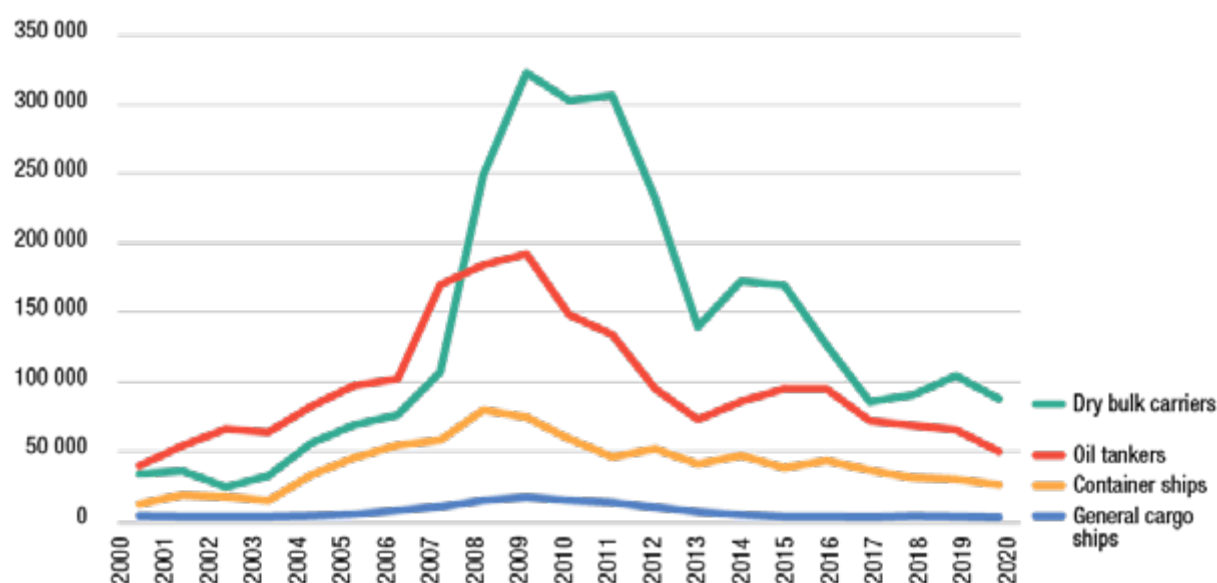


prospects: Labour shortages affect newbuilding and ship recycling and weak investor sentiment affects ordering

The COVID-19 pandemic has brought widespread uncertainty related to economic performance in 2020 and 2021 (see chapter 1). As a result, strategic investment decisions had to be reconsidered, for instance, newbuilding ordering and repairs were postponed. Ordering contracts were down 53 per cent year over year in July 2020 (Clarksons Research, 2020c). In addition, many companies decided to delay scrubber installation because of the impact of the pandemic

Figure 2.4 World tonnage on order, 2000–2020
(Thousand dead-weight tons)



Source: UNCTAD calculations, based on data from Clarksons Research.

Notes: Propelled seagoing merchant vessels of 100 gross tons and above; beginning-of-year figures.

Table 2.8 Reported tonnage sold for ship recycling by major vessel type and country of ship recycling, 2019
(Thousand gross tons)

Vessel type	Bangladesh	China	India	Pakistan	Turkey	Rest of world	World total	Percentage
Bulk carriers	3 426	238	582	132	161	32	4 570	37.4
Chemical tankers	64	4	125	7	3	9	211	1.7
Container ships	1 015	24	964	12	10	86	2 111	17.3
Ferries and passenger ships	71	2	46	27	76	5	226	1.8
General cargo ships	140	62	150	12	174	36	575	4.7
Liquefied gas carriers	169		70		30	9	279	2.3
Offshore vessels	326	4	543	9	435	197	1 514	12.4
Oil tankers	1 271	14	387	56	119	153	1 999	16.4
Other	200	35	384	13	87	12	732	6.0
Total	6 682	383	6 682	267	1 095	540	12 218	100.0
Percentage	54.7	3.1	26.6	2.2	9.0	4.4	100.0	

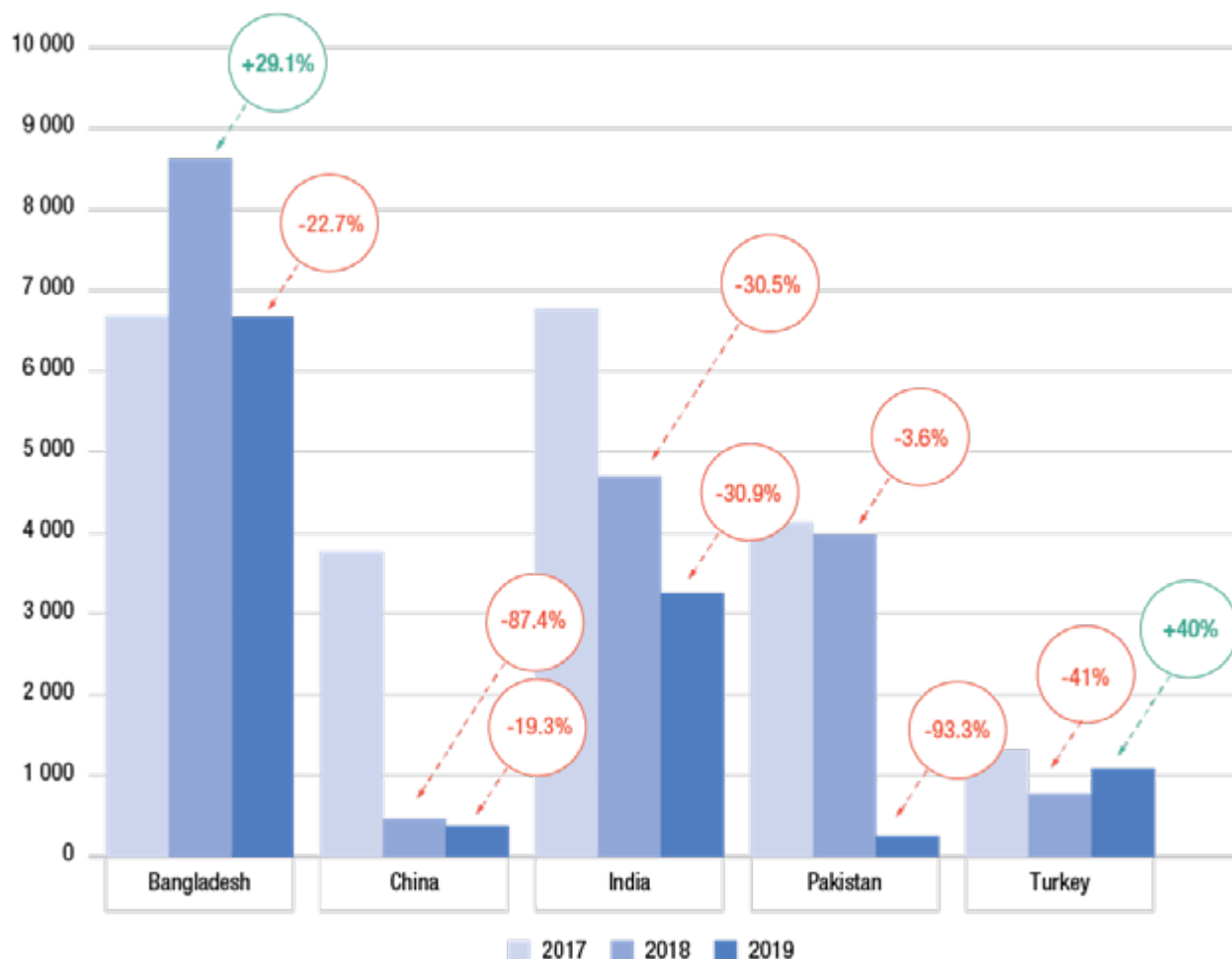
Source: Clarksons Research.

Notes: Propelled seagoing vessels of 100 gross tons and above. Estimates for all countries available at <http://stats.unctad.org/shipscrapping>.

on financial cash flow (Clarksons Research, 2020d; *Manifold Times*, 2020). This is also linked to fuel price dynamics since January 2020, namely the narrowing of the price differential between high and low sulphur fuel, which increased the time to recover the investment cost of installing scrubbers (IHS Markit, 2020; *Seatrade Maritime News*, 2020a).

Before the pandemic, the shipbuilding sector had already been facing a challenging environment of fierce competition and declining orders. Increased consolidation and government finance helped to cope with this situation (UNCTAD, 2019a). Seeking to minimize costs and losses and restructuring their businesses to improve balance sheets, the world's

Figure 2.5 Reported tonnage sold for ship recycling by major vessel type and country of ship recycling, 2017–2019
(Thousand gross tons and percentage change)



Source: UNCTAD calculations, based on data from Clarksons Research.

Notes: Propelled seagoing vessels of 100 gross tons and above. Estimates for all countries available at <http://stats.unctad.org/shipscrapping>.

largest shipbuilder (Hyundai Heavy Industries Company of the Republic of Korea) signed in March 2020 a formal agreement with the State-run Korea [Republic of] Development Bank to buy Daewoo Shipbuilding and Marine Engineering. The merger will be completed upon approval by antitrust authorities in China, the European Union, Japan, Kazakhstan, the Republic of Korea and Singapore (*The Korea Times*, 2020). The European Union and Japan have voiced concerns about the potential of this merger to lead to an uneven trading playing field (WTO, 2020) and reduced competition in shipbuilding markets of large container ships, oil tankers, liquefied natural gas carriers and liquefied petroleum gas carriers (European Commission, 2019).

Against this background, the pandemic further accentuated challenges, reducing demand and affecting orders, production and delivery. Box 2.2 describes some of these challenges, from perspective of the European Union.

The slowdown in shipbuilding contributes to lower fleet growth. Fewer newbuilding deliveries during the April–September 2020 period could result in relatively lower fleet growth, bringing it to about 1.6 per cent for 2020 (Clarksons Research, 2020e). The extent to which this will improve supply–demand balance in 2021 will depend on how demand and economic activity will recover and on developments in ship recycling.

In comparison, ship recycling offers more positive prospects. In June 2020, container ship recycling volumes were nearly as high as levels reported from January to May 2020 (Hellenic Shipping News Worldwide, 2020c). By the end of that month, ship-recycling activity had partially recovered in the bulk carriers segment. In this segment, scrapped volumes for the first half of 2020 exceeded levels for the full year 2019 (Clarksons Research, 2020e). Ship recycling is expected to increase, as the shipping industry copes with idling fleets and plans to scrap older vessels (more than 15 years old) that are not fuel efficient (Lloyd's List, 2020b).

Box 2.2 Shipbuilding at a crossroads in the European Union

In the face of production halts, temporary layoffs and liquidity issues stemming from the COVID-19 pandemic, the European shipbuilding and maritime equipment manufacturing industries have sought additional support – beyond horizontal industrial policies and financial support – calling for sector-specific support measures.

By doing so, they aim to preserve the economic contribution of the sector but, more importantly, to prevent potential dependence on Asian foreign suppliers for maritime technology, a strategic element to generate value in the maritime supply chain. The European Shipbuilding and Maritime Equipment Association estimated that this scenario could mean losing about €120 billion of added value created by the maritime technology sector; 1 million jobs in maritime technology companies and Europe's innovation and technological global leadership in complex ship types.

Concerns also relate to the role played by the shipbuilding and equipment industries in achieving longer-term goals such as promoting technological development and innovation to ensure carbon neutral shipping by 2050, as foreseen in the European Green Deal. In this sense, losing European shipyards could mean becoming dependent on Asian nations to achieve such goals.

Sources: Safety4sea, 2020; SWZ|Maritime, 2020; World Maritime News, 2020.

4. Seafarers and the maritime workforce

Emerging challenges for the maritime workforce as a result of the changing nature of work due to technological change

Historically, innovation and technology have played a crucial role in increasing the economic efficiency of the shipping industry. More recently, they have also become drivers and enablers of improved environmental performance of this sector. From a social perspective, technological advances and automation represent both opportunities and challenges for the shipping industry. Many emerging technologies in the maritime industry aim to improve safety and efficiency on board. Technological change also entails challenges. Disruptions in the labour market are expected because the sets of skills in demand and work routines will change.

According to a recent report by the International Transport Workers' Federation (2019),³ forecast

³ The report analyses several modes of transport and explores readiness based on 17 country case studies (Australia, Brazil, China, Denmark, France, Ghana, Japan, Nigeria, Norway, Panama, Peru, the Philippines, the Republic of Korea, South Africa, Sweden, Turkey and the United States).

scenarios suggest that, although technology has the potential to reduce labour requirements, expanding international trade will counterbalance this reduction. For example, the demand for seafarers is expected to continue mounting up to 2040, albeit not at the same rate.⁴ In some cases, a decrease in jobs in transport is offset by an increase in other parts of the transport system. Thus, more transport workers will be needed in the future.

The impact of technology and automation on the global maritime workforce, from 2020 until 2040, will vary, depending on the skills and tasks performed and workers' demographic groups. Low and middle-skilled jobs (that is to say, support activities for deep-sea transport workers such as cargo handlers in ports, dockers, crane operators, and maintenance and repair workers) and ageing or higher-wage workforces face a greater risk of redundancy. By contrast, high-skilled occupations, such as ship captains and officers, are less prone to automation, with automation and technological applications being introduced to assist them in their work. Younger and lower-wage workforces are likely to witness a delay in the introduction of automation and new technologies.

The impact on labour markets will also depend on the level of readiness of countries to adopt new technologies and automation. Such readiness is defined as the capability to capitalize on the future, mitigate risks and challenges, and be resilient and agile in responding to unknown future shocks. A country's level of readiness for automation is measured against five factors: innovation and technology, infrastructure quality, regulation and governance, human capital and skills, and business and investment. According to the above-mentioned report, there is a readiness gap in the maritime sector between developed and developing countries. A higher level of readiness is observed in Australia, East Asia, Europe and the United States, whereas countries in Africa and South America are positioned at the other end, due to insufficient technological advancement and investment, as well as to regulation and infrastructure gaps and weaknesses in terms of business models.

This means that most developing countries will witness a slower adoption rate of technology and automation, although low and middle-skilled jobs in industrialized countries face a more substantial risk of disappearing due to automation probability. This is likely to be accompanied by lower capital investments and research and development expenditures, leading to smaller productivity increases and the risk of falling behind in terms of maritime sector capabilities and competitiveness.

In all likelihood, the future of work in the maritime sector will look very different from what it is today, and there will be less jobs onboard ships and more

⁴ For complete statistics on the supply of seafarers, see <http://stats.unctad.org/seafarersupply>.

onshore jobs, requiring a more adaptable workforce. Re-skilling and retraining will be crucial in preparing workers for the transformations that will arise as result of advanced technologies and automation. However, most countries have not elaborated long-term plans for automation in the maritime sector (International Transport Workers' Federation, 2019).

To support the successful transition of workers, the report of the Federation recommends the following actions:

- Raising awareness of the implications of further introduction of automation and technology into transport systems.
- Facilitating dialogues between stakeholders in global transport for a better understanding of the different positions of all parties concerned.
- Establishing national strategies and policies to address the ramifications of further automation and technology in transport.
- Supporting developing countries in dealing with the effects of introducing more automation and technology in transport.
- Identifying essential skills needed to work effectively in a world of advanced automation and technology in transport, implementing them in education and training.

Impacts, responses and prospects in relation to the COVID-19 pandemic: Sailors stranded at sea

Each month about 150,000 seafarers need to be changed over to and from the ships they operate to ensure compliance with international maritime regulations for ensuring safety, crew health and welfare, and the prevention of fatigue. The pandemic has led to restrictions in the cross-border movement of persons, closures of consulates affecting visa processing, port closures, disembarkation restrictions and lack of air services, which have impaired the ability to repatriate or resupply crews.

To mobilize action towards addressing this problem, several international organizations, maritime industry and labour organizations approached the relevant authorities and issued guidance documents to facilitate crew changes and repatriation of seafarers while, at the same time, taking steps to minimize the risk of contagion of the coronavirus disease (see chapter 5 for a detailed description of guidance documents).

In May 2020, some Governments started allowing crew changes at port under strict protocols. Despite all efforts, crew changes advanced slowly. In June, many seafarers were working beyond their contractual terms, could not disembark or be replaced. In mid-June 2020, IMO estimated that as many as 300,000 seafarers each month required international flights to enable

crew changeovers. About half of them needed to be repatriated home by aircraft, while the other half needed to join ships. Additionally, about 70,000 cruise ship staff were waiting for repatriation (IMO, 2020).

Countries have faced several challenges at the local level to enact crew changes. These include difficulty to engage through a systematic approach the wide range of domestic agencies that need to be involved in the process. Countries have also faced difficulties related to the lack of infrastructure or of protective equipment and to unclear procedures on how to mitigate risks, while enabling the logistics of crew change amid restrictions and lockdown protocols and shortages of staff involved in the process (Lloyd's List, 2020c).

The pandemic has brought visibility to seafarers with the recognition that they provide an essential service because they ensure trade in essential goods, such as medical supplies and food, and they keep supply chains running. However, the slow pace of concrete actions highlights the challenges of balancing the safety and well-being of workers with operational continuity, which raises the question as to whether practices and procedures regarding crew changeover, disease management, health care and welfare need to evolve to enhance support for seafarers.

Further, the pandemic has provided an opportunity to raise awareness of the importance of gender in the maritime sector, including seafarers. Today, women represent only 2 per cent of the world's 1.2 million seafarers; 94 per cent of women seafarers are working in the cruise industry (www.imo.org/en/OurWork/TechnicalCooperation/Pages/WomenInMaritime.aspx#.) It is important to move forward and promote a safe and attractive sector that supports greater engagement for women (see box 2.3).