C. OUTLOOK AND POLICY CONSIDERATIONS

1. Economic situation

According to UNCTAD projections, world GDP will expand by 2.6 per cent in 2017, up from 2.2 per cent in 2016. This growth is not expected to reflect a sustained recovery in global demand, but rather factors such as the end of the destocking cycle in the United

States; improved commodity price levels; the impact of support measures such as stimulus packages, for example in China; and gradual economic recovery in Brazil and the Russian Federation. Expansion in Eastern and Southern Asia is expected to accelerate, with developments in China remaining a key determinant of the outlook. Projected growth in the least developed countries (4.4 per cent) remains below the Sustainable Development Goal target. In line with GDP growth, world merchandise trade volumes are also expected to expand: the World Trade Organization forecasts an increase of 2.4 per cent in 2017, up from 1.9 per cent in 2016. Projected growth is, however, placed within a range of 1.8 per cent to 3.6 per cent.

The conclusion of the Economic Partnership Agreement between the European Union and Japan in July 2017 was a positive development that could support trade flows. The Agreement is expected to abolish most of the duties paid by companies in the European Union, which are estimated at €1 billion annually (*Financial Times*, 2017). It is also expected to open the Japanese market to key agricultural exports, end tariffs on automobiles and automotive parts, and further open services trade (European Commission, 2017). The European Union–Canada Comprehensive Economic and Trade Agreement is also likely to come into force in 2017–2021 (Economist Intelligence Unit, 2017).

In addition, policies that tackle persistent transport infrastructure gaps in the developing countries and enable adequate capacity in maritime transport could also help boost trade. Sustainable Development Goal 9 ("build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation") and more specifically, Goal 9.1 relating to resilient infrastructure, provides a framework for channelling relevant efforts. The Inter-agency and Expert Group on Sustainable Development Goal Indicators has proposed that freight volumes, including by mode of transport, be used to measure progress in achieving Goal 9.1.

Yet, the expected gradual recovery in the world economy and trade continues to be overshadowed by uncertainty and risks. These include the continued rebalancing of the Chinese economy, the new policy framework in the United States and the outcome of the negotiations between the United Kingdom and the rest of the European Union and their future economic and trade relations after the United Kingdom leaves the Union. One study estimates that both a "hard" exit of the United Kingdom resulting in a loss of preferential access to the European single market, and the imposition of various trade barriers in the United States would reduce the value of world merchandise exports to a level close to 3 per cent below baseline in 2030. In terms of value, the loss would be equivalent to $1.2 trillion (*Shipping and Finance*, 2017).

Various factors play against a strong revival in merchandise trade growth: concerns over the potential rise of trade protectionism, moving production closer to home, shortening supply chains, a growing aversion to trade liberalization and the failure of regional trade agreements such as the Transatlantic Trade and Investment Partnership and the Trans-Pacific Partnership Agreement to fully materialize.

2. Seaborne trade development forecasts

Bearing in mind projected growth in world GDP and merchandise trade and the downside risks to the global economy and trade policy, various estimates of future seaborne trade growth have been put forward and all appear to converge on continued growth in world seaborne trade in 2017. As shown in table 1.11, UNCTAD forecasts an increase in world seaborne trade volumes between 2017 and 2022. Projected growth estimates are based on the income elasticity of seaborne trade, including by cargo segment derived by using regression analysis over 2000–2016. Combining the estimated elasticities with the latest International Monetary Fund GDP growth projections for 2017–2022, world seaborne trade volumes are expected to expand across all segments, with containerized trade and major dry bulk commodities trade recording the fastest growth.

In 2017, UNCTAD forecasts indicate that world seaborne trade volumes will reach 10.6 billion tons, reflecting an increase of 2.8 per cent, up from 2.6 per cent in 2016. Improved prospects reflect a firming up in demand in the dry bulk trade sector, with the major bulk commodities projected to expand by 5.4 per cent in 2017. Containerized trade is projected to grow by 4.5 per cent, owing mainly to growing intra-Asian trade volumes and improved flows on the East–West mainlanes. Growth in tanker trade is expected to diminish, reflecting the impact of oil output cuts by major producers since the start of 2017, as well as some recovery in oil price levels. Crude oil trade is projected to grow by less than 1 per cent while, together, refined petroleum products and gas are projected to grow by 2 per cent.

As shown in table 1.11, the medium-term outlook is also positive. UNCTAD projects world seaborne trade volumes to expand at a compound annual growth rate of 3.2 per cent between 2017 and 2022. This is in line with some existing projections, including by Clarksons Research and is consistent with the historical average annual growth rate of 3 per cent estimated by UNCTAD in 1970–2016.

Between 2017 and 2022, trade in the major commodities and containerized trade is forecast to growth by 5.6 per cent and 5 per cent, respectively. Volumes are likely to be further supported by infrastructure development projects such as the One Belt, One Road initiative (China), the International North–South Transport Corridor (India, the Russian Federation and Central Asia) and

the Quality for Infrastructure Partnership (Japan). With around 900 projects either under negotiation or under way, the One Belt, One Road initiative, for example, may boost demand for raw materials and support Chinese exports of machinery and manufactured goods by sea. These would help support dry bulk shipments, port development and the container network (Gordon, 2017). The financing of the initiative remains, however, an important consideration. China has provided initial funding but more resources are required. The project will involve mobilizing financing through various channels (United Nations Economic and Social Commission for Asia and the Pacific, 2017). Prospects relating to coal remain, nevertheless uncertain, given the global green and climate agenda and the incremental phasing out of coal in favour of renewable energies.

Projected growth in tanker trade volumes is expected to remain relatively modest between 2017 and 2022. Crude oil volumes and refined petroleum products and gas are projected to increase by 1.2 per cent and 1.7 per cent, respectively. Future developments in oil trade remain uncertain due to trends relating to shale oil production and crude oil imports in the United States. Prospects for gas trade seem to be more positive.

3. Policy considerations

Seaborne trade is of strategic economic importance, as it accounts for over 80 per cent of world merchandise trade by volume and more than 70 per cent of its value. Projected growth in world seaborne trade remains subject to uncertainty and several downside risks. It is imperative to tackle these risks and uncertainty. Preparing for the projected growth in world seaborne trade volumes will be required; this means that implications for ship carrying capacity, maritime transport connectivity, port performance and capacity requirements be identified and clearly understood. In this context and considering the emerging trends currently shaping the outlook for seaborne cargo flows, some important issues are arising and span areas such

Table 1.11. Projected seaborne trade developments, 2017–2030

	Growth rates	Years	Seaborne trade flows	Source
Lloyd's List Intelligence	3.1	2017–2026	Seaborne trade volume	*Lloyd's List Intelligence research, 2017*
	4.6	2017–2026	Containerized trade volume	
	3.6	2017–2026	Dry bulk	
	2.5	2017–2026	Liquid bulk	
Clarksons Research Services	3.1	2017	Seaborne trade volume	*Seaborne Trade Monitor, June 2017*
	4.8	2017	Containerized trade volume	*Container Intelligence Monthly, June 2017*
	5.1	2018	Containerized trade volume	*Container Intelligence Monthly, June 2017*
	3.4	2017	Dry bulk	*Dry Bulk Trade Outlook, June 2017*
	2.1	2017	Liquid bulk	*Seaborne Trade Monitor, June 2017*
Drewry Maritime Research	1.9	2017	Containerized trade volume	*Container Forecaster, Quarter 1, 2017*
Maritime Strategies International	3.7	2017	Containerized trade volume	*Dynamar B.V, Dynaliners Monthly, May 2017*
	4.5	2018	Containerized trade volume	
	4.5	2019	Containerized trade volume	
McKinsey	3.0	2017	Containerized trade volume	*Dynamar B.V, Dynaliners Monthly, May 2017*
IHS Markit	By a factor of 2.7	2016–2030	Seaborne trade value	*IHS Markit research, 2016*
UNCTAD	2.8	2017	Seaborne trade volume	*Review of Maritime Transport 2017*
	4.5	2017	Containerized trade volume	
	5.4	2017	Five major bulks	
	0.9	2017	Crude oil	
	2.0	2017	Refined petroleum products and gas	
UNCTAD	3.2	2017–2022	Seaborne trade volume	*Review of Maritime Transport 2017*
	5.0	2017–2022	Containerized trade volume	
	5.6	2017–2022	Five major bulks	
	1.2	2017–2022	Crude oil	
	1.7	2017–2022	Refined petroleum products and gas	

Sources: UNCTAD secretariat calculations, based on own calculations and forecasts published by the indicated institutions and data providers (column 5 of table).
Note: Figures by Lloyd's List Intelligence and UNCTAD are compound annual growth rates. Figures for the other sources are annual percentage changes.

as trade policy, infrastructure development as well as technology and e-commerce.

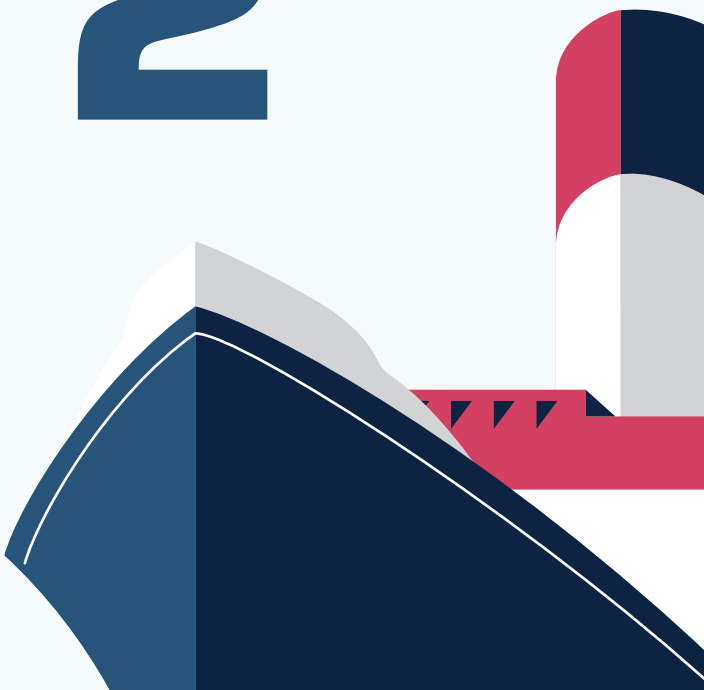
At the trade policy level and bearing in mind the overall policy framework under the Addis Ababa Action Agenda and the 2030 Agenda for Sustainable Development, efforts should aim to limit trade-restrictive measures. Developments relating to regional trade agreements and their potential implications for trade and shipping should be monitored and assessed. An example is the trade that could derive from the newly adopted European Union–Japan free trade agreement, given the associated significant ton-miles and capacity utilization (Baltic and International Maritime Council, 2017). Furthermore, effective implementation of the World Trade Organization Agreement on Trade Facilitation, which came into force in February 2017, can help support trade flows by unlocking capacity and reducing transaction costs, especially in developing economies.

In parallel, policies that tackle the persistent transport infrastructure gaps in developing economies and enable adequate capacity in maritime transport to effectively service and boost trade should also be promoted. Furthermore, policy measures that have an important transport infrastructure development component (for example, the One Belt, One Road initiative) could also stimulate trade and boost demand for maritime transportation.

Cross-border e-commerce patterns that favour shipping as the main mode of transport could also be promoted. Intervention measures may include helping relevant e-commerce stakeholders embrace technology, implementing trade facilitation solutions and customs reforms and developing common standards and practices. Clarifying the scale of digitalization and its implications for industrial production processes, supply chains, shipping and seaborne trade will also be necessary to ensure the formulation of adequate response measures.

Monitoring developments in the liner shipping markets, including the impact of liner shipping market consolidation and concentration on shipping rates and prices will be required to ensure that trade is not undermined by increasing shipping costs in the longer term, as will be discussed in the following chapters.

2



STRUCTURE, OWNERSHIP AND REGISTRATION OF THE WORLD FLEET

The world shipping fleet provides not only transport connectivity to global trade but also livelihoods to the people working in maritime businesses in developed and developing countries. At the beginning of 2017, the world fleet's commercial value amounted to $829 billion, with different countries benefiting from the building, owning, flagging, operation and scrapping of ships.

The top five shipowners in terms of cargo carrying capacity (dwt) are Greece, Japan, China, Germany and Singapore; together, these five countries have a market share of 49.5 per cent of dwt. Only one country from Latin America – Brazil – is among the top 35 shipowning countries; none are from Africa. The five largest flag registries are Panama, Liberia, the Marshall Islands, Hong Kong (China) and Singapore; together they have a market share of 57.8 per cent. Three countries – the Republic of Korea, China and Japan – constructed 91.8 per cent of world gross tonnage in 2016; among these, the Republic of Korea had the largest share, with 38.1 per cent. Four countries – India, Bangladesh, Pakistan and China – together accounted for 94.9 per cent of ship scrapping in 2016. UNCTAD data confirms a continued trend of industry consolidation, where different countries specialize in different maritime subsectors. It also confirms the growing participation of developing countries in many maritime sectors.

For the fifth year in a row, world fleet growth has been decelerating. The commercial shipping fleet grew by 3.15 per cent in 2016, compared with 3.5 per cent in 2015. Despite this further decline, the supply still increased faster than demand, leading to a continued situation of global overcapacity and downward pressure on freight rates.

The structure of the world fleet in terms of vessel types, tonnage, value and age are described in section A. Fleet ownership and registration are discussed in sections B and C, respectively, and data on shipbuilding, scrapping and the order book, in section D. Three issues considered relevant for the future development of the industry are explored in section E: cabotage traffic, gender aspects and developments in marine fuels. The overall outlook of the industry and policy implications are presented in section F.

WORLD CONTAINER CARRYING SHIP FLEET

Germany China Greece

Germany, China and Greece own

39%

of the world container-carrying ship fleet

TOP THREE FLAGS BY TONNAGE

Panama Liberia Marshall Islands

More than

70%

of the commercial fleet is registered under a flag which is different from the country of ownership

LEADERS IN SHIP BUILDING

China Republic of Korea Japan

China, the Republic of Korea and Japan were leaders in ship building, accounting for

92%

of global deliveries in 2016

SHIP-SCRAPPING COUNTRIES

Bangladesh India Pakistan China

Bangladesh, India, Pakistan and China accounted for

94%

of ship scrapping in 2016

GENDER SPLIT IN ON SHORE MARITIME POSITIONS

2016

While more women than men work in administrative and junior positions, the maritime industry has yet to succeed in tapping the leadership potential of its female co-workers

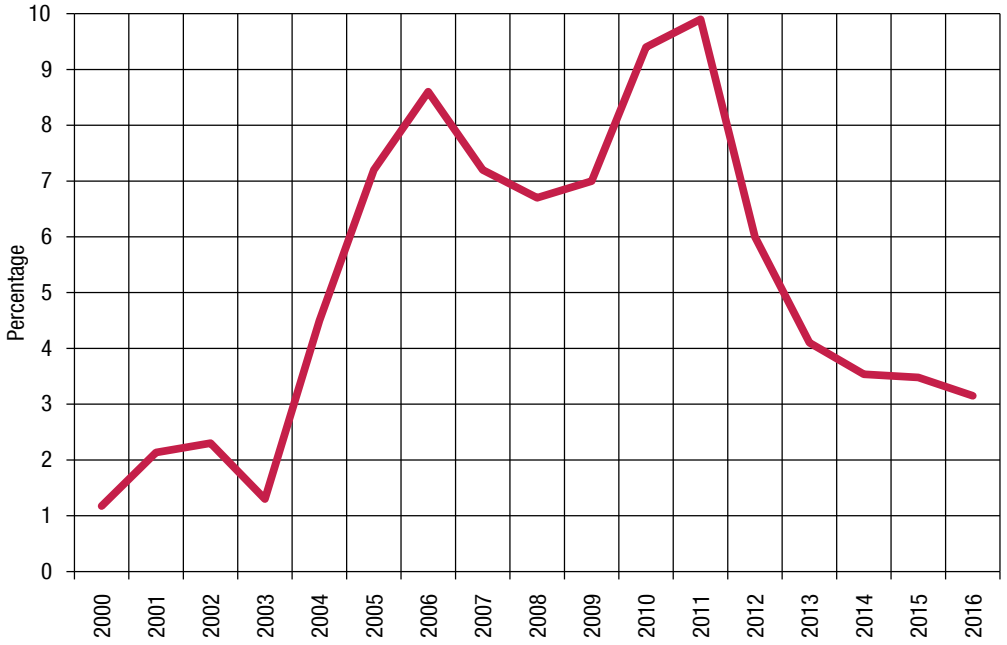
A. WORLD FLEET STRUCTURE

1. World fleet growth and principal types of vessel

Growing supply

For the fifth year in a row, world fleet growth[1] has been decelerating. The commercial shipping fleet grew by 3.15 per cent in the past 12 months to 1 January 2017 (figure 2.1). Despite this further decline in the annual growth rate, the supply increased faster than demand, at 2.6 per cent, leading to a continued situation of global overcapacity and downward pressure on freight rates. In terms of vessel numbers, the growth rate was 2.47 per cent – lower than tonnage – reflecting a further increase in average vessel sizes. In total, the world commercial fleet on 1 January 2017 consisted of 93,161 vessels, with a combined tonnage of 1.86 billion dwt.

Figure 2.1. Annual growth of world fleet, 2000–2016 (Percentage annual change)



Source: UNCTAD, *Review of Maritime Transport*, various issues.

Vessel types

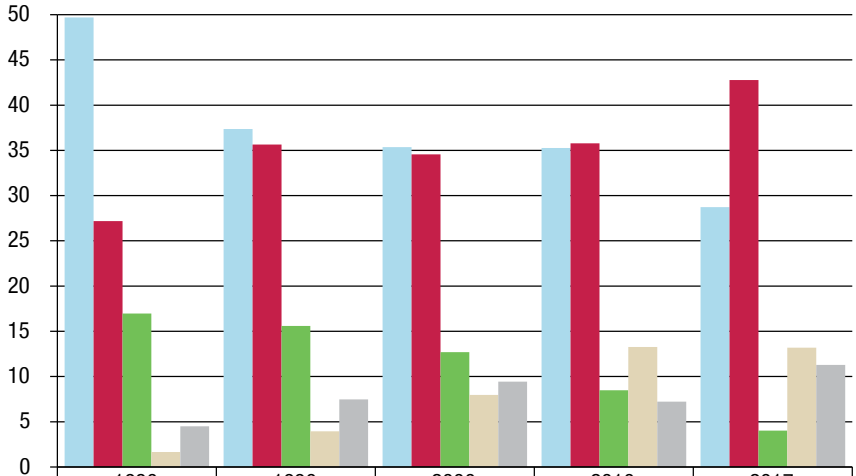
Carriers of liquefied natural gas and other gas recorded continued high growth (+9.7 per cent); growth was also recorded in the oil tanker (5.8 per cent) and chemical tanker (4.7 per cent) segments (table 2.1). In contrast, a long-term decline continued in the general cargo ship segment, which experienced negative growth (-0.2 per cent); its share of world's tonnage is currently 4 per cent, down from 17 per cent in 1980 (figure 2.2).

The further specialization of the world fleet poses challenges for smaller and weaker economies, as it is often more difficult for them to generate sufficient cargo volumes to fill specialized ships, and it is costly to provide the necessary specialized port facilities. While general cargo ships with their own gear have the advantage of flexibility and can call at small ports with no ship-to-shore cargo handling equipment, the ever-larger container ships require container cranes on the quays. Chemical tankers and offshore vessels for the oil and gas exploration industry also require higher investments in terminals and storage facilities.

Given the low growth in demand and low and volatile freight rates, seaports are reluctant to invest in new terminals. Current trends in vessel types and sizes, however, suggest that the pressure from the shipping industry will remain, and port and maritime authorities must carefully plan if and how to accommodate larger and specialized vessels.

Another trend that affects many developing countries, especially exporters of fruit, fish and meat, is the continued replacement of reefer ship capacity by reefer capacity on container ships. The reason behind this trend is not as much cost savings achieved on the maritime leg, but rather the improved door-to-door transport, reliability and intermodal connectivity of containers, as compared with bulk reefer ships (Arduino et al., 2015).

Figure 2.2. World fleet by principal vessel type, 1980–2017 (Percentage share of dead-weight tonnage)



	1980	1990	2000	2010	2017
Oil tankers	49.7	37.4	35.4	35.3	28.7
Dry bulk carriers	27.2	35.6	34.6	35.8	42.8
General cargo ships	17.0	15.6	12.7	8.5	4.0
Container ships	1.6	3.9	8.0	13.3	13.2
Other	4.5	7.5	9.4	7.2	11.3

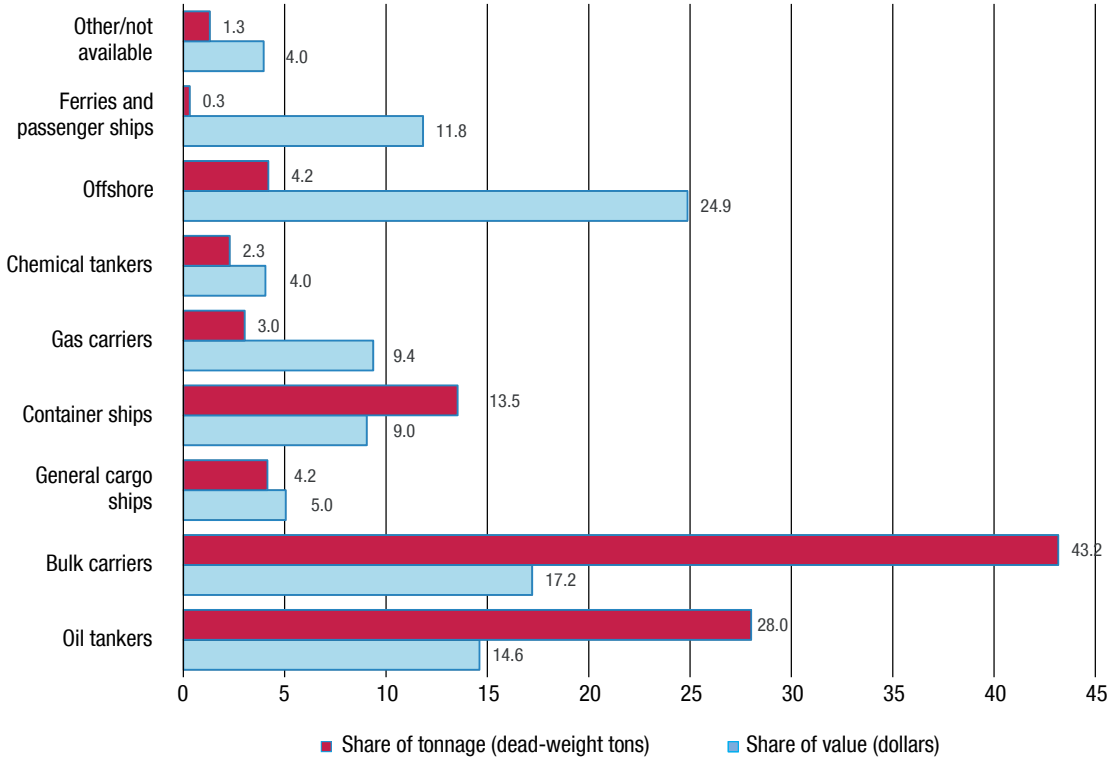
Sources: UNCTAD secretariat calculations, based on data from Clarksons Research and the *Review of Maritime Transport*, various issues.
Note: All propelled seagoing merchant vessels of 100 gross tons and above, not including inland waterway vessels, fishing vessels, military vessels, yachts and offshore fixed and mobile platforms and barges (with the exception of floating production, storage and offloading units, and drillships); beginning-of-year figures.

Table 2.1. World fleet by principal vessel type, 2016 and 2017 (Thousands of dead-weight tons and percentage share)

Principal types	2016	2017	Percentage change, 2016–2017
Oil tankers	505 736	534 855	5.76
	28.0	*28.7*	
Bulk carriers	779 289	796 581	2.22
	43.2	*42.8*	
General cargo ships	74 992	74 823	-0.23
	4.2	*4.0*	
Container ships	244 339	245 609	0.52
	13.5	*13.2*	
Other	200 923	209 984	4.55
	11.1	*11.3*	
Gas carriers	54 530	59 819	9.70
	3.0	*3.2*	
Chemical tankers	41 295	43 225	4.68
	2.3	*2.3*	
Offshore	75 696	77 490	2.48
	4.2	*4.2*	
Ferries and passenger ships	5 757	5 896	2.43
	0.3	*0.3*	
Other/not available	23 645	23 554	-0.08
	1.3	1.3	
World total	1 805 279	1 861 852	3.15

Source: UNCTAD secretariat calculations, based on data from Clarksons Research.
Notes: Propelled seagoing merchant vessels of 100 gross tons and above; beginning-of-year figures; percentage share in italics.

Figure 2.3. World fleet by principal vessel type, 2017
(Percentage of dead-weight tonnage and of dollar value)



Source: UNCTAD secretariat calculations, based on data from Clarksons Research.
Notes: Dwt share is calculated for all ships of 100 gross tons and above. The share of market value is estimated for all commercial ships of 1,000 gross tons and above.

Tonnage and value[2]

An analysis of the commercial value of the world fleet provides another perspective to the traditional market share in terms of cargo-carrying capacity (dwt). In general, dwt is considered the relevant indicator for shipping, because it represents the relevance of maritime transport for international trade volumes. In terms of dwt, the world fleet is dominated by dry bulk carriers, oil tankers and container ships transporting iron ore or coal.

If, however, the commercial value of the fleet is considered, offshore vessels, ferries and gas carriers gain in importance (figure 2.3.) These ships are costlier to build and the cargo they transport is often of higher unit value than the oil or iron ore transported by liquid and dry bulk carriers.

Container shipping

After years of overinvestment in container shipping, recent deliveries (figure 2.4) and the order book (figure 2.7) suggest that some improvements can be expected. In 2016, 127 new container ships were delivered, representing a reduction of 70 per cent from the 2008 peak of 436 ships. The combined TEU capacity amounted to less than 904 thousand TEUs, a reduction by almost half, compared with deliveries in 2015. The trend towards gearless ships continued: Only 4.1 per cent of delivered TEU capacity was on ships capable of calling in ports that did not have their own ship-to-shore container-handling equipment.

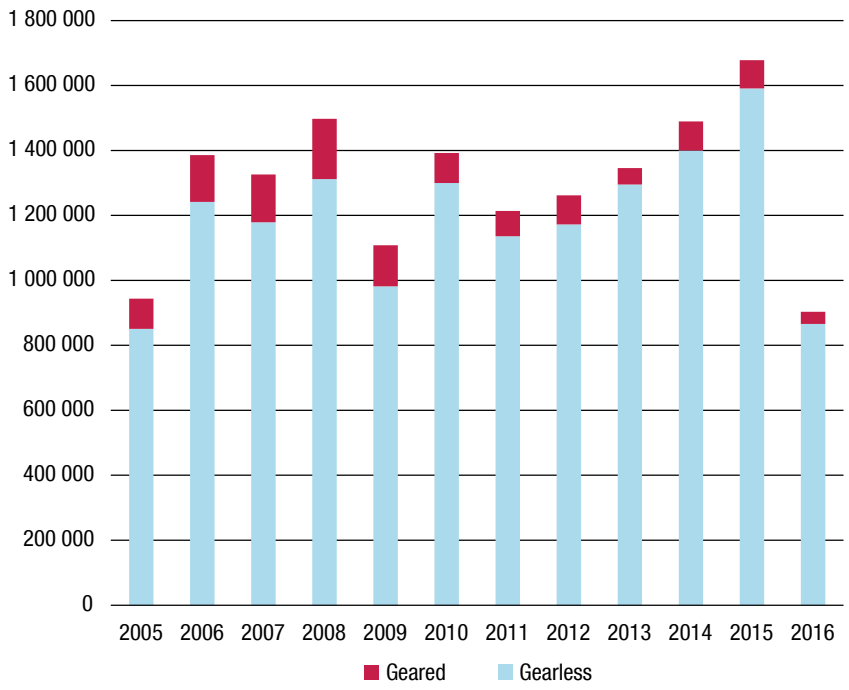
In 2016, there was some improvement regarding the average vessel size of newbuildings: TEU capacity per ship delivered was slightly below that of 2015. Yet the new ships are larger than the existing fleet, and there is continued pressure on ports to accommodate ever-larger vessels. This applies not only to the world's main hub ports in Eastern Asia and Europe, but just as much, if not more, to smaller ports in all regions, owing to the cascading effect.

Figure 2.5 depicts the difference in vessel sizes for geared and gearless ships. While the average container-carrying capacity of new gearless ships has doubled since 2005, the average capacity of geared newbuildings has remained practically unchanged.

2. World merchant fleet age distribution

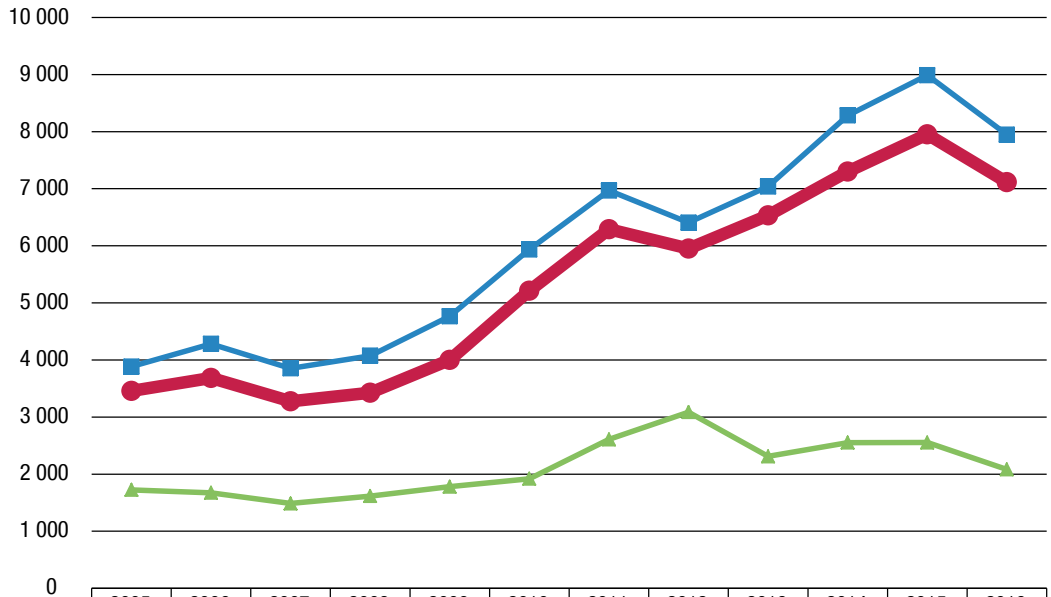
At the beginning of 2017, the average age of the commercial fleet was 20.6 years, representing a slight increase over the previous year (table 2.2). Fewer newbuildings than at the beginning of the decade, combined with similar scrapping levels, have led to an aging fleet. Compared with historical averages, however, the world fleet is still relatively young, especially in the bulker and container segments.

Figure 2.4. Container ship deliveries, 2005–2016 (Twenty-foot equivalent units)



Source: UNCTAD secretariat calculations, based on data from Clarksons Research.
Note: Propelled seagoing vessels of 100 gross tons and above.

Figure 2.5. Average vessel size of container ship deliveries, 2005–2016 (Twenty-foot equivalent units)



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Gearless	3 885	4 282	3 853	4 074	4 766	5 937	6 969	6 406	7 040	8 284	8 989	7 947
All	3 457	3 686	3 275	3 427	4 001	5 214	6 291	5 952	6 534	7 301	7 952	7 115
Geared	1 725	1 673	1 486	1 616	1 781	1 919	2 609	3 087	2 311	2 553	2 554	2 082

Source: UNCTAD secretariat calculations, based on data from Clarksons Research.
Note: Propelled seagoing merchant container vessels of 100 gross tons and above.

Table 2.2. Age distribution of world merchant fleet, by vessel type, 2017

Economic grouping and vessel type		Years					Average age		Percentage change
		0–4	5–9	10–14	15–19	20+	2017	2016	2016–2017
World									
Bulk carriers	Percentage of total ships	35.77	33.80	12.05	9.33	9.05	8.80	8.80	0.00
	Percentage of dead weight tonnage	38.66	34.88	11.91	7.55	7.01	7.95	7.94	0.01
	Average vessel size (dwt)	79 099	75 525	72 283	59 244	56 673			
Container ships	Percentage of total ships	18.63	30.50	22.72	15.66	12.50	11.55	11.10	0.45
	Percentage of dead weight tonnage	31.51	32.57	20.82	10.17	4.92	8.72	8.39	0.33
	Average vessel size (dwt)	80 624	50 891	43 679	30 961	18 751			
General cargo	Percentage of total ships	7.68	16.50	10.20	7.54	58.08	25.21	24.44	0.76
	Percentage of dead weight tonnage	14.98	24.70	12.23	10.24	37.85	18.29	17.83	0.46
	Average vessel size (dwt)	8 118	6 081	5 086	5 630	2 561			
Oil tankers	Percentage of total ships	16.03	22.51	15.46	7.74	38.26	18.76	18.36	0.40
	Percentage of dead weight tonnage	22.07	34.74	24.44	12.67	6.09	9.90	9.54	0.36
	Average vessel size (dwt)	73 274	82 242	84 610	89 498	8 777			
Other	Percentage of total ships	14.37	18.65	10.60	8.43	47.96	22.73	22.25	0.48
	Percentage of dead weight tonnage	19.40	26.43	14.21	10.29	29.67	15.58	15.65	-0.07
	Average vessel size (dwt)	7 777	7 907	8 004	7 144	3 954			
All ships	Percentage of total ships	11.75	17.97	10.13	7.00	53.15	20.57	19.92	0.65
	Percentage of dead weight tonnage	29.80	33.16	16.95	9.78	10.31	9.90	9.55	0.34
	Average vessel size (dwt)	42 207	34 948	32 847	25 991	5 917			
Developing economies – all ships									
	Percentage of total ships	16.92	21.01	11.29	7.92	42.86	29.03	28.33	0.70
	Percentage of dead weight tonnage	31.40	30.60	12.74	9.75	15.50	16.72	15.91	0.81
	Average vessel size (dwt)	34 624	27 025	22 137	23 195	6 733			
Developed economies – all ships									
	Percentage of total ships	16.15	23.86	14.08	10.76	35.15	19.05	18.51	0.54
	Percentage of dead weight tonnage	29.25	35.13	19.73	9.76	6.12	9.15	9.04	0.11
	Average vessel size (dwt)	53 396	43 538	42 708	28 695	6 589			
Countries with economies in transition – all ships									
	Percentage of total ships	6.32	8.82	6.02	3.19	75.66	29.39	28.93	0.46
	Percentage of dead weight tonnage	12.58	28.76	21.23	11.20	26.22	15.59	16.03	-0.43
	Average vessel size (dwt)	14 835	24 533	26 714	25 028	2 447			

Source: UNCTAD secretariat calculations, based on data from Clarksons Research.
Notes: Propelled seagoing vessels of 100 gross tons and above; beginning-of-year figures.

Ships flagged in the developing economies are on average 10 years older than those flagged in developed economies, and among the different vessel types, general cargo ships are the oldest (more than 25 years), and dry bulk carriers are the youngest (less than nine years).

The fleet's age structure also reflects growth in vessel size. In particular, container ships have increased their carrying capacity in recent decades. Container ships built 15 to 19 years ago were significantly smaller than dry- and liquid bulk carriers built at that time; today, container ships are the largest average size of vessel (dwt, delivered over the last four years).

If the past growth and levelling off of ship sizes in the dry bulk and tanker sectors is an indicator for the container segment, it can be assumed that container ship sizes have probably reached a peak and will not grow much further. Container ships have now reached similar dwt capacities as the largest dry and liquid bulk ships. Access channels and shipyards would need to expand capacity significantly if they are to accommodate ships beyond 20,000–22,000 TEUs. This conclusion is in line with the diseconomies of scale reached in seaports, which is discussed in chapter 4.