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REVIEW OF MARITIME TRANSPORT 2010

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Chapter 2

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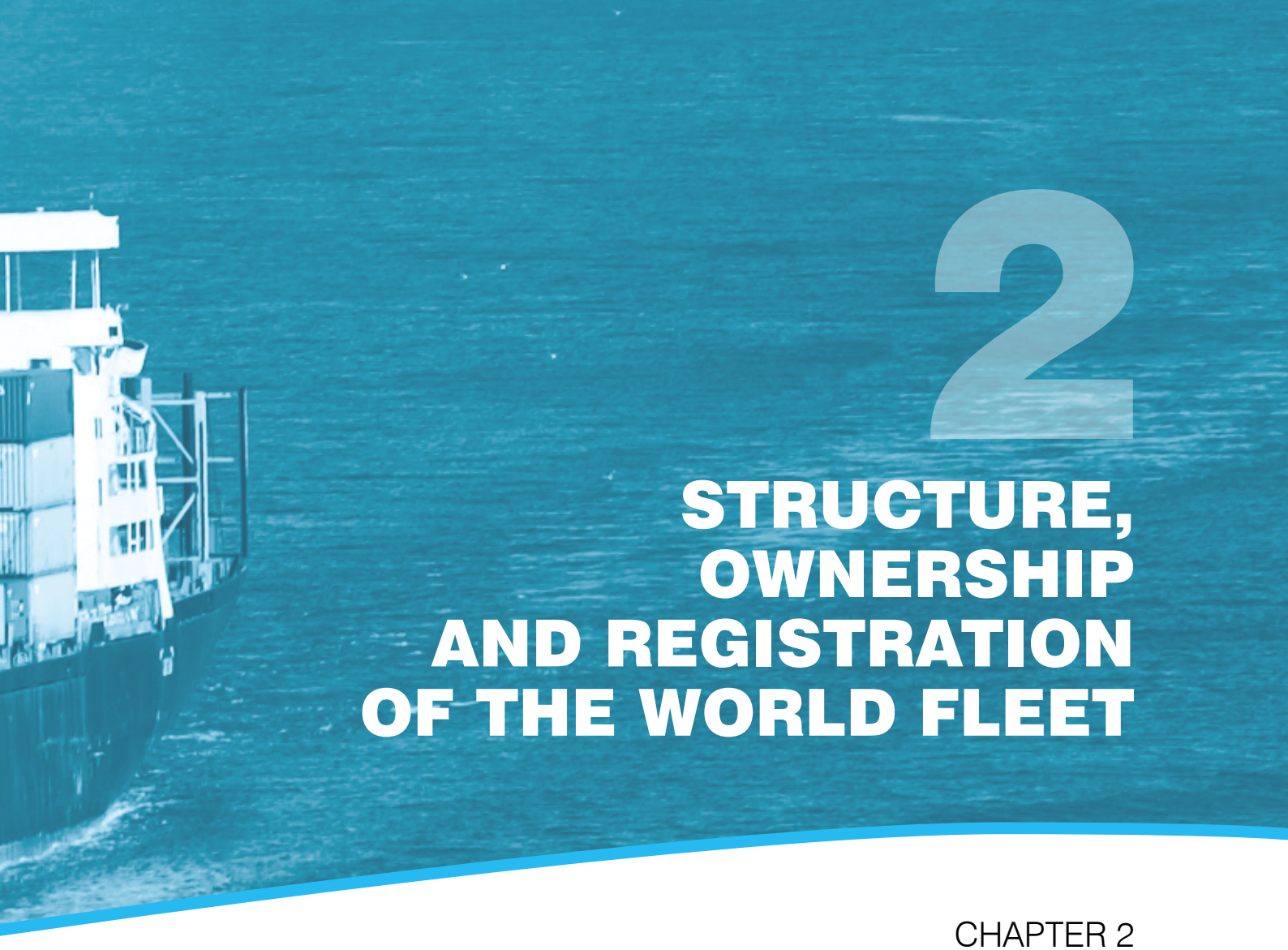

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STRUCTURE, OWNERSHIP AND REGISTRATION OF THE WORLD FLEET

CHAPTER 2

At the beginning of 2010, the world merchant fleet reached 1,276 million deadweight tons (dwt), an increase of 84 million dwt (7 per cent) over 2009. This growth resulted from record new deliveries of 117 million dwt, as against demolitions and other withdrawals from the market of approximately 33 million dwt. In spite of the economic crisis, new deliveries in 2009 grew by 42 per cent over 2008 as a result of ships having been ordered prior to the downturn in demand. The resulting oversupply of tonnage then led to a surge in demolitions of older tonnage by more than 300 per cent.

In 2009, China overtook Germany as the third-largest shipowning country, surpassed Japan as the second-biggest shipbuilding country, and replaced India as the busiest ship-recycling country. China has also emerged as an important provider of ship finance, supporting owners and shipyards in avoiding the cancellation of ship orders.

This chapter presents the supply-side dynamics of the world maritime industry. It covers the vessel types, age profile, ownership and registration of the world fleet. It also reviews deliveries of ships, tonnage on order, newbuilding prices, and the markets for second-hand tonnage. Particular focus is placed on ship recycling, as the current oversupply of tonnage has led to a surge of tonnage sold for demolition.

A. STRUCTURE OF THE WORLD FLEET

1. World fleet growth and principal vessel types

Trends in vessel types

In January 2010, there were 102,194 commercial ships in service, with a combined tonnage of 1,276,137 thousand dwt (table 2.1). Oil tankers accounted for 450 million dwt (35.3 per cent) and dry bulk carriers for 457 million dwt (35.8 per cent), representing annual increases of 7.6 and 9.1 per cent respectively.

Table 2.1. World fleet size by principal vessel types, 2009–2010[a] *(beginning-of-year figures, thousands of dwt)*

Principal types	2009	2010	Percentage change 2010/2009
Oil tankers	418 266	450 053	7.6
	35.1	*35.3*	*0.2*
Bulk carriers	418 356	456 623	9.1
	35.1	*35.8*	*0.7*
General cargo ships	108 881	108 232	-0.6
	9.1	*8.5*	*-0.7*
Container ships	161 919	169 158	4.5
	13.6	*13.3*	*-0.3*
Other types of ships	84 895	92 072	8.5
	7.1	*7.2*	*0.1*
Liquefied gas carriers	36 341	40 664	11.9
	3.0	*3.2*	*0.1*
Chemical tankers	8 141	7 354	-9.7
	0.7	*0.6*	*-0.1*
Offshore supply	22 567	24 673	9.3
	1.9	*1.9*	*0.0*
Ferries and passenger ships	6 083	6 152	1.1
	0.5	*0.5*	*0.0*
Other/ n.a.	11 762	13 229	12.5
	1.0	*1.0*	*0.1*
World total	1 192 317	1 276 137	7.0
	100.0	*100.0*	

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

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

Container ships reached 169 million dwt – an increase of 4.5 per cent over 2009 – while the fleet of general cargo ships declined during 2009, reaching 108 million dwt in January 2010, corresponding to just 8.5 per cent of the fleet. Among other vessel types, the tonnage of liquefied gas carriers continued to grow, reaching 41 million dwt. This was an increase of almost 12 per cent over 2008, in which deliveries had already reached a historic high.

The long-term trend in the composition of the world fleet is illustrated in figure 2.1. During the last decade, the container ship fleet has grown by 154 per cent and the dry and liquid bulk fleet has grown by about 50 per cent, while general cargo tonnage has remained relatively stable. Since 1980, the share of containerized tonnage has increased eightfold, against a reduction by half of the general cargo fleet; this is a reflection of the increased containerisation of the trade in manufactured goods. The last five years have seen a historic surge in the total tonnage, by 42 per cent; this includes a 72 per cent increase in the containerized fleet.

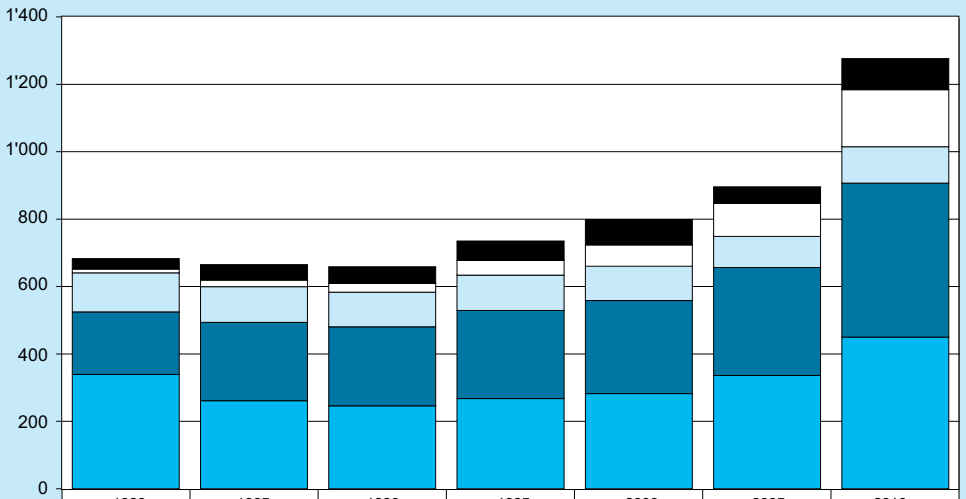
The world container ship fleet

The world fleet of fully cellular container ships continued to expand in 2009, albeit at a slower rate than in previous years. The year-on-year growth in vessel numbers was 0.8 per cent. As vessel sizes continued to increase, the growth rate in TEU capacity was higher, at 5.6 per cent, and the average vessel size went up by 4.7 per cent. On 1 January 2010, the world cellular container ship fleet stood at 4,677 vessels, with a combined total carrying capacity of 12.8 million TEU (see table 2.2).

As regards new deliveries in 2009, the average TEU capacity of cellular container ships that entered service during the year was 4,016 TEU, a further increase from the previous year's 3,489 TEU (table 2.3). The growth in the average vessel size of new vessels continued in 2010, reaching 4,942 TEU during the first five months of the year.

The largest container ships in service in early 2010 had a nominal capacity of 14,770 TEU. These were eight ships owned and operated by Maersk Line from Denmark, delivered between 2006 and 2008 by the Odense shipyard in Denmark. However, weight constraints have not allowed all those containers to be fully loaded. For this reason, it has recently become practice to also report the TEU capacity "at 14 tons", i.e. how many twenty-foot containers can be loaded if filled with 14 tons of cargo. The adjusted cargo-

Figure 2.1. World fleet by principal vessel types, selected years[a] *(beginning-of-year figures, millions of dwt)*



	1980	1985	1990	1995	2000	2005	2010
Other	31	45	49	58	75	49	92
Container	11	20	26	44	64	98	169
General cargo	116	106	103	104	101	92	108
Dry bulk	186	232	235	262	276	321	457
Oil tanker	339	261	246	268	282	336	450

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

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

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

World total	1987	1997	2007	2008	2009	2010	Growth 2010/2009 (per cent)
Number of vessels	1 052	1 954	3 904	4 276	4 638	4 677	0.84
TEU capacity	1 215 215	3 089 682	9 436 377	10 760 173	12 142 444	12 824 648	5.62
Average vessel size	1 155	1 581	2 417	2 516	2 618	2 742	4.74

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

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

Table 2.3. Geared and gearless fully cellular container ships built in 2008 and 2009

	Geared			Gearless			Total		
	2008	2009	Change %	2008	2009	Change %	2008	2009	Change %
Number of ships	88	45	-48.9	346	235	-32.1	434	280	-35.5
Percentage of ships	*20.3*	*16.1*		*79.7*	*83.9*		*100.0*	*100.0*	
TEU	154 708	84 436	-45.4	1 359 454	1 040 119	-23.5	1 514 162	1 124 555	-25.7
Percentage of TEU	*10.2*	*7.5*		*89.8*	*92.5*		*100.0*	*100.0*	
Average vessel size (TEU)	1 758	1 876	6.7	3 929	4 426	12.6	3 489	4 016	15.1

Source: Compiled by the UNCTAD secretariat, on the basis of data regarding the existing container ship fleet, obtained from *Containerisation international Online*, May 2009 (2008 data) and May 2010 (2009 data).

carrying capacity of the 14,770 TEU vessels is thus reduced to 12,508 TEU.[1] The largest container ships delivered in 2009 were two 13,880 TEU vessels for the French carrier CMA CGM (9,932 TEU at 14 tons), and the largest vessels delivered so far in 2010 are owned and operated by MSC of Switzerland and have a nominal capacity of 14,000 TEU (no adjusted capacity reported).[2]

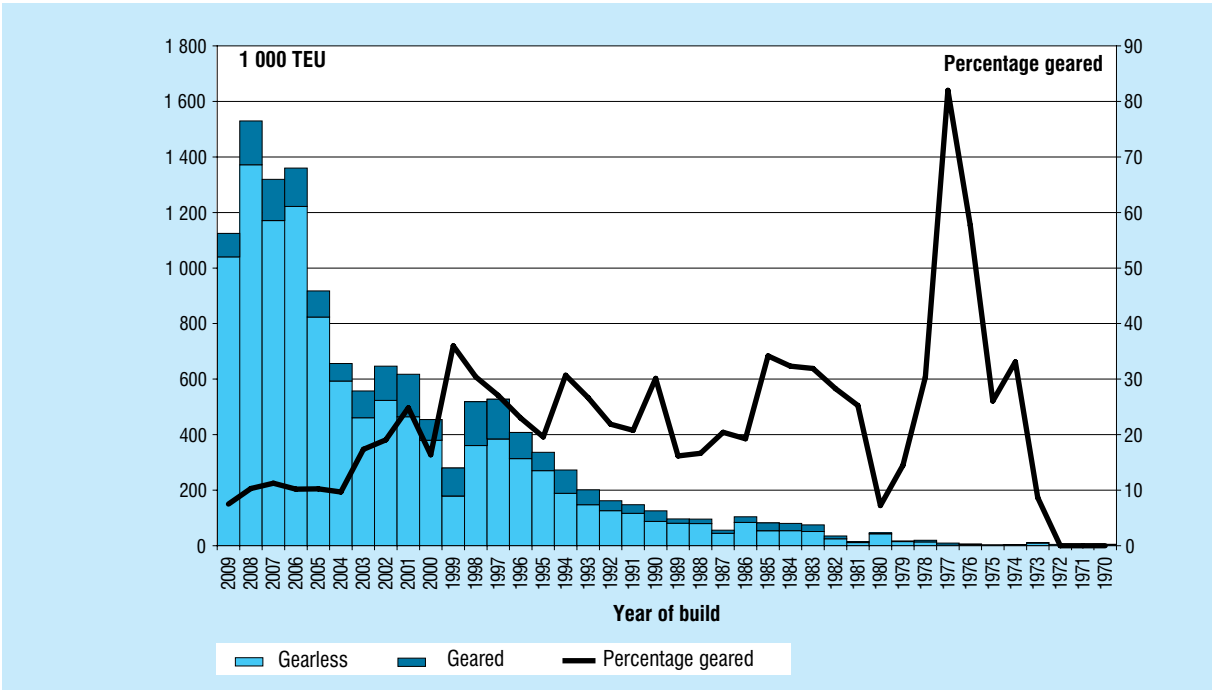
Most new container ships are gearless and therefore depend on port cranes for the loading and unloading of containers. Gearless ships are less costly to operate than geared ships, as the latter involve higher capital, fuel and maintenance expenditures. Also, port cranes allow for higher handling speeds. Geared ships will remain a niche market only appropriate for those ports where low cargo volumes do not justify investment in port cranes or where the public sector does not have the financial resources for such investment. The diseconomies of scale resulting from the lower levels of traffic in those ports will ultimately mean higher total logistics costs and cargo handling time for importers and exporters, because of the dependence on geared ships.

Looking at the age profile of the current container ship fleet (fig. 2.2), it is interesting to note that the earliest container ships were all gearless. In the 1970s, onboard container cranes were introduced as a new technology and were deployed on more than half of newbuildings in some years. Since then, the share of geared vessels has fluctuated and slowly decreased. In 2009, only 7.5 per cent of TEU capacity on new vessels was geared, a further decrease from the 10.2 per cent share in 2008 (table 2.3). The share of geared ships is highest in the 1,500 to 2,499 TEU size range, where more than 60 per cent of the fleet is geared. Among the smallest ships, of between 100 and 499 TEU, the geared share is only 31 per cent, and for ships larger than 4,000 TEU it is practically zero.[3]

Major liner shipping operators

The container ship fleet is operated by liner shipping companies. These companies may not necessarily own the vessels, but they operate them to provide regular containerized shipping services. In January 2010, the top 10 liner companies operated 50.2 per cent of the container ship fleet, a slight decrease from the 51.2 per cent in January 2009 (table 2.4). During the downturn in demand, the major operators tended to reduce their chartered-in tonnage by returning vessels to owners. Some of these ships are then laid up, if no new charterer can be found. In general, it is

Figure 2.2. Geared and gearless fully cellular container ships by year of build
(*in thousands of TEU, as at 1 January 2010*)



Source: Compiled by the UNCTAD secretariat, on the basis of data regarding the existing container ship fleet, obtained from *Containerization International Online*, May 2010

Table 2.4. The 20 top ranked operators of container ships, 1 January 2010 (number of ships and total shipboard capacity deployed, in TEUs)

Ranking	Operator	Country/ territory	Number of vessels	Average vessel size	TEU	Share of world total, TEU	Cumulated share, TEU	Percentage of growth in TEU over 1 Jan. 2009
1	Maersk Line	Denmark	427	4 090	1 746 639	11.7%	11.7%	0.3%
2	MSC	Switzerland	394	3 827	1 507 843	10.1%	21.8%	-0.2%
3	CMA CGM Group	France	289	3 269	944 690	6.3%	28.1%	9.2%
4	Evergreen Line	China, Taiwan Province of	167	3 549	592 732	4.0%	32.0%	-5.9%
5	APL	Singapore	129	4 068	524 710	3.5%	35.6%	11.4%
6	COSCON	Singapore	143	3 468	495 936	3.3%	38.9%	0.9%
7	Hapag-Lloyd Group	Germany	116	4 053	470 171	3.1%	42.0%	-5.3%
8	CSCL	China	120	3 809	457 126	3.1%	45.1%	5.9%
9	Hanjin	Republic of Korea	89	4 495	400 033	2.7%	47.8%	9.4%
10	NYK	Japan	77	4 670	359 608	2.4%	50.2%	0.4%
11	MOL	Japan	90	3 871	348 353	2.3%	52.5%	-10.0%
12	K Line	Japan	89	3 655	325 280	2.2%	54.7%	5.1%
13	Yang Ming	China, Taiwan Province of	80	3 966	317 304	2.1%	56.8%	-0.1%
14	OOCL	China, Hong Kong	63	4 609	290 350	1.9%	58.7%	-20.3%
15	Hamburg Sud	Germany	88	3 226	283 897	1.9%	60.6%	10.7%
16	HMM	Republic of Korea	53	4 905	259 941	1.7%	62.4%	0.5%
17	Zim	Israel	64	3 371	215 726	1.4%	63.8%	-14.3%
18	CSAV	Chile	66	2 968	195 884	1.3%	65.1%	38.0%
19	UASC	Kuwait	45	3 924	176 578	1.2%	66.3%	13.6%
20	PIL	Singapore	84	2 071	173 989	1.2%	67.5%	17.6%
Total top 20 carriers			2 673	3 774	10 086 790	67.5%	67.5%	1.4%
Others			6 862	709	4 864 981	32.5%	32.5%	8.6%
World container ship fleet			9 535	1 568	14 951 771	100.0%	100.0%	3.6%

Source: UNCTAD secretariat, based on Fleet Statistics from *Containerisation International Online*, available at http://www.ci-online.co.uk.

Note: Includes all container-carrying ships. Not fully comparable to tables 2.2. and 2.3, which only cover the specialized fully cellular container ships.

the larger ships that are being returned to shipowners, as the smaller vessels are more versatile in the face of low demand.

The container ship operating sector is increasingly concentrated. Overall, the TEU capacity operated by the top 20 companies in 2009 increased by 135,000 TEU to reach 10.1 million TEU, corresponding to 67.5 per cent of the world total TEU capacity. Among the top 20 operators, Maersk Line maintained its lead position, closely followed by MSC and by CMA CGM, in second and third places respectively (table 2.4). The gap between second and third place narrowed during 2009. The top 20 liner companies remained unchanged from the previous year, with 11 companies from developing economies and 9 from developed economies. Asian economies dominated the list, with 14 companies from that region. One of the top 20 carriers is from Latin America. Five are from Europe, including the top three liner companies, which are headquartered in Denmark, Switzerland and France.

The largest percentage decreases in operated fleets were recorded for OOCL, Zim, MOL and Evergreen, while CSAV, PIL, UASC, APL and Hamburg Süd saw the highest positive growth. In all, the top 20 liner shipping companies began 2010 with a combined capacity 1.4 per cent larger than at the start of 2009, compared to an overall growth rate of the global container-carrying fleet of 3.6 per cent.[4]

Container production and leasing

Towards the end of 2009, the world container fleet stood at 27.1 million TEU, a decline of 5.5 per cent compared to the previous year. Lessors whose main business is the leasing of containers to liner shipping companies owned 37.6 per cent of the total; the remainder of the container fleet was owned by the carriers themselves. The share of the lessors has slowly declined in recent years; in 2005 it still stood at 43.8 per cent (fig. 2.3).

Unlike the building of container ships, the construction of containers adjusts relatively quickly to changes in demand. Container production in 2009 sank to 350,000 TEU, due to the low demand for new boxes, which was down from a peak of 4,250,000 TEU in 2007. The weakening of global demand that began in the last quarter of 2008 further worsened in the first three quarters of 2009, before a slight improvement in the last quarter as some new orders for new boxes were received from leasing companies. Container producers, who are mostly based in China, had to shut down numerous factories, and limit the operation of the remaining factories to one shift, corresponding to 33 per cent of capacity.

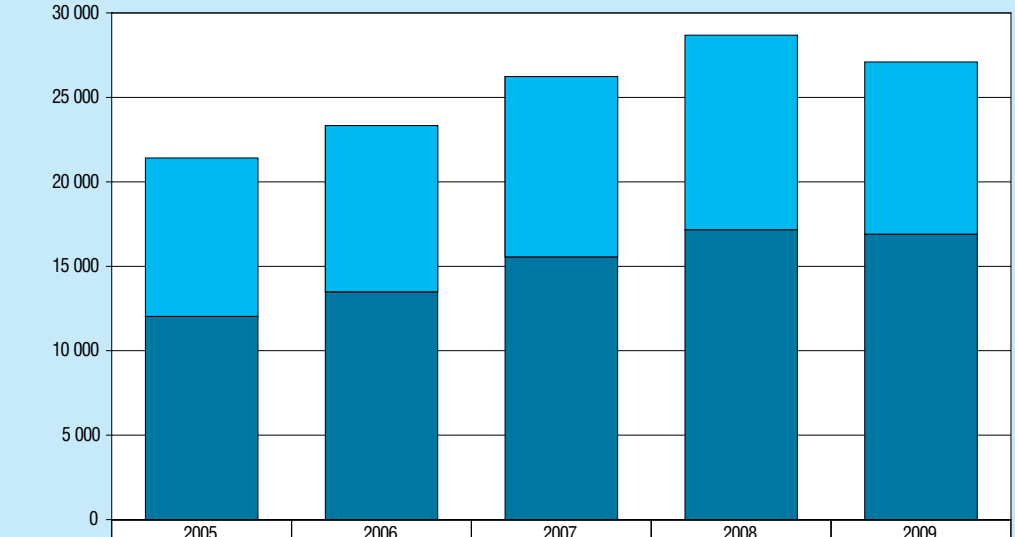
The annual average price of newly produced twenty-foot containers fell to $2,025 in 2009. As the cost of new material also fell, the last quarter of 2009 saw the new box price fall to $1,900 (fig. 2.4). The drastic cut in production and the accompanying drop in prices were also due to producers aiming to strike a balance between the need to lower the inventory of boxes built using the higher-cost materials of 2008 and the objective of building new boxes made from the relatively cheaper materials being used in 2009.

2. Age distribution of the world merchant fleet

The average age of the world fleet decreased during 2009 as new tonnage was delivered and more ships were demolished during the economic crisis. In particular, the average age per deadweight ton decreased (as compared to the average age per ship), as the newly delivered ships tend to be larger than most of those in the existing fleet; vessels built during the last four years are, on average, six times larger than those built before 1990.

Container ships are the youngest vessel type, with an average age (per ship) of 10.6 years, followed by bulk carriers (16.6 years), oil tankers (17.0 years), general cargo ships (24.6 years) and other types (25.3 years) (table 2.5).

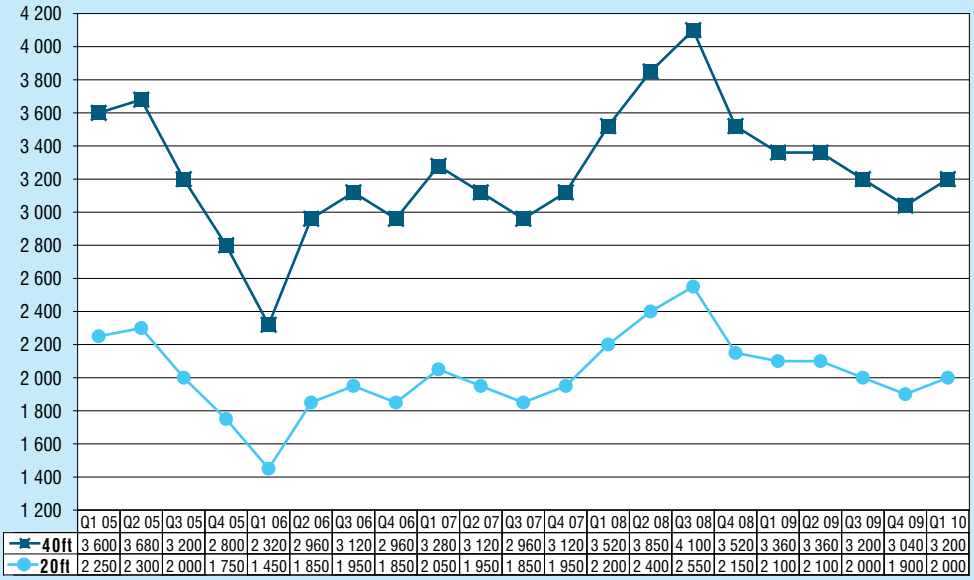
Figure 2.3. World Container fleet *(end-of-year figures, thousands of TEU)*



	2005	2006	2007	2008	2009
Lessors	9 380	9 850	10 680	11 525	10 200
Sea carriers	12 035	13 485	15 555	17 160	16 900

Source: Compiled by the UNCTAD secretariat, on the basis of data from *Containerization International Magazine,* August 2008 and May 2010.

Figure 2.4. Container prices *(quarterly averages, in dollars)*



	Q1 05	Q2 05	Q3 05	Q4 05	Q1 06	Q2 06	Q3 06	Q4 06	Q1 07	Q2 07	Q3 07	Q4 07	Q1 08	Q2 08	Q3 08	Q4 08	Q1 09	Q2 09	Q3 09	Q4 09	Q1 10
40ft	3 600	3 680	3 200	2 800	2 320	2 960	3 120	2 960	3 280	3 120	2 960	3 120	3 520	3 850	4 100	3 520	3 360	3 360	3 200	3 040	3 200
20ft	2 250	2 300	2 000	1 750	1 450	1 850	1 950	1 850	2 050	1 950	1 850	1 950	2 200	2 400	2 550	2 150	2 100	2 100	2 000	1 900	2 000

Source: Compiled by the UNCTAD secretariat, on the basis of data from *Containerisation International Magazine*, various issues.

The major open and international registries have the youngest fleet among the country groups reported in table 2.5. The average age per ship of the open-registry fleets is under 16 years, with 25 per cent of these ships being under five years old. The corresponding share of ships that are under five years old is 15 per cent in developing economies, 10 per cent in developed economies, and only 8 per cent in transition economies.

Figure 2.5 provides more detailed illustrations of the age profiles of the world fleet and selected vessel types in January 2010. It also shows the percentage of tonnage demolished during 2009 by year of build. The likelihood of a vessel being demolished is highest for ships between 30 and 35 years old. Ships under 18 years old are not usually scrapped, and as ships get older, those few that have survived 40 or more years are again more likely to be kept in service.

The dry bulk vessel fleet expanded dramatically in 2009, and the percentage of tonnage demolished was relatively high for those built in the 1970s. The container ship fleet expanded less in 2009 than in the previous four years, and many ships built in the 1980s were demolished. New tonnage of oil tankers reached a historic high in 2009. The general cargo fleet continues to include a lot of tonnage that was built in the 1980s, 1970s and even 1960s, and the proportion of this older fleet that is being demolished is lower than for other vessel types; general cargo ships can thus be expected to continue to be the oldest component of the world fleet.

Very few specialized reefer ships have been built since 2001, as refrigerated cargo is increasingly being transported by reefer containers on container ships. More than half of the specialized reefer tonnage built in 1979 was demolished in 2009. As most existing reefer ships were built in the 1980s and 1990s, a large proportion of this fleet can be expected to be demolished during the next two decades, and developing countries' fruit exports will then depend almost entirely on containerized transport.

B. OWNERSHIP OF THE WORLD FLEET

At the beginning of 2010, owners from Greece controlled 15.96 per cent of the world's tonnage, followed by owners from Japan with 15.73 per cent and then owners from China with 8.96 per cent (table 2.6).[5] All three countries have seen their market share increase since 2009, and China has actually overtaken Germany as the third-largest shipowning country. In terms of vessel numbers, Japan continues to be the leading country, with 3,751 ships of 1,000 GT and above, followed by China with 3,633 ships. In terms of nationally

Table 2.5. Age distribution of the world merchant fleet, by vessel type, as of 1 January 2010
(percentage of total ships and dwt)

Country grouping Types of vessels		0–4 years	5–9 years	10–14 years	15–19 years	20 years and +	Average age (years) 2010	Average age (years) 2009	Change 2010/2009
WORLD									
Bulk carriers	Ships	19.0	16.0	14.2	10.8	40.1	16.58	17.22	-0.64
	dwt	25.2	19.4	15.7	12.4	27.4	13.77	14.27	-0.50
Average vessel size (dwt)		74 809	68 046	62 375	64 563	38 537			
Container ships	Ships	31.3	21.7	20.9	12.8	13.3	10.56	10.92	-0.37
	dwt	38.9	26.0	17.2	9.5	8.4	8.72	9.01	-0.29
Average vessel size (dwt)		44 701	43 151	29 644	26 579	22 653			
General cargo	Ships	9.6	8.0	9.1	11.1	62.3	24.63	24.44	0.18
	dwt	16.1	9.8	13.5	9.8	50.8	21.40	22.12	-0.72
Average vessel size (dwt)		8 260	6 083	7 372	4 391	4 043			
Oil tankers	Ships	24.2	16.0	10.7	12.0	37.1	17.03	17.55	-0.52
	dwt	31.8	28.2	16.7	13.0	10.2	10.13	10.72	-0.59
Average vessel size (dwt)		55 138	74 066	65 636	45 454	11 514			
Other types	Ships	9.2	9.3	9.1	8.7	63.8	25.33	25.26	0.07
	dwt	28.3	14.1	11.3	8.4	37.9	17.47	18.24	-0.77
Average vessel size (dwt)		4 923	2 444	1 980	1 548	953			
All ships	Ships	12.7	10.8	10.2	9.9	56.4	22.93	23.00	-0.07
	dwt	28.8	22.2	15.8	11.7	21.5	13.35	13.97	-0.62
Average vessel size (dwt)		28 401	25 665	19 266	14 799	4 764			
DEVELOPING ECONOMIES									
Bulk carriers	Ships	19.8	15.5	14.1	10.0	40.6	16.35	16.90	-0.55
	dwt	24.9	17.7	15.3	12.8	29.3	14.04	14.32	-0.28
Average vessel size (dwt)		74 036	67 566	63 914	75 360	42 528			
Container ships	Ships	32.2	19.9	19.7	13.7	14.5	10.74	11.20	-0.45
	dwt	41.2	24.9	15.2	10.0	8.7	8.59	8.98	-0.39
Average vessel size (dwt)		43 804	42 738	26 365	24 903	20 470			
General cargo	Ships	9.9	8.3	7.6	9.0	65.2	24.73	24.72	0.01
	dwt	16.4	8.4	12.0	9.4	53.8	21.75	22.55	-0.80
Average vessel size (dwt)		8 705	5 332	8 296	5 500	4 347			
Oil tankers	Ships	22.8	12.7	10.4	11.1	43.0	18.18	18.84	-0.67
	dwt	31.4	24.2	15.2	16.2	13.0	11.02	11.74	-0.72
Average vessel size (dwt)		57 643	80 173	60 786	61 255	12 669			
Other types	Ships	11.8	9.1	7.9	8.4	62.8	24.66	24.77	-0.11
	dwt	24.6	12.1	10.7	8.6	44.1	19.16	19.53	-0.37
Average vessel size (dwt)		3 903	2 478	2 536	1 900	1 313			
All ships	Ships	14.6	10.6	9.4	9.3	56.2	22.31	22.55	-0.24
	dwt	28.4	19.6	14.7	13.0	24.4	14.01	14.56	-0.55
Average vessel size (dwt)		28 942	27 569	23 149	20 633	6 436			
DEVELOPED ECONOMIES									
Bulk carriers	Ships	11.2	15.5	15.0	16.8	41.5	19.18	19.51	-0.33
	dwt	22.7	25.5	17.4	13.3	21.0	13.42	14.33	-0.91
Average vessel size (dwt)		94 095	77 011	54 176	37 086	23 663			
Container ships	Ships	27.1	28.5	24.2	11.6	8.7	9.91	9.79	0.12
	dwt	33.0	30.8	21.9	8.3	6.0	8.68	8.47	0.21
Average vessel size (dwt)		56 948	50 512	42 453	33 521	32 073			
General cargo	Ships	13.4	10.6	17.8	20.3	38.0	20.84	20.81	0.03
	dwt	23.0	15.3	22.1	11.9	27.6	16.68	17.34	-0.66
Average vessel size (dwt)		6 974	5 877	5 054	2 369	2 952			
Oil tankers	Ships	25.0	24.6	12.5	19.0	18.9	13.82	14.21	-0.39
	dwt	32.4	39.4	17.9	7.4	3.0	7.87	8.43	-0.56
Average vessel size (dwt)		52 391	64 571	57 974	15 640	6 398			
Other types	Ships	7.1	11.0	12.1	9.1	60.7	25.29	25.08	0.20
	dwt	22.3	20.1	17.8	9.7	30.1	16.36	16.59	-0.23
Average vessel size (dwt)		*3 051*	1 784	1 433	1 041	485			
All ships	Ships	10.1	12.6	13.4	11.6	52.3	23.15	23.03	0.12
	dwt	28.7	30.9	18.9	9.4	12.0	11.02	11.56	-0.54
Average vessel size (dwt)		20 926	17 953	10 346	5 943	1 690			

Table 2.5. Age distribution of the world merchant fleet, by vessel type, as of 1 January 2010 *(percentage of total ships and dwt)* (concluded)

Country grouping Types of vessels		0–4 years	5–9 years	10–14 years	15–19 years	20 years and +	Average age (years) 2010	Average age (years) 2009	Change 2010/2009
COUNTRIES WITH ECONOMIES IN TRANSITION									
Bulk carriers	Ships	13.3	7.1	7.2	15.5	56.9	20.83	22.56	-1.74
	dwt	14.0	8.5	10.0	19.4	48.1	19.35	20.98	-1.63
Average vessel size (dwt)		38 169	43 581	50 346	45 469	30 701			
Container ships	Ships	13.7	15.0	17.6	18.9	34.8	15.85	15.62	0.23
	dwt	23.3	30.1	5.5	17.3	23.8	12.23	11.74	0.49
Average vessel size (dwt)		42 144	49 510	7 698	22 535	16 899			
General cargo	Ships	6.6	10.0	4.6	10.2	68.6	24.54	24.22	0.32
	dwt	7.5	6.2	4.7	7.5	74.1	25.59	26.87	-1.28
Average vessel size (dwt)		4 058	2 195	3 613	2 615	3 844			
Oil tankers	Ships	12.3	9.9	4.2	9.0	64.5	23.50	23.81	-0.31
	dwt	29.0	26.7	6.6	14.7	23.0	13.06	13.75	-0.69
Average vessel size (dwt)		32 115	36 749	21 097	22 448	4 871			
Other types	Ships	5.6	4.9	3.2	10.6	75.6	25.76	25.41	0.34
	dwt	26.8	25.8	7.2	12.4	27.7	13.93	15.51	-1.58
Average vessel size (dwt)		17 361	19 311	8 244	4 242	1 339			
All ships	Ships	7.6	8.0	4.6	10.8	69.0	24.37	24.30	0.07
	dwt	18.7	16.3	7.5	14.9	42.6	18.09	20.18	-2.09
Average vessel size (dwt)		19 308	16 025	12 866	10 749	4 835			
TEN MAJOR OPEN AND INTERNATIONAL REGISTRIES									
Bulk carriers	Ships	24.4	18.4	14.9	8.9	33.4	14.33	15.13	-0.80
	dwt	28.8	19.8	15.6	10.5	25.3	12.65	13.13	-0.48
Average vessel size (dwt)		77 349	70 508	68 395	77 633	49 661			
Container ships	Ships	35.0	21.9	20.5	12.2	10.4	9.61	10.33	-0.72
	dwt	41.6	25.7	15.7	9.0	7.9	8.30	8.97	-0.67
Average vessel size (dwt)		42 863	42 299	27 597	26 629	27 543			
General cargo	Ships	15.3	9.5	13.8	11.8	49.6	19.81	20.46	-0.66
	dwt	19.8	12.2	16.5	9.2	42.4	17.77	19.15	-1.38
Average vessel size (dwt)		11 712	11 685	10 873	7 094	7 772			
Oil tankers	Ships	35.8	23.3	14.2	9.2	17.4	10.70	11.34	-0.64
	dwt	30.7	28.9	18.6	13.7	8.0	9.48	9.71	-0.23
Average vessel size (dwt)		64 870	93 392	98 974	112 217	34 731			
Other types	Ships	19.9	10.4	10.6	7.3	51.8	21.23	21.87	-0.64
	dwt	35.6	13.0	10.2	5.9	35.4	15.88	16.72	-0.84
Average vessel size (dwt)		19 566	13 683	10 463	8 772	7 450			
All ships	Ships	24.6	15.8	14.3	9.8	35.4	15.89	16.63	-0.75
	dwt	31.0	22.9	16.4	11.1	18.6	11.83	12.34	-0.51
Average vessel size (dwt)		47 430	54 537	43 025	42 637	19 748			

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

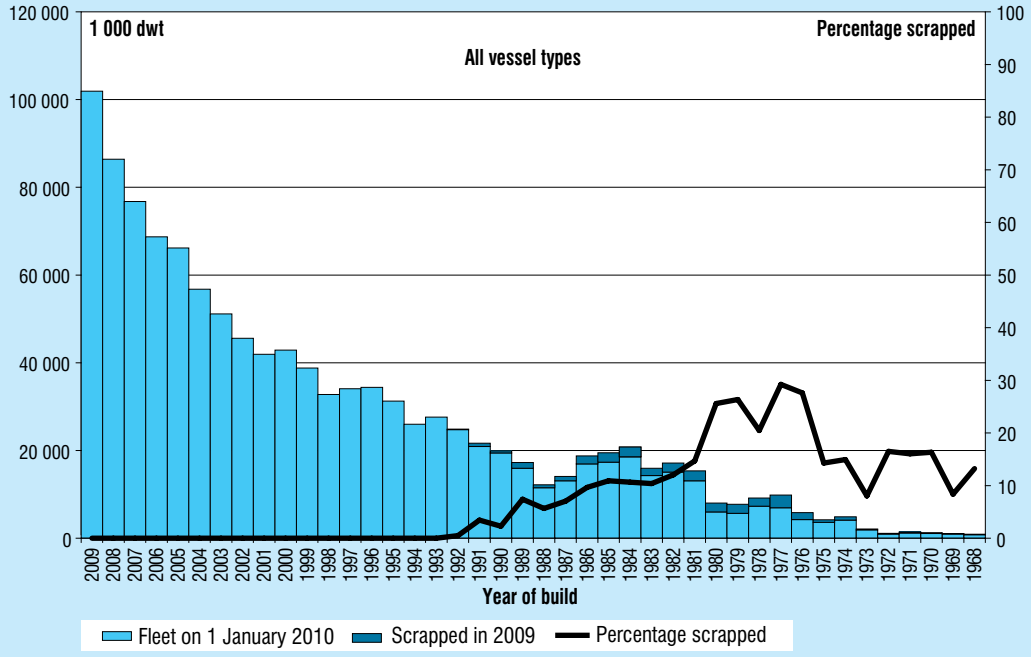
[a] Vessels of 100 gross tons and above.

flagged and beneficially owned tonnage, the Greek fleet is the world's largest, accounting for 58.5 million dwt, followed by the Chinese-owned and flagged fleet with 41 million dwt.

Together, the top 35 shipowning countries (in terms of dwt) control 95.5 per cent of the world tonnage. About one third of this tonnage is controlled by owners from developing countries and about two thirds by owners from developed countries.[6] Of the top 35 countries and territories, 18 are classified as developed, 16 as developing, and 1 as an economy in transition. Sixteen of the countries or territories are in Asia, 15 are in Europe, and 4 are in the Americas, while none are in Africa or Oceania.

As regards flags of registration, 68.4 per cent of the world's tonnage is foreign-flagged. The percentage is higher for developed countries (approximately 75 per cent foreign-flagged) than for developing countries (about 57 per cent foreign-flagged). One of the motivations for shipowners to use a foreign flag is the possibility of employing foreign seafarers. This is of particular interest to companies based in countries with high wage levels; that is to say, it is more likely to be the case in developed than in developing countries.

Figure 2.5. Age distribution of the world merchant fleet, by vessel type, as of 1 January 2010
***(percentage of total ships and dwt)* (continued)**



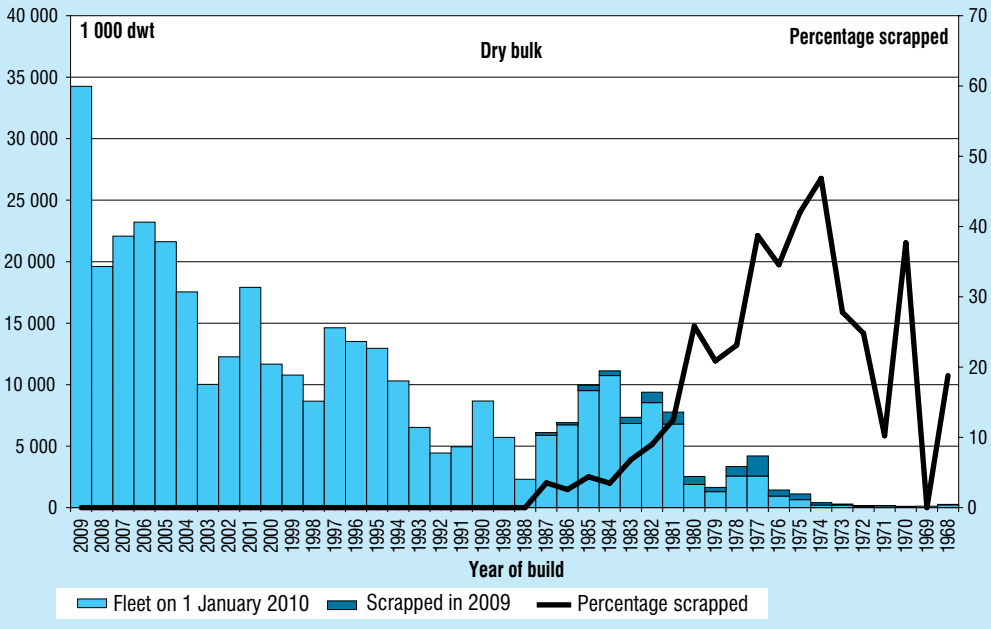
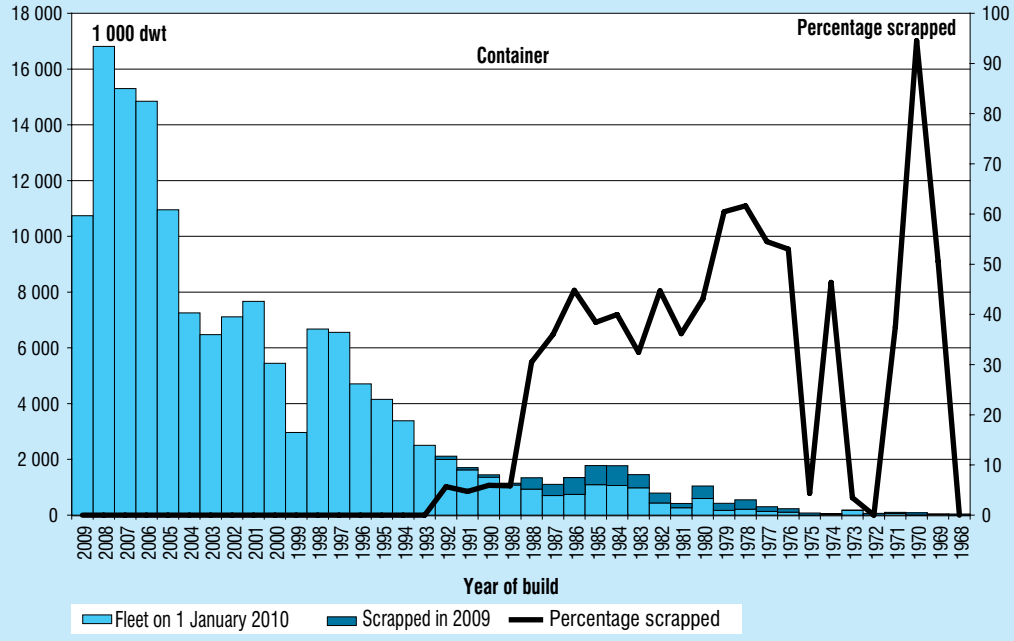


Figure 2.5. Age distribution of the world merchant fleet, by vessel type, as of 1 January 2010
***(percentage of total ships and dwt)* (continued)**



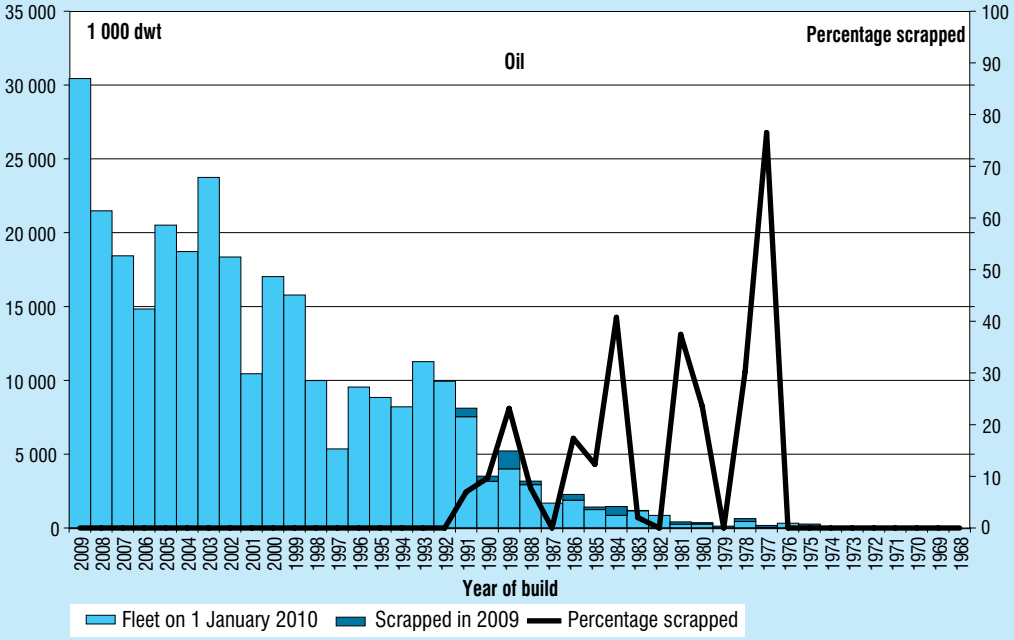
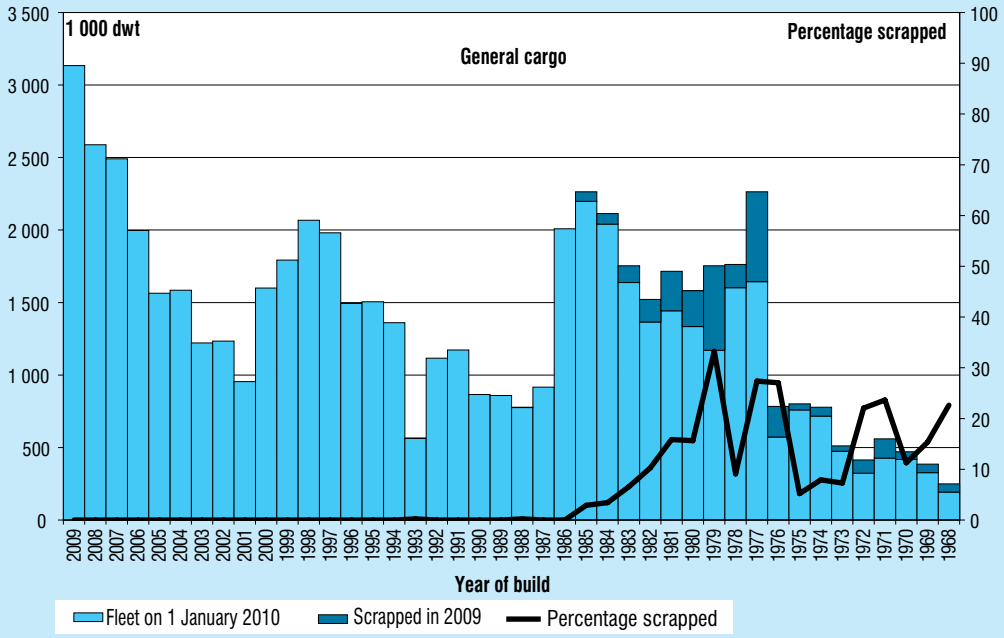
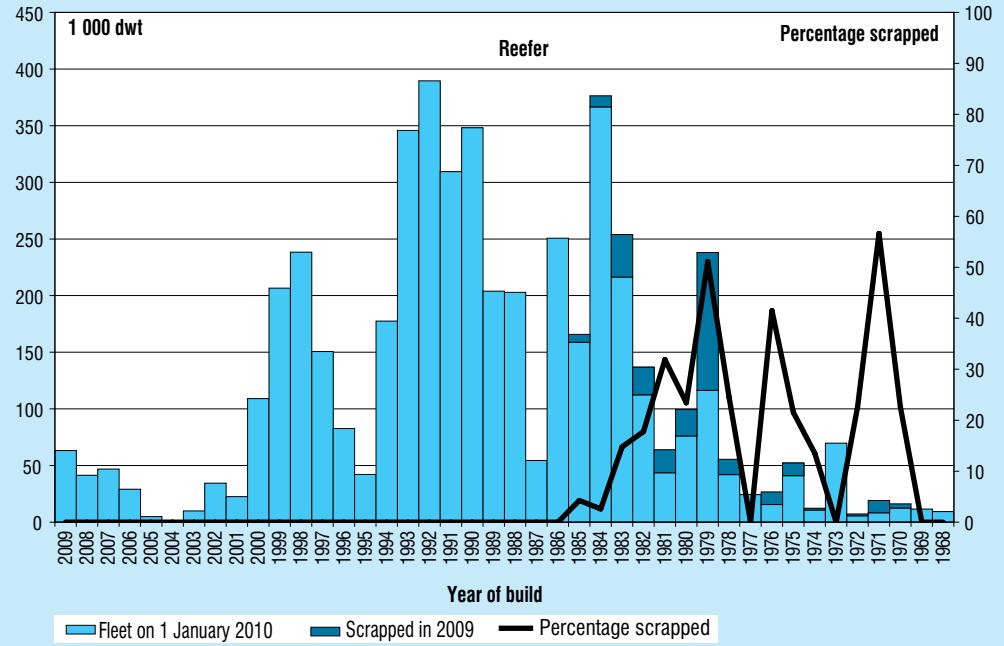


Figure 2.5. Age distribution of the world merchant fleet, by vessel type, as of 1 January 2010 *(percentage of total ships and dwt)* (concluded)





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

[a] Charts are based on the available data for 95.5 per cent of the fleet of vessels of 1,000 gross tons (GT) and above built between 1968 and 2009.

Table 2.6. The 35 countries and territories with the largest controlled fleets (dwt), as at 1 January 2010[a]

Country or territory of ownership [b]	Number of vessels			Deadweight tonnage				
	National flag[c]	Foreign flag	Total	National flag[c]	Foreign flag	Total	Foreign flag as a percentage of total	Total as a percentage of world total, 1 Jan. 2010
Greece	741	2 409	3 150	58 478 197	127 616 965	186 095 162	69	15.96
Japan	720	3 031	3 751	14 443 324	168 876 356	183 319 680	92	15.73
China	2 024	1 609	3 633	41 026 075	63 426 314	104 452 389	61	8.96
Germany	458	3 169	3 627	16 926 387	86 969 282	103 895 669	84	8.91
Republic of Korea	775	425	1 200	18 865 348	26 017 970	44 883 318	58	3.85
United States	920	945	1 865	21 529 559	19 761 196	41 290 755	48	3.54
Norway	820	1 148	1 968	14 102 299	26 416 491	40 518 790	65	3.48
China, Hong Kong	350	330	680	21 225 179	13 216 692	34 441 871	38	2.95
Denmark	360	580	940	12 937 381	20 261 040	33 198 421	61	2.85
Singapore	598	387	985	17 377 216	15 232 228	32 609 444	47	2.80
China, Taiwan Province of	92	545	637	3 769 436	25 721 242	29 490 678	87	2.53
United Kingdom	357	437	794	8 948 902	17 262 720	26 211 622	66	2.25
Italy	608	236	844	15 277 538	7 176 463	22 454 001	32	1.93
Russian Federation	1 472	515	1 987	5 860 326	13 571 242	19 431 568	70	1.67
Canada	210	223	433	2 303 767	15 980 908	18 284 675	87	1.57
Bermuda	0	180	180	0	17 192 696	17 192 696	100	1.47
India	443	66	509	14 280 882	2 885 687	17 166 569	17	1.47
Turkey	558	664	1 222	7 139 310	9 629 658	16 768 968	57	1.44
Iran (Islamic Republic of)	74	91	165	853 008	12 839 807	13 692 815	94	1.17
Saudi Arabia	74	98	172	1 740 908	11 464 923	13 205 831	87	1.13
Belgium	85	149	234	5 581 132	6 966 887	12 548 019	56	1.08
Malaysia	380	100	480	8 783 140	3 655 990	12 439 130	29	1.07
United Arab Emirates	63	354	417	698 818	8 525 258	9 224 076	92	0.79
Indonesia	778	90	868	7 069 985	1 868 730	8 938 715	21	0.77
Cyprus	129	206	335	3 542 642	5 339 340	8 881 982	60	0.76
Netherlands	528	272	800	4 828 515	3 989 203	8 817 718	45	0.76
Brazil	128	33	161	2 272 241	5 463 966	7 736 207	71	0.66
France	180	224	404	2 994 852	4 390 712	7 385 564	59	0.63
Sweden	136	217	353	1 453 082	5 570 298	7 023 380	79	0.60
Viet Nam	460	84	544	4 560 855	2 230 992	6 791 847	33	0.58
Kuwait	39	47	86	3 835 639	2 767 625	6 603 264	42	0.57
Spain	173	231	404	1 405 579	3 839 347	5 244 926	73	0.45
Isle of Man	2	30	32	4 968	4 817 656	4 822 624	100	0.41
Switzerland	35	122	157	1 023 109	2 925 288	3 948 397	74	0.34
Thailand	298	45	343	3 007 664	785 892	3 793 556	21	0.33
Total (35 countries)	15 068	19 292	34 360	348 147 263	764 657 064	1112 804 327	69	95.46
World total	17 279	21 133	38 412	368 251 867	797 468 296	1165 720 163	68	100.00

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

[a] Vessels of 1,000 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 5.7 million dwt).

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

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

C. REGISTRATION OF SHIPS

1. Flags of registration

In January 2010, the 35 largest flags of registration accounted for 93.23 per cent of the world fleet – a further increase from the 92.9 per cent share of one year earlier (table 2.7).[7] The largest flag of registration continues to be Panama, with 289 million dwt (22.6 per cent of the world fleet), followed by Liberia (142 million dwt; 11.1 per cent), the Marshall Islands (6.1 per cent), Hong Kong, China (5.8 per cent), Greece (5.3 per cent) and the Bahamas (5.02 per cent). Together, these top 5 registries accounted for 51 per cent of the world's deadweight tonnage, and the top 10 registries accounted for 71.3 per cent – both figures showing increases over the previous year.

As regards the number of ships, the largest fleets are flagged in Panama (8,100 vessels of 100 GT and above), the United States (6,546), Japan (6,221), Indonesia (5,205), China (4,064) and the Russian Federation (3,465). Except for Panama, these fleets include a large number of general cargo and other smaller vessels that are employed in coastal, inter-island and inland waterway cabotage services.

The flag of Indonesia recorded the highest percentage growth, mostly due to nationally owned vessels that had previously been registered under foreign flags that moved back to the national registry in 2009. In January 2010, only 20.9 per cent of Indonesian-controlled tonnage was using a foreign flag, down from 29.4 per cent one year earlier.

The top 10 major open and international registries in 2010 comprised the same flags as in 2009. They increased their combined market share by a further 0.32 percentage points between 1 January 2009 and 1 January 2010 to reach 55.44 per cent (table 2.8). The 10 major open and international registries have their highest shares among dry bulk carriers (61.3 per cent) and oil tankers (55.5 per cent). Among the remaining registries, which include national registries and smaller open registries, the share of developed countries decreased by 0.34 percentage points during 2009 to reach 17.9 per cent in January 2010, while developing countries kept their share approximately stable at 25.2 per cent. Developed countries' fleets have their highest shares among container ships (26.3 per cent), while developing countries provide their flag most often to general cargo vessels (35.6 per cent of the world fleet in this vessel category). Among the developing regions, Asia has by far the largest share, with 22.4 per cent of the world fleet, followed by Latin America and the Caribbean, with 1.8 per cent.

The following section examines in greater detail the links between vessel ownership and registration for the 10 major open and international registries and the 35 major countries and territories of ownership.

2. Ownership and registration

Most open and international registries specialize in certain countries of ownership (table 2.9 and fig. 2.6).[8] The registry of Panama caters mainly for owners from China, Greece, Japan and the Republic of Korea. The flag of Liberia is used mostly for ships owned by German and Greek owners. The clients of the Marshall Islands registry are principally from Germany, Greece and the United States. The client base of the Bahamas is relatively broadly spread. The largest group of owners for the Maltese registry is from Greece. From the country-of-ownership perspective, a mirror image is obtained (fig. 2.7). Carriers from China, Japan and the Republic of Korea rely mostly on the flag of Panama; German owners register their ships mainly in Liberia; and owners from the United States often choose the flag of the Marshall Islands, which used to be a United States dependent territory. Greek owners, on the other hand, use a wider portfolio of different flags of registration, including their own national flag.

D. SHIPBUILDING, DEMOLITION AND THE SECOND-HAND MARKET

1. Shipbuilding

Even as the economic crisis continued through 2009, the world's shipyards continued to deliver new ships. As in 2008, and even without significant new orders, vessels continued to be built, on the basis of orders that had been placed prior to the economic crisis.

During 2009, there were 3,658 newbuildings recorded as delivered – a new historical record compared to the previous year's record of 2,999 newbuildings, and an increase of 22 per cent in terms of vessel numbers. In terms of deadweight tonnage, newbuildings stood at 117.3 million dwt, against 82.3 million dwt in 2008,

Table 2.7. The 35 flags of registration with the largest registered deadweight tonnage, as at 1 January 2010[a]

Flag of registration	Number of vessels	Share of world total, vessels	Deadweight tonnage, 1 000 dwt	Share of world total, dwt	Cumulated share, dwt	Average vessel size, dwt	Dwt growth 2010/2009, percentage
Panama	8 100	7.93	288 758	22.63	22.63	35 649	5.40
Liberia	2 456	2.40	142 121	11.14	33.76	57 867	12.80
Marshall Islands	1 376	1.35	77 827	6.10	39.86	56 561	13.70
China, Hong Kong	1 529	1.50	74 513	5.84	45.70	48 733	16.10
Greece	1 517	1.48	67 629	5.30	51.00	44 581	7.29
Bahamas	1 426	1.40	64 109	5.02	56.03	44 957	3.38
Singapore	2 563	2.51	61 660	4.83	60.86	24 058	1.42
Malta	1 613	1.58	56 156	4.40	65.26	34 815	10.84
China	4 064	3.98	45 157	3.54	68.80	11 112	12.90
Cyprus	1 026	1.00	31 305	2.45	71.25	30 512	-0.26
Republic of Korea	3 009	2.94	20 819	1.63	72.88	6 919	-7.88
Norway (NIS)	560	0.55	18 648	1.46	74.34	33 300	-8.24
United Kingdom	1 697	1.66	17 758	1.39	75.73	10 464	11.33
Japan	6 221	6.09	17 707	1.39	77.12	2 846	14.86
Germany	948	0.93	17 570	1.38	78.50	18 534	-2.11
Italy	1 635	1.60	17 276	1.35	79.85	10 566	19.84
Isle of Man	363	0.36	16 711	1.31	81.16	46 036	15.12
India	1 349	1.32	14 970	1.17	82.33	11 097	-2.16
Denmark (DIS)	490	0.48	13 500	1.06	83.39	27 551	8.18
Antigua and Barbuda	1 237	1.21	13 034	1.02	84.41	10 536	4.65
United States	6 546	6.41	12 792	1.00	85.42	1 954	7.40
Indonesia	5 205	5.09	10 471	0.82	86.24	2 012	49.04
Malaysia	1 344	1.32	10 225	0.80	87.04	7 608	8.88
Bermuda	155	0.15	10 107	0.79	87.83	65 204	-1.86
France (FIS)	165	0.16	8 330	0.65	88.48	50 487	16.61
Turkey	1 344	1.32	7 878	0.62	89.10	5 862	5.37
Saint Vincent and the Grenadines	1 043	1.02	7 329	0.57	89.67	7 027	-0.96
Russian Federation	3 465	3.39	7 283	0.57	90.24	2 102	2.00
Netherlands	1 332	1.30	7 252	0.57	90.81	5 445	6.42
Philippines	1 823	1.78	7 033	0.55	91.36	3 858	4.19
Belgium	246	0.24	6 575	0.52	91.88	26 728	-0.85
Viet Nam	1 415	1.38	5 415	0.42	92.30	3 827	16.14
Cayman Islands	150	0.15	3 961	0.31	92.61	26 404	-8.19
China, Taiwan Province of	641	0.63	3 944	0.31	92.92	6 153	-7.11
Kuwait	209	0.20	3 856	0.30	93.23	18 451	-0.23
Total top 35 flags of registration	68 262	66.80	1 189 679	93.23	93.23	17 428	7.44
World total	102 194	100.00	1 276 137	100.00	100.00	12 487	7.03

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

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

Table 2.8. Distribution of dwt capacity of vessel types, as percentages, by country group of registration, 2010[a]
(percentage change 2010/2009 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	17.89	20.23	11.00	17.84	26.34	25.17
	-0.34	*0.18*	*-0.50*	*0.56*	*-0.75*	*-1.56*
Countries with economies						
in transition	1.00	0.84	0.44	4.55	0.10	2.06
	-0.06	*0.02*	*-0.06*	*-0.13*	*-0.01*	*-0.07*
Developing countries	25.23	23.23	26.99	35.56	19.81	24.05
	0.02	*-0.10*	*-0.20*	*0.56*	*0.96*	*-0.25*
of which:						
Africa	0.67	0.73	0.29	1.89	0.12	1.91
	0.09	*0.26*	*-0.00*	*0.13*	*-0.01*	*-0.12*
America	1.75	1.86	1.24	4.22	0.27	3.57
	-0.16	*-0.18*	*-0.16*	*-0.07*	*-0.02*	*-0.27*
Asia	22.36	20.33	24.92	28.68	19.39	17.65
	0.08	*-0.15*	*-0.09*	*0.41*	*0.99*	*0.13*
Oceania	0.44	0.32	0.54	0.78	0.03	0.92
	0.02	*-0.03*	*0.05*	*0.09*	*0.00*	*0.01*
Other, unallocated	0.44	0.22	0.28	2.09	0.12	0.99
	0.05	*-0.03*	*0.09*	*0.36*	*0.08*	*-0.02*
10 major open and						
international registries[b]	55.44	55.47	61.29	39.96	53.63	47.74
	0.32	*-0.08*	*0.68*	*-1.35*	*-0.28*	*1.91*

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

[a] Vessels of 100 GT and above.

[b] There exists no clear definition of "open and international registries". UNCTAD has grouped the 10 major open and international registries to include the 10 largest fleets with more than 90 per cent foreign-controlled tonnage. See table 2.9 for the list of registries.

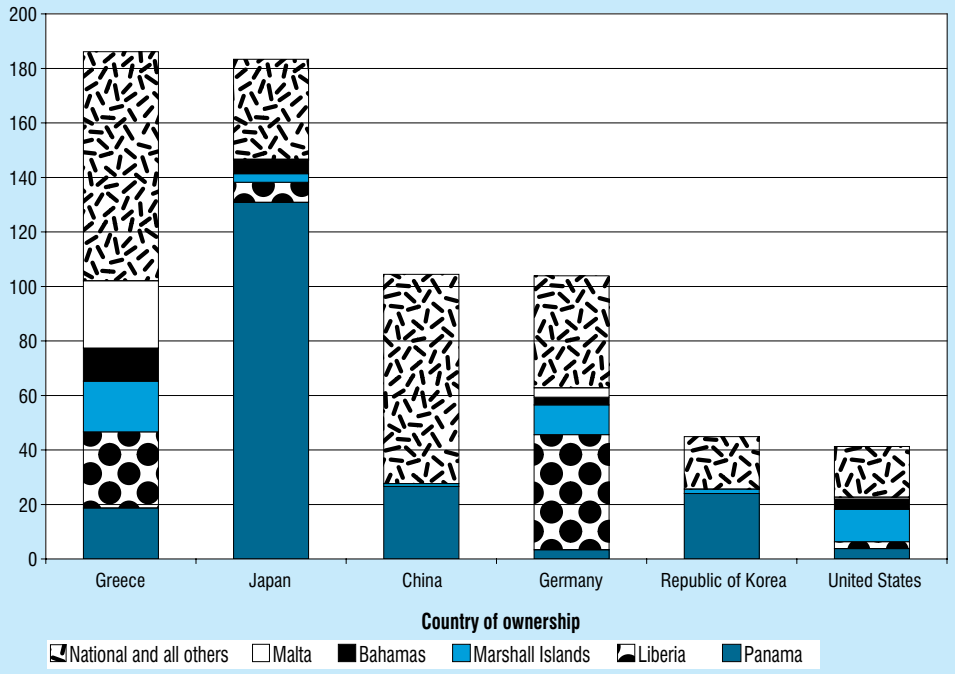
corresponding to an impressive growth of 42 per cent.

More than 90 per cent of construction took place in just three Asian countries, namely the Republic of Korea (37.3 per cent of gross tonnage), China (28.6 per cent) and Japan (24.6 per cent). All remaining countries together accounted for only 9.6 per cent of global shipbuilding in 2009 (table 2.10).

The three main shipbuilding countries specialize in different vessel types (fig. 2.8). While the Republic of Korea focuses on container ships and tankers, China has a higher market share in dry bulk carriers. Japan builds mostly oil tankers and only a small share of the container ships. More than 57 per cent of container ship tonnage and 73 per cent of gas carriers are built in the Republic of Korea. China has its highest market share in general cargo ships, with 64 per cent, and Japan dominates the vehicle carrier market, with 63 per cent of the global production of this vessel type. The other countries maintain a higher market share in other specialized ships, such as tugs, offshore supply or fishing vessels used in national waters, and cruise ships and other passenger ships (table 2.10).

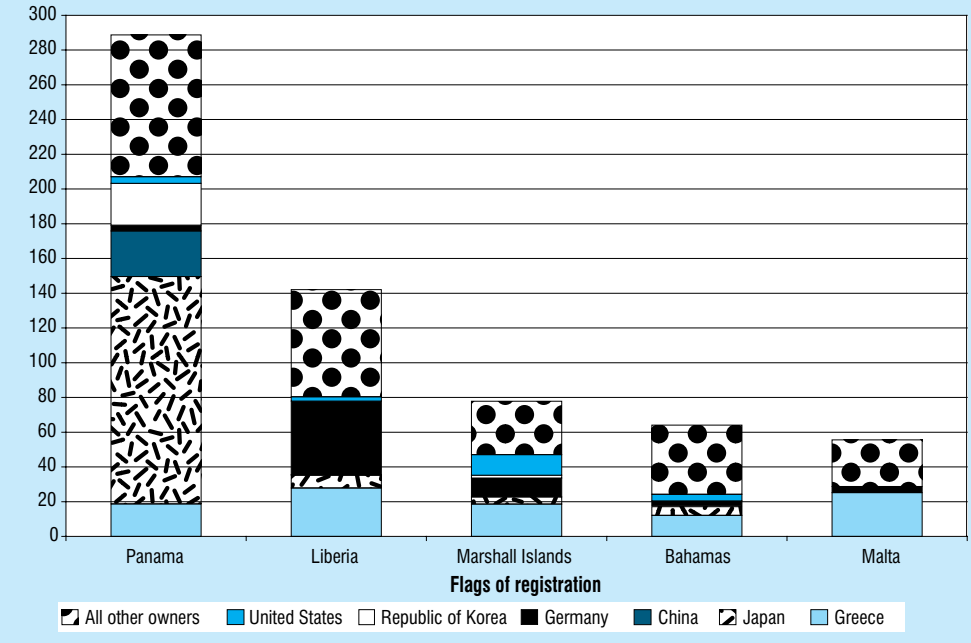
In addition to the three Asian shipbuilders mentioned above, several other Asian countries participated in global vessel construction in 2009. Bangladesh built one 2,950 dwt general cargo ship. Taiwan Province of China is home to six yards, which in 2009 built 18 ships, including 11 container vessels of up to 8,200 TEU carrying capacity. Hong Kong (China) built just one vessel in 2009. Thirteen yards in India

Figure 2.6. Major countries of ownership and their flags of registration, 2010[a]
(beginning-of-year figures, in millions of deadweight tons)



Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by IHS Fairplay.
[a] Cargo-carrying vessels of 1,000 GT and above.

Figure 2.7. Major open and international registries and the countries of ownership, 2010[a]
(beginning-of-year figures, in millions of deadweight tons)



Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by IHS Fairplay.
[a] Cargo-carrying vessels of 1,000 GT and above.

Table 2.9. True nationality of 10 major open and international registry fleets, as at 1 January 2010[a]

Country or territory of ownership	Panama			Liberia			Marshall Islands		
	Number of vessels	1 000 dwt	%	Number of vessels	1 000 dwt	%	Number of vessels	1 000 dwt	%
Greece	457	18 728	7.6	437	27 888	21.5	313	18 629	28.2
Japan	2 294	130 879	52.8	111	7 359	5.7	32	3 118	4.7
China	567	26 262	10.6	13	399	0.3	13	963	1.5
Germany	31	3 386	1.4	977	42 239	32.5	243	10 898	16.5
Republic of Korea	355	24 017	9.7	1	1	0.0	19	1 608	2.4
United States	159	3 808	1.5	54	2 541	2.0	169	11 877	18.0
Norway	111	3 294	1.3	45	952	0.7	72	3 286	5.0
China, Hong Kong	123	5 119	2.1	69	4 391	3.4	5	125	0.2
Denmark	41	1 335	0.5	4	244	0.2	7	355	0.5
Singapore	103	3 124	1.3	36	4 434	3.4	27	2 514	3.8
China, Taiwan Province of	321	12 649	5.1	80	6 438	5.0		0	-
United Kingdom	49	1 949	0.8	30	1 332	1.0	4	194	0.3
Italy	27	852	0.3	51	3 288	2.5	3	13	0.0
Russian Federation	40	316	0.1	104	8 962	6.9	7	132	0.2
Canada	8	324	0.1	3	159	0.1	4	122	0.2
Bermuda	6	677	0.3	4	1 176	0.9	35	5 439	8.2
India	19	740	0.3	1	150	0.1	6	549	0.8
Turkey	85	820	0.3	13	306	0.2	67	2 518	3.8
Iran (Islamic Republic of)	8	68	0.0		0	-		0	-
Saudi Arabia	7	150	0.1	24	6 180	4.8	1	1	0.0
Belgium	4	199	0.1	1	14	0.0	1	442	0.7
Malaysia	17	312	0.1		0	-	12	75	0.1
United Arab Emirates	107	2 725	1.1	25	1 382	1.1	17	781	1.2
Indonesia	16	273	0.1	3	265	0.2	1	6	0.0
Cyprus	14	1 143	0.5	37	665	0.5	42	1 146	1.7
Netherlands	24	129	0.1	7	93	0.1	16	428	0.6
Brazil	7	936	0.4	18	3 820	2.9	1	280	0.4
France	14	253	0.1	3	305	0.2	3	18	0.0
Sweden	3	6	0.0	9	377	0.3	1	13	0.0
Viet Nam	37	1 053	0.4	3	140	0.1		0	-
Kuwait	11	657	0.3		0	-		0	-
Spain	45	294	0.1	1	40	0.0	5	187	0.3
Isle of Man	7	804	0.3	19	3 913	3.0		0	-
Switzerland	27	691	0.3	16	425	0.3	10	357	0.5
Thailand	11	74	0.0		0	-	1	33	0.0
Total of the 35 countries	5 155	248 045	100.0	2 199	129 880	100.0	1 137	66 111	100.0
Registry's market share among the 35 countries	15.0	22.3		6.4	11.7		3.3	5.9	

Table 2.9. True nationality of 10 major open and international registry fleets, as at 1 January 2010[a] (continued)

Bahamas			Malta			Cyprus			Country or territory of ownership
Number of vessels	1 000 dwt	%	Number of vessels	1 000 dwt	%	Number of vessels	1 000 dwt	%	
217	12 150	21.2	436	24 693	49.9	218	11 654	39.9	Greece
89	4 986	8.7	8	345	0.7	20	723	2.5	Japan
6	429	0.7	11	191	0.4	8	211	0.7	China
46	2 822	4.9	113	3 454	7.0	186	4 239	14.5	Germany
	0	-	3	13	0.0		0	-	Republic of Korea
108	3 823	6.7	35	637	1.3	7	60	0.2	United States
243	5 560	9.7	89	878	1.8	25	194	0.7	Norway
4	23	0.0	1	12	0.0	2	36	0.1	China, Hong Kong
52	721	1.3	42	670	1.4	3	52	0.2	Denmark
10	57	0.1	4	111	0.2	4	101	0.3	Singapore
	0	-		0	-		0	-	China, Taiwan Province of
58	2 092	3.7	16	309	0.6	24	1 301	4.5	United Kingdom
11	509	0.9	52	967	2.0	4	47	0.2	Italy
1	2	0.0	54	499	1.0	50	2 128	7.3	Russian Federation
103	10 617	18.5	1	24	0.0	2	64	0.2	Canada
14	1 703	3.0	4	74	0.2	7	322	1.1	Bermuda
1	8	0.0	2	162	0.3	3	284	1.0	India
2	98	0.2	204	4 533	9.2		0	-	Turkey
	0	-	61	9 334	18.9	10	3 180	10.9	Iran (Islamic Republic of)
18	4 940	8.6		0	-		0	-	Saudi Arabia
11	142	0.2	14	397	0.8	2	14	0.0	Belgium
13	107	0.2	1	3	0.0		0	-	Malaysia
27	1 390	2.4	1	30	0.1	15	380	1.3	United Arab Emirates
2	82	0.1		0	-		0	-	Indonesia
23	706	1.2	33	942	1.9	124	3 438	11.8	Cyprus
33	1 902	3.3	5	29	0.1	48	476	1.6	Netherlands
2	363	0.6		0	-		0	-	Brazil
23	547	1.0	11	507	1.0		0	-	France
3	111	0.2	2	57	0.1	4	18	0.1	Sweden
	0	-		0	-		0	-	Viet Nam
2	85	0.1	2	147	0.3		0	-	Kuwait
11	1 144	2.0	13	212	0.4	13	287	1.0	Spain
	0	-		0	-		0	-	Isle of Man
1	97	0.2	15	215	0.4		0	-	Switzerland
4	99	0.2		0	-		0	-	Thailand
1 138	57 313	100.0	1 233	49 444	100.0	779	29 208	100.0	Total of the 35 countries
3.3	5.2		3.6	4.4		2.3	2.6		Registry's market share among the 35 countries

Table 2.9. True nationality of 10 major open and international registry fleets, as at 1 January 2010[a] (continued)

Country or territory of ownership	Isle of Man			Antigua and Barbuda			Bermuda			Saint Vincent and the Grenadines		
	Number of vessels	1 000 dwt	%	Number of vessels	1 000 dwt	%	Number of vessels	1 000 dwt	%	Number of vessels	1 000 dwt	%
Greece	54	4 640	28.9	5	109	0.9	3	225	3.7	68	1 839	36.3
Japan	13	1 047	6.5		0	-	2	164	2.7	3	10	0.2
China	2	571	3.6		0	-	16	2 200	36.5	74	1 732	34.2
Germany	53	901	5.6	1 018	11 407	93.2	17	667	11.1	8	112	2.2
Republic of Korea		0	-		0	-		0	-		0	-
United States	5	184	1.1	6	23	0.2	26	358	5.9	23	116	2.3
Norway	62	2 090	13.0	10	97	0.8	5	58	1.0	15	55	1.1
China, Hong Kong		0	-		0	-	5	640	10.6	4	51	1.0
Denmark	47	489	3.0	27	138	1.1		0	-	19	52	1.0
Singapore	1	50	0.3		0	-		0	-	3	24	0.5
China, Taiwan Province of		0	-		0	-		0	-	4	5	0.1
United Kingdom	80	4 553	28.3		0	-	7	384	6.4	8	74	1.5
Italy		0	-		0	-		0	-	10	111	2.2
Russian Federation		0	-	3	8	0.1		0	-	19	244	4.8
Canada	1	21	0.1		0	-		0	-	1	3	0.1
Bermuda	5	1 496	9.3		0	-		0	-	1	10	0.2
India		0	-		0	-		0	-	5	12	0.2
Turkey		0	-	7	38	0.3		0	-	16	55	1.1
Iran (Islamic Republic of)		0	-		0	-		0	-	1	1	0.0
Saudi Arabia		0	-		0	-		0	-		0	-
Belgium		0	-		0	-		0	-	12	33	0.7
Malaysia		0	-		0	-		0	-		0	-
United Arab Emirates		0	-		0	-		0	-	17	269	5.3
Indonesia		0	-		0	-		0	-		0	-
Cyprus		0	-	1	10	0.1		0	-	3	21	0.4
Netherlands	2	3	0.0	17	78	0.6		0	-	3	7	0.1
Brazil		0	-		0	-		0	-	2	5	0.1
France		0	-		0	-	1	7	0.1	27	63	1.2
Sweden	1	23	0.1	1	5	0.0	17	1 318	21.9	1	4	0.1
Viet Nam		0	-		0	-		0	-		0	-
Kuwait		0	-		0	-		0	-		0	-
Spain		0	-		0	-		0	-		0	-
Isle of Man	2	5	0.0	2	29	0.2		0	-		0	-
Switzerland		0	-	7	305	2.5		0	-	13	161	3.2
Thailand		0	-		0	-		0	-		0	-
Total of the 35 countries	328	16 073	100.0	1 104	12 246	100.0	99	6 022	100.0	360	5 071	100.0
Registry's market share among the 35 countries	1.0	1.4		3.2	1.1		0.3	0.5		1.0	0.5	

Table 2.9. True nationality of 10 major open and international registry fleets, as at 1 January 2010[a] (concluded)

Total major 10 open and international registries					Total national controlled fleet	Major 10 registries as % of total nationally controlled fleet	Country or territory of ownership
Number of vessels	% of vessels	1 000 dwt	% of dwt	Average vessel size	1 000 dwt		
2 208	16.32	120 554	19.46	54 599	186 095	64.8	Greece
2 572	19.01	148 629	24.00	57 787	183 320	81.1	Japan
710	5.25	32 959	5.32	46 421	104 452	31.6	China
2 692	19.89	80 125	12.94	29 764	103 896	77.1	Germany
378	2.79	25 640	4.14	67 830	44 883	57.1	Republic of Korea
592	4.37	23 426	3.78	39 572	41 291	56.7	United States
677	5.00	16 464	2.66	24 319	40 519	40.6	Norway
213	1.57	10 399	1.68	48 820	34 442	30.2	China, Hong Kong
242	1.79	4 058	0.66	16 768	33 198	12.2	Denmark
188	1.39	10 415	1.68	55 398	32 609	31.9	Singapore
405	2.99	19 092	3.08	47 140	29 491	64.7	China, Taiwan Province of
276	2.04	12 191	1.97	44 169	26 212	46.5	United Kingdom
158	1.17	5 788	0.93	36 634	22 454	25.8	Italy
278	2.05	12 291	1.98	44 211	19 432	63.3	Russian Federation
123	0.91	11 334	1.83	92 146	18 285	62.0	Canada
76	0.56	10 898	1.76	143 398	17 193	63.4	Bermuda
37	0.27	1 903	0.31	51 442	17 167	11.1	India
394	2.91	8 368	1.35	21 238	16 769	49.9	Turkey
80	0.59	12 584	2.03	157 294	13 693	91.9	Iran (Islamic Republic of)
50	0.37	11 272	1.82	225 434	13 206	85.4	Saudi Arabia
45	0.33	1 241	0.20	27 575	12 548	9.9	Belgium
43	0.32	496	0.08	11 544	12 439	4.0	Malaysia
209	1.54	6 956	1.12	33 284	9 224	75.4	United Arab Emirates
22	0.16	626	0.10	28 451	8 939	7.0	Indonesia
277	2.05	8 070	1.30	29 134	8 882	90.9	Cyprus
155	1.15	3 144	0.51	20 284	8 818	35.7	Netherlands
30	0.22	5 405	0.87	180 161	7 736	69.9	Brazil
82	0.61	1 699	0.27	20 721	7 386	23.0	France
42	0.31	1 932	0.31	46 007	7 023	27.5	Sweden
40	0.30	1 193	0.19	29 827	6 792	17.6	Viet Nam
15	0.11	889	0.14	59 263	6 603	13.5	Kuwait
88	0.65	2 164	0.35	24 594	5 245	41.3	Spain
30	0.22	4 752	0.77	158 390	4 823	98.5	Isle of Man
89	0.66	2 250	0.36	25 283	3 948	57.0	Switzerland
16	0.12	206	0.03	12 879	3 794	5.4	Thailand
13 532	100.00	619 412	100.00	45 774	1 112 804	55.7	Total of the 35 countries
39.4		55.7					Registry's market share among the 35 countries

Table 2.10. Deliveries of newbuildings, main shipbuilding countries *(2009, thousands of gross tons)*

	Republic of Korea	China	Japan	All other countries	Total	Percentage of total gross tonnage
Bulk and ore carriers	4 115	9 386	8 107	866	22 474	28.9
Percentage	*18.3*	*41.8*	*36.1*	*3.9*	*100.0*	
Crude and crude/oil products tankers	8 153	5 567	3 792	61	17 573	22.6
Percentage	*46.4*	*31.7*	*21.6*	*0.3*	*100.0*	
Container ships (fully cellular)	6 672	2 187	1 124	1 685	11 669	15.0
Percentage	*57.2*	*18.7*	*9.6*	*14.4*	*100.0*	
Products and chemical tankers	4 627	2 422	1 494	1 074	9 617	12.4
Percentage	*48.1*	*25.2*	*15.5*	*11.2*	*100.0*	
LNG and LPG tankers	4 351	338	1 237	47	5 974	7.7
Percentage	*72.8*	*5.7*	*20.7*	*0.8*	*100.0*	
Vehicles carriers	445	407	1 995	332	3 178	4.1
Percentage	*14.0*	*12.8*	*62.8*	*10.4*	*100.0*	
General cargo ships	10	1 171	242	412	1 835	2.4
Percentage	*0.5*	*63.8*	*13.2*	*22.4*	*100.0*	
All other vessel sub-types	584	722	1 110	2 950	5 366	6.9
Percentage	*10.9*	*13.5*	*20.7*	*55.0*	*100.0*	
Total	28 957	22 201	19 101	7 427	77 686	100.0
Percentage of total gross tonnage	*37.3*	*28.6*	*24.6*	*9.6*	*100.0*	

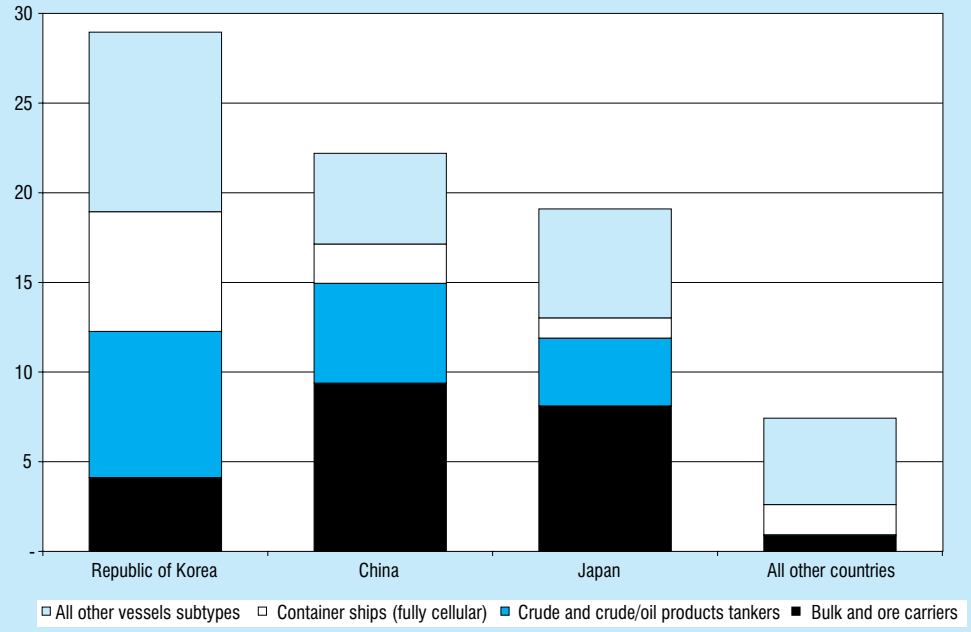
Source: Compiled by the UNCTAD secretariat, on the basis of data from IHS Fairplay.

built 33 ships, mostly specialized tugs and general cargo and platform supply ships; in addition, some product tankers and an Indian-flagged 29,400 dwt bulk carrier were delivered during the year. Indonesia has 63 active shipyards, which delivered 189 ships in 2009, mostly a range of specialized tugs, but also cement carriers, general cargo ships and product tankers. Six shipyards in the Islamic Republic of Iran built 11 ships, including two roll-on roll-off (ro-ro) vessels. The Democratic People's Republic of Korea delivered two ships during the year, including one ro-ro vessel. In Malaysia, 45 shipyards delivered 227 ships, mostly tugboats and supply vessels, and also some large offshore supply vessels and chemical tankers. Papua New Guinea built one ship during the year. In the Philippines, a total of 8 yards built 24 ships, including 7 container vessels with a capacity of around 4,300 TEUs, and 9 dry bulk carriers of 58,000 dwt. A yard in Saudi Arabia delivered 4 anchor-handling supply ships. Singapore has 13 shipyards, which delivered 34 mostly smaller ships, such as tugs and supply vessels. Yards in Sri Lanka constructed 3 ships, including one ro-ro passenger ship. In Thailand, 10 ships were supplied by 3 yards, including one small cellular container vessel. The United Arab Emirates is home to 8 yards, which delivered 25 mostly smaller crew-supply and tug vessels. In Viet Nam, 99 ships were built by 41 yards, including several dry bulk carriers of around 55,000 dwt each and general cargo ships of 4,300 dwt.[9]

In Latin America, Argentina, Cuba, Ecuador and Mexico were reported to have delivered one vessel each in 2009. Brazil built 35 ships at 6 shipyards, including tugboats and offshore and platform supply vessels. Three shipyards in Chile delivered a total of 11 fishing and passenger ships and tugboats. One shipyard in Peru built 4 tugs.

In Africa, Egypt built 4 tugboats at three yards. Kenya delivered one 1,800 dwt deck vessel with liquid cargo capacity, currently registered in Sierra Leone. One tugboat was constructed in the Libyan Arab Jamahiriya. South Africa built five ships at three yards, including one 4,680 dwt products tanker used for bunkering in South Africa.

Figure 2.8. Deliveries of newbuildings in the main shipbuilding countries, 2009 (*in thousands of gross tons*)



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

2. Demolition of ships

At the beginning of 2009, there were 99,741 commercial vessels of 100 GT and above. During the year, 3,658 new vessels were delivered (+3.7 per cent of the existing fleet at the beginning of the year, in terms of vessel numbers), while 1,205 ships were withdrawn and mostly demolished (a reduction of 1.2 per cent from the existing fleet). The resulting fleet total in January 2010 amounted to 102,194 ships (+2.5 per cent compared to January 2009).[10]

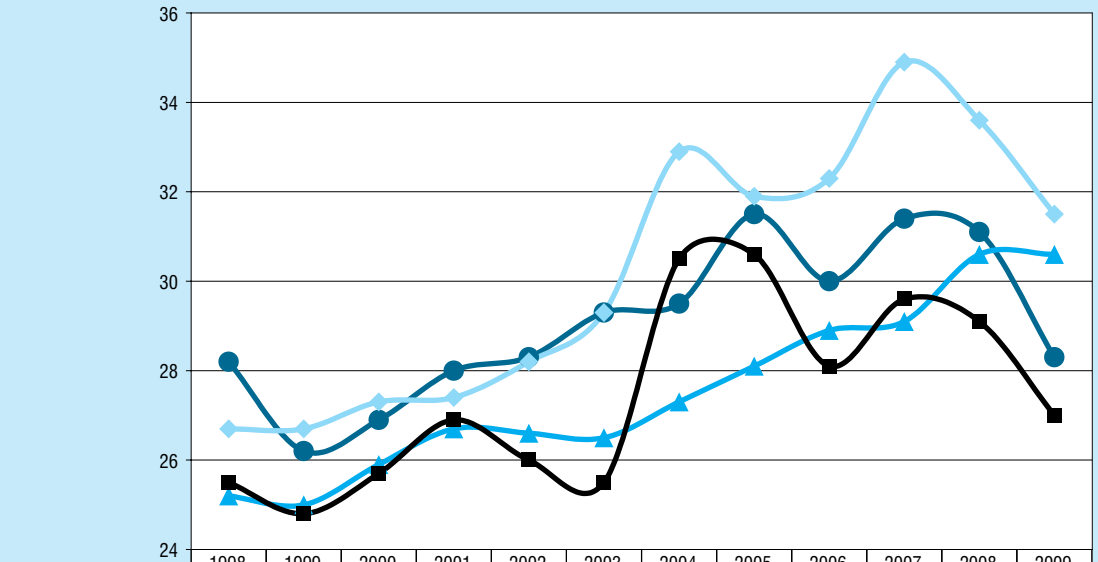
The market for ship demolition – also called scrapping or recycling – is far more volatile than the market for shipbuilding, as ships can be sold for demolition at short notice. In periods when freight and charter rates are high, shipowners are very reluctant to withdraw any ships from the market, while in times of low demand for maritime transport, owners are much more inclined to sell their ships to scrap yards. The disadvantage of selling in times of low demand is that prices for scrap metal are very low. Between mid-2008 and early 2009, the price for scrap metal had fallen from around $650 per light displacement ton (ldt) to just $200. Since then, the price has recovered, reaching about $400 in March 2010.

In recent years, the average age of broken-up ships has tended to increase, as ships are now built to last longer, and, in times of economic growth, owners keep older ships in service for longer. During the economic downturn in 2008 and 2009, however, the share of tonnage being demolished increased, and the average age of the fleet therefore decreased (see fig. 2.9, as well as the age profiles and share of broken-up tonnage presented in fig. 2.5).

Of the tonnage demolished in 2009, container ships and dry bulk carriers accounted for the largest share, with about 23 per cent each, followed by vehicle carriers (15 per cent of scrapped tonnage) and tankers (13 per cent) (table 2.11 and fig. 2.10). Container ships saw a particular surge in demolition activity during 2009. The total container-carrying capacity scrapped during 2009 was 364,300 TEU, up from 99,900 TEU in 2008, and from just 1,900 TEU four years earlier.[11] Still, even the surge in scrapping in 2009 corresponded to only 3 per cent of the existing container capacity.

The market for ship demolition is as concentrated as the market for shipbuilding. Just three countries accounted for 90 per cent of the gross tonnage demolished in 2009, with China leading (34.5 per

Figure 2.9. Average age of broken-up ships, by type, 1998 to 2009[a] *(in years)*



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Tankers	28.2	26.2	26.9	28.0	28.3	29.3	29.5	31.5	30.0	31.4	31.1	28.3
Dry bulk carriers	25.2	25.0	25.9	26.7	26.6	26.5	27.3	28.1	28.9	29.1	30.6	30.6
Container ships	25.5	24.8	25.7	26.9	26.0	25.5	30.5	30.6	28.1	29.6	29.1	27.0
General cargo ships	26.7	26.7	27.3	27.4	28.2	29.3	32.9	31.9	32.3	34.9	33.6	31.5

Source: Compiled by the UNCTAD secretariat, on the basis of data from the *Shipping Statistics and Market Review* produced by the Institute of Shipping Economics and Logistics. Volume 52, no. 1/2 – 2010, table 2.2.

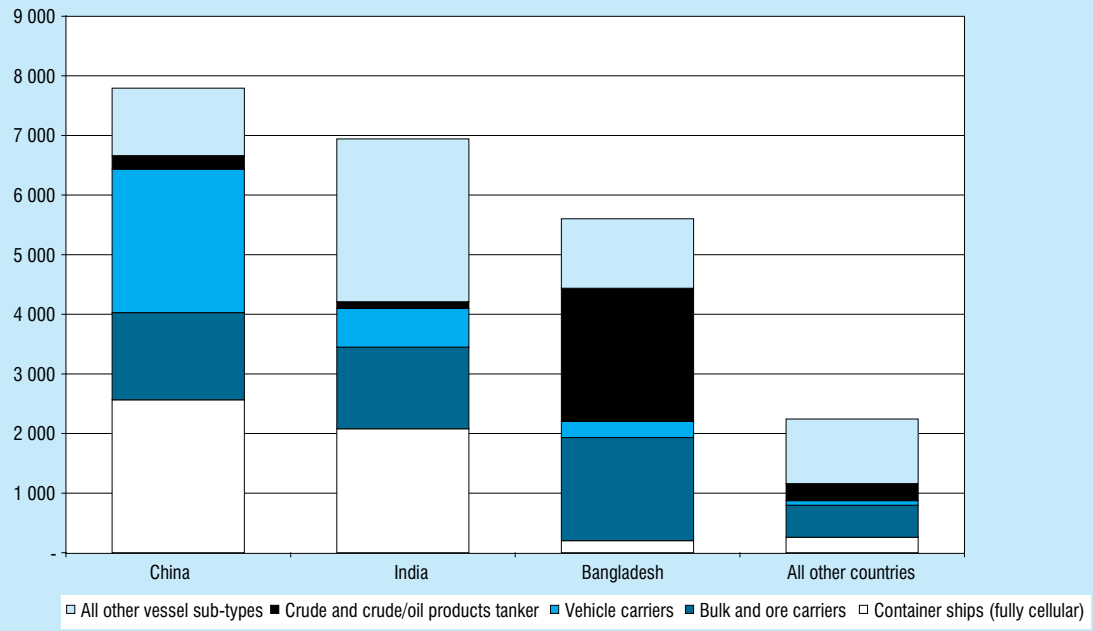
[a] Ships of 300 GT and over.

Table 2.11. Tonnage reported sold for demolition, main ship breaking countries, 2009 (thousands of gross tons)

	China	India	Bangladesh	Pakistan	All other countries	Total	Percentage of total gross tonnage
Container ships (fully cellular)	2 566	2 079	201	147	112	5 104	*22.6*
Percentage	*50.3*	*40.7*	*3.9*	*2.9*	*2.2*	*100.0*	
Bulk and ore carriers	1 461	1 369	1 731	399	140	5 100	*22.6*
Percentage	*28.7*	*26.9*	*33.9*	*7.8*	*2.7*	*100.0*	
Vehicle carriers	2 407	652	270	-	75	3 404	*15.1*
Percentage	*70.7*	*19.2*	*7.9*	-	*2.2*	*100.0*	
Crude and crude/oil products tankers	227	110	2 234	287	-	2 858	*12.7*
Percentage	*7.9*	*3.9*	*78.2*	*10.1*	-	*100.0*	
General cargo ships	482	1 144	183	161	227	2 197	*9.7*
Percentage	*21.9*	*52.0*	*8.4*	*7.3*	*10.4*	*100.0*	
Products and chemical tankers	108	271	438	99	22	938	*4.2*
Percentage	*11.5*	*28.9*	*46.7*	*10.6*	*2.4*	*100.0*	
LPG tankers	1	216	211	44	7	478	*2.1*
Percentage	*0.2*	*45.1*	*44.1*	*9.2*	*1.4*	*100.0*	
All other vessel sub-types	541	1 102	335	281	243	2 501	*11.1*
Percentage	*21.6*	*44.0*	*13.4*	*11.2*	*9.7*	*100.0*	
Total gross tonnage	7 792	6 943	5 603	1 417	826	22 581	*100.0*
Percentage of total gross tonnage	*34.5*	*30.7*	*24.8*	*6.3*	*3.7*	*100.0*	

Sources: Compiled by the UNCTAD secretariat, on the basis of data from IHS Fairplay.

Figure 2.10. Tonnage reported sold for demolition in the main shipbreaking countries, 2009
(thousands of gross tons)



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

cent), followed by India (30.7 per cent) and then Bangladesh (24.8 per cent). Pakistan (6.3 per cent) and all other countries combined (3.7 per cent) made up the remainder (table 2.11).

In the field of ship scrapping, too, countries specialize in certain vessel types. In 2009, Chinese scrap yards purchased 71 per cent of the vehicle carriers and 50 per cent of the container ships sold for demolition. India mainly demolished container ships and other specialized tonnage, while Bangladesh purchased most of the large oil tankers, with a 78 per cent market share in this segment.

Developed countries are not participating significantly in ship recycling, as developing countries with low wages are more competitive in this very labour-intensive industry. More stringent environmental regulations further add to the higher costs in developed countries.

3. Tonnage on order

As only a few new orders were placed in 2009 and shipyards slowed down the delivery of existing orders, the overall picture regarding the global order book has not changed much in recent months (table 2.12 and fig. 2.11). The tonnage on order as at 31 December 2009 consisted of 258.3 million dwt of dry bulk carriers (54.5 per cent of the total world deadweight tonnage on order), 109.3 million dwt of oil tankers (23.1 per cent), 15 million dwt of general cargo vessels (3.2 per cent), 53.9 million dwt of container ships (11.4 per cent) and 37.4 million dwt of other vessel types (7.9 per cent). The total tonnage on order stood at 9,222 vessels, with a combined capacity of 474 million dwt.

4. Prices of newbuildings and second-hand tonnage

On account of overcapacity, prices for both new and second-hand ships continued to fall in 2008 and 2009 and in early 2010 (tables 2.13 and 2.14). Average newbuilding prices for dry bulk vessels went down by between 24 and 29 per cent between 2008 and 2009, container ships were sold 19 to 33 per cent cheaper in 2009 compared to 2008, and oil tanker prices fell by between 23 and 26 per cent.

In the case of second-hand ships, the decline was even more dramatic. Average prices for 10-year-old dry

Table 2.12. World tonnage on order, 2000–2009[a] (thousands of deadweight tons)

Beginning of month	Tankers			Bulk carriers			General cargo ships		
	1 000 dwt	Ships	Average vessel size, dwt	1 000 dwt	Ships	Average vessel size, dwt	1 000 dwt	Ships	Average vessel size, dwt
December 2000	40 328	284	142 001	31 208	486	64 214	3 966	446	8 892
March 2001	44 361	319	139 061	27 221	439	62 007	3 963	441	8 986
June 2001	45 123	339	133 105	26 103	400	65 258	4 154	419	9 914
September 2001	48 386	381	126 998	21 944	337	65 115	3 967	393	10 094
December 2001	51 894	399	130 060	22 184	353	62 845	3 826	372	10 286
March 2002	47 836	404	118 405	19 027	300	63 425	3 758	357	10 525
June 2002	49 564	425	116 622	18 132	283	64 069	3 932	353	11 139
September 2002	47 774	431	110 845	18 869	283	66 676	3 979	369	10 782
December 2002	47 591	488	97 523	28 641	391	73 251	2 832	257	11 018
March 2003	50 284	515	97 639	32 019	441	72 605	2 958	263	11 249
June 2003	55 771	540	103 279	33 408	455	73 425	2 592	250	10 368
September 2003	57 856	580	99 752	41 499	575	72 172	2 841	269	10 562
December 2003	61 123	631	96 867	46 732	640	73 019	3 068	295	10 400
March 2004	62 096	615	100 969	48 761	671	72 670	3 021	312	9 683
June 2004	66 652	649	102 699	50 545	696	72 623	2 838	317	8 954
September 2004	66 969	661	101 314	52 768	703	75 061	2 921	323	9 043
December 2004	71 563	701	102 087	62 051	796	77 953	3 306	370	8 935
March 2005	68 667	679	101 129	63 404	792	80 055	3 312	388	8 536
June 2005	70 520	686	102 799	65 326	801	81 556	4 079	456	8 945
September 2005	68 741	693	99 193	63 495	788	80 578	4 777	521	9 170
December 2005	70 847	724	97 855	66 614	805	82 750	5 088	584	8 712
March 2006	83 385	791	105 417	63 829	784	81 415	5 798	634	9 145
June 2006	93 277	887	105 160	69 055	859	80 390	7 370	683	10 791
September 2006	106 912	987	108 321	73 226	898	81 543	7 602	715	10 632
December 2006	118 008	1 078	109 470	79 364	988	80 328	8 004	737	10 860
March 2007	120 819	1 113	108 553	100 256	1 204	83 269	9 561	843	11 342
June 2007	122 429	1 107	110 595	143 795	1 657	86 781	10 782	885	12 184
September 2007	124 758	1 149	108 580	183 574	2 137	85 903	12 042	956	12 597
December 2007	124 845	1 134	110 093	221 808	2 573	86 206	13 360	1 035	12 908
March 2008	128 128	1 139	112 492	243 600	2 804	86 876	15 097	1 195	12 633
June 2008	142 333	1 202	118 413	262 452	3 009	87 222	15 911	1 255	12 678
September 2008	151 423	1 245	121 625	288 959	3 316	87 141	16 787	1 332	12 603
December 2008	140 504	1 154	121 754	292 837	3 347	87 492	17 849	1 374	12 991
March 2009	130 777	1 088	120 200	289 763	3 303	87 727	17 439	1 363	12 795
June 2009	119 709	986	121 409	280 102	3 194	87 696	16 684	1 296	12 874
September 2009	114 460	934	122 548	269 558	3 050	88 380	16 354	1 264	12 939
December 2009	109 310	884	123 654	258 343	2 918	88 534	15 018	1 179	12 738
Percentage of total, December 2009	23.1	9.6		54.5	31.6		3.2	12.8	

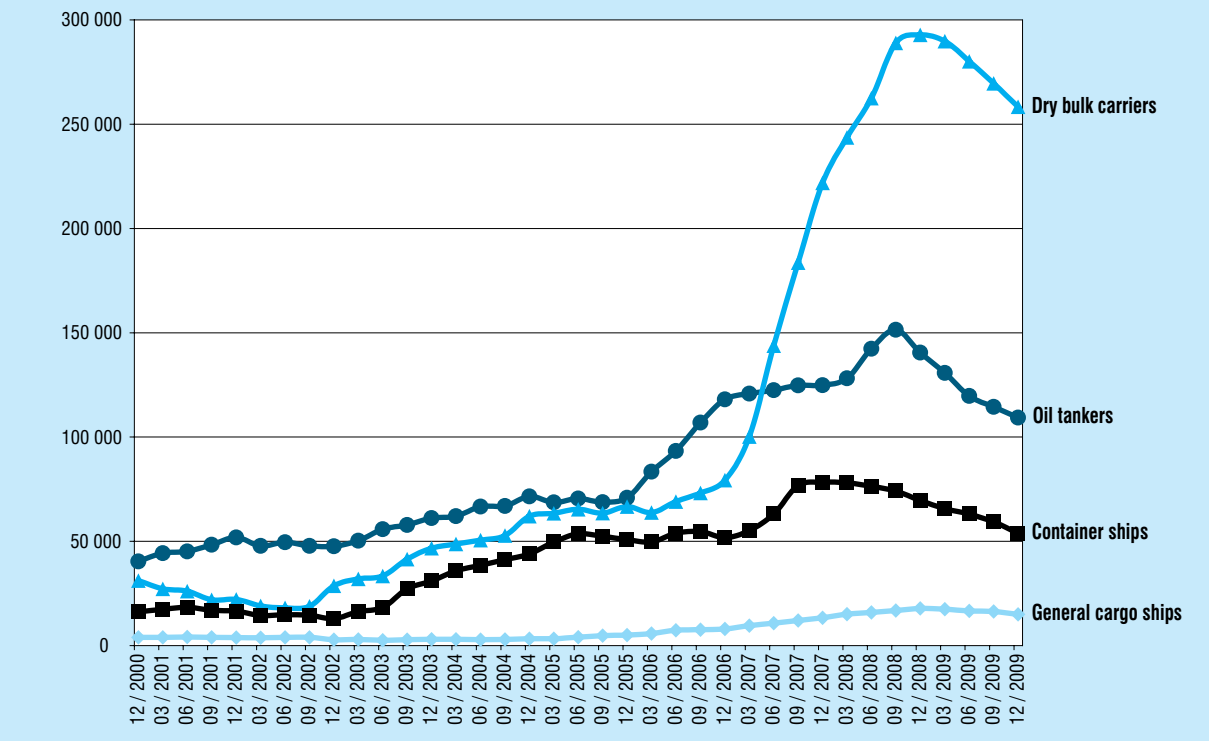
Table 2.12. World tonnage on order, 2000–2009[a] (thousands of deadweight tons) (concluded)

Container vessels			Other ships			Total			Beginning of month
1 000 dwt	Ships	Average vessel size, dwt	1 000 dwt	Ships	Average vessel size, dwt	1 000 dwt	Ships	Average vessel size, dwt	
16 140	394	40 964	8 870	1 087	8 160	100 513	2 697	37 268	**December 2000**
17 350	435	39 884	10 154	1 132	8 970	103 048	2 766	37 255	**March 2001**
18 393	441	41 708	11 790	1 138	10 360	105 563	2 737	38 569	**June 2001**
16 943	413	41 025	12 181	1 153	10 564	103 421	2 677	38 633	**September 2001**
16 550	393	42 111	13 501	1 201	11 242	107 955	2 718	39 719	**December 2001**
14 476	355	40 776	12 839	1 200	10 700	97 936	2 616	37 437	**March 2002**
14 793	362	40 865	15 415	1 324	11 643	101 836	2 747	37 072	**June 2002**
14 509	338	42 927	15 342	1 292	11 875	100 473	2 713	37 034	**September 2002**
13 000	296	43 919	16 174	1 386	11 669	108 238	2 818	38 409	**December 2002**
16 281	326	49 943	16 199	1 365	11 868	117 742	2 910	40 461	**March 2003**
18 296	367	49 853	17 085	1 367	12 498	127 152	2 979	42 683	**June 2003**
27 216	503	54 107	18 062	1 484	12 171	147 475	3 411	43 235	**September 2003**
30 974	580	53 403	19 277	1 492	12 920	161 174	3 638	44 303	**December 2003**
35 840	658	54 468	20 068	1 520	13 203	169 786	3 776	44 965	**March 2004**
38 566	724	53 268	22 833	1 682	13 575	181 434	4 068	44 600	**June 2004**
41 172	808	50 956	24 368	1 714	14 217	188 198	4 209	44 713	**September 2004**
43 904	880	49 891	27 361	1 898	14 416	208 185	4 645	44 819	**December 2004**
49 624	1 006	49 328	27 328	1 940	14 087	212 335	4 805	44 190	**March 2005**
53 605	1 101	48 688	29 884	2 002	14 927	223 414	5 046	44 275	**June 2005**
52 378	1 132	46 271	31 209	2 158	14 462	220 600	5 292	41 686	**September 2005**
50 856	1 124	45 245	33 147	2 285	14 506	226 551	5 522	41 027	**December 2005**
49 749	1 130	44 026	36 750	2 373	15 487	239 512	5 712	41 931	**March 2006**
53 876	1 185	45 465	39 768	2 522	15 768	263 347	6 136	42 918	**June 2006**
54 676	1 199	45 601	42 322	2 714	15 594	284 738	6 513	43 718	**September 2006**
51 717	1 143	45 247	45 612	2 962	15 399	302 706	6 908	43 820	**December 2006**
55 144	1 229	44 869	49 245	3 327	14 802	335 025	7 716	43 420	**March 2007**
63 063	1 305	48 324	52 382	3 562	14 706	392 451	8 516	46 084	**June 2007**
76 804	1 412	54 394	56 767	3 864	14 691	453 945	9 518	47 693	**September 2007**
78 348	1 435	54 598	56 947	3 876	14 692	495 309	10 053	49 270	**December 2007**
78 042	1 419	54 998	58 304	4 174	13 968	523 171	10 731	48 753	**March 2008**
76 388	1 352	56 500	57 574	4 302	13 383	554 657	11 120	49 879	**June 2008**
74 090	1 322	56 044	56 563	4 442	12 734	587 823	11 657	50 427	**September 2008**
69 593	1 209	57 563	52 088	4 256	12 239	572 871	11 340	50 518	**December 2008**
65 610	1 121	58 528	48 131	4 117	11 691	551 720	10 992	50 193	**March 2009**
63 064	1 028	61 346	43 989	3 796	11 588	523 548	10 300	50 830	**June 2009**
59 314	948	62 567	40 947	3 591	11 403	500 632	9 787	51 153	**September 2009**
53 903	813	66 301	37 434	3 428	10 920	474 008	9 222	51 400	**December 2009**
11.4	8.8		7.9	37.2		100.0	100.0		**Percentage of total, December 2009**

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

[a] Ships of 100 GT and above.

Figure 2.11. World tonnage on order, 2000–2010[a] *(thousands of deadweight tons)*



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

[a] Ships of 100 GT and above.

Table 2.13. Representative newbuilding prices in selected years *(millions of dollars, annual averages)*

Type and size of vessel	2003	2004	2005	2006	2007	2008	2009	March 2010	Percentage change 2009/2008
Dry bulk - Handysize, 30,000 dwt	16	19	21	22	33	38	29	25	-23.7
Dry bulk - Panamax, 75,000 dwt	23	32	35	36	47	54	39	35	-27.8
Dry bulk - Capesize, 170,000 dwt	38	55	62	62	84	97	69	57	-28.9
Container - geared, 500 TEU	13	18	18	16	16	21	14	10	-33.3
Container - gearless, 6,500 TEU	67	86	101	98	97	108	87	74	-19.4
Container - gearless, 12,000 TEU	n.a.	n.a.	n.a.	n.a.	154	164	114	105	-30.5
Oil tanker - Handy, 50,000 dwt	28	35	42	47	50	52	40	34	-23.1
Oil tanker - Suezmax, 160,000 dwt	47	60	73	76	85	94	70	63	-25.5
Oil tanker - VLCC, 300,000 dwt	67	91	119	125	136	153	116	99	-24.2
Chemical tanker - 12,000 dwt	12	16	18	21	33	34	33	30	-2.9
LPG carrier - 15,000 m3	28	36	45	49	51	52	46	40	-11.5
LNG carrier - 160,000 m3	153	173	205	217	237	222	226	210	1.8

Source: Compiled by the UNCTAD secretariat, on the basis of data from *Drewry Shipping Insight*.

Table 2.14. Second-hand prices for five-year-old ships, 2000–2008 *(millions of dollars, end-of-year figures)*

Type and size of vessel [a]	2003	2004	2005	2006	2007	2008	2009	March 2010	Percentage change 2009/2008
Dry bulk - Handysize, 28,000 dwt, 10 years old	10	15	20	20	28	31	17	20	-45.2
Dry bulk - Panamax, 75,000 dwt, 5 years old	20	35	40	39	83	70	31	36	-55.7
Dry bulk - Capesize, 150,000 dwt, 10 years old	23	41	32	49	75	82	32	35	-61.0
Container - geared, 500 TEU, 10 years old	5	7	11	10	9	13	4	4	-69.2
Container - geared, 2,500 TEU, 10 years old	20	29	39	41	24	36	18	15	-50.0
Container - geared, 3,500 TEU, 10 years old	25	34	43	44	43	45	24	18	-46.7
Oil tanker - Handy, 45,000 dwt, 5 years old	25	35	44	47	40	51	30	26	-41.2
Oil tanker - Suezmax, 150,000 dwt, 5 years old	43	60	72	76	87	95	59	59	-37.9
Oil tanker - VLCC, 300,000 dwt, 5 years old	60	91	113	116	124	145	84	80	-42.1
Chemical tanker - 12,000 dwt, 10 years old	9	11	12	14	23	23	20	17	-13.0
LPG carrier - 15,000 m3, 10 years old	21	23	30	39	40	39	39	25	0.0

Source: Compiled by the UNCTAD secretariat, on the basis of data from *Drewry Shipping Insight*.

bulk vessels decreased by between 45 and 61 per cent between 2008 and 2009, 10-year-old container ships were between 47 and 69 per cent cheaper in 2009 than in 2008, and oil tanker prices declined by between 38 and 42 per cent. On average, over the eight periods covered in tables 2.13 and 2.14, second-hand vessel prices were 50 per cent more volatile than newbuilding prices (i.e. the statistical variance was 50 per cent higher), because second-hand prices are market-driven whereas newbuilding prices are driven by the cost of shipbuilding.

The most expensive new ships continue to be LNG carriers, which in March 2010 typically cost $210 million, followed by large container ships, which typically sold for $105 million. New small dry bulk carriers, in turn, were on sale for around $25 million.

Shipping can benefit from important economies of scale. While a 12,000 TEU ship carries almost twice as many containers as a 6,500 TEU ship, its price is only about 42 per cent higher. By the same token, a 170,000 dwt Capesize dry bulk carrier is only 63 per cent more expensive than a 75,000 dwt Panamax, although it is 127 per cent larger in size. A very large crude carrier (VLCC) is almost twice as big as a Suezmax tanker, yet its price is only 57 per cent higher (table 2.13).

5. The delayed adjustment of supply to changes in demand

Short-term adjustments

Shipping has been hit particularly hard by the economic crisis. The downturn in trade in 2009 led directly to a rapid decline in demand for transport and related services. And yet, as shown above, in spite of this downturn in demand, shipping capacity expanded throughout 2009, as vessels ordered in earlier years continued to be delivered by the world's shipyards.

The supply side's response to changes in demand is never immediate. Between 2002 and 2004, demand for containerized trade grew faster than the supply of container-carrying capacity, so the industry ordered new tonnage. This tonnage is usually delivered two to three years later, and since 2006, the supply of container ships has been growing faster than demand. In 2009, the difference in these two growth rates amounted to a staggering 15 percentage points (see also fig. 3.3 in chapter 3). The resulting oversupply of tonnage has led to a significant drop in container freight rates, which decreased by one third between the end of 2008 and the end of 2009 (see chapter 4). A similar picture emerges in dry bulk shipping, where the cost of chartering vessels fell by more than half. The low freight and charter rates, combined with the downturn in trade volumes, have led to historic financial losses

for operators. The world's largest container shipping company, Maersk Line, reported a loss of $2.1 billion in 2009. Hanjin Line lost $1.1 billion during the same year, Neptune Orient Line lost $741 million, and similar losses were recorded all across the industry. Total losses for the top 20 container carriers are estimated at $20 billion for the year. For 2010, prospects are again much better; for example, the French carrier CMA CGM reported an estimated profit of $270 million for the first quarter ended 31 March, and expects to earn $1.8 billion for the year 2010 as a whole, before taxes, depreciation and amortization.[12]

The maritime business has long been known for being cyclical. In times of growth and high profits, shipowners have positive cash flows and they order new capacity. This capacity, however, takes time to be delivered. There are waiting times, because shipbuilding berths tend to be full in times of prosperity; any new construction will only be started two to three years after it has been ordered, and then the construction itself can take up to one year. During the industry's boom years, the world saw records for new vessel orders being set year after year. These vessels are still being delivered today, which is why the world fleet is still expanding in spite of the economic crisis. The resulting surplus capacity and shipping companies' negative cash flows caused a standstill in new orders during most of 2009.

Although the current boom-and-bust cycle in the shipping business is extreme, and is partly due to the downturn in demand, the cyclical nature of the shipping business is not new. It has been compared to the "pig cycle" that was identified in the United Kingdom in the 1930s.[13] Basically, this means that boom and bust is at least partly self-inflicted by the shipping industry. New output is produced in response to changes in price, but only after a time lag, and the time lag itself is the cause of future price changes. Ideally, the new vessels added would arrive in a steady flow, but in practice, investment in new vessel capacity follows the pig cycle. Intensive new activity occurs at the peak of the highly profitable boom period, but then the new ships become available in bust times; the bust is made worse by the delivery of the new ships.

Even without the economic crisis, the huge order book of new ships would, by now, have led to an oversupply of tonnage and a corresponding decline in vessel prices; but the economic downturn has certainly made this situation worse. In the case of container ships, for example, the fleet is forecast to continue to grow over the next four to five years, and most of this growth is on account of ships that can carry more than 8,000 TEU. Specifically, 156 container ships of more than 10,000 TEU are due to be delivered by 2013, whereas there were only 42 ships of that size in service in April 2010.[14] With regard to dry bulk vessels, the order book currently stands at two thirds of the existing fleet.[15]

Freight rates and second-hand vessel prices react immediately to changes in the supply/demand balance. The supply of new capacity, however, reacts much more slowly. The industry has five ways to adjust its supply to a decline in demand, most of which only work in the long term:

Firstly, shipping companies will immediately stop ordering new tonnage. 2009 saw only nine new orders for container ships, compared to 213 in 2008 and 538 in 2007. For tankers, the new orders in 2009 stood at 153, down from 509 in 2008 and 1,054 in 2007. There were only 290 new orders for dry bulk carriers in 2009, compared to 1,204 in 2008 and 2,060 in 2007.[16]

Secondly, owners may, to some extent, terminate or postpone existing orders at the shipyards. In the container ship market especially, activity in 2009 focused primarily on restructuring the existing order book; it is estimated that about 60 per cent of orders that were initially scheduled for delivery during the first three months of 2010 "slipped" to a later date.[17] The rate of such "slippage" is lower for dry and liquid bulk carriers. When negotiating postponements, some shipyards were more flexible than others – notably yards that only existed on paper as greenfield projects when the orders were placed. Numerous deliveries were postponed, but most were not cancelled. Some shipyards helped their clients to finance the ships through leaseback schemes, and the fleet capacity of the world's top 20 container lines is still on course to expand by more than a third over the next four years.

Thirdly, as a short-term measure, vessels may slow-steam, thus reducing the effective capacity supplied by the existing fleet. Slow-steaming means that the voyage speed of ships is reduced, which then makes it necessary to employ a larger number of ships to maintain the same frequency or to serve the same level of demand. Employing nine or ten vessels on a service that usually only requires eight ships has two main potential advantages: firstly, it helps to maintain freight rates without having to lay off ships, and secondly, it saves fuel. During the economic downturn,

shippers were not too concerned about delays in the delivery of goods, as they were mostly aiming to reduce their inventory anyhow. However, as the economy is now picking up, traders and factories may no longer accept the longer delivery times.

Fourthly, the industry may temporarily withdraw existing tonnage from service. Many surplus vessels are not effectively deployed and are instead laid off.[18] In the beginning of 2010, 12 per cent of the global container carrying-capacity was idle and was anchored at different harbours. Put differently, there were more than 500 container ships idled at anchorages around the globe, with double that quantity still due to be delivered.[19] Although the economy is picking up and the idle capacity in May 2010 was estimated at just 4 per cent of the existing fleet, the surplus tonnage will remain for years to come.[20]

And finally, owners may demolish vessels. Despite capacity constraints at the scrap yards, 2009 did in fact see a surge in ship recycling, as shipowners sold their vessels as scrap metal. Notably, China saw a record in tonnage imported for scrapping. Nevertheless, the growth was lower than initially expected. As prices for scrap metal are currently very low, many vessel owners are preferring to hold on and to merely lay off their ships, rather than to scrap them, hoping for better times to come.

With ships being temporarily withdrawn from service, actual fleet deployment – i.e. the assignment of container ships to trade routes – effectively decreased during 2009. The container capacity deployed on the main trade routes between East Asia and Europe and between East Asia and North America was 20 per cent lower in January 2010 than it had been one year earlier. Interestingly, the reduction in fleet deployment was less drastic on major South–South routes, as trade among developing countries was less affected by the economic downturn than most of the developed world's trade. Fleet deployment between southern Africa and East Asia dropped by only 7 per cent, between East Asia and South America it dropped by 13 per cent, and between southern Africa and South America it actually increased during 2009, by 3.4 per cent. This reflects the positive role that developing countries, and South–South trade in particular, are playing in support of global economic recovery.

Consolidation: adjustment in the long term

During previous periods of low profits, significant consolidation took place in the container shipping industry. During the 1990s, in the United States, Sea-Land was taken over by Maersk (Denmark), American President Lines by NOL (Singapore), and parts of Crowley by Hamburg Süd (Germany). Since the start of the current crisis, carriers have incurred heavy losses. Nevertheless, all of the top 25 companies have been able to maintain their independence; there have been no mergers or acquisitions among them over the last couple of years.

Even so, the losses currently being incurred are unsustainable. Some government agencies and industry associations are already seeking ways of assisting member companies, but in doing so, they come up against competition (antitrust) authorities. In the European Union, for example, the Competition Directorate is contesting a government loan guarantee for the container carrier Hapag-Lloyd. A scheme devised by a group of European owners of container ships to jointly manage capacity was similarly contested by the Competition Directorate. In the long run, there is probably no way around further industry consolidation.

The countercyclical side of shipping

While shipowners and yards are still struggling to cope with the oversupply of tonnage, the outlook on the demand side is improving (see also chapter 1). Importers and factories that are now posting new orders overseas are in a lucky position, as there is ample spare capacity to transport their goods, and freight rates are far below the peaks of 2008. While the oversupply of tonnage has had a negative impact on the profitability of the transport industry, it has had mostly positive implications for importers and exporters.

In a way, the procyclical investment patterns of the shipping industry effectively act as a countercyclical corrective mechanism to international trade. While the economy was overheating and trade was booming, high freight costs and port congestion on occasion acted as a brake that somewhat spoiled the party. Today, as the business world and policymakers discuss how to revive global trade, it is positive to note that transaction costs are relatively low and there is no shortage of capacity to carry the reviving trade in goods. Waiting times in ports and freight rates have shortened significantly, bringing some relief to traders in the form of lower transport costs and smoother operations. Shipping one ton of dry bulk cargo over 1,000 nautical miles by sea in early 2010 cost between $4 and $7, as compared to between $10 and $16 in 2008.

A notable exception to this has been port congestion relating to the demand in China for iron ore, which continued to rise in 2009. This resulted in a high percentage of the fleet calling at the exporting ports of Australia, Brazil, and India, and also at the importing ports in China, which pushed up vessel waiting times and freight rates. At its peak on 26 June 2009, almost one fifth of the specialized fleet was reported to be queuing up outside a port in one of these four countries.[21]

The exceptions prove the rule. In container shipping, Asia's largest carrier – Evergreen – was the only top 20 company with an empty order book for new vessels in early 2010, although it is now planning to acquire 100 new container ships. Evergreen seems to have predicted the crisis back in 2006 and refrained from placing new orders, at a time when many of its rivals were still expanding.

In general, countercyclical ordering makes a lot of sense – and is of course easier said than done. Ordering new ships at the low point of a cycle is cheaper, delivery can take place earlier, and the company will have new and modern ships the moment that demand revives. The flip side to this approach is that it is risky; the cost of financing will be high, and a higher cash deposit may be required to offset the higher risk. Nonetheless, there still appears to be some truth in the old (and perhaps cynical) saying that a successful shipowner does not earn money on transport, but on buying and selling vessels at the right moment.

The growing participation of China in maritime businesses

To some extent, the shipping cycle may look like history repeating itself. Nevertheless, with every such cycle, some lasting change takes place, and in the context of the recent financial crisis, the emergence of China on the market for ship finance could be one such lasting change. It is interesting to note that Chinese banks have lent to foreign shipowners since the banking crisis started in September 2008,[22] replacing the traditional sources of financing from Germany and the United Kingdom and helping owners to take delivery of previously ordered ships. When orders by foreign owners were cancelled, Chinese shipyards would often still finalize the construction of the ship and then sell it at reduced prices to domestic carriers.

Developments in China are particularly noteworthy with regard to the supply of, and demand for, shipping services. On the demand side, Chinese containerized exports make up a quarter of the world total. On the supply side, Chinese shipping companies are among the fastest-growing, and China has the most important container and crane manufacturers. During 2009, China overtook Germany as the third-largest shipowning country. It has overtaken both Japan as the second-biggest shipbuilding country and India as the busiest ship-recycling country.

The maritime faculties of the universities of Shanghai and Dalian are the world's largest in terms of student numbers, and China is one of the few countries participating in almost all maritime subsectors, including owning, operation, construction, recycling, registration, classification, manning and financing. However, all this does not mean that Chinese-owned ships will necessarily use the Chinese flag, or that only Chinese-owned ships will be deployed to transport national trade. China still benefits from the globalized shipping industry for its exports of goods. By keeping shipping markets open and, at the same time, supplying vessels, cranes and ship financing, China is ensuring that, in the long term too, there will be sufficient shipping capacity to transport its foreign trade at low freight costs.

ENDNOTES

1 If empty containers are loaded on deck, the practical TEU carrying capacity can effectively be even higher. According to company sources, the vessel *Ebba Maersk* sailed with 15,011 TEUs from Tangier on 19 May 2010, stowing containers up to nine tiers high on deck.

2 *Containerisation International Online* (2010). See: http://www.ci-online.co.uk. 13 May.

3 Clarkson Research Services (2010). *Container Intelligence Monthly*. April.

4 When calculating growth rates for the container ship fleet, different ways of measuring may lead to different figures. The TEU growth rate for fully cellular container ships (table 2.2) is higher than the TEU growth rate for all container ships (table 2.4), because the share of fully cellular containers has increased. The growth rate in terms of dwt (table 2.1) is, again, higher than in terms of TEU (table 2.4), as the cargo-carrying capacity per TEU also depends on vessel size, age, and other characteristics. If we want to compare container ships with other vessel types, dwt is a better measurement than TEU, which is only relevant for container ships. When comparing geared with gearless container ships, it is useful to look only at fully cellular container ships. If we analyse the market shares of container companies, the total container-carrying capacity of all ships needs to be taken into account .

5 The information in this section is based on data on vessels of 1,000 GT and above, as the country of ownership for smaller ships is not always available. Vessels of 1,000 GT and above account for 91.3 per cent (1,165 million dwt) of the world total of 1,276 million dwt for all ships of 100 GT of above (see annex IIIb).

6 Please refer to annex I for the classification of countries for these statistical purposes.

7 The information in this section is based on data on vessels of 100 GT and above (see also annex IIIb), except where the country of vessel ownership is considered. In the latter case, the data are for vessels of 1,000 GT and above.

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

9 UNCTAD secretariat, based on data provided by IHS Fairplay.

10 UNCTAD secretariat calculations, based on data provided by IHS Fairplay.

11 Clarkson Research Services (2010). *Container Intelligence Monthly*. April.

12 *Journal of Commerce.* http://www.joc.com. Various issues.

13 Coase R and Fowler RF (1935). Bacon production and the pig cycle in Great Britain. *Economica 2* (n.s. 6): 142–147.

14 *Containerisation International Online* (2010). May. Also: Bayne D (2010) (Drewry Shipping Consultants). How has the global financial crisis affected the container port and shipping industry? Presented to the Intermodal Asia 2010 conference held in Sydney, Australia.

15 Clarkson Research Services (2010). *Dry Bulk Trade Outlook.* January.

16 Clarkson Research Services (2010). *Container Intelligence Monthly.* April.

17 Clarkson Research Services (2010). *Container Intelligence Monthly.* April.

18 For the purposes of this analysis, "laid off" or "idle" ships also include ships that are "laid up" or withdrawn from the shipping market for other reasons, for example for repairs or for use as storage vessels.

19 *Containerisation International Online* (2010). 5 February .

20 AXS Marine (2010). Alphaliner. As reported in *Dynaliners 22/2010.* 4 June.

21 Clarkson Research Services (2009). *Dry Bulk Trade Outlook.* November.

22 *Worldyards* (2010). See: http://www.worldyards.com. See also: *Shipping and Finance* (2010): 8–9. 24 March.