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REVIEW OF MARITIME TRANSPORT 2012

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Chapter 2



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STRUCTURE, OWNERSHIP AND REGISTRATION OF THE WORLD FLEET

This chapter presents the supply-side of the shipping industry. It covers the vessel types, age profile, ownership and registration of the world fleet. The chapter also reviews deliveries, demolitions and tonnage on order.

More than three years after the economic and financial crisis of 2008, the world fleet continued to expand during 2011, reaching more than 1.5 billion deadweight tons (dwt) in January 2012, an increase of over 37 per cent in just four years. At the same time, continued deliveries and a drastic downturn in new orders following the economic crisis has led to a reduction in the world order book by one third during the same period. The order book in early 2012 amounts to approximately 21 per cent of the existing fleet tonnage, down from about 44 per cent four years earlier.

Still largely responding to orders placed prior to the economic crisis, the major shipbuilders are reluctant to cancel or postpone deliveries. China, Japan and the Republic of Korea together built more than 93 per cent of the tonnage delivered in 2011, thus maintaining important employment in their shipyards. The resulting oversupply of ships represents a serious challenge for shipowners. Importers and exporters, on the other hand, potentially benefit from ample supply of shipping capacity to transport international seaborne trade.

Developing countries continue to expand their market share in different maritime sectors, including shipbuilding, ownership, registration, operation, scrapping and manning. One third of the world fleet is owned by shipowners in developing countries, and 12 of the top 20 container operators are from developing countries. Almost 42 per cent of the world fleet are registered in Panama, Liberia and the Marshall Islands, and more than 92 per cent of scrapping in 2011 took place in India, China, Bangladesh and Pakistan.

A. STRUCTURE OF THE WORLD FLEET

1. World fleet growth and principal vessel types

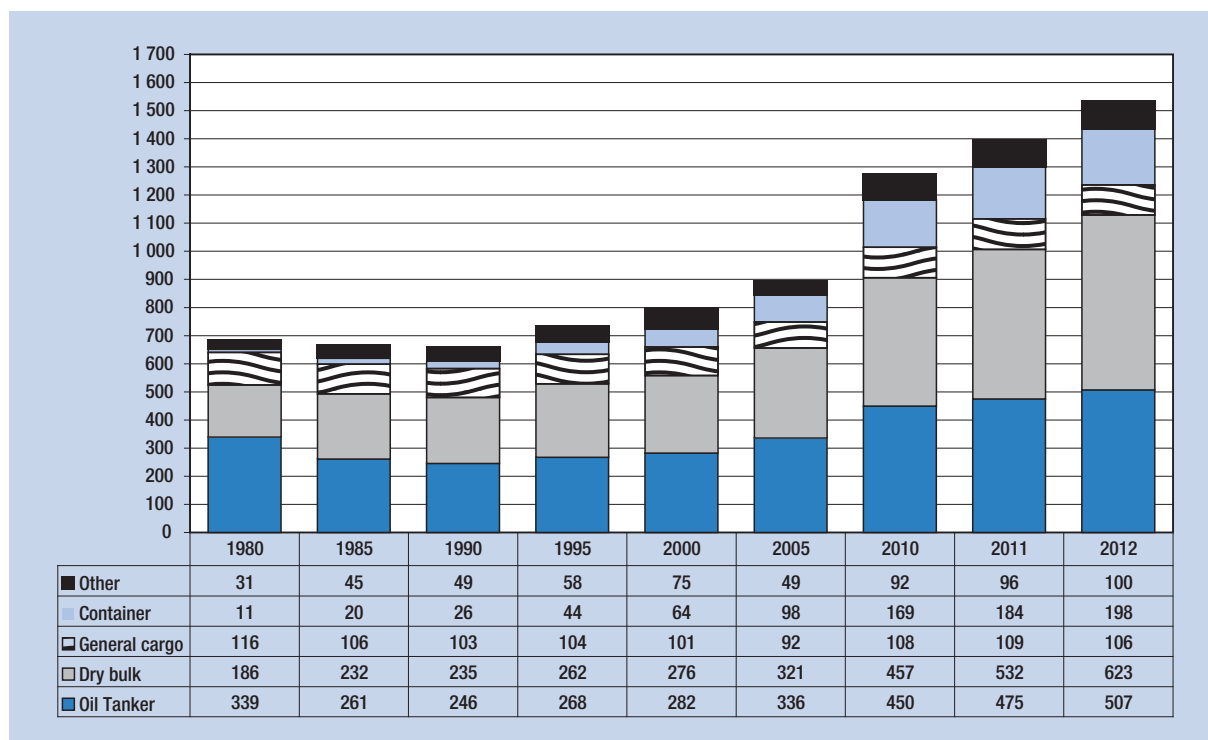
Following an annual growth of almost 10 per cent, in January 2012 the world fleet reached a total tonnage of 1,534 million dwt. At the beginning of the year, there were 104,305 seagoing commercial ships in service (see annex II). The largest growth of tonnage was in dry bulk carriers, plus 17 per cent, bringing this category to 40.6 per cent of the world total capacity; the world dry bulk fleet has surged by 60 per cent in just four years. Oil tanker capacity, which grew by 6.9 per cent, now accounts for 33.1 per cent of the world fleet. Containerships, after an increase of 7.7 per cent, make up 12.9 per cent of the world tonnage. The conventional general cargo fleet continued its relative decline, being the only major vessel type with a smaller tonnage in January 2012 than one year earlier. Since 1980, the general cargo fleet has declined by 7 per cent, while the remainder of the world fleet grew by more than 150 per cent (table 2.1, figure 2.1).

Dry bulk ships

Freight costs are an important component of the landed price of most dry bulk commodities. In order to remain competitive and maintain reasonable profit margins, distant suppliers such as Brazilian iron ore producers see the use of large ships as a prerequisite to achieve economies of scale. It may be useful to recall that transporting dry bulk in a small Handymax ship was, in March 2012, three times as expensive per ton-mile than shipping the cargo in a large Capesize bulk carrier.¹

The year 2011 saw a particularly interesting development in the dry bulk market, as a major supplier of iron ore aimed at gaining more control over the supply chain by ordering historically large vessels. To benefit from the above-mentioned economies of scale in the iron ore trade, in 2011 and early 2012 the Brazilian mining conglomerate Vale took delivery of the largest existing cargo carrying ships, the so-called Valemax ships of up to 400,000 dwt capacity.² The ships created a difficult situation for Vale, however, as permission for them to enter Chinese ports was still under discussion with Chinese authorities. Reportedly,

Figure 2.1. World fleet by principal vessel types, selected years^a (Beginning-of-year figures, millions of dwt)



Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by IHS Fairplay.

^a Seagoing propelled merchant ships of 100 gross tonnage (GT) and above.

Table 2.1. World fleet by principal vessel types, 2011–2012^a (Beginning-of-year figures, thousands of dwt; percentage share in italics)

<i>Principal types</i>	<i>2011</i>	<i>2012</i>	<i>Percentage change 2012/2011</i>
Oil tankers	474 846	507 454	6.9
	<i>34.0</i>	<i>33.1</i>	<i>-0.9</i>
Bulk carriers	532 039	622 536	17.0
	<i>38.1</i>	<i>40.6</i>	<i>2.5</i>
General cargo ships	108 971	106 385	-2.4
	<i>7.8</i>	<i>6.9</i>	<i>-0.9</i>
Container ships	183 859	198 002	7.7
	<i>13.2</i>	<i>12.9</i>	<i>-0.3</i>
Other types of ships	96 028	99 642	3.8
	<i>6.9</i>	<i>6.5</i>	<i>-0.4</i>
Liquefied gas carriers	43 339	44 622	3.0
	<i>3.1</i>	<i>2.9</i>	<i>-0.2</i>
Offshore supply	33 227	37 468	12.8
	<i>2.4</i>	<i>2.4</i>	<i>0.1</i>
Ferries and passenger ships	6 164	6 224	1.0
	<i>0.4</i>	<i>0.4</i>	<i>0.0</i>
Other/ n.a.	13 299	11 328	-14.8
	<i>1.0</i>	<i>0.7</i>	<i>-0.2</i>
World total	1 395 743	1 534 019	9.9
	<i>100.0</i>	<i>100.0</i>	

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by *IHS Fairplay*.

^a Seagoing propelled merchant ships of 100 GT and above. Percentage shares are shown in italics.

Chinese shipowners and iron ore producers opposed the entry of the Brazilian Valemax ships into Chinese ports, arguing that the operation of such large ships might not be safe, and fearing that Vale could gain monopolistic control of the supply chain for iron ore. Ports would also need to expand stockpiling capacity to store the imported ore.³

Vale is planning to take delivery of 35 such ships by the end of 2013, with a total investment of \$4.2 billion. The Valemax ships are built in shipyards in the Republic of Korea and in China. Keeping in mind the benefits of lower transport costs, energy efficiency and further

South-South trade and collaboration between Brazil and China, several industry observers expressed hope that the ban for Valemax ships to enter Chinese ports would soon be lifted.⁴ History has shown, however, that attempts by exporters to control the maritime supply chain have often been short-lived, and in the longer term the traditional shipowners may resume their role as providers of maritime transport services.

Oil tankers

The oil tanker tonnage reached more than half a billion dwt in January 2012. A part of this tonnage is used for storage, rather than for transporting oil. For example, in March 2012, the world's second-largest oil tanker was booked by Petroleo Brasileiro to be deployed as a storage facility. Increasing production in Latin America has spurred demand for more ships to store crude oil.⁵ The increase in oil stocks also reflects fears of a possible future shortage of oil – for example, due to political conflict in the Persian Gulf. In the short term, the increase in the use of ships to store oil helps to reduce the oversupply of tonnage. In the medium-term future, the release of the stored oil will reduce the demand for oil transport and at the same time will increase available tanker capacity, again resulting in an oversupply of tonnage.

Container ships

In terms of deadweight tonnage, container ships have a share of just 12.9 per cent of the world fleet. The role of container ships for global trade is, however, more important than this tonnage share would suggest, as 52 per cent of seaborne trade in dollar terms are containerized.⁶ If the deadweight tonnage share of different vessel types is compared with the share of the value of the cargo carried, on average each dwt of container ships carries 27 times more seaborne trade (in monetary terms) than a dwt of dry bulk carriers (see also table 2.5 below).

In terms of actual transport capacity, the average box-carrying capacity of container ships reached 3,074 20-foot equivalent units (TEU) in early 2012, a further increase of 6 per cent over the previous year (table 2.2). New container ships delivered in 2011 were 34 per cent larger than those delivered throughout 2010.

More than 93 per cent of the newly delivered container ships were gearless, that is, consisting of ships dependent on specialized container cranes in the ports (figure 2.2). Geared ships, which cater more for secondary ports, often in developing countries, tend to be smaller than gearless ones, which serve on the

Table 2.2. Long-term trends in the cellular container ship fleet^a

Beginning of year	Number of vessels	TEU capacity	Average vessel size (TEU)
1987	1 052	1 215 215	1 155
1997	1 954	3 089 682	1 581
2007	3 904	9 436 377	2 417
2008	4 276	10 760 173	2 516
2009	4 638	12 142 444	2 618
2010	4 677	12 824 648	2 742
2011	4 868	14 081 957	2 893
2012	5 012	15 406 610	3 074
Growth 2012/2011 (per cent)	2.96	9.41	6.26

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by IHS Fairplay.

^a Fully cellular container ships of 100 GT and above. Beginning-of-year figures, except those from 1987, which are mid-year figures.

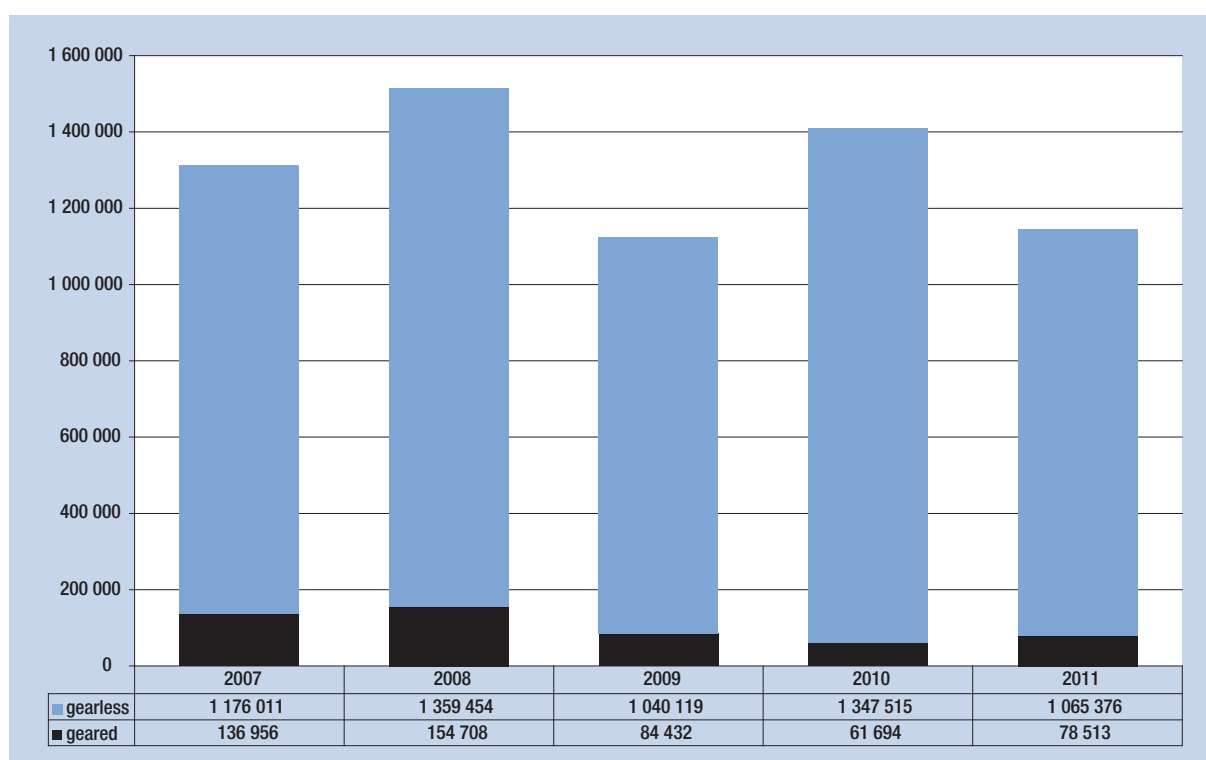
major routes for the larger volumes of containerized trade. In 2011, new geared ships were on average two fifths of the size (in TEU) of gearless ships.

In parallel with this long-term development, seaports increasingly deploy ship-to-shore gantry cranes to cater for gearless vessels. Between 2000 and

2010, the number of gantries deployed increased by 88 per cent to reach 4,900 units worldwide.⁷ For some developing countries, however, this trend poses a challenge, as their ports may not always be able to catch up with market requirements. During the same period, gantries deployed in Africa, for example, increased by just 66 per cent, reaching only 200 units in 2010. Many African ports are not yet ready to accommodate the latest gearless container ships.

Specialized ships

Owners of specialized reefer tonnage have suffered from the competition of container ships that also cater for refrigerated containers. Containers today account for about 60 per cent of reefer cargo, and new container ships increasingly include large reefer capacities.⁸ While the trend of containerization of refrigerated cargo will continue, the replacement of older dedicated reefer ships by more modern tonnage in coming years will allow a minimum fleet of these specialized vessels to be maintained. This should be able to cater for surges in demand during harvest time in many developing countries, which the regular container lines would not cover on their own.

Figure 2.2. Trends in deliveries of container ships (New container ships, in TEU, 2007–2011)

Source: Compiled by the UNCTAD secretariat, based on data provided by Lloyd's List Intelligence: www.lloydslistintelligence.com.

**Table 2.3. Age distribution of the world merchant fleet, by vessel type, as of 1 January 2012
(Percentage of total ships and dwt)**

<i>Country grouping and types of vessels</i>	<i>0–4 years</i>	<i>5–9 years</i>	<i>10–14 years</i>	<i>15–19 years</i>	<i>20 years and +</i>	<i>Average age (years) 2012</i>	<i>Average age (years) 2011</i>	<i>Percentage change 2012/2011</i>
WORLD								
Bulk carriers	33.7	14.3	11.3	12.4	28.2	13.18	15.29	-2.11
<i>Dwt</i>	41.5	16.6	11.3	13.1	17.6	10.52	12.49	-1.97
<i>Average vessel size (dwt)</i>	78 098	73 344	63 300	66 520	39 569			
Container ships	23.8	27.9	18.3	17.4	12.6	10.90	10.70	0.20
<i>Dwt</i>	32.8	31.0	16.6	12.0	7.5	8.93	8.84	0.09
<i>Average vessel size (dwt)</i>	54 465	43 915	35 837	27 267	23 718			
General cargo	11.5	10.7	8.2	11.2	58.4	23.26	24.15	-0.89
<i>Dwt</i>	21.4	13.7	11.8	10.2	42.8	18.80	20.27	-1.47
<i>Average vessel size (dwt)</i>	9 698	6 670	7 451	4 723	3 795			
Oil tankers	24.7	21.2	11.0	10.5	32.6	15.70	16.37	-0.66
<i>Dwt</i>	34.7	29.0	18.4	9.4	8.5	9.44	9.74	-0.30
<i>Average vessel size (dwt)</i>	63 483	61 884	75 896	40 588	11 756			
Other types	10.6	9.7	9.2	8.4	62.0	25.06	25.19	-0.13
<i>Dwt</i>	27.2	18.3	10.7	7.7	36.1	17.12	17.11	0.01
<i>Average vessel size (dwt)</i>	4 417	3 240	1 992	1 580	1 006			
All ships	15.1	12.5	9.9	10.0	52.6	21.90	22.49	-0.58
<i>Dwt</i>	35.8	22.5	14.3	11.2	16.2	11.51	12.59	-1.07
<i>Average vessel size (dwt)</i>	34 827	26 518	21 378	16 431	4 543			
DEVELOPING ECONOMIES								
Bulk carriers	34.9	14.3	9.9	12.1	28.8	12.96	14.99	-2.03
<i>Dwt</i>	41.4	16.0	9.5	13.2	19.8	10.81	12.77	-1.97
<i>Average vessel size (dwt)</i>	77 386	72 977	62 730	71 136	44 843			
Container ships	25.1	26.7	16.8	18.0	13.3	11.00	10.83	0.17
<i>Dwt</i>	34.7	30.7	14.6	12.3	7.7	8.80	8.71	0.10
<i>Average vessel size (dwt)</i>	51 780	43 083	32 702	25 532	21 563			
General cargo	11.5	11.3	7.5	9.1	60.5	23.31	24.07	-0.76
<i>Dwt</i>	22.1	13.4	9.8	9.8	44.8	19.00	20.39	-1.39
<i>Average vessel size (dwt)</i>	10 547	6 487	7 160	5 932	4 074			
Oil tankers	24.0	18.6	9.8	9.9	37.7	16.69	17.15	-0.45
<i>Dwt</i>	35.4	27.7	15.8	9.9	11.2	9.94	10.33	-0.38
<i>Average vessel size (dwt)</i>	65 045	65 891	71 308	44 408	13 102			
Other types	14.2	11.0	7.7	8.3	58.9	23.67	24.33	-0.65
<i>Dwt</i>	24.2	15.5	9.4	7.7	43.2	18.94	19.06	-0.11
<i>Average vessel size (dwt)</i>	3 384	2 802	2 442	1 839	1 454			
All ships	17.8	13.3	8.7	9.7	50.4	20.74	21.61	-0.87
<i>Dwt</i>	36.4	21.2	12.1	11.6	18.7	11.92	13.11	-1.19
<i>Average vessel size (dwt)</i>	35 395	27 677	24 061	20 607	6 435			
DEVELOPED ECONOMIES								
Bulk carriers	23.2	11.4	15.1	16.7	33.6	16.51	18.13	-1.62
<i>Dwt</i>	37.3	17.2	17.8	13.8	13.8	10.78	12.06	-1.28
<i>Average vessel size (dwt)</i>	94 354	88 638	69 250	48 620	24 230			
Container ships	16.3	33.5	24.7	17.0	8.4	10.84	10.28	0.56
<i>Dwt</i>	23.1	35.5	23.8	12.0	5.5	9.44	9.12	0.32
<i>Average vessel size (dwt)</i>	74 141	55 339	50 293	36 726	34 295			
General cargo	16.8	13.3	14.1	20.8	35.0	19.00	19.66	-0.66
<i>Dwt</i>	27.4	18.2	20.4	12.3	21.7	14.14	15.19	-1.04
<i>Average vessel size (dwt)</i>	7 234	6 040	6 395	2 613	2 741			

**Table 2.3. Age distribution of the world merchant fleet, by vessel type, as of 1 January 2012
(Percentage of total ships and dwt) (continued)**

<i>Country grouping and types of vessels</i>	<i>0–4 years</i>	<i>5–9 years</i>	<i>10–14 years</i>	<i>15–19 years</i>	<i>20 years and +</i>	<i>Average age (years) 2012</i>	<i>Average age (years) 2011</i>	<i>Percentage change 2012/2011</i>
Oil tankers	21.5	29.1	15.1	16.7	17.6	13.47	13.67	-0.20
<i>Dwt</i>	27.9	37.5	23.8	8.5	2.3	8.45	8.18	0.27
Average vessel size (dwt)	57 139	56 766	69 511	22 286	5 730			
Other types	8.1	10.2	13.3	9.6	58.7	24.96	24.91	0.04
<i>Dwt</i>	21.8	24.1	18.8	10.9	24.4	15.02	15.49	-0.47
Average vessel size (dwt)	2 789	2 454	1 467	1 185	434			
All ships	10.8	12.6	13.6	11.9	51.1	22.54	22.66	-0.12
<i>Dwt</i>	28.3	29.9	20.7	10.3	10.7	10.49	10.78	-0.29
Average vessel size (dwt)	20 949	18 961	12 106	6 846	1 675			
COUNTRIES WITH ECONOMIES IN TRANSITION								
Bulk carriers	35.0	5.9	4.2	13.7	41.2	15.73	17.99	-2.26
<i>Dwt</i>	34.1	6.9	5.9	17.3	35.8	15.06	17.33	-2.27
Average vessel size (dwt)	37 094	44 555	55 500	48 770	37 922			
Container ships	14.5	20.3	6.3	23.8	35.2	16.16	15.95	0.22
<i>Dwt</i>	21.0	33.1	2.5	16.0	27.4	13.30	12.35	0.94
Average vessel size (dwt)	40 165	42 901	10 454	17 638	21 347			
General cargo	7.5	10.9	6.3	8.9	66.4	24.19	24.68	-0.49
<i>Dwt</i>	10.1	9.7	5.5	5.8	68.9	24.34	25.68	-1.34
Average vessel size (dwt)	4 713	2 980	2 987	1 932	4 098			
Oil tankers	18.1	14.8	5.5	8.2	53.3	20.76	22.19	-1.43
<i>Dwt</i>	38.4	30.0	6.8	10.9	13.8	10.04	10.97	-0.93
Average vessel size (dwt)	41 006	38 211	25 681	22 196	5 051			
Other types	7.1	6.7	3.9	7.4	74.9	25.69	25.71	-0.02
<i>Dwt</i>	37.6	29.1	7.2	9.2	17.0	10.57	11.55	-0.98
Average vessel size (dwt)	41 006	38 211	25 681	22 196	5 051			
All ships	11.7	9.6	5.1	9.2	64.4	23.21	23.90	-0.69
<i>Dwt</i>	31.3	17.9	6.0	12.9	31.9	14.84	16.24	-1.41
Average vessel size (dwt)	29 687	21 209	14 351	19 149	10 267			
TEN MAJOR OPEN AND INTERNATIONAL REGISTRIES								
Bulk carriers	38.0	16.9	11.6	11.8	21.6	11.20	13.08	-1.89
<i>Dwt</i>	43.2	18.0	10.5	12.4	15.9	9.75	11.49	-1.73
Average vessel size (dwt)	82 215	76 751	65 422	75 977	53 264			
Container ships	26.2	30.0	17.5	16.9	9.4	9.86	9.61	0.25
<i>Dwt</i>	35.8	30.6	14.9	11.6	7.0	8.40	8.28	0.12
Average vessel size (dwt)	54 691	40 978	34 341	27 591	29 737			
General cargo	18.6	13.9	12.2	12.0	43.3	17.90	18.58	-0.68
<i>Dwt</i>	27.0	15.7	13.4	10.0	33.8	15.20	16.21	-1.01
Average vessel size (dwt)	14 264	11 140	10 834	8 236	7 680			
Oil tankers	35.9	29.7	14.9	7.1	12.4	9.53	9.81	-0.29
<i>Dwt</i>	35.4	28.1	20.7	9.1	6.8	8.80	9.14	-0.33
Average vessel size (dwt)	77 377	74 168	109 146	99 893	42 802			
Other types	23.6	12.6	10.6	7.0	46.2	19.72	20.49	-0.77
<i>Dwt</i>	32.2	17.9	9.1	5.6	35.2	16.09	15.84	0.25
Average vessel size (dwt)	17 049	17 780	10 687	10 034	9 507			
All ships	28.9	19.5	12.9	10.8	27.9	13.88	14.79	-0.92
<i>Dwt</i>	38.3	22.8	14.5	10.7	13.8	10.16	11.10	-0.93
Average vessel size (dwt)	57 487	50 618	48 467	43 152	21 396			

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by IHS Fairplay.
^a Seagoing propelled merchant ships of 100 GT and above.

The supply–demand balance is more favourable for shipowners of product tankers, for which fewer orders have been placed in recent years, but demand has increased due to longer distances between regions of supply and demand.

Regarding other types of specialized ships, offshore supply vessels continued to grow in 2011 at an above-average rate (plus 12.8 per cent), reaching a share of 2.4 per cent of the world fleet in January 2012. Offshore specialized ships have been in growing demand, notably in Nigeria, Ghana and other Western African countries, where oil exploration has recently expanded.

2. Age distribution of the world merchant fleet

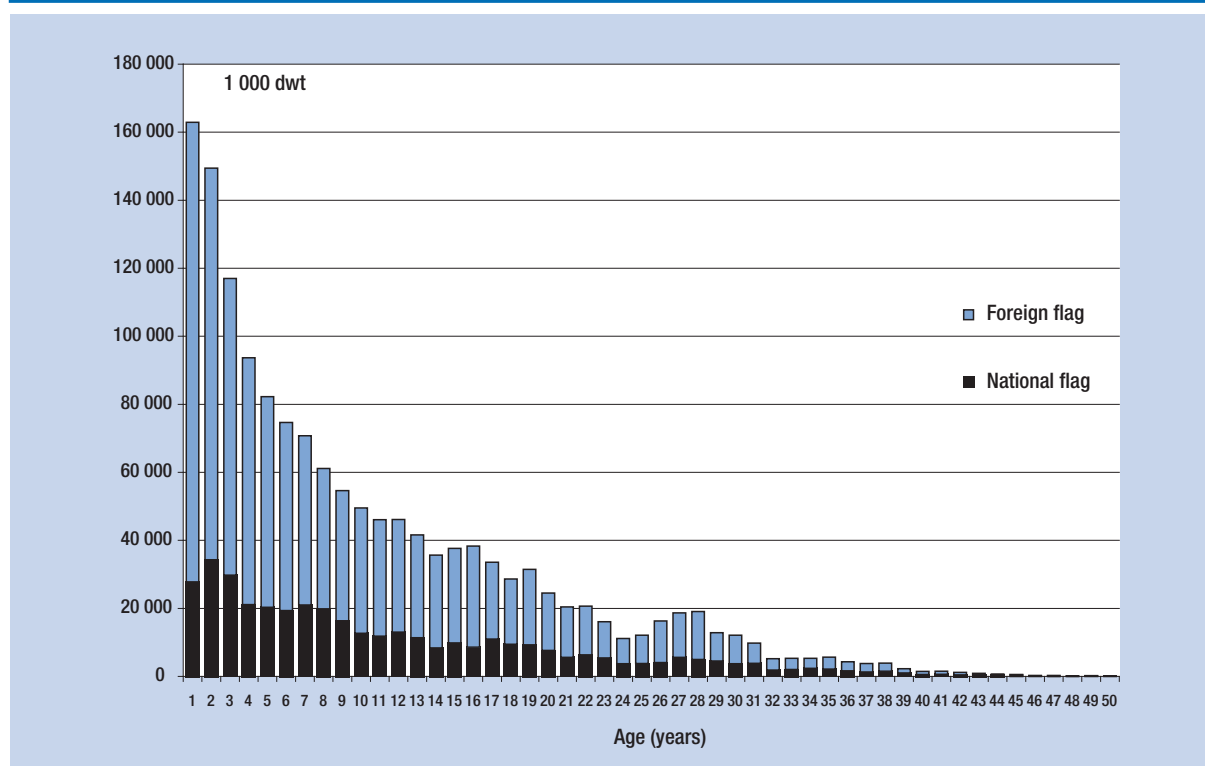
The average age of the world fleet decreased slightly during 2011 as a result of continued newbuilding deliveries and increased demolitions. In January 2012, the average age of the fleet per dwt was 11.5 years, while the average age per vessel was almost twice as high at 21.9 years, indicating that older ships tend to be much smaller (table 2.3). An impressive 41.5 per cent of dry bulk tonnage is less than five years old,

following the historical spree of new construction of the last few years. Container ships continue to be the youngest market segment, with an average age per dwt of below nine years, and almost 64 per cent of the fleet younger than 10 years. The oldest ships continue to be general cargo and other types of vessels, with about three out of five ships being older than 20 years.

Among country groupings, the major open registries continued to have the youngest fleet, after recording a further reduction in the average age, from 11.1 to 10.2 years per dwt. The modernization of the open registry fleet is also reflected in the particularly high share of foreign-flagged ships among the 2011 deliveries (figures 2.3 and 2.4).

The recent growth of the world fleet is illustrated in figure 2.3. In spite of the economic crisis of 2008–2009, more tonnage was added to the world fleet in 2010 and 2011 than in any previous year, this fact resulting from orders placed prior to the economic crisis (see also figure 2.9). The high volume of one-year-old tonnage also explains the reduction in the average age of the fleet (table 2.3). Most of the additions to the world fleet during 2011 were registered under foreign flags.

Figure 2.3. Age structure of world fleet, national and foreign flags (Thousands of dwt)



Source: Compiled by the UNCTAD secretariat, on the basis of data from *IHS Fairplay*, for vessels of 1000 GT and above.

3. Domestic shipping

Apart from international seaborne trade, domestic shipping is an important additional source of employment for ships, and policy makers frequently aim at supporting coastal maritime transport because of the environmental benefits of reducing the cargo moved by road. Demand for intra-country (cabotage) shipping has helped to absorb some of the new tonnage that entered into service in 2011. For example, about 10 per cent of smaller dry bulk carriers built in China are deployed exclusively in Chinese cabotage.⁹

Cabotage shipping is not governed by most of the international maritime regulations, such as the phasing out of single-hull tankers. Nigerian shipowners, for example, mostly deploy single-hull tankers for the coastal transport of oil.¹⁰ Vessels deployed in cabotage services are also often older than the internationally deployed fleet; in the United States, for example, more than half of the cabotage fleet is older than 25 years.¹¹ The dry bulk fleet owned by Chinese interests includes about 50 per cent more ships of 25 years and older than the world average, which is mostly due to its deployment in coastal shipping.¹²

In many countries, cabotage is reserved for nationally flagged ships, which reduces competition from foreign providers. In order to further promote coastal shipping and benefit from more competitive maritime transport services, some countries are considering opening certain cabotage services to non-national operators. For the case of India, for example, it has been argued that a relaxation of the cabotage restrictions would help promote trans-shipment in Indian ports.¹³ In Nigeria, the issuance of waivers for foreign providers of cabotage services has in practice become the rule rather than an exception.¹⁴ Other countries have chosen to maintain a more restrictive policy, with a view to promoting national shipbuilding and the employment of national seafarers. Indonesia, for example, is reportedly considering prohibiting the import of older ships for cabotage services, hoping that this will increase the demand for shipbuilding in Indonesian yards.¹⁵

B. OWNERSHIP AND OPERATION OF THE WORLD FLEET

1. Ship-owning countries

Among the top 35 ship-owning economies, there are 17 in Asia, 14 in Europe and 4 in the Americas

(table 2.4). Practically half of the world tonnage (49.7 per cent) is owned by shipping companies from just four countries – Greece, Japan, Germany and China. Owners from Bermuda, Brazil and the Isle of Man specialize mostly in large ships, notably tankers and dry bulk carriers. Owners from Indonesia, the Russian Federation and Viet Nam have a large number of smaller ships, including vessels deployed in coastal and inter-island services.

Table 2.5 depicts the major ship-owning countries and their share in different market segments (in dwt percentage share), as well as an estimation of their share in the transport of global seaborne trade (in \$ percentage share). Containerized cargo accounts for an estimated 52 per cent of the value of global seaborne trade and countries with a high share of containerized tonnage will thus also have a high share in global seaborne trade that is transported by their nationally owned ships.

As the largest owner of ship containerized tonnage, Germany (37 per cent of the container ship fleet) becomes the country whose ships also account for the largest share (more than 23 per cent) of global seaborne trade carried. The second largest shipowner is Japan with a share of 11.2 per cent of global seaborne trade carried, followed by Greece (9.8 per cent), China (7.5 per cent) and Denmark (5.6 per cent).

Ownership of the fleet does not necessarily imply that the ship-owning countries effectively operate or control the shipping operations. In particular, the German-owned container ships are frequently chartered out to liner shipping operators based in other countries, such as Maersk (Denmark), MSC (Switzerland) or CSAV (Chile). Neither would there necessarily exist a relationship between a country's own foreign trade and its fleet ownership. Previous analysis indicates that oil-exporting countries are more likely to own the oil tankers used for their own national exports, while the exporters of containerized cargo are much less likely to own the container ships used for their own foreign trade.¹⁶

2. Container shipping operators

The top 20 carriers

The largest container ship operators in January 2012 continue to be Maersk Line (Denmark), MSC (Switzerland) and CMA CGM (France). Together, these three companies operate almost 30 per cent of the global container carrying capacity (in TEU), reflecting the continued process of industry concentration of the last few years. Compared with January 2011,

Table 2.4. The 35 countries and territories with the largest owned fleets, as of 1 January 2012^a (Dwt)

Country or territory of ownership ^b	Number of vessels			Deadweight tonnage			Foreign flag as a percentage of total	Estimated market share 1 January 2012
	National flag ^c	Foreign flag	Total	National flag ^c	Foreign flag	Total		
Greece	738	2 583	3 321	64 921 486	159 130 395	224 051 881	71.02	16.10
Japan	717	3 243	3 960	20 452 832	197 210 070	217 662 902	90.60	15.64
Germany	422	3 567	3 989	17 296 198	108 330 510	125 626 708	86.23	9.03
China	2 060	1 569	3 629	51 716 318	72 285 422	124 001 740	58.29	8.91
Korea, Republic of	740	496	1 236	17 102 300	39 083 270	56 185 570	69.56	4.04
United States	741	1 314	2 055	7 162 685	47 460 048	54 622 733	86.89	3.92
China, Taiwan Province of	470	383	853	28 884 470	16 601 518	45 485 988	36.50	3.27
Norway	851	1 141	1 992	15 772 288	27 327 579	43 099 867	63.41	3.10
Denmark	394	649	1 043	13 463 727	26 527 607	39 991 334	66.33	2.87
Chinese Taipei	102	601	703	4 076 815	34 968 474	39 045 289	89.56	2.81
Singapore	712	398	1 110	22 082 648	16 480 079	38 562 727	42.74	2.77
Bermuda	17	251	268	2 297 441	27 698 605	29 996 046	92.34	2.16
Italy	608	226	834	18 113 984	6 874 748	24 988 732	27.51	1.80
Turkey	527	647	1 174	8 554 745	14 925 883	23 480 628	63.57	1.69
Canada	205	251	456	2 489 989	19 360 007	21 849 996	88.60	1.57
India	455	105	560	15 276 544	6 086 410	21 362 954	28.49	1.53
Russian Federation	1 336	451	1 787	5 410 608	14 957 599	20 368 207	73.44	1.46
United Kingdom	230	480	710	2 034 570	16 395 185	18 429 755	88.96	1.32
Belgium	97	180	277	6 319 103	8 202 208	14 521 311	56.48	1.04
Malaysia	432	107	539	9 710 922	4 734 174	14 445 096	32.77	1.04
Brazil	113	59	172	2 279 733	11 481 795	13 761 528	83.43	0.99
Saudi Arabia	75	117	192	1 852 378	10 887 737	12 740 115	85.46	0.92
Netherlands	576	386	962	4 901 301	6 799 943	11 701 244	58.11	0.84
Indonesia	951	91	1 042	9 300 711	2 292 255	11 592 966	19.77	0.83
Iran	67	71	138	829 704	10 634 685	11 464 389	92.76	0.82
France	188	297	485	3 430 417	7 740 496	11 170 913	69.29	0.80
United Arab Emirates	65	365	430	609 032	8 187 103	8 796 135	93.08	0.63
Cyprus	62	152	214	2 044 256	5 092 849	7 137 105	71.36	0.51
Viet Nam	477	79	556	4 706 563	1 988 446	6 695 009	29.70	0.48
Kuwait	44	42	86	3 956 910	2 735 309	6 692 219	40.87	0.48
Sweden	99	208	307	1 070 563	5 325 853	6 396 416	83.26	0.46
Isle of Man	6	38	44	226 810	6 131 401	6 358 211	96.43	0.46
Thailand	277	67	344	3 610 570	1 542 980	5 153 550	29.94	0.37
Switzerland	39	142	181	1 189 376	3 700 886	4 890 262	75.68	0.35
Qatar	48	37	85	881 688	3 745 663	4 627 351	80.95	0.33
Total top 35 economies	14 941	20 793	35 734	374 029 685	952 927 192	1 326 956 877	71.81	95.34
Other owners	2 172	1 816	3 988	22 491 261	42 344 181	64 835 442	65.31	4.66
Total of known economy of ownership	17 113	22 609	39 722	396 520 946	995 271 373	1 391 792 319	71.51	100.00
Others, unknown economy of ownership			7 179			126 317 184		
World Total			46 901			1 518 109 503		

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by IHS Fairplay.

^a Vessels of 1000 GT and above, ranked by deadweight tonnage – excluding the United States Reserve Fleet and the United States and Canadian Great Lakes fleets (which have a combined tonnage of 5.3 million dwt).

^b The country of ownership indicates where the true controlling interest (that is, the parent company) of the fleet is located. In several cases, determining this has required making certain judgements. Thus, for example, 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 second registries such as the Danish International Ship Register (DIS), the Norwegian International Ship Register (NIS) or the French International Ship Register (FIS).

Table 2.5. Countries/territories of ownership, by main vessel types (Dwt and dollars as percentages, January 2012 estimates)

	Total	Germany	Japan	Greece	China	Denmark	China Taiwan, Province of	Norway	Korea, Republic of	Singapore	China, Hong Kong SAR	United States	Canada	Russian Federation	Turkey	Netherlands	Italy	United Kingdom	All other economies
<i>Estimated share of world fleet (dwt), by main vessel type</i>																			
Container	100	37.0	8.8	6.8	6.3	8.8	4.8	0.3	3.2	3.3	2.2	1.5	2.3	0.2	0.6	0.4	0.1	0.4	13.1
Dry bulk	100	4.8	22.7	19.9	14.0	1.1	3.4	1.4	6.3	2.0	4.5	3.1	0.4	0.3	2.1	0.2	1.5	0.9	11.3
Tankers	100	4.6	12.5	20.8	5.2	3.4	1.7	3.4	2.8	3.9	3.0	5.0	1.8	2.8	1.6	0.8	2.7	2.2	21.7
General cargo	100	13.3	12.4	2.4	11.0	1.1	1.6	12.0	2.3	1.4	1.8	1.0	0.2	3.7	3.4	4.5	2.2	2.0	23.7
<i>Estimated share of global seaborne trade (\$), carried by nationally owned ships, by main vessel type</i>																			
Container	52	19.2	4.6	3.5	3.3	4.6	2.5	0.2	1.7	1.7	1.1	0.8	1.2	0.1	0.3	0.2	0.0	0.2	6.8
Dry bulk	6	0.3	1.4	1.2	0.8	0.1	0.2	0.1	0.4	0.1	0.3	0.2	0.0	0.0	0.1	0.0	0.1	0.1	0.7
Tankers	22	1.0	2.7	4.6	1.1	0.7	0.4	0.7	0.6	0.9	0.7	1.1	0.4	0.6	0.4	0.2	0.6	0.5	4.8
General cargo	20	2.7	2.5	0.5	2.2	0.2	0.3	2.4	0.5	0.3	0.4	0.2	0.0	0.7	0.7	0.9	0.4	0.4	4.7
TOTAL	100	23.2	11.2	9.8	7.5	5.6	3.4	3.4	3.1	3.0	2.4	2.3	1.6	1.5	1.4	1.3	1.2	1.2	17.0

Source: Estimations by the UNCTAD secretariat, on the basis of data supplied by *IHS Fairplay* (world fleet) and the World Shipping Council (share of seaborne trade by vessel type).

the largest growth was recorded by MOL (Japan), with an increase in TEU of 23.6 per cent, followed by CSCL (China, 20.9 per cent increase) and Hapag-Lloyd (Germany, 15.8 per cent increase). The largest decline in capacity was recorded by CSAV (Chile), which saw its operated TEU decrease by 9.1 per cent (table 2.6).

Financial performance

As a consequence of the continued oversupply of tonnage, which effectively continued to worsen throughout 2011, most carriers incurred important financial losses. The container shipping companies' combined loss was estimated at over \$5 billion in 2011, following a profit of \$17 billion in 2010, and a loss of \$19 billion in 2009.¹⁷ A loss of \$1.7 billion in 2011 was reported by COSCO (including non-container shipping businesses), CSAV reported a loss of \$1.2 billion, CMA CGM \$30 million, Hanjin \$730 million, and NOL \$478 million. The year 2012 does not appear to be more positive. During the first quarter of 2012, CSAV reported a loss of \$205 million, Hanjin of \$208 million, Hapag-Lloyd of \$172 million, Maersk Line of \$599 million and NOL of \$254 million.¹⁸ Confronted with such a bleak picture, many industry observers expect a surge in bankruptcies in coming years, as banks "are seeking to recover what they can from a debacle they helped to create".¹⁹

Investing in circles

Carriers have invested in ever larger ships to benefit from economies of scale. The pressure to reduce costs is increased by historically low freight rates. However, building more and larger ships also adds to the general oversupply of capacity, thus putting further downward pressure on the freight rates. While an investment in larger ships may make sense for an individual company, for the industry as a whole this actually leads to a vicious cycle of more oversupply of tonnage and a further worsened financial performance. From the clients' perspective this pattern could also be considered as a virtuous cycle, where technological progress and energy efficiency help to reduce transport costs, which in turn help to promote trade and investment in larger and more energy-efficient ships.

Not all carriers have shown procyclical investment patterns. Evergreen, which in recent years had been the only major carrier that had not expanded and invested in ultralarge container ships, has in early 2012 placed an order for 10 vessels of 13,800 TEU each, this being the highest capacity range of container ships. The new container ships are reportedly to be among the most energy efficient ever built. Combined with other orders for new tonnage, Evergreen's order book in May 2012 amounted to 62 per cent of its existing fleet, pointing to an ambitious anticyclical expansion plan.²⁰

Table 2.6. The 20 leading service operators of container ships, 1 January 2012 (Number of ships and total shipboard capacity deployed, in TEUs)

Ranking (TEU)	Operator	Country/ territory	Number of vessels	Average vessel size	TEU	Share of world total, TEU (percentage)	Cumulated share, TEU (percentage)	Growth in TEU over 2011 (percentage)
1	Maersk Line	Denmark	453	4 646	2 104 825	11.8	11.8	15.6
2	MSC	Switzerland	432	4 688	2 025 179	11.3	23.1	14.9
3	CMA CGM Group	France	290	4 004	1 161 141	6.5	29.5	8.5
4	APL	Singapore	144	4 168	600 168	3.4	32.9	1.4
5	COSCO	China	145	4 304	624 055	3.5	36.4	10.3
6	Evergreen Line	China, Taiwan Province of	159	3 590	570 843	3.2	39.6	-3.9
7	Hapag-Lloyd Group	Germany	145	4 476	648 976	3.6	43.2	15.8
8	CSCL	China	124	4 493	557 168	3.1	46.3	20.9
9	Hanjin	Korea, Republic of	101	4 927	497 641	2.8	49.1	11.2
10	MOL	Japan	107	4 194	448 727	2.5	51.6	23.6
11	OOCL	China, Hong Kong SAR	88	4 516	397 433	2.2	53.8	6.1
12	Zim	Israel	82	3 708	304 074	1.7	55.5	8.0
13	HMM	Korea, Republic of	70	4 497	314 770	1.8	57.3	10.4
14	NYK	Japan	93	4 129	383 964	2.1	59.4	8.8
15	Yang Ming	China, Taiwan Province of	84	4 089	343 476	1.9	61.3	6.4
16	Hamburg Sud	Germany	99	3 728	369 057	2.1	63.4	10.0
17	K Line	Japan	79	4 336	342 572	1.9	65.3	-1.6
18	CSAV	Chile	85	4 095	348 035	1.9	67.2	-9.1
19	PIL	Singapore	104	2 279	236 978	1.3	68.6	-0.5
20	Wan Hai Lines Limited	China, Taiwan Province of	89	2 080	185 146	1.0	69.6	8.8
Total top 20 carriers			2 973	3 979	12 464 228	69.6	69.6	10.0
Others			7 093	768	5 445 054	30.3	30.4	10.7
World container ship fleet			10 066	1 678	17 909 282	100.0	100.0	10.2

Source: UNCTAD secretariat, based on data provided by *Lloyd's List Intelligence*: www.lloydslistintelligence.com.

Note: Includes all container carrying ships. Not fully comparable to table 2.2, which covers only the specialized fully cellular container ships.

Consolidation and restructuring

Lines are taking different approaches to confront losses. The Malaysian shipping company MISC has effectively discontinued its container activities and now focuses solely on dry and liquid bulk. The Chilean carrier CSAV has in 2012 drastically modified its strategy, increasing the share of jointly operated services from 30 to more than 90 per cent and increasing the share of owned versus chartered-in tonnage.²¹ Zim (Israel) is in negotiations with creditors to obtain additional funding and with shipyards to delay the delivery of previously ordered ships. Reports suggest that both CMA CGM and MSC are considering selling stakes in port operation businesses.

Several industry representatives suggest that further mergers among shipping lines can be expected and

would be positive for carrier profitability; proposed candidates for mergers were, for example, the three largest Japanese lines.²² Some analysts predict that the major East–West companies “will shrink to 7 to 10 carriers by the mid-2020s”.²³ All major shipping lines have in recent years increased vessel-sharing arrangements with other carriers, and two major alliances – the Grand Alliance and the New World Alliance – have joined forces to form the new G6 Alliance.²⁴ Feeder operators have also created alliances among themselves to better defend themselves against competition from the larger shipping lines.²⁵

Several lines sought support from the public sector. The French CMA CGM has reportedly “approached a French sovereign wealth fund”.²⁶ The China Shipowners’ Association reportedly demanded carriers to seek government support and set freight

Table 2.7. The 35 flags of registration with the largest registered deadweight tonnage (ranked by deadweight tonnage), as of 1 January 2012^a

Flag of registrations	Number of vessels	Deadweight tonnage, in thousands dwt	Average vessel size, dwt	Share of world total, dwt (per cent)	Cumulated share, dwt (per cent)	Tonnage registered for foreign owners in thousands dwt	Per cent of tonnage owned by foreigners	Dwt growth 2012/2011, (per cent)
Panama	8 127	328 210	40 385	21.39	21.39	328 112	99.97	7.25
Liberia	3 030	189 911	62 677	12.38	33.77	189 911	100.00	14.24
Marshall Islands	1 876	122 857	65 489	8.01	41.78	122 857	100.00	24.40
China, Hong Kong SAR	1 935	116 806	60 365	7.61	49.40	87 907	75.26	27.33
Singapore	2 877	82 084	28 531	5.35	54.75	59 910	72.99	21.99
Greece	1 386	72 558	52 351	4.73	59.48	7 520	10.36	1.59
Malta	1 815	71 287	39 277	4.65	64.12	71 241	99.94	16.30
Bahamas	1 409	69 105	49 046	4.50	68.63	68 620	99.30	2.43
China	4 148	58 195	14 030	3.79	72.42	5 983	10.28	10.34
Cyprus	1 022	32 986	32 276	2.15	74.57	30 940	93.80	2.06
Japan	5 619	23 572	4 195	1.54	76.11	398	1.69	6.18
Isle Of Man	410	22 542	54 980	1.47	77.58	22 315	98.99	16.06
Italy	1 667	21 763	13 055	1.42	79.00	3 523	16.19	11.95
Republic Of Korea	2 916	19 157	6 570	1.25	80.25	1 460	7.62	-4.95
United Kingdom	1 662	18 664	11 230	1.22	81.46	16 615	89.02	9.80
Norway (NIS)	535	17 896	33 450	1.17	82.63	3 248	18.15	-0.94
Germany	868	17 482	20 141	1.14	83.77	123	0.70	-0.48
India	1 443	16 141	11 186	1.05	84.82	668	4.14	5.65
Antigua and Barbuda	1 322	14 402	10 894	0.94	85.76	14 402	100.00	3.67
Denmark (DIS)	534	13 846	25 929	0.90	86.66	372	2.69	-3.20
Indonesia	6 332	13 512	2 134	0.88	87.54	3 483	25.78	11.63
United States	6 461	11 997	1 857	0.78	88.32	4 585	38.22	-5.25
Bermuda	164	11 598	70 722	0.76	89.08	9 301	80.19	6.80
Malaysia	1 449	10 895	7 519	0.71	89.79	990	9.09	1.58
Turkey	1 360	9 535	7 011	0.62	90.41	710	7.45	9.03
Netherlands	1 382	8 279	5 991	0.54	90.95	3 338	40.31	17.67
France (FIS)	161	7 973	49 521	0.52	91.47	4 980	62.47	1.17
Russian Federation	3 362	7 413	2 205	0.48	91.95	1 632	22.01	0.18
Philippines	1 995	6 694	3 355	0.44	92.39	5 834	87.16	-3.63
Belgium	235	6 663	28 352	0.43	92.83	326	4.90	-2.02
Viet Nam	1 525	6 072	3 982	0.40	93.22	845	13.92	2.94
Saint Vincent and the Grenadines	857	5 636	6 577	0.37	93.59	5 636	100.00	-15.89
China, Taiwan Province of	906	4 328	4 777	0.28	93.87	147	3.40	0.43
Thailand	850	4 249	4 999	0.28	94.15	398	9.36	-6.90
Kuwait	206	3 976	19 301	0.26	94.41	1	0.02	32.27
Total top 35 flags of registration	71 846	1 448 285	20 158	94.41	94.41	1 082 977		10.65
World total	104 305	1 534 019	14 707	100.00	100.00	1 133 417		9.91

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by IHS Fairplay.

^a Seagoing propelled merchant ships of 100 GT and above; ranked by deadweight tonnage.

rates jointly.²⁷ The German Federal State of Hamburg has increased its share in Hapag-Lloyd, to avoid that the company would “fall victim to a global monopoly”.²⁸

Container ships are often owned by charterers, that is, companies that do not themselves provide the liner shipping service, but rather charter their vessels out to the operators. Many of these charterer owners have been under financial pressure and some were forced to auction their ships.²⁹ Such sales, however, will not withdraw the capacity from the market.

C. REGISTRATION OF SHIPS

1. Flags of registration

The year 2011 saw a further increase in the use of open registries. Among the tonnage delivered in 2011, an estimated 83 per cent was registered abroad (figure 2.3), and an estimated 71.5 per cent of the world tonnage is now registered under a foreign flag, that is, vessels operate under a different flag to that of the nationality of the owner (figure 2.4). Accordingly, the growth of most of the major flags of registration was higher than the growth of the total fleet. The registries of Hong Kong, China (plus 27.3 per cent), the Marshall

Islands (plus 24.4 per cent) and Singapore (plus 22 per cent) saw particularly impressive increases in their fleets (table 2.7).

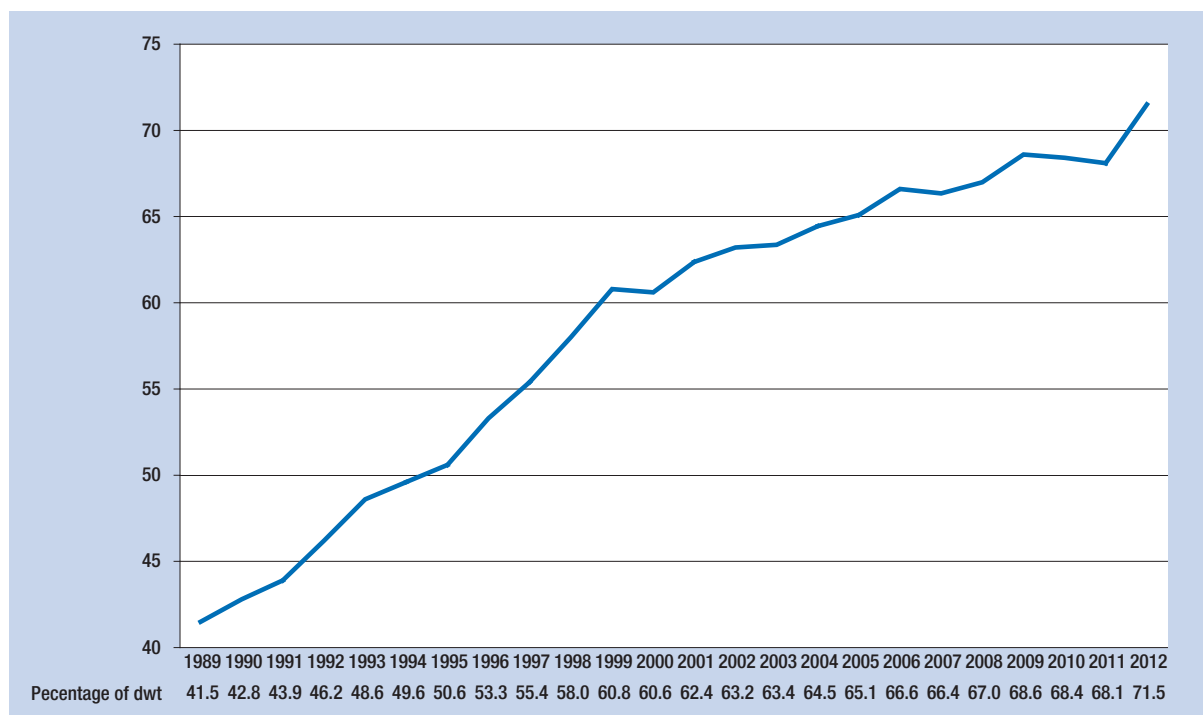
A process of concentration is also observed in this maritime sector. Among the different country groupings, the 10 major open registries continued to expand their market share, amounting to 56.6 per cent in January 2012. The open-registry fleet has its highest share in bulk carriers (61.3 per cent). The share of the fleet registered in the developing countries of Asia also experienced a positive growth, while all other country groupings saw their market share decline between 2011 and 2012 (table 2.8).

2. Nationality of controlling interests

As vessel registries compete for business, the traditional distinction between open flags of registration as compared with flags that cater only for national owners becomes increasingly blurred. As illustrated in figure 2.5, today, almost all registries cater for national and foreign owners.

Among the top 30 flags of registration, three cater exclusively for foreign-owned tonnage, notably Liberia, the Marshall Islands, and Antigua and

Figure 2.4. Global share of foreign-flagged fleet^a (Beginning-of-year figures, percentage dwt, 1989–2012)



Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by *IHS Fairplay*.

^a Estimate based on available information of commercial seagoing vessels of 1000 GT and above.

Table 2.8. Distribution of dwt capacity of vessel types, by country group of registration, 2012^a (Percentage change 2012/2011 in italics)

	Total fleet	Oil tankers	Bulk carriers	General cargo	Container ships	Other types
World total	100.00	100.00	100.00	100.00	100.00	100.00
Developed countries	15.85	18.32	10.15	18.02	22.75	22.85
	<i>-1.11</i>	<i>-1.10</i>	<i>-0.80</i>	<i>0.34</i>	<i>-1.23</i>	<i>-0.96</i>
Countries with economies in transition	0.82	0.79	0.33	4.23	0.08	1.85
	<i>-0.11</i>	<i>-0.02</i>	<i>-0.08</i>	<i>-0.30</i>	<i>-0.01</i>	<i>-0.11</i>
Developing countries	26.41	24.86	28.14	35.17	21.17	24.58
	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
Of which:						
Africa	0.65	0.75	0.29	2.25	0.11	1.77
	<i>-0.03</i>	<i>0.03</i>	<i>-0.06</i>	<i>0.15</i>	<i>0.00</i>	<i>-0.01</i>
America	1.52	1.82	0.90	4.17	0.42	3.26
	<i>-0.12</i>	<i>-0.01</i>	<i>-0.16</i>	<i>0.00</i>	<i>0.05</i>	<i>-0.23</i>
Asia	23.87	22.00	26.60	28.05	20.60	18.39
	<i>1.07</i>	<i>1.21</i>	<i>1.30</i>	<i>0.08</i>	<i>0.49</i>	<i>0.13</i>
Oceania	0.37	0.30	0.35	0.69	0.03	1.16
	<i>-0.01</i>	<i>0.12</i>	<i>-0.11</i>	<i>-0.11</i>	<i>0.01</i>	<i>0.02</i>
Other, unallocated	0.30	0.18	0.12	1.55	0.06	1.24
	<i>-0.21</i>	<i>-0.06</i>	<i>-0.19</i>	<i>-1.06</i>	<i>-0.07</i>	<i>-0.09</i>
Ten major open registries^b	56.62	55.85	61.27	41.04	55.93	49.48
	<i>0.52</i>	<i>-0.17</i>	<i>0.10</i>	<i>0.89</i>	<i>0.75</i>	<i>1.24</i>

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by IHS Fairplay.

^a Seagoing propelled merchant ships of 100 GT and above.

^b There exists no clear definition of the term major open registries. The 10 major open and international registries have been grouped by UNCTAD to include the 10 largest fleets with more than 90 per cent foreign-controlled tonnage in 2007 (see annex II for the list of registries). The composition of this list has been kept constant to allow for year-to-year comparisons. Note, however, that the market shares and the percentage of foreign controlled tonnage changes from year to year (see also figure 2.5 for an estimated share of foreign-controlled tonnage for the top 30 flags of registration).

Barbuda. The flags of Panama, Malta, the Bahamas and the Isle of Man are also used by a small number of national shipowners, although the majority of users of these flags are foreign. Other flags for which more than 50 per cent of the tonnage is owned by foreign nationals are those of Cyprus, the United Kingdom, the Philippines, Bermuda, Hong Kong (China), Singapore and France (including the international registry FIS). In the case of the Netherlands and the United States, approximately two out of every five owners are foreign. The flags of Belgium, India, Denmark (including DIS), Japan and Germany are almost exclusively used by national owners.

Figures 2.6 and 2.7 and annex III combine data on the top 35 ship-owning countries (table 2.4) with information on the top 35 flags of registration (table 2.7). Most owners from Japan and the Republic of Korea register their tonnage under the flag of Panama, while the most common flag of choice for German owners is Liberia. Owners from the United States are most likely to register their tonnage under

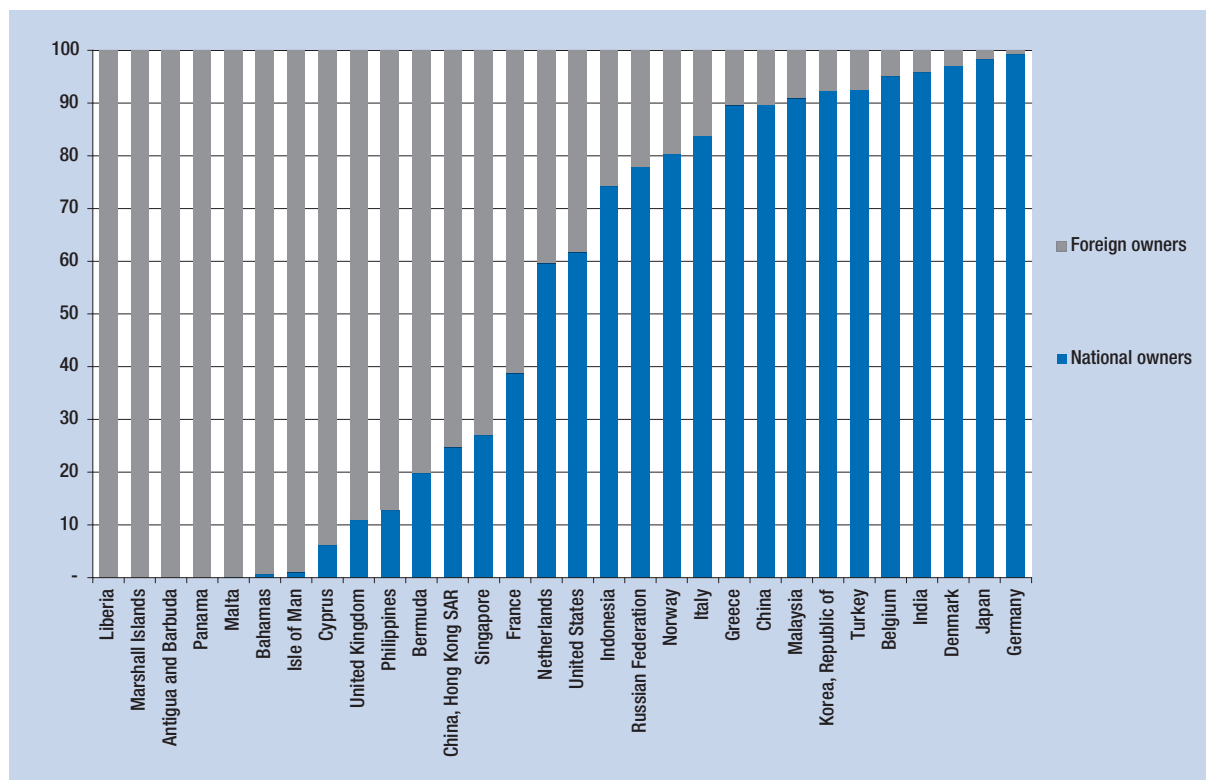
the flag of the Marshall Islands. Greek shipowners have the most diverse portfolio of flags of registration, including a large share under the national Greek flag (figure 2.6). A mirror image of the most important owner-flag combination is obtained in figure 2.7. For the Panamanian registry, Japanese owners are the most important clients, while for the registry of Liberia, owners from Germany are most important.

D. SHIPBUILDING, DEMOLITION AND NEW ORDERS

1. Deliveries of newbuildings

Almost 39 per cent of GT delivered in 2011 was built by Chinese shipyards, followed by shipyards from the Republic of Korea (35.2 per cent), Japan (19 per cent) and the Philippines (1.6 per cent). All other countries of the world together accounted for only 5.3 per cent of GT built in 2011, mostly in shipyards in Viet Nam,

Figure 2.5. Foreign and national ownership of the top 30 fleets by flag of registration, 2012 (Percentage share of fleet dwt)



Source: Compiled by the UNCTAD secretariat, based on data provided by IHS Fairplay.

Note: The term national owners in the nationally flagged fleet includes nationals making use of the country's international registry, such as DIS (Denmark), FIS (France) and NIS (Norway). The term foreign owners includes tonnage where the nationality of the owner is not known.

Brazil and India (table 2.9). More than half of dry bulk carriers (in GT) were built by China, while the Republic of Korea had a 55 per cent share of container and other dry cargo ships. The Republic of Korea's lead in container ship building was further evidenced by the beginning of the construction of the world's largest container ship, the first of Maersk's Tripple-E class, in a Daewoo shipyard in the Republic of Korea in May 2012.

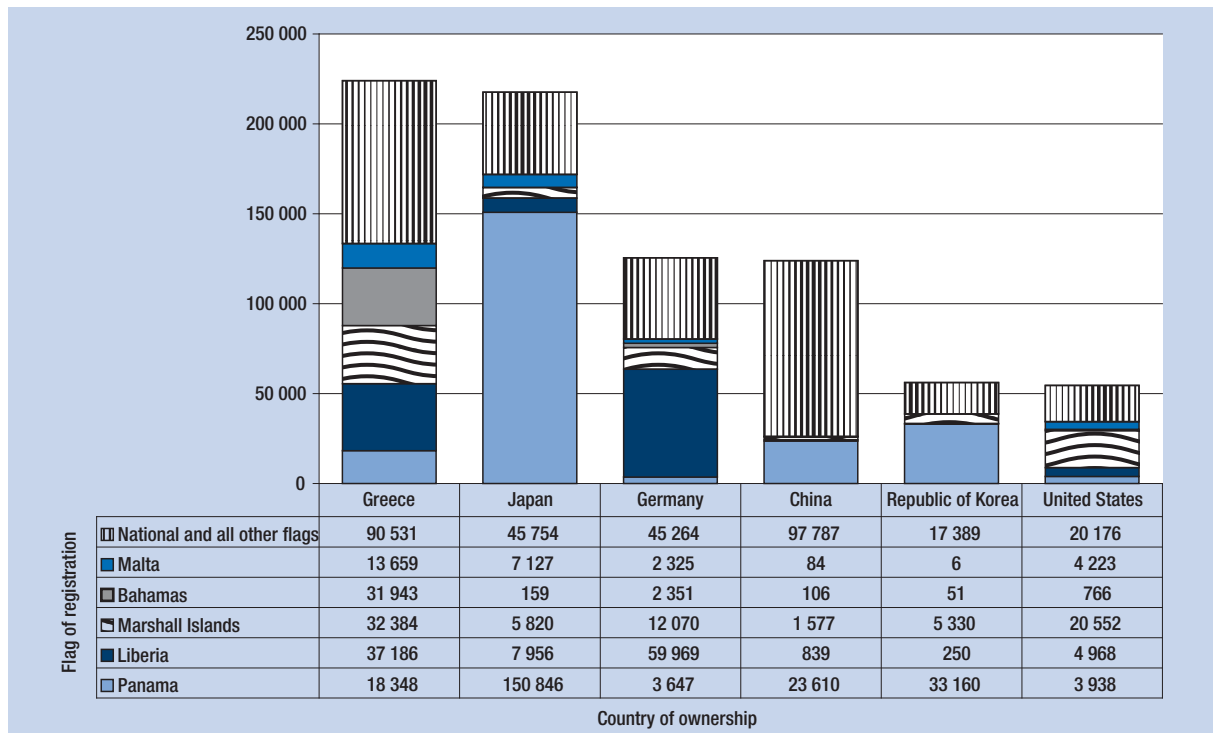
Deliveries during the three years following the economic and financial crisis are almost 80 per cent higher than the tonnage built and delivered during the three years prior to the crisis. For new orders, the picture is just the opposite: during the three years prior to 2009, shipowners ordered on average 200 million dwt per year, which is 2.5 times as much as the annual new orders placed between 2009 and 2011.³⁰

It is, largely, the orders placed prior to 2009 that are the cause of the present boom in deliveries. Based on the current order book, deliveries in 2012 are expected to be even higher than last year's historical record; 73 per cent of containerships that are to be delivered

during 2012 were ordered in 2008 or earlier.³¹ Only in 2013 will the decline of new orders since 2009 finally also lead to a decline in shipbuilding.

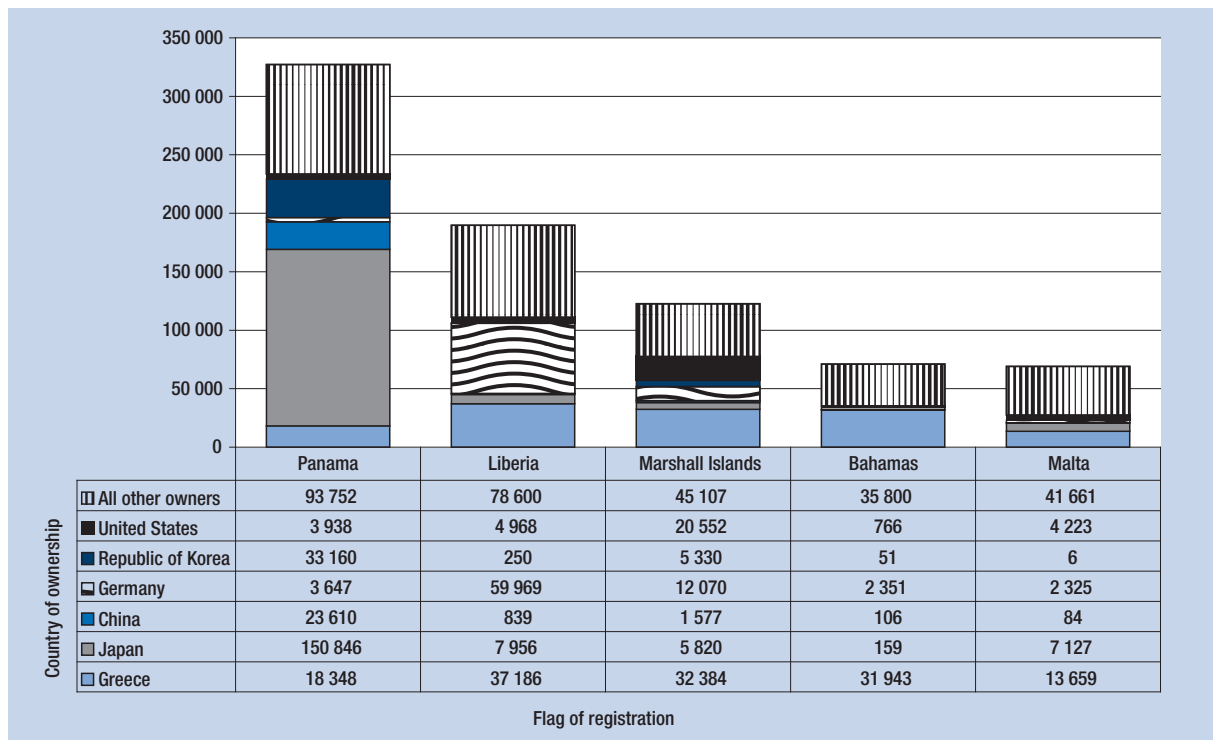
Chinese shipyards and Chinese traders have a common interest in continuing deliveries of new ships by Chinese shipyards. The building activities maintain employment in shipbuilding, and the delivered tonnage ensures a high supply of maritime transport capacity, which is to the benefit of importers and exporters. Shipowners, on the other hand, have reportedly expressed concerns that a continued oversupply of ships could prove devastating for them.³²

In the longer term, in view of the reduced numbers of new orders, shipyards in most countries have been forced to reduce their capacity.³³ An exception is the Philippines, which is expanding its shipbuilding capacity; factors contributing to this expansion include investment by Hanjin (Republic of Korea), which is reportedly planning to hire 10,000 additional workers for its facility in Subic Bay.³⁴ India, too, is expected to expand its shipbuilding and repair capacity by 2015.³⁵

Figure 2.6. Major countries of ownership and their flags of registration, 2012^a (Thousands of dwt)

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by IHS Fairplay.

^a Seagoing propelled merchant ships of 1000 GT and above.

Figure 2.7. Major open registries and the countries of ownership, 2012^a (Thousands of dwt)

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by IHS Fairplay.

^a Cargo-carrying vessels of 1000 GT and above.

Table 2.9. Deliveries of newbuildings, major vessel types and countries where built (2011, thousands of GT)

	China	Korea, Republic of	Japan	Philippines	Rest of world	World total
Tankers	7 613	11 370	4 764	-	617	24 365
Bulk carriers	26 719	11 678	11 656	1 658	1 290	53 001
Container and other passenger	4 291	11 794	2 921	3	2 418	21 427
Offshore and other work vessels	986	1 008	26	0	1 032	3 052
Total	39 609	35 850	19 367	1 661	5 357	101 845

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by *IHS Fairplay*.

Table 2.10. Tonnage reported sold for demolition, major vessel types and country of demolition (2011, thousands of GT)

	India	China	Bangladesh	Pakistan	Turkey	Rest of world	Total
Tankers	1 811	610	830	1 485	98	157	4 992
Bulk carriers	3 215	4 367	4 527	1 240	205	114	13 668
Container and other passenger	3 370	1 318	464	176	830	353	6 511
Offshore and other work vessels	366	59	136	548	18	260	1 388
Total	8 762	6 354	5 957	3 449	1 152	884	26 558

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by *IHS Fairplay*.

2. Demolition of ships

Most of the world's ship recycling takes place in developing countries in Asia. India accounted for 33 per cent of GT demolished in 2011, followed by China (23.9 per cent), Bangladesh (22.4 per cent) and Pakistan (13 per cent). There is also a pattern of specialization in India, which had its highest market share in the scrapping of container and other dry cargo ships. Scrapyards of Bangladesh and China purchased more tonnage of bulk carriers, while those of Pakistan mostly demolished tankers (table 2.10).

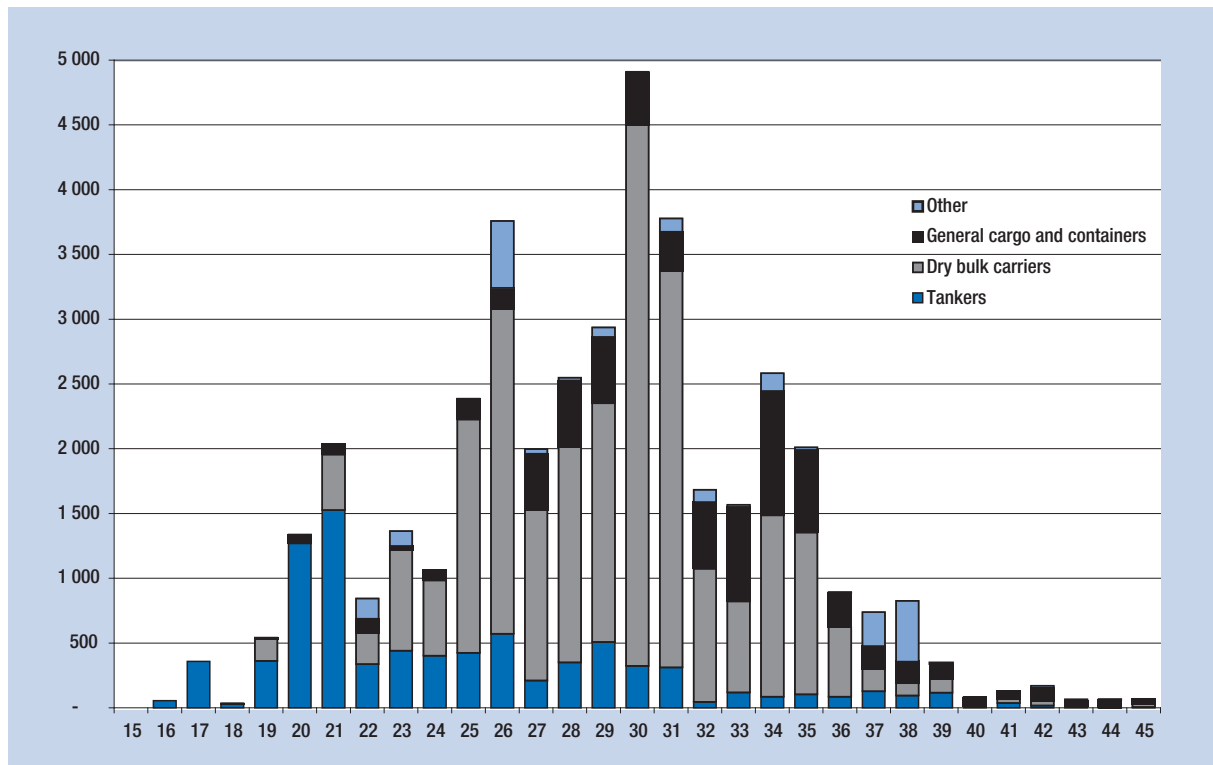
The large majority of ships demolished in 2011 were between 20 and 40 years of age, with a peak at the age of 30 (figure 2.8). Tankers tended to be demolished at a younger age, while general cargo and container ships were more likely to be kept in business beyond the age of 30. The shorter life cycle of oil tankers is in part the result of increasingly stringent environmental regulations.

In early 2012, MOL (Japan) reportedly sold five oil tankers for scrapping, including modern double-hull ships, "to help alleviate overcapacity in the charter market".³⁶ Rather than sell the ships to other owners, who would then compete for the same cargo, it was considered preferable to demolish the ships – even if the immediate earnings from such a sale would be lower than from a sale on the second-hand market.

In total, the quantity of tonnage sold for demolition increased by 31 per cent in 2011 compared with 2010. The increase was due to the surge in the scrapping of dry bulk ships (plus 356 per cent), while some other vessel types actually saw a slight decline in demolitions. Many of the dry bulk ships demolished were effectively still seaworthy, built in the eighties and with valid certificates for several more years of trading. However, as new tonnage is more energy efficient, given the extremely low charter rates, many owners still found it more profitable to sell for scrap instead of continuing trading at a financial loss. This economic context, combined with renewed demand from scrapyards in Bangladesh, has led to a further surge in ship recycling in early 2012. In May 2012, a 13-year-old container ship was sold for demolition, making it the youngest merchant vessel to be demolished since the economic crisis in 2008.³⁷

3. Tonnage on order

Since the economic and financial crisis of 2008 and 2009, far fewer new orders have been placed than tonnage delivered by the world's shipyards. This has helped to reduce significantly the existing order book (figure 2.9 and table 2.11). Since its peak in autumn 2008, the total order book has decreased by 43 per cent. The reduction in the order book for tankers has

Figure 2.8. Tonnage reported sold for demolition in 2011, by age (Years and dwt)

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by IHS Fairplay.

been even more impressive – at the end of 2011 tanker tonnage on order had declined by 57 per cent compared with three years earlier. In terms of dwt, more than half of the existing order book is for dry bulk carriers.

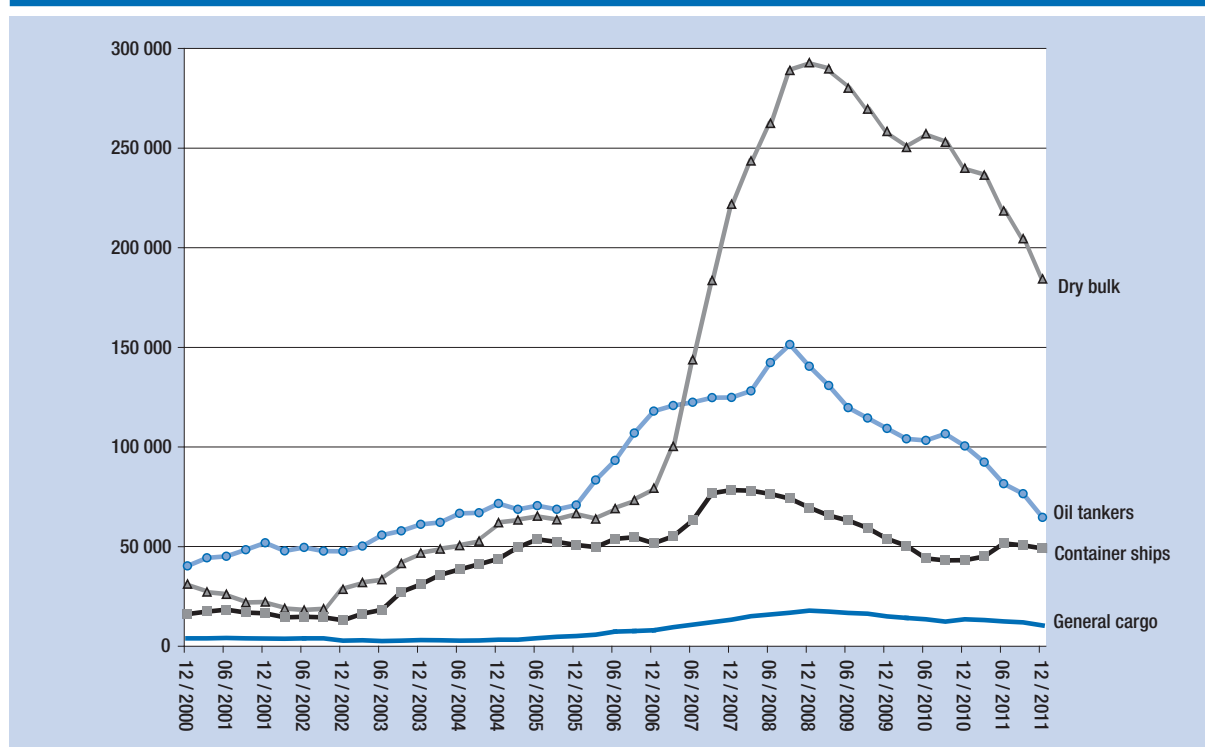
Compared with the existing fleet (table 2.1), the order book for dry bulk carriers also continues to be the largest, amounting to almost 30 per cent of the tonnage existing in January 2012. Container ships on order are almost 25 per cent of the current fleet, and oil tankers under 13 per cent. As an exception among the major vessel types, for the first time since 2006, the order book for container ships actually increased between the end of 2010 and the end of 2011.

Among specialized vessels, the most important increase was recorded for liquefied natural gas (LNG) tankers, for which the current order book now stands at more than 20 per cent of the existing fleet. As a response to the expected further surge in demand for LNG transport following opposition to the use of nuclear energy in Japan and other countries (this opposition being expected to increase the use of LNG), a historically high number of new orders for LNG carriers was placed in 2011. Several new orders are

of the tri-fuel design, enabling the ship to run on either fuel oil, diesel, or natural gas.³⁸ Another important increase was recorded for offshore vessels, including orders placed for drilling and support ships to serve new explorations in Brazil and West Africa.

New orders for dry cargo ships (bulk and containers) in 2011 were about as high as in 2006, that is, during the boom years before the financial and economic crisis, while new orders for tankers were among the lowest in recent history.³⁹ Among container ships, the majority of new orders are for ships above 10,000 TEU; these so-called mega-ships will account for more than half of the container fleet (in TEU) by 2015.⁴⁰

Most of the world's shipbuilding takes place in Asia. China is estimated to hold about 44 per cent of the current order book, followed by the Republic of Korea (30 per cent) and Japan (17 per cent).⁴¹ However, considering new orders placed in 2011, builders in the Republic of Korea generated more new business during the year than Chinese shipyards. Orders at Chinese shipyards tended to be largely for dry bulk ships, while the Republic of Korea has a larger share in higher value container and specialized ships.

Figure 2.9. World tonnage on order, 2000–2011^a (Thousands of dwt)

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by IHS Fairplay.

^a Seagoing propelled merchant ships of 100 GT and above.

4. Tonnage utilization

Tonnage reported as idle

By the end of 2011, less than 1 per cent of the world merchant fleet of tankers, dry bulk and general cargo carriers was reported as idle, which is less than half of the idle share at the end of 2008 (table 2.12). Among the different vessel types, the highest idle shares were reported for LNG tankers (1.9 per cent) and for the ro-ro fleet (1.7 per cent) (table 2.13).

While there is no agreed definition of the term idle, for the purposes of this report the idle fleet includes ships that are reported as laid up. However, not being reported as laid up does not necessarily imply that the ship is at present transporting cargo. For example, the available tanker capacity waiting and ready to take cargo in the oil-exporting Persian Gulf region was reportedly 10 per cent higher than the available cargo in early 2012.⁴²

The share of idle tonnage in container shipping is not quite comparable with the idle bulk and general cargo fleet. While tankers, bulk carriers and general cargo ships in the tramp business may be waiting for new cargo without immediately being considered “idle”,

a containership that is not participating in a regular liner service is reported as idle. In early 2012, about 5 per cent of the container ship fleet was thus inactive, including six ships larger than 10,000 TEU.

Slow steaming in container shipping

Since 2008, container shipping companies have systematically reduced the speed of their services by introducing slow steaming. This has allowed them to absorb additional vessel capacity, thus reducing the oversupply of tonnage. It has also helped to significantly reduce fuel consumption. When initially introduced, slow steaming did not meet much opposition from shippers, because during the economic downturn many importers were not particularly concerned about replenishing their inventories. At present, an estimated 5 per cent of the total container fleet capacity is absorbed by slow steaming.⁴³

Estimates for the average speed of shipping lines point to 15 to 20 knots for different levels of slow steaming. This is still faster than the usual sailing speeds for dry and liquid bulk ships, which tend to be around 10 to 15 knots. Depending on distance and speed, cost savings can amount to between 3 and 5 per cent of vessel operating costs.⁴⁴

Table 2.11. World tonnage on order, 2000–2011^a

Beginning of month	Tankers		Bulk carriers		General cargo ships		Container vessels		Other ships			Total			
	Thousands of dwt	Ships	Thousands of dwt	Ships	Thousands of dwt	Ships	Thousands of dwt	Ships	Thousands of dwt	Ships	Thousands of dwt	Ships	Thousands of dwt	Ships	Thousands of dwt
December 2000	40 328	284	31 208	486	3 966	446	16 140	394	8 870	1 087	8 160	100 513	2 697	37 268	December 2000
December 2001	51 894	399	22 184	353	3 826	372	16 550	393	13 501	1 201	11 242	107 955	2 718	39 719	December 2001
December 2002	47 591	488	28 641	391	2 832	257	13 000	296	16 174	1 386	11 669	108 238	2 818	38 409	December 2002
December 2003	61 123	631	46 732	640	3 068	295	30 974	580	19 277	1 492	12 920	161 174	3 638	44 303	December 2003
December 2004	71 563	701	62 051	796	3 306	370	43 904	880	27 361	1 898	14 416	208 185	4 645	44 819	December 2004
December 2005	70 847	724	66 614	805	5 088	584	50 856	1 124	33 147	2 285	14 506	226 551	5 522	41 027	December 2005
December 2006	118 008	1 078	79 364	988	8 004	737	51 717	1 143	45 612	2 962	15 399	302 706	6 908	43 820	December 2006
December 2007	124 845	1 134	221 808	2 573	13 360	1 035	78 348	1 435	56 947	3 876	14 692	495 309	10 053	49 270	December 2007
March 2008	128 128	1 139	243 600	2 804	15 097	1 195	78 042	1 419	58 304	4 174	13 968	523 171	10 731	48 753	March 2008
June 2008	142 333	1 202	262 452	3 009	15 911	1 255	76 388	1 352	57 574	4 302	13 383	554 657	11 120	49 879	June 2008
September 2008	151 423	1 245	288 959	3 316	16 787	1 332	74 090	1 322	56 563	4 442	12 734	587 823	11 657	50 427	September 2008

Table 2.11. World tonnage on order, 2000–2011^a (continued)

December 2008	140 504	1 154	121 754	292 837	3 347	87 492	17 849	1 374	12 991	69 593	1 209	57 563	52 088	4 256	12 239	572 871	11 340	50 518	December 2008
March 2009	130 777	1 088	120 200	289 763	3 303	87 727	17 439	1 363	12 795	65 610	1 121	58 528	48 131	4 117	11 691	551 720	10 992	50 193	March 2009
June 2009	119 709	986	121 409	280 102	3 194	87 696	16 684	1 296	12 874	63 064	1 028	61 346	43 989	3 796	11 588	523 548	10 300	50 830	June 2009
September 2009	114 460	934	122 548	269 558	3 050	88 380	16 354	1 264	12 939	59 314	948	62 567	40 947	3 591	11 403	500 632	9 787	51 153	September 2009
December 2009	109 310	884	123 654	258 343	2 918	88 534	15 018	1 179	12 738	53 903	813	66 301	37 434	3 428	10 920	474 008	9 222	51 400	December 2009
March 2010	104 062	849	122 570	250 383	2 890	86 638	14 199	1 139	12 466	50 416	732	68 874	34 804	3 396	10 248	453 864	9 006	50 396	March 2010
June 2010	103 245	824	125 297	257 229	2 951	87 167	13 480	1 095	12 311	44 071	628	70 176	30 135	3 137	9 606	448 160	8 635	51 900	June 2010
September 2010	106 599	791	134 765	252 924	2 887	87 608	12 361	1 023	12 083	43 060	600	71 766	26 003	2 849	9 127	440 946	8 150	54 104	September 2010
December 2010	100 442	741	135 549	239 898	2 823	84 980	13 487	989	13 637	43 180	566	76 289	24 888	2 702	9 211	421 895	7 821	53 944	December 2010
March 2011	92 367	710	130 094	236 431	2 786	84 864	13 172	967	13 621	45 011	577	78 009	24 106	2 703	8 918	411 087	7 743	53 091	March 2011
June 2011	81 566	657	124 149	218 453	2 601	83 988	12 485	930	13 425	51 642	652	79 205	24 404	2 687	9 082	388 549	7 527	51 621	June 2011
September 2011	76 536	635	120 530	204 580	2 470	82 826	11 994	880	13 630	50 661	633	80 034	25 445	2 687	9 470	369 218	7 305	50 543	September 2011
December 2011	64 618	588	109 895	184 353	2 268	81 284	10 464	785	13 330	49 088	602	81 542	24 527	2 613	9 387	333 051	6 856	48 578	December 2011
Percentage of total, December 2011	19.4	8.6	55.4	33.1	3.1	11.4	14.7	8.8	7.4	38.1	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	Percentage of total, December 2011

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by IHS Fairplay.
^a Seagoing propelled merchant ships of 100 GT and above.

Table 2.12. Tonnage reported as idle, 2005–2011 (End-of-year figures)

	2005	2006	2007	2008	2009	2010	2011
Millions of dwt							
Merchant fleet, three main vessel types^a	697.9	773.9	830.7	876.2	930.3	1,023.3	1,135.4
Idle fleet^b	7.2	10.1	12.1	19.0	12.0	14.1	10.7
Active fleet	690.7	763.7	818.6	857.2	918.3	1,009.1	1,124.7
Idle fleet as percentage of merchant fleet	1.0	1.3	1.5	2.2	1.3	1.4	0.9

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

^a Tankers and dry bulk carriers of 10 000 dwt and above, and conventional general cargo vessels of 5,000 dwt and above.

^b The idle fleet is defined as tonnage that is reported as laid up.

Table 2.13. Analysis of idle tonnage by main type of vessel, 2005–2011^a (Millions of dwt or m³)

	2005	2006	2007	2008	2009	2010	2011
World tanker fleet (dwt)	312.9	367.4	393.5	414.04	435.25	447.64	473.91
Idle tanker fleet (dwt)	4.5	6.1	7.8	14.35	8.51	10.48	6.96
Share of idle fleet in tanker fleet (%)	1.4	1.7	2.0	3.47	1.96	2.34	1.47
World dry bulk fleet (dwt)	340.0	361.8	393.5	417.62	452.52	522.52	608.60
Idle dry bulk fleet (dwt)	2.0	3.4	3.6	3.68	2.64	2.86	2.87
Share of idle fleet in dry bulk fleet (%)	0.6	0.9	0.9	0.88	0.58	0.55	0.47
World conventional general cargo fleet (dwt)	45.0	44.7	43.8	44.54	42.53	53.10	52.90
Idle conventional general cargo fleet (dwt)	0.7	0.6	0.7	0.97	0.83	0.78	0.85
Share of idle fleet in general cargo fleet (%)	1.6	1.4	1.6	2.18	1.95	1.47	1.61
World ro-ro fleet (dwt)	n.a.	n.a.	n.a.	11.37	10.93	10.28	9.99
Idle ro-ro fleet (dwt)	n.a.	n.a.	n.a.	0.89	0.73	0.33	0.17
Share of idle fleet in ro-ro fleet (%)	n.a.	n.a.	n.a.	7.83	6.68	3.21	1.70
World vehicle carrier fleet (dwt)	n.a.	n.a.	n.a.	11.27	11.20	11.48	12.42
Idle Vehicle carrier fleet (dwt)	n.a.	n.a.	n.a.	0.24	0.55	0.13	0.06
Share of idle fleet in vehicle carrier fleet (%)	n.a.	n.a.	n.a.	2.13	4.91	1.13	0.48
World LNG carrier fleet (m³)	n.a.	n.a.	n.a.	44.43	46.90	51.15	51.32
Idle LNG carrier fleet (m ³)	n.a.	n.a.	n.a.	5.87	1.29	1.53	0.98
Share of idle fleet in LNG fleet (%)	n.a.	n.a.	n.a.	13.21	2.75	2.99	1.91
World Liquefied petroleum gas(LPG) fleet (m³)	n.a.	n.a.	n.a.	11.56	18.50	19.42	19.44
Idle LPG carrier fleet (m ³)	n.a.	n.a.	n.a.	0.94	0.10	0.13	0.11
Share of idle fleet in LNG fleet (%)	n.a.	n.a.	n.a.	8.13	0.54	0.67	0.57

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

^a This table excludes tankers and dry bulk carriers of less than 10 000 dwt and conventional general cargo vessels of less than 5,000 dwt.

The inventory cost (capital, depreciation) of the goods that spend more time en route may well be higher than the cost savings made by the carriers. Shippers, who have to bear the inventory costs, have accordingly complained about this situation. Nevertheless, shippers have also realized that slow steaming may improve service reliability, and in the end may not be too concerned about the speed of delivery.⁴⁵

A further reduction of service speed would not make technological or economic sense – engines would

suffer, and the savings made in fuel reduction would be outweighed by additional operating costs resulting from the need to deploy additional ships. Returning to the previous higher speeds appears unlikely, too, as businesses have now adapted to the inventory held on the ships, and in view of the continuing oversupply of tonnage, the carriers have no room to re-absorb additional capacity should it be released from slow steaming. It appears that the current speeds may become the norm, with high speeding being considered as a form of premium service.

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