UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT
Geneva

# REVIEW OF MARITIME TRANSPORT 2009

*Report by the UNCTAD secretariat*

Chapter 2

**UNITED NATIONS**
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# Chapter 2

# STRUCTURE, OWNERSHIP AND REGISTRATION OF THE WORLD FLEET

***At the beginning of 2009, the world merchant fleet reached 1.19 billion deadweight tons (dwt), a year-on-year growth of 6.7 per cent compared to January 2008. This growth was the result of vessel orders placed before the financial crisis, when the industry was still expecting continuing high growth rates in demand – which did not materialize (see chapter 1). As the world's shipping capacity continues to increase even during the current economic downturn, the industry finds itself confronted with a surge in oversupply (see chapter 3) and tumbling charter and freight rates (see chapter 4).***

***This chapter presents the supply-side dynamics of the world maritime industry. The information and data comprehensively cover the structure, ownership and registration of the world fleet. Particular focus will be placed on the fleet's age profile, as this helps to visualize long-term trends for different vessel types. The chapter also reviews deliveries and demolitions of ships, tonnage on order, newbuilding prices, and markets for second-hand tonnage, and discusses the industry's possibilities of adjusting to the economic crisis.***

## A. STRUCTURE OF THE WORLD FLEET

### 1. World fleet growth and principal vessel types

*Trends in vessel types*

During the 12 months up to 1 January 2009, the deadweight tonnage of oil tankers increased by 2.5 per cent and that of bulk carriers by 7.0 per cent (see fig. 9 and table 8). For the first time, the total tonnage on dry bulk carriers has exceeded the tonnage on oil tankers. Together, the two types of ships represent 71.2 per cent of the world total tonnage, a slight decrease from the 71.5 per cent of January 2008. The fleet of general cargo ships increased by only 3.2 per cent in 2008, resulting in a decline of this category's share of the total world fleet to 9.1 per cent. The fleet of container ships increased by 17.3 million deadweight tons (dwt), or 11.9 per cent, and now represents 13.6 per cent of the total world fleet. Several specialized other types of ships have also recorded high growth rates: in 2008, the tonnage of liquefied gas carriers grew by 21.1 per cent, and that of offshore supply vessels grew by 9.1 per cent. In total, at the beginning of 2009, the world merchant fleet reached 1.19 billion dwt, a year-on-year growth rate of 6.7 per cent compared to January 2008. Since the beginning of the decade, the tonnage on general cargo ships has increased by 7 per cent, dry and liquid bulk tonnage by 52 and 48 per cent respectively, and containerized tonnage by an impressive 154 per cent.

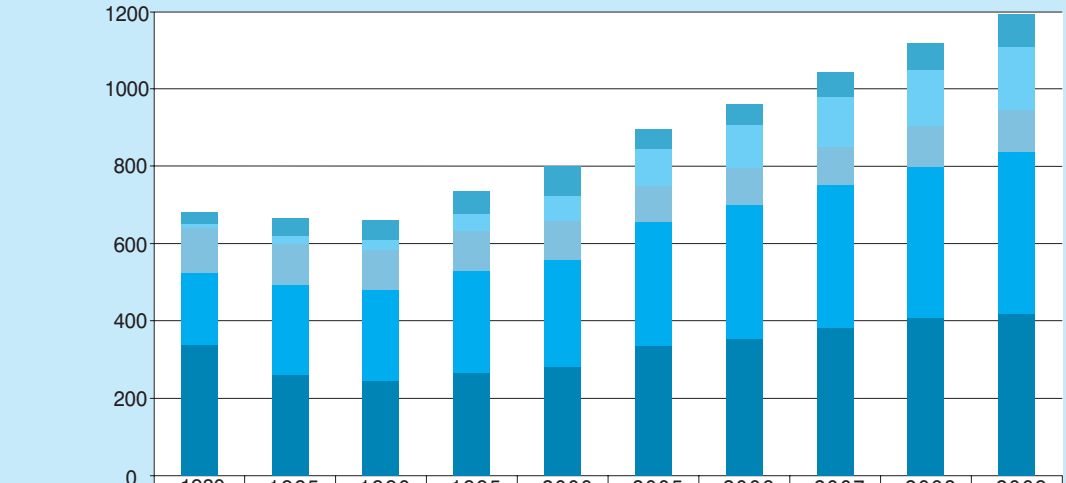
*The world container ship fleet*

The world fleet of fully cellular container ships continued to expand substantially in 2008: by the beginning of 2009 there were 4,638 ships, with a total capacity of 12.14 million TEUs – an increase of 8.5 per cent in the number of ships and 12.9 per cent in TEU capacity over the previous year. This notable difference in the two growth rates indicates the corresponding development in the size of container ships. Indeed, ship sizes also continued to increase, with the average carrying capacity per ship growing from 2,516 TEUs in January

Figure 9

**World fleet by principal vessel types, selected years[a]**

*(beginning-of-year figures, millions of dwt)*




| | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| Other | 31 | 45 | 49 | 58 | 75 | 49 | 53 | 63 | 69 | 85 |
| Container | 11 | 20 | 26 | 44 | 64 | 98 | 111 | 128 | 145 | 162 |
| General cargo | 116 | 106 | 103 | 104 | 101 | 92 | 96 | 101 | 105 | 109 |
| Dry bulk | 186 | 232 | 235 | 262 | 276 | 321 | 346 | 368 | 391 | 418 |
| Oil tanker | 339 | 261 | 246 | 268 | 282 | 336 | 354 | 383 | 408 | 418 |

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

[a] Cargo-carrying vessels of 100 gross tons and above.

2008 to 2,618 TEUs in January 2009 (see table 9). The average carrying capacity of new cellular container ships that entered service in 2008 was 3,489 TEU, a further increase from the previous year's 3,291 TEU.

In 2008, the largest new container ship that entered service was the Panama-flagged *MSC Daniela*, with 13,800 TEU, owned and operated by the Swiss-based Mediterranean Shipping Company. The smallest fully cellular vessels built in 2008 were three 604-TEU ships owned by the Singapore-based company PIL. During the first 10 months of 2009, the largest new container ships were two vessels of 13,800 TEU owned and operated by the Mediterranean Shipping Company. On 31 October 2009, there were 218 new 2009-built fully cellular container ships with a combined capacity of 899,284 TEU in service, with an average size of 4,125 TEU.[1]

**Almost 80 per cent of ships and almost 90 per cent of TEU capacity of 2008-built fully cellular containerships are gearless**

The trend towards more gearless vessels continued in 2008. Almost 80 per cent of ships and almost 90 per cent of the TEU capacity of 2008-built fully cellular container ships are gearless (table 10), whereas up to 10 years ago, almost half of newly built ships were still geared (fig. 10). When the first specialized container ships entered service in the 1960s and 1970s, they were initially all gearless, that is to say, they depended on the ports' cranes to load and unload the containers. During the 1980s and 1990s, ships were increasingly often equipped with their own cranes – a trend that has subsided in the current decade as more and more ports have been modernized and have invested in specialized container gantry cranes. Smaller or financially weaker ports – especially in developing countries – that have not been able to invest in specialized container cranes are confronted today with a situation whereby they can only accommodate an ever-diminishing proportion of the global container ship fleet.

Table 8

**World fleet size by principal types of vessel, 2008–2009[a]**

*(beginning-of-year figures, thousands of dwt)*

| Principal types | 2008 | 2009 | Percentage change 2009/2008 |
|---|---|---|---|
| **Oil tankers** | 407 881 | 418 266 | 2.5 |
| | *36.5* | *35.1* | *-1.4* |
| **Bulk carriers** | 391 127 | 418 356 | 7.0 |
| | *35.0* | *35.1* | *0.1* |
| **General cargo ships** | 105 492 | 108 881 | 3.2 |
| | *9.4* | *9.1* | *-0.3* |
| **Container ships** | 144 655 | 161 919 | 11.9 |
| | *12.9* | *13.6* | *0.6* |
| **Other types of ships** | 68 624 | 84 895 | 23.7 |
| | *6.1* | *7.1* | *1.0* |
| **Liquefied gas carriers** | 30 013 | 36 341 | 21.1 |
| | *2.7* | *3.0* | *0.4* |
| **Chemical tankers** | 8 236 | 8 141 | -1.2 |
| | *0.7* | *0.7* | *-0.1* |
| **Offshore supply** | 20 687 | 22 567 | 9.1 |
| | *1.9* | *1.9* | *0.0* |
| **Ferries and passenger ships** | 5 948 | 6 083 | 2.3 |
| | *0.5* | *0.5* | *0.0* |
| **Other/ n.a.** | 3 740 | 11 762 | 214.5 |
| | *0.3* | *1.0* | *0.7* |
| **World total** | 1 117 779 | 1 192 317 | 6.7 |
| | *100.0* | *100.0* | |

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

[a] Vessels of 100 gross tons and above. Percentage shares are shown in italics.

Table 9

**Long-term trends in the cellular container ship fleet[a]**

| World total | 1987 | 1997 | 2007 | 2008 | 2009 | Growth 2009/2008 |
|---|---|---|---|---|---|---|
| **Number of vessels** | 1 052 | 1 954 | 3 904 | 4 276 | 4 638 | 8.47 |
| **TEU capacity** | 1 215 215 | 3 089 682 | 9 436 377 | 10 760 173 | 12 142 444 | 12.85 |
| **Average vessel size** | 1 155 | 1 581 | 2 417 | 2 516 | 2 618 | 4.04 |

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

[a] Vessels of 100 gross tons and above. Beginning-of-year figures, except those from 1987, which are mid-year figures.

Table 10

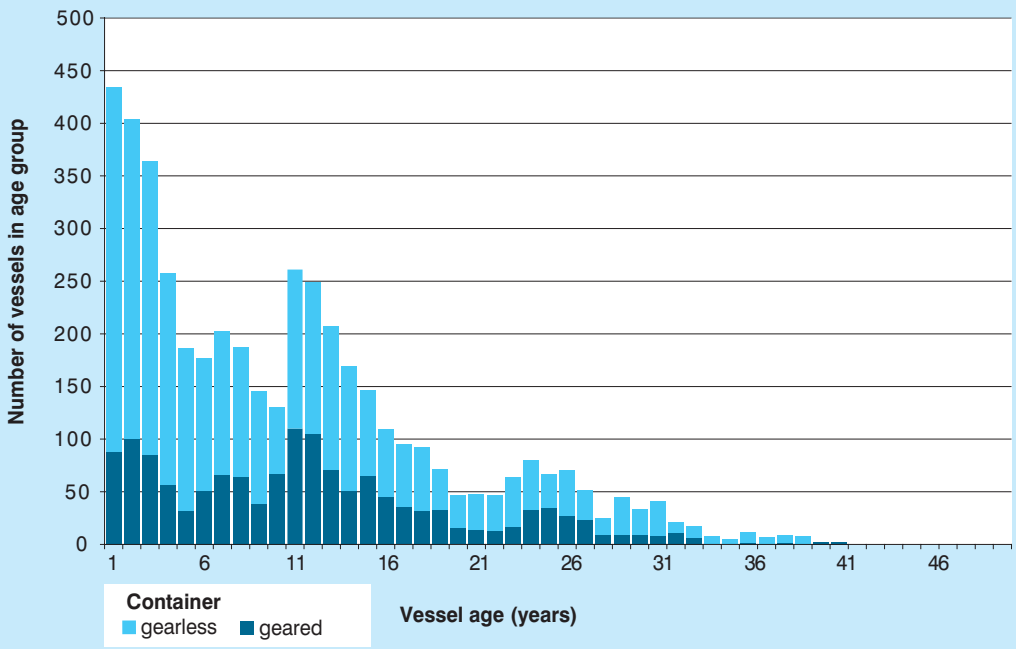
**Geared and gearless fully cellular container ships built in 2007 and 2008**

| | Geared | | | Gearless | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2007 | 2008 | Change % | 2007 | 2008 | Change % | 2007 | 2008 | Change % |
| **Ships** | 93 | 88 | -5.4 | 306 | 346 | 13.1 | 399 | 434 | 8.8 |
| **Percentage of ships** | *23.3* | *20.3* | | *76.7* | *79.7* | | *100.0* | *100.0* | |
| **TEU** | 136 956 | 154 708 | 13.0 | 1 176 011 | 1 359 454 | 15.6 | 1 312 967 | 1 514 162 | 15.3 |
| **Per cent of TEU** | *10.4* | *10.2* | | *89.6* | *89.8* | | *100.0* | *100.0* | |
| **Average vessel size** | 1 473 | 1 758 | 19.4 | 3 843 | 3 929 | 2.2 | 3 291 | 3 489 | 6.0 |

*Source*: Compiled by the UNCTAD secretariat, on the basis of data on the existing container ship fleet, from *Containerisation International Online*, May 2008 (2007 data) and May 2009 (2008 data).

Figure 10

**Geared and gearless fully cellular container ships by age**




*Source*: Compiled by the UNCTAD secretariat, on the basis of data on the existing container ship fleet, from *Containerisation International Online*, May 2009.

## 2. Age distribution of the world merchant fleet

As shown in table 11, the average age per ship in January 2009 stood at 23.0 years, corresponding to an average age per dwt of 13.97 years.[2] The average age per ship tends to be higher than the age per dwt, as ship sizes have grown over time, and younger (larger) ships thus contribute with more dwt to the total fleet; in fact, 57.2 per cent of ships and only 23.8 per cent of the world's tonnage is 20 years and older. Vessels registered in the 10 major open and international registries, which together account for 54 per cent of the world's tonnage, are younger than the world average, with an average ship age of under 17 years (12.3 years per dwt); only 38.9 per cent of ships and 20.8 per cent of dwt of the major open registry fleet is 20 years and older, while 51.8 per cent of tonnage is younger than 10 years.

Table 11

## Age distribution of the world merchant fleet, by vessel type, as of 1 January 2009

*(percentage of total ships and dwt)*

| Country grouping / Vessel type | | 0–4 years | 5–9 years | 10–14 years | 15–19 years | 20 years and + | Average age (years) |
|---|---|---|---|---|---|---|---|
| **WORLD** | | | | | | | |
| Bulk carriers | *Ships* | 16.7 | 14.9 | 15.8 | 10.1 | 42.5 | 17.22 |
| | *dwt* | 22.9 | 18.7 | 17.5 | 12.1 | 28.8 | 14.27 |
| | *Average vessel size (dwt)* | 74 114 | 67 761 | 59 763 | 64 459 | 36 584 | |
| Container ships | *Ships* | 31.5 | 19.5 | 21.7 | 11.0 | 16.4 | 10.92 |
| | *dwt* | 39.8 | 23.5 | 17.1 | 8.6 | 11.1 | 9.01 |
| | *Average vessel size (dwt)* | 44 162 | 42 065 | 27 492 | 27 169 | 23 608 | |
| General cargo | *Ships* | 9.3 | 7.8 | 9.6 | 11.0 | 62.3 | 24.44 |
| | *dwt* | 13.7 | 9.9 | 12.9 | 9.4 | 54.1 | 22.12 |
| | *Average vessel size (dwt)* | 7 281 | 6 299 | 6 635 | 4 219 | 4 295 | |
| Oil tankers | *Ships* | 22.1 | 14.8 | 11.1 | 12.2 | 39.7 | 17.55 |
| | *dwt* | 29.9 | 28.3 | 15.7 | 13.6 | 12.6 | 10.72 |
| | *Average vessel size (dwt)* | 55 467 | 78 246 | 58 072 | 45 673 | 12 999 | |
| Other types | *Ships* | 8.2 | 9.3 | 9.1 | 9.5 | 63.9 | 25.26 |
| | *dwt* | 24.9 | 15.4 | 9.6 | 9.6 | 40.5 | 18.24 |
| | *Average vessel size (dwt)* | 4 645 | 2 540 | 1 616 | 1 554 | 973 | |
| All ships | *Ships* | 11.6 | 10.4 | 10.5 | 10.2 | 57.2 | 23.00 |
| | *dwt* | 26.9 | 21.7 | 15.8 | 11.7 | 23.8 | 13.97 |
| | *Average vessel size (dwt)* | 27 735 | 24 817 | 17 992 | 13 709 | 4 983 | |
| **DEVELOPING ECONOMIES** | | | | | | | |
| Bulk carriers | *Ships* | 18.1 | 14.1 | 15.9 | 9.3 | 42.6 | 16.90 |
| | *dwt* | 23.7 | 16.8 | 17.1 | 12.7 | 29.6 | 14.32 |
| | *Average vessel size (dwt)* | 74 424 | 67 470 | 61 317 | 78 171 | 39 543 | |
| Container ships | *Ships* | 31.4 | 17.6 | 21.8 | 11.6 | 17.6 | 11.20 |
| | *dwt* | 41.7 | 21.3 | 16.6 | 8.8 | 11.5 | 8.98 |
| | *Average vessel size (dwt)* | 44 235 | 40 356 | 25 449 | 25 316 | 21 843 | |
| General cargo | *Ships* | 9.9 | 7.7 | 7.8 | 8.7 | 65.9 | 24.72 |
| | *dwt* | 14.1 | 7.9 | 12.0 | 8.6 | 57.4 | 22.55 |
| | *Average vessel size (dwt)* | 7 437 | 5 392 | 8 050 | 5 201 | 4 555 | |
| Oil tankers | *Ships* | 20.4 | 11.4 | 10.8 | 10.9 | 46.5 | 18.84 |
| | *dwt* | 29.7 | 23.1 | 14.4 | 16.7 | 16.1 | 11.74 |
| | *Average vessel size (dwt)* | 60 081 | 83 522 | 55 234 | 63 078 | 14 280 | |
| Other types | *Ships* | 10.4 | 8.6 | 8.5 | 8.9 | 63.7 | 24.77 |
| | *dwt* | 22.8 | 13.3 | 8.7 | 9.3 | 45.9 | 19.53 |
| | *Average vessel size (dwt)* | 4 098 | 2 895 | 1 905 | 1 959 | 1 347 | |
| All ships | *Ships* | 13.3 | 9.7 | 10.0 | 9.2 | 57.7 | 22.55 |
| | *dwt* | 27.1 | 18.4 | 15.2 | 12.9 | 26.5 | 14.56 |
| | *Average vessel size (dwt)* | 29 033 | 27 059 | 21 586 | 19 925 | 6 566 | |
| **DEVELOPED ECONOMIES** | | | | | | | |
| Bulk carriers | *Ships* | 8.5 | 16.4 | 16.7 | 15.9 | 42.5 | 19.51 |
| | *dwt* | 16.8 | 28.7 | 19.8 | 10.0 | 24.7 | 14.33 |
| | *Average vessel size (dwt)* | 84 057 | 74 583 | 50 318 | 26 671 | 24 639 | |
| Container ships | *Ships* | 30.2 | 27.3 | 22.5 | 9.2 | 10.8 | 9.79 |
| | *dwt* | 36.4 | 30.6 | 18.3 | 7.2 | 7.6 | 8.47 |
| | *Average vessel size (dwt)* | 53 456 | 49 750 | 36 082 | 34 868 | 31 133 | |
| General cargo | *Ships* | 11.4 | 11.9 | 19.3 | 20.2 | 37.2 | 20.81 |
| | *dwt* | 19.4 | 18.9 | 19.7 | 12.8 | 29.2 | 17.34 |
| | *Average vessel size (dwt)* | 6 576 | 6 135 | 3 943 | 2 467 | 3 044 | |
| Oil tankers | *Ships* | 24.2 | 22.9 | 13.7 | 19.2 | 20.0 | 14.21 |
| | *dwt* | 31.1 | 39.5 | 16.7 | 8.1 | 4.6 | 8.43 |
| | *Average vessel size (dwt)* | 48 644 | 65 355 | 45 954 | 15 905 | 8 689 | |
| Other types | *Ships* | 6.8 | 11.8 | 11.2 | 10.0 | 60.3 | 25.08 |
| | *dwt* | 20.9 | 22.2 | 14.7 | 11.2 | 31.0 | 16.59 |
| | *Average vessel size (dwt)* | 2 960 | 1 798 | 1 254 | 1 072 | 491 | |
| All ships | *Ships* | 9.5 | 13.3 | 13.0 | 12.2 | 52.1 | 23.03 |
| | *dwt* | 27.1 | 32.0 | 17.7 | 9.0 | 14.2 | 11.56 |
| | *Average vessel size (dwt)* | 19 817 | 16 648 | 9 409 | 5 095 | 1 881 | |

Table 11 continued

| Country grouping<br>Vessel type | | 0–4 years | 5–9 years | 10–14 years | 15–19 years | 20 years and + | Average age (years) |
|---|---|---|---|---|---|---|---|
| **COUNTRIES WITH ECONOMIES IN TRANSITON** | | | | | | | |
| Bulk carriers | *Ships* | 9.3 | 4.3 | 9.6 | 13.6 | 63.2 | 22.56 |
| | *dwt* | 12.1 | 6.0 | 12.4 | 17.0 | 52.6 | 20.98 |
| | *average vessel size (dwt)* | 46 796 | 50 127 | 46 134 | 44 806 | 29 859 | |
| Container ships | *Ships* | 18.5 | 10.4 | 20.4 | 14.2 | 36.5 | 15.62 |
| | *dwt* | 33.6 | 21.9 | 6.2 | 15.5 | 22.8 | 11.74 |
| | *average vessel size (dwt)* | 42 599 | 49 265 | 7 189 | 25 545 | 14 673 | |
| General cargo | *Ships* | 7.1 | 9.0 | 5.7 | 10.3 | 68.0 | 24.22 |
| | *dwt* | 7.8 | 5.1 | 4.9 | 7.3 | 75.0 | 26.87 |
| | *average vessel size (dwt)* | 3948 | 2045 | 3 088 | 2 556 | 3 976 | |
| Oil tankers | *Ships* | 11.4 | 8.1 | 5.0 | 8.4 | 67.1 | 23.81 |
| | *dwt* | 30.4 | 22.2 | 7.3 | 13.4 | 26.6 | 13.75 |
| | *average vessel size (dwt)* | 33 606 | 34 731 | 18 355 | 20 198 | 4 987 | |
| Other types | *Ships* | 4.8 | 4.0 | 4.0 | 13.1 | 74.1 | 25.41 |
| | *dwt* | 27.8 | 22.2 | 6.9 | 12.2 | 30.9 | 15.51 |
| | *average vessel size (dwt)* | 19 063 | 18 410 | 5746 | 3 085 | 1 382 | |
| All ships | *Ships* | 7.1 | 6.7 | 5.6 | 11.5 | 69.1 | 24.30 |
| | *dwt* | 19.1 | 12.9 | 8.4 | 13.3 | 46.3 | 20.18 |
| | *average vessel size (dwt)* | 19 340 | 13 946 | 10 926 | 8 439 | 4 857 | |
| **TEN MAJOR OPEN AND INTERNATIONAL REGISTRIES** | | | | | | | |
| Bulk carriers | *Ships* | 21.9 | 16.7 | 16.8 | 8.2 | 36.4 | 15.13 |
| | *dwt* | 26.7 | 18.9 | 17.4 | 10.5 | 26.5 | 13.13 |
| | *average vessel size (dwt)* | 76 584 | 70 903 | 64 896 | 80 523 | 45 620 | |
| Container ships | *Ships* | 33.9 | 19.3 | 21.0 | 11.0 | 14.7 | 10.33 |
| | *dwt* | 41.0 | 22.4 | 15.8 | 9.0 | 11.8 | 8.97 |
| | *average vessel size (dwt)* | 42 088 | 40 370 | 26 127 | 28 378 | 27 877 | |
| General cargo | *Ships* | 13.4 | 9.2 | 13.0 | 11.3 | 53.3 | 20.46 |
| | *dwt* | 16.0 | 11.3 | 15.4 | 8.5 | 48.8 | 19.15 |
| | *average vessel size (dwt)* | 10 862 | 11 224 | 10 741 | 6 886 | 8 307 | |
| Oil tankers | *Ships* | 34.2 | 21.7 | 13.3 | 10.0 | 20.8 | 11.34 |
| | *dwt* | 29.7 | 29.9 | 16.9 | 13.7 | 9.8 | 9.71 |
| | *average vessel size (dwt)* | 64 682 | 102759 | 94 804 | 10 1865 | 35 070 | |
| Other types | *Ships* | 16.8 | 10.7 | 10.4 | 8.0 | 54.1 | 21.87 |
| | *dwt* | 31.8 | 14.5 | 8.4 | 7.2 | 38.1 | 16.72 |
| | *average vessel size (dwt)* | 19 945 | 14 150 | 8 439 | 9 503 | 7 389 | |
| All ships | *Ships* | 22.3 | 14.7 | 14.5 | 9.7 | 38.9 | 16.63 |
| | *dwt* | 29.3 | 22.5 | 16.3 | 11.1 | 20.8 | 12.34 |
| | *average vessel size (dwt)* | 47 055 | 54 950 | 40 492 | 41 107 | 19 200 | |

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

[a] Vessels of 100 gross tons and above.

By vessel type, the average age of tankers stands at 17.5 years (10.7 per dwt), and the average age of bulk carriers at 17.2 (14.3 per dwt). General cargo vessels are the oldest vessel type, with an average age of 24.4 years (22.1 per dwt) and 54.1 per cent of tonnage 20 years and older. Only 23.6 per cent of general cargo tonnage is younger than 10 years, reflecting the trend that general cargo is increasingly containerized. The youngest fleet continues to be that of container ships, with an average age per ship of 10.9 years (9.0 years average per dwt); 39.8 per cent of tonnage on container ships is younger than five years, and only 11.1 per cent is 20 years and older. Among country groups, the container ship fleet registered in developing countries is the youngest, followed by developed countries and countries with economies in transition.

**... 39.8 per cent of tonnage on containerships is younger than five years ...**

The impressive growth of the world fleet over the last two decades is illustrated by the age profile of today's fleet (fig. 11). Today there is five times more tonnage in service that was built in 2008 (i.e. one year old, as illustrated in fig. 11) than tonnage built 20 years earlier. Most of the growth of the world fleet is in open and international registries, i.e. the share of the nationally flagged tonnage is higher among older ships than among those built more recently. The age profile also illustrates the peaks of tonnage delivered in 1977, 1983, 1992, 1996 and 2008. An interesting and more detailed picture of the fleet's age profile is obtained when looking at different vessel types, flags of registration, and countries of ownership (figures 12, 13 and 14).

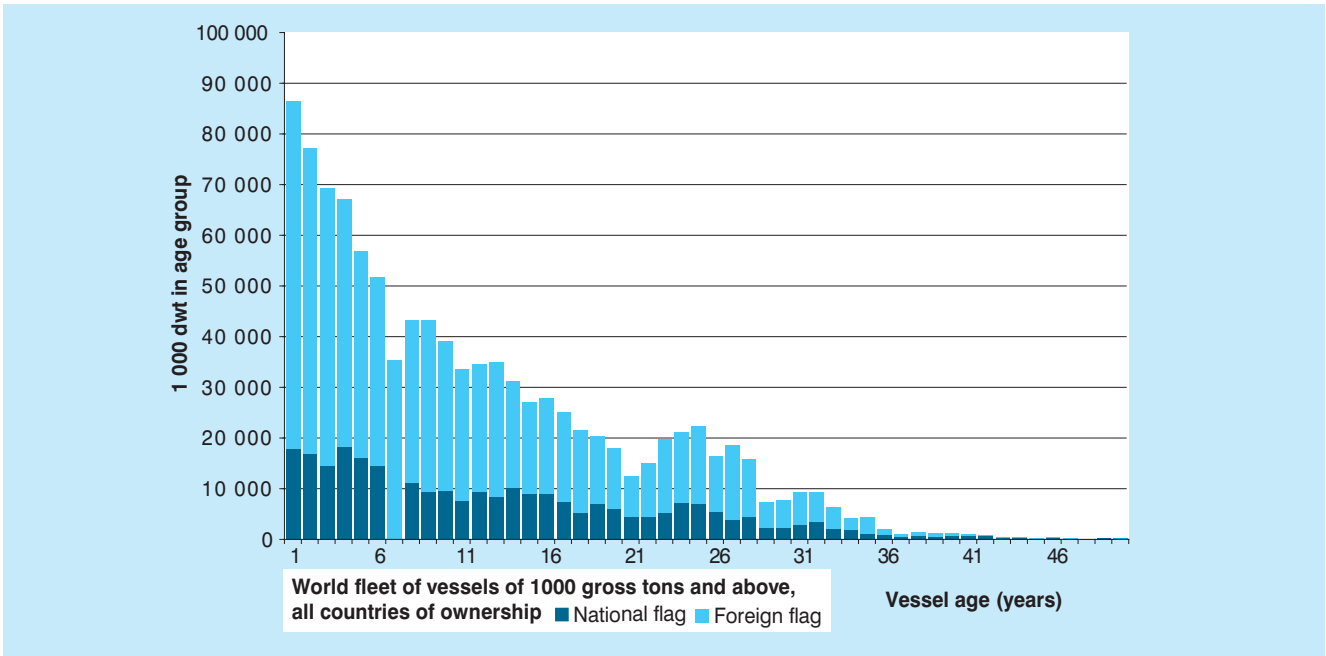
**The tonnage of container ships, and also on chemical and liquefied gas tankers, has surged over the last three to five years, while new deliveries of specialized refrigerated tonnage has almost come to a standstill …**

The delivery of new tonnage on different vessel types has varied markedly over the last five decades (fig. 12). The tonnage of container ships, and also on chemical and liquefied gas tankers, has surged over the last three to five years, while new deliveries of specialized refrigerated tonnage has almost come to a standstill since 2001, as more and more container ships also cater for reefer cargo; the reefer capacity of container ships is forecast to increase by a further 40 per cent until 2012. Dry bulk carriers and oil tankers have seen a relatively steady growth, while deliveries of general cargo and ro-ro tonnage has been more volatile. The share of foreign-flagged tonnage is lowest for general cargo and ro-ro vessels, and highest for liquefied gas carriers and refrigerated cargo.

The age profile of different flags of registration varies widely too (fig. 13). Some of the major open registries have relatively young fleets; they include Antigua and Barbuda (average age per dwt 8.4 years), the Bahamas (12.4), Bermuda (13.6), the Cayman Islands (10.6), Liberia (11.0), the Marshall Islands (9.6), Panama (11.0) and the Philippines (12.6). Other open registries specialize in far older fleets; they include Cambodia (average age per dwt 27.9 years), Dominica (21.2), Mongolia (29.8), Saint Kitts and Nevis (29.3), Saint Vincent and the

Figure 11

**Age profile of world fleet, all vessel types[a]**

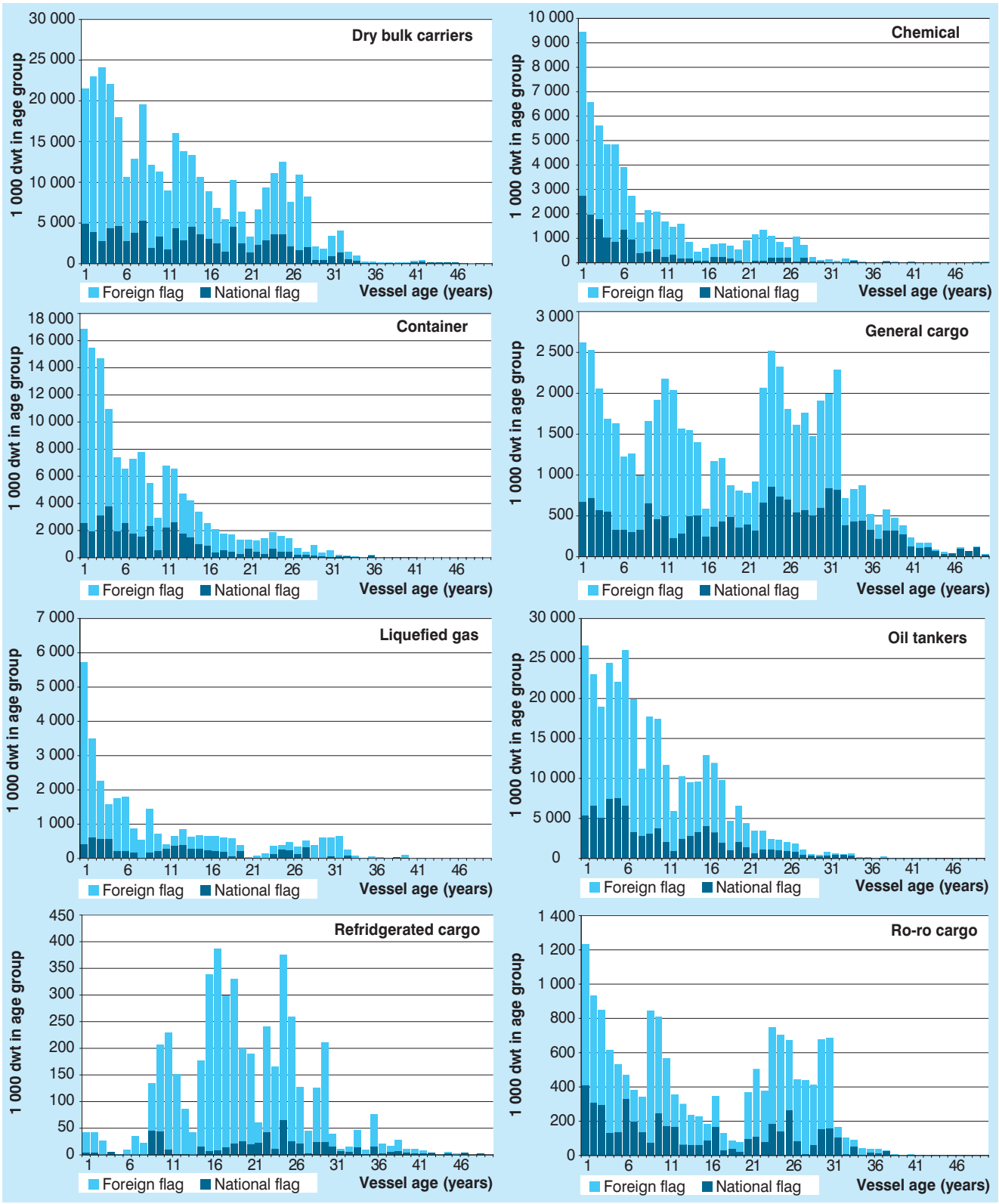



*Source*: Compiled by the UNCTAD secretariat, on the basis of data supplied by Lloyd's Register – Fairplay.

[a] Vessels of 1,000 gross tons (GT) and above built between 1958 and 2008.

Figure 12

**Age profiles of world fleet for eight major vessel types**




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

Figure 13

**Age profiles of world fleet: major flags of registration of developing countries, countries with economies in transition, and open and international registries located in developing countries**

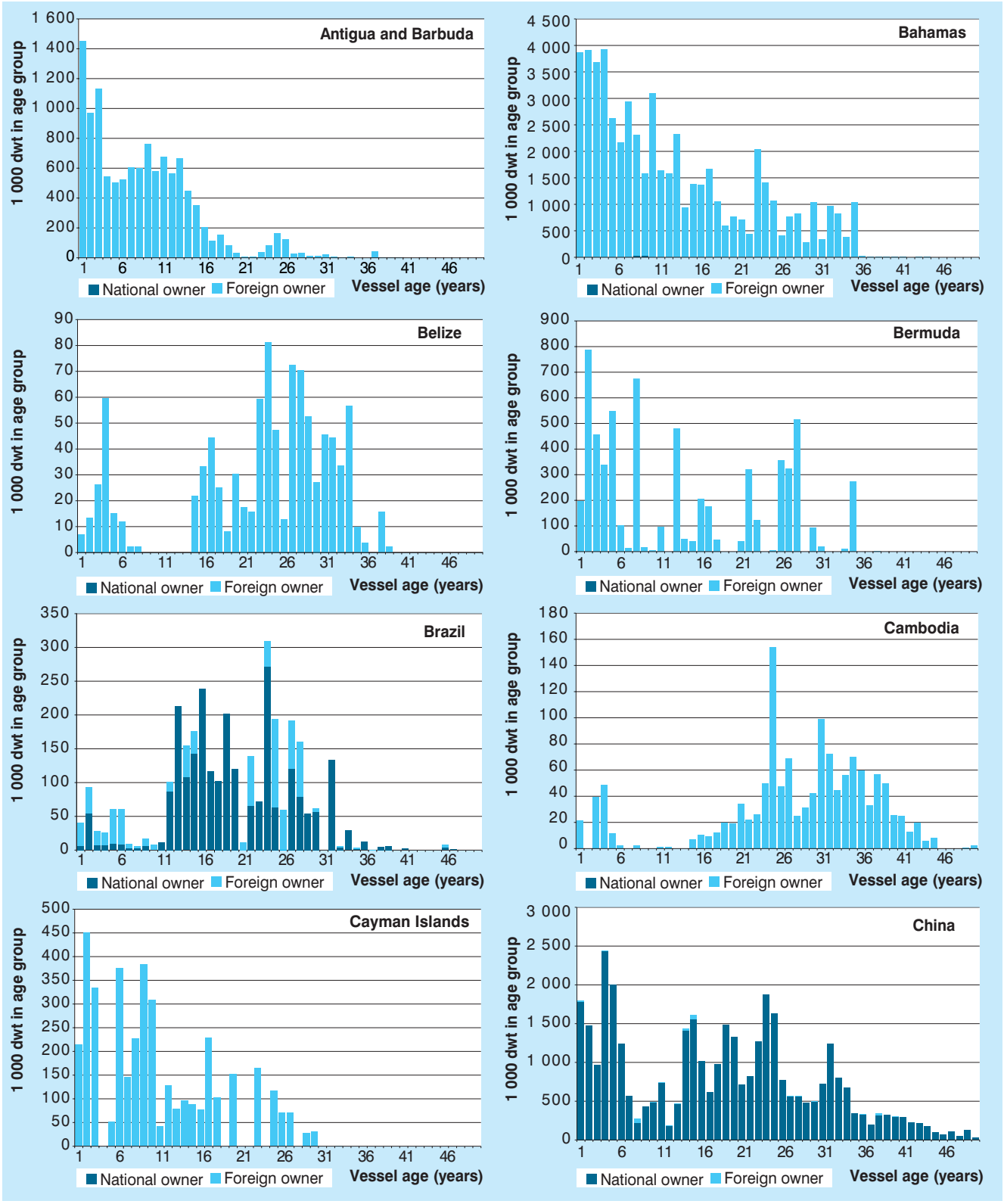


Figure 13 (continued)

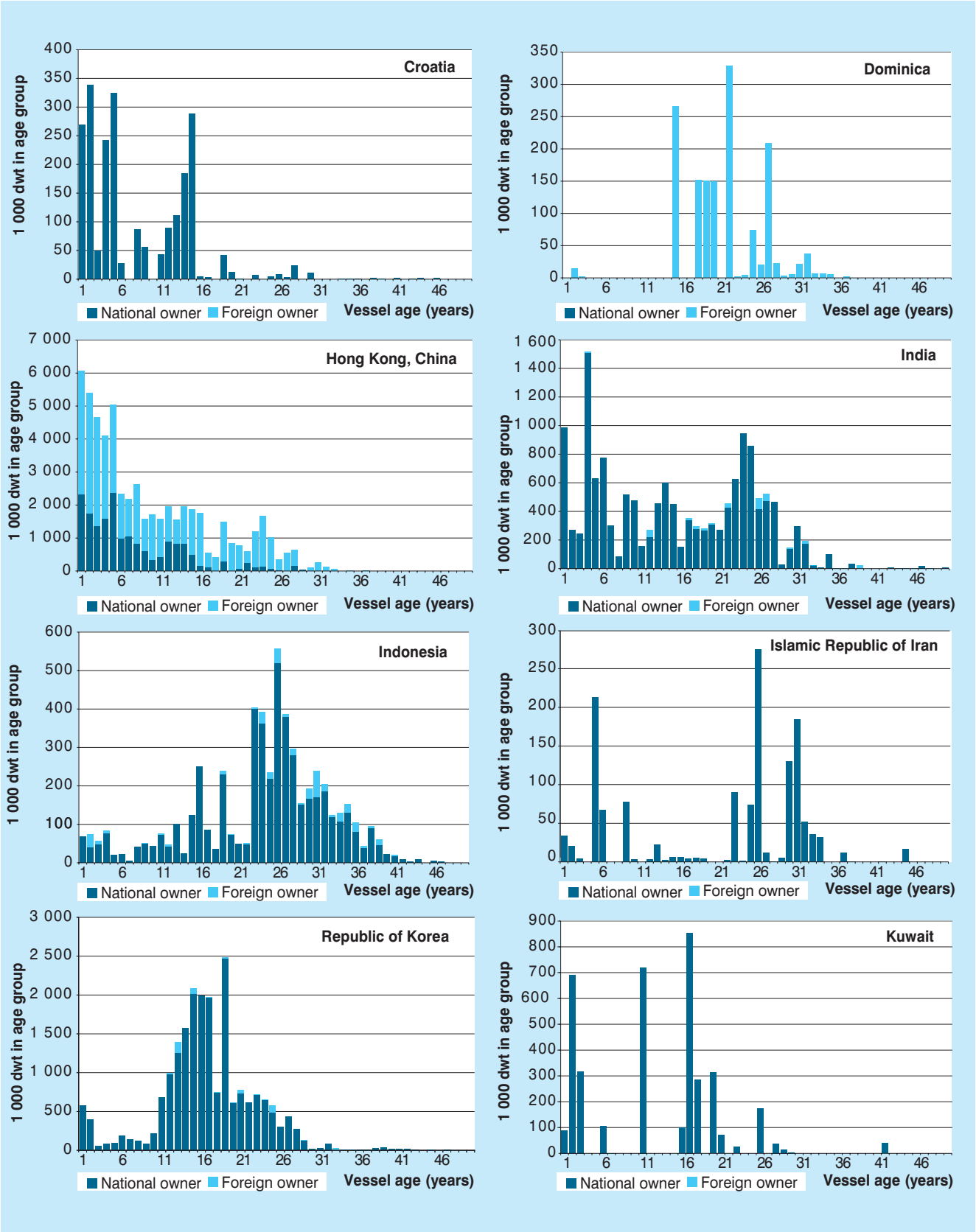


Figure 13 (continued)

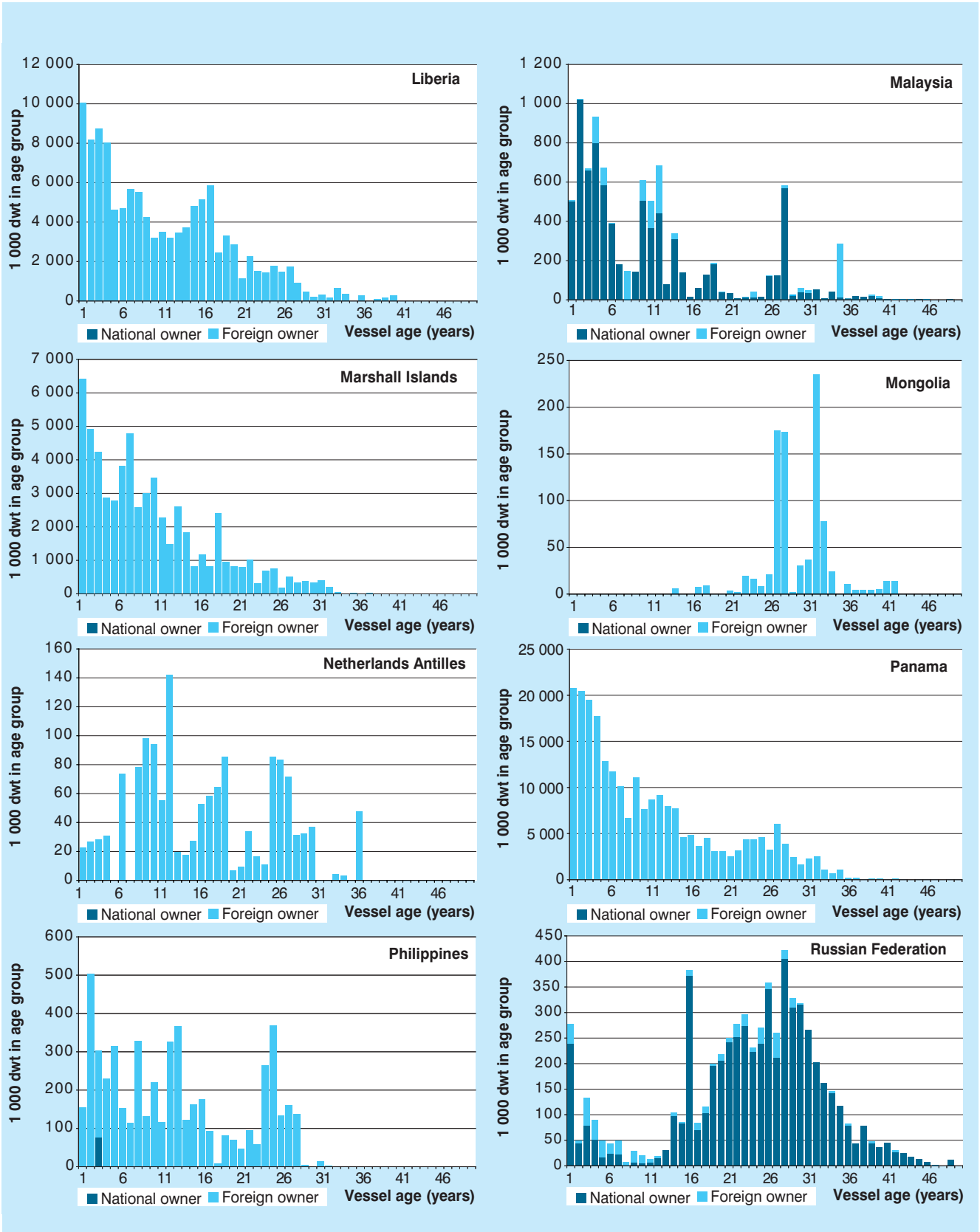


Figure 13 (continued)

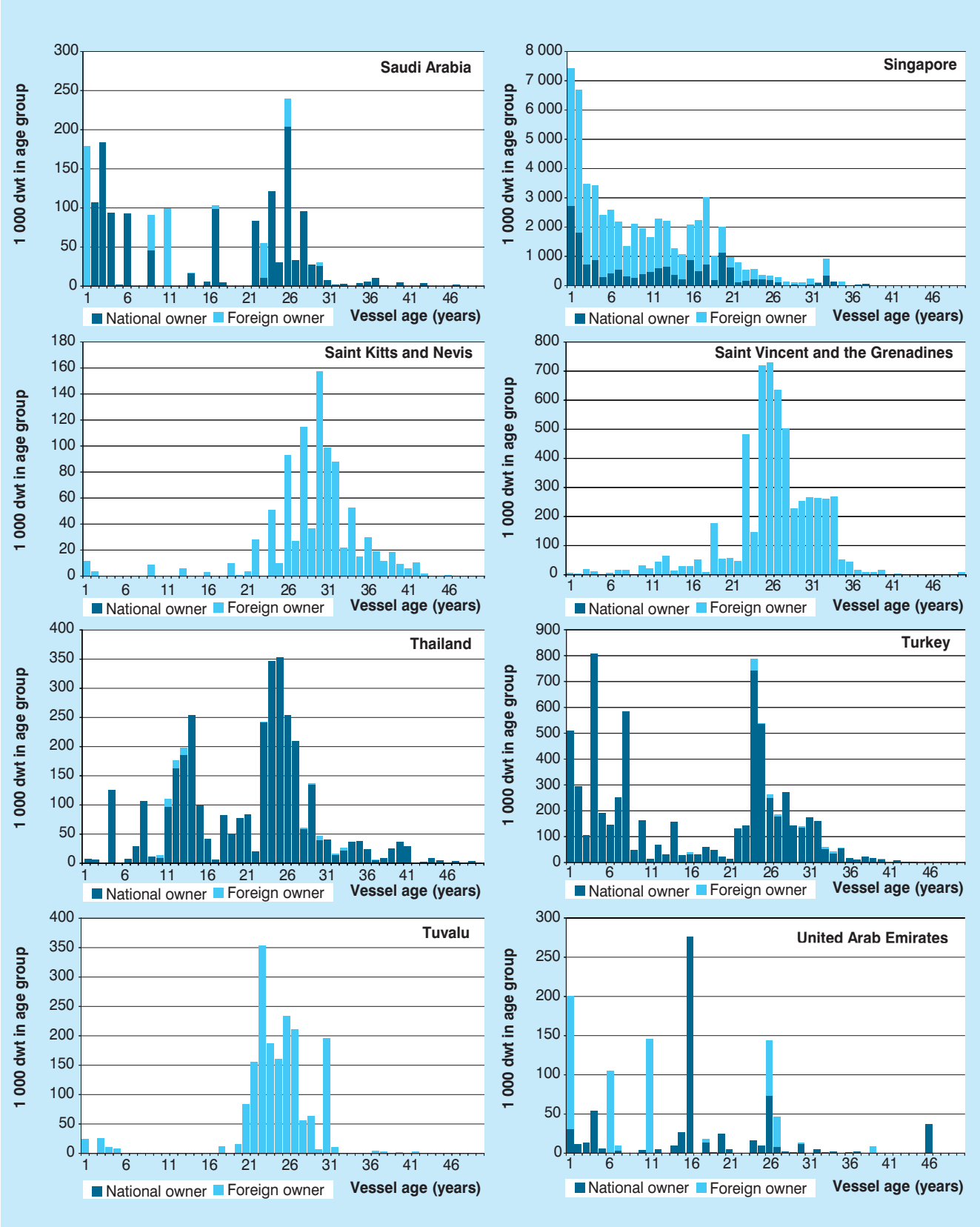
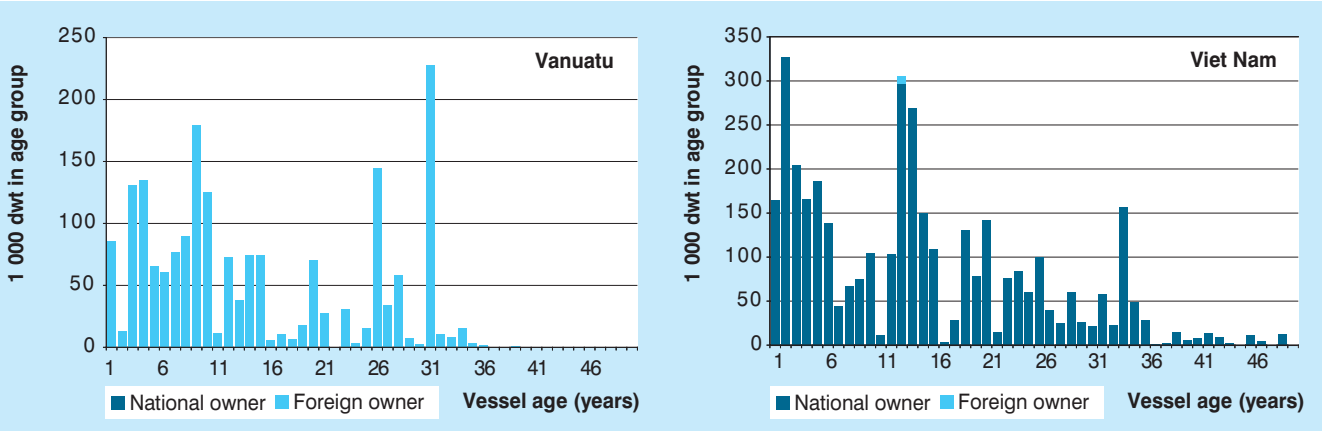


Figure 13 (continued)




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

Figure 14

**Age profiles of world fleet: developing countries and countries with economies in transition among the major 35 vessel-owning countries**

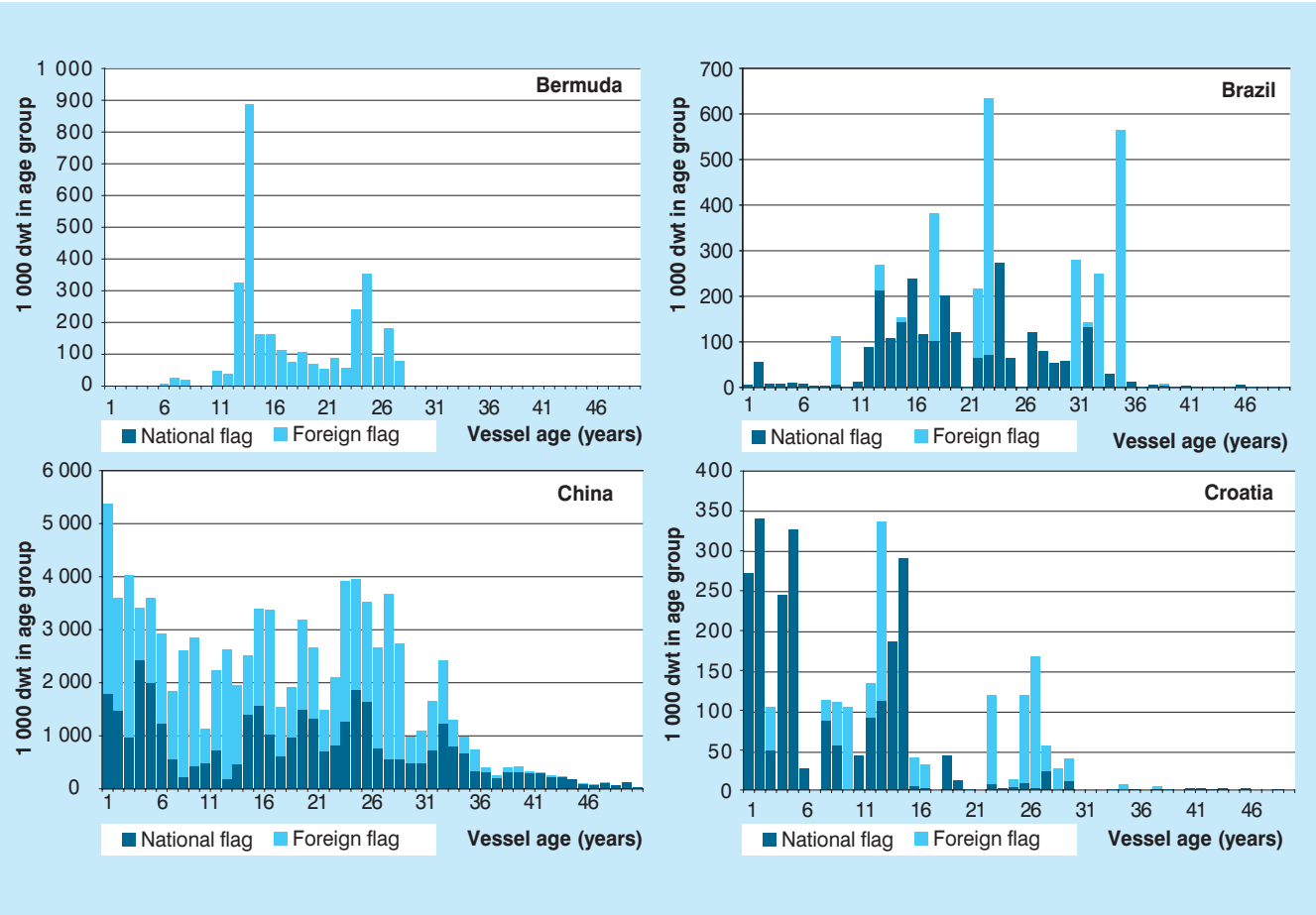


Figure 14 (continued)

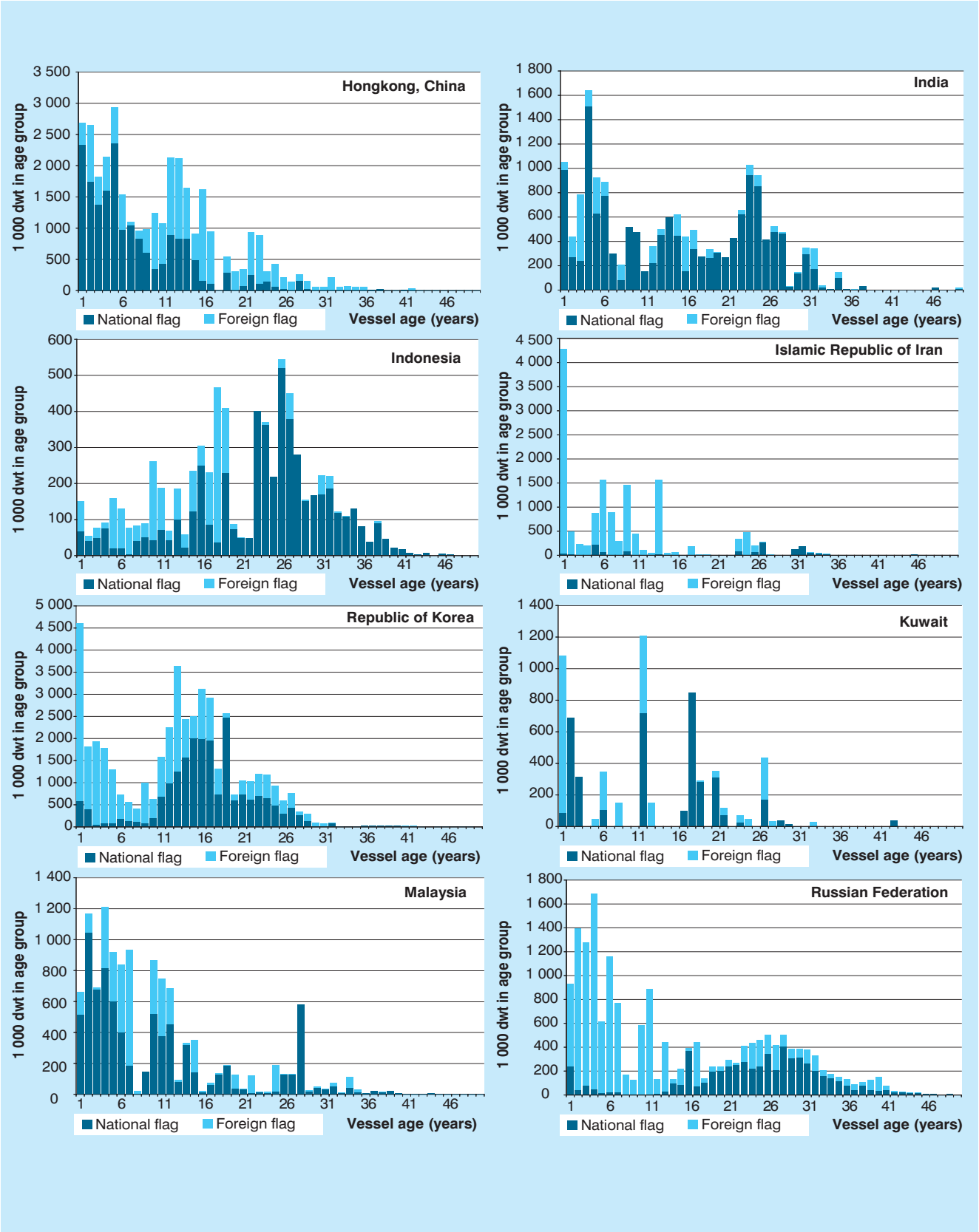
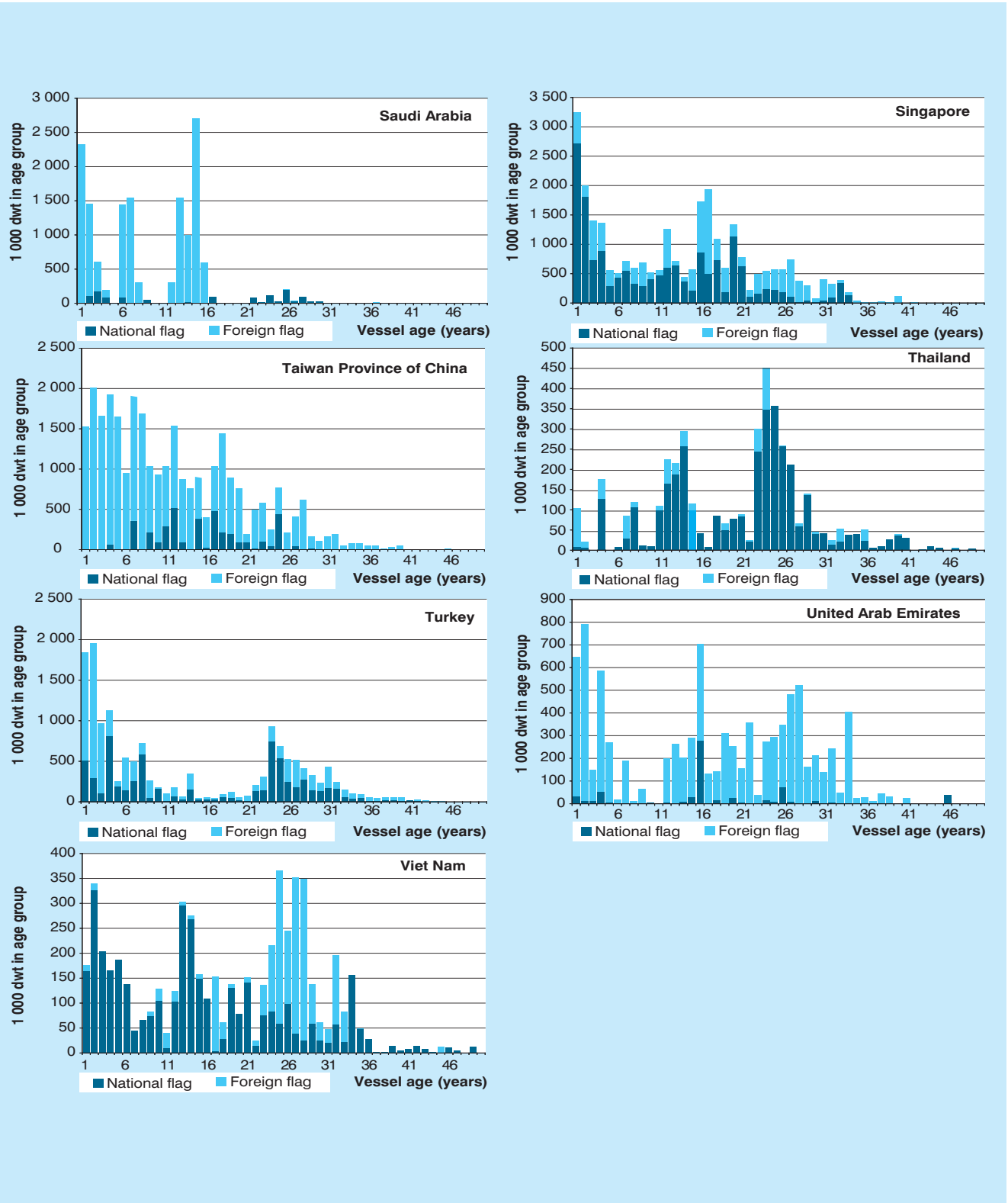


Figure 14 (continued)




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

Grenadines (26.4) and Tuvalu (24.5). A comparison between the age profile of a registry's fleet and the likelihood of the flag being targeted by different port state control regimes shows a high correlation. By way of example, the three oldest fleets among those listed above are included in the "black lists" of the Paris and Tokyo memorandums of understanding on port state control, while the three youngest fleets are on the "white lists", that is to say, ships flying the flag of those countries are less likely to be detained during port state control inspections.[3]

Many flags of registration cater mostly for nationals of the same country, and their age profile is thus mostly determined by the structure of the nationally controlled fleet. These include Brazil (average age per dwt 19.6 years), China (18.2), Croatia (8.1), India (15.2), Indonesia (24.2), the Islamic Republic of Iran (21.1), Kuwait (12.6), Malaysia (11.1), the Republic of Korea (16.8), the Russian Federation (23.4), Saudi Arabia (14.9), Thailand (21.2), Turkey (16.0) and Viet Nam (14.7).

**Nationals of the top 35 countries together control 95.60 per cent of the world fleet …**

Some registries provide their country's flag to foreign-owned ships while at the same time maintaining an important nationally controlled fleet that uses the national flag; these include Hong Kong (China) (average age per dwt 9.5 years), Singapore (10.0) and the United Arab Emirates (14.4). Brazil and Saudi Arabia, too, have a certain fleet of foreign-owned ships that use the national flag; in the case of Brazil, this includes a large number of new offshore supply vessels that are owned by companies from Italy, Norway, the United States, and other countries.

Figure 14 provides an overview of the age profiles of nationally owned tonnage. Almost all nationally owned fleets include some ships that are nationally flagged, as well as foreign-flagged ships. A curious special case is Bermuda: vessel owners from Bermuda exclusively register their ships under flags other than Bermuda (including the Bahamas, Croatia, the Marshall Islands, the Philippines, and the Spanish international registry CSR), while at the same time, the flag of Bermuda is in fact one of the most widely used – albeit only by non-Bermudan owners. Owners from Indonesia, the Republic of Korea and the Russian Federation have most of their younger tonnage registered under foreign flags, while older ships mostly fly the national flag. In Brazil, Singapore and Viet Nam, on the other hand, the older tonnage is in fact more likely to use a foreign flag, as compared to the younger nationally controlled tonnage.

**Owners from Indonesia, the Republic of Korea and the Russian Federation have most of their younger tonnage registered under foreign flags, while older ships mostly fly the national flag.**

## B. OWNERSHIP OF THE WORLD FLEET

The 35 countries with the largest fleets owned by nationals are ranked in table 12, according to deadweight tonnage.[4] Nationals of the top 35 countries together control 95.60 per cent of the world fleet, a further increase over the 95.37 per cent historical record of January 2008. Japan has overtaken Greece as the country with the largest controlled fleet, totalling 173.3 million dwt and 3,720 ships of 1,000 GT and above. Greece has a controlled fleet of 169.4 million dwt (3,064 ships), followed by Germany (105 million dwt; 3,522 ships), China (92.8 million dwt; 3,499 ships) and Norway (50.2 million dwt; 2,027 ships). Together, those five countries hold a market share of 53.5 per cent; the top 10 countries together hold a market share of 70 per cent. Of the top 35 countries, 16 are from Asia, 15 are from Europe, and 4 are from the Americas, while none are from Africa or Oceania. Of the top 35 countries and territories, 17 are classified as developed (see annex I), 16 as developing, and 2 as economies in transition.

More than other vessel types, container ships are increasingly operated by companies that do not own the vessels they use; indeed, major liner shipping companies charter many of the ships that they use to offer their services. Of the fully cellular container ship fleet in service today, 65.5 per cent of ships (corresponding to 55.1 per cent of TEU capacity) are operated by liner shipping companies that do not own the ship themselves.[5] This share is even higher for smaller and older geared container ships, whereas the newer and larger gearless ships are more often owned by the major liner operators themselves.

Several developing countries, especially from Asia but also from South America, are host to important liner shipping operators, whereas

Table 12

## The 35 countries and territories with the largest controlled fleets (dwt), as of 1 January 2009[a]

| Country or territory of ownership [b] | Number of vessels | | | Deadweight tonnage | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | National flag[c] | Foreign flag | Total | National flag[c] | Foreign flag | Total | Foreign flag as a percentage of total | Total as a percentage of world total, 1 Jan. 09 | Total as a percentage of world total, 1 Jan. 08 | Change in percentage share |
| **Japan** | 733 | 2 987 | 3 720 | 12 199 536 | 161 085 699 | 173 285 235 | 92.96 | 15.68 | 15.58 | 0.10 |
| **Greece** | 720 | 2 344 | 3 064 | 52 833 486 | 116 593 204 | 169 426 690 | 68.82 | 15.33 | 16.81 | -1.48 |
| **Germany** | 479 | 3 043 | 3 522 | 17 428 475 | 87 525 237 | 104 953 712 | 83.39 | 9.50 | 9.07 | 0.43 |
| **China** | 1 944 | 1 555 | 3 499 | 37 204 731 | 55 594 490 | 92 799 221 | 59.91 | 8.40 | 8.18 | 0.22 |
| **Norway** | 783 | 1 244 | 2 027 | 11 542 923 | 38 673 312 | 50 216 235 | 77.01 | 4.54 | 4.51 | 0.03 |
| **Republic of Korea** | 797 | 438 | 1 235 | 20 858 866 | 25 764 360 | 46 623 226 | 55.26 | 4.22 | 3.63 | 0.59 |
| **United States** | 867 | 915 | 1 782 | 20 606 970 | 19 358 913 | 39 965 883 | 48.44 | 3.62 | 3.84 | -0.22 |
| **Hong Kong, China** | 307 | 373 | 680 | 18 296 677 | 15 427 149 | 33 723 826 | 45.75 | 3.05 | 3.22 | -0.17 |
| **Denmark** | 347 | 567 | 914 | 11 958 945 | 19 636 578 | 31 595 523 | 62.15 | 2.86 | 2.64 | 0.22 |
| **United Kingdom** | 398 | 520 | 918 | 11 175 470 | 19 741 031 | 30 916 501 | 63.85 | 2.80 | 2.50 | 0.30 |
| **Taiwan Province of China** | 91 | 540 | 631 | 4 068 416 | 25 735 230 | 29 803 646 | 86.35 | 2.70 | 2.52 | 0.18 |
| **Singapore** | 545 | 331 | 876 | 16 482 632 | 11 747 265 | 28 229 897 | 41.61 | 2.55 | 2.76 | -0.21 |
| **Italy** | 582 | 238 | 820 | 12 853 503 | 6 896 850 | 19 750 353 | 34.92 | 1.79 | 1.71 | 0.08 |
| **Russian Federation** | 1 516 | 557 | 2 073 | 5 944 226 | 12 343 679 | 18 287 905 | 67.50 | 1.66 | 1.74 | -0.08 |
| **India** | 495 | 69 | 564 | 14 389 937 | 2 822 923 | 17 212 860 | 16.40 | 1.56 | 1.55 | 0.01 |
| **Canada** | 212 | 201 | 413 | 2 454 402 | 14 716 391 | 17 170 793 | 85.71 | 1.55 | 1.81 | -0.26 |
| **Turkey** | 533 | 630 | 1 163 | 6 803 806 | 8 647 114 | 15 450 920 | 55.97 | 1.40 | 1.27 | 0.13 |
| **Saudi Arabia** | 73 | 99 | 172 | 1 234 653 | 13 676 703 | 14 911 356 | 91.72 | 1.35 | 1.25 | 0.10 |
| **Iran (Islamic Republic of)** | 83 | 128 | 211 | 1 357 901 | 13 202 731 | 14 560 632 | 90.67 | 1.32 | 0.99 | 0.33 |
| **Belgium** | 93 | 147 | 240 | 6 283 078 | 7 164 128 | 13 447 206 | 53.28 | 1.22 | 1.17 | 0.05 |
| **Malaysia** | 338 | 97 | 435 | 7 717 055 | 3 842 005 | 11 559 060 | 33.24 | 1.05 | 1.08 | -0.03 |
| **United Arab Emirates** | 58 | 347 | 405 | 701 714 | 8 331 052 | 9 032 766 | 92.23 | 0.82 | 0.86 | -0.04 |
| **Netherlands** | 491 | 267 | 758 | 4 217 884 | 4 186 617 | 8 404 501 | 49.81 | 0.76 | 0.83 | -0.07 |
| **Cyprus** | 126 | 234 | 360 | 3 196 071 | 5 162 708 | 8 358 779 | 61.76 | 0.76 | 0.70 | 0.06 |
| **Sweden** | 143 | 224 | 367 | 1 740 141 | 5 697 891 | 7 438 032 | 76.60 | 0.67 | 0.67 | 0.00 |
| **Indonesia** | 715 | 106 | 821 | 4 956 797 | 2 064 867 | 7 021 664 | 29.41 | 0.64 | 0.70 | -0.06 |
| **France** | 180 | 188 | 368 | 2 988 629 | 3 576 784 | 6 565 413 | 54.48 | 0.59 | 0.63 | -0.04 |
| **Kuwait** | 38 | 44 | 82 | 3 846 063 | 2 602 518 | 6 448 581 | 40.36 | 0.58 | 0.51 | 0.07 |
| **Viet Nam** | 389 | 67 | 456 | 3 629 175 | 1 938 996 | 5 568 171 | 34.82 | 0.50 | 0.44 | 0.06 |
| **Brazil** | 129 | 15 | 144 | 2 444 762 | 2 266 253 | 4 711 015 | 48.11 | 0.43 | 0.43 | -0.00 |
| **Spain** | 187 | 204 | 391 | 1 562 315 | 2 885 611 | 4 447 926 | 64.88 | 0.40 | 0.43 | -0.03 |
| **Thailand** | 300 | 44 | 344 | 3 506 972 | 620 161 | 4 127 133 | 15.03 | 0.37 | 0.39 | -0.02 |
| **Switzerland** | 35 | 114 | 149 | 1 012 164 | 2 816 788 | 3 828 952 | 73.57 | 0.35 | 0.34 | 0.01 |
| **Croatia** | 78 | 39 | 117 | 2 311 784 | 985 103 | 3 296 887 | 29.88 | 0.30 | 0.30 | -0.00 |
| **Bermuda** | 0 | 65 | 65 | 0 | 3 227 658 | 3 227 658 | 100.00 | 0.29 | 0.31 | -0.02 |
| **Total (35 countries or territories)** | 14 805 | 18 981 | 33 786 | 329 810 159 | 726 557 999 | 1 056 368 158 | 68.78 | 95.60 | 95.37 | 0.23 |
| **World total** | 16 996 | 20 840 | 37 836 | 347 007 002 | 757 952 026 | 1 104 959 028 | 68.60 | 100.00 | 100.00 | |

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

[a] Vessels of 1,000 GT and above, excluding the United States Reserve Fleet and the United States and Canadian Great Lakes fleets (which have a combined tonnage of 6.4 million dwt).

[b] The country of ownership indicates where the true controlling interest (i.e. parent company) of the fleet is located. In several cases, determining this has required making certain judgements. Thus, for instance, Greece is shown as the country of ownership for vessels owned by a Greek national with representative offices in New York, London and Piraeus, although the owner may be domiciled in the United States.

[c] Includes vessels flying the national flag but registered in territorial dependencies or associated self-governing territories such as the Isle of Man (United Kingdom), and also second registries such as DIS (Denmark), NIS (Norway) or FIS (France). For the United Kingdom, British-flag vessels are included under the national flag, except for Bermuda.

their share among the shipowning companies is smaller; many of the non-operating container ship owners are based in Europe, notably in Germany. By way of example, only 13 of the 82 CSAV-operated ships (Chile) are also owned by CSAV, while most of the remainder are owned by German non-operating companies such as Doehle, NRS or Oskar Wehr. Hanjin (Republic of Korea) operates 80 ships, of which it owns 29; IRSL (Islamic Republic of Iran) owns 18 of the 22 vessels it operates; Maruba (Argentina) owns one of the 18 ships it operates; OOCL (Hong Kong, China) operates 82 ships of which it owns 39; and MISC (Malaysia) operates 45 ships of which it owns 14. This distinction between ownership and operation of vessels is yet another example of how the globalization of the maritime business leads to a division of labour: capital costs and tax systems may benefit the ownership of vessels in some countries, while logistics know-how and the costs of management skills may be more favourable in others, including many middle-income developing countries.

## C. REGISTRATION OF SHIPS

### 1. Flags of registration

The 35 countries and territories with the largest fleets registered under their flag account for 92.87 per cent of the world fleet – a further increase of 0.45 per cent compared to their 92.42 per cent share in January 2008 (table 13).[6] The top 5 registries together account for 49.95 per cent of the world's dwt, and the top 10 registries account for 70.49 per cent – both figures showing increases over previous years.

**The top 5 registries together account for 49.95 per cent of the world's dwt, and the top 10 registries account for 70.49 per cent – both figures showing increases over previous years.**

The largest flag of registration continues to be Panama, with 274 million dwt (23 per cent of the world fleet), followed by Liberia (124 million dwt; 10.6 per cent). These two leading registries are followed by five flags with between 61 and 68 million dwt (between 5 and 6 per cent of the world fleet) each: the Marshall Islands, Hong Kong (China), Greece, the Bahamas and Singapore. As regards the number of ships, the largest fleets are flagged in Panama (8,065), the United States (6,435), Japan (6,316), Indonesia (4,464), China (3,916) and the Russian Federation (3,444). Except for Panama, these fleets include a large number of general cargo and other smaller vessels that are employed in coastal shipping.

Several registries recorded double-digit growth in 2008, notably Viet Nam (+19.8 per cent), Germany (+19.4 per cent), the United Kingdom (+15.3 per cent), the Marshall Islands (+14.9 per cent), the Danish International Registry (+14.5 per cent), Malta (+12.1 per cent) and Antigua and Barbuda (+11.4 per cent). Malta gained additional tonnage controlled by the Islamic Republic of Iran, whose national flag no longer appears among the top 35 (it was still ranked 32 in January 2008). The growth in Viet Nam, Germany and the Danish International Registry was mostly due to nationally controlled tonnage, while the growth in the United Kingdom, the Marshall Islands, Malta, and Antigua and Barbuda was predominantly due to new registrations of foreign-owned vessels.

As regards the percentage distribution of the world fleet, the 10 major open and international registries increased their combined market share between 2008 and 2009 by a further 0.77 percentage points to reach 55.11 per cent. The 10 major open and international registries had their highest shares among dry bulk carriers (60.6 per cent) and oil tankers (55.6 per cent).

Excluding the 10 major open and international registries, 18.2 per cent of the world fleet is registered in developed countries, with a particularly high share (27.1 per cent) in the container ship fleet (table 14). Countries with economies in transition accounted for 1.1 per cent of the total world fleet, with 4.7 per cent of general cargo vessels. Only 1 per cent of the world's tonnage is registered in developing countries in Africa and Oceania, including the open registries of Tuvalu and Vanuatu. Two per cent of the world fleet is registered in developing countries in the Americas, including several open registries such as Barbados, Belize, the Plurinational State of Bolivia, Dominica, Honduras, Jamaica, the Netherlands Antilles, and Saint Kitts and Nevis. With 22.3 per cent of the world fleet, developing countries in Asia account for a higher market share in vessel registration than developed countries, holding a particularly high share in the general cargo fleet (28.3 per cent) and dry bulk carriers (25.0 per cent).

The following section will examine in more detail the links between vessel ownership and registration, for the 10 major open and international registries and the 35 major countries of ownership.

Table 13

**The 35 flags of registration with the largest registered deadweight tonnage, as of 1 January 2009 [a]**

| Flag of registration | Number of vessels | Share of world total, vessels | Deadweight tonnage, 1000 dwt | Share of world total, dwt | Cumulated share, dwt | Average vessel size, dwt | Dwt growth 2009/2008, per cent |
|---|---|---|---|---|---|---|---|
| **Panama** | 8 065 | 8.09 | 273 961 | 22.98 | 22.98 | 33 969 | 8.47 |
| **Liberia** | 2 306 | 2.31 | 125 993 | 10.57 | 33.54 | 54 637 | 7.21 |
| **Marshall Islands** | 1 265 | 1.27 | 68 451 | 5.74 | 39.28 | 54 111 | 14.85 |
| **Hong Kong, China** | 1 371 | 1.37 | 64 183 | 5.38 | 44.67 | 46 814 | 8.40 |
| **Greece** | 1 498 | 1.50 | 63 036 | 5.29 | 49.95 | 42 080 | 2.69 |
| **Bahamas** | 1 446 | 1.45 | 62 013 | 5.20 | 55.15 | 42 886 | 3.80 |
| **Singapore** | 2 451 | 2.46 | 60 798 | 5.10 | 60.25 | 24 805 | 9.45 |
| **Malta** | 1 532 | 1.54 | 50 666 | 4.25 | 64.50 | 33 072 | 12.05 |
| **China** | 3 916 | 3.93 | 39 998 | 3.35 | 67.86 | 10 214 | 7.74 |
| **Cyprus** | 1 016 | 1.02 | 31 388 | 2.63 | 70.49 | 30 893 | 6.65 |
| **Republic of Korea** | 3 001 | 3.01 | 22 600 | 1.90 | 72.38 | 7 531 | 6.90 |
| **Norway (NIS)** | 601 | 0.60 | 20 322 | 1.70 | 74.09 | 33 813 | -0.88 |
| **Germany** | 961 | 0.96 | 17 949 | 1.51 | 75.59 | 18 677 | 19.41 |
| **United Kingdom** | 1 676 | 1.68 | 15 950 | 1.34 | 76.93 | 9 517 | 15.25 |
| **Japan** | 6 316 | 6.33 | 15 417 | 1.29 | 78.23 | 2 441 | 4.09 |
| **India** | 1 460 | 1.46 | 15 300 | 1.28 | 79.51 | 10 480 | 1.72 |
| **Isle of Man** | 345 | 0.35 | 14 516 | 1.22 | 80.73 | 42 075 | 4.81 |
| **Italy** | 1 588 | 1.59 | 14 415 | 1.21 | 81.93 | 9 078 | 8.66 |
| **Denmark (DIS)** | 470 | 0.47 | 12 479 | 1.05 | 82.98 | 26 551 | 14.45 |
| **Antigua and Barbuda** | 1 195 | 1.20 | 12 455 | 1.04 | 84.03 | 10 423 | 11.38 |
| **United States** | 6 435 | 6.45 | 11 910 | 1.00 | 85.02 | 1 851 | -1.88 |
| **Bermuda** | 153 | 0.15 | 10 298 | 0.86 | 85.89 | 67 310 | 4.34 |
| **Malaysia** | 1 238 | 1.24 | 9 391 | 0.79 | 86.68 | 7 586 | -0.61 |
| **Turkey** | 1 301 | 1.30 | 7 476 | 0.63 | 87.30 | 5 747 | 2.41 |
| **Saint Vincent and the Grenadines** | 1 009 | 1.01 | 7 400 | 0.62 | 87.92 | 7 334 | -12.97 |
| **France (FIS)** | 168 | 0.17 | 7 144 | 0.60 | 88.52 | 42 524 | -3.63 |
| **Russian Federation** | 3 444 | 3.45 | 7 140 | 0.60 | 89.12 | 2 073 | 0.07 |
| **Indonesia** | 4 464 | 4.48 | 7 025 | 0.59 | 89.71 | 1 574 | 2.42 |
| **Netherlands** | 1 296 | 1.30 | 6 815 | 0.57 | 90.28 | 5 258 | 9.61 |
| **Philippines** | 1 808 | 1.81 | 6 750 | 0.57 | 90.85 | 3 733 | 1.37 |
| **Belgium** | 243 | 0.24 | 6 631 | 0.56 | 91.40 | 27 289 | 2.54 |
| **Viet Nam** | 1 312 | 1.32 | 4 663 | 0.39 | 91.80 | 3 554 | 19.77 |
| **Cayman Islands** | 153 | 0.15 | 4 314 | 0.36 | 92.16 | 28 196 | -1.01 |
| **Taiwan Province of China** | 637 | 0.64 | 4 246 | 0.36 | 92.51 | 6 665 | -1.43 |
| **Thailand** | 879 | 0.88 | 4 218 | 0.35 | 92.87 | 4 799 | -0.12 |
| **Total Top 35 flags of registration** | 67 019 | 67.19 | 1 107 312 | 92.87 | | 16 522 | 7.19 |
| **World Total** | 99 741 | 100.00 | 1 192 317 | 100.00 | | 11 954 | 6.67 |

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

[a] Ships of 100 GT and above; ranked by deadweight tonnage.

Table 14

**Distribution of dwt capacity of vessel types, by country group or registration, 2009[a]**

*(percentage change 2009/2008 in italics)*

| | Total fleet | Oil tankers | Bulk carriers | General cargo[c] | Container ships | Other types |
|---|---|---|---|---|---|---|
| **World total** | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| **Developed countries** | 18.23 | 20.05 | 11.50 | 17.28 | 27.09 | 26.73 |
| | *-0.31* | *-0.26* | *-0.16* | *0.24* | *-0.80* | *-3.12* |
| **Countries with economies in transition** | 1.06 | 0.82 | 0.50 | 4.68 | 0.11 | 2.13 |
| | *-0.09* | *0.01* | *-0.12* | *-0.25* | *0.01* | *-0.49* |
| **Developing countries** | 25.21 | 23.33 | 27.19 | 35.01 | 18.85 | 24.30 |
| | *-0.30* | *-0.85* | *-0.21* | *-0.06* | *0.82* | *0.62* |
| ***of which:*** | | | | | | |
| **Africa** | 0.59 | 0.46 | 0.30 | 1.76 | 0.13 | 2.03 |
| | *0.02* | *0.03* | *0.00* | *0.04* | *0.00* | *-0.10* |
| **Americas** | 1.91 | 2.05 | 1.40 | 4.29 | 0.29 | 3.85 |
| | *-0.07* | *-0.14* | *-0.05* | *0.20* | *0.01* | *-0.22* |
| **Asia** | 22.29 | 20.47 | 25.01 | 28.27 | 18.40 | 17.52 |
| | *-0.29* | *-0.76* | *-0.25* | *-0.30* | *0.80* | *1.02* |
| **Oceania** | 0.42 | 0.35 | 0.49 | 0.69 | 0.03 | 0.91 |
| | *0.03* | *0.02* | *0.09* | *0.00* | *0.00* | *-0.08* |
| **Other, unallocated** | 0.39 | 0.24 | 0.19 | 1.73 | 0.03 | 1.01 |
| | *-0.07* | *-0.09* | *-0.04* | *-0.07* | *-0.01* | *-0.23* |
| **10 major open and international registries[b]** | 55.11 | 55.56 | 60.62 | 41.31 | 53.91 | 45.83 |
| | *0.77* | *1.18* | *0.53* | *0.14* | *-0.01* | *3.22* |

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

[a] Vessels of 100 GT and above.

[b] There exists no clear definition of "open and international registries". UNCTAD has grouped the 10 major open and international registries to include the 10 largest fleets with more than 90 per cent foreign-controlled tonnage. See table 15 for the list of registries

[c] Including passenger/cargo.

## 2. Nationality of controlling interests

Most open and international registries specialize in certain countries of ownership (table 15).[7] For instance, the flag of the world's largest registry, Panama, is predominantly used by vessel owners of Japan, who account for more than half of the registry's tonnage (128.4 million dwt of ships of 1,000 GT and above), followed by owners from China (22.8 million dwt), Greece (19.4 million dwt) and the Republic of Korea (19.2 million dwt). From Japan's perspective, the Panamanian registry is even more important: 74.1 per cent of Japanese-owned tonnage uses the flag of Panama; this is the highest percentage among all the top 35 vessel-owning economies for any one of the top 10 registries. Other economies that make heavy use of the flag of Panama for their vessels are Taiwan Province of China (42.8 per cent of the tonnage controlled by owners from Taiwan Province of China is registered in Panama), the Republic of Korea (41.2 per cent), the United Arab Emirates (30.9 per cent) and China (26.6 per cent).

**… the flag of the world's largest registry, Panama, is predominantly used by vessel owners of Japan, who account for more than half of the registry's tonnage …**

The world's second largest registry, Liberia, is predominantly used by owners from Germany (39.5 million dwt) and Greece (23.2 million dwt). Saudi Arabia relies on Liberia to provide the flag for 49.3 per cent of its nationally controlled fleet. Forty-four per cent of the tonnage

controlled by owners from the Russian Federation flies the flag of Liberia, as does 37.7 per cent of German-owned tonnage. Liberia supplies the flag to 11 per cent of the tonnage of the top 35 shipowning countries, albeit only to 6.1 per cent of the number of ships, which is due to the large average vessel size of Liberian-registered ships.

By January 2009, the Marshall Islands had become the third largest registry, catering above all for tonnage owned by interests from Greece (16.1 million dwt), the United States (11.8 million dwt) and Germany (10.4 million dwt). This registry is of particular importance for the United States, as 29.5 per cent of United States–controlled tonnage flies the flag of the Marshall Islands. Turkish owners rely on the Marshall Islands registry for 15.2 per cent of their nationally controlled tonnage.

In Europe, the flag of Malta is used above all by ships from Greece (19.5 million dwt) and the Islamic Republic of Iran (9.7 million dwt). Of the fleet owned by the Islamic Republic of Iran, 66.4 per cent is registered in Malta. The registry of Cyprus depends heavily on owners from Greece (13.1 million dwt) and Germany (4.2 million dwt), and also on owners from Cyprus itself (3.2 million dwt). Only 38.2 per cent of the Cypriot-owned fleet uses the national flag of Cyprus. The flag of the Isle of Man is used predominantly by owners from the United Kingdom (5.9 million dwt), Greece (4.6 million dwt) and Norway (2.1 million dwt). From the perspective of the country of ownership, this registry is relatively important for the United Kingdom, as 19.1 per cent of the tonnage owned by the United Kingdom flies the flag of the Isle of Man.

In the Caribbean, the registry of the Bahamas caters predominantly for tonnage owned by Greece (12.6 million dwt), Canada (8.5 million dwt) and Norway (6.7 million dwt). Of Canadian-controlled tonnage, 49.4 per cent is registered in the Bahamas, as is 27.1 per cent of the fleet owned by Saudi Arabia, 22.9 per cent of Dutch-controlled tonnage, and 22.4 per cent of tonnage from Spain. Antigua and Barbuda depends almost exclusively on German-owned tonnage (10.5 million dwt), which accounts for an 89.9 per cent share among the top 35 shipowning countries. This is the highest dependency among the top 10 registries. From the German perspective, 10.0 per cent of its tonnage uses the flag of Antigua and Barbuda, as does 8.0 per cent of the tonnage owned by Swiss nationals. Bermuda is mostly the registry of tonnage from China (2.2 million dwt) and Sweden (1.5 million dwt). Of the Swedish-owned fleet, 19.7 per cent flies the flag of Bermuda. The Saint Vincent and the Grenadines–flagged fleet includes 2.0 million dwt owned by Chinese interests, and 1.7 million dwt owned by interests from Greece. This registry caters for a relatively wide range of owners, and no country depends on it for a particularly high percentage of its nationally owned tonnage.

The motivations for choosing a foreign flag vary for different countries, vessel types and vessel characteristics. Empirical research suggests that older vessels are more likely to be nationally flagged than foreign flagged.[8] Another determining factor for a vessel owner to choose a foreign flag appears to be the likelihood that it trades internationally, as do most cargo and larger vessels, as compared to passenger or smaller units. Furthermore, if a vessel is built in the country of ownership, this increases the likelihood of remaining in the national flag registry. Owners from high-income countries are more likely to choose a foreign flag than owners from countries with a lower GDP per capita or with low human development indicators, such as a low literacy rate or life expectancy. These indicators are correlated with higher wages, and using a foreign flag often allows the employment of seafarers from developing countries with lower wages.

**Owners from high-income countries are more likely to choose a foreign flag than owners from countries with a lower GDP per capita …**

## D. SHIPBUILDING, DEMOLITION AND THE SECOND-HAND MARKET

### 1. Delivery of newbuildings

In spite of the global economic crisis, the world's shipyards continued to deliver new ships throughout 2008. Although new orders for most vessel types practically came to a standstill, vessels continued to be constructed in line with orders placed prior to the economic crisis, especially in the dry bulk segment. In fact, newbuilding activities reached the highest level ever recorded in terms of deadweight tons, with deliveries totalling 82.3 million dwt (see table 16 and fig. 15) – a

**Although new orders for most vessel types practically came to a standstill, vessels continued to be constructed in line with orders placed prior to the economic crisis …**

Table 15

## True nationality of 10 major open and international registry fleets, as of 1 January 2009[a]

| Country or territory of ownership | Panama | | | Liberia | | | Marshall Islands | | |
|---|---|---|---|---|---|---|---|---|---|
| | Number of vessels | 1 000 dwt | % | Number of vessels | 1 000 dwt | % | Number of vessels | 1 000 dwt | % |
| Japan | 2 292 | 128 423 | 53.3 | 115 | 6 996 | 6.0 | 23 | 2 234 | 3.7 |
| Greece | 503 | 19 429 | 8.1 | 387 | 23 155 | 19.9 | 282 | 16 051 | 26.7 |
| Germany | 95 | 7 501 | 3.1 | 857 | 39 527 | 34.0 | 233 | 10 449 | 17.4 |
| China | 558 | 22 818 | 9.5 | 12 | 364 | 0.3 | 10 | 789 | 1.3 |
| Norway | 134 | 4 540 | 1.9 | 49 | 2 164 | 1.9 | 86 | 6 185 | 10.3 |
| Republic of Korea | 324 | 19 209 | 8.0 | 5 | 124 | 0.1 | 13 | 1 059 | 1.8 |
| United States | 172 | 3 065 | 1.3 | 105 | 3 698 | 3.2 | 170 | 11 788 | 19.6 |
| Hong Kong, China | 127 | 4 864 | 2.0 | 60 | 3 672 | 3.2 | 7 | 283 | 0.5 |
| Denmark | 40 | 1 063 | 0.4 | 9 | 275 | 0.2 | 9 | 521 | 0.9 |
| United Kingdom | 56 | 1 305 | 0.5 | 30 | 1 345 | 1.2 | 16 | 798 | 1.3 |
| Taiwan Province of China | 332 | 12 753 | 5.3 | 92 | 7 186 | 6.2 | 1 | 276 | 0.5 |
| Singapore | 92 | 2 668 | 1.1 | 36 | 4 420 | 3.8 | 20 | 952 | 1.6 |
| Italy | 31 | 788 | 0.3 | 48 | 2 953 | 2.5 | 3 | 127 | 0.2 |
| Russian Federation | 24 | 238 | 0.1 | 95 | 8 049 | 6.9 | 9 | 163 | 0.3 |
| India | 25 | 859 | 0.4 | 1 | 150 | 0.1 | 2 | 310 | 0.5 |
| Canada | 11 | 975 | 0.4 | 5 | 215 | 0.2 | | 0 | - |
| Turkey | 96 | 782 | 0.3 | 12 | 228 | 0.2 | 57 | 2 344 | 3.9 |
| Saudi Arabia | 8 | 191 | 0.1 | 28 | 7 353 | 6.3 | 4 | 1 242 | 2.1 |
| Iran (Islamic Republic of) | 8 | 68 | 0.0 | | 0 | - | | 0 | - |
| Belgium | 3 | 192 | 0.1 | 1 | 14 | 0.0 | 1 | 442 | 0.7 |
| Malaysia | 17 | 296 | 0.1 | | 0 | - | 8 | 47 | 0.1 |
| United Arab Emirates | 118 | 2 788 | 1.2 | 27 | 1 556 | 1.3 | 16 | 511 | 0.9 |
| Netherlands | 29 | 242 | 0.1 | 6 | 74 | 0.1 | 10 | 164 | 0.3 |
| Cyprus | 14 | 781 | 0.3 | 38 | 764 | 0.7 | 42 | 1 113 | 1.9 |
| Sweden | 7 | 72 | 0.0 | 10 | 421 | 0.4 | 6 | 57 | 0.1 |
| Indonesia | 26 | 498 | 0.2 | 2 | 234 | 0.2 | | 0 | - |
| France | 7 | 188 | 0.1 | 4 | 159 | 0.1 | | 0 | - |
| Kuwait | 9 | 565 | 0.2 | | 0 | - | | 0 | - |
| Viet Nam | 35 | 1 126 | 0.5 | 4 | 204 | 0.2 | | 0 | - |
| Brazil | 8 | 1 367 | 0.6 | 3 | 456 | 0.4 | 1 | 280 | 0.5 |
| Spain | 51 | 336 | 0.1 | | 0 | - | 1 | 94 | 0.2 |
| Thailand | 11 | 63 | 0.0 | | 0 | - | | 0 | - |
| Switzerland | 32 | 828 | 0.3 | 11 | 318 | 0.3 | 11 | 374 | 0.6 |
| Croatia | 3 | 35 | 0.0 | 2 | 31 | 0.0 | 8 | 213 | 0.4 |
| Bermuda | | 0 | - | | 0 | - | 11 | 1 255 | 2.1 |
| Total of the 35 countries | 5 298 | 240 917 | 100.0 | 2 054 | 116 104 | 100.0 | 1 060 | 60 122 | 100.0 |
| Percentage share among the 35 countries | 15.7 | 22.8 | | 6.1 | 11.0 | | 3.1 | 5.7 | |

Table 15 (continued)

| Bahamas | | | Malta | | | Cyprus | | | Country or territory of ownership |
|---|---|---|---|---|---|---|---|---|---|
| Number of vessels | 1 000 dwt | % | Number of vessels | 1 000 dwt | % | Number of vessels | 1 000 dwt | % | |
| 87 | 4 900 | 8.8 | 6 | 227 | 0.5 | 20 | 562 | 1.9 | **Japan** |
| 217 | 12 573 | 22.5 | 408 | 19 457 | 41.8 | 249 | 13 069 | 44.3 | **Greece** |
| 43 | 2 817 | 5.0 | 95 | 3 148 | 6.8 | 174 | 4 236 | 14.3 | **Germany** |
| 9 | 760 | 1.4 | 12 | 207 | 0.4 | 8 | 191 | 0.6 | **China** |
| 231 | 6 702 | 12.0 | 100 | 919 | 2.0 | 31 | 819 | 2.8 | **Norway** |
| | 0 | - | 28 | 3 797 | 8.2 | 1 | 9 | 0.0 | **Republic of Korea** |
| 111 | 4 090 | 7.3 | 29 | 358 | 0.8 | 6 | 25 | 0.1 | **United States** |
| 25 | 349 | 0.6 | 2 | 19 | 0.0 | 2 | 36 | 0.1 | **Hong Kong, China** |
| 60 | 753 | 1.3 | 44 | 527 | 1.1 | 4 | 57 | 0.2 | **Denmark** |
| 73 | 2 008 | 3.6 | 21 | 440 | 0.9 | 23 | 1 221 | 4.1 | **United Kingdom** |
| | 0 | - | | 0 | - | | 0 | - | **Taiwan Province of China** |
| 19 | 417 | 0.7 | | 0 | - | 2 | 95 | 0.3 | **Singapore** |
| 12 | 516 | 0.9 | 53 | 1 041 | 2.2 | 7 | 54 | 0.2 | **Italy** |
| 3 | 18 | 0.0 | 57 | 508 | 1.1 | 52 | 1 801 | 6.1 | **Russian Federation** |
| 2 | 12 | 0.0 | 2 | 162 | 0.3 | 3 | 284 | 1.0 | **India** |
| 85 | 8 478 | 15.2 | 1 | 24 | 0.1 | 2 | 64 | 0.2 | **Canada** |
| 7 | 349 | 0.6 | 188 | 3 800 | 8.2 | | 0 | - | **Turkey** |
| 18 | 4 036 | 7.2 | | 0 | - | | 0 | - | **Saudi Arabia** |
| | 0 | - | 86 | 9 662 | 20.7 | 10 | 2 636 | 8.9 | **Iran (Islamic Republic of)** |
| 13 | 163 | 0.3 | 16 | 345 | 0.7 | 2 | 12 | 0.0 | **Belgium** |
| 14 | 109 | 0.2 | | 0 | - | | 0 | - | **Malaysia** |
| 22 | 1 042 | 1.9 | 3 | 81 | 0.2 | 10 | 440 | 1.5 | **United Arab Emirates** |
| 32 | 1 928 | 3.5 | 4 | 95 | 0.2 | 49 | 405 | 1.4 | **Netherlands** |
| 28 | 864 | 1.5 | 30 | 751 | 1.6 | 126 | 3 196 | 10.8 | **Cyprus** |
| 8 | 168 | 0.3 | 3 | 43 | 0.1 | 2 | 8 | 0.0 | **Sweden** |
| 2 | 82 | 0.1 | | 0 | - | | 0 | - | **Indonesia** |
| 23 | 594 | 1.1 | 5 | 56 | 0.1 | | 0 | - | **France** |
| 2 | 85 | 0.2 | 1 | 73 | 0.2 | | 0 | - | **Kuwait** |
| | 0 | - | | 0 | - | | 0 | - | **Viet Nam** |
| 1 | 105 | 0.2 | | 0 | - | | 0 | - | **Brazil** |
| 9 | 997 | 1.8 | 6 | 75 | 0.2 | 8 | 303 | 1.0 | **Spain** |
| 5 | 132 | 0.2 | | 0 | - | | 0 | - | **Thailand** |
| 1 | 9 | 0.0 | 16 | 301 | 0.6 | | 0 | - | **Switzerland** |
| 1 | 54 | 0.1 | 10 | 451 | 1.0 | | 0 | - | **Croatia** |
| 11 | 693 | 1.2 | | 0 | - | | 0 | - | **Bermuda** |
| 1 174 | 55 804 | 100.0 | 1 226 | 46 566 | 100.0 | 791 | 29 524 | 100.0 | **Total of the 35 countries** |
| 3.5 | 5.3 | | 3.6 | 4.4 | | 2.3 | 2.8 | | **Percentage share among the 35 countries** |

Table 15 (continued)

| Country or territory of ownership | Isle of Man | | | Antigua and Barbuda | | | Bermuda | | | Saint Vincent & the Grenadines | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of vessels | 1 000 dwt | % | Number of vessels | 1 000 dwt | % | Number of vessels | 1 000 dwt | % | Number of vessels | 1 000 dwt | % |
| **Japan** | 7 | 129 | 0.9 | | 0 | - | 2 | 164 | 2.6 | 3 | 10 | 0.2 |
| **Greece** | 52 | 4 557 | 31.9 | 4 | 57 | 0.5 | 2 | 152 | 2.4 | 64 | 1 738 | 31.3 |
| **Germany** | 52 | 804 | 5.6 | 952 | 10 499 | 89.9 | 21 | 768 | 12.2 | 2 | 3 | 0.1 |
| **China** | | 0 | - | | 0 | - | 16 | 2 232 | 35.4 | 87 | 1 988 | 35.7 |
| **Norway** | 52 | 2 098 | 14.7 | 10 | 80 | 0.7 | 5 | 58 | 0.9 | 15 | 54 | 1.0 |
| **Republic of Korea** | | 0 | - | 1 | 51 | 0.4 | | 0 | - | | 0 | - |
| **United States** | 4 | 203 | 1.4 | 8 | 28 | 0.2 | 26 | 346 | 5.5 | 21 | 84 | 1.5 |
| **Hong Kong, China** | | 0 | - | | 0 | - | 5 | 640 | 10.1 | 5 | 65 | 1.2 |
| **Denmark** | 46 | 479 | 3.4 | 21 | 103 | 0.9 | | 0 | - | 17 | 48 | 0.9 |
| **United Kingdom** | 95 | 5 912 | 41.4 | 10 | 157 | 1.3 | 7 | 478 | 7.6 | 14 | 170 | 3.1 |
| **Taiwan Province of China** | | 0 | - | | 0 | - | | 0 | - | 4 | 5 | 0.1 |
| **Singapore** | 1 | 50 | 0.4 | | 0 | - | | 0 | - | 2 | 19 | 0.3 |
| **Italy** | | 0 | - | | 0 | - | | 0 | - | 16 | 212 | 3.8 |
| **Russian Federation** | | 0 | - | 4 | 11 | 0.1 | | 0 | - | 25 | 317 | 5.7 |
| **India** | | 0 | - | | 0 | - | | 0 | - | 6 | 25 | 0.5 |
| **Canada** | | 0 | - | | 0 | - | | 0 | - | 1 | 3 | 0.1 |
| **Turkey** | 2 | 7 | 0.0 | 8 | 41 | 0.3 | | 0 | - | 17 | 68 | 1.2 |
| **Saudi Arabia** | | 0 | - | | 0 | - | | 0 | - | | 0 | - |
| **Iran (Islamic Republic of)** | | 0 | - | | 0 | - | | 0 | - | 2 | 2 | 0.0 |
| **Belgium** | | 0 | - | | 0 | - | | 0 | - | 13 | 41 | 0.7 |
| **Malaysia** | | 0 | - | | 0 | - | | 0 | - | | 0 | - |
| **United Arab Emirates** | | 0 | - | | 0 | - | | 0 | - | 13 | 299 | 5.4 |
| **Netherlands** | 3 | 4 | 0.0 | 16 | 64 | 0.5 | | 0 | - | 6 | 20 | 0.4 |
| **Cyprus** | | 0 | - | 17 | 273 | 2.3 | | 0 | - | 1 | 6 | 0.1 |
| **Sweden** | 1 | 23 | 0.2 | 1 | 5 | 0.0 | 19 | 1 464 | 23.2 | 2 | 8 | 0.1 |
| **Indonesia** | | 0 | - | | 0 | - | | 0 | - | | 0 | - |
| **France** | 1 | 4 | 0.0 | | 0 | - | 1 | 7 | 0.1 | 23 | 66 | 1.2 |
| **Kuwait** | | 0 | - | | 0 | - | | 0 | - | | 0 | - |
| **Viet Nam** | | 0 | - | | 0 | - | | 0 | - | | 0 | - |
| **Brazil** | | 0 | - | | 0 | - | | 0 | - | | 0 | - |
| **Spain** | | 0 | - | | 0 | - | | 0 | - | | 0 | - |
| **Thailand** | | 0 | - | | 0 | - | | 0 | - | | 0 | - |
| **Switzerland** | | 0 | - | 7 | 305 | 2.6 | | 0 | - | 10 | 125 | 2.3 |
| **Croatia** | | 0 | - | | 0 | - | | 0 | - | 11 | 185 | 3.3 |
| **Bermuda** | | 0 | - | | 0 | - | | 0 | - | | 0 | - |
| **Total of the 35 countries** | 316 | 14 270 | 100.0 | 1 059 | 11 673 | 100.0 | 104 | 6 309 | 100.0 | 380 | 5 561 | 100.0 |
| **Percentage share among the 35 countries** | 0.9 | 1.4 | | 3.1 | 1.1 | | 0.3 | 0.6 | | 1.1 | 0.5 | |

Table 15 (continued)

| Total major 10 open and international registries | | | | | Total national controlled fleet, 1 000 dwt | Major 10 registries as % of total national controlled fleet | Country or territory of ownership |
|---|---|---|---|---|---|---|---|
| Number of vessels | % of vessels | 1 000 dwt | % of dwt | Average vessel size | | | |
| 2 555 | 19.0 | 143 646 | 24.5 | 56 221 | 173 285 | 82.9 | **Japan** |
| 2 168 | 16.1 | 110 239 | 18.8 | 50 848 | 169 427 | 65.1 | **Greece** |
| 2 524 | 18.7 | 79 751 | 13.6 | 31 597 | 104 954 | 76.0 | **Germany** |
| 712 | 5.3 | 29 349 | 5.0 | 41 221 | 92 799 | 31.6 | **China** |
| 713 | 5.3 | 23 618 | 4.0 | 33 124 | 50 216 | 47.0 | **Norway** |
| 372 | 2.8 | 24 248 | 4.1 | 65 183 | 46 623 | 52.0 | **Republic of Korea** |
| 652 | 4.8 | 23 684 | 4.0 | 36 325 | 39 966 | 59.3 | **United States** |
| 233 | 1.7 | 9 930 | 1.7 | 42 617 | 33 724 | 29.4 | **Hong Kong, China** |
| 250 | 1.9 | 3 825 | 0.7 | 15 301 | 31 596 | 12.1 | **Denmark** |
| 345 | 2.6 | 13 835 | 2.4 | 40 101 | 30 917 | 44.7 | **United Kingdom** |
| 429 | 3.2 | 20 220 | 3.4 | 47 132 | 29 804 | 67.8 | **Taiwan Province of China** |
| 172 | 1.3 | 8 622 | 1.5 | 50 126 | 28 230 | 30.5 | **Singapore** |
| 170 | 1.3 | 5 692 | 1.0 | 33 482 | 19 750 | 28.8 | **Italy** |
| 269 | 2.0 | 11 105 | 1.9 | 41 284 | 18 288 | 60.7 | **Russian Federation** |
| 41 | 0.3 | 1 803 | 0.3 | 43 977 | 17 213 | 10.5 | **India** |
| 105 | 0.8 | 9 759 | 1.7 | 92 942 | 17 171 | 56.8 | **Canada** |
| 387 | 2.9 | 7 618 | 1.3 | 19 685 | 15 451 | 49.3 | **Turkey** |
| 58 | 0.4 | 12 823 | 2.2 | 221 087 | 14 911 | 86.0 | **Saudi Arabia** |
| 106 | 0.8 | 12 368 | 2.1 | 116 676 | 14 561 | 84.9 | **Iran (Islamic Republic of)** |
| 49 | 0.4 | 1 208 | 0.2 | 24 659 | 13 447 | 9.0 | **Belgium** |
| 39 | 0.3 | 453 | 0.1 | 11 608 | 11 559 | 3.9 | **Malaysia** |
| 209 | 1.6 | 6 718 | 1.1 | 32 142 | 9 033 | 74.4 | **United Arab Emirates** |
| 155 | 1.2 | 2 996 | 0.5 | 19 330 | 8 405 | 35.7 | **Netherlands** |
| 296 | 2.2 | 7 748 | 1.3 | 26 175 | 8 359 | 92.7 | **Cyprus** |
| 59 | 0.4 | 2 267 | 0.4 | 38 421 | 7 438 | 30.5 | **Sweden** |
| 30 | 0.2 | 814 | 0.1 | 27 133 | 7 022 | 11.6 | **Indonesia** |
| 64 | 0.5 | 1 073 | 0.2 | 16 767 | 6 565 | 16.3 | **France** |
| 12 | 0.1 | 724 | 0.1 | 60 316 | 6 449 | 11.2 | **Kuwait** |
| 39 | 0.3 | 1 330 | 0.2 | 34 102 | 5 568 | 23.9 | **Viet Nam** |
| 13 | 0.1 | 2 209 | 0.4 | 169 923 | 4 711 | 46.9 | **Brazil** |
| 75 | 0.6 | 1 805 | 0.3 | 24 069 | 4 448 | 40.6 | **Spain** |
| 16 | 0.1 | 195 | 0.0 | 12 158 | 4 127 | 4.7 | **Thailand** |
| 88 | 0.7 | 2 260 | 0.4 | 25 677 | 3 829 | 59.0 | **Switzerland** |
| 35 | 0.3 | 969 | 0.2 | 27 693 | 3 297 | 29.4 | **Croatia** |
| 22 | 0.2 | 1 948 | 0.3 | 88 557 | 3 228 | 60.4 | **Bermuda** |
| 13 462 | 100.0 | 586 850 | 100.0 | 43 593 | 1 056 368 | 55.6 | **Total of the 35 countries** |
| 39.8 | | 55.6 | | | | | **Percentage share among the 35 countries** |

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

[a] Ships of 1,000 GT and above.

Table 16

**Deliveries of newbuildings, selected years [a]**

| Year | Oil tankers [b] | | | Dry bulk carriers [b] | | | Others [c] | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. of vessels | Million dwt | Average vessel size | No. of vessels | Million dwt | Average vessel size | No. of vessels | Million dwt | Average vessel size | No. of vessels | Million dwt | Average vessel size |
| **1980** | 99 | 7.0 | 70 707 | 135 | 4.7 | 34 815 | 552 | 4.4 | 7 971 | 786 | 18.0 | 22 901 |
| | *13* | *39* | | *17* | *26* | | *70* | *24* | | *100* | *100* | |
| **1985** | 72 | 3.9 | 54 167 | 339 | 14.7 | 43 363 | 539 | 5.7 | 10 575 | 950 | 25.0 | 26 316 |
| | *8* | *16* | | *36* | *59* | | *57* | *23* | | *100* | *100* | |
| **1990** | 81 | 8.7 | 107 407 | 119 | 9.6 | 80 672 | 523 | 4.0 | 7 648 | 723 | 23.0 | 31 812 |
| | *11* | *38* | | *16* | *42* | | *72* | *17* | | *100* | *100* | |
| **1997** | 69 | 7.5 | 108 696 | 299 | 18.8 | 62 876 | 699 | 10.5 | 15 021 | 1 067 | 36.8 | 34 489 |
| | *6* | *20* | | *28* | *51* | | *66* | *29* | | *100* | *100* | |
| **1998** | 120 | 12.6 | 105 000 | 217 | 11.6 | 53 456 | 704 | 11.1 | 15 767 | 1 041 | 35.3 | 33 910 |
| | *12* | *36* | | *21* | *33* | | *68* | *31* | | *100* | *100* | |
| **1999** | 161 | 19.1 | 118 634 | 195 | 13.0 | 66 667 | 589 | 8.8 | 14 941 | 945 | 40.5 | 42 857 |
| | *17* | *47* | | *21* | *32* | | *62* | *22* | | *100* | *100* | |
| **2000** | 154 | 20.8 | 135 065 | 188 | 13.1 | 69 681 | 1 202 | 10.5 | 8 735 | 1 544 | 44.4 | 28 756 |
| | *10* | *47* | | *12* | *30* | | *78* | *24* | | *100* | *100* | |
| **2001** | 112 | 14.4 | 128 571 | 310 | 21.0 | 67 742 | 1 048 | 9.8 | 9 351 | 1 470 | 45.2 | 30 748 |
| | *8* | *32* | | *21* | *46* | | *71* | *22* | | *100* | *100* | |
| **2002** | 182 | 23.4 | 128 571 | 226 | 14.1 | 62 389 | 1 131 | 11.5 | 10 168 | 1 539 | 49.0 | 31 839 |
| | *12* | *48* | | *15* | *29* | | *73* | *23* | | *100* | *100* | |
| **2003** | 281 | 29.4 | 104 626 | 161 | 11.2 | 69 565 | 1 265 | 8.6 | 6 798 | 1 707 | 49.2 | 28 822 |
| | *16* | *60* | | *9* | *23* | | *74* | *17* | | *100* | *100* | |
| **2004** | 294 | 27.0 | 91 837 | 266 | 19.8 | 74 436 | 1 262 | 7.9 | 6 260 | 1 822 | 49.4 | 27 113 |
| | *16* | *55* | | *15* | *40* | | *69* | *16* | | *100* | *100* | |
| **2005** | 315 | 29.0 | 92 063 | 308 | 23.2 | 75 325 | 1 341 | 16.8 | 12 528 | 1 964 | 70.5 | 35 896 |
| | *16* | *41* | | *16* | *33* | | *68* | 24 | | *100* | *100* | |
| **2006** | 329 | 24.7 | 74 948 | 307 | 25.1 | 81 759 | 1 762 | 21.3 | 12 110 | 2 398 | 71.1 | 29 648 |
| | *14* | *35* | | *13* | *35* | | *73* | *30* | | *100* | *100* | |
| **2007** | 372 | 29.6 | 79 570 | 312 | 24.5 | 78 526 | 2 098 | 27.8 | 13 231 | 2 782 | 81.9 | 29 424 |
| | *13* | *36* | | *11* | *30* | | *75* | *34* | | *100* | *100* | |
| **2008[d]** | 437 | 33.7 | 77 117 | 355 | 28.9 | 81 408 | 2 207 | 19.7 | 8 930 | 2 999 | 82.3 | 27 445 |
| | *15* | *41* | | *12* | *35* | | *74* | *24* | | *100* | *100* | |

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

[a] Percentage shares per vessel type are shown in italics.

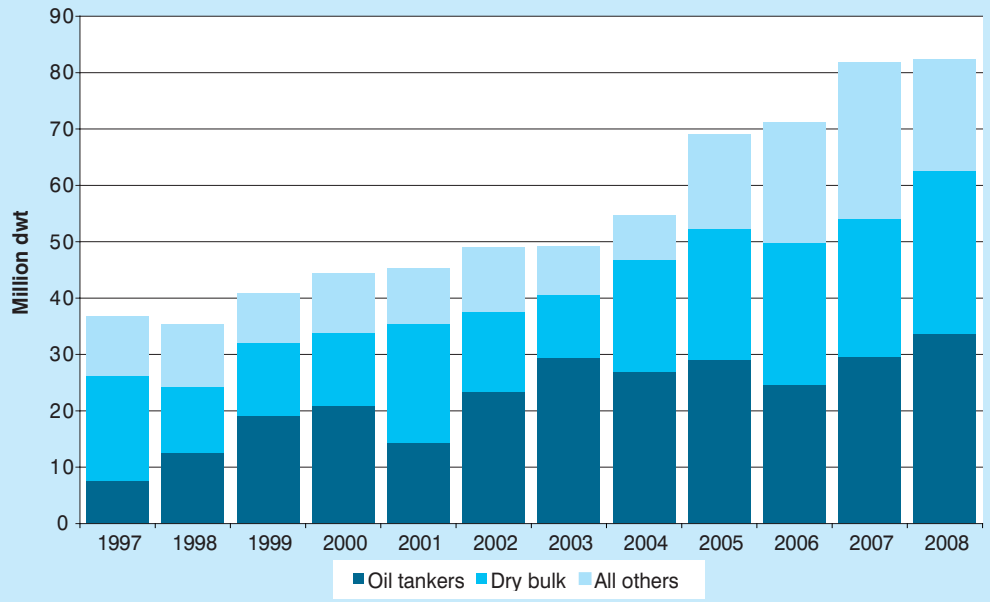
[b] Vessels over 10,000 dwt.

[c] Seagoing, cargo-carrying vessels of over 100 GT.

[d] Provisional.

Figure 15

**Deliveries of newbuildings, 1997–2008**




*Source:* Compiled by the UNCTAD secretariat, on the basis of data from Fearnleys *Review*, various issues, and from Lloyd's Register – Fairplay. See also the notes to table 16.

further increase over the previous year's historical record of 81.9 million dwt. During 2008, 2,999 cargo-carrying commercial vessels of 100 GT and above were delivered, a historical record too, and an increase of 7.8 per cent over 2007.

As regards the tonnage and vessel types, in 2008, deliveries of oil tankers of 10,000 dwt and above accounted for 41 per cent of delivered dwt, dry bulk carriers of 10,000 dwt and above accounted for 35 per cent, and other vessels accounted for 24 per cent; the latter category included all kinds of commercial vessels of 100 GT and above. As regards the number of vessels, 74 per cent of the vessels delivered in 2007 belonged to the category of "other vessels", as compared to 15 per cent for large oil tankers and 12 per cent for large dry bulk carriers. In 2008, deliveries of oil tankers reached a historical record in terms of vessel numbers (437 units of 10,000 dwt and above), and also in terms of delivered dead weight tonnage (33.7 million dwt). There were 355 dry bulk carriers delivered in 2007, with a combined tonnage of 28.9 million dwt. The number of other vessel types delivered – including car carriers, container ships, LNG tankers and general cargo ships – reached 2,207 units in 2008, with a combined tonnage of 19.7 million dwt.

## 2. Demolition of ships

Although the economic crisis led to a plummeting of demand for steel, and therefore also a slump in prices for old ships, the sale of tonnage for demolition still increased dramatically. The oversupply of vessel capacity was such that shipowners were willing to sell their older tonnage even at very low prices.

During the last three months of 2008, 181 vessels were reported to have left the market to be demolished; the cumulative total of the demolitions will permit the recycling of more than 1.7 million tons of metal.

During this period, ship-breaking yards in India with 80 vessels (44 per cent) to be demolished were ahead of Bangladesh which had 70 vessels (39 per cent), followed by China with 20 vessels (11 per cent) and Pakistan with 11 vessels (6 per cent). Bangladeshi ship-breaking yards prefer to buy high-tonnage vessels; in this sense Bangladesh was ahead in 2008, with a total of 810,000 tons of metal to be recycled, compared to India with 570,000 tons.[9]

During the first four months of 2009, 339 ships were reported sold for demolition. This compares with a total of 487 during the whole of 2008. In deadweight terms, more was scrapped in the four months to April 2009 than in any of the three years between 2005 and 2007. The total amount scrapped in the period from January to April 2009 was some 2.9m light displacement tons (ldt). At an average price of $250 per ldt, that would equate to an aggregate value of nearly $750 million.[10] In October 2009, it was forecasted that 1,200 ships would be demolished during 2009.[11]

Looking at vessels of 10,000 dwt and above, the year 2008 saw a surge in the demolition of dry bulk carriers (3.1 million dwt) – the highest level since 2003. Demolition of large oil tankers increased too, from 2.2 million dwt in 2007 to 3.6 million dwt in 2008 (table 17).

As the world fleet gets older and newbuildings are built to last longer, the average age of broken-up ships increases too, in the longer term. Between 1998 and 2008, the average age of broken-up oil tankers increased from 28.2 years to 31.1 years, the average age of broken-up dry bulk carriers increased from 25.1 to 30.6 years, the average age of broken-up container ships increased from 25.5 to 29.1 years, and the average age of broken-up general cargo ships increased from 26.7 to 33.6 years (see table 18). In times of economic downturn, however, the likelihood of older tonnage being demolished increases, and the average age of oil tankers, container ships and general cargo ships decreased slightly between 2007 and 2008.

## 3. Tonnage on order

With historically high demand for shipping capacity until mid-2008, especially for key commodities such as iron ore, grains and coal, the shipping industry responded by ordering new tonnage. Until September 2008, the total tonnage on order was still increasing, with more than half of the tonnage on order in the dry bulk sector. Since the end of 2008, however, new orders have practically come to a standstill, especially in container shipping.

Table 17

**Tonnage reported sold for breaking, by vessel type, 2000–2008**

*(millions of dwt and percentage shares)*

| Years | Million dwt | | | | | Total as perentage of world fleet | Percentage share | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Tankers[a] | Combined carriers[a] | Bulk carriers[a] | Others | Total | | Tankers[a] | Combined carriers[a] | Bulk carriers[a] | Others | Total |
| **2000** | 13.5 | 1.0 | 4.6 | 3.1 | 22.2 | 2.7 | 60.9 | 4.3 | 20.8 | 14.0 | 100.0 |
| **2001** | 15.7 | 0.8 | 8.1 | 3.2 | 27.8 | 3.4 | 56.5 | 2.7 | 29.1 | 11.7 | 100.0 |
| **2002** | 18.1 | 1.6 | 5.9 | 4.9 | 30.5 | 3.6 | 59.3 | 5.2 | 19.3 | 16.1 | 100.0 |
| **2003** | 18.4 | 0.5 | 3.3 | 3.4 | 25.6 | 3.0 | 71.9 | 2.0 | 12.9 | 13.3 | 100.0 |
| **2004** | 7.8 | 0.5 | 0.5 | 1.8 | 10.6 | 1.2 | 73.6 | 4.7 | 4.7 | 17.0 | 100.0 |
| **2005** | 4.5 | - | 0.9 | 0.9 | 6.3 | 0.7 | 71.4 | - | 14.3 | 14.3 | 100.0 |
| **2006** | 2.7 | 0.2 | 1.3 | 1.8 | 6.0 | 0.6 | 45.0 | 3.3 | 21.7 | 30.0 | 100.0 |
| **2007** | 2.2 | - | 0.1 | 1.9 | 4.0 | 0.4 | 50.0 | - | 2.5 | 47.5 | 100.0 |
| **2008** | 3.6 | - | 3.1 | 1.3 | 8.0 | 0.7 | 45.0 | - | 38.8 | 16.3 | 100.0 |

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

[a] Vessels over 10,000 dwt.

Table 18

**Average age of broken-up ships, by type, 1998 to 2008[a]**

| Year | Tankers | Dry bulk carriers | Container ships | General cargo ships |
|---|---|---|---|---|
| **1998** | 28.2 | 25.2 | 25.5 | 26.7 |
| **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 |
| **2004** | 29.5 | 27.3 | 30.5 | 32.9 |
| **2005** | 31.5 | 28.1 | 30.6 | 31.9 |
| **2006** | 30.0 | 28.9 | 28.1 | 32.3 |
| **2007** | 31.4 | 29.1 | 29.6 | 34.9 |
| **2008** | 31.1 | 30.6 | 29.1 | 33.6 |

*Source*: Compiled by the UNCTAD secretariat, on the basis of data from the *Shipping Statistics and Market Review* produced by the Institute of Shipping Economics and Logistics. Volume 52, no. 1/2 – 2008, table 2.2.

[a] Ships of 300 GT and over.

Tonnage on order as per 31 March 2009 consisted of 289.8 million dwt of dry bulk carriers (52.5 per cent of the world total dwt on order), 130.8 million dwt of oil tankers (23.7 per cent), 13.4 million dwt of general cargo vessels (2.4 per cent), 65.6 million dwt of container ships (11.9 per cent) and 48.1 million dwt of other vessel types (8.7 per cent). The total tonnage on order stood at 10,992 vessels with a combined capacity of 551.7 million dwt (see table 19). Figure 16 illustrates the development of the main vessel types over the last eight years.

All vessel types reached a peak in demand between the middle of 2007 and the end of 2008. In terms of vessel numbers, container ships reached their peak first (at the end of 2007), followed by other ships (in the first quarter of 2008), tankers (in the third quarter of 2008), and, most recently, bulk carriers and general cargo ships (at the end of 2008). Between December 2008 and March 2009, the order book declined for all vessel types. The total tonnage on order in March 2009 stood at 551.7 million dwt, which was still 5.5 per cent higher than a year earlier, but was down 6.1 per cent from the peak of 587.8 million dwt in September 2008.

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

Newbuilding prices for all vessel types plummeted during the first quarter of 2009. Comparing end-of-year figures, prices for newbuildings of dry bulk carriers, LPG tankers and container ships were highest in 2007, while most new tankers and general cargo ships were more expensive in 2008. The strongest declines between the peak prices and the prices in April 2009 were recorded for dry bulk carriers and container ships, while prices for LNG and LPG tankers have been relatively more stable (table 20). LNG tankers had already experienced a price decline in previous years due to an oversupply of tonnage, as demand grew more slowly than had initially been planned when the opening of several new gas fields was delayed.

The most expensive new ships continue to be LNG carriers, which in April 2009 cost $325 million – equivalent to $1,567 per cubic metre. Prices per dwt depend heavily on ship sizes, implying significant economies of scale. At $433, the price per dwt on a 300,000 dwt tanker is only 46 per cent of the price per dwt on a 45,000 dwt tanker. In the case of dry bulk carriers, the price per dwt on a 170,000 dwt vessel is $424, which represents two thirds of the price per dwt on a 45,000 dwt vessel and is the lowest price per dwt of all ship types in the table. In the case of container ships, it is interesting to note that the price per TEU on the largest 12,500 TEU ships is not lower than on the smaller 4,000 TEU ships. As most recent new orders have been for the largest container ships, which compete with large dry and liquid bulk carriers for space at the shipyards, their price per TEU has remained relatively higher.

Prices for second-hand tonnage fluctuate more than prices for newbuildings. The latter have a higher floor price, which is determined by the variable production costs, while the floor price for second-hand tonnage is given by scrap prices. Between 2001 and 2007, prices for five-year-old dry bulk carriers had surged more than sixfold, reaching levels that were in fact significantly higher than the corresponding newbuilding prices (see tables 20 and 21). In the economic downturn, second-hand prices have plummeted even more than the newbuilding prices. At the end of 2008, a five-year-old dry bulk carrier of 170,000 dwt was 47 per cent cheaper than a newbuilding, and a five-year-old 300,000 dwt tanker cost 27 per cent less than the corresponding newbuilding. Between the end of 2007 and the end of 2008, second-hand prices for tankers went down by between 15 and 20 per cent, and

Table 19

**World tonnage on order, 2000–2009[a]**

| Beginning of month | Tankers | | | Bulk carriers | | | General cargo ships | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1000 dwt | Ships | Average vessel size, dwt | 1000 dwt | Ships | Average vessel size, dwt | 1000 dwt | Ships | Average vessel size, dwt |
| **December 2000** | 40 328 | 284 | 142 001 | 31 208 | 486 | 64 214 | 3 966 | 446 | 8 892 |
| **March 2001** | 44 361 | 319 | 139 061 | 27 221 | 439 | 62 007 | 3 963 | 441 | 8 986 |
| **June 2001** | 45 123 | 339 | 133 105 | 26 103 | 400 | 65 258 | 4 154 | 419 | 9 914 |
| **September 2001** | 48 386 | 381 | 126 998 | 21 944 | 337 | 65 115 | 3 967 | 393 | 10 094 |
| **December 2001** | 51 894 | 399 | 130 060 | 22 184 | 353 | 62 845 | 3 826 | 372 | 10 286 |
| **March 2002** | 47 836 | 404 | 118 405 | 19 027 | 300 | 63 425 | 3 758 | 357 | 10 525 |
| **June 2002** | 49 564 | 425 | 116 622 | 18 132 | 283 | 64 069 | 3 932 | 353 | 11 139 |
| **September 2002** | 47 774 | 431 | 110 845 | 18 869 | 283 | 66 676 | 3 979 | 369 | 10 782 |
| **December 2002** | 47 591 | 488 | 97 523 | 28 641 | 391 | 73 251 | 2 832 | 257 | 11 018 |
| **March 2003** | 50 284 | 515 | 97 639 | 32 019 | 441 | 72 605 | 2 958 | 263 | 11 249 |
| **June 2003** | 55 771 | 540 | 103 279 | 33 408 | 455 | 73 425 | 2 592 | 250 | 10 368 |
| **September 2003** | 57 856 | 580 | 99 752 | 41 499 | 575 | 72 172 | 2 841 | 269 | 10 562 |
| **December 2003** | 61 123 | 631 | 96 867 | 46 732 | 640 | 73 019 | 3 068 | 295 | 10 400 |
| **March 2004** | 62 096 | 615 | 100 969 | 48 761 | 671 | 72 670 | 3 021 | 312 | 9 683 |
| **June 2004** | 66 652 | 649 | 102 699 | 50 545 | 696 | 72 623 | 2 838 | 317 | 8 954 |
| **September 2004** | 66 969 | 661 | 101 314 | 52 768 | 703 | 75 061 | 2 921 | 323 | 9 043 |
| **December 2004** | 71 563 | 701 | 102 087 | 62 051 | 796 | 77 953 | 3 306 | 370 | 8 935 |
| **March 2005** | 68 667 | 679 | 101 129 | 63 404 | 792 | 80 055 | 3 312 | 388 | 8 536 |
| **June 2005** | 70 520 | 686 | 102 799 | 65 326 | 801 | 81 556 | 4 079 | 456 | 8 945 |
| **September 2005** | 68 741 | 693 | 99 193 | 63 495 | 788 | 80 578 | 4 777 | 521 | 9 170 |
| **December 2005** | 70 847 | 724 | 97 855 | 66 614 | 805 | 82 750 | 5 088 | 584 | 8 712 |
| **March 2006** | 83 385 | 791 | 105 417 | 63 829 | 784 | 81 415 | 5 798 | 634 | 9 145 |
| **June 2006** | 93 277 | 887 | 105 160 | 69 055 | 859 | 80 390 | 7 370 | 683 | 10 791 |
| **September 2006** | 106 912 | 987 | 108 321 | 73 226 | 898 | 81 543 | 7 602 | 715 | 10 632 |
| **December 2006** | 118 008 | 1 078 | 109 470 | 79 364 | 988 | 80 328 | 8 004 | 737 | 10 860 |
| **March 2007** | 120 819 | 1 113 | 108 553 | 100 256 | 1 204 | 83 269 | 9 561 | 843 | 11 342 |
| **June 2007** | 122 429 | 1 107 | 110 595 | 143 795 | 1 657 | 86 781 | 10 782 | 885 | 12 184 |
| **September 2007** | 124 758 | 1 149 | 108 580 | 183 574 | 2 137 | 85 903 | 12 042 | 956 | 12 597 |
| **December 2007** | 124 845 | 1 134 | 110 093 | 221 808 | 2 573 | 86 206 | 13 360 | 1 035 | 12 908 |
| **March 2008** | 128 128 | 1 139 | 112 492 | 243 600 | 2 804 | 86 876 | 15 097 | 1 195 | 12 633 |
| **June 2008** | 142 333 | 1 202 | 118 413 | 262 452 | 3 009 | 87 222 | 15 911 | 1 255 | 12 678 |
| **September 2008** | 151 423 | 1 245 | 121 625 | 288 959 | 3 316 | 87 141 | 16 787 | 1 332 | 12 603 |
| **December 2008** | 140 504 | 1 154 | 121 754 | 292 837 | 3 347 | 87 492 | 17 849 | 1 374 | 12 991 |
| **March 2009** | 130 777 | 1 088 | 120 200 | 289 763 | 3 303 | 87 727 | 17 439 | 1 363 | 12 795 |
| **Percentage of total, March 2009** | 23.7 | 9.9 | | 52.5 | 30.0 | | 3.2 | 12.4 | |

Table 19 (continued)

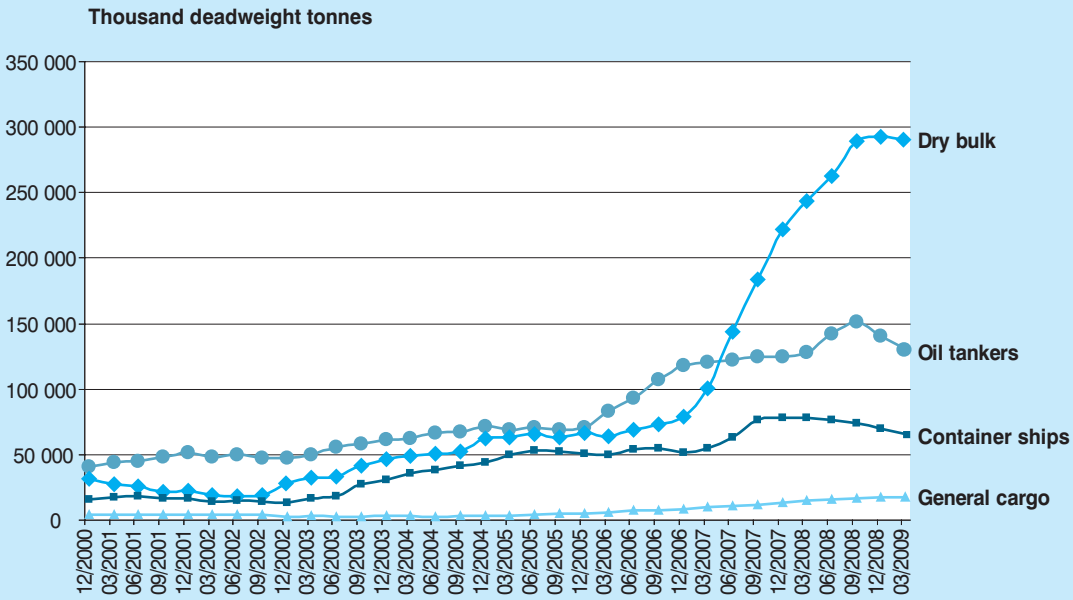
| Container vessels | | | Other ships | | | Total | | | Beginning of month |
|---|---|---|---|---|---|---|---|---|---|
| 1000 dwt | Ships | Average vessel size, dwt | 1000 dwt | Ships | Average vessel size, dwt | 1000 dwt | Ships | Average vessel size, dwt | |
| 16 140 | 394 | 40 964 | 8 870 | 1 087 | 8 160 | 100 513 | 2 697 | 37 268 | **December 2000** |
| 17 350 | 435 | 39 884 | 10 154 | 1 132 | 8 970 | 103 048 | 2 766 | 37 255 | **March 2001** |
| 18 393 | 441 | 41 708 | 11 790 | 1 138 | 10 360 | 105 563 | 2 737 | 38 569 | **June 2001** |
| 16 943 | 413 | 41 025 | 12 181 | 1 153 | 10 564 | 103 421 | 2 677 | 38 633 | **September 2001** |
| 16 550 | 393 | 42 111 | 13 501 | 1 201 | 11 242 | 107 955 | 2 718 | 39 719 | **December 2001** |
| 14 476 | 355 | 40 776 | 12 839 | 1 200 | 10 700 | 97 936 | 2 616 | 37 437 | **March 2002** |
| 14 793 | 362 | 40 865 | 15 415 | 1 324 | 11 643 | 101 836 | 2 747 | 37 072 | **June 2002** |
| 14 509 | 338 | 42 927 | 15 342 | 1 292 | 11 875 | 100 473 | 2 713 | 37 034 | **September 2002** |
| 13 000 | 296 | 43 919 | 16 174 | 1 386 | 11 669 | 108 238 | 2 818 | 38 409 | **December 2002** |
| 16 281 | 326 | 49 943 | 16 199 | 1 365 | 11 868 | 117 742 | 2 910 | 40 461 | **March 2003** |
| 18 296 | 367 | 49 853 | 17 085 | 1 367 | 12 498 | 127 152 | 2 979 | 42 683 | **June 2003** |
| 27 216 | 503 | 54 107 | 18 062 | 1 484 | 12 171 | 147 475 | 3 411 | 43 235 | **September 2003** |
| 30 974 | 580 | 53 403 | 19 277 | 1 492 | 12 920 | 161 174 | 3 638 | 44 303 | **December 2003** |
| 35 840 | 658 | 54 468 | 20 068 | 1 520 | 13 203 | 169 786 | 3 776 | 44 965 | **March 2004** |
| 38 566 | 724 | 53 268 | 22 833 | 1 682 | 13 575 | 181 434 | 4 068 | 44 600 | **June 2004** |
| 41 172 | 808 | 50 956 | 24 368 | 1 714 | 14 217 | 188 198 | 4 209 | 44 713 | **September 2004** |
| 43 904 | 880 | 49 891 | 27 361 | 1 898 | 14 416 | 208 185 | 4 645 | 44 819 | **December 2004** |
| 49 624 | 1 006 | 49 328 | 27 328 | 1 940 | 14 087 | 212 335 | 4 805 | 44 190 | **March 2005** |
| 53 605 | 1 101 | 48 688 | 29 884 | 2 002 | 14 927 | 223 414 | 5 046 | 44 275 | **June 2005** |
| 52 378 | 1 132 | 46 271 | 31 209 | 2 158 | 14 462 | 220 600 | 5 292 | 41 686 | **September 2005** |
| 50 856 | 1 124 | 45 245 | 33 147 | 2 285 | 14 506 | 226 551 | 5 522 | 41 027 | **December 2005** |
| 49 749 | 1 130 | 44 026 | 36 750 | 2 373 | 15 487 | 239 512 | 5 712 | 41 931 | **March 2006** |
| 53 876 | 1 185 | 45 465 | 39 768 | 2 522 | 15 768 | 263 347 | 6 136 | 42 918 | **June 2006** |
| 54 676 | 1 199 | 45 601 | 42 322 | 2 714 | 15 594 | 284 738 | 6 513 | 43 718 | **September 2006** |
| 51 717 | 1 143 | 45 247 | 45 612 | 2 962 | 15 399 | 302 706 | 6 908 | 43 820 | **December 2006** |
| 55 144 | 1 229 | 44 869 | 49 245 | 3 327 | 14 802 | 335 025 | 7 716 | 43 420 | **March 2007** |
| 63 063 | 1 305 | 48 324 | 52 382 | 3 562 | 14 706 | 392 451 | 8 516 | 46 084 | **June 2007** |
| 76 804 | 1 412 | 54 394 | 56 767 | 3 864 | 14 691 | 453 945 | 9 518 | 47 693 | **September 2007** |
| 78 348 | 1 435 | 54 598 | 56 947 | 3 876 | 14 692 | 495 309 | 10 053 | 49 270 | **December 2007** |
| 78 042 | 1 419 | 54 998 | 58 304 | 4 174 | 13 968 | 523 171 | 10 731 | 48 753 | **March 2008** |
| 76 388 | 1 352 | 56 500 | 57 574 | 4 302 | 13 383 | 554 657 | 11 120 | 49 879 | **June 2008** |
| 74 090 | 1 322 | 56 044 | 56 563 | 4 442 | 12 734 | 587 823 | 11 657 | 50 427 | **September 2008** |
| 69 593 | 1 209 | 57 563 | 52 088 | 4 256 | 12 239 | 572 871 | 11 340 | 50 518 | **December 2008** |
| 65 610 | 1 121 | 58 528 | 48 131 | 4 117 | 11 691 | 551 720 | 10 992 | 50 193 | **March 2009** |
| 11.9 | 10.2 | | 8.7 | 37.5 | | 100.0 | 100.0 | | **Percentage of total, March 2009** |

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

[a] Ships of 100 GT and above.

Figure 16

**World tonnage on order, 2000–2009[a]**




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

[a] Ships of 100 GT and above.

second-hand prices for dry bulk carriers went down by between 67 and 71 per cent.

## 5. Adjusting to the economic crisis

Several developing and transition economies will be severely impacted by the downturn in demand for shipping services. Shipbuilding countries such as the Republic of Korea, China and Viet Nam will be abruptly affected by cancellations of existing orders and the drying up of new orders. The strongest impacts will probably be on those economies that also have control over large fleets. The top five shipowning developing economies are China, Hong Kong (China), Taiwan Province of China, the Republic of Korea, and Singapore (see also table 12). Taking into account containerized, dry bulk and tanker tonnage, these three economies control around 17 per cent of the world's merchant fleet. The Republic of Korea in particular, with its large fleet of dry bulk carriers, container ships and oil tankers, as well as substantial container traffic volumes and shipbuilding yards, is set to be among the countries most severely affected by the economic crisis.[12]

The supply of maritime transport capacity can only slowly adjust to changes in demand. Between the ordering of a new vessel and its delivery, two to three years may pass. As long as demand is high, shipowners tend to order new vessels, in spite of early warnings that even if demand continues to grow, the surge in new tonnage will invariably lead to an oversupply of tonnage. Even without the current economic crisis, the tonnage that entered the market in 2007 and 2008 plus the tonnage scheduled to be delivered in 2009 and 2010 by the world's shipyards would in any case have led to an oversupply of tonnage and a corresponding decline in vessel prices.

In the case of container ships, for example, the delivery of previously ordered tonnage is forecast to lead to an

Table 20

**Representative newbuilding prices in selected years**

*(millions of dollars, end-of-year figures)*

| Type and size of vessel[a] | 1985 | 1990 | 1995 | 2000 | 2005 | 2006 | 2007 | 2008 | April 2009 | Percentage change 2008/ 2007 | Percentage change April 09/ Dec. 08 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **45,000 dwt dry bulk carrier** | 11 | 24 | 25 | 20 | 28 | 31 | 39 | 36 | 29 | -7.7 | -19.4 |
| **72,000 dwt dry bulk carrier** | 14 | 32 | 29 | 23 | 35 | 40 | 54 | 42 | 37 | -22.2 | -11.9 |
| **170,000 dwt dry bulk carrier** | 27 | 45 | 40 | 40 | 59 | 70 | 97 | 89 | 72 | -8.2 | -19.1 |
| **45,000 dwt tanker** | 18 | 29 | 34 | 29 | 43 | 47 | 52 | 48 | 42 | -7.7 | -12.5 |
| **110,000 dwt tanker** | 22 | 42 | 43 | 41 | 58 | 81 | 72 | 76 | 65 | 5.6 | -14.5 |
| **300,000 dwt tanker** | 47 | 90 | 85 | 76 | 120 | 130 | 145 | 151 | 130 | 4.1 | -13.9 |
| **150,000 $m^3$ LNG** | 200 | 225 | 245 | 165 | 205 | 220 | 220 | 245 | 235 | 11.4 | -4.1 |
| **78,000 $m^3$ LPG** | 44 | 78 | 68 | 60 | 89 | 92 | 93 | 90 | 85 | -3.2 | -5.6 |
| **20,000 dwt general cargo** | 12 | 24 | 21 | 19 | 18 | 24 | 25 | 40 | 30 | 60.0 | -25.0 |
| **2,500 TEU full container ship** | 26 | 52 | 50 | 35 | 42 | 46 | 66 | n.a. | n.a. | n.a. | n.a. |
| **4,000 TEU full container ship** | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 130 | 70 | 48 | -46.2 | -31.4 |
| **8,000 TEU full container ship** | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 160 | 130 | 110 | -18.8 | -15.4 |
| **12,500 TEU full container ship** | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 165 | 150 | n.a. | -9.1 |

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

[a] Note: Vessel sizes refer to the years 2005–2009 and do not always coincide completely in the case of earlier years.

Table 21

**Second-hand prices for five-year-old ships, 2000–2008**

*(millions of dollars, end-of-year figures)*

| Type and size of vessel | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | Percentage change 2008/2007 |
|---|---|---|---|---|---|---|---|---|---|---|
| **40,000 dwt tankers** | 27.00 | 25.50 | 24.00 | 28.00 | 40.00 | 45.00 | 47.50 | 50.00 | 42.50 | -15.0 |
| **95,000 dwt tankers** | 39.00 | 33.00 | 30.00 | 38.00 | 57.00 | 59.50 | 66.00 | 68.00 | 57.40 | -15.6 |
| **150,000 dwt tankers** | 50.00 | 43.00 | 42.00 | 48.00 | 74.00 | 76.00 | 85.00 | 95.00 | 76.00 | -20.0 |
| **300,000 dwt tankers** | 71.00 | 60.00 | 53.00 | 75.00 | 107.00 | 108.00 | 121.00 | 130.00 | 110.00 | -15.4 |
| **52,000 dwt dry bulk carrier** | 15.00 | 12.00 | 15.00 | 20.50 | 30.00 | 26.50 | 40.50 | 75.50 | 25.00 | -66.9 |
| **70,000 dwt dry bulk carrier** | 16.00 | 13.50 | 17.00 | 28.00 | 41.00 | 30.00 | 46.00 | 91.50 | 27.00 | -70.5 |
| **170,000 dwt dry bulk carrier** | 25.00 | 25.00 | 29.00 | 46.00 | 65.00 | 58.00 | 81.00 | 152.00 | 47.00 | -69.1 |

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

annual fleet growth of 9.3 per cent over the next five years. Most of the growth is on account of ships larger than 8,000 TEU; if all orders are confirmed (see also the discussion on adjustment to the economic crisis), this vessel size range would grow by a staggering 25 per cent per year until the end of 2013.[13] In spite of the plunge in demand, deliveries for the next five years are thus expected to equal or outpace deliveries in the record year of 2008; the TEU capacity of the new container ships to be delivered during the next five years corresponds to around 75 per cent of the current fleet. Utilization of the fleet of LNG tankers is estimated at 60 to 65 per cent, as many ships were delivered ahead of the projects for which they had been intended; the oversupply is forecast to decline during the next years up to 2012, as delayed liquefaction projects come on stream.[14] The current order book of dry bulk vessels stands at 70 per cent of the existing fleet.[15] Charter and freight rates (see chapter 4) and vessel prices (see tables 20 and 21) react immediately to a change in the demand/supply balance. The supply of capacity, however, reacts much more slowly. Given the still-growing transport capacity, as new ships continue to be delivered by the world's shipyards, the industry has five ways to adjust the supply to a decline in demand. Firstly, it may stop ordering new tonnage. Secondly, it may demolish vessels. Thirdly, it may, to some extent, terminate orders at the shipyards. Fourthly, vessels may slow steam, thus reducing the effective capacity supplied by the existing fleet. And finally, the industry may temporarily withdraw existing tonnage from service.

*Withholding of new orders*

Orders of new ships have practically come to a standstill. In March 2009, only 13 new orders for ships larger than 1,000 GT were recorded – a further reduction from the already low figure of 37 new contracts in January 2009. The annualized average was estimated at 252 contracts, which was 96 per cent below the peak of new orders in July 2007. The global order book itself contained 10,341 ships larger than 1,000 GT as of 7 April 2009 – down 177 on the previous month – following the virtual absence of any contracting activity.[16] Looking at different vessel types, new orders for dry bulk carriers in March 2009 were at their lowest level since 2000, and new orders for general cargo ships were at their lowest recorded level since the 1960s. There have been no new orders for vehicle carriers since February 2009, for LPG carriers since December 2008, for ro-ro vessels since November 2008, and for container ships since October 2008. In March 2009, one new order for a crude oil tanker was reported.[17]

Looking at shipbuilding in developing countries, the first half of 2009 yielded hardly any newbuilding contracts in the Republic of Korea. In particular, Hyundai Heavy Industries – the world's biggest shipbuilder – did not secure a single order. Meanwhile, Samsung Heavy Industries had just a single order for an LNG tanker. In China, the shipbuilding sector attracted orders at a level 96 per cent lower than during the same period in 2008.[18]

*Demolitions*

Some analysts expect ship-scrapping to be one of the few shipping-related businesses that may benefit from the economic crisis: "The ship-recycling industry is now experiencing its largest growth period in history, after the financial crisis saw rates for many vessel types collapse. With a threefold increase in ship-scrapping expected globally this year, and more than 1,000 ships destined for the breakers' yards, there are now fears that existing yards cannot handle the workload."[19] However, the demolition of existing tonnage will not be enough to compensate for the downturn in demand and for the new tonnage that is still leaving the world's shipyards. Prices for scrap metal are currently very low, and many vessel owners prefer to hold on and lay off their ships, hoping for better times to come. Demolition during the first five months of 2009 amounted to only 1.2 per cent of the world fleet, still below the demolition levels of the 1999–2003 period.[20]

**… the demolition of existing tonnage will not be enough to compensate for the downturn in demand and for the new tonnage that is still leaving the world's shipyards.**

*Termination and rescheduling of orders*

Since the beginning of the economic crisis, numerous orders at the world's shipyards have been cancelled. The specialized press reports a "dearth of new orders (…), with the renegotiation of existing contracts now taking up more time for shipbuilders than new enquiries."[21] Activity in the container ship newbuilding market focuses "primarily on the restructuring of the existing order book, as possible cancellations and renegotiations of existing deals become an increasing issue, and yards are yet to fully address their pricing ideas. (…) One change that is becoming apparent

since the beginning of the year is that yards seem to be becoming more sympathetic to owners' problems, as they begin to realize that a proactive approach to solving these issues could prevent them from becoming problems for the yard."[22]

One example of the renegotiation of a newbuilding contract involves a four-vessel order by a European-based shipowner at a Chinese facility; the amended order reduces the contract to three vessels and calls for a delay in the delivery of two of the remaining units by around three months. An Athens-based company has disclosed details of the six-month delay in the delivery of 15 new container ships that it has on order in China and the Republic of Korea. A Canadian company has confirmed that it has entered into an option agreement to delay the delivery of 15 ships in its newbuilding backlog. A dry cargo company from the Republic of Korea is reported to have cancelled an order for eight bulk carriers of 37,000 dwt in China.[23] Table 22 describes in the detail the situation of newbuilding contract terminations towards the middle of 2009. In total, between January 2008 and the middle of 2009, there were 440 deductions recorded from the current order book, including failed orders, contractual cancellations, and delays and terminations by mutual agreement.

Since early 2008, there have been 289 failed contracts. These refer to signed contracts that have failed to become effective. They also include terminated orders between

Table 22

**Newbuilding contract terminations[a]**

*(compensated gross tons (CGT), and numbers of vessels)[b c]*

| Year of delivery | Failed contracts | Effective contracts | | | | Total deduction | Total order book prior to deductions | Deduction as a percentage of order book |
|---|---|---|---|---|---|---|---|---|
| | | Cancelled contracts | | Terminated by mutual agreement | | | | |
| | | Remained | Removed | Remained | Removed | | | |
| **2009** | 1 094 445 | 14 377 | 387 605 | 23 454 | 635 211 | 2 117 261 | 41 147 183 | 5.15% |
| | (71) | (1) | (40) | (1) | (31) | (142) | (2 235) | *6.35%* |
| **2010** | 2 317 092 | - | 48 026 | - | 722 994 | 3 088 112 | 55 406 702 | 5.57% |
| | (113) | - | (-7) | | (34) | (154) | (2 628) | *5.86%* |
| **2011** | 2 079 747 | - | 48 026 | - | 362 348 | 2 490 121 | 42 452 134 | 5.87% |
| | (91) | | (7) | | (21) | (119) | (1 827) | *6.51%* |
| **2012** | 313,336 | - | 18 621 | - | 144 359 | 476 316 | 14 085 154 | 3.38% |
| | (14) | - | (2) | - | (8) | (24) | (554) | *4.33%* |
| **2013** | - | - | - | - | 23 615 | 23 615 | 2 572 057 | 0.92% |
| | | | | | (1) | (1) | (105) | *0.95%* |
| **2014** | - | - | - | - | - | - | 464,153 | 0% |
| | - | - | - | - | - | - | (15) | 0% |
| **Total** | 5 804 620 | 14 377 | 502 278 | 23 454 | 1 888 527 | 8 195 425 | 156 127 383 | 5.25% |
| | (289) | (1) | (56) | (1) | (95) | (440) | (7 364) | *5.98%* |

*Source*: Worldyards.com, available at http://www.worldyards.com. 16 June 2009.

[a] Recorded between 1 January 2008 and 12 June 2009.

[b] Compensated gross tons are a measurement of shipbuilding volumes. The gross tons (GT) are adjusted for different vessel types and ship sizes. For detailed calculations, see OECD (2007): "Compensated gross ton (CGT) system", available at http://www.oecd.org/dataoecd/59/49/37655301.pdf

[c] Number of vessels in brackets.

shipbuilders and shipowning companies which are controlled by the same ultimate interests. During the same period, there were 56 cancelled orders, i.e. effective contracts that were cancelled legitimately or abandoned by way of defaults. In one case, the shipyard decided to continue with construction in spite of the cancellation from the shipowner. Ninety-five orders were terminated by mutual agreement. These resulted from an agreement between buyer and shipyard to negate an effective shipbuilding contract, especially contracts for delivery in the distant future. The buyers would normally agree to pay the shipbuilders some compensation. Among the contracts terminated by mutual agreement, there was one case where the shipyard decided to continue with construction in spite of the cancellation by the buyer.

While shipowners' lawyers try to find clauses that allow for the termination of orders without penalty, shipyards' lawyers work hard to make sure that companies that have ordered new vessels stick to their commitments. In the long term, there is a common interest between both parties to reduce the volatility of the shipbuilding cycle; both sides should aim, above all, at postponing existing orders. So far, during the 12 months to mid-2009, a total of 279 orders have been delayed or postponed by mutual agreement, including 59 orders for tankers (corresponding to 3.0 million dwt), 72 orders for dry bulk carriers (9.5 million dwt), 94 orders for container ships (422,000 TEU), and 54 orders for other vessel types. In total, this corresponds to 4.3 per cent of the existing order book.[24]

*Slow steaming and other forms of reducing the effective supply*

Reducing the service speed of vessels has two positive impacts. Firstly, it helps to reduce emissions of greenhouse gases, and secondly, it absorbs some of the existing shipping overcapacity. It has been estimated that "owners could cope with up to 10–15 per cent overcapacity through slow steaming".[25] However, slow steaming has obvious negative side-effects – above all on the speed of service, but also on the shipboard machinery and other components, which are designed for higher speeds and suffer from higher wear and tear if not utilized optimally. In the case of some vessel types, ships can be utilized for storage, e.g. car carriers or tankers, but this, too, is only a temporary solution to oversupply.

*Withdrawal from service*

As regards the idle container ship fleet, 506 vessels were reported as idle by the end of April 2009. The idle fleet stands at 1.34 million TEU, representing 10.6 per cent of the capacity. In particular, non-operating owners find themselves obliged to lay up ships. Unlike operating owners, they have no way to employ their ships if no charterers are found.[26] Laid-up dry bulk tonnage increased by 73 per cent between March 2008 and March 2009.[27]

The following chapter will examine the supply and demand balance of the world fleet in greater detail.

## ENDNOTES

1 Compiled by the UNCTAD secretariat, on the basis of data on the existing container ship fleet, from *Containerisation International Online,* May 2008 (2007 data) May 2009 (2008 data) and October 2009 (2009 data).

2 The average age calculated for January 2009 is not fully comparable with the figures published in previous issues of the *Review of Maritime Transport.* The UNCTAD secretariat is now in a position to publish the exact average age, both per dwt and also per ship, based on more detailed available information.

3 The average ages are calculated on the basis of information about vessels of 1,000 GT and above only. For information about the white lists and black lists of port state control regimes, such as the Paris and Tokyo memorandums of understanding, see http://www.parismou.org and http://www.tokyo-mou.org.

4 Information in this chapter is based on data on vessels of 1,000 GT and above, as the country of ownership of smaller ships is not always available. Vessels of 1,000 GT and above account for 92.3 per cent (1,105 million dwt) of the world total of 1,192 million dwt for all ships of 100 GT of above (see annex IIIb).

5 Calculated by the UNCTAD secretariat, on the basis of data on the existing container ship fleet in *Containerisation International Online*, May 2009. Note: Although owner and operator may be different companies, on occasion financial and other linkages will exist between the two, and the separation between "owner" and "operator" is not always as clear-cut as it appears when two different company names are reported.

6 Information in this chapter is based on data on vessels of 100 GT and above (see also annex IIIb), except where the vessel owner's country of domicile is considered. In the latter case, the data is for vessels of 1,000 GT and above.

7 The figures for the ownership – i.e. the nationality of the ships' controlling interests – are not always precise. Stock holding companies, for example, may be owned by a large number of nationals from different countries. Nevertheless, for most ships it is possible to identify the country under whose flag it is registered, as well as the nationality of its owner.

8 *Source*: Hoffmann J, Sánchez R and Talley W (2005). Determinants of vessel flag. In: Cullinane K, ed. *Shipping Economics*, *(Research in Transportation Economics, vol. 12)*. Elsevier. ISBN 0-7623-1177-0.

9 http://www.ship-breaking.com, no. 14, January 2009; and no. 15, April 2009.

10 *Source*: *Lloyd's List.* 8 May 2009. Note that the number of vessels reported as demolished by different sources does not always coincide, as some sources include smaller ships, whereas others only include vessels of 10,000 dwt and above. Also, some ships may be sold in one period and then be demolished in a later month.

11 *Lloyd's List*. 30 October 2009.

12 UNCTAD Transport Newsletter no. 42, first quarter 2009.

13 *Fairplay Shipping Weekly*. 7 May 2009.

14 *Lloyd's List*. 30 April 2009.

15 *Clarkson Dry Bulk Trade Outlook*. April 2009.

16 *Fairplay Shipping Weekly*. 23 April 2009.

17 *Fairplay Shipping Weekly*. 2 July 2009.

18 *Fairplay Shipping Weekly*. 30 April 2009.

19 *Lloyd's List*. 11 November 2008.

20 Worldyards.com, available at http://www.worldyards.com. 9 June 2009

21 *Fairplay Shipping Weekly*. 7 May 2009.

22 *Container Intelligence Monthly*. March 2009.

23 *Fairplay Shipping Weekly*. 7 May 2009.

24 Worldyards.com, available at http://www.worldyards.com. 16 June 2009.

25 *Lloyd's List*. 3 June 2009. The specific example refers to oil tankers.

26 Data from Alphaliner, as reported by *Containerisation International Online*. 5 May 2009.

27 *Clarkson Dry Bulk Trade Outlook*. April 2009.