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Chapter 2

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STRUCTURE, OWNERSHIP AND REGISTRATION OF THE WORLD FLEET

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

The year 2012 saw the turn of the largest shipbuilding cycle in recorded history. Between 2001 and 2011, year after year, newbuilding deliveries reached new historical highs. Only in 2012, for the first time since 2001, was the fleet that entered into service during the year less than that delivered during the previous 12 months. In spite of this slowing down of new deliveries, the world tonnage continued to grow in 2012, albeit at a slower pace than in 2011. The world fleet has more than doubled since 2001, reaching 1.63 billion deadweight tons (dwt) in January 2013.

Since the historical peaks of 2008 and 2009, the tonnage on order for all major vessel types has decreased drastically. As shipyards continued to deliver pre-ordered tonnage, the orderbooks went down by 50 per cent for container ships, 58 per cent for dry-bulk carriers, 65 per cent for tankers and by 67 per cent for general-cargo ships. At the end of 2008, the dry-bulk order book was equivalent to almost 80 per cent of the fleet at that time, while the tonnage on order as of January 2013 is the equivalent of just 20 per cent of the fleet in service.

Chapter 2 of this year's Review presents unique fleet profiles for 48 major ship-owning developing countries. Several oil- and gas-exporting countries are also important owners of oil- and liquefied-gas tanker tonnage, both under their respective national as well as under foreign flags. By the same token, countries with important offshore investments also tend to own offshore supply ships. Dry-bulk ships are less often controlled by the cargo-owning countries than is the case of the oil-exporting nations. Most container ships are foreign flagged as they engage in international trade, serving routes that connect several countries at the same time. Many of the general-cargo fleets are nationally flagged and serve the coastal or inter-island cabotage trades.

This year's chapter 2 also presents a special focus on 10 years of UNCTAD's Liner Shipping Connectivity Index (LSCI) and the related analysis of container ship deployment. The last 10 years have seen two important trends, which represent two sides of the same coin. On the one hand, ships have become bigger, and on the other hand the number of companies in most markets has diminished. As regards the number of companies, the average per country has decreased by 27 per cent during the last 10 years, from 22 in 2004 to just 16 in 2013. This trend has important implications for the level of competition, especially for smaller trading nations. While an average of 16 service providers may still be sufficient to ensure a functioning competitive market with many choices for shippers for the average country, on given individual routes, especially those serving smaller developing countries, the decline in competition has led to oligopolistic markets.

A. STRUCTURE OF THE WORLD FLEET

1. World fleet growth and principal vessel types

The growth of the world fleet [1]

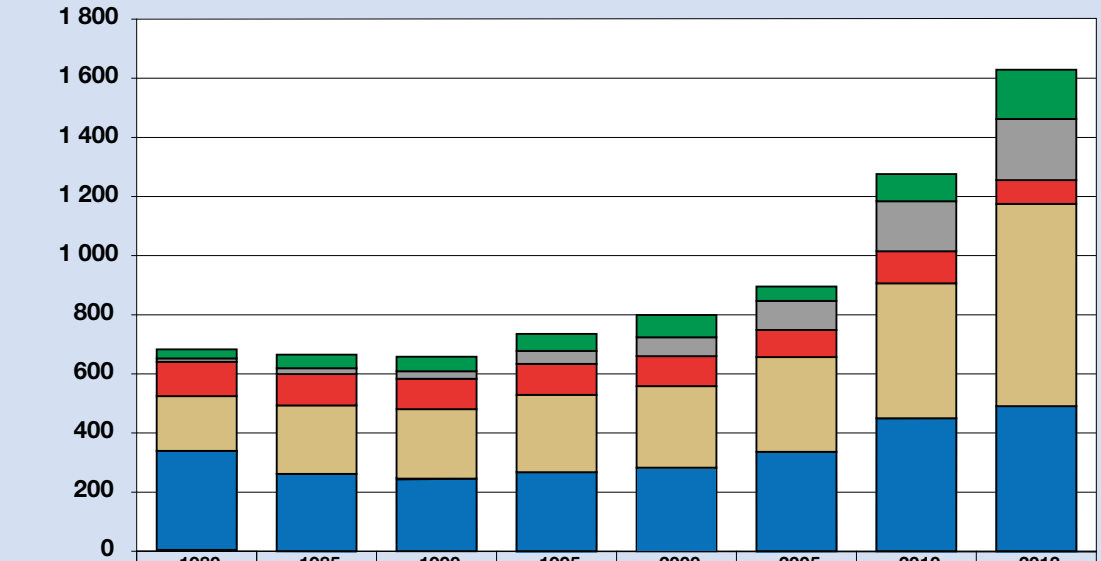
The year 2012 saw the turn of the largest shipbuilding cycle, in terms of GT, in recorded history. Between 2001 and 2011, year after year, newbuilding deliveries reached new historical highs. Even after the economic downturn of 2008, the dead-weight tonnage delivered annually continued to increase for three more years due to orders that had largely been placed prior to the crisis. Only in 2012, for the first time since 2001, was the fleet that entered into service during the year less than that delivered during the previous 12 months.

In spite of this slowing down of new deliveries, the world tonnage continued to grow in 2012, albeit at a slower pace; year-on-year growth amounted to 6 per cent, compared to a 10 per cent increase the previous year. The world fleet more than doubled since 2001, reaching 1.63 billion dwt in January 2013 (figure 2.1 and table 2.1).

The turning point in the shipbuilding cycle is further evidenced in figure 2.3, which illustrates the age structure of the existing fleet. There was more tonnage built in 2011 (that is, 2 years old in figure 2.3) than tonnage built in 2012. Such a large weakening has not been seen since the mid-1990s. The turning point is also visible in figure 2.10, which shows that the order book had already started to regress in 2009.

The numbers in the shipping fleet react only slowly to a changing economic environment. While the downturn in demand became clear in 2008, the order book showed a decline in 2009, new deliveries went down in 2012, and the existing fleet still continues to grow in 2013. The order book, however, is rapidly decreasing, and the current schedule only provides for output of close to recent levels for this year and a little less so for 2014.

Figure 2.1. World fleet by principal vessel types, 1980–2013 (Beginning-of-year figures, in millions of dwt)



	1980	1985	1990	1995	2000	2005	2010	2013
Other	31	45	49	58	75	49	92	166
Container	11	20	26	44	64	98	169	207
General cargo	116	106	103	104	101	92	108	80
Dry bulk	186	232	235	262	276	321	457	685
Oil tanker	339	261	246	268	282	336	450	491

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by Clarkson Research Services and previous issues of the *Review of Maritime Transport*.

Note: All propelled seagoing merchant vessels of 100 GT and above, excluding inland waterway vessels, fishing vessels, military vessels, yachts, and offshore fixed and mobile platforms and barges (with the exception of floating production storage and offloading units (FPSOs) and drillships).

The world fleet in January 2013 consists of 42 per cent dry-bulk tonnage (in dwt), a historical record for this vessel type. General-cargo tonnage, on the other hand, continued its decline; its share of the world total is now less than 5 per cent, down from a 15 per cent share 20 years ago. Oil tankers, too, saw their share decline, from almost half of the world tonnage in 1980, to 30 per cent in January 2013 (table 2.1 and Annex II).

Table 2.1. World fleet by principal vessel types, 2012–2013 (Beginning-of-year figures, thousands of dwt; percentage share in italics)

Principal types	2012	2013	Percentage change 2013/2012
Oil tankers	469 516	490 743	4.5%
	30.6%	*30.1%*	*-0.4%*
Bulk carriers	623 006	684 673	9.9%
	40.5%	*42.0%*	*1.5%*
General cargo ships	80 825	80 345	-0.6%
	5.3%	*4.9%*	*-0.3%*
Container ships	196 853	206 577	4.9%
	12.8%	*12.7%*	*-0.1%*
Other types:	166 667	166 445	-0.1%
	10.8%	*10.2%*	*-0.6%*
Gas carriers	44 060	44 346	0.6%
	2.9%	*2.7%*	*-0.1%*
Chemical tankers	23 238	23 293	0.2%
	1.5%	*1.4%*	*-0.1%*
Offshore	70 767	69 991	-1.1%
	4.6%	*4.3%*	*-0.3%*
Ferries and passenger ships	5 466	5 504	0.7%
	0.4%	*0.3%*	*0.0%*
Other/n.a.	23 137	23 312	0.8%
	1.5%	*1.4%*	*-0.1%*
World total	1 536 868	1 628 783	6.0%
	100%	*100%*	*0.0%*

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by Clarkson Research Services.

Note: Propelled seagoing merchant vessels of 100 GT and above.

Oil tankers

Following heavy scrapping and conversions of single-hull ships in recent years, most oil tankers are now double hulled, in compliance with relevant IMO environmental and safety regulations, as well as the Oil Pollution Act of the United States of America, which phased out single-hull tankers from United States waters in 2010. After the renovation of the fleet, today only 14 per cent of tanker tonnage is 15 years or older.

When the last single-hulled very large crude carrier (VLCC) was delivered in 1996, there were 376 in service. In early 2013, there are only three. Only 243, however, were actually scrapped. Sixty were converted into floating oil production and storage facilities and 70 were converted into dry-bulk carriers. Some of the older VLCCs are deployed as FPSOs (*Shipping Intelligence Weekly, 2013).*

Bulk carriers

The largest existing ships in operation for ocean transport are dry bulkers owned and operated by the Brazilian iron-ore conglomerate Vale, called "Vale-max". In April 2013, the latest vessel of this series, the *Vale Korea*, entered into service, with a capacity of 402,303 dwt. While initially built to call in Chinese ports, Vale is now developing trans-shipment hubs in Malaysia and the Philippines as the ships are not allowed to enter ports in China fully loaded. Due to regulatory limitations in China, Vale-max ships that entered Chinese ports in early 2013 were registered as just under 300,000 dwt.

In 2012, seven times more tonnage of bulk carriers was delivered than 10 years earlier. At the same time, the order book is dwindling, amounting today to just one fifth of the existing fleet (Clarkson Research Services, 2013a).

General-cargo ships

General-cargo vessels – sometimes also referred to as "break-bulk" ships – have seen their importance decline over the last decades, largely to the benefit of container ships. As more and more goods are containerized, the market for carriage by break-bulk cargo ships has dropped.

Nevertheless, some goods, in particular dry cargo that is too large for containers, will always require transport as break-bulk. The specialized break-bulk fleet has been modernized in recent years, as most older ships were demolished. According to a recent report

by Dynamar (Dynamar, 2013), among the almost 800 ships deployed by the 25 largest specialized operators, fewer than 100 are older than 25 years, with only a small number still dating from the 1970s. With over 500 units built since 2000, the majority of the specialized fleet consists of modern, highly productive and multi-employable ships that carry a wide range of cargoes, from forest products to bags and project cargoes.

Container ships

Container ships carry an estimated 52 per cent of global seaborne trade in terms of value (World Shipping Council, 2013). Their share of the world fleet has grown almost eightfold since 1980, as goods are increasingly containerized for international transport. Apart from manufactured goods, more and more commodities (such as coffee) as well as refrigerated cargo (fruit, meat, fish) are today largely transported in standardized sea containers.

Most new container ships today are gearless, that is, they are no longer equipped with their own container-handling cranes, but depend on the seaports to provide specialized handling equipment. This trend goes hand-in-hand with the delivery of larger vessels, as these are less often equipped with their own cargo-handling equipment. This poses a challenge for smaller ports, especially in developing countries, which may not have enough volume to justify investment in specialized and costly ship-to-shore cranes in their container terminals.

The share of gearless ships among the total deliveries of container vessels keeps increasing. In 2005, there were four times more gearless ships delivered than ships with their own handling equipment, while in 2012 the proportion was 6 to 1 (table 2.2 and figure 2.2). Gearless container ships are on average more than twice the size than geared vessels, and the average size of both types of ships has gone up by almost 80 per cent since 2005.

The year 2013 also saw the delivery of the first "Triple E" container ships by Daewoo in the Republic of Korea to Maersk in Denmark. The Triple E stands for energy efficiency, economies of scale and environmental improvements. For a short period these ships, with a declared container-carrying capacity of 18,000 full TEUs, were the largest container ships, taking over from the 16,000-TEU vessels of CMA CGM, which were the largest container vessels until early 2013. In 2013, CSCL from China placed orders for even larger container ships, also in shipyards in the Republic of Korea, scheduled to carry 18,400 TEU and to be delivered in 2014.

Other types

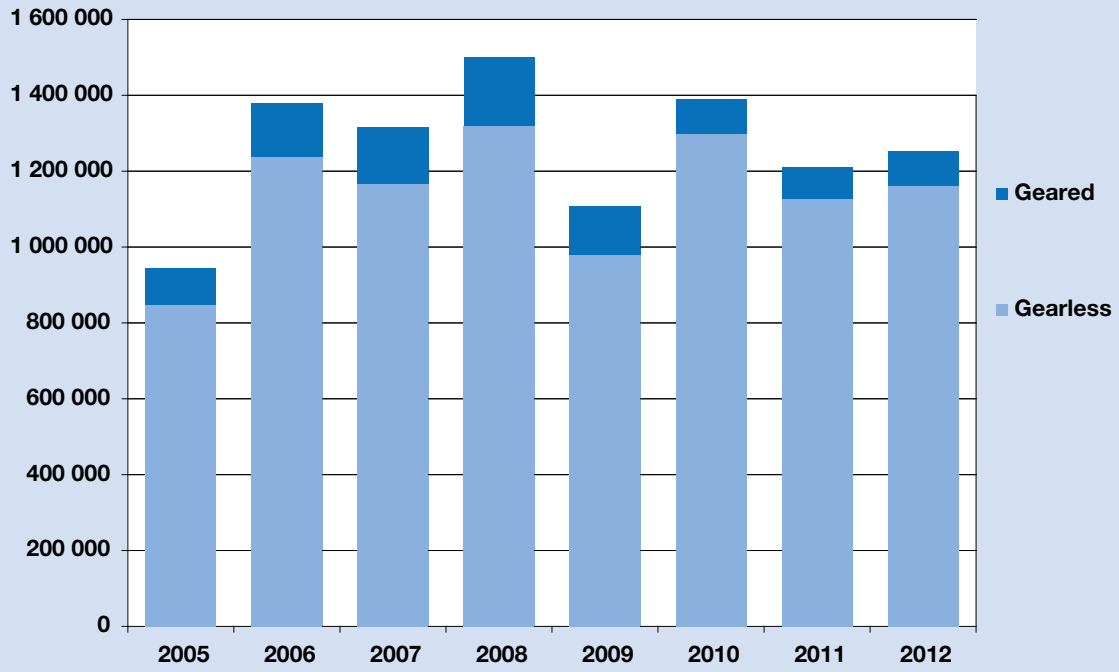
Chemical tankers have seen a trend towards larger vessels, aiming at economies of scale. The share of ships above 36,000 dwt has increased from 23 per cent in 2005 to 28 per cent today, while the share of the smallest units (below 10,000 dwt) went down from 47 per cent to 40 per cent during the same period (*Fairplay, 2013).*

Table 2.2. Container ship deliveries

	Gearless			Geared			Total		
Year built	Ships	TEU	Average vessel size (TEU)	Ships	TEU	Average vessel size (TEU)	Ships	TEU	Average vessel size (TEU)
2005	217	847 530	3 906	55	96 010	1 746	272	943 540	3 469
2006	285	1 237 630	4 343	86	142 104	1 652	371	1 379 734	3 719
2007	297	1 166 968	3 929	102	148 268	1 454	399	1 315 236	3 296
2008	321	1 319 897	4 112	114	181 322	1 591	435	1 501 219	3 451
2009	204	978 900	4 799	72	127 394	1 769	276	1 106 294	4 008
2010	217	1 297 291	5 978	48	92 117	1 919	265	1 389 408	5 243
2011	159	1 126 977	7 088	32	83 728	2 617	191	1 210 705	6 339
2012	172	1 161 695	6 754	29	89 476	3 085	201	1 251 171	6 225

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by Clarkson Research Services.
Note: Fully cellular container ships of 100 GT and above.

Figure 2.2. Trends in deliveries of container ships (New container ships, in TEU, 2005–2012)



Source: Compiled by the UNCTAD secretariat, based on data provided by Clarkson Research Services.

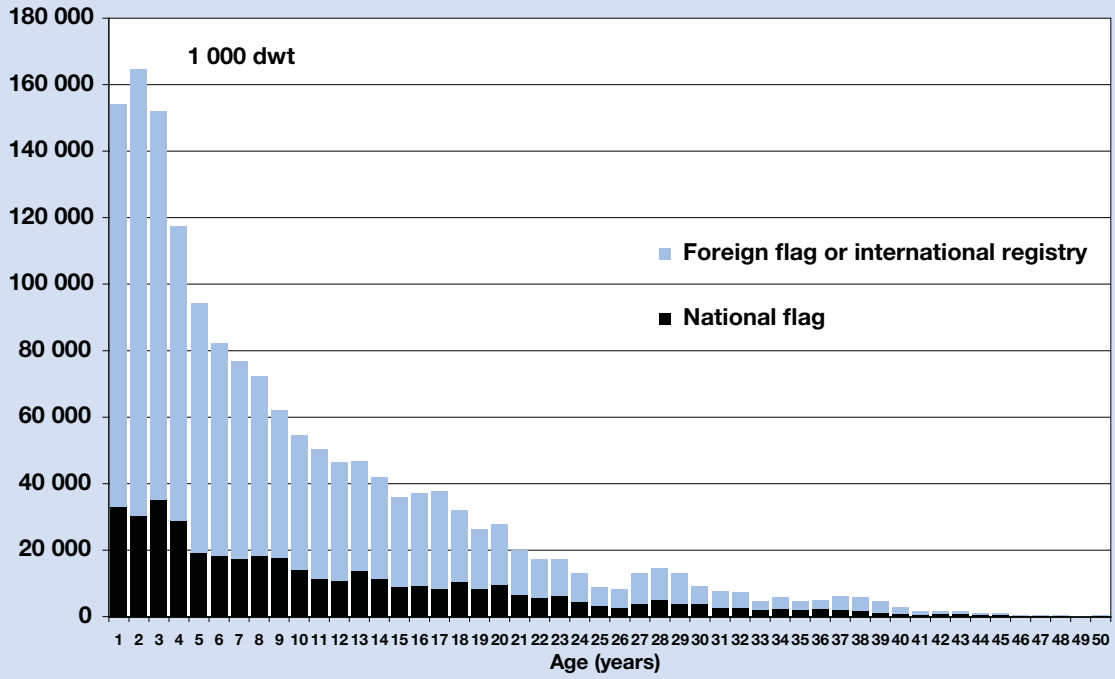
2. Age distribution of the world merchant fleet

In January 2013, 20 per cent of all seagoing merchant ships were younger than 5 years, representing 40 per cent of the world's deadweight tonnage (see table 2.3 and figure 2.3). Ships delivered in more recent years are on average larger than older ships. New container ships are on average three times the size of those built 20 or more years ago, and only 5 per cent of the container ship tonnage is older than 20 years. Oil tankers, too, tend to be replaced relatively early; only 4 per cent of the existing oil-tanker tonnage was built more than 20 years ago.

The average age (per ship) in January 2013 was highest for general-cargo ships (25 years), followed by other types (22.6 years), oil tankers (16.7 years), container ships (10.8 years) and dry-bulk carriers (9.9 years). Following the surge of newbuildings in the dry-bulk segment, almost half of the dry-bulk dead weight tonnage is only 4 years old or younger, overtaking for the first time container ships as the youngest vessel category.

As a reflection of most recent ships being larger than older ones, the global average age per ship shows an age of 20.3 years, while the average age by dwt is 9.6 years. Their geographical distribution is also well balanced and ships registered in developing countries are now only slightly older (two years) than those flying the flag of developed countries. Among the 10 major flag states, Greece has the oldest fleet, followed by Panama and China. The youngest fleets are those registered in the Marshall Islands, Hong Kong (China) and Singapore. On average, foreign-flagged ships are slightly younger than nationally flagged ones. This situation and its rationale are discussed below.

Figure 2.3. Age structure of world fleet, national and foreign flags



Source: Compiled by the UNCTAD secretariat, on the basis of data from Clarkson Research Services.
Note: For vessels of 1,000 GT and above.

Table 2.3. Age distribution of the world merchant fleet, by vessel type, as of 1 January 2013 (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) 2013*	*Average age (years) 2012*	*Percentage change 2013/2012*
WORLD									
Bulk carriers	**Bulk carriers Ships**	44	15	12	13	16	9.94	11.57	-1.63
	Dwt	49	16	11	13	11	8.36	9.71	-1.35
	Average vessel size (dwt)	81 514	75 173	65 405	71 528	48 211			
Container ships	**Ships**	23	29	18	20	10	10.81	10.73	0.08
	Dwt	34	32	16	13	5	8.25	8.24	0.01
	Average vessel size (dwt)	59 547	43 782	37 049	26 750	19 962			
General cargo	**Ships**	12	11	7	12	58	24.99	24.58	0.41
	Dwt	22	13	10	10	44	19.10	19.61	-0.51
	Average vessel size (dwt)	7 396	5 237	6 845	3 705	3 081			
Oil tankers	**Ships**	24	20	10	12	34	16.74	16.50	0.25
	Dwt	37	28	20	10	4	8.14	8.01	0.13
	Average vessel size (dwt)	69 029	64 212	87 809	35 925	5 921			
Others	**Ships**	17	13	10	10	50	22.57	22.29	0.28
	Dwt	23	20	13	10	34	16.07	15.84	0.23
	Average vessel size (dwt)	6 985	8 251	6 898	5 119	3 968			
All ships	**Ships**	20	15	10	12	44	20.34	20.30	0.03
	Dwt	40	22	14	12	12	9.60	10.19	-0.59
	Average vessel size (dwt)	40 664	32 047	31 610	21 098	6 267			

Table 2.3. Age distribution of the world merchant fleet, by vessel type, as of 1 January 2013 (Percentage of total ships and dwt) *(continued)*

Country grouping / *Types of vessels*		*0–4 years*	*5–9 years*	*10–14 years*	*15–19 years*	*20 years and +*	*Average age (years) 2013*	*Average age (years) 2012*	*Percentage change 2013/2012*
DEVELOPING ECONOMIES									
Bulk carriers	**Ships**	41	10	9	16	24	11.77	13.99	-2.22
	Dwt	48	10	8	17	16	9.76	11.76	-2.00
	Average vessel size (dwt)	80 772	65 854	60 514	75 693	47 053			
Container ships	**Ships**	21	23	15	25	17	12.83	13.06	-0.23
	Dwt	36	28	12	17	7	8.63	9.18	-0.55
	Average vessel size (dwt)	56 530	41 481	28 210	22 545	13 619			
General cargo	**Ships**	11	12	5	8	63	25.38	24.95	0.43
	Dwt	19	12	6	9	53	21.02	21.79	-0.78
	Average vessel size (dwt)	6 396	4 194	5 808	4 342	3 102			
Oil tankers	**Ships**	24	14	7	12	43	18.69	18.61	0.08
	Dwt	43	23	15	12	8	8.42	8.51	-0.09
	Average vessel size (dwt)	64 176	59 987	74 818	37 046	6 404			
Others	**Ships**	20	15	9	11	45	20.19	20.01	0.18
	Dwt	24	16	9	9	42	17.85	17.91	-0.06
	Average vessel size (dwt)	5 122	5 269	4 909	4 265	4 224			
All ships	**Ships**	20	14	8	11	46	20.21	20.28	-0.07
	Dwt	41	16	11	14	18	10.75	11.88	-1.13
	Average vessel size (dwt)	35 193	22 382	25 060	23 249	6 856			
DEVELOPED ECONOMIES									
Bulk carriers	**Ships**	46	19	14	12	9	8.31	9.28	-0.98
	Dwt	50	20	13	11	6	7.24	8.03	-0.79
	Average vessel size (dwt)	82 751	79 903	68 206	68 126	51 940			
Container ships	**Ships**	24	33	19	17	6	9.60	9.39	0.22
	Dwt	33	33	18	12	4	8.07	7.86	0.21
	Average vessel size (dwt)	61 076	44 622	40 797	30 302	30 536			
General cargo	**Ships**	16	12	11	19	41	20.89	20.57	0.32
	Dwt	28	16	16	12	29	15.38	15.65	-0.27
	Average vessel size (dwt)	8 690	6 825	7 618	3 319	3 751			
Oil tankers	**Ships**	26	28	15	14	17	12.59	12.13	0.46
	Dwt	34	32	24	8	2	7.88	7.59	0.29
	Average vessel size (dwt)	74 911	66 936	94 955	35 850	7 199			
Others	**Ships**	15	13	12	11	49	23.36	22.96	0.40
	Dwt	23	23	15	10	28	14.63	14.17	0.47
	Average vessel size (dwt)	9 764	11 817	8 684	6 534	4 971			
All ships	**Ships**	22	17	13	14	34	18.20	18.10	0.11
	Dwt	39	26	17	10	8	8.61	8.82	-0.21
	Average vessel size (dwt)	47 299	40 209	36 065	20 843	7 594			

Table 2.3. Age distribution of the world merchant fleet, by vessel type, as of 1 January 2013 (Percentage of total ships and dwt) *(continued)*

Country grouping *Types of vessels*		*0–4 years*	*5–9 years*	*10–14 years*	*15–19 years*	*20 years and +*	*Average age (years) 2013*	*Average age (years) 2012*	*Percentage change 2013/2012*
COUNTRIES WITH ECONOMIES IN TRANSITION									
Bulk carriers	**Ships**	29	13	7	13	39	15.64	18.68	-3.04
	Dwt	31	11	7	13	38	15.07	18.16	-3.09
	Average vessel size (dwt)	45 120	35 203	43 734	42 427	40 694			
Container ships	**Ships**	13	3	17	30	37	18.20	17.27	0.93
	Dwt	30	4	15	26	25	14.59	13.66	0.94
	Average vessel size (dwt)	27 602	13 760	11 201	10 566	8 560			
General cargo	**Ships**	4	4	1	7	83	30.33	29.65	0.68
	Dwt	7	7	2	10	74	26.39	25.97	0.42
	Average vessel size (dwt)	6 144	6 124	5 299	4 403	2 985			
General cargo	**Ships**	17	14	5	5	60	22.69	22.88	-0.18
	Dwt	34	34	17	6	9	9.46	8.89	0.57
	Average vessel size (dwt)	48 168	58 518	81 964	31 915	3 636			
Oil tankers	**Ships**	7	5	3	5	80	28.57	27.92	0.65
	Dwt	18	13	3	3	63	21.88	21.27	0.61
	Average vessel size (dwt)	3 378	3 655	1 237	815	916			
Others	**Ships**	8	6	3	6	77	27.92	27.49	0.42
	Dwt	27	22	11	9	32	14.96	15.46	-0.50
	Average vessel size (dwt)	23 192	25 073	26 839	8 930	2 758			
All ships	**Ships**	8	6	3	6	77	27.92	27.49	0.42
	Dwt	27	22	11	9	32	14.96	15.46	-0.50
	Average vessel size (dwt)	23 192	25 073	26 839	8 930	2 758			

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by Clarkson Research Services.
Note: Propelled seagoing merchant vessels of 100 GT and above.

B. OWNERSHIP AND OPERATION OF THE WORLD FLEET

1. Ship-owning countries

The national concentration of fleet ownership is illustrated by the fact that owners from five countries – in order of decreasing tonnage, Greece, Japan, China, Germany and the Republic of Korea – together account for 53 per cent of the world tonnage. Among the top 35 ship-owning economies, 17 are in Asia, 14 in Europe, and 4 in the Americas (table 2.4).

In terms of vessel numbers, the largest ship-owning country is China, with 5,313 ocean-going merchant ships, out of which about half fly the national Chinese flag. This makes more nationally flagged Chinese-owned ships than nationally flagged ships from Greece, Japan and Germany combined.

Another way to consider fleet ownership is in terms of ship value. Container vessels and gas carriers, for example, are more expensive than dry and liquid bulkers. The market value of a vessel also depends on its age and maintenance. Estimates for January 2013 (Clarkson Research Services, 2013b) suggest that the Japanese-owned fleet currently reaches the highest value, amounting to almost $100 billion, followed by the United States ($92 billion), Greece ($72 billion), China ($61 billion) and Germany ($60 billion). The total of the world fleet being estimated to be worth $809 billion, the top five ship-owning countries by fleet value thus would control almost 48 per cent of the world fleet; the top 10 owner countries under this criteria would have a market share in value terms of 67 per cent.

From a registration perspective, most of the top 35 ship-owning countries have more than half of their tonnage under a foreign flag. Exceptions include

Table 2.4. The 35 countries and territories with the largest owned fleets, as of 1 January 2013 (Dwt)

Country or territory of ownership [a]	Number of vessels			Deadweight tonnage				
	National flag	Foreign and internat. flag [b]	Total	National flag [c]	Foreign and international flag [b]	Total	Foreign and international flag as a percentage of total [b]	Total as a percentage of world
Greece	825	2 870	3 695	69 644 624	175 205 954	244 850 578	71.56	15.17
Japan	738	3 253	3 991	17 216 128	206 598 880	223 815 008	92.31	13.87
China	2 665	2 648	5 313	66 936 002	123 142 833	190 078 835	64.79	11.78
Germany	396	3 437	3 833	16 641 757	109 136 771	125 778 528	86.77	7.79
Republic of Korea	764	812	1 576	16 624 445	58 471 361	75 095 806	77.86	4.65
Singapore	1 090	798	1 888	32 711 136	31 441 668	64 152 804	49.01	3.98
United States	768	1 175	1 943	8 671 669	49 606 395	58 278 064	85.12	3.61
United Kingdom	415	822	1 237	10 447 630	39 857 066	50 304 696	79.23	3.12
Norway	414	1 494	1 908	2 190 036	43 802 209	45 992 245	95.24	2.85
Taiwan Province of China	102	712	814	3 311 133	40 948 712	44 259 845	92.52	2.74
Denmark	45	946	991	68 724	40 646 119	40 714 843	99.83	2.52
Bermuda	4	206	210	209 778	32 686 529	32 896 307	99.36	2.04
Turkey	645	935	1 580	9 619 689	19 470 911	29 090 600	66.93	1.80
Italy	673	211	884	19 097 635	6 245 330	25 342 964	24.64	1.57
Hong Kong (China)	269	297	566	15 768 670	8 556 599	24 325 269	35.18	1.51
India	584	158	742	15 063 983	7 377 303	22 441 287	32.87	1.39
United Arab Emirates	82	617	699	700 914	18 772 655	19 473 569	96.40	1.21
Russian Federation	1 195	532	1 727	5 495 653	13 888 598	19 384 251	71.65	1.20
Malaysia	472	142	614	9 520 599	7 593 951	17 114 550	44.37	1.06
Netherlands	757	450	1 207	6 100 843	10 571 723	16 672 566	63.41	1.03
Brazil	202	108	310	2 837 889	13 314 666	16 152 555	82.43	1.00
Switzerland	39	291	330	1 144 359	14 506 537	15 650 896	92.69	0.97
Islamic Republic of Iran	108	121	229	1 748 219	13 568 542	15 316 761	88.59	0.95
Indonesia	1 383	147	1 530	11 910 441	3 390 980	15 301 421	22.16	0.95
Cyprus	183	192	375	6 178 327	7 745 606	13 923 933	55.63	0.86
France	179	230	409	3 862 058	7 144 805	11 006 863	64.91	0.68
Canada	206	145	351	2 650 551	6 571 778	9 222 329	71.26	0.57
Monaco		126	126		9 157 769	9 157 769	100.00	0.57
Belgium	90	155	245	4 008 509	4 720 024	8 728 533	54.08	0.54
Viet Nam	758	83	841	6 422 675	1 540 097	7 962 772	19.34	0.49
Saudi Arabia	62	125	187	1 036 358	6 771 973	7 808 332	86.73	0.48
Kuwait	40	36	76	4 037 837	2 862 528	6 900 365	41.48	0.43
Sweden	114	225	339	1 323 946	5 120 753	6 444 699	79.46	0.40
Oman	3	31	34	5 332	6 133 802	6 139 134	99.91	0.38
Thailand	336	79	415	4 444 401	1 652 413	6 096 814	27.10	0.38
Total top 35 countries	16 606	24 609	41 215	377 651 950	1 148 223 839	1 525 875 789	75.25	94.55
Other owners	2 655	2 522	5 177	29 703 524	52 879 452	82 582 976	64.03	5.12
Total of known country of ownership	19 261	27 131	46 392	407 355 474	1 201 103 291	1 608 458 765	74.67	99.67
Others, unknown country of ownership			730			5 297 140		0.33
World total			47 122			1 613 755 905		100

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by Clarkson Research Services.

Note: Vessels of 1,000 GT and above, ranked by deadweight tonnage.

[a] The country of ownership indicates where the true controlling interest (that is, the parent company) of the fleet is located. In several cases, determining this has required making certain judgements. Thus, for 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.

[b] "Foreign and international flag" in this table includes vessels registered in second/international registers such as the Danish or Norwegian International Ship Registers (DIS or NIS respectively).

countries with a large cabotage fleet, such as India, Indonesia or Viet Nam, and countries where the national register provides a competitive flag that is also used by many foreign owners, as is the case for example for Singapore, which thus effectively become an open register.

Figure 2.4 provides 48 maritime fleet profiles, illustrating the type of ships controlled by the main developing ship-owning countries, including the share of nationally and foreign-flagged tonnage for each main vessel type.

Several oil- and gas-exporting countries are also important owners of oil and liquefied-gas tanker tonnage, both under their respective national as well as under foreign flags. Algeria, for example, has a high share of oil and liquefied-gas tankers; Argentina's fleet consists of mostly foreign-flagged oil tankers; Ecuador's oil tankers include the nationally flagged cabotage fleet (for example, to the Galapagos Islands) as well as foreign-flagged tankers servicing the international transport of Ecuador's oil exports. Other countries with a high share of oil and gas tankers are Egypt, the Islamic Republic of Iran, Kazakhstan, Kuwait, Libya, Malaysia, Mexico, Nigeria, Oman, Peru, Qatar, the Russian Federation, Saudi Arabia, the United Arab Emirates and the Bolivarian Republic of Venezuela.

By the same token, countries with important offshore investments also tend to own ships providing offshore supply services. Angola's fleet, for example, largely specializes in the oil and offshore business; Brazil, too, owns an important fleet of offshore vessels, in addition to its dry-bulk and oil-tanker fleet. Cameroun's entire fleet consists of nationally flagged offshore supply and storage vessels, as do most of Nigeria's and Tunisia's fleets. The offshore fleet of the Democratic Republic of the Congo, on the other hand, is fully foreign flagged.

Dry-bulk ships are less often controlled by the cargo-owning countries than is the case of the oil-exporting nations. Nevertheless, important owners of dry-bulk tonnage include major importers and exporters of iron ore and other dry commodities, such as Brazil (exports) and China (imports). Other economies with a high share of dry-bulk tonnage include Hong Kong (China), Taiwan Province of China, Croatia, the Republic of Korea, Lebanon, Pakistan, the Philippines, Singapore, South Africa, Thailand, Turkey, and Ukraine.

Most container ships are foreign flagged. They engage in international trade, serving routes that connect several countries at the same time. On such routes, cargo reservation regimes have in practice shown to be difficult to enforce. Countries/territories with a share of foreign-flagged container fleets include Chile, Hong Kong (China), Kuwait, Morocco, Singapore and South Africa.

Many of the nationally owned fleets serve the national (coastal or inter-island) cabotage trades or benefit from other cargo-reservation regimes. These ships tend to be nationally flagged as foreign ships are excluded from certain markets by the national legislation. Examples here include parts of Bangladesh's bulk and general-cargo ships, some of Chile's dry- and liquid-bulk fleet, an important share of China's bulk and general-cargo ships, part of Cuba's general-cargo carriers, India's general-cargo and tanker fleet, and a wide range of different vessels engaged in Indonesia's inter-island transport. Other countries with important nationally flagged general-cargo fleets include Ethiopia, Myanmar, the Russian Federation, the Philippines and Viet Nam.

Panama, which is mostly known for its open register, also comprises of some national shipowners, mostly, albeit not exclusively, using the national Panama flag. The largest part of the Panamanian-owned fleet consists of general-cargo ships, and about half of them do not use the flag of Panama. Owners from Singapore also use both the national flag and foreign flags.

2. Container ship operators

The largest container ship operators in 2013 continued to be Maersk Line (Denmark), MSC (Switzerland) and CMA CGM (France). Together, these three European companies operate one third of the global container-carrying capacity (TEU; table 2.5). On the main East–West route between Asia and Europe these same three carriers also deploy the largest ships and they cooperate with each other through slot-sharing arrangements, with plans to enhance their cooperation through a P3 alliance (*International Transport Journal, 2013).* This combination of larger ships and cooperation allows them to achieve important economies of scale, which smaller competing lines on this route cannot match.

Among the top 20 operators, 14 are from Asia, 5 from Europe, and one, Chilean CSAV, from South America, which has a market share of 2 per cent. From a continental origin angle, one could note that the European companies, including the three world largest carriers, gather a combined market share of 49 per

Figure 2.4. Fleet profiles of the major 48 ship-owning developing countries/territories and countries/territories with economies in transition (Dwt, by country of ownership, 1 January 2013)

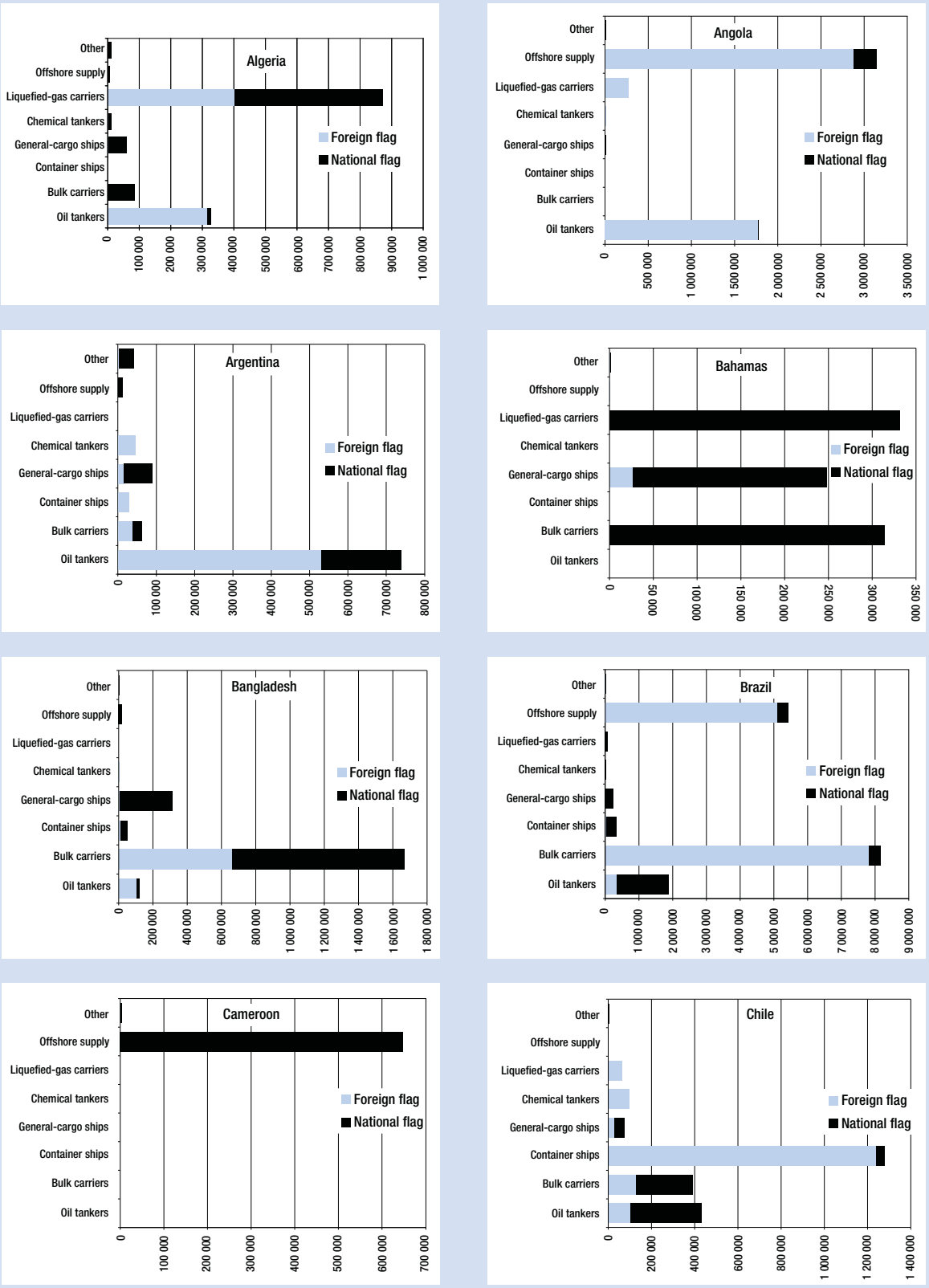


Figure 2.4. Fleet profiles of the major 48 ship-owning developing countries/territories and countries/territories with economies in transition (Dwt, by country of ownership, 1 January 2013) *(continued)*

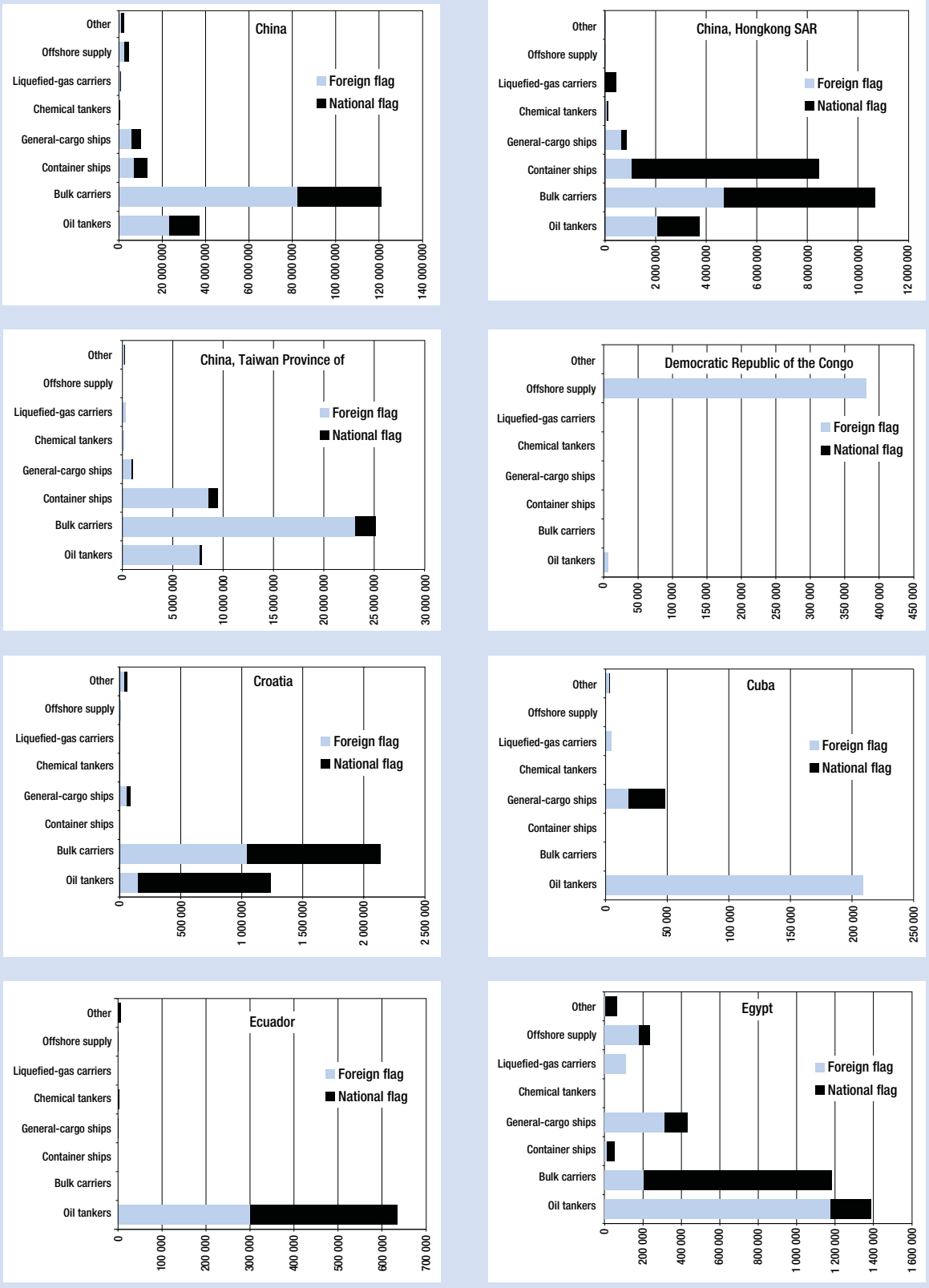
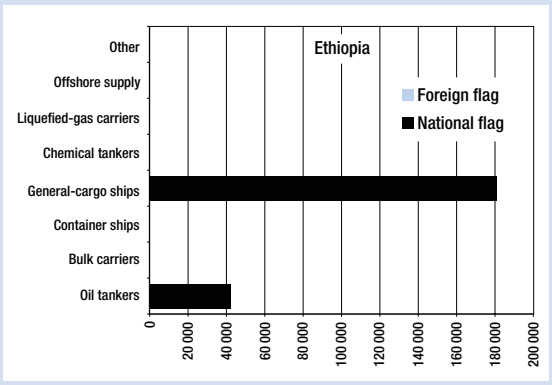
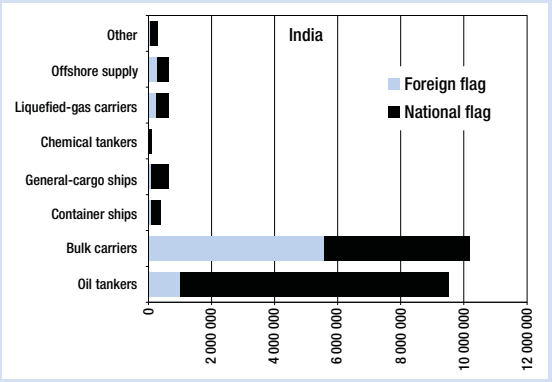
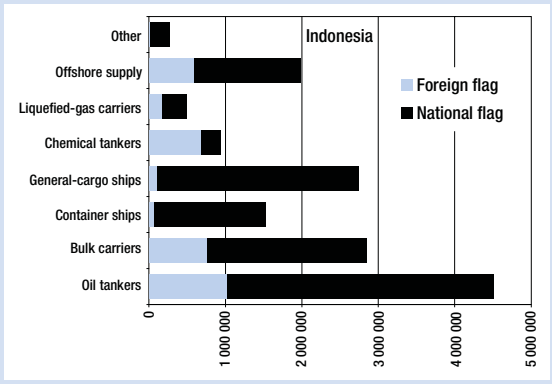
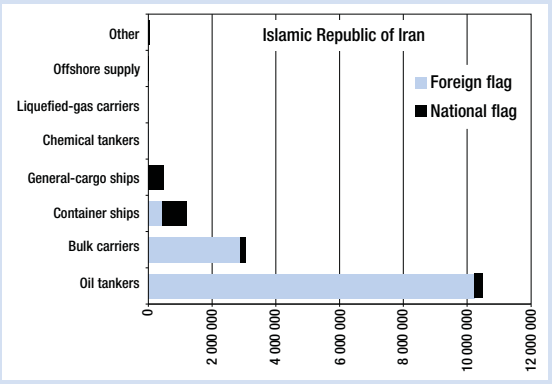


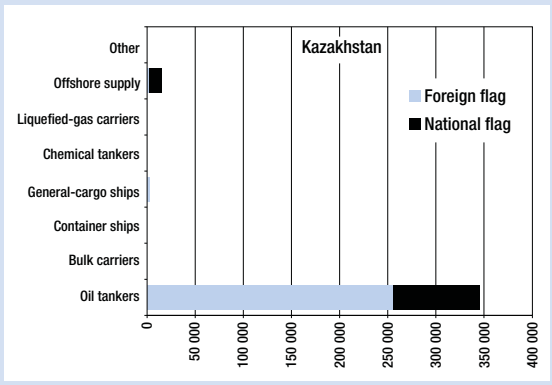
Figure 2.4. Fleet profiles of the major 48 ship-owning developing countries/territories and countries/territories with economies in transition (Dwt, by country of ownership, 1 January 2013) *(continued)*

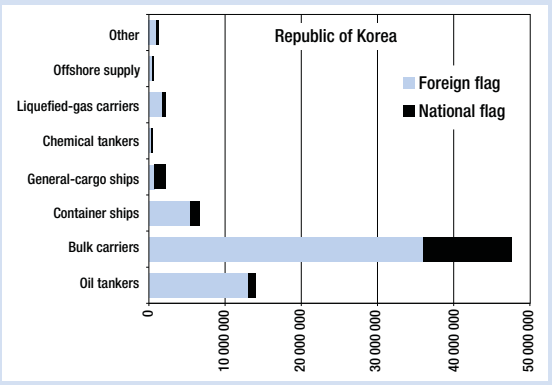


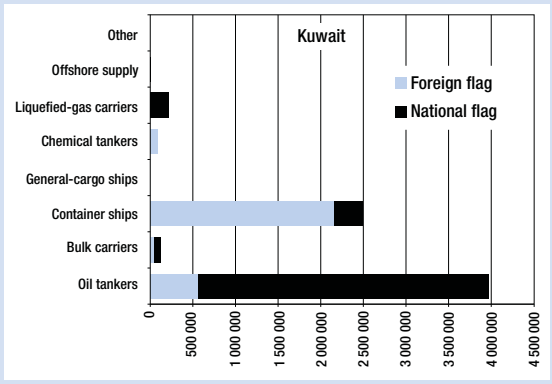












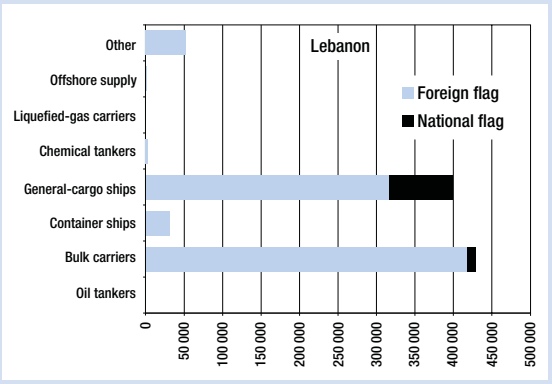
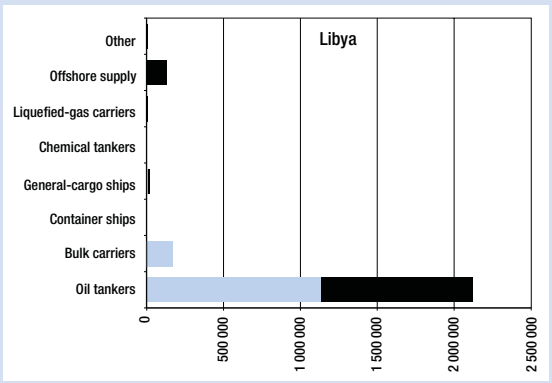
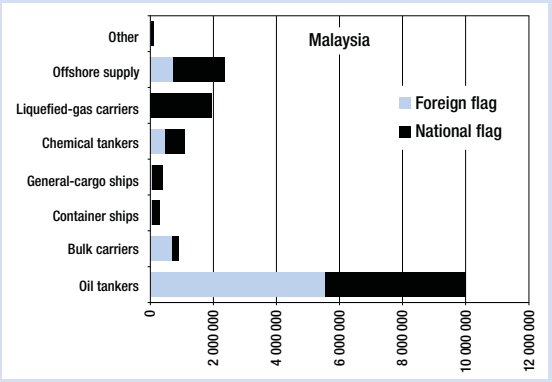
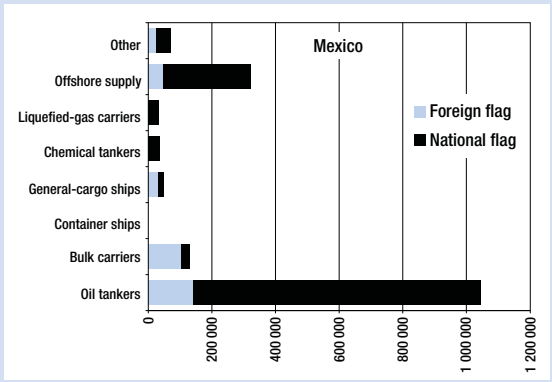
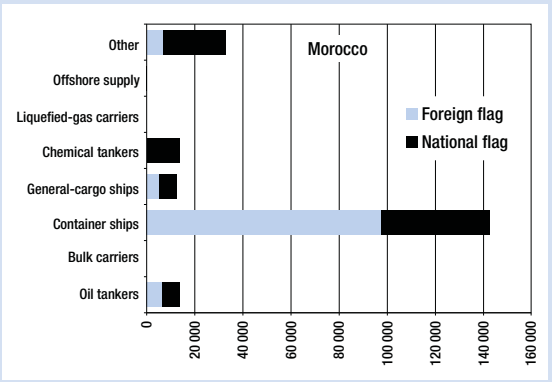


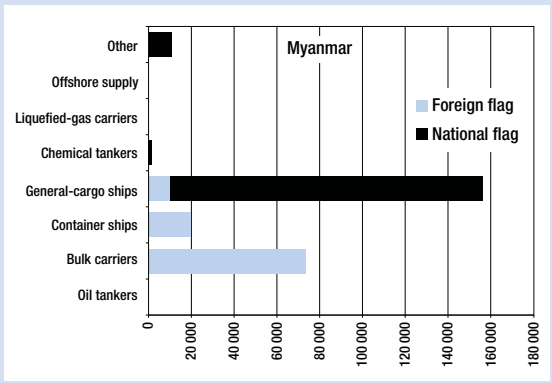
Figure 2.4. Fleet profiles of the major 48 ship-owning developing countries/territories and countries/territories with economies in transition (Dwt, by country of ownership, 1 January 2013) *(continued)*

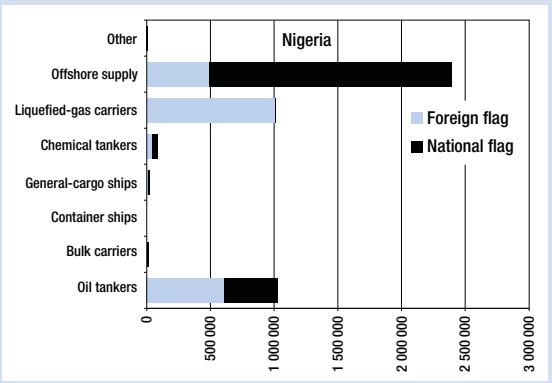


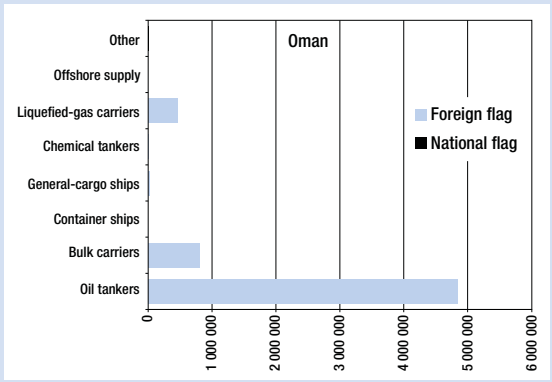












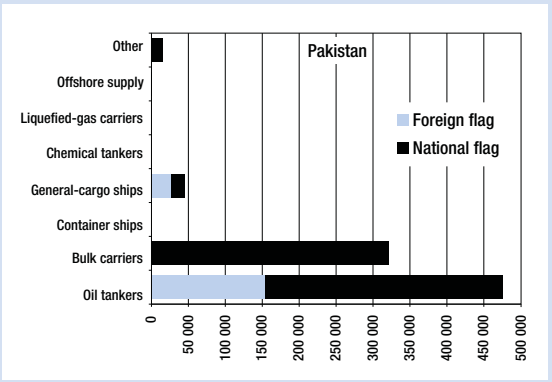
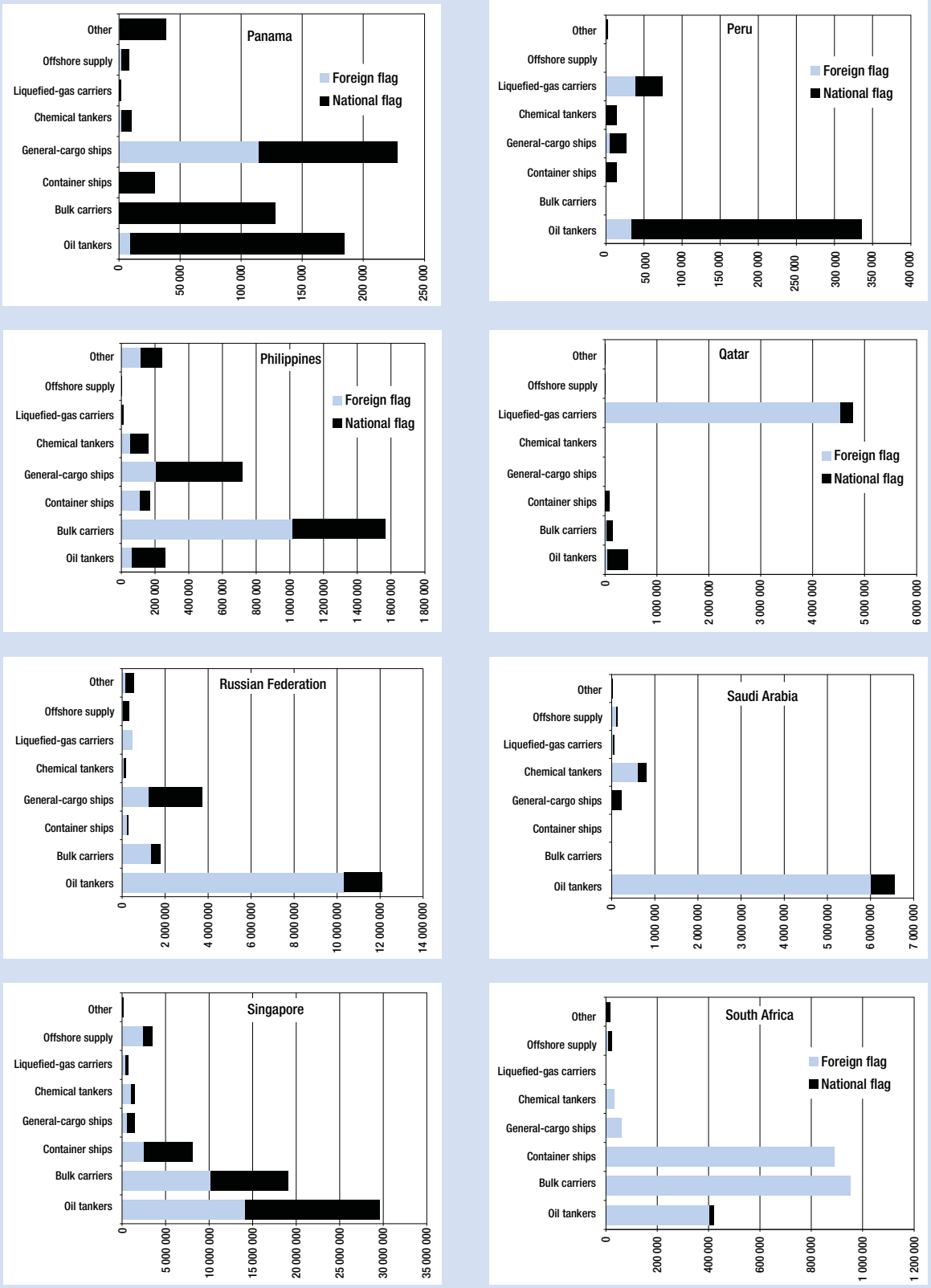


Figure 2.4. Fleet profiles of the major 48 ship-owning developing countries/territories and countries/territories with economies in transition (Dwt, by country of ownership, 1 January 2013) *(continued)*



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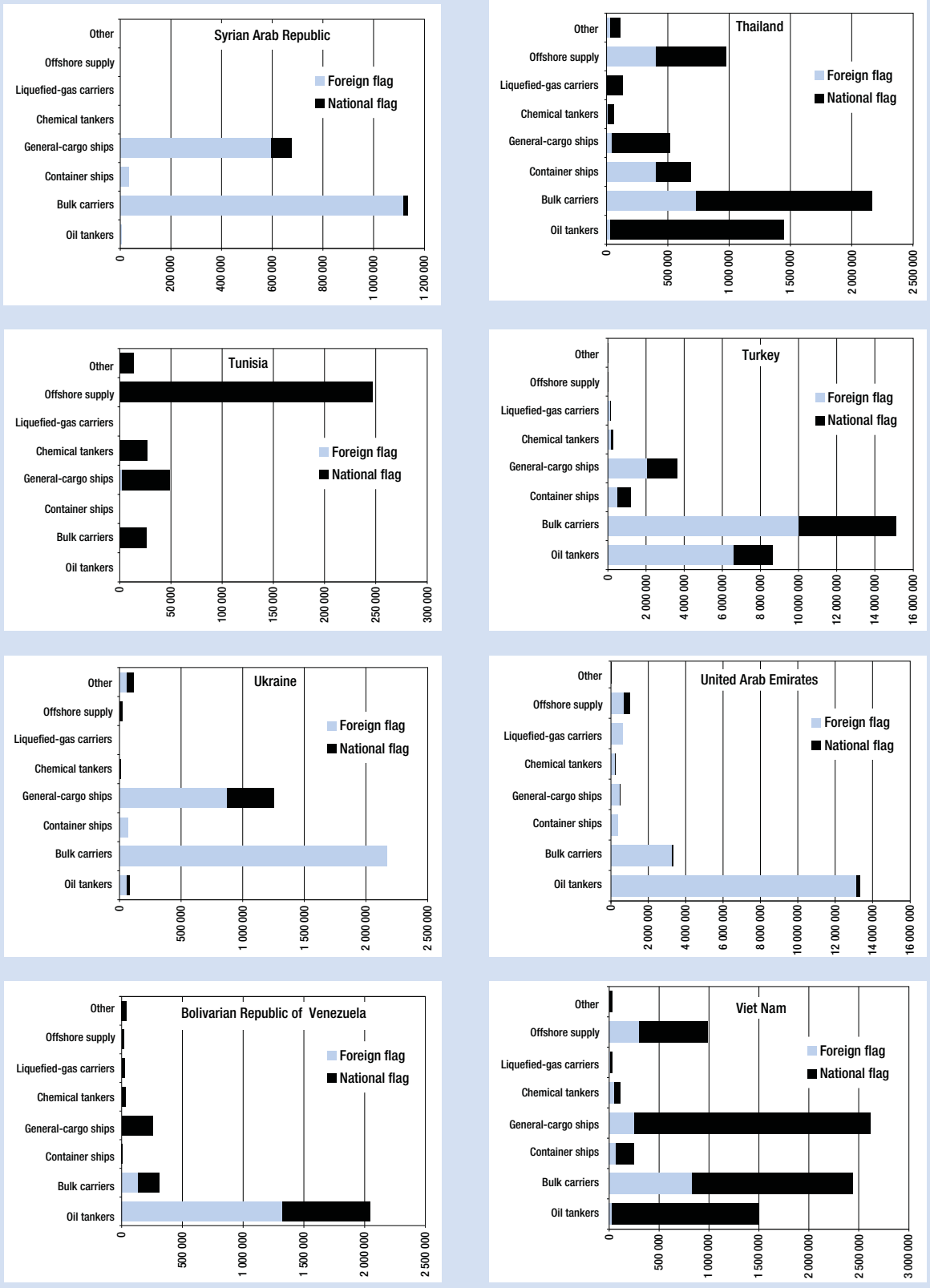


Source: UNCTAD secretariat, based on data provided by Clarkson Research Services.

Note: Propelled seagoing merchant vessels of 1,000 GT and above.

cent, equivalent to the combined Asian participation. It is also worth noting here that about half of the ships operated by the shipping lines are chartered-in, that is, the owners do not operate their container ships. Many of these owners are based in Germany. Moreover, the ships owned by the operators themselves tend to be larger than the charter-owner fleet. In particular, ships of 8,000 TEU and above are twice as often owned by liner companies such as Maersk, MSC and CMG CGM than by the charter-owners.

Table 2.5. The 20 leading liner companies, 1 January 2013 (Number of ships and total shipboard capacity deployed, in TEUs)

Ranking (TEU)	Operator	Country/ territory	Number of vessels	Average vessel size	TEU	Share of world total, TEU (percentage)	Cumulated share, TEU (percentage)	Growth in TEU over 2012 (percentage)
1	Maersk Line	Denmark	453	4 745	2 149 524	13.4%	13.4%	2.1%
2	MSC	Switzerland	398	5 186	2 064 118	12.9%	26.2%	1.9%
3	CMA CGM Group	France	288	4 004	1 153 088	7.2%	33.4%	-0.7%
4	COSCO	China	155	4 614	715 219	4.5%	37.9%	14.6%
5	Evergreen Line	Taiwan Province of China	187	3 795	709 702	4.4%	42.3%	24.3%
6	Hapag-Lloyd Group	Germany	141	4 533	639 148	4.0%	46.3%	-1.5%
7	APL	Singapore	127	4 492	570 497	3.6%	49.8%	-4.9%
8	CSCL	China	124	4 550	564 151	3.5%	53.3%	1.3%
9	Hanjin	Republic of Korea	107	5 190	555 279	3.5%	56.8%	11.6%
10	MOL	Japan	111	4 576	507 894	3.2%	60.0%	13.2%
11	OOCL	Hong Kong (China)	102	4 442	453 044	2.8%	62.8%	14.0%
12	NYK	Japan	93	4 334	403 030	2.5%	65.3%	28.0%
13	Hamburg Sud	Germany	93	4 132	384 293	2.4%	67.7%	4.1%
14	HMM	Republic of Korea	67	5 438	364 373	2.3%	70.0%	15.8%
15	Yang Ming	Taiwan Province of China	86	4 222	363 057	2.3%	72.2%	5.7%
16	K Line	Japan	75	4 558	341 848	2.1%	74.3%	-0.2%
17	Zim	Israel	71	3 978	282 411	1.8%	76.1%	-7.1%
18	UASC	Kuwait	41	6 361	260 818	1.6%	77.7%	36.5%
19	CSAV	Chile	55	4 716	259 391	1.6%	79.3%	-25.5%
20	PIL	Singapore	98	2 426	237 776	1.5%	80.8%	0.3%
Total top 20 liner companies			**2 872**	**4 519**	**12 978 661**	**80.8%**		
Others			2 957	1 041	3 079 572	19.2%		
Total all liner companies			**5 829**	**2 755**	**16 058 233**	**100.0%**		

Source: UNCTAD secretariat, based on data provided by Lloyd's List Intelligence, available at www.lloydslistintelligence.com.
Note: Includes all container-carrying ships known to be operated by liner shipping companies.

C. CONTAINER SHIP DEPLOYMENT AND LINER SHIPPING CONNECTIVITY

1. Container shipping and international trade

The importance of containerization for global trade has recently been re-emphasized. As *The Economist* put it, "Containers have been more important for globalization than freer trade" (*The Economist*, 2013). A new study (Bernhofen et al., 2013) covering the introduction of containerization until 1990 concluded that containerization had a stronger impact on driving globalization than trade liberalization, especially for developed countries and North–North trade. At the same time, the study concluded that during the early stages of containerization, for trade involving developing economies the impact of the gradual goods boxing process had been relatively small.

On a related matter, and recalling that container trade remains largely serviced by regular liner shipping services, it appears worth noting that a recent study

by the Economic and Social Commission for Asia and the Pacific and the World Bank (Arvis et al., 2013), covering more recent data, found that liner shipping connectivity – measuring the capacity of a country to carry its containerized foreign trade using liner shipping – had a stronger impact on trade costs than the indicators for "logistics performance", "air connectivity", "costs of starting a business" and "lower tariffs" combined.

Annex V of this *Review* includes UNCTAD's LSCI in its tenth year. Since 2004, the LSCI has provided an indicator of each coastal country's access to the global liner shipping network. The complete time series is published in electronic format on UNCTADstat (UNCTADStat – Statistical Database, 2013). The underlying data is provided by Lloyds List Intelligence (Lloyd's List Intelligence – Containers, 2013); the LSCI is generated from five components which capture the deployment of container ships by liner shipping companies to a country's ports of call as follows: (a) the number of ships; (b) their total container-carrying capacity; (c) the number of companies providing services with their own operated ships; (d) the number of services provided; (e) the size (in TEU) of the largest ship deployed.

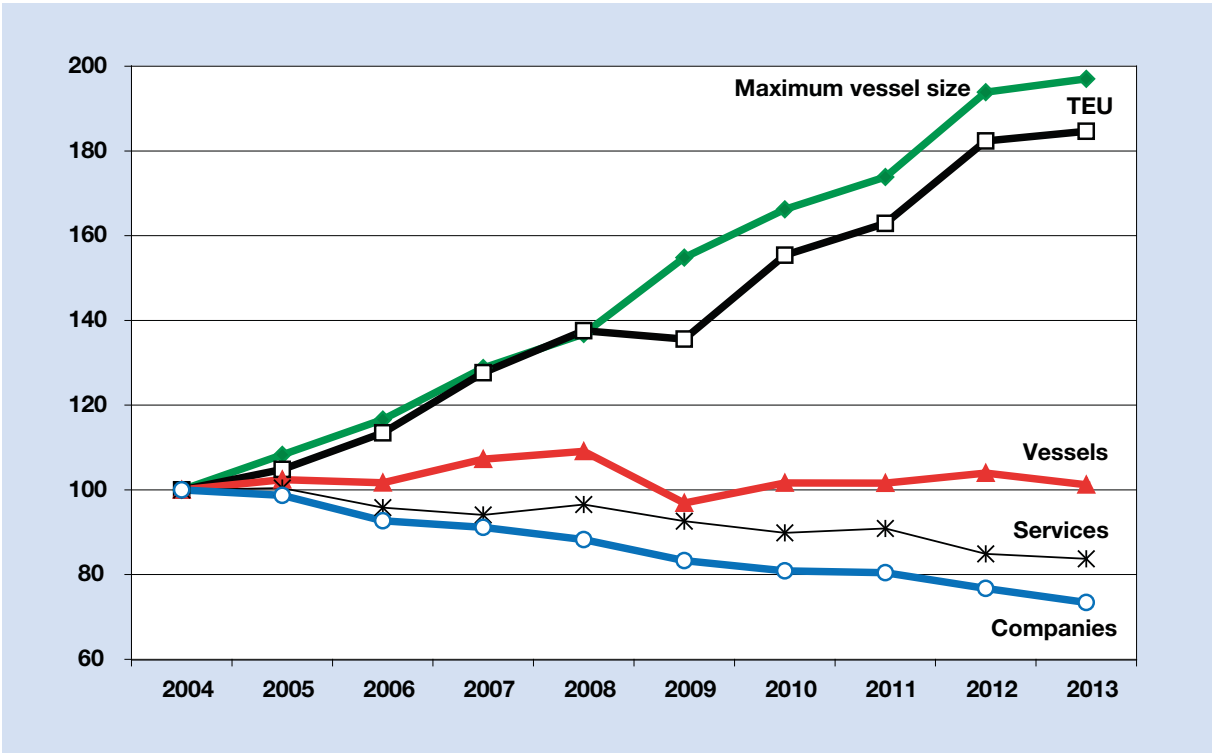
Making use of the 10-year time series of the LSCI and its underlying data, this section discusses, first, key global developments in vessel deployment, and then looks at trends in the LSCI in selected regions in Latin America, Africa and Asia.

2. Bigger ships deployed by fewer companies

The last 10 years have seen two important trends, which represent two sides of the same coin. On the one hand, ships are becoming bigger, and on the other hand the number of companies in most markets is diminishing (figure 2.5).

As regards vessel sizes, since 2004 the average container-carrying capacity of the largest ship in the 159 countries covered by UNCTAD's database has almost doubled, from 2,812 TEU 10 years ago to 5,540 TEU in 2013. The size of the largest existing ships has also almost doubled during these 10 years (from 8,238 TEU to 16,020 TEU), and although the new ultra-large container carriers are only deployed on a small number of routes (mainly Europe–Asia), they have pushed the previously used ships out of this market, which have had to find cargo on other routes,

Figure 2.5. Trends in container-ship fleet deployment (Index =100 for 2004, data for mid-2004–mid-2013)



Source: UNCTAD, based on data provided by Lloyds List Intelligence.

including North–South and intraregional trade lanes. In other words, although the largest 15,000+ TEU ships are not deployed in Latin America, Africa or South Asia, their deployment still has an important impact on these regions, as the cascading effect forces the 8,000+ TEU ships – the biggest in 2004 – to find new markets. This trend can be expected to continue. For the time being, the container ship order book is dominated by post-Panamax ships, which account for 92 per cent of the container-carrying capacity on order (Clarkson Research Services, 2013c).

As regards the number of companies, the average per country has decreased by 27 per cent during the last 10 years, from 22 in 2004 to just 16 in 2013. This trend has important implications for the level of competition, especially for smaller trading nations. While an average of 16 service providers may still be sufficient to ensure a functioning competitive market with many choices for shippers for the average country, on given individual routes, especially those serving smaller developing countries, the decline in competition has led to oligopolistic markets. For example, in 2004 there were 22 countries served by three or fewer carriers, while in 2013, 31 countries were facing such a less-than-desirable situation. Even on the main East–West routes, analysts have expressed concerns that shippers will be confronted with less choice, as medium-sized carriers are squeezed out of the market (*Journal of Commerce, 2013).*

Rather than increasing the number of vessels deployed, the carriers response to the growing demand has been the use of larger ships. As of 2004, the average number of ships deployed per country has remained almost constant, while the total container-carrying capacity increased by more than 80 per cent.

From the shippers' perspective, larger ships and more total TEU carrying capacity bring overall good news. Both a comfortable available carrying capacity for the growing trade in containerized goods, and the doubling of ship sizes to achieve economies of scale should lead to lower freight costs. However, lower operational unit costs achieved by shipping lines thanks to newer, larger and more fuel-efficient ships may not necessarily be passed on to the shippers, that is, the importers and exporters. The very process of concentration of cargo in larger ships may also lead to the same capacity now offered by fewer providers, hence less competition and, in some oligopolistic markets, a situation where shippers may in fact be confronted with higher freight rates and less choice of services.

3. Regional trends

Overall, thanks to larger ships and more container-carrying capacity deployed from and to the world's ports, the average LSCI in most countries shows that their connectivity has increased. Since 2004, 120 countries recorded an improved LSCI, while the LSCI in 39 countries went down. Figure 2.6 illustrates trends in some selected developing countries in Latin America, Africa and Asia.

On the west coast of South and Central America, Panama appears best connected to global liner shipping networks, largely thanks to its canal. Although Panama has less trade than its Southern neighbours, its container terminals provide trans-shipment services for practically all of North, Central and South America, connecting East–West and North–South liner services. In South America, Ecuador has not been able to accommodate the same LSCI growth as its neighbours, partly because its main port, Guayaquil, has been confronted with limitations in the dredging of the access channel and insufficient investment in specialized container handling cranes. On South America's east coast, Brazil shows the highest LSCI, closely followed by Argentina and Uruguay. Although much smaller than its neighbours, Uruguay has been able to attract liner services for transit and trans-shipment cargo. The Bolivarian Republic of Venezuela, whose main export is crude oil, has not recorded any increase in container ship deployment during the last 10 years.

In West Africa, Nigeria has seen the highest growth of its LSCI, mostly fuelled by growing demand for imports. In general, the LSCI of the West African countries move largely in parallel to each other, as the same companies deploy the same ships to call at most ports along the coast. The LSCI of the Côte d'Ivoire has seen important drops in 2006 and 2010, when political turmoil and economic embargoes discouraged liner companies to serve the port of Abidjan. In Eastern Africa, Djibouti has overtaken its neighbours and became an important trans-shipment centre, connecting East–West services with feeder services from Eastern and Southern Africa. It also serves as a gateway for neighbouring landlocked Ethiopia and increasingly caters for cargo destined for South Sudan.

In South Asia, the LSCI of Bangladesh, India and Pakistan almost exclusively reflects the vessel deployment for these countries' national foreign trade. In Sri Lanka on the other hand, large container ships are deployed to connect to feeder services, including

to India, thus benefiting from cabotage restrictions which continue to limit the attractiveness of Indian ports for trans-shipment operations to the different ports of this large country.

Malaysia, in South-East Asia, has seen its LSCI grow much faster than its neighbours Indonesia and Thailand, almost reaching the LSCI of Singapore. Comparing the developments in Singapore and Malaysia, it is interesting to note that the two countries' LSCI moves largely in parallel, as the same companies and ships provide the same services passing through the Strait of Malacca. The data for 2007 and 2008, however, also illustrate a certain competition, when one country's ability to attract additional liner companies may be to the detriment of the other's LSCI.

In East Asia, the Republic of Korea and Japan started out with the same LSCI in 2004. Since then, Japan has remained relatively stagnant, its rank slipping from ninth in 2004 to fifteenth in 2013. During the same period, the Republic of Korea has attracted more and bigger ships, partly to cater for its own trade, but also to provide trans-shipment services for cargo to and from ports of neighbouring countries. For the last 10 years China has the highest LSCI not only in its region but also among all countries covered by LSCI.

D. REGISTRATION OF SHIPS

1. Flags of registration

The five largest fleets by flag of registration in January 2013, and in terms of dwt, were Panama (21.5 per cent of the world total dwt), Liberia (12.2 per cent), the Marshall Islands (8.6 per cent), Hong Kong, China (8 per cent) and Singapore (5.5 per cent) (see table 2.6 for details of the 35 flags of registration with the largest registered fleets). The latter two were also those with the highest year-on-year growth, increasing their tonnage by more than 16 per cent. As regards vessel types, Liberia caters largely for oil tankers, while Panama flags a high number of dry-bulk carriers. The Bahamas has many "other" vessels, including a large number of cruise ships.

The traditional distinction between "national" flagged fleets and "open registers" is becoming increasingly blurred. Among the top 35 fleets, there are 11 that could be considered purely open as less than 2 per cent of the ships flying their flags belong to owners from the same country. At the other end of the spectrum, there are 8 flags that are used almost

Figure 2.6. Trends in the LSCI (Index =100 for the maximum value in 2004)

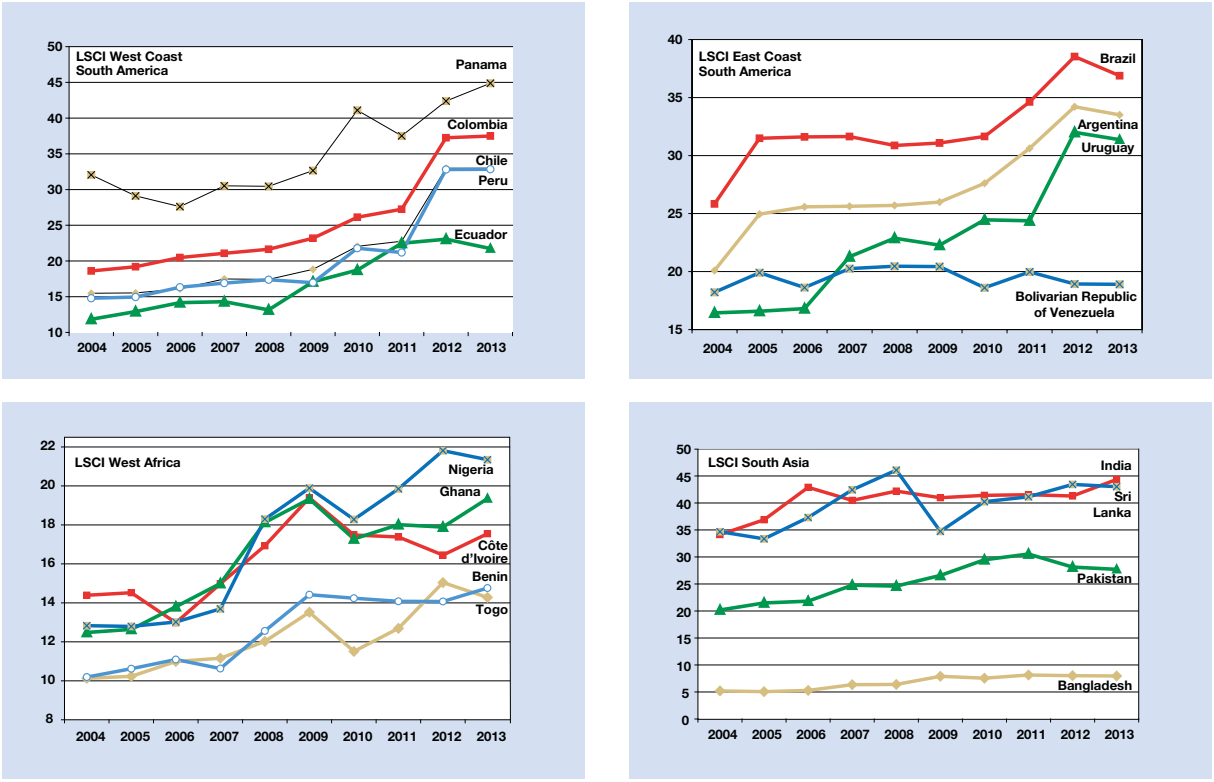
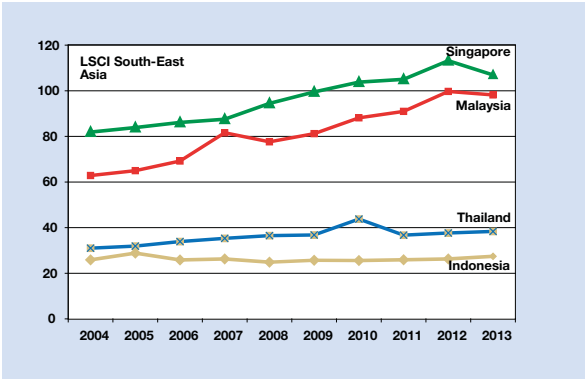
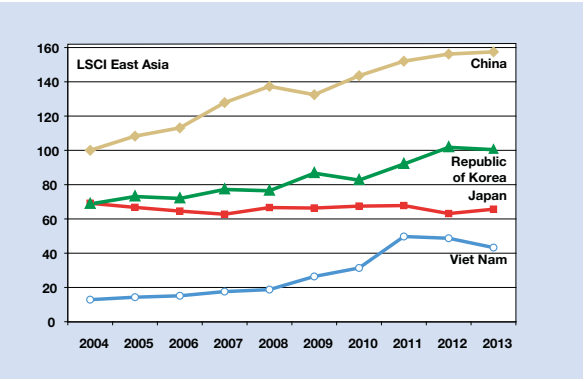
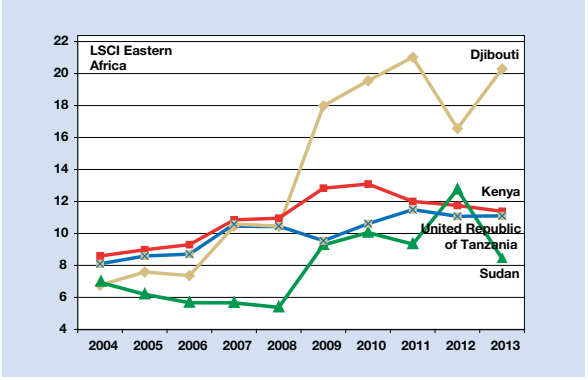


Figure 2.6. Trends in the LSCI (Index =100 for the maximum value in 2004) *(continued)*







Source: UNCTAD. The LSCI is generated from data provided by Lloyds List Intelligence. The LSCI for 159 countries is available on-line under (http://stats.unctad.org/lsci).

exclusively (more than 95 per cent of the total) by owners from the country; these could be called purely national flags. In between, 16 of the top 35 flags are used by both national and foreign owners. The flag of the Philippines, for example, is used three times more by foreigners than Philippine nationals. For Singapore, the proportion of foreign to national ownership is about 2:1, and for the United Kingdom it is about 50:50 (not including here the flag of the Isle of Man).

In January 2013, a new historical record share of 73 per cent of the world fleet was "flagged out", that is, the nationality of the vessel's owner was different from the flag under which the vessel was registered (figure 2.7). In other words, for almost three out of every four dwt, shipowners chose a flag different from their own nationality. The remaining 27 per cent are kept under the national flag because either the owner considered the national flag competitive in terms of costs and services provided, or he may not have had a choice, as is often the case for government cargo and cabotage traffic.

In the past, important reasons to choose a foreign flag were the tax regimes and the possibility to employ foreign seafarers. The latter reason was particularly important for countries with higher labour costs, that is mostly developed countries (Cullinane, 2005). Today, the responsibilities of flag States in ensuring compliance with international regulations and in providing 24/7 services to shipowners are increasingly important, and many developing countries' owners also choose to register their fleets under foreign flags that offer a solid institutional framework and enjoy a good compliance reputation.

The regional shares by vessel type and flag of registration are provided in table 2.7 (see Annex II for the national shares). In total, developing countries register more than three quarters of the world fleet, including the world's major open registers (Panama, Liberia, and the Marshall Islands), but also important national fleets employed in coastal and inter-island cabotage trades (for example, China, India and Indonesia), as well as mixed registers with national and foreign owners (for example, Hong Kong (China), Singapore and the Philippines). The fleets registered in developed countries/overseas territories also include major open registers (for example, Malta, the Isle of Man and Bermuda), flags used by both nationals and foreigners (for example, Cyprus, the United Kingdom and France), and flags that are almost exclusively used by national owners (for example, Germany and Japan). The Danish (DIS) and Norwegian (NIS) international ship registers are these countries' second registers; they provide better conditions to shipowners than the same countries' first registers in terms of taxes and possibilities to employ foreign seafarers. DIS and NIS are still today mostly used by Danish and Norwegian nationals respectively (see Annex III).

Among the developing regions, Africa's share is determined largely by the register of Liberia, which

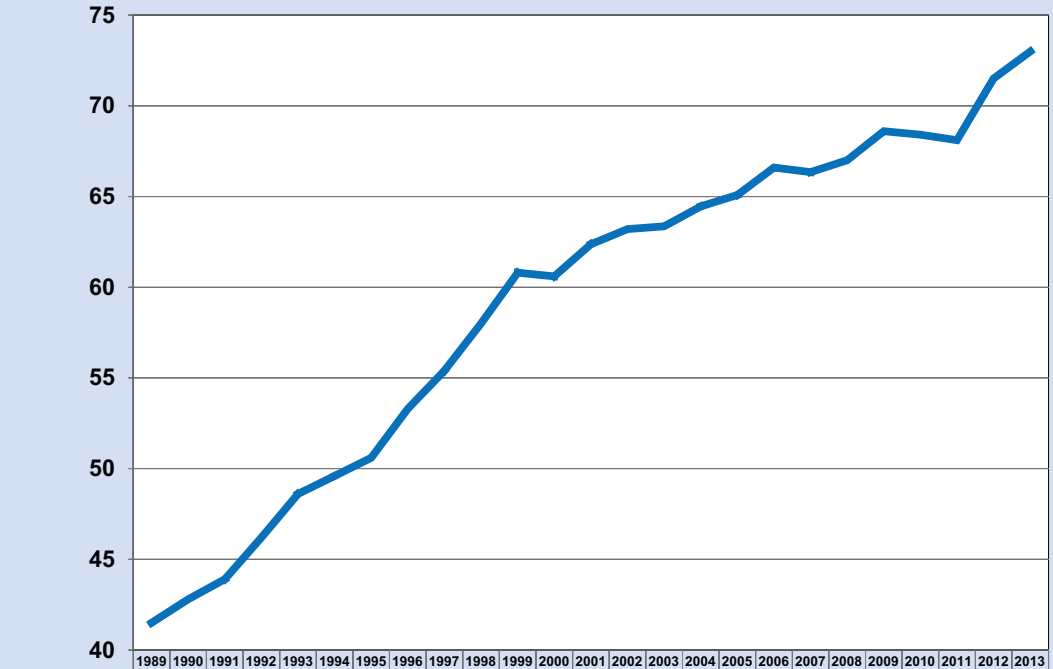
Table 2.6. The 35 flags of registration with the largest registered fleets, as of 1 January 2013 (Dwt)

Flag of registration	Number of vessels	Share of world total, vessels	Deadweight tonnage (thousands dwt)	Share of world total (percentage dwt)	Cumulated share (percentage dwt)	National ownership (percentage) [a]	Dwt Growth 2013/2012 (percentage)
Panama	8 580	9.87	350 506	21.52	21.52	0.14	5.03
Liberia	3 144	3.62	198 032	12.16	33.68	0.01	5.83
Marshall Islands	2 064	2.37	140 016	8.60	42.27	0.11	11.08
Hong Kong (China)	2 221	2.55	129 806	7.97	50.24	12.15	16.87
Singapore	3 339	3.84	89 697	5.51	55.75	36.60	16.62
Greece	1 551	1.78	75 424	4.63	60.38	92.60	5.13
Bahamas	1 446	1.66	73 702	4.52	64.91	1.18	1.44
Malta	1 794	2.06	68 831	4.23	69.13	0.35	8.18
China	3 727	4.29	68 642	4.21	73.35	98.18	9.83
Cyprus	1 030	1.18	31 706	1.95	75.29	19.51	7.61
Isle of Man	422	0.49	22 629	1.39	76.68	0.00	9.32
United Kingdom	1 343	1.54	21 095	1.30	77.98	49.88	6.99
Italy	1 506	1.73	20 612	1.27	79.24	93.46	2.44
Japan	5 379	6.19	20 409	1.25	80.50	99.32	11.04
Norway (NIS)	536	0.62	18 093	1.11	81.61	82.33	5.37
Republic of Korea	1 894	2.18	17 720	1.09	82.69	96.47	-10.74
Germany	781	0.90	17 128	1.05	83.75	97.59	2.30
India	1 385	1.59	15 876	0.97	84.72	96.16	-3.45
Indonesia	6 293	7.24	14 267	0.88	85.60	90.28	0.17
Antigua and Barbuda	1 302	1.50	14 142	0.87	86.47	0.00	4.27
Denmark (DIS)	482	0.55	13 739	0.84	87.31	92.53	1.24
Bermuda	168	0.19	12 378	0.76	88.07	1.69	0.45
United States	3 452	3.97	12 321	0.76	88.83	73.93	-1.18
Malaysia	1 539	1.77	10 508	0.65	89.47	92.82	-3.15
Turkey	1 365	1.57	10 215	0.63	90.10	96.94	3.30
United Republic of Tanzania	198	0.23	8 815	0.54	90.64	0.30	10.45
Netherlands	1 250	1.44	8 712	0.53	91.17	70.90	6.73
France	543	0.62	7 431	0.46	91.63	52.40	-0.22
Viet Nam	1 772	2.04	7 284	0.45	92.08	97.55	1.52
Belgium	216	0.25	6 913	0.42	92.50	58.35	0.46
Russian Federation	2 324	2.67	6 784	0.42	92.92	84.57	-2.14
Philippines	1 383	1.59	6 417	0.39	93.31	26.36	-2.41
St. Vincent and the Grenadines	1 046	1.20	4 919	0.30	93.61	0.08	-18.09
Thailand	755	0.87	4 811	0.30	93.91	97.95	-6.63
Cayman Islands	174	0.20	4 310	0.26	94.17	0.00	2.12
Top 35 total	66 404	76.38	1 533 889	94.17	94.17	24.30	6.71
World total	86 942	100.00	1 628 783	100.00	100.00	23.00	5.98

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by Clarkson Research Services.
Note: Propelled seagoing merchant vessels of 100 GT and above; ranked by deadweight tonnage.

[a] The estimate of national ownership is based on available information of commercial seagoing vessels of 1,000 GT and above.

Figure 2.7. Global share of foreign-flagged fleet (Beginning-of-year figures, percentage of world total dwt, 1989–2013)



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Percentage of dwt	41.5	42.8	43.9	46.2	48.6	49.6	50.6	53.3	55.4	58.0	60.8	60.6	62.4	63.2	63.4	64.5	65.1	66.6	66.4	67.0	68.6	68.4	68.1	71.5	73.0

Source: UNCTAD, Review of Maritime Transport, various issues.
Note: Estimate based on available information of seagoing merchant vessels of 1,000 GT and above.

caters above all for container ships and oil tankers. For the Latin American and Caribbean fleets, the flag of Panama explains the region's high share among bulk carriers. Almost one quarter of the world fleet is registered in developing countries in Asia, with a particularly high share among the general-cargo ships (almost 33 per cent of the world total). The share of Oceania reflects to a large extent the register of the Marshall Islands, with its specialization in oil tankers and dry-bulk carriers.

Table 2.7. Distribution of dwt capacity of vessel types, by country group of registration, 2013 (Beginning-of-year figures, percentage of dwt)

	Total	Oil tankers	Bulk carriers	General cargo ships	Container ships	Other types
Developing economies	75.49	72.23	81.13	65.07	72.26	70.92
… of Africa	13.55	16.87	10.07	5.37	23.11	10.17
… of America	28.57	21.08	34.95	24.74	23.24	32.86
… of Asia	24.42	21.94	27.46	32.80	21.64	18.61
… of Oceania	8.95	12.35	8.66	2.15	4.27	9.28
Developed economies	23.36	26.80	18.55	28.64	27.68	25.13
Transition economies	0.72	0.77	0.26	5.21	0.04	1.17
Unknown and other flags	0.42	0.19	0.06	1.08	0.01	2.78
World total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied Clarkson Research Services.
Note: Propelled seagoing merchant vessels of 100 GT and above.

2. Nationality of controlling interests

Vessel registers often specialize in different ship types and countries of ownership. Annex III provides a detailed overview of the countries of ownership that register their ships under the main flags of registration. The flag of Antigua and Barbuda is mostly used by owners from Germany; the Bahamas registers, above all, ships from Canada, Greece and Norway; Greek and German owners are the main clients for the registers of Cyprus and of Liberia; and 47 per cent of the Panamanian deadweight tonnage is Japanese owned.

E. SHIPBUILDING, DEMOLITION AND NEW ORDERS

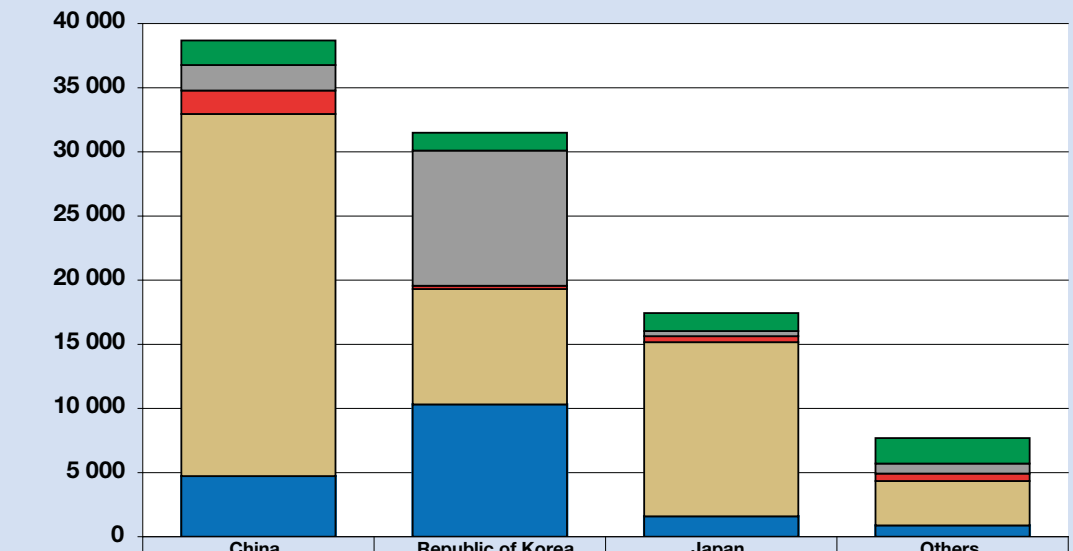
1. Deliveries of newbuildings

Three countries (China, the Republic of Korea and Japan) together built 92 per cent of the world's new tonnage (GT) in 2012, with China alone accounting for more than 40 per cent. Almost 57 per cent of the tonnage delivered in 2012 was on dry-bulk ships, followed by oil tankers (18.4 per cent) and container ships (14.4 per cent) (figure 2.8 and table 2.8). This is a significantly different picture from just six years ago. In 2006, the Republic of Korea was the largest shipbuilder, followed by Japan. China and Europe each had a market share of about 15 per cent.

Shipbuilders also specialize in different vessel types. While China and Japan have mostly built dry-bulk carriers, the Republic of Korea had a far higher share in container ships and oil tankers, and European and other regions' yards had a somewhat higher share among the offshore and passenger vessels. In addition to bulk carriers, Japan is also focusing on other specialized ships, including gas and car carriers. The four largest individual shipbuilding groups are from the Republic of Korea; shipbuilding in China is spread among a larger number of individual shipbuilders.

Even more so than ships, sea containers are almost exclusively built in China. Low production costs and the need for empty boxes to transport Chinese exports made China the natural location for setting up factories for the construction of containers. Interestingly, at the end of 2013, a new factory for reefer containers is scheduled to open in San Antonio, Chile. Maersk

Figure 2.8. Deliveries of newbuildings, major vessel types and countries where built, 2012 (Thousands of GT)



	China	Republic of Korea	Japan	Others
Other	1 914	1 391	1 406	1 989
Container	1 984	10 540	390	773
General cargo	1 833	260	472	583
Dry bulk	28 217	8 988	13 571	3 468
Oil tanker	4 729	10 311	1 592	877

Source: UNCTAD secretariat, on the basis of data supplied by Clarkson Research Services.
Note: Propelled seagoing merchant vessels of 100 GT and above.

Table 2.8. Deliveries of newbuildings, major vessel types and countries where built, 2012 (Thousands of GT)

	China	Republic of Korea	Japan	Philippines	Rest of world	World total
Oil tankers	4 729	10 311	1 592	251	626	17 510
Bulk carriers	28 217	8 988	13 571	2 342	1 126	54 244
General cargo	1 833	260	472	–	583	3 147
Container ships	1 984	10 540	390	–	773	13 687
Gas carriers	179	173	152	–	18	522
Chemical tankers	68	188	200	–	44	499
Offshore	967	506	108	102	819	2 502
Ferries and passenger ships	100	71	36	–	875	1 082
Other	600	453	910	–	131	2 094
Total	**38 677**	**31 491**	**17 429**	**2 696**	**4 994**	**95 287**

Source: Compiled by the UNCTAD secretariat on the basis of data provided by Clarkson Research Services.
Note: Propelled seagoing merchant vessels of 100 GT and above.

Container Industry San Santonio is going to be the first reefer container factory in South America (MCI San Antonio, 2013). The company is scheduled to produce 40,000 reefer containers per year. South America is among the regions with the highest demand for empty reefer containers for export. The new factory will thus help correct a reefer trade imbalance and reduce repositioning costs as fewer empty reefer containers will need to be moved from Asia to South America (*World Cargo News, 2013).*

2. Demolition of ships

The Indian subcontinent continued to be the major ship-breaking region in 2012, accounting for more than 70 per cent of the tonnage (GT) reported sold for breaking. Within the subcontinent, Bangladesh was the largest ship-breaking country, followed by India and Pakistan. Chinese breakers demolished 21.6 per cent and the rest of the world the remaining 11.7 per cent (table 2.9).

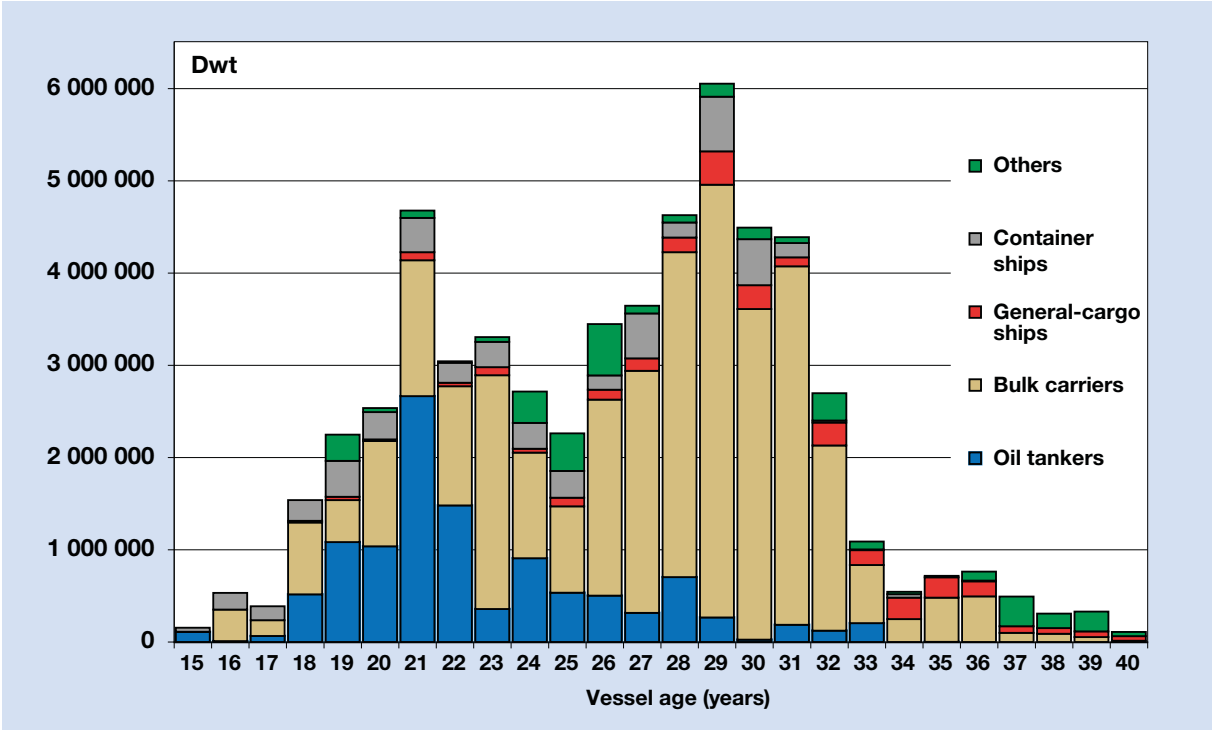
Table 2.9. Tonnage reported sold for demolition, major vessel types and countries where demolished, 2012 (Thousands of GT)

	China	India	Bangladesh	Pakistan	Unknown Indian Subcontinent	Turkey	Others/ unknown	World Total
Oil tankers	1 459	369	1 197	2 711	191	21	200	6 149
Bulk carriers	5 533	5 446	6 064	1 959	205	365	720	20 293
General cargo	316	393	1 166	28	–	291	471	2 665
Container ships	316	553	2 954	7	216	124	76	4 246
Gas carriers	4	89	30	–	–	77	38	238
Chemical tankers	7	11	333	–	21	–	27	399
Offshore	154	4	44	649	156	75	100	1 182
Ferries and passenger ships	12	4	82	–	–	139	66	303
Other	55	158	386	17	–	146	56	817
Total	**7 855**	**7 027**	**12 256**	**5 372**	**790**	**1 239**	**1 755**	**36 293**

Source: Compiled by the UNCTAD secretariat, on the basis of data from Clarkson Research Services.
Note: Propelled seagoing merchant vessels of 100 GT and above.

As illustrated in figure 2.9, oil tankers tend to be sold for breaking at a much younger age than dry-bulk carriers. Environmental regulations often do not allow older tankers to be deployed beyond two decades, while dry bulkers often trade to carry cargo for three or more decades. General-cargo and passenger ships (included under "other" in figure 2.9) tend to be deployed the longest; they are often trading on inter-island and coastal cabotage services, which are not bound by the international regulations of IMO.

Figure 2.9. Tonnage reported sold for demolition in 2012, by age (Years and dwt)



Source: UNCTAD secretariat, on the basis of data from Clarkson Research Services.

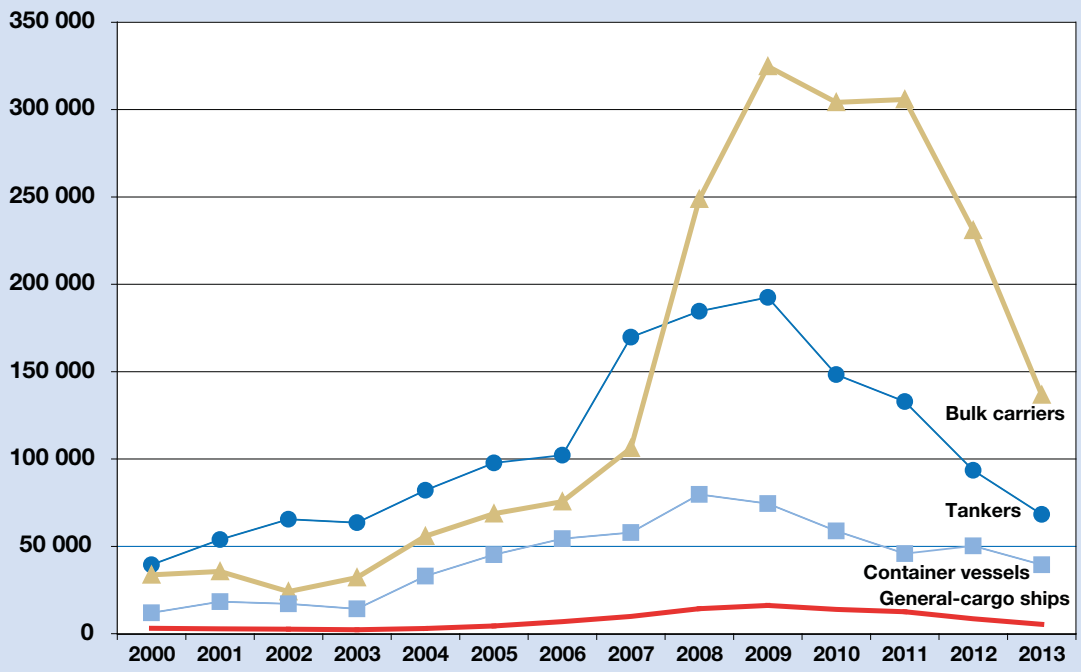
3. Tonnage on order

Following the peaks in 2008 and 2009, the tonnage on order for all major vessel types has drastically declined over the last few years. As far fewer new orders were placed since the economic crisis of 2008, and shipyards continued to deliver pre-ordered tonnage, the order books went down by 50 per cent for container ships, 58 per cent for dry-bulk carriers, 65 per cent for tankers and by 67 per cent for general-cargo ships, as compared to the previous peaks (figure 2.10 and table 2.10).

The reduction in the order book is even more impressive if compared to the existing fleet. At the end of 2008, the dry-bulk order book was equivalent to almost 80 per cent of the fleet at that time, while the tonnage on order as of January 2013 is the equivalent of just 20 per cent of the fleet in service. For tankers, the order book went down from 50 per cent of the fleet at its peak to around 10 per cent in January 2013.

For all main vessel types, new orders are at historical lows, and the order book is declining rapidly. Unless large numbers of countercyclical investors place new orders in 2013 and 2014, by 2014 numerous shipyards will need to reduce employment. Reports from ship brokers suggest that in fact more such countercyclical investors are emerging, expecting to benefit from the current low newbuilding prices, and hoping for a revival of the shipping markets in coming years (Clarkson Research Services, 2013a). Nevertheless, from the shipyards' perspective, the current capacity is almost certainly too high for even the most optimistic scenario. According to some estimates "shipyard capacity could be slashed by as much as 40 per cent across the world and the industry would still be able to meet the demand for new ships for 2015" (*China Trade Today - Online Magazine, 2013).*

Figure 2.10. World tonnage on order, 2000–2013 (Thousands of dwt)



Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by Clarkson Research Services.
Note: *Propelled seagoing merchant vessels of 100 GT and above; beginning of year figures.*

4. Tonnage utilization

Ships are capital investments with high fixed costs and relatively low running costs – only exceptionally are they kept laid off. In early 2013, almost 99 per cent of the tonnage was in service, the remainder being laid off (0.73 per cent), used for long term storage (0.16 per cent) or not in service for other reasons (0.15 per cent). Among the different vessel types, container ships had the highest utilization rate (99.85 per cent), while offshore supply vessels had the lowest (84.52 per cent) (table 2.11).

Table 2.10. World tonnage on order, 2000–2013

Beginning of month	Tankers			Bulk carriers			General cargo ships			Container vessels			Other ships			Total		
	Thousands dwt	Number of ships	Average vessel size (dwt)	Thousands dwt	Number of ships	Average vessel size (dwt)	Thousands dwt	Number of ships	Average vessel size (dwt)	Thousands dwt	Number of ships	Average vessel size (dwt)	Thousands dwt	Number of ships	Average vessel size (dwt)	Thousands dwt	Number of ships	Average vessel size (dwt)
January 2000	39 444	427	92 375	33 729	467	72 226	3 125	341	9 164	11 922	278	42 884	2 963	363	8 791	91 183	1 876	49 288
January 2001	53 832	533	100 998	35 608	535	66 557	2 797	269	10 398	18 348	413	44 426	3 274	413	8 570	113 859	2 163	53 405
January 2002	65 546	752	87 162	24 107	360	66 965	2 541	233	10 906	17 132	403	42 511	4 264	474	9 454	113 589	2 222	51 655
January 2003	63 545	862	73 719	32 127	440	73 015	2 265	226	10 023	14 230	324	43 921	4 933	481	11 035	117 100	2 333	50 935
January 2004	82 094	1 146	72 076	55 829	735	75 958	3 012	563	6 072	33 004	622	53 061	5 361	971	7 529	179 300	4 037	48 407
January 2005	97 757	1 558	63 479	68 710	851	80 741	4 405	963	5 359	45 246	898	50 385	6 110	1 707	5 290	222 229	5 977	42 201
January 2006	102 202	1 882	54 741	75 623	950	79 604	6 904	1 221	6 299	54 385	1 210	44 946	6 637	1 875	4 884	245 750	7 138	37 913
January 2007	169 798	2 703	63 075	106 149	1 363	77 879	9 919	1 448	7 293	57 937	1 286	45 052	8 353	2 231	4 643	352 155	9 031	41 430
January 2008	184 548	3 174	58 401	248 698	2 984	83 344	14 266	1 889	7 925	79 702	1 429	55 775	11 477	2 938	4 778	538 691	12 414	45 749
April 2008	187 420	3 274	57 438	278 423	3 335	83 485	16 334	2 184	7 944	78 855	1 382	57 058	12 883	3 813	4 484	573 914	13 988	44 458
July 2008	199 397	3 296	60 699	302 678	3 602	84 031	16 650	2 148	8 218	81 921	1 370	59 797	13 026	3 743	4 571	613 673	14 159	46 728
October 2008	206 413	3 205	64 605	329 557	3 863	85 311	17 242	2 149	8 452	77 875	1 280	60 840	13 199	3 561	4 842	644 286	14 058	49 167
January 2009	192 532	2 957	65 331	324 772	3 824	84 930	16 169	1 965	8 674	74 445	1 200	62 037	12 582	3 280	4 961	620 499	13 226	50 158
April 2009	175 063	2 819	62 344	323 234	3 797	85 129	16 186	2 064	8 317	70 017	1 098	63 767	13 120	3 892	4 417	597 619	13 670	47 359
July 2009	159 975	2 573	62 441	313 865	3 677	85 359	15 414	1 921	8 488	65 998	1 013	65 151	13 052	3 571	4 726	568 305	12 755	48 039
October 2009	152 156	2 390	63 904	309 077	3 629	85 169	14 614	1 783	8 678	63 004	947	66 530	12 382	3 242	4 902	551 233	11 991	49 363

Table 2.10. World tonnage on order, 2000–2013 *(continued)*

Beginning of month	Tankers			Bulk carriers			General cargo ships			Container vessels			Other ships			Total		
	Thousands dwt	Number of ships	Average vessel size (dwt)	Thousands dwt	Number of ships	Average vessel size (dwt)	Thousands dwt	Number of ships	Average vessel size (dwt)	Thousands dwt	Number of ships	Average vessel size (dwt)	Thousands dwt	Number of ships	Average vessel size (dwt)	Thousands dwt	Number of ships	Average vessel size (dwt)
January 2010	148 328	2 276	65 429	304 114	3 539	85 932	13 894	1 627	8 964	58 823	842	69 861	11 568	2 857	5 157	536 727	11 141	51 406
April 2010	136 373	2 186	62 614	309 728	3 648	84 903	14 017	1 637	8 957	54 530	775	70 361	11 819	3 191	4 655	526 466	11 437	49 179
July 2010	135 006	2 072	65 378	323 404	3 812	84 839	13 280	1 530	9 052	48 427	677	71 532	11 618	2 956	4 890	531 736	11 047	51 143
October 2010	135 114	1 938	69 862	307 605	3 674	83 725	12 966	1 422	9 471	46 458	637	72 932	11 522	2 658	5 317	513 665	10 329	52 517
January 2011	132 914	1 857	71 729	305 831	3 705	82 546	12 553	1 305	9 915	45 878	622	73 759	10 830	2 408	5 426	508 006	9 897	53 803
April 2011	122 327	1 737	70 465	291 326	3 535	82 412	11 728	1 189	10 102	48 405	648	74 699	11 388	2 414	5 657	485 174	9 523	53 357
July 2011	114 179	1 630	70 091	275 879	3 364	82 009	10 647	1 056	10 267	52 469	688	76 263	11 272	2 217	5 989	464 446	8 955	54 005
October 2011	103 107	1 517	67 968	253 615	3 103	81 732	9 839	949	10 511	51 462	669	76 924	10 931	1 961	6 480	428 954	8 199	54 216
January 2012	93 559	1 334	70 134	230 964	2 813	82 106	8 553	799	10 813	50 275	646	77 825	10 604	1 785	6 846	393 955	7 377	55 230
April 2012	87 083	1 282	67 928	203 541	2 507	81 189	7 697	696	11 123	45 141	579	77 964	10 007	1 598	7 189	353 470	6 662	54 785
July 2012	76 128	1 085	70 164	170 949	2 140	79 883	5 921	501	11 914	40 806	526	77 579	9 941	1 416	8 024	303 746	5 668	55 357
October 2012	70 657	1 020	69 271	152 970	1 940	78 850	5 981	462	12 975	40 881	515	79 380	10 603	1 291	9 501	281 091	5 228	55 640
January 2013	68 291	964	70 841	136 720	1 736	78 756	5 362	383	14 001	39 470	485	81 382	10 569	1 179	10 559	260 414	4 747	56 996

Source: Compiled by the UNCTAD secretariat, on the basis of data supplied by Clarkson Research Services.

Notes: Seagoing propelled merchant ships of 100 GT and above. Average vessel size calculation excludes those vessels for which no deadweight figure is available.

Table 2.11. Tonnage utilization by type of vessel, January 2013 (Percentage of dwt or cubic metres)

	In service	Idle and laid up	Long-term storage	Repairs and not in service for other reasons	Total
Bulk carriers	99.75	0.14	0.02	0.10	100.00
Chemical tankers	99.57	0.36	–	0.08	100.00
Container ships	99.85	0.12	–	0.03	100.00
Ferries and passenger ships	98.23	1.49	–	0.28	100.00
General-cargo ships	98.78	0.87	0.04	0.31	100.00
Liquefied-gas carriers	98.62	1.19	0.19	–	100.00
Offshore supply	94.52	4.40	–	1.08	100.00
Oil tankers	98.16	1.25	0.48	0.12	100.00
Other/n.a.	99.31	0.53	–	0.16	100.00
Total	**98.96**	**0.73**	**0.16**	**0.15**	**100.00**

Source: Compiled by the UNCTAD secretariat, on the basis of data from Clarkson Research Services.

These apparently high utilization rates hide the oversupply of vessel capacity, especially in container shipping. The data captured in table 2.11 does not include "warm" lay ups, that is, short-term withdrawals from regular container services, when ships are considered "idle". If idle capacity is excluded, only about 95 to 96 per cent of the container ship fleet was in service in January 2013. In addition, slow steaming, that is, providing services at speeds below the optimum for which the ships had been built, has helped to absorb an additional capacity of about 1.7 million TEU, as more ships are deployed to ensure the same frequency of service (Clarkson Research Services, 2013c). This is equivalent to more than 10 per cent of the existing fleet.

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ENDNOTES

1. The underlying data on the world fleet for chapter 2 has been provided by Clarkson Research Services, London. With a view to focusing solely on commercial shipping, the vessels covered in UNCTAD's analysis include all propelled sea-going merchant vessels of 100 GT and above, including offshore drillships and FPSOs, and also including the Great Lakes fleets of the United States and Canada, which for historical reasons had been excluded in earlier issues of the *Review of Maritime Transport*. We exclude military vessels, yachts, waterway vessels, fishing vessels, and offshore fixed and mobile platforms and barges. As regards the main vessel types (oil tankers, dry-bulk, container, and general-cargo) there is no change compared to previous issues of the *Review of Maritime Transport*. As regards "other" vessels, the new data includes a smaller number of ships (previously, fishing vessels with little cargo-carrying capacity had been included) and a slightly higher tonnage due to the inclusion of ships used in the offshore transport and storage. To ensure full comparability of the 2013 data with the two previous years, UNCTAD has updated the fleet data available online for the years 2011, 2012 and 2013, applying the same criteria (http://stats.unctad.org/fleet). As in previous years, the data on fleet ownership covers only ships of 1,000 GT and above, as information on the true ownership is often not available for smaller ships.