0	358
Montserrat	..	..	..	..	..	..
Nicaragua	4	0	0	0	0	3
Paraguay	45	3	0	36	1	5
Peru	224	15	0	25	0	184
Saint Kitts and Nevis	0	0	0	0	0	0
Saint Lucia	..	..	..	..	..	..
Saint Vincent and the Grenadines	6 318	357	2 630	2 521	163	648
Suriname	5	2	0	3	0	1
Trinidad and Tobago	28	0	0	3	0	25
Turks and Caicos Islands	1	0	0	0	0	1
Uruguay	76	8	0	9	0	59
Venezuela	847	393	121	37	1	296
<b>Subtotal</b>	<b>26 003</b>	<b>5 553</b>	<b>5 744</b>	<b>7 236</b>	<b>3 820</b>	<b>3 650</b>
<b>Developing countries and territories of Asia</b>						
Bahrain	276	81	43	3	96	53
Bangladesh	447	67	6	297	45	32
Brunei Darussalam	480	1	0	2	0	477
Cambodia	..	..	..	..	..	..
Hong Kong (China)	20 507	4 452	11 879	1 520	2 392	265
India	6 961	3 954	2 000	311	100	596
Indonesia	3 840	949	389	1 530	174	798





## Annex III (b)

Merchant fleets of the world by flag of registration, <sup>a</sup> groups of countries and types of ship <sup>b</sup>  
as at 31 December 2003  
(in thousand dwt)

	Total fleet	Oil tankers	Bulk carriers	General cargo <sup>c</sup>	Container ships	Other types
<b>World total <sup>d</sup></b>	<b>856 974</b>	<b>316 759</b>	<b>307 660</b>	<b>94 767</b>	<b>90 461</b>	<b>47 327</b>
<b>Developed market-economy countries</b>						
Australia	2 277	461	928	112	10	766
Austria	41	0	0	38	3	0
Belgium	1 938	616	344	3	317	658
Canada	3 124	735	1 856	131	2	400
Denmark	9 173	3 198	77	413	4 875	610
Finland	1 146	513	94	393	14	133
France	6 389	4 079	687	248	629	747
Germany	6 902	274	2	336	6 062	229
Gibraltar	1 256	477	30	453	284	12
Greece	54 481	31 265	20 146	445	2 190	435
Iceland	73	0	1	2	0	70
Ireland	446	16	141	224	13	52
Israel	892	3	0	3	882	5
Italy	10 575	4 535	2 606	1 312	830	1 293
Japan	16 577	5 693	5 940	2 219	473	2 252
Luxembourg	1 366	758	0	62	147	398
Netherlands	7 920	691	309	3 611	1 990	1 320
New Zealand	164	86	17	11	0	50
Norway	27 652	13 127	7 514	3 850	88	3 074
Portugal	1 608	865	309	240	41	152
South Africa	107	4	0	0	30	73
Spain	2 587	1 282	43	354	232	675
Sweden	2 116	613	61	1 171	0	271
Switzerland	1 040	0	877	40	118	5
Turkey	7 542	1 106	4 368	1 612	327	128
United Kingdom	21 536	8 275	3 245	1 719	5 397	2 900
United States	41 484	23 479	8 814	2 471	5 442	1 278
<b>Subtotal</b>	<b>230 413</b>	<b>102 150</b>	<b>58 413</b>	<b>21 470</b>	<b>30 394</b>	<b>17 986</b>
<b>Major open-registry countries</b>						
Bahamas	47 750	25 829	9 659	6 619	2 007	3 637
Bermuda	6 488	1 152	3 579	237	526	993
Cyprus	35 332	6 866	21 471	3 557	3 155	283
Liberia	82 085	41 392	19 491	4 414	13 240	3 548
Malta	40 998	16 229	19 633	3 578	1 206	351
Panama	186 860	53 180	92 740	13 452	20 647	6 842
<b>Subtotal</b>	<b>399 514</b>	<b>144 648</b>	<b>166 573</b>	<b>31 858</b>	<b>40 781</b>	<b>15 654</b>

## Annex III (b) (continued)

	Total fleet	Oil tankers	Bulk carriers	General cargo <sup>c</sup>	Container ships	Other types
<b>Central and Eastern Europe and former USSR</b>						
Albania	98	0	0	96	0	1
Armenia	..	..	..	..	..	..
Azerbaijan	508	234	0	113	0	162
Belarus	..	..	..	..	..	..
Bulgaria	1 077	32	847	113	67	18
Czech Republic	..	..	..	..	..	..
Estonia	227	15	48	110	0	53
Georgia	1 106	66	365	625	5	46
Hungary	10	0	0	10	0	0
Kazakhstan	11	0	0	3	0	8
Kyrgyzstan	..	..	..	..	..	..
Latvia	53	4	0	11	0	38
Lithuania	403	7	116	201	0	78
Moldova, Republic of	..	..	..	..	..	..
Poland	300	16	201	18	0	65
Romania	686	97	234	219	0	136
Russian Federation	9 902	2 589	1 140	3 959	317	1 897
Slovakia	43	0	33	10	0	0
Tajikistan	..	..	..	..	..	..
Turkmenistan	40	8	3	15	0	12
Ukraine	1 267	56	160	704	40	307
Former USSR <sup>e</sup>	..	..	..	..	..	..
Uzbekistan	..	..	..	..	..	..
<b>Subtotal</b>	<b>15 730</b>	<b>3 125</b>	<b>3 147</b>	<b>6 206</b>	<b>429</b>	<b>2 822</b>
<b>Socialist countries of Asia</b>						
China	26 825	4 890	12 106	6 347	2 621	860
Democratic People's Republic of Korea	1 311	37	204	998	23	49
Viet Nam	1 809	433	278	1 022	16	59
<b>Subtotal</b>	<b>29 944</b>	<b>5 360</b>	<b>12 588</b>	<b>8 368</b>	<b>2 660</b>	<b>968</b>
<b>Developing countries of Africa</b>						
Algeria	938	51	288	153	0	446
Angola	32	2	0	12	0	18
Benin	0	0	0	0	0	0
Cameroon	366	357	0	2	0	7
Cape Verde	21	4	0	15	0	3
Comoros	599	139	245	192	0	24
Congo	1	0	0	0	0	1

## Annex III (b) (continued)

	Total fleet	Oil tankers	Bulk carriers	General cargo <sup>c</sup>	Container ships	Other types
Côte d'Ivoire	5	1	0	0	0	4
Democratic Republic of the Congo	..	..	..	..	..	..
Djibouti	4	0	0	4	0	0
Egypt	1 688	380	740	400	58	110
Equatorial Guinea	18	0	0	7	0	11
Eritrea	..	..	..	..	..	..
Ethiopia	101	4	0	98	0	0
Gabon	8	1	0	4	0	3
Gambia	2	0	0	0	0	2
Ghana	96	11	0	23	0	62
Guinea	7	2	0	0	0	5
Guinea-Bissau	2	0	0	0	0	2
Kenya	16	8	0	2	0	6
Libyan Arab Jamahiriya	116	10	0	74	0	31
Madagascar	33	7	0	19	0	7
Malawi	..	..	..	..	..	..
Mauritania	23	0	0	1	0	23
Mauritius	60	0	13	15	0	32
Morocco	392	119	0	83	68	121
Mozambique	28	0	0	11	0	17
Nigeria	676	577	13	44	0	41
Saint Helena	1	0	0	0	0	1
Sao Tome and Principe	105	9	29	65	0	2
Senegal	23	0	0	2	0	21
Seychelles	70	35	0	18	0	17
Sierra Leone	22	17	0	1	0	5
Somalia	6	2	0	2	0	2
Sudan	29	1	0	27	0	1
Togo	11	0	0	4	0	7
Tunisia	132	75	26	5	0	25
Uganda	..	..	..	..	..	..
United Republic of Tanzania	42	14	0	25	0	3
<b>Subtotal</b>	<b>5 672</b>	<b>1 825</b>	<b>1 354</b>	<b>1 308</b>	<b>126</b>	<b>1 058</b>
<b>Developing countries of America</b>						
Anguilla	1	0	0	1	0	0
Antigua and Barbuda	7 851	45	611	2 685	4 420	90
Argentina	489	92	52	108	0	236
Barbados	695	195	315	100	0	84
Belize	1 782	237	276	966	19	284

## Annex III (b) (continued)

	Total fleet	Oil tankers	Bulk carriers	General cargo <sup>c</sup>	Container ships	Other types
Bolivia	655	477	13	129	2	33
Brazil	5 139	2 283	2 136	337	184	199
British Virgin Islands	158	126	0	30	0	2
Cayman Islands	4 437	2 528	1 159	606	0	144
Chile	1 129	439	328	116	51	193
Colombia	88	10	0	53	0	25
Costa Rica	1	0	0	0	0	1
Cuba	110	32	6	22	0	50
Dominica	44	18	1	21	0	5
Dominican Republic	12	0	0	11	0	1
Ecuador	452	383	0	3	0	67
El Salvador	2	0	0	0	0	2
Falkland Islands <sup>f</sup>	37	0	0	0	0	37
Grenada	1	0	0	1	0	0
Guatemala	4	0	0	0	0	4
Guyana	30	2	0	21	0	7
Haiti	1	0	0	1	0	0
Honduras	1 000	314	114	451	6	114
Jamaica	79	3	70	0	0	6
Mexico	1 252	866	14	66	0	306
Montserrat	..	..	..	..	..	..
Nicaragua	2	0	0	1	0	1
Paraguay	47	4	0	40	2	1
Peru	148	27	0	37	0	83
Saint Kitts and Nevis	1	0	0	1	0	0
Saint Lucia	..	..	..	..	..	..
Saint Vincent and the Grenadines	9 028	613	4 603	3 226	203	382
Suriname	7	3	0	3	0	0
Trinidad and Tobago	8	0	0	0	0	8
Turks and Caicos Islands	0	0	0	0	0	0
Uruguay	51	11	0	7	0	33
Venezuela	1 261	678	200	49	1	333
<b>Subtotal</b>	<b>36 001</b>	<b>9 387</b>	<b>9 899</b>	<b>9 092</b>	<b>4 889</b>	<b>2 732</b>
<b>Developing countries and territories of Asia</b>						
Bahrain	353	153	60	4	100	36
Bangladesh	606	116	9	402	61	17
Brunei Darussalam	422	2	0	3	0	418
Cambodia	..	..	..	..	..	..
Hong Kong (China)	34 467	7 065	22 472	2 004	2 697	228

## Annex III (b) (continued)

	Total fleet	Oil tankers	Bulk carriers	General cargo <sup>c</sup>	Container ships	Other types
India	11 363	6 936	3 374	369	131	553
Indonesia	4 809	1 527	619	2 081	229	353
Iran, Islamic Rep. of	8 336	5 507	1 766	702	247	113
Iraq	207	86	0	55	0	66
Jordan	385	290	0	82	7	6
Kuwait	3 716	3 043	27	158	227	261
Lebanon	247	1	80	156	0	9
Malaysia	8 064	2 740	2 553	724	855	1 191
Maldives	84	12	0	69	0	3
Myanmar	651	5	433	199	0	14
Oman	9	1	0	1	0	7
Pakistan	499	274	0	184	27	13
Philippines	6 944	430	4 741	1 460	56	257
Qatar	796	507	0	58	202	28
Republic of Korea	10 434	1 893	5 886	1 153	816	686
Saudi Arabia	1 962	1 395	0	346	156	65
Singapore	36 393	16 932	10 333	3 219	4 853	1 056
Sri Lanka	187	74	0	82	21	10
Syrian Arab Republic	689	2	77	599	8	1
Thailand	3 411	541	950	1 564	232	124
United Arab Emirates	1 007	489	64	88	227	139
Yemen	..	..	..	..	..	..
<b>Subtotal</b>	136 041	50 022	53 446	15 764	11 153	5 655
<b>Developing countries of Europe</b>						
Croatia	1 222	150	902	143	0	27
Slovenia	1	0	0	0	0	1
Yugoslavia	..	..	..	..	..	..
<b>Subtotal</b>	1 222	150	902	143	0	28
<b>Developing countries of Oceania</b>						
Fiji	17	7	0	4	0	6
Kiribati	4	0	0	3	0	1
Nauru	..	..	..	..	..	..
Papua New Guinea	84	12	5	64	0	4
Samoa	..	..	..	..	..	..
Solomon Islands	5	0	0	2	0	3
Tonga	228	23	71	123	0	11
Tuvalu	93	50	0	39	0	4
Vanuatu	2 006	0	1 260	323	29	394
<b>Subtotal</b>	2 437	92	1 337	558	29	422
<b>Developing total</b>	181 373	61 476	66 938	26 865	16 198	9 896
<b>Unallocated</b>	-	-	-	-	-	-



## Notes to Annex III

Source: Lloyd's Register–Fairplay.

- <sup>a</sup> The designations employed and the presentation of material in this table refer to flags of registration and do not imply the expression of any opinion by the Secretariat of the United Nations concerning the legal status of any country or territory, or of its authorities, or concerning the delimitation of its frontiers.
- <sup>b</sup> Ships of 100 grt and over, excluding the Great Lakes fleets of the United States and Canada and the United States Reserve Fleet.
- <sup>c</sup> Including passenger/cargo.
- <sup>d</sup> Excluding estimates of the United States Reserve Fleet and the United States and Canadian Great Lakes fleets, which amounted to respectively 3.9 million grt (4.3 million dwt), 0.9 million grt (1.8 million dwt) and 1.0 million grt (1.6 million dwt).
- <sup>e</sup> All Republics of the former USSR that have not established new shipping registers.
- <sup>f</sup> A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).