# UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT Geneva

# REVIEW OF MARITIME TRANSPORT 2007

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# Chapter 2

# STRUCTURE, OWNERSHIPAND REGISTRATION OF THE WORLD FLEET

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

The world merchant fleet expanded to 1.04 billion deadweight tons (dwt) at the beginning of 2007, a remarkable 8.6 per cent annual increase. Tonnage on order reached a total of 6,908 vessels with a total tonnage of 302.7 million dwt. As regards fleet ownership, at the beginning of 2007, developing countries controlled approximately 31.2 per cent of the world dwt, developed countries about 65.9 per cent and economies in transition the remaining 2.9 per cent. Since UNCTAD began recording the share of foreign-flagged dwt in 1989, the share of foreign-flagged tonnage increased every year until 2006. Between January 2006 and 2007, however, it stopped growing, decreasing slightly from 66.5 to 66.35 per cent of the world total.

### A. STRUCTURE OF THE WORLD FLEET

# 1. World fleet growth and principal vessel types

Comparative time-series data on the world fleet for 2005, 2006 and 2007 are provided in figure 5 and table 8. Towards the end of 2006, the world merchant fleet exceeded 1 billion dwt for the first time, reaching 1.04 billion dwt. Year-on-year growth on 1 January 2007 was 8.6 per cent, an increase of 82 million dwt.

The tonnage of oil tankers in 2006 increased by 8.1 per cent and that of bulk carriers by 6.2 per cent. Those two types of ships together represented 72.0 per cent of total tonnage, a slight decrease from 72.9 per cent in January 2006. The fleet of general cargo ships increased by 4.9 per cent in 2006; as this growth rate is below the world merchant fleet total growth rate, this category's share of the total world fleet has further declined to 9.7 per cent. In terms of deadweight tonnage, the fleet of containerships increased by 17 million dwt, or 15.5 per

cent, and now represents 12.3 per cent of the world total fleet. This high growth rate reflects the increasing share of trade in manufactured goods being containerized. In fact, since 1980 the share of dwt on containerships increased almost eightfold, while the share of tonnage on general cargo vessels decreased significantly from 17 per cent in 1980 to less then 10 per cent today. The share of oil tankers also declined, from almost 50 per cent in 1980 to 36.7 per cent in 2007, while the share of tonnage on dry bulk vessels has remained relatively stable since 1985.

# 2. The world containership fleet

The world fleet of fully cellular containerships continued to expand substantially in 2006 in terms of both number of ships and their TEU capacity; by the beginning of 2007 there were 3,904 ships with a total capacity of 9.4 million TEUs. This represents an increase of 11.7 per cent in the number of ships and an increase of 16.2 per cent in TEU capacity over the previous year. Ship sizes also continued to increase, with average carrying

Millions of dwt Other Container General cargo Dry bulk Oil tanker 

Figure 5

World fleet by principal vessel types, selected years<sup>a</sup>

(Millions of dwt)

<sup>a</sup> Cargo-carrying vessels of 100 GT and above.

capacity per ship growing from 2,324 TEUs in January 2006 to 2,417 TEUs in January 2007 (see table 9). As regards vessel registration, 54.26 per cent of the containerized tonnage is registered in the 10 major open and international registries — 28.4 per cent in developed countries and 16.5 per cent in developing countries in Asia. The share of the other developing regions and of economies in transition is below 1 per cent each (see table 10).

During the last 20 years, the world fleet's total TEU carrying capacity has increased almost sevenfold, growing at an average annual rate of 10.8 per cent, with annual growth rates even higher in the last decade than in the previous one. In October 2007, the world containership fleet reached 12.5 million TEUs, with 135 containerships of 8,000 TEU and above in service. Seven existing ships have a reported capacity of more than 10,000 TEUs, including six 12,508 TEU containerships owned and operated by Maersk Line of Denmark. Since 1987, the average vessel size of containerships has more than doubled.

# 3. Age distribution of the world merchant fleet

Table 11 provides data on the average age distribution of the world merchant fleet by both ship types and groups of countries and territories. The estimated average age of the total world fleet dropped marginally during 2006 to 12 years. By vessel type, the youngest fleet is that of containerships, with an average age of 9.1 year; 34.7 per cent of tonnage is younger than five years and only 13 per cent is 20 years and older. The average age of tankers remained at 10 years, the average age of bulk carriers decreased from 13.1 to 12.9 years and general cargo vessels continued to be the oldest vessel type, with an average of 17.4 years and 56.8 per cent of vessels more than 19 years old. Only 10.1 per cent of general cargo vessels are younger than 5 years, a fact that reflects the trend towards the increasing containerization of general cargo.

As regards country groupings, ships registered in developed countries are the youngest (average age of

Table 8

World fleet size by principal types of vessel, 2005–2007<sup>a</sup>

(Beginning-of-year figures, in thousands of dwt)

Principal types	2005	2006	2007	Percentage change 2007/2006
Oil tankers	336 156	354 219	382 975	8.1
	37.5	36.9	36.7	-0.2
Bulk carriers	320 584	345 924	367 542	6.2
	35.8	36.0	35.3	-0.7
Ore/bulk/oil	9 695	7 817	5 614	-28.2
	1.1	0.8	0.5	-0.3
Ore/bulk	310 889	338 107	361 928	7.0
	34.7	35.2	34.7	-0.5
General cargo ships	92 048	96 218	100 934	4.9
	10.3	10.0	9.7	-0.4
Containerships	98 064	111 095	128 321	15.5
	10.9	11.6	12.3	0.7
Other types of ships	48 991	52 508	62 554	19.1
	5.5	5.5	6.0	0.5
Liquefied gas carriers	22 546	24 226	26 915	11.1
	2.5	2.5	2.6	0.1
Chemical tankers	8 290	8 919	8 823	-1.1
	0.9	0.9	0.8	-0.1
Miscellaneous tankers	1 001	1 261	1 168	-7.4
	0.1	0.1	0.1	0.0
Ferries and passenger ships	5 589	5 649	5 754	1.9
	0.6	0.6	0.6	0.0
Other	11 565	12 453	19 894	59.8
	1.3	1.1	1.9	0.8
World total	895 843	959 964	1 042 328	8.6
	100.0	100.0	100.0	

<sup>&</sup>lt;sup>a</sup> Vessels of 100 GT and above. Percentage shares are shown in italics.

 $\label{eq:Table 9}$  Long-term trends in the cellular containership fleet  $^{\rm a}$ 

World total	1987	1997	2006	2007	Percentage growth 2007/2006
Number of vessels	1 052	1 954	3 494	3 904	11.7
TEU capacity	1 215 215	3 089 682	8 120 465	9 436 377	16.2
Average vessel size	1 155	1 581	2 324	2 417	4.0

Vessels of 100 GT and above. Beginning-of-year figures, except those for 1987, which are mid-year figures.

Table 10 Distribution of the world fleet and dwt capacity of containerships, by country group, in  $2007^{\rm a}$ 

Flags of registration by groups of countries	Dwt	Share of world total
World total	128 321 475	100.00
Developed countries	36 475 603	28.43
Countries with economies in transition	167 314	0.13
<b>Developing countries</b>	22 005 522	17.15
of which:		
Africa	186 895	0.15
America	663 146	0.52
Asia	21 114 005	16.45
Oceania	41 476	0.03
Other, unallocated	51 364	0.04
10 major open and international registries <sup>b</sup>	69 621 672	54.26

(Beginning-of-year figures)

<sup>&</sup>lt;sup>a</sup> Vessels of 100 GT and above.

The 10 major open and international registries are the 10 largest fleets with more than 90 per cent foreign-controlled tonnage. See table 19 for the list of registries.

Table 11

Age distribution of the world merchant fleet, by type of vessel, a as of 1 January 2007

(Percentage of total dwt)

Country grouping	Type of vessel	0–4 years	5–9 years	10–14 years	15–19 years	20 years and over	Average age (years) 2007 b	Average age (years) 2006 b
World total	All ships	25.1	21.0	16.7	10.9	26.2	12.0	12.2
	Tankers	30.3	25.0	16.4	14.6	13.6	10.0	10.0
	Bulk carriers	21.6	19.0	19.1	9.0	31.3	12.9	13.1
	General cargo	10.1	12.6	10.9	9.6	56.8	17.4	17.5
	Containerships	34.7	25.7	18.6	8.0	13.0	9.1	9.4
	All others	19.6	14.4	10.7	9.1	46.3	15.1	15.3
Seven major open-	All ships	27.6	21.3	16.7	10.5	24.0	11.5	
registry countries <sup>c</sup>	Tankers	31.1	24.9	16.6	15.7	11.8	9.8	
	Bulk carriers	24.7	19.7	18.4	7.8	29.5	12.3	
	General cargo	11.5	14.3	13.2	9.6	51.3	16.5	
	Containerships	39.0	23.5	16.0	7.9	13.5	8.9	
	All others	22.4	15.0	9.8	5.9	46.9	14.7	
Developed countries	All ships	28.4	29.9	17.6	7.8	16.3	9.9	
	Tankers	36.5	35.4	14.3	6.7	7.1	7.7	
	Bulk carriers	19.6	25.5	23.9	6.1	24.9	11.9	
	General cargo	14.9	23.9	15.8	12.8	32.6	13.7	
	Containerships	30.6	31.6	19.1	8.8	9.9	8.9	
	All others	22.4	19.9	15.0	10.7	31.9	13.0	
Economies	All ships	20.1	6.2	11.5	10.3	51.8	16.2	
in transition	Tankers	34.4	7.4	15.5	7.1	35.5	12.6	
	Bulk carriers	9.1	7.2	10.9	13.1	59.7	18.2	
	General cargo	6.7	4.3	5.0	10.1	73.8	20.1	
	Containerships	47.0	3.3	16.1	8.2	25.4	10.5	
	All others	32.0	7.0	14.8	10.0	36.3	13.1	
Developing countries	All ships	24.6	18.9	17.1	11.8	27.7	12.4	
	Tankers	28.0	21.0	17.7	17.5	15.8	10.8	
	Bulk carriers	23.1	18.3	18.6	9.6	30.5	12.8	
	General cargo	9.6	10.9	10.7	8.5	60.4	17.9	
	Containerships	35.9	24.4	19.3	7.2	13.1	9.1	
	All others	17.6	12.9	10.5	7.8	51.2	15.9	

<sup>&</sup>lt;sup>a</sup> Vessels of 100 GT and above.

To estimate the average age, it has been assumed that the ages of vessels are distributed evenly between the lower and upper limits of each age group. For the 20-years-and-over age group, the midpoint has been assumed to be 23.5 years.

<sup>&</sup>lt;sup>c</sup> The open registries in this group are the Bahamas, Bermuda, Cyprus, Liberia, Malta, Panama and Vanuatu.

9.9 years in January 2007), followed by major open registries (11.5 years), developing countries (12.4 years) and economies in transition (16.2 years). Replacement of general cargo vessels by containerships is particularly noticeable in the fleets registered in developing countries and in economies in transition. In those country groups, containerships were introduced later than in the developed countries' fleets. As a consequence, in developing countries 35.9 per cent of containerships are younger than five years, as against only 9.6 per cent of general cargo vessels in this age group. For general cargo vessels registered in developing countries, 60.4 per cent are older than 19 years, as against only 13.1 per cent of containerships in this age group. For economies in transition, 73.8 per cent of general cargo vessels are older than 19 years, and 47 per cent of containerships are younger than 5 years.

With regard to longer term trends, the average age of all vessel types has decreased during the last decade, except that of general cargo vessels, which has remained practically constant. The average age of tankers has decreased by 32.7 per cent, the average age of bulk carriers by 11.3 per cent and the average age of containerships by 23.8 per cent. This reverses the trend of the previous decade, during which the average age of tankers and bulk carriers increased. Twenty years ago, the average age of tankers was greater than that of bulk carriers (12.1 years versus 10.7 years), whereas today tankers are on average younger than bulk carriers (10.0 years versus 12.9 years) (see table 12).

# 4. Delivery of newbuildings

Newbuilding activities reached the highest level ever recorded in terms of deadweight tons, with deliveries totalling 71.1 million dwt in 2006 (see table 13), a further increase over the previous year's record of 70.5 million dwt. During 2006, 2,398 cargo-carrying commercial vessels of 100 GT and above were delivered — also a record, and an increase of 22 per cent over 2005. As regards tonnage and vessel types, the deliveries are approximately evenly split between oil tankers of 10,000 dwt and above (35 per cent of delivered dwt), dry bulk carriers of 10,000 dwt and above (35 per cent) and other vessels (30 per cent); the latter category includes all kinds of commercial vessels of 100 GT and above. As regards the number of vessels, 74 per cent of vessels delivered in 2006 belong to the category of "other vessels", as compared with 13 per cent for large oil tankers and 13 per cent for large dry bulk carriers.

The deliveries of oil tankers set a record in terms of vessel numbers (322 units of 10,000 dwt and above in 2006). However, as the average vessel sizes for oil tankers decreased, the dwt delivered in 2006 was 16 per cent lower than in the peak year of 2003. During the last 10 years, the average sizes of oil tankers increased until a peak of 135,065 dwt was reached in 2000, and have since decreased every year to an average vessel size of 76,578 dwt in 2006. The trend regarding dry bulk carrier vessel sizes is the opposite of the trend for oil tankers: dwt per unit have been increasing continuously

Table 12

Long-term trends in average age, by vessel type

	Type of vessel	1987	1997	2007	Percentage change 2007/1997	Percentage change 2007/1987
World total	All ships	11.7	14.9	12.0	-19.5	2.6
	Tankers	12.1	14.9	10.0	-32.7	-16.9
	Bulk carriers	10.7	14.6	12.9	-11.4	20.9
	General cargo	13.7	17.3	17.4	0.4	27.0
	Containerships	n.a.	12.0	9.1	-23.8	n.a.
	All others	n.a.	15.3	15.1	-1.3	n.a.

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

Notes: Vessels of 100 GT and above. Data for 1997 and 2007 are beginning-of-year figures; data for 1987 are mid-year figures.

Table 13

Deliveries of newbuildings, selected years <sup>a</sup>

Year		Oil tankeı	rs <sup>b</sup>	Dry	bulk carı	riers <sup>b</sup>		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		<i>78</i>	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	264	13.9	52 652	1 262	7.9	6 260	1 820	49.4	27 143
	16	55		15	28		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 <sup>d</sup>	322	24.7	76 578	310	25.2	81 290	1 766	21.2	12 026	2 398	71.1	29 648
	13	35		13	35		74	30		100	100	

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

<sup>&</sup>lt;sup>a</sup> Percentage shares per vessel type are shown in italics.

b Vessels over 10,000 dwt.

<sup>&</sup>lt;sup>c</sup> Seagoing, cargo-carrying vessels of over 1,000 GT.

d Provisional.

in recent years, reaching 81,290 dwt in 2006. In total, 310 dry bulk carriers were delivered in 2006, with a combined tonnage of 25.2 million dwt. The year 2006 also saw a record in the number and tonnage of other vessel types delivered, including car carriers, containerships, LNG tankers and general cargo ships, which reached a total of 1,766 units with a combined tonnage of 21.2 million dwt.

# 5. Demolition of ships

The trend in the demolition of ships is correlated with the trend in the delivery of ships; while 2006 saw record highs in newbuildings, it also saw record lows in demolitions. In total, demolitions were equivalent to only 0.6 per cent of the existing world fleet (see table 14). This is only one sixth of the percentage that was demolished in 2002. Tanker tonnage continues to have the highest share among vessel types, although for the first time in this decade its participation was less than half of the total demolished tonnage (2.7 million dwt,

corresponding to 45 per cent of the year's total). Other vessel types increased their share to 30 per cent, reaching 1.8 million dwt in 2006, while dry bulk carriers had a share of 21.7 per cent, with 1.3 million dwt demolished.

The average age of demolished ships in 2006 was highest for general cargo vessels (32.3 years), followed by tankers (30 years), dry bulk carriers (28.9 years) and containerships (28.1 years) (see table 15). For all vessel types the average age at demolition has increased since the beginning of the decade, albeit with some fluctuations. In general, scrapping activity is negatively correlated with developments in freight rates, as high freight rates make it less economically advantageous for owners to sell their vessels to scrapyards. India, China, Bangladesh and Turkey account for 41, 27, 14 and 9 per cent, respectively, of the world's total recycling capacity. The total tonnage of vessels scrapped in China fell from 2.3 million tonnes in 2003 to just 150,000 tonnes in 2005, increasing again — to 190,000 tonnes — in 2006.

Table 14

Tonnage reported sold for breaking, by type of vessel, 2000–2006

(Millions of dwt and percentage shares)

Years		Mil	lion dwt				Percentage share				
	Tankers	Combined	Bulk	Others	Total	Total as	Tankers	Combined	Bulk	Others	Total
		carriers	carriers			percentage of world fleet		carriers	carriers		
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

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

lac	ole 15		
Average age of broken-up ship	ps, by type	e, from 2000	) to 2006 <sup>a</sup>

Year	Tankers	Dry bulk carriers	Containerships	General cargo ships
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

Source: Compiled by the UNCTAD secretariat on the basis of data in Institute of Shipping Economics and Logistics, Shipping Statistics and Market Review, vol. 51, no. 1/2 — 2007, table 2.2.

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

### B. OWNERSHIP OF THE WORLD FLEET

# 1. The 35 countries and territories with the largest controlled fleets

The 35 countries with the largest fleets controlled by nationals (nationality being defined as the country of domicile) are ranked in table 16 according to deadweight tonnage. Nationals of the top 35 countries together control 95.33 per cent of the world fleet, a further increase from 95.17 per cent in January 2006, and a record high since UNCTAD started recording this market share in 1989. Greece continues to be the country with the largest controlled fleet, totalling 170.2 million dwt and 3,084 ships, followed by Japan (147.5 million dwt and 3,330 ships), Germany (85.0 million dwt and 2,964 ships), China (70.4 million dwt and 3,184 ships) and Norway (48.7 million dwt and 1,810 ships). Together, those five countries have a market share of 53.3 per cent.

The Greek-controlled fleet uses the national flag for 29 per cent of its dwt, as against 71 per cent using a foreign flag. As regards vessel types, the Greek-controlled fleet has 82.5 million tons of dry bulk carriers, 73.5 million dwt of oil tankers, 7.0 million dwt of containerships, 4.7 million dwt of general cargo vessels and 2.4 million dwt of other vessels. The largest foreign-flagged parts of the Greek-controlled fleet are 14.0 million dwt tons of Liberian-flagged oil tankers and 14.9 million dwt of Maltese-flagged dry bulk carriers. The average size of Greek-flagged ships is 70,000 dwt, compared with 51,000 dwt for Greek-controlled foreign-flagged vessels.

The Japanese-controlled fleet is 92 per cent foreign-flagged; it comprises 77.3 million dwt of dry bulk carriers, 42.1 million dwt of oil tankers, 10.5 million dwt of containerships, 8.8 million dwt of general cargo vessels and 8.8 million dwt of other vessels. An impressive total of 799 Japanese-controlled dry bulk carriers with a combined tonnage of 62.7 million dwt fly the flag of Panama. Foreign-flagged Japanese-controlled ships have an average vessel size of 52,000 dwt, which is three times as large as that of Japanese-flagged vessels; the latter include smaller ro-ro and other vessels used for cabotage traffic.

The German-controlled fleet uses a foreign flag for 85 per cent of its dwt. More than half of the German-controlled fleet is made up of containerships (46.2 million dwt), followed by 18.9 million dwt of oil tankers, 12.2 million dwt of dry bulk carriers, 6.8 million dwt of general cargo vessels and 1 million dwt of other vessels. German-controlled containerships use the flag of Liberia for 19.1 million dwt. As regards German-controlled container and general cargo vessels, 820 are registered in Antigua and Barbuda, representing 28 per cent of the German-controlled fleet in terms of vessel numbers. Foreign-flagged German-controlled ships are on average slightly smaller (28,000 dwt) than German-flagged ships (32,000 dwt).

In 2006, Norway replaced the United States as the country with the fifth largest controlled fleet, reaching a total of 48.7 million dwt. Less than 4 per cent of this fleet uses the first Norwegian registry and 25 per cent of it is registered in the Norwegian International Register

Table 16

The 35 countries and territories with the largest controlled fleets, as of 1 January 2007<sup>a</sup>

Country or territory	Num	ber of vess	els			Dead	weight tonnag	ge in thousan	ds of dwt	
of domicile <sup>b</sup>	National flag <sup>c</sup>	Foreign flag	Total	National flag	Foreign flag	Total	Foreign flag as a percentage of total	Total as a percentage of world total	Total as a percentage of world total, 1 January 2006	Change in percentage share
Greece	707	2 377	3 084	49 771	120 411	170 181	70.75	17.39	18.02	-0.63
Japan	719	2 611	3 330	11 822	135 685	147 507	91.99	15.07	14.52	0.55
Germany	403	2 561	2 964	12 843	72 200	85 043	84.90	8.69	7.89	0.80
China	1 870	1 314	3 184	32 229	38 162	70 390	54.21	7.19	7.22	-0.03
Norway	768	1 042	1 810	13 907	34 790	48 697	71.44	4.98	5.01	-0.03
United States	847	919	1 766	22 705	25 555	48 261	52.95	4.93	5.18	-0.24
Hong Kong (China)	296	393	689	19 180	25 873	45 053	57.43	4.60	4.84	-0.23
Republic of Korea	662	379	1 041	14 486	17 802	32 287	55.14	3.30	3.27	0.03
United Kingdom	375	480	855	9 504	17 252	26 757	64.48	2.73	2.35	0.39
Singapore	499	295	794	14 887	10 836	25 723	42.12	2.63	2.53	0.09
Taiwan Province of China	97	477	574	4 076	20 781	24 858	83.60	2.54	2.69	-0.15
Denmark	306	475	781	9 817	12 061	21 878	55.13	2.24	2.16	0.08
Russian Federation	1 629	574	2 203	6 462	11 644	18 106	64.31	1.85	1.84	0.01
Italy	575	164	739	11 559	4 403	15 962	27.58	1.63	1.60	0.03
India	404	52	456	13 288	1 529	14 817	10.32	1.51	1.52	0.00
Switzerland	29	341	370	810	11 691	12 501	93.52	1.28	1.30	-0.02
Belgium	74	152	226	6 462	6 028	12 490	48.26	1.28	1.27	0.00
Saudi Arabia	63	87	150	949	10 912	11 861	92.00	1.21	1.25	-0.04
Turkey	448	426	874	6 370	4 557	10 927	41.70	1.12	1.13	-0.02
Iran (Islamic Republic of)	156	28	184	8 845	1 148	9 994	11.49	1.02	1.08	-0.06
Netherlands	501	238	739	4 338	4 407	8 745	50.39	0.89	0.97	-0.08
United Arab Emirates	51	315	366	615	6 304	6 918	91.12	0.71	0.50	0.21
Indonesia	679	114	793	4 382	2 301	6 684	34.43	0.68	0.69	0.00
Malaysia	303	54	357	6 285	372	6 657	5.59	0.68	1.06	-0.38
Sweden	161	185	346	1 888	4 530	6 418	70.58	0.66	0.70	-0.05
Cyprus	97	125	222	2 439	3 714	6 153	60.36	0.63	n.a.	n.a.
France	168	141	309	2 865	3 101	5 965	51.98	0.61	0.54	0.07
Canada	219	121	340	2 676	3 269	5 945	54.99	0.61	0.72	-0.11
Brazil	136	15	151	2 559	2 316	4 875	47.50	0.50	0.52	-0.03
Kuwait	39	29	68	3 419	1 364	4 783	28.51	0.49	0.56	-0.07
Spain	186	161	347	918	3 502	4 420	79.23	0.45	0.45	0.00
Philippines	221	35	256	2 023	1 115	3 137	35.52	0.32	0.55	-0.23
Viet Nam	322	30	352	2 542	502	3 045	16.50	0.31	n.a.	n.a.
Thailand	260	38	298	2 498	415	2 913	14.25	0.30	0.35	-0.06
Australia	46	39	85	1 338	1 531	2 869	53.37	0.29	0.29	0.00
Total (35 countries or				_						
territories)	14 316		31 103	310 758	622 061	932 819	66.69	95.33	95.17	0.15
World total	16 407	18 415	34 822	329 259	649 298	978 557	66.35	100.00	100.00	

- <sup>a</sup> Vessels of 1,000 GT and above, excluding the US Reserve Fleet and the US and Canadian Great Lakes fleets.
- The country of domicile indicates where the controlling interest (i.e. parent company) of the fleet is located. In several cases, determining this has required making certain judgements. Thus, for instance, Greece is shown as the country of domicile for vessels owned by a Greek owner with representative offices in New York, London and Piraeus, although the owner may be domiciled in the United States.
- Includes vessels registered in second registries such as CSR (Spain), DIS (Denmark), FIS (France) and NIS (Norway). For the United Kingdom: includes vessels registered in the Isle of Man; British flag vessels are included under the national flag, except for Bermuda. For the United States: for historical reasons, the figure includes vessels registered in the Marshall Islands.

(NIS). Half of the Norwegian-controlled tonnage consists of oil tankers (24.8 million dwt), followed by 9.9 million dwt of general cargo vessels, 8.6 million dwt of dry bulk carriers, 5.0 million dwt of other types and less than half a million dwt of containerships. A total of 5 million dwt of Norwegian-controlled oil tankers are registered in the Marshall Islands, and 3.2 million dwt of general cargo vessels use the flag of the Bahamas. At 33,000 dwt, the average size of Norwegian-controlled foreign-flagged vessels is almost twice the size of the nationally flagged vessels.

As regards the largest nationally controlled fleets from developing countries, these are mostly from Asia, plus Brazil.

The Chinese-controlled fleet is 46 per cent registered in China, versus 54 per cent that uses a foreign flag. More than half of the Chinese-controlled fleet are dry bulk carriers (38.3 million dwt), followed by 14.0 million dwt of oil tankers, 9.8 million dwt of general cargo vessels, 7.1 million dwt of containerships and 1.2 million dwt of other vessels. The flags most commonly used by Chinese-controlled ships include those of Hong Kong (China), Panama and Liberia. The average vessel size of Chinese-controlled ships is 22,000 dwt, with foreign-flagged vessels being on average 70 per cent larger than Chinese-flagged ones.

Hong Kong (China) controls a fleet of 45 million dwt, and although it also has a large national vessel registry that is used by foreign vessel operators, 57 per cent of the tonnage controlled by Hong Kong (China) is registered under a different flag. The fleet controlled by Hong Kong (China) consists of 21.5 million dwt of dry bulk carriers, 16.4 million dwt of oil tankers, 3.8 million dwt of other ships, 1.8 million dwt of general cargo vessels and 1.6 million dwt of containerships. A total of 9.6 million dwt of dry bulk carriers and oil tankers are registered under the flag of Panama.

The Republic of Korea controls a fleet of 32.3 million dwt, 55 per cent of which is foreign-flagged. The fleet is composed of 16.6 million dwt of dry bulk carriers, 9.2 million dwt of oil tankers, 2.5 million dwt of containerships, 2.1 million dwt of other types and 1.8 million dwt of general cargo vessels. A total of 12.3 million dwt of oil tankers and dry bulk carriers controlled by the Republic of Korea fly the flag of Panama.

The Singapore-controlled fleet totals 25.7 million dwt, 64 per cent of which (16.6 million dwt) consists of oil tankers, followed by 4.2 million dwt of dry bulk carriers, 3.3 million dwt of containerships, 1.2 million dwt of general cargo vessels and 0.5 million dwt of other types. Although the flag of Singapore is itself used by a large number of foreign vessel operators, Singaporean companies themselves register 42 per cent of their fleet under foreign flags, including 4.5 million dwt of oil tankers that are registered in Liberia.

The Indian-controlled fleet of 14.8 million dwt is 90 per cent nationally flagged. This includes all Indian oil tankers, which make up 58 per cent (8.6 million dwt) of the country's total. The remainder of the fleet consists of 4.6 million dwt of dry bulk carriers and 1.1 million dwt of other types, as well as a small number of general cargo and containerships.

The Saudi Arabia-controlled fleet of 11.9 million dwt consists almost entirely (95 per cent) of oil tankers, most of which are registered in Liberia (6.7 million dwt) and the Bahamas (2.7 million dwt). Eight per cent of the Saudi Arabia-controlled fleet is nationally flagged.

The fleet with owners domiciled in the Islamic Republic of Iran is nationally flagged for 89 per cent of its tonnage, including 6 million dwt of oil tankers and 1.7 million dwt of dry bulk carriers.

Companies or nationals domiciled in the United Arab Emirates (UAE) control 366 ships with a total of 6.9 million dwt. This fleet includes 2.8 million dwt of oil tankers and 2 million dwt of dry bulk carriers. Vessels controlled from the UAE are registered in a particularly wide variety of flag countries, including in Belize, the Comoros, Iraq, Jordan, Kiribati, Mongolia, the Democratic People's Republic of Korea, Somalia, Saint Kitts and Nevis, and Turkmenistan. The largest foreign flag components of the UAE-controlled fleet are 1 million dwt of Bahamas-flagged oil tankers.

Indonesia is the country of domicile of vessel owners controlling 6.7 million dwt, including 3 million dwt of oil tankers, 1.6 million dwt of general cargo vessels, 0.9 million dwt of dry bulk carriers, and about 1.1 million dwt of container and other types. A total of 1.1 million dwt of the Indonesian-controlled oil tankers are registered in Singapore, and 66 per cent of the fleet is nationally flagged.

The fleet of owners domiciled in Malaysia totals 6.7 million dwt and is 94 per cent nationally flagged, including almost all oil tankers (3 million dwt) and 1.9 million out of 2.1 million of other vessel types. Brazil controls a fleet of 4.9 million dwt, including 2.1 million dwt oil tankers and 1.6 million dwt other types of vessels; 51 per cent of its fleet is nationally flagged and 1.1 million dwt are registered in Panama. The Kuwait-controlled fleet of 4.8 million dwt consists largely of oil tankers, totalling 3.2 million dwt, as well as 0.9 million dwt of containerships; the latter are registered in Bahrain, Kuwait, Saudi Arabia, the United Arab Emirates and Qatar. In total, 71 per cent of the Kuwait-controlled fleet is nationally flagged. The Philippines controls a fleet of 3.1 million dwt, consisting of 62 per cent of dry bulk carriers; 64 per cent of this fleet flies the flag of the Philippines. The Viet Nam-controlled fleet of 3 million dwt is nationally flagged for 84 per cent of its tonnage,

including 231 general cargo vessels, totalling 1.3 million dwt. The Thailand-controlled fleet is 86 per cent nationally flagged, including 1.1 million dwt dry bulk carriers; 17 containerships, totalling 0.24 million dwt, are registered in Singapore.

# 2. Participation of country groups in the control of the world fleet

Developing countries control approximately 31.2 per cent of the world dwt, developed countries control about 65.9 per cent and countries with economies in transition the remaining 2.9 per cent as shown in table 17. A total of 49 per cent of developing countries' controlled tonnage is nationally registered, while only 26 per cent of the tonnage controlled by developed countries flies the national flag.

Table 17

Control of world fleet, main country groups, as at 1 January 2007<sup>a</sup>

(Percentage shares of dwt)

<b>Country of domicile</b>	National flag	Foreign flag	Total
<b>Developed countries</b>	17.3	48.6	65.9
Countries with economies in transition	1.2	1.7	2.9
<b>Developing countries</b>	15.2	16.0	31.2
Total	33.7	66.3	100.0

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

<sup>a</sup> UNCTAD secretariat estimation based on ownership data of the top 35 vessel-owning countries, which account for 95.3 per cent of the world dwt of vessels of 1,000 GT and above, as well as registration data for all countries.

Approximately 47 per cent of the world dwt is controlled by European countries, approximately 46 per cent by Asian and Pacific countries, and approximately 6 per cent by countries in the Americas. African countries control less then 1 per cent of the world fleet. In all regions more than half of the dwt is foreign-flagged, with 70 per cent foreign-flagged dwt in Europe, 65 per cent in Asia and 53 per cent in the Americas.

Developing countries are increasingly active in the purchase and sale of cargo ships. By way of example, in mid-2007, the Shipping Corp of India reported an

extensive fleet expansion plan. It aimed to acquire 72 vessels at a cost of \$4 billion over five years, 25 per cent of which were already on order. The first 12 vessels are scheduled to be delivered between 2008 and 2010. At the same time, a shipping conglomerate from Sri Lanka reported the sale of containerships because of the downturn in charter rates and high maintenance costs, while a Turkish company ordered two new 176,000 dwt bulk carriers from a Chinese shipyard. The Government of China is reportedly encouraging its shipyards to meet the deadline of 2010 for half of its LNG imports to be carried on Chinese-built and owned vessels.

# 3. Trends in the share of foreign flags

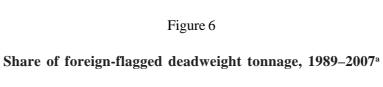
Since UNCTAD began recording the share of foreignflagged dwt in 1989, this share increased every year until 2006. Between January 2006 and 2007, however, for the first time, the foreign-flagged share decreased slightly, from 66.5 to 66.35 per cent (see figure 6). Further growth in the use of foreign flags is limited by market restrictions in many countries with important cabotage traffic as well as Government-controlled trade, both of which may be reserved to nationally flagged vessels. At the same time, several countries have reduced the tax burden on nationally flagged vessels, thus achieving in some cases a return of previously foreign-flagged ships to the national flag. In general, the motivation for a vessel owner to use a foreign flag may include more favourable tax regimes, conditions to finance ships and the possibility of employing foreign seafarers. No general conclusions can be drawn as regards the safety of foreign-flagged versus nationally flagged vessels.

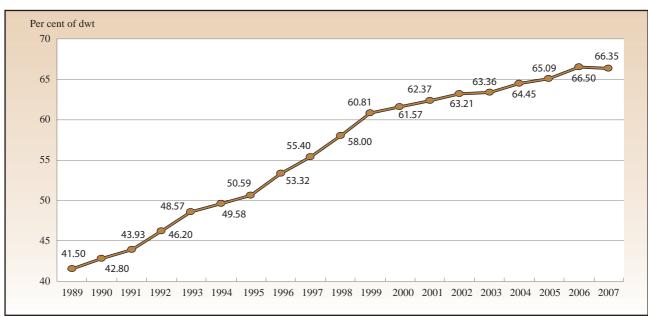
It should be noted that the "foreign flags" included in the calculations of this share of national and foreign flags (tables 16 and 17, and figure 6) exclude second registries, such as the CSR (Spain), DIS (Denmark), FIS (France) and NIS (Norway), as well as ships registered under the flags of, for example, the Marshall Islands for the United States, the Isle of Man and Cayman Islands for the United Kingdom, and the Netherland Antilles for the Netherlands. If those second and international registries are included, the share of "foreign-flagged" vessels becomes more than 71 per cent of the world fleet's dwt. Section C looks at the main flags of registration of the world fleet in more detail.

### C. REGISTRATION OF SHIPS

### 1. Flags of registration

The 35 countries and territories with the largest fleets registered under their flag are ranked in table 18 according to deadweight tonnage. Together, they account for 959 million dwt, corresponding to 92 per cent of the world fleet. The top five registries together account for 48 per cent, and the top 10 registries for 68 per cent of the world's dwt. The largest flag of registration continues to be Panama, with 232 million dwt (22.3 per cent of the world), followed by Liberia (105 million dwt, 10.1 per cent). These two leading registries are followed





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

<sup>a</sup> Cargo-carrying vessels of 1,000 GT and above.

Table 18

The 35 flags of registration with the largest registered deadweight tonnage as of 1 January 2007<sup>a</sup>

Flag of registration	Number of vessels	vessels	Deadweight tonnage, 1,000 dwt	dwt	Cumulated share, dwt	Average vessel size	Share of nationals of country of registry <sup>b</sup>
Panama	7 199	7.58	232 148	22.27	22.27	32 247	0
Liberia	1 908	2.01	105 227	10.10	32.37	55 150	0
Bahamas	1 394	1.47	55 238	5.30	37.67	39 625	0
Greece	1 459	1.54	55 145	5.29	42.96	37 796	92
Marshall Islands	963	1.01	54 644	5.24	48.20	56 744	26
Hong Kong (China)	1 159	1.22	54 341	5.21	53.41	46 886	39
Singapore	2 080	2.19	51 043	4.90	58.31	24 540	30
Malta	1 287	1.36	40 201	3.86	62.17	31 236	0
China	3 700	3.90	34 924	3.35	65.52	9 439	99
Cyprus	966	1.02	29 627	2.84	68.36	30 670	8
NIS	614	0.65	20 285	1.95	70.30	33 038	61
Republic of Korea	2 829	2.98	16 540	1.59	71.89	5 847	96
Japan	6 713	7.07	15 083	1.45	73.34	2 247	100
Isle of Man	360	0.38	14 225	1.36	74.70	39 514	38
India	1 185	1.25	14 190	1.36	76.06	11 974	98
Italy	1 566	1.65	13 279	1.27	77.34	8 480	92
Germany	875	0.92	13 172	1.26	78.60	15 054	99
United Kingdom	1 596	1.68	12 810	1.23	79.83	8 026	44
United States	6 422	6.76	12 354	1.19	81.02	1 924	83
Antigua and Barbuda	1 081	1.14	10 400	1.00	82.01	9 621	0
DIS	418	0.44	10 004	0.96	82.97	23 933	97
Bermuda	149	0.16	9 361	0.90	83.87	62 829	6
Iran (Islamic Republic of)	475	0.50	8 953	0.86	84.73	18 848	100
Malaysia	1 101	1.16	8 571	0.82	85.55	7 784	76
Saint Vincent and the Grenadines	1 063	1.12	8 552	0.82	86.37	8 045	0
Russian Federation	3 650	3.84	7 612	0.73	87.10	2 085	94
Turkey	1 182	1.25	7 223	0.69	87.80	6 111	99
Belgium	233	0.25	6 995	0.67	88.47	30 019	93
Philippines	1 843	1.94	6 704	0.64	89.11	3 637	39
Indonesia	4 286	4.51	6 392	0.61	89.72	1 491	94
Netherlands	1 258	1.33	5 828	0.56	90.28	4 633	67
Cayman Islands	157	0.17	4 637	0.44	90.73	29 538	7
FIS	55	0.06	4 636	0.44	91.17	84 296	30
Taiwan Province of China	629	0.66	4 398	0.42	91.60	6 991	93
Thailand	790	0.83	4 320	0.41	92.01	5 469	66
Top 35	62 645	65.99	959 062	92.01		15 309	32
World total	94 936	100.00	1 042 351	100.00		10 980	34

<sup>&</sup>lt;sup>a</sup> Ships of 100 GT and above.

The estimated share is based on data about vessels of 1,000 GT and above.

by five flags with between 51 and 55 million dwt (close to 5 per cent of the world fleet) each; they are the Bahamas, Greece, the Marshall Islands, Hong Kong (China) and Singapore.

The flag of the world's largest registry, Panama, is predominantly used by vessel owners of Japan, Greece, China, Taiwan Province of China and Switzerland. Japanese owners alone account for about half of the Panama registered dwt, and the other four economies together for about one quarter; together the five economies make up three quarters of Panama's registered fleet. From the perspective of the country of domicile, owners from Japan and Switzerland rely most heavily on Panama to provide the flag for their ships, each having more than 75 per cent of their nationally controlled fleet registered in Panama. As regards vessel types, 33 per cent of the world's dwt of dry bulk carriers flies the flag of Panama.

The world's second largest registry, Liberia, is predominantly used by owners from Germany (mostly for containerships) as well as from Greece, the Russian Federation and Saudi Arabia (mostly for oil tankers). Saudi Arabia relies on Liberia to provide the flag for more than half of its nationally controlled fleet. Liberia supplies the flag for more than 10 per cent of the world's dwt, albeit for just 2 per cent of the number of ships, this being due to the large average vessel size of Liberian-registered ships. Apart from Panama and Liberia, there are four other registries — the Bahamas, Malta, Antigua and Barbuda, and Saint Vincent and the Grenadines — with less then 1 per cent of registered ships controlled by interests domiciled in the same country (table 18).

Although in general open to any shipowner, most open registries effectively specialize in some countries of domicile. For example, three quarters of the dwt registered in Malta is owned by Greeks, more than 90 per cent of the fleet of Antigua and Barbuda is owned by Germans, and about 60 per cent of the dwt of Saint Vincent and the Grenadines originates from Greece and from China.

A number of vessel registries are based in currently or previously dependent territories. These include the Marshall Islands, pertaining to the United States, as well as the Isle of Man, Bermuda and the Cayman Islands, pertaining to the United Kingdom. Although special relationships may have existed between a country's shipowners and such second registries, these registries do not differ now from traditional open registries. Less

than one quarter of the fleet registered in the Marshall Islands is controlled by the United States, and only around one third of the fleet registered in the Isle of Man actually has owners domiciled in the United Kingdom. In the case of Bermuda, there are more owners from Hong Kong (China), Sweden, Germany and the United States that use the flag of Bermuda than owners from the United Kingdom. By the same token, the flag of the Cayman Islands is more often used by owners from Greece, the United States, Germany and Italy than owners from the United Kingdom. Among the top 35 flags of registration, there are three "second national registries", pertaining to Norway (NIS), Denmark (DIS) and France (FIS). Interestingly, such second national registries increasingly also cater for nationals of other countries. The shares of foreign-controlled dwt amount to approximately 40 per cent for NIS, 5 per cent for DIS and 70 per cent for FIS. In the case of FIS, there is more Belgian-owned tonnage in this registry than French-owned tonnage.

Fourteen of the top 35 flags of registration cater mostly for their own national shipowners. They are Greece, China, the Republic of Korea, Japan, India, Italy, Germany, the United States, the Islamic Republic of Iran, the Russian Federation, Turkey, Belgium, Indonesia and Taiwan Province of China. There are a further seven countries or economies that provide their flag both to their own nationals and to a significant share of foreigners. These are Hong Kong (China) (approximately 61 per cent foreign-controlled tonnage), Singapore (70 per cent), United Kingdom (56 per cent), Malaysia (24 per cent), the Netherlands (33 per cent), the Philippines (61 per cent) and Thailand (34 per cent).

There is no clear definition of "open" registries. In view of the above-described differences in terms of foreign-controlled but nationally registered fleets, any distinction between "national" or "open" registries cannot be clear-cut. The following section will look in more detail at the links between ownership and registration for the 10 major open registries and 35 major countries of domicile.

### 2. Nationality of controlling interests

Table 19 presents the controlling nationality of the dwt registered in the largest 10 open and international registries for the 35 largest countries of domicile. It has to be noted that the figures for ownership — that is, the "country of domicile" of ships' controlling interests — are not always exact. Stockholding companies may be owned by a large number of nationals from different countries. A company may be holding shares of less than

Table 19

True nationality of major open-registry fleets, as of 1 January 2007<sup>a</sup>

Country or territory of domicile	]	Panama		1	Liberia		Bahamas		
	No. of vessels	000 dwt	%	No. of vessels	000 dwt	%	No. of vessels	000 dwt	%
Greece	546	22 211	10.2	288	18 834	19.5	228	12 632	25.0
Japan	2 082	112 196	51.6	102	5 570	5.8	59	3 608	7.1
Germany	34	5 231	2.4	659	30 022	31.1	39	2 281	4.5
China	460	15 567	7.2	51	2 977	3.1	5	211	0.4
Norway	68	1 580	0.7	40	2 695	2.8	268	6 836	13.5
United States	145	2 278	1.0	105	3 610	3.7	166	10 352	20.5
Hong Kong (China)	159	10 579	4.9	23	1 116	1.2	7	638	1.3
Republic of Korea	297	15 904	7.3	4	463	0.5	0	0	0.0
United Kingdom	43	1 010	0.5	34	1 132	1.2	86	1 906	3.8
Singapore	78	2 470	1.1	42	4 833	5.0	11	389	0.8
Taiwan Province of China	306	10 202	4.7	76	5 793	6.0	2	110	0.2
Denmark	31	732	0.3	8	231	0.2	71	948	1.9
Russian Federation	12	177	0.1	86	7 265	7.5	6	37	0.1
Italy	10	138	0.1	19	1 133	1.2	8	461	0.9
India	26	751	0.3	2	154	0.2	1	8	0.0
Switzerland	234	9 431	4.3	10	280	0.3	2	97	0.2
Belgium	12 12	256	0.1 0.1	0	0 6 660	0.0	13 15	168 2 788	0.3 5.5
Saudi Arabia	45	289	0.1	26 3	53	6.9	9	351	
Turkey Iran (Islamic Republic of)	45 7	375 88	0.2	0	0	0.1	0	0	0.7
Netherlands	33	321	0.0	42	763	0.0	34	1 283	2.5
United Arab Emirates	111	1 719	0.1	20	1 097	1.1	34 19	1 147	2.3
Indonesia	42	541	0.8	1	79	0.1	3	102	0.2
Malaysia	18	91	0.2	0	0	0.0	11	73	0.2
Sweden	7	68	0.0	9	380	0.4	9	69	0.1
Cyprus	14	746	0.3	6	272	0.3	16	625	1.2
France	12	229	0.1	3	131	0.1	40	1 187	2.3
Canada	4	43	0.0	2	32	0.0	14	557	1.1
Brazil	7	1 101	0.5	3	456	0.5	1	149	0.3
Kuwait	2	109	0.0	1	42	0.0	0	0	0.0
Spain	58	422	0.2	0	0	0.0	11	1 366	2.7
Philippines	16	318	0.1	0	0	0.0	1	28	0.1
Viet Nam	9	165	0.1	1	65	0.1	0	0	0.0
Thailand	10	62	0.0	0	0	0.0	1	17	0.0
Australia	4	80	0.0	2	355	0.4	2	95	0.2
Total 35 countries/territories	4 954	217 480	100.0	1 668	96 492	100.0	1 158	50 517	100.0
Percentage share among 35 countries/territories	15.9	23.3		5.4	10.3		3.7	5.4	

Table 19 (continued)

Country or territory of domicile		Cyprus	(		Malta		ds	hall Islan	Mars
V. GOZZEVA	%	000 dwt	No. of vessels	%	000 dwt	No. of vessels	%	000 dwt	No. of vessels
Greece	54.1	15 540	313	74.2	25 832	473	23.9	11 687	190
Japan	1.6	467	19	0.1	27	1	0.4	205	5
Germany	17.4	4 998	185	4.9	1 720	59	20.8	10 185	190
China	0.8	238	10	0.6	216	13	0.1	72	2
Norway	2.8	791	17	1.4	503	62	13.5	6 582	66
United States	0.1	22	7	0.2	68	8	26.4	12 889	191
Hong Kong (China)	0.1	19	1	0.1	46	2	1.2	584	9
Republic of Korea United Kingdom	0.3 4.2	76 1 216	3 25	0.4	131 114	5	0.9	455 721	10
Singapore	0.1	30	25 1	0.5	0	0	0.7	330	6
Taiwan Province of China	0.0	0	0	0.0	0	0	0.7	0	0
Denmark	0.0	47	2	0.6	197	7	0.5	260	4
Russian Federation	5.3	1 532	51	2.3	788	69	0.2	75	4
Italy	0.0	11	3	2.5	857	39	0.3	156	2
India	0.0	0	0	0.1	38	1	0.0	0	0
Switzerland	0.2	68	4	1.3	447	24	0.9	417	14
Belgium	0.0	9	1	0.2	72	10	0.0	0	0
Saudi Arabia	0.0	0	0	0.0	0	0	1.9	928	3
Turkey	0.0	0	0	5.6	1 933	127	1.9	933	32
Iran (Islamic Republic of)	0.5	148	2	2.5	871	14	0.0	0	0
Netherlands	0.6	159	23	0.1	32	5	0.0	2	1
United Arab Emirates	1.8	525	11	0.9	310	11	0.7	354	9
Indonesia	0.0	0	0	0.0	0	0	0.0	0	0
Malaysia	0.0	0	0	0.0	0	0	0.1	37	3
Sweden	0.0	9	2	0.0	9	1	0.0	18	3
Cyprus	8.5	2 439	97	1.4	484	16	2.2	1 082	38
France	0.0	0	0	0.1	45	4	0.0	0	0
Canada	0.2	60	2	0.2	64	16	0.3	143	4
Brazil Kuwait	0.0	0	0	0.0	0	0	1.2 0.0	605 0	2
Spain	1.1	309	8	0.0	17	1	0.0	98	2
Philippines	0.0	2	1	0.0	0	0	0.2	98	0
Viet Nam	0.0	0	0	0.0	0	0	0.0	0	0
Thailand	0.0	0	0	0.0	0	0	0.0	0	0
Australia	0.0	0	0	0.0	0	0	0.0	73	1
Total 35 countries/territories	100.0	28 715	788	100.0	34 823	976	100.0	48 893	793
Percentage share among 35 countries/territories		3.1	2.5		3.7	3.1		5.2	2.5

Table 19 (continued)

Country or territory of domicile	Isl	e of Man		Antigua	a & Barb	rbuda Saint Vinc Grena			the	В	ermuda	
	No. of vessels	000 dwt	%	No. of vessels	000 dwt	%	No. of vessels	000 dwt	%	No. of vessels	000 dwt	%
Greece	46	3 953	28.5	3	26	0.3	85	2 376	36.2	2	88	1.5
Japan	4	13	0.1	0	0	0.0	0	0	0.0	0	0	0.0
Germany	55	822	5.9	869	9 020	92.5	4	20	0.3	21	747	12.9
China	0	0	0.0	0	0	0.0	111	2 198	33.5	0	0	0.0
Norway	52	2 5 1 9	18.1	11	147	1.5	27	99	1.5	5	58	1.0
United States	5	289	2.1	7	20	0.2	27	198	3.0	29	381	6.6
Hong Kong (China)	0	0	0.0	0	0	0.0	6	96	1.5	15	2 127	36.6
Republic of Korea	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
United Kingdom	90	5 281	38.0	5	44	0.5	12	158	2.4	6	339	5.8
Singapore	2	94	0.7	0	0	0.0	5	77	1.2	1	155	2.7
Taiwan Province of China	0	0	0.0	0	0	0.0	3	4	0.1	0	0	0.0
Denmark	67	501	3.6	17	117	1.2	15	37	0.6	0	0	0.0
Russian Federation	0	0	0.0	5	14	0.1	25	285	4.3	0	0	0.0
Italy	2	150	1.1	0	0	0.0	19	229	3.5	0	0	0.0
India	0	0	0.0	0	0	0.0	8	120	1.8	0	0	0.0
Switzerland	0	0	0.0	4	184	1.9	17	302	4.6	0	0	0.0
Belgium	0	0	0.0	1	4	0.0	9	29	0.4	3	23	0.4
Saudi Arabia	0	0	0.0	0	0	0.0	1	3	0.0	0	0	0.0
Turkey	2	7	0.0	9	36	0.4	18	87	1.3	0	0	0.0
Iran (Islamic Republic of)	0	0	0.0	0	0	0.0	3	7	0.1	0	0	0.0
Netherlands	1	2	0.0	16	71	0.7	7	13	0.2	1	273	4.7
United Arab Emirates	0	0	0.0	0	0	0.0	18	103	1.6	0	0	0.0
Indonesia	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Malaysia	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Sweden	3	97	0.7	1	2	0.0	2	5	0.1	15	1 239	21.3
Cyprus	4	150	1.1	1	44	0.4	3	29	0.4	0	0	0.0
France	2	8	0.1	1	4	0.0	17	56	0.9	1	7	0.1
Canada	0	0	0.0	0	0	0.0	7	27	0.4	0	0	0.0
Brazil	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Kuwait	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Spain	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Philippines	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Viet Nam	0	0	0.0	3	10	0.1	0	0	0.0	0	0	0.0
Thailand	0	0	0.0	0	0	0.0	0	0	0.0	0	0	0.0
Australia	0	0	0.0	1	6	0.1	0	0	0.0	5	371	6.4
Total 35 countries/territories	335	13 885	100.0	954	9 750	100.0	449	6 557	100.0	104	5 809	100.0
Percentage share among 35 countries/territories	1.1	1.5		3.1	1.0		1.4	0.7		0.3	0.6	

Table 19 (continued)

Country or territor of domicil	Major 10 registries as % of total	Total national	al registries	rnation	en and inte	ajor 10 op	Total m
	national controlled fleet	controlled fleet, 000 dwt	Average vessel size	% of dwt	000 dwt	% of vessels	No. of vessels
Greece	66.5	170 181	52 120	22.5	113 153	19.3	2 171
Japan	82.8	147 507	53 735	24.3	122 085	20.2	2 272
Germany	65.9	85 043	44 965	11.1	56 026	11.1	1 246
China	30.5	70 390	32 944	4.3	21 479	5.8	652
Norway	44.5	48 697	35 806	4.3	21 663	5.4	605
United States	62.3	48 261	44 054	6.0	30 089	6.1	683
Hong Kong (China)	33.7	45 053	68 484	3.0	15 203	2.0	222
Republic of Korea	52.7	32 287	54 757	3.4	17 029	2.8	311
United Kingdom	44.4	26 757	37 827	2.4	11 878	2.8	314
Singapore	32.6	25 723	57 383	1.7	8 378	1.3	146
Taiwan Province of China	64.8	24 858	41 622	3.2	16 108	3.4	387
Denmark	13.5	21 878	14 399	0.6	2 952	1.8	205
Russian Federation	56.1	18 106	40 153	2.0	10 159	2.3	253
Italy	19.6	15 962	30 744	0.6	3 136	0.9	102
India	7.2	14 817	28 178	0.2	1 071	0.3	38
Switzerland	88.3	12 501	36 205	2.2	11 042	2.7	305
Belgium	4.5	12 490	11 642	0.1	559	0.4	48
Saudi Arabia	89.9	11 861	187 161	2.1	10 668	0.5	57
Turkey	34.2	10 927	15 840	0.7	3 738	2.1	236
Iran (Islamic Republic of)	11.1	9 994	42 837	0.2	1 114	0.2	26
Netherlands	32.6	8 745	19 381	0.6	2 849	1.3	147
<b>United Arab Emirates</b>	76.0	6 918	26 405	1.0	5 255	1.8	199
Indonesia	10.8	6 684	15 699	0.1	722	0.4	46
Malaysia	3.0	6 657	6 276	0.0	201	0.3	32
Sweden	29.5	6 418	37 129	0.4	1 894	0.5	51
Cyprus	94.7	6 153	30 036	1.2	5 827	1.7	194
France	27.9	5 965	21 058	0.3	1 664	0.7	79
Canada	15.6	5 945	18 928	0.2	927	0.4	49
Brazil	47.4	4 875	177 788	0.5	2 311	0.1	13
Kuwait	3.1	4 783	50 138	0.0	150	0.0	3
Spain	50.0	4 420	27 649	0.4	2 212	0.7	80
Philippines	11.1	3 137	19 343	0.1	348	0.2	18
Viet Nam	7.6	3 045	22 996	0.0	230	0.1	10
Thailand	2.7	2 913	7 204	0.0	79	0.1	11
Australia	33.9	2 869	69 476	0.2	973	0.1	14
Total 35 countries/territorie	53.9	932 819	44 826		503 172	100.0	11 225
Percentage share amon	55.7		17020	100.0		100.0	
35 countries/territorie		100.0			53.9		36.1

<sup>&</sup>lt;sup>a</sup> Ships of 1,000 GT and above.

100 per cent in companies in third countries. Especially in container shipping, there is a clear distinction between the vessel owners, many of which are German or Greek, and the operators, which charter the vessel and sell liner shipping services under their own name. Nevertheless, for most ships it is possible to identify not only the country under whose flag it is registered, but also the country from where the ship is controlled commercially.

As can be seen from table 19, most open and international registries specialize in certain countries of domicile. Panama is the only registry that provides its flag to vessels from all 35 countries covered in the table. It has a particularly high share of Japanese-controlled vessels; the Bahamas, Cyprus, Malta and the Marshall Islands provide the flag for a high proportion of Greek-controlled vessels; and Liberia, and especially Antigua and Barbuda, register a large share of German-owned vessels.

Table 20 shows the registration of tonnage by main groups of countries, as well as the proportion of nationally and foreign-controlled dwt, that is the vessel owners' countries of domicile. As can be seen, developing countries provide the flag for 64.8 per cent of the world's dwt, developed countries have a share of 33.9 per cent and countries in transition the remaining 1.4 per cent.

Among the developing countries, those in America have the largest share (29 per cent of the world's dwt), followed by Asia (21 per cent), Africa (10 per cent) and Oceania (less than half a per cent). As regards Africa, 95 per cent of the African-flagged dwt corresponds to the flag of Liberia, whose registry is mostly managed from offices located in the United States. For the Americas, the foreign-flagged dwt includes ships registered in Panama, the Bahamas, Antigua and Barbuda, and Saint Vincent and the Grenadines, as well as numerous smaller open registries, such as Barbados, Belize, Bolivia, Dominica, Honduras, Jamaica, and Saint Kitts and Nevis. In Asia, the main foreign-controlled registrations are those using the flags of Singapore, Hong Kong (China) and increasingly the Philippines, as well as smaller open registries such as Cambodia, Mongolia and Myanmar. The majority of dwt registered in Oceania flies the flags of Tuvalu and Vanuatu, both of which are open registries. The largest registered fleet of the countries in transition is that of the Russian Federation, which caters mostly for dwt whose controlling interest is domiciled at home; there are no major open registries located in the countries in transition.

# D. SHIPBUILDING AND THE SECOND-HAND MARKET

## 1. Tonnage on order

Tonnage on order as of 31 December 2006 consists of 118 million dwt oil tankers (39 per cent of the world total dwt on order), 79 million dwt of dry bulk carriers (26.2 per cent), 8 million dwt of general cargo vessels (2.6 per cent), 51.7 million dwt of containerships (17.1 per cent) and 45.6 million dwt of other vessel types (15.1 per cent). Total tonnage on order is at its highest level since the beginning of the decade — 6,908 vessels with a total tonnage of 302.7 million dwt (see table 21). Figure 7 illustrates the development of the four main vessel types over the last six years. The tonnage of containerships on order has more than tripled since December 2006 (an increase of 220 per cent), orders for oil tankers increased by 193 per cent, orders for dry bulk carriers by 154 per cent and orders for general cargo vessels by 102 per cent.

As regards average vessel sizes, the largest vessel orders continue to be for oil tankers, although the average vessel size decreased from 142,001 dwt in December 2000 to 109,470 dwt in December 2006. Given the smaller vessel sizes, the growth in oil tanker tonnage on order reflects an impressive growth in the number of ships on order, which now stands at over 1,000 oil tankers, having almost quadrupled since December 2000. Containership sizes increased until mid-2004: they reached an average size of 54,467 dwt in March of that year, reflecting an increasing share of post-Panamax tonnage. Since 2004, however, new orders increasingly also include Panamax and feeder vessel sizes; this reduced the average vessel size to 45,247 in December 2006, a reduction of 17 per cent since its peak.

By mid-2007 the global tanker newbuildings order book had reportedly reached its highest ever level. The crude oil tanker order book stood at 100 million dwt (36 per cent of the existing fleet) and the products oil carrier order book at 50 million dwt (44 per cent). The order book for dry bulk carriers had reached 125 million dwt by mid-2007, equivalent to 34 per cent of the fleet. The largest containerships under construction in September 2007 were eight 13,092 TEU units. In total, in September 2007 there were 278 containerships on order with a capacity of 8,000 TEU and above. The total order book for containerships exceeds 6.2 million TEUs after the leading ocean carriers and major charter shipowners signed numerous new contracts.

Table 20

Flags of registration, main country groups, as of 1 January 2007<sup>a</sup>

(Percentage shares of dwt)

Flag of registration	National control	Foreign control	Total by group of countries
<b>Developed countries</b>	17.3	16.6	33.9
Countries with economies in transition	1.2	0.1	1.4
<b>Developing countries</b>	15.2	49.6	64.8
Total	33.7	66.3	100.0

<sup>a</sup> UNCTAD secretariat estimation based on ownership data of the top 35 vessel-owning countries, which account for 95.3 per cent of the world dwt of vessels of 1,000 GT and above, as well as registration data for vessels of 100 GT and above for all countries.

# 2. Prices of newbuildings and second-hand tonnage

Newbuilding prices for all vessel types have continued to increase compared with the previous year's figures. The highest increase (+39.7 per cent) was for 110,000 dwt tankers, followed by general cargo vessels (+33.3 per cent). Since the beginning of the decade, prices for all vessel types have increased, the increases ranging from one third for LNG carriers to almost double for 110,000 dwt tankers (see table 22).

Prices for second-hand tonnage fluctuate more than prices for newbuildings. Prices for five-year-old dry bulk carriers tripled between 2001 and 2006, reaching levels that are in fact higher than the corresponding newbuilding prices (see tables 22 and 23). A five-year-old 170,000 dwt dry bulk carrier in 2006 cost \$81 million compared with just \$25 million five years earlier, and a five-year-old 300,000 dwt tanker cost \$121 million compared with \$60 million in 2001.

The most expensive new ships are LNG carriers, which in 2006 cost \$220 million, equivalent to

almost \$1,500 per m<sup>3</sup>. Prices per dwt depend heavily on ship sizes, a fact that implies significant economies of scale. At \$433, the price per dwt on a 300,000 dwt tanker was only 41 per cent of the price on a 45,000 dwt tanker. In the case of dry bulk carriers, the price per dwt on a 170,000 dwt vessel was \$412, which was the lowest of all vessel types in the table, and represents 60 per cent of the price per dwt on a 45,000 dwt vessel. Containerships are more expensive than tankers and dry bulk carriers: a 2,500 TEU containership in 2006 cost \$18,400 per TEU (corresponding to about \$1,400 per dwt). In August 2007, carriers were reportedly paying \$165 million (\$12,600 per TEU) for eight new 13,092 TEU vessels that were scheduled to be delivered by Republic of Korea shipyards in 2011. As regards new bulk carrier prices, in September 2007, these were 50 per cent higher than at the end of 2006, reaching for example \$51 million for a Panamax vessel. Second-hand prices for dry bulk carriers reached historical records at double the price level of end of 2006 figures; at \$75 million a five-year-old Panamax dry bulk carrier was almost 50 per cent more expensive than a newly ordered ship.

Table 21

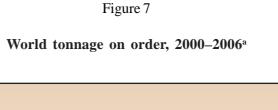
World tonnage on order, 2000–2006<sup>a</sup>

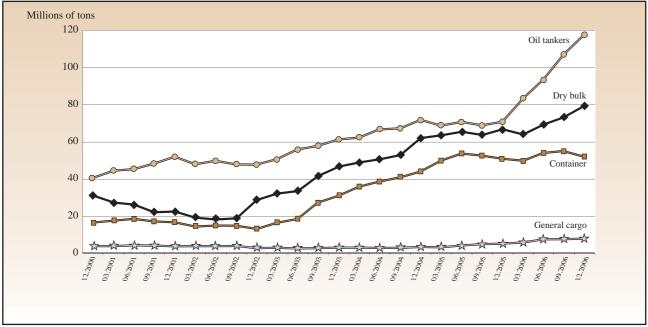
<b>Beginning of month</b>		Tanker	s	Bı	ılk carı	riers	Gene	ral carg	go ships
	1,000	Ships	Average	1,000	Ships	Average	1,000	Ships	Average
	dwt		vessel	dwt		vessel	dwt		vessel
			size, dwt			size, dwt			size, dwt
December 2000	40 328	284	142 001	31 208	486	64 214	3 966	446	8 892
March 2001	44 361	319	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
Percentage of total, December 2006	39.0	15.6		26.2	14.3		2.6	10.7	

Table 21 (continued)

Con	tainer	vessels	C	ther sh	ips		Total		<b>Beginning of month</b>
1,000	Ships	Average	1,000	Ships	Average	1,000	Ships	Average	
dwt		vessel	dwt		vessel	dwt		vessel	
		size, dwt			size, dwt			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	<b>March 2001</b>
18 393	441	41 708	11 790	1 138	10 360	105 563	2 737	38 569	<b>June 2001</b>
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	<b>March 2003</b>
18 296	367	49 853	17 085	1 367	12 498	127 152	2 979	42 683	<b>June 2003</b>
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	<b>June 2004</b>
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	<b>June 2005</b>
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	<b>June 2006</b>
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
17.1	16.5		15.1	42.9		100.0	100.0		Percentage of total,
17.1	10.5		13.1	42.9		100.0	100.0		December 2006

<sup>&</sup>lt;sup>a</sup> Ships of 100 GT and above.





<sup>a</sup> Ships of 100 GT and above.

Table 22

Representative newbuilding prices in selected years a (Millions of dollars, end-of-year figures)

Type and size of vessels	1985	1990	1995	2000	2003	2004	2005	2006	Percentage change 2006/2005	Percentage change 2006/2000
45,000 dwt dry bulk carrier	11	24	25	20	22	30	28	31	10.7	55.0
45,000 dwt tanker	18	29	34	29	30	38	43	47	9.3	62.1
72,000 dwt dry bulk carrier	14	32	29	23	25	35	35	40	14.3	73.9
110,000 dwt tanker	22	42	43	41	41	56	58	81	39.7	97.6
170,000 dwt dry bulk carrier	27	45	40	40	47	61	59	70	18.6	75.0
<b>300,000 dwt tanker</b>	47	90	85	76	75	105	120	130	8.3	71.1
150,000 m <sup>3</sup> LNG	200	225	245	165	155	190	205	220	7.3	33.3
78,000 m <sup>3</sup> LPG	44	78	68	60	59	77	89	92	3.4	53.3
20,000 dwt general cargo	12	24	21	19	16	20	18	24	33.3	26.3
2,500 TEU full containership	26	52	50	35	38	42	42	46	9.5	31.4

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

<sup>a</sup> Vessel sizes for different years do not always coincide completely.

Table 23

Second-hand prices for five-year-old ships, 2000–2006

(Millions of dollars, end-of-year figures)

Vessel <sup>a</sup>	2000	2001	2002	2003	2004	2005	2006	Percentage change 2006/2005	Percentage change 2006/2000
40,000 dwt tankers	27	26	24	28	40	45.0	47.5	5.6	75.9
95,000 dwt tankers	39	33	30	38	57	59.5	66.0	10.9	69.2
150,000 dwt tankers	50	43	42	48	74	76.0	85.0	11.8	70.0
<b>300,000 dwt tankers</b>	71	60	53	75	107	108.0	121.0	12.0	70.4
45,000 dwt dry bulk carrier	15	12	15	21	30	25.0	37.5	50.0	150.0
70,000 dwt dry bulk carrier	16	14	17	28	41	30.0	46.0	53.3	187.5
170,000 dwt dry bulk carrier	25	25	29	46	65	58.0	81.0	39.7	224.0

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

### **Endnotes**

- Information in this chapter is based on data on vessels of 1,000 GT and above, as the country of domicile for owners of smaller ships is not always available. Vessels of 1,000 GT and above account for 93.9 per cent (978,557 dwt) of the world total of 1,042,351 dwt for all ships of 100 GT of above.
- Information in this chapter is based on data on vessels of 100 GT and above, except where the vessel owner's country of domicile is considered. For the latter case, data are for vessels of 1,000 GT and above.

<sup>&</sup>lt;sup>a</sup> Vessel sizes for different years do not always coincide completely.