



# The Perfect Storm

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## The Impact of COVID-19 on Shipping, Seafarers and Maritime Labour Markets

Lessons learned and  
practical solutions for the future

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## 1. Executive Summary

This research investigates macro and micro-effects of the COVID-19 pandemic on the shipping industry. More specifically, it assesses:

- The economic and regulatory responses to the pandemic, particularly those enacted by national governments.
- The impact of national public health policies, implemented to contain and mitigate COVID-19, on shipping labour markets and the supply chain.
- The effects of national policies on the international logistics network and the shipping industry, as well as on shipping's longstanding commitment and contributions towards the United Nations (UN) Sustainable Development Goals (SDGs), including in the context of global shipping employment.

The devastating impact of the pandemic was unforeseen, but its potential effects were not entirely unexpected. The shipping industry had highlighted these in the previous decade, including through submissions to UN fora, following challenges faced by outbreaks on Ebola, Avian Flu and SARS.

Moreover, in September 2019, three months before COVID-19 was formally identified, the Global Preparedness Monitoring Board (GPMB) of the Johns Hopkins Center for Health Security, a World Health Organization (WHO) and World Bank initiative, raised concerns about the international community's unpreparedness for a pandemic (GPMB 2019).

All these efforts represented missed opportunities to establish robust preparedness policies for pandemics and other health crises, to protect global society and industries, including global supply chains and transportation networks.

A more recent GPMB report (GPMB 2021) also highlighted some major shortcomings in the policy responses implemented to contain or mitigate the effects of the pandemic and concluded that the inadequacies of the response "started at the top", emphasising also that while the UN General Assembly, UN Security Council, World Health Assembly, G7 leaders and G20 leaders had convened various meetings, there is little evidence that these significantly impacted the trajectory of the pandemic, beyond formal declarations of intent. This was partly attributed to "dysfunction, division and competition among countries [which] increased vaccine inequity [and] contributed to the emergence of new variants." (GPMB 2021, 23)

From the shipping industry's perspective, the pandemic highlighted how a healthy, highly skilled, and motivated workforce is needed to support the ever-increasing demand for goods and products transported by sea through a sophisticated supply chain network, which began to struggle at the peak of national restrictions to contain the outbreak. Two years of strain and pressure on seafarers have negatively impacted mental health and wellbeing.

At the peak of the pandemic, over 400,000 seafarers were stranded on board ships, as governments overlooked or neglected their crucial role and refused to prioritise them for vaccination, immigration, and travel purposes, whilst an equal number of seafarers could not join ships as planned, to work and support their families.

Some found themselves stranded at sea for over a year – far beyond their contractual terms, unable to disembark and cut off from physical contact with their loved ones. This was frequently referred to as a kind of governmentally induced forced labour (ITF 2020). It also had a major impact on their mental wellbeing.

Ensuring quality labour is the responsibility of employers, unions, national and international regulators. Due to the substandard treatment of seafarers, during the pandemic, the shipping industry is experiencing notable shortages in the workforce, which is expected to increase and place the supply chain under even greater strain.

### Lessons Learned

- Stronger, long-term cooperation between industry and governments is required to address the increasing challenges and changes to maritime trade and labour markets, whilst national economies navigate towards recovery.
- Government-industry collaboration is essential to build back better.
- Competent national government ministries and agencies should collaborate with intergovernmental organisations and liaise more closely with industry, to improve the treatment of seafarers in the event of travel restrictions.
- Unless meaningful changes are implemented, the same issues will re-emerge.

The key research findings and conclusions of the report are outlined below, alongside a set of recommendations in the form of “calls to action (CTAs).”

### Key findings

1	Covid-19 related restrictions significantly hindered the shipping industry’s ability to repatriate seafarers to their countries of residence and to effect crew changes, rendering hundreds of thousands of seafarers unable to leave their ships and having to serve onboard beyond their original contracts.
2	Governmental action was globally diverse and uncoordinated. Some government policy responses to the pandemic failed to comply with key International Conventions, including the ILO Maritime Labour Convention (MLC) which address seafarers’ specific needs. In December 2020, the ILO concluded that governments breached seafarers’ rights during the pandemic.
3	Governments failed to strike a balance between prioritising national health requirements of the WHO International Health Regulations (IHR), and those of the ILO MLC, designed to address the health and transit needs of seafarers, exposing them to greater risks.
4	In order to put some structure in place it was left to the shipping industry partners to produce protocols which can be found at <a href="https://www.ics-shipping.org">COVID-19   International Chamber of Shipping (ics-shipping.org)</a> . These protocols were then shared by the IMO and ILO with a wider audience including member states.

### Conclusions

1	Lack of appreciation for the strategic role of seafarers in facilitating world trade meant that they were not prioritised early enough for access to testing facilities and COVID-19 vaccinations. The nature of the global shipping industry requires better international coordination between international organisations, national governments, and other stakeholders to address similar crises in the future.
2	National actions to contain and mitigate the effects of the pandemic negatively affected seafarers and international shipping, due to their impact on global supply chains and crewing. Some policies also affected the industry’s ability to fulfil its longstanding commitments to the UN SDGs with unintended consequences for the global economy.
3	During a pandemic or similar crisis better global and cross-border level co-operation is required, underpinned by a coherent framework to address the specific nature of the role of seafarers. Adherence to International Conventions throughout this process is crucial.

## Calls to Action (CTAs)

Based on the above findings and conclusions, as well as lessons learned, the research identifies a set of “Calls to Action” to serve as a framework to prepare for future pandemics or similar crises.

Table 1: Calls to Action

Calls to Action (CTAs)	Stakeholders			
	International Organisations	National Governments	Employers	Unions
Define the meaning of <b>Key Workers</b>	ILO IMO WHO			
Recognise all seafarers as <b>Key Workers</b>	ILO IMO WHO	*		
Ensure an open, global, and freely accessible <b>labour market</b> for seafarers	ILO IMO	*		
Sustain global <b>labour standards</b> for seafarers	ILO	*		
Encourage <b>quality training</b> of seafarers and life-long learning	IMO		*	*
Support training for seafarers' <b>future roles</b>	IMO	*		
Support maritime labour-supply countries to enhance <b>training facilities</b>	IMO			
Maintain and strengthen the roles of IMO and ILO as <b>global regulators</b> for seafarers	IMO ILO	*		
Ensure adequate <b>medical care</b> and equitable access to vaccines	WHO ILO	*		
Provide mechanisms that promote balanced post pandemic <b>recovery</b>	IMO ILO WHO	*		

## 2. The macroeconomic effects of COVID-19

### 2.1 Global outbreak evolution

The COVID-19 pandemic began to spread worldwide in the first quarter of 2020 with wide-ranging effects on global society, such as people's health; livelihoods; and national economies, including job markets and every business activity. Since the outbreak of the pandemic, the global maritime supply chain has navigated through uncharted waters, but shipping has continued to be critical to sustaining trade flows and keeping supply chains intact throughout.

COVID-19 has been a story of two tales. While governments in advanced and emerging economies quickly established COVID-19 vaccination programs to vaccinate their citizens, developing countries have had little access to vaccines until now (International Monetary Fund 2021). Vaccine nationalism is undermining multilateral efforts to ensure equitable access to vaccines, including for seafarers.

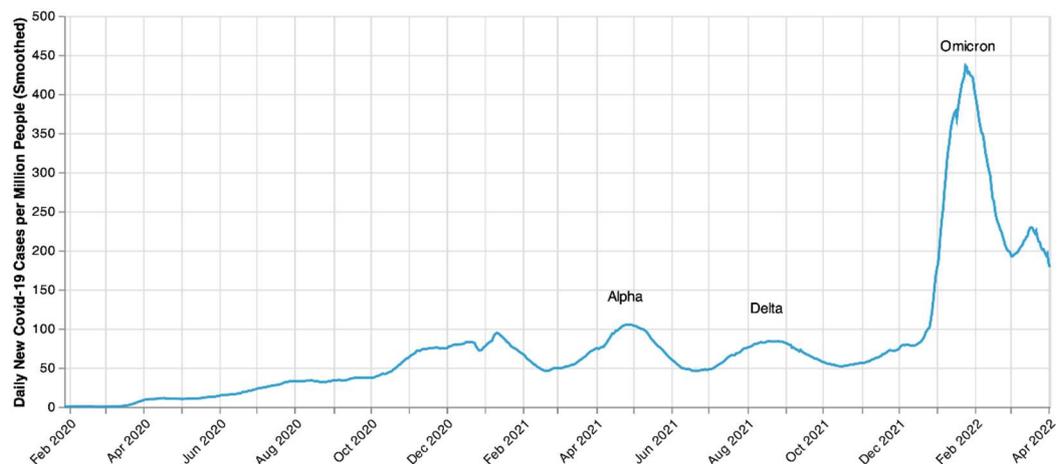
Table 2: Access to Vaccination

Country categories	Percentage of fully vaccinated population
Advanced economies	50 - 60%
Emerging economies	35 - 40%
Developing countries	5%

Source: International Monetary Fund 2021

Despite the quick response of public authorities in advanced and emerging economies, it has not yet been possible to flatten the curve (see Figure 1) and, hence, COVID-19 continues to negatively impact economies. Even in advanced economies the share of people requesting vaccination is often too low. Vaccines currently available only offer limited protection against new COVID variants (e.g., Delta and the Omicron variants). Figure 1 shows the global outbreak evolution and different waves of COVID-19. During 2021, the rate of weekly infections was at least three hundred per one million people.

Figure 1: COVID-19 Evolution



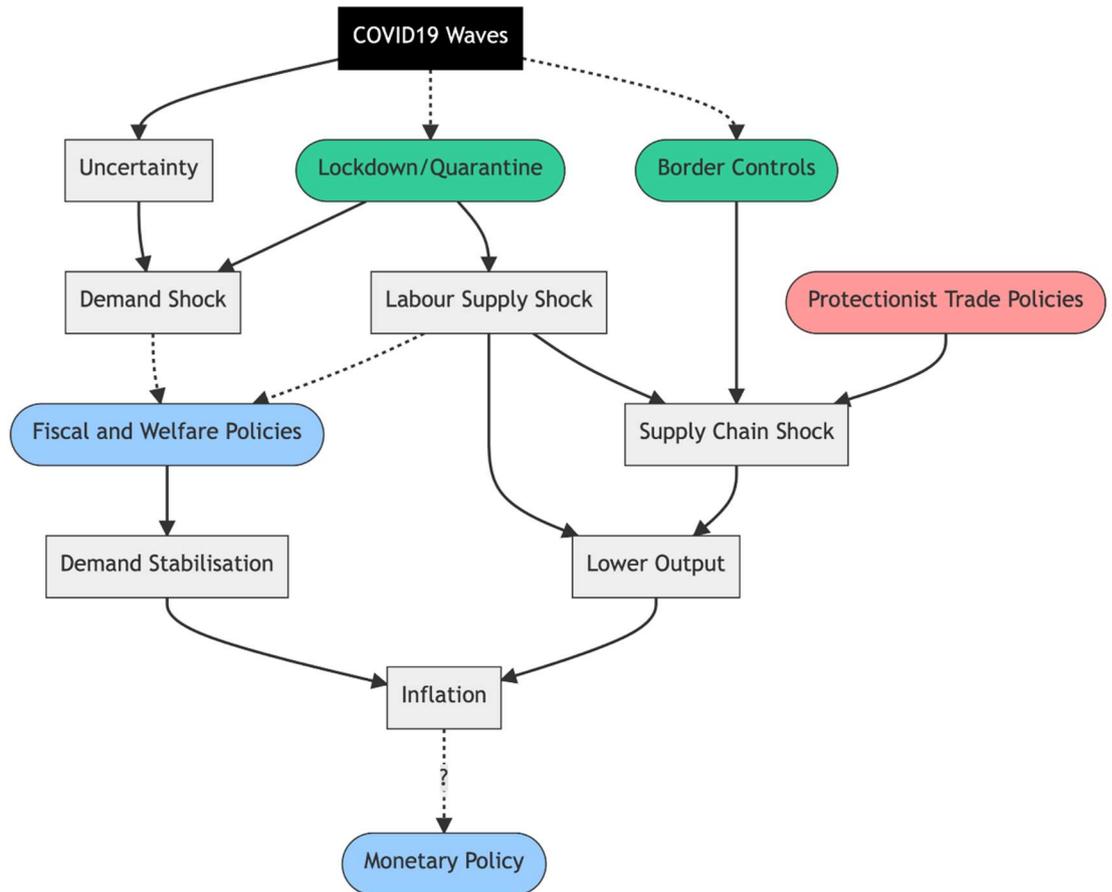
Source: Our World in Data 04/2022

### 2.2 Macroeconomic backdrop

The economic consequences of COVID-19 differ from other economic shocks. Public health emergency measures (including mitigation and containment policies) implemented quickly by individual governments, to respond to the pandemic, slowed down economic activity globally, affecting national economies in several ways (see Figure 2 for an overview).

National lockdowns and quarantine measures shutdown entire industries (e.g., hospitality, shipping, and aviation), bringing national economies to a standstill. These also affected labour incomes, lowering overall consumption levels. The pandemic also led to diminished confidence and increased uncertainty, thus lowering investment.

Figure 2: COVID-19 and its Economic Consequences



On the supply side, lockdowns and quarantines significantly reduced hours worked. In many industries, the consequences of these measures led to the following:

- A lack of intermediate products due to lockdowns.
- Supply chains nearing breaking point, as logistics networks suffered from labour supply shortages (including shipping) and from closed borders or increased borders restrictions.
- Disruptions causing a sharp decline in industrial output (see. Figure 3).

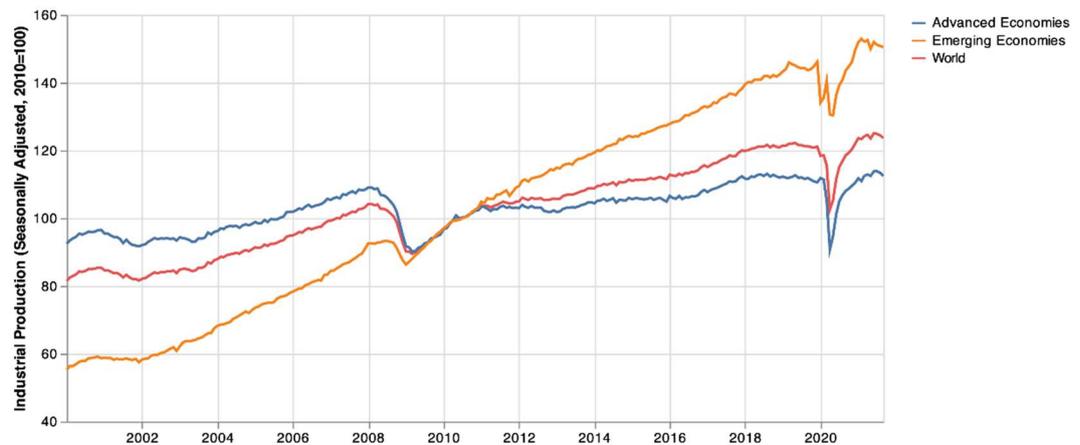
Governments responded differently to these challenges. More specifically, advanced economies actively addressed these through fiscal, labour market and welfare policies, accelerating economic recovery. However, lower supply and stabilised demand in countries caused inflationary pressure in 2020. Even though economies recovered in 2021, higher commodity and goods prices led to higher inflation rates, leaving many countries with unfavourable policy options: if governments and central banks continue to stabilise the goods market, it could fuel inflation, whereas if central banks start to fight inflation through monetary policy, it could deepen the goods and labour markets crisis. The pandemic has severely limited the fiscal policy options of emerging economies (International Monetary Fund 2021).

In a shipping industry context, at the start of the pandemic, initial analyses suggested that shipping would experience a considerable downturn (all sectors and trades). However, COVID-19 lockdowns ushered in radical unforeseen changes, including to consumer behaviour, which triggered an extraordinary expansion in digitalisation and e-commerce,

in-turn heightening demand for shipping services. Amid the easing of COVID containment measures in the second half of 2020, government policies stimulating economic recovery and supporting consumer demand were instrumental in increasing the flow of manufactured consumer goods – especially in the containerised trade – and a plethora of other cargo typically transported by sea.

This ‘perfect storm’ of unprecedented demand, congestion on land and container shortages resulted in considerable challenges across the entire supply chain, including for shipping companies, port terminals, truckers, railroads, inland distribution centres and other supply chain participants. Governments should resist spontaneous policy interventions that could impact supply chains and maritime trade, without comprehending the root causes of this disruption. As the shipping industry evolves and adapts to the pandemic, policymakers should implement measures to facilitate and strengthen global supply chains to be resilient against similar vulnerabilities.

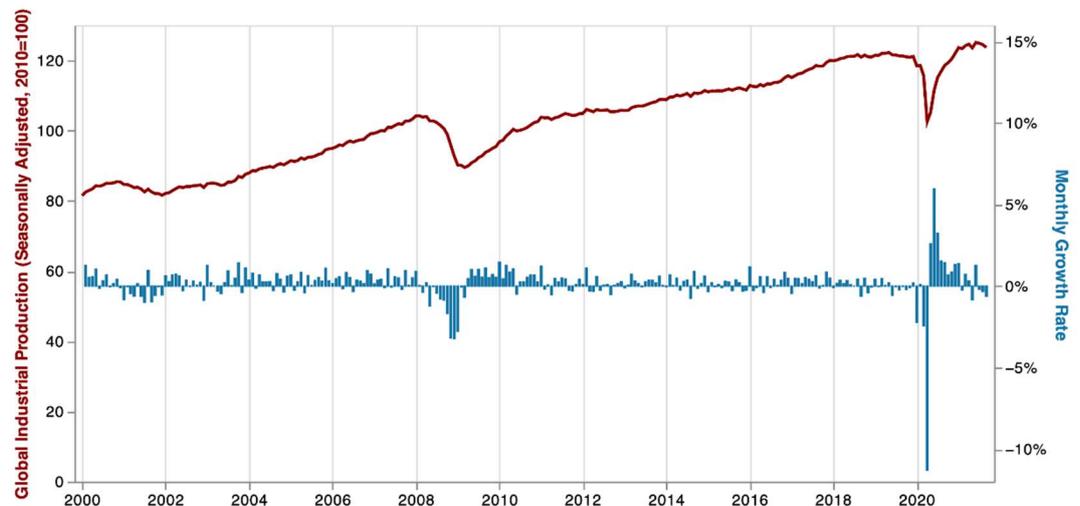
Figure 3: Industrial Production



Source: CPB Netherlands Bureau for Economic Policy Analysis 2022.

The global spread of COVID-19 in the first quarter of 2020 and the immediate lockdowns implemented in response, led to a sharp decline in global industrial production, a key indicator of demand for shipping services. The magnitude of the downturn during the current pandemic compares to the output decline caused by the 2008 global financial crisis (see Figures 3 and 4).

Figure 4: Global Industrial Production



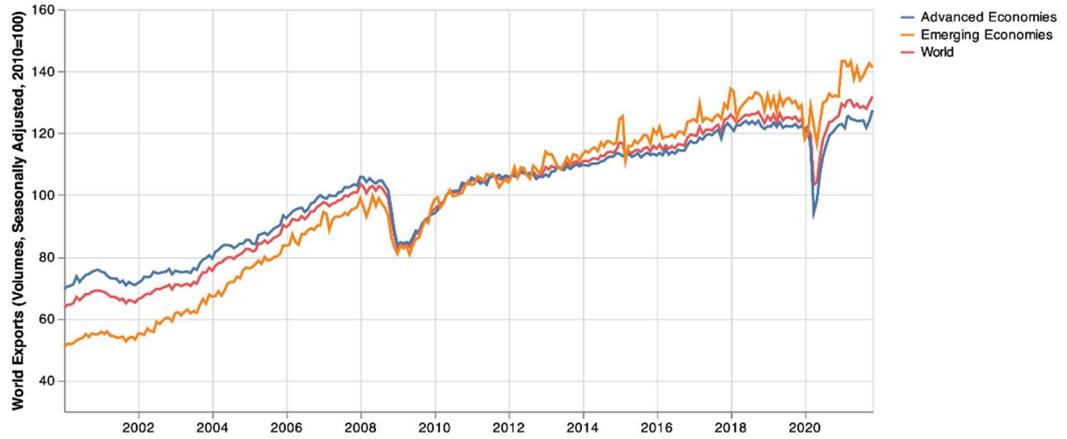
Sources: CPB Netherlands Bureau for Economic Policy Analysis 2022, own calculations.

A notable difference, however, is that the decline in output due to COVID-19 was swifter, because of the lockdown and quarantine measures imposed. During the second quarter of 2020, industrial production recovered in advanced and emerging economies and in 2021

returned to the trend path. However, this subsequently stagnated in 2021, at a time when bottlenecks were becoming apparent in international supply chains and shipping.

According to the IMF (International Monetary Fund 2021), world output fell by 3.1% in 2020 (advanced economies: -4.5% and emerging economies: -2.1%) and was projected to increase in 2021 by 5.9% (advanced economies: +5.2% and emerging economies: 6.4%). Global growth is forecast to decelerate to 4.9% in 2022.

Figure 5: World Trade Volumes (constant prices)



Source: CPB Netherlands Bureau for Economic Policy Analysis 2022.

Figure 5 shows that world trade (export volumes) was badly hit by the COVID-19 outbreak and policy responses. Although international trade, like industrial production, initially recovered after the 2020 outbreak, it ground to a halt again in early 2021.

Figure 6: World Exports



Source: CPB Netherlands Bureau for Economic Policy Analysis 2022.

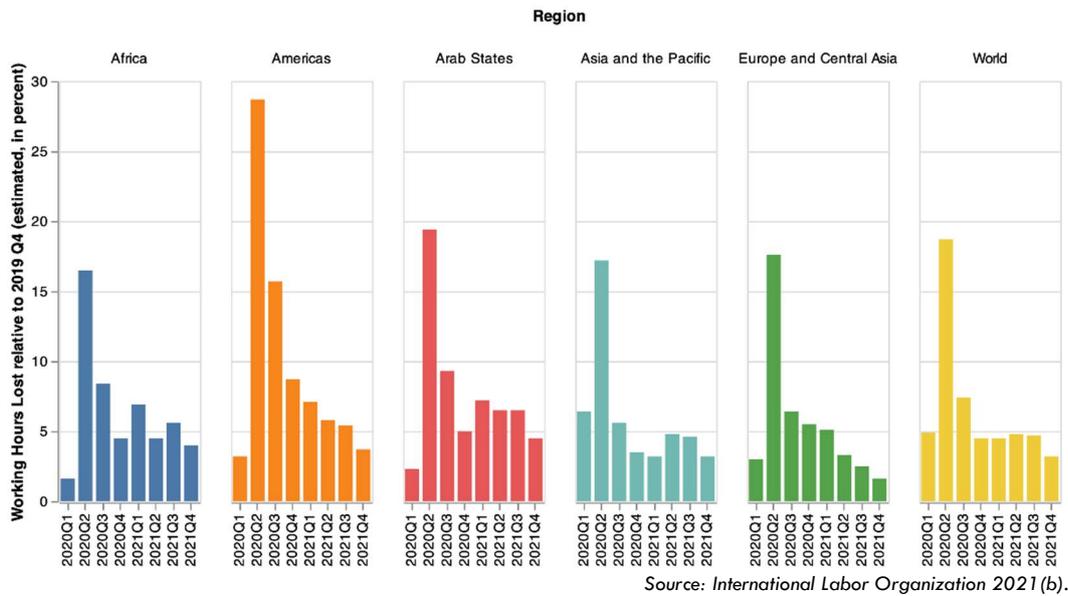
As Figure 6 shows, world exports measured at current prices (export values in US-\$) increased in 2021, indicating that rising export values were caused by price growth of internationally traded goods. As highlighted elsewhere in this research, one of the main reasons for this were the supply chain bottlenecks caused by disruptions to production and transportation networks.

The pandemic and related policy responses had a significant impact on labour markets, including the shipping labour market. If one contrasts the effect of the 2007/2008 global financial crisis with the impact of the COVID-19 pandemic on labour markets, it shows that while the financial sector collapse reduced the ratio of weekly hours worked, on average from one percentage point or less in 2008 for the working population aged 15-64, the

ratio of weekly hours worked in 2020 fell by two percentage points in most regions and almost four percentage points in the Americas.

Both the global financial crisis and the COVID-19 pandemic rippled through the world economy, eventually affecting all economic sectors. Labour market disparity between the two crises is due to the severe containment, suppression and mitigation policies implemented by governments, in response to the pandemic. The (International Labour Organization 2021) (ILO) estimates that despite the economic recovery in 2021, the pandemic is still affecting labour markets, including the shipping labour market.

Figure 7: Working Hours Lost



As shown in Figure 7, working hours lost in the second quarter of 2020 relative to the pre-crisis fourth quarter of 2019 ranged between 16 - 28 percent. In the fourth quarter of 2021 about 3 - 5 percent less hours were worked compared to the fourth quarter of 2019 (International Labour Organization 2021)

As identified in this research, some seafarers worked dramatically longer hours, whilst national policies inhibited their return-to-work onboard ships.

### 3. COVID-19: Impact of government mitigation and containment policies

Multilateral organisations, governments and companies have implemented an array of policy responses to the pandemic. In a shipping context, national containment and mitigation measures had a varied impact on the industry. For the first time in years supply chains including maritime supply chains became the focus of public discourse and policy interventions. Some of the main issues were:

- The ‘crew change crisis’ significantly affected seafarers worldwide.
- Similar challenges faced in other transport sectors and by other transport workers.
- Different transport sectors (e.g., shipping, aviation, rail, and road transport) collaborated to find practical solutions.

Central to all considerations is the impact of these measures on seafarers. In the early weeks of the pandemic, cruise ships became the focus of considerable public attention, with the surge in COVID-19 infections on board, affecting both seafarers and passengers alike and exacerbated by contradictory medical responses from port states, often leaving them stranded, with ports turning away ships.

The shipping industry identified six main challenges in need of urgent attention, including the ability to effect crew change, medical care and vaccination of seafarers once vaccines became available.

*Figure 8: Main Challenges: Seafarers and Shipping Companies during the Pandemic*



The multitude of travel restrictions and countries barring virtually all cross-border travel made passenger movements almost impossible with most planes grounded and commercial flights cancelled. These restrictions significantly hindered the global shipping industry’s ability to repatriate seafarers to their countries of residence and to effect crew changes, rendering hundreds of thousands of seafarers unable to leave their ships and serving onboard beyond their original contracts. An equal number of replacement seafarers could not reach their ships to start their service. Despite this, cargo ships continued to operate thanks to the continued service of seafarers.

Social partners, represented for seafarers by the International Transport Workers’ Federation (ITF) and the employers by the International Chamber of Shipping (ICS) led the efforts to address these challenges, working in collaboration with bodies such as the International Maritime Employers’ Council (IMEC); shipping industry groups including Intertanko, BIMCO, Intermanager; and national organisations.

Social partners joined forces in an unprecedented way to identify common ground and implement practical solutions to these significant challenges, including to ensure that all countries formally designate seafarers and other marine personnel as ‘key workers’:

- To enable crew changes to take place in a safe and timely manner, and
- To ensure that seafarers are prioritised for COVID-19 vaccinations, after the most vulnerable and health workers.

The industry also produced extensive on-board protocols and guidelines later endorsed by ILO, IMO and WHO. Crew changes require physical travel and necessary permission for transit and border crossings, but countries implemented travel restrictive policies at short notice, which did not fully consider the specificities of international transport workers. These ranged from policies banning the return of citizens to highly restricted flows of personnel.

Shipping companies were forced to divert ships and adapt port calls to effect crew changes. In December 2021, shipowners, seafarers' unions, and shipping employers established their own approved international network of quarantine facilities, to ensure seafarers could join ships safely from strategic seafarer supply countries, such as the Philippines, despite unpredictable changes to government border policies to contain the spread of COVID-19. The Crew Enhanced Quarantine International Programme (CrewEQUIP) is a partnership between ICS, ITF and IMEC.

Shore leave was all but impossible in the first months of the pandemic and most seafarers' clubs were closed. Once these reopened, the shipping industry (including employers and unions) worked alongside international organisations in leading efforts to encourage even the most limited shore leave. However, some countries continue to restrict or ban shore-leave for seafarers in 2022.

Table 3: National Approaches: Treatment of Seafarers at Height of the Pandemic

	Shore leave	Crew Change	Medical Care	Key Workers	Vaccination offered to seafarers	National Vaccination Level
<i>Australia</i>	Heavily Restricted	Heavily Restricted	Accessible	Key Workers	Yes	77,40%
<i>China</i>	Heavily Restricted	Heavily Restricted	Heavily Restricted	Heavily Restricted	Restricted	n.a.
<i>Germany</i>	Restricted	Accessible	Accessible	Key Workers	Yes	71,60%
<i>India</i>	Heavily Restricted	Restricted	Accessible	Key Workers	Yes	45,40%
<i>Japan</i>	Heavily Restricted	Heavily Restricted	Restricted	Key Workers	Yes	79,00%
<i>Panama</i>	Restricted	Yes	Yes	Yes	Yes	57,40%
<i>Russia</i>	Restricted	Restricted	Yes	Yes	Yes	46,6%
<i>Singapore</i>	Restricted	Yes	Yes	Yes	Yes	83,4%
<i>Netherlands</i>	Restricted	Accessible	Accessible	Key Workers	Yes	70,2%
<i>Nigeria</i>	Restricted	Restricted	Accessible	Key Workers	Restricted	3,7%
<i>South Africa</i>	Restricted	Restricted	Accessible	Key Workers	Restricted	29,6
<i>UAE</i>	Restricted	Accessible	Accessible	Key Workers	Yes	95,5%
<i>UK</i>	Restricted	Accessible	Accessible	Key Workers	Yes	70,8%
<i>USA</i>	Restricted	Restricted	Accessible	Key Workers	Yes	62,4%

Key:

Yes	Key Workers	Restricted	Heavily Restricted
Accessible			

“Medical care” provisions, clearly defined and enshrined in the Maritime Labour Convention (MLC, 2006), were disregarded, and overridden by incompatible national and sometimes regional regulations or interpretations. These included provisions related to access to dentistry and optical care. The ILO Committee of Experts expressed deep regret regarding “the existence of cases of denial of access to medical care ashore for seafarers, even in situations of the utmost urgency [and] cases of consistent refusal to allow sick seafarers to disembark or to allow for the bodies of deceased seafarers to be removed from the vessels

and for their repatriation” (CEACR 2022). Resulting psychological implications, extended contracts and lack of medical treatment require long-term evaluation.

Further concerns arose when port states refused to accept the bodies of deceased seafarers, for immediate repatriation to their countries of residence and failure to honour the specific religious burial customs of seafarers. In 2021, the pandemic also contributed to an increased number of abandoned ships and abandoned crews often in non-signatory states of the ILO MLC.

The advent of vaccines relaxed travel restrictions and competent national authorities acquired and implemented vaccination programmes. Although this was a positive step overall, it presented significant challenges for seafarers. Often, seafarers could only receive vaccinations in their home countries or countries of residence, which they were away from for prolonged periods of time. Positively, some port states have begun to offer vaccines to seafarers irrespective of their nationality.

Table 3 outlines information provided during meetings convened with international organisations during the height of the pandemic, specifying national approaches to the treatment of seafarers.

Despite laudable efforts by some national governments (including flexible approaches by their competent authorities), as well as considerable efforts by employers, unions, and charities, on behalf of seafarers, the following emerged:

- National governments employed a variety of ministries, dependent on national practices, to establish policies which had an impact on seafarers (transport, health, interior, etc.). Some governments in considering national healthcare priorities, disregarded internationally binding Conventions, such as the ILO MLC, in the context of seafarers.
- Communication of frequently changing rules remained vague, sporadic, and rarely focused on seafarers.
- National policies failed to recognise seafarers as a globally active group with specific requirements, as opposed to national workers.
- Despite the critical nature of their job functions and the essential services they facilitate, seafarers were not prioritised for COVID-19 vaccinations.
- The inextricable link between the strategic transportation services facilitated by seafarers and smooth functioning of supply chains was not fully appreciated.
- Despite the especially urgent need for a high vaccination ratio of seafarers, global access remains low, due to the diversity of countries from which seafarers emanate. This was partly mitigated by the growing number of countries offering vaccines to seafarers regardless of their nationality.

The social partners (comprising employers and unions), working alongside a number of governments, secured high level declarations promoting better treatment of seafarers amidst the pandemic. Notably, global governing bodies such as IMO, ILO and the UN General Assembly declared their support for seafarers and formally called for a resolution to the crew change crisis.

## 4. COVID-19 and governmental actions: Effects on maritime labour markets

Over the last two decades, the seafarer labour market has gradually turned from ‘supply-driven’ to ‘demand-driven’. While a longstanding shortage of officers is increasing, oversupply of ratings is also decreasing. In the most recent forecast (ICS/BIMCO 2021) officer and rating demand will increase by 7.15% and 7.21% respectively until 2026, even in the base scenario. In the high scenario demand may rise to 2.3% and 1.1% annually for officers and ratings. Such developments put high pressure on maritime training institutes.

Table 4: Supply and Demand for Seafarers

	Seafarers	2005	2010	2015	2021
Supply	Officer (supply)	466.000	624.000	774.000	857.540
	Rating (supply)	721.000	747.000	873.500	1.035.180
	Total (supply)	1.187.000	1.371.000	1.647.500	1.892.720
Demand	Officer (demand)	476.000	637.000	790.500	883.780
	Rating (demand)	686.000	747.000	754.500	997.540
	Total (demand)	1.062.000	1.384.000	1.545.000	1.881.320
Balance	Officer (shortage)	-10.000	-13.000	-16.500	-26.240
	Rating (surplus)	136.000	0	119.000	37.640

Source: ICS/BIMCO Workforce Report 2021

Since the 1970s, the number of seafarers needed to operate a single ship has decreased significantly. New means of propulsion and major innovations in the automation of ship operations led to standard crew numbers declining from around fifty at the start of the century to below twenty. However, the global fleet increased simultaneously, to cater to growing demands of world trade, far outpacing job losses due to efficiency gains.

The pandemic notwithstanding, the shipping labour market is very dynamic, due to its global nature. The IMO’s Convention on Standards of Training, Certification, and Watchkeeping (STCW) contains a global definition of ‘training and certification,’ based on which seafarers from almost any country can work on board virtually any commercial ship. The established international standards enabled seafarer hiring from across the world, causing a structural shift in the global shipping labour market since the early 1980s.

According to ICS/BIMCO, as shown in Figure 9, six countries supply roughly 40% of the shipping workforce. National trends also continue to play a significant role in the supply of seafarers.

Examples are the increase of training schools in China, the state of the national economy in Greece, framework conditions for employment in the Philippines and political circumstances in Myanmar.

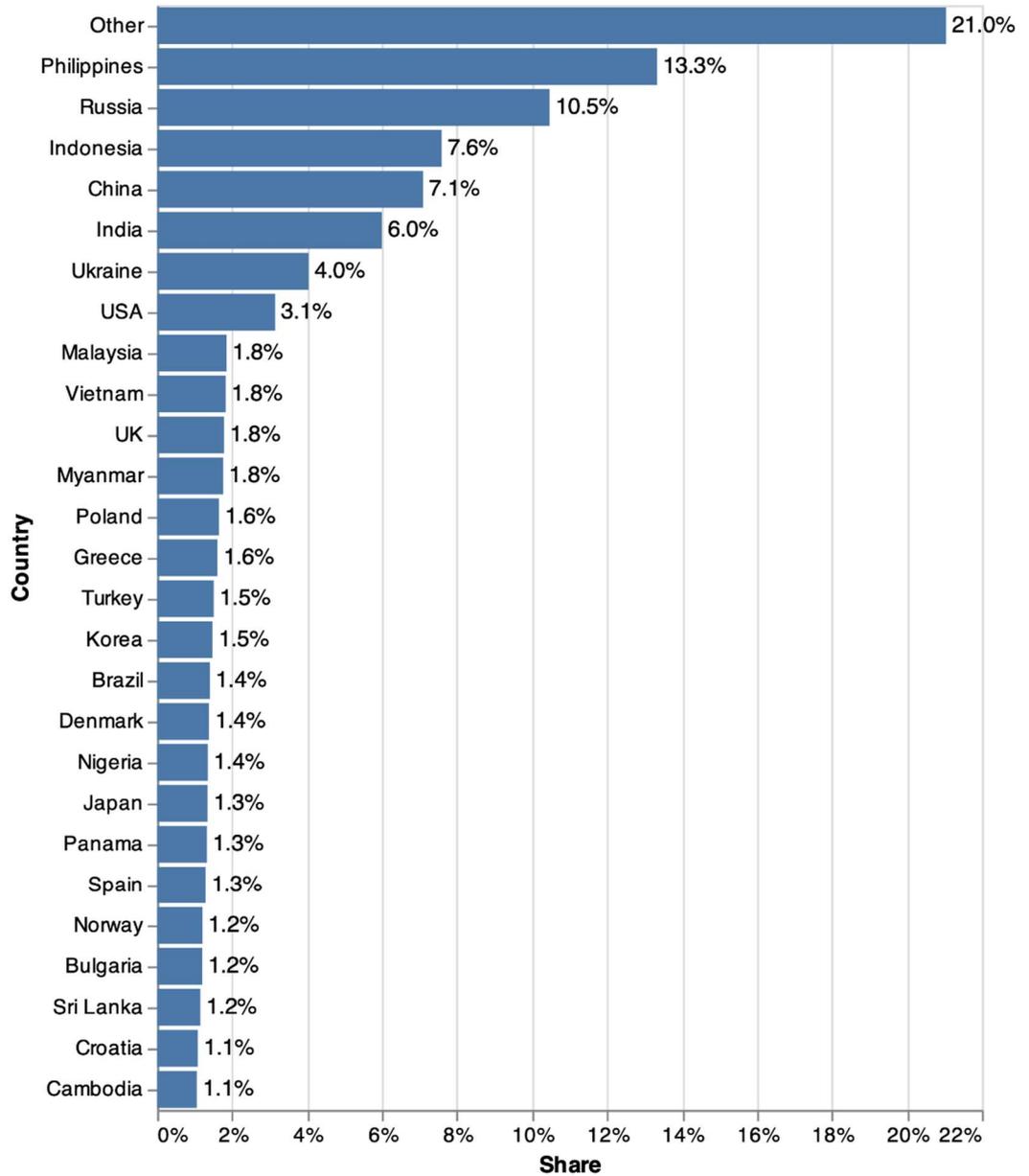
Other notable factors also influence the supply and demand balance in the shipping labour market, including the gradual evolution towards increased automation on board ships. Recent major studies, such as (ICS / HSBA 2018) and (ITF / WMU 2019) revealed that, in the short and mid-term, neither further automation nor fully autonomous ships will lead to a decline in seafarer demand. However, this is due to the projected continuous growth of the world fleet. In the long term, it is likely that further automation on board may reduce demand for ship-based seafarers while increase the number of jobs ashore.

Despite the evolution towards increased automated operations, the demand for skilled sea personnel is unlikely to diminish. Ships are expected to increasingly be controlled remotely with owners and operators requiring highly skilled personnel to manage these operations.

Land-based operations are likely to be within maritime hubs and near existing training centres. Employers are also likely to continue to hire seafarers from countries with

competitive wages. Recruitment, training, and retention will gain a different dynamic when more tasks can be handled on shore.

Figure 9: Seafarers by Country of Origin



Source: ICS/BIMCO, 2021.

With respect to digitalisation and automation on board ships, there are some key factors, which governments, employers, and seafarer groups should consider when developing and implementing related policies:

- ✓ Seafarers will need additional and different training to serve some or all their time ashore including training with a digital focus.
- ✓ Countries will compete on the quality of training for shipping personnel. Clusters of highly skilled personnel will attract remote operation centres.
- ✓ As training becomes more sophisticated, seafarers will have to rely much more on lifelong learning. The return on investment in training at a company level will lead to longer contractual relationships.
- ✓ Special competences will be required as well as existing global standards, to address needs for specific roles, such as Engineers and Electro-Technical Officers.

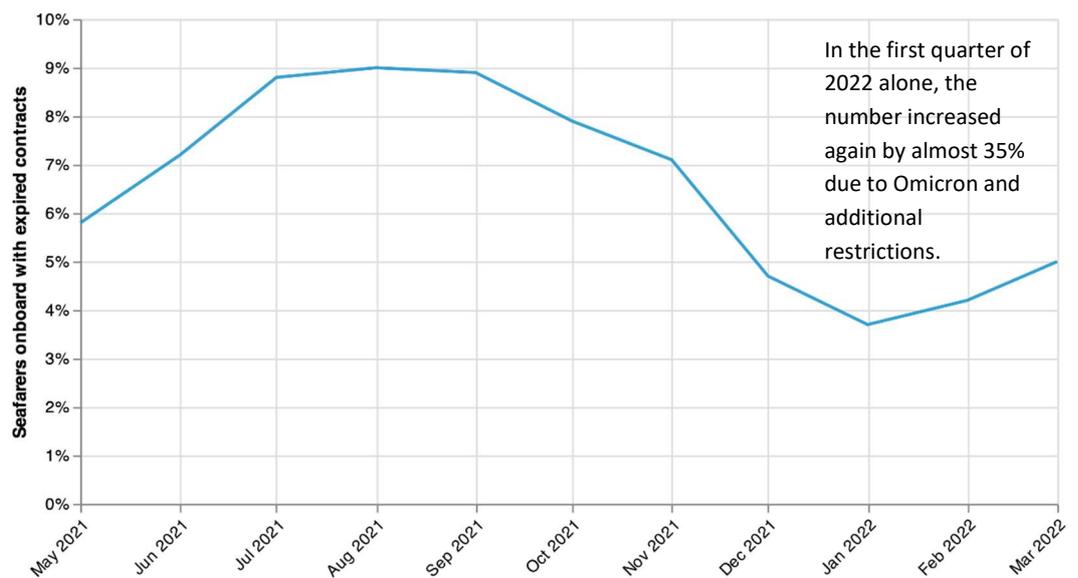
- ✓ The seafarer workforce is moving rapidly towards retirement. As the industry increases automation, this may result in challenges in recruitment.
- ✓ Retention methods must improve to encourage seafarers to remain at sea. This could make it easier to attract a new generation of seafarers who might never have previously considered a life at sea.
- ✓ Ship operations may not be restricted to personnel with STCW certification.
- ✓ The labour market will become significantly more competitive, as it will be easier to change between jobs and employers.
- ✓ The economic impact on labour supply countries such as Kiribati and the Philippines will be significant, as training centres will be more concentrated. Smaller countries will need support to continue supplying seafarers. Countries like the Philippines with a large base of former seafarers may be able to re-train large numbers for remote operations.

In the context of COVID-19, seafarers from developing and emerging countries had insufficient access to vaccines which limited labour supply. During the first phase of the pandemic, seafarers continued to work on board and companies recorded a low churn rate. Subsequently, policy restrictions implemented to mitigate the impact of the pandemic led to a reluctance by some seafarers to serve on board.

Before COVID-19, the annual turnover rate of officers decreased from almost 9% p.a. between 2010-15 to 6,2% in the following five years. In 2020 it dropped to 4,5%. ICS/BIMCO notes that “the severe restrictions and consequent employment uncertainty resulting from the COVID-19 pandemic” was temporarily behind this drop (ICS/BIMCO 2021). However, seafarer job satisfaction decreased rapidly concurrently – a clear indication of further turnover expected.

Since the outbreak of the pandemic, the shipping labour market has been disrupted, including due to the ongoing crew change crisis, meaning that effecting crew change could often not take place or took place with severe delays. Crew hubs changed frequently according to travel and hygiene regulations.

Figure 10: Seafarers Onboard with Expired Contracts



Source: Global Maritime Forum, 2022.

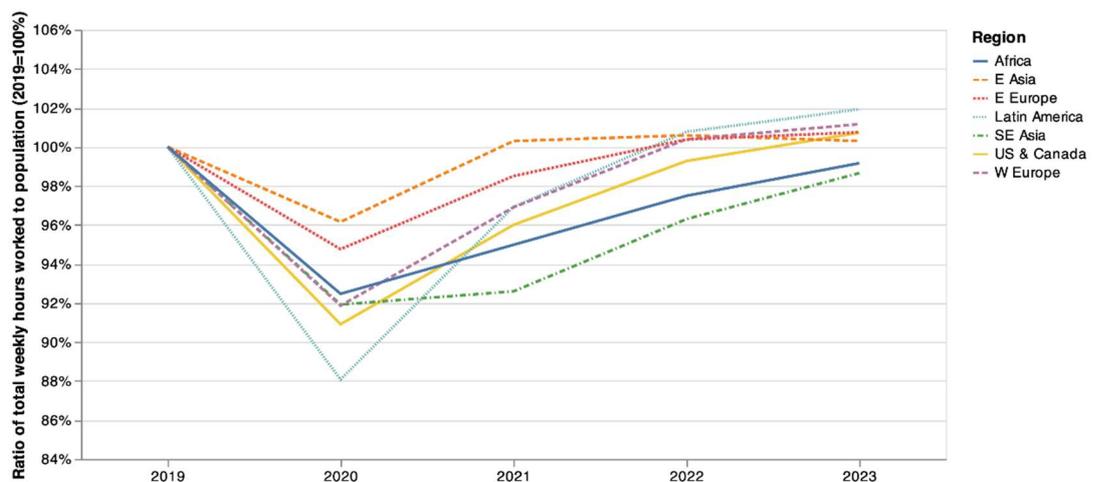
The World Maritime Forum launched the “Neptune Crew Change Indicator”, to record the number of seafarers working on board, beyond the expiry of their contracts, revealing this

figure to be up to ten percent of the global seafarers' total<sup>1</sup> (GMF Global Maritime Forum 2022). The index highlights the plight of seafarers during each wave of COVID-19, as some countries banned or restricted crew changes, despite their obligations under the ILO MLC.

Meanwhile, the International Labour Organization (ILO) downgraded its 2022 labour market recovery forecast. According to the World Employment and Social Outlook (ILO 2022), around fifty million full time jobs may be lost in 2022, leading to a rise in global unemployment. In the context of shipping, this is exacerbated by the fact that some seafarers are either still unable to board ships, due to the ongoing crew change crisis or to a reluctance due to the pandemic and related policy restrictions.

According to the ILO, Europe and North America are both making encouraging signs of recovery in their respective labour markets, while the most prominent seafarer supply regions have a less positive outlook. (ILO 2022, 48ff)

Figure 11: Labour Force Recovery Rate 2019 - 23



Source: ILO World Employment Social Outlook, 2022.

Global recruitment of seafarers will be more important than ever to achieve a sustainable social fabric. Some recent indications suggest protectionist policies are being contemplated in the seafarer employment market, including in Europe, within the “European Maritime Space” concept, intended to increase the number of jobs for European seafarers (France22 2022). If implemented, this could have a detrimental effect on the global seafarer supply and demand dynamics, especially on seafarers from leading supply countries. The current Black Sea crisis is also causing new challenges, alongside the effects of COVID-19 and related restrictions on seafarers.

In this respect, before implementation of any new radical seafarer employment policies, governments should bear in mind the following principles:

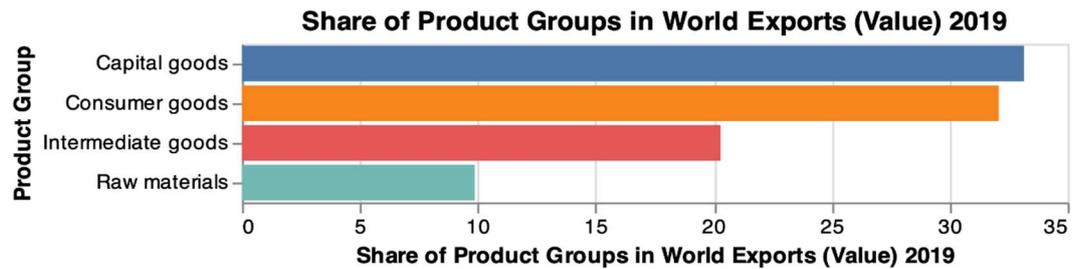
- Maintaining long-term sustainability of global shipping labour standards.
- The shipping labour market for seafarers needs to remain global and open.

<sup>1</sup> The index uses data related to 90.000 seafarers from 10 ship management companies.

### 5.1 Logistics, supply chains as enablers of international division of labour

In today's highly interconnected and open economies, production and the division of labour occurs across countries. In 2019, trade in intermediate goods and raw materials accounted for about 30 percent of global exports (WITS 2022, see Figure 12). Consequently, supply chain disruptions caused by regional lockdowns, international trade disruptions or by bottlenecks in international transportation quickly impacted local production, being dependent on intermediate goods.

Figure 12: Share of Product Groups in World Exports (values) 2019



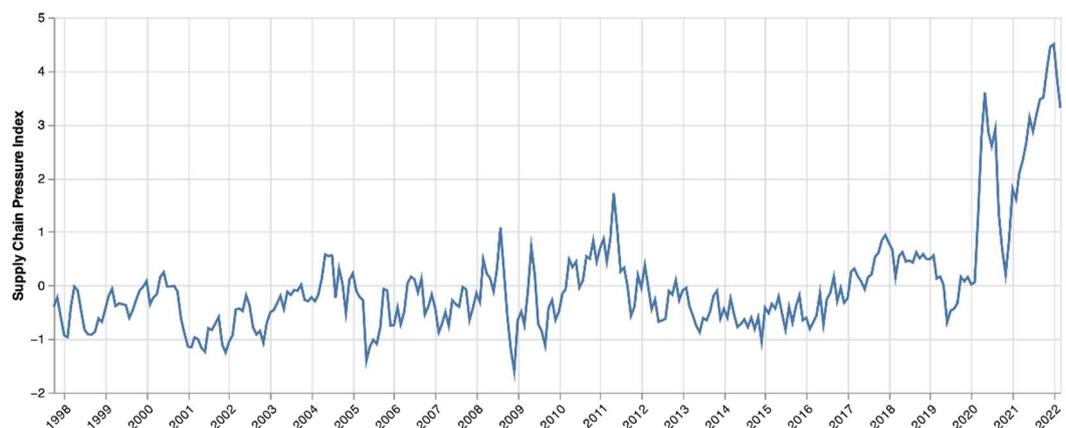
Source: World Integrated Trade Solution 2022.

“Just in Time” global supply chains require a functioning global logistics network. For most trade flows, different modes of transport are available, which combine to achieve an optimal combination of delivery times and delivery costs. However, there are some key elements in the global logistics network on which the network performance depends. For instance, in view of the major cost advantages, shipping has a key role to play in intercontinental trade flows. In addition to shipping, the links between transport modes, such as ports or freight yards and hinterland connections, must also remain efficient to enable frictionless transit of goods.

### 5.2 Disruptions of COVID-19 for international logistics networks

COVID-19 had a major impact on various parts of the global logistics networks and supply chains. Consequently, globally operating companies had to realign their supply chains due to COVID-19. Especially companies that had focused production in single locations for scale effects, assuming that just in time supply chains would always work smoothly. They often found it difficult to provide such goods globally with disrupted supply chains.

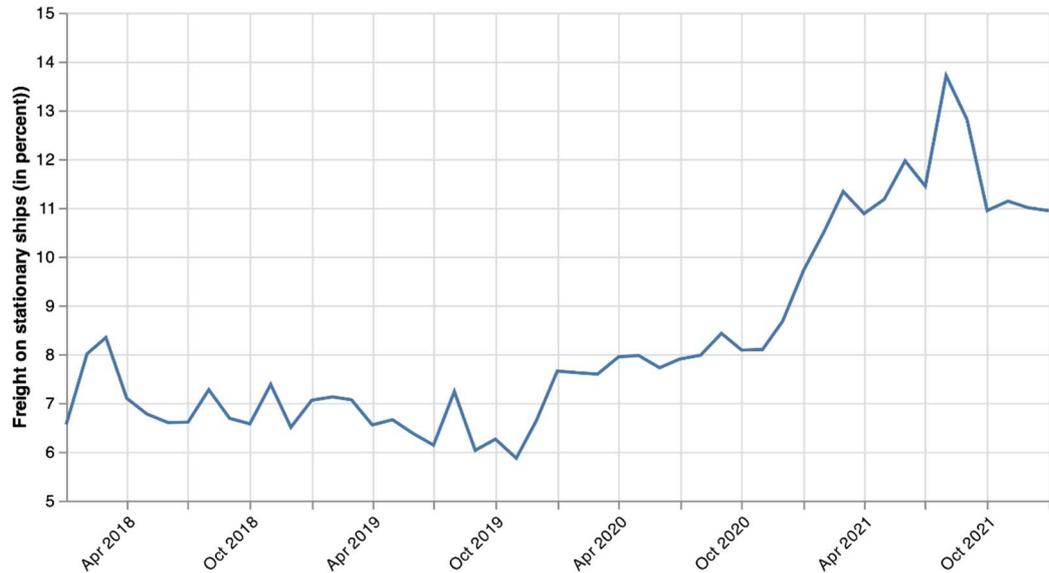
Figure 13: Supply Chain Pressure Index



Source: Benigno et al. 2022.

The Global Supply Chain Pressure Index (GSCPI) shows disruptions affecting global supply chains (Benigno 2022). The index uses data on global transportation cost and data on delivery times and backlogs. Over the previous 25 years, no other event has had such implications as COVID-19.

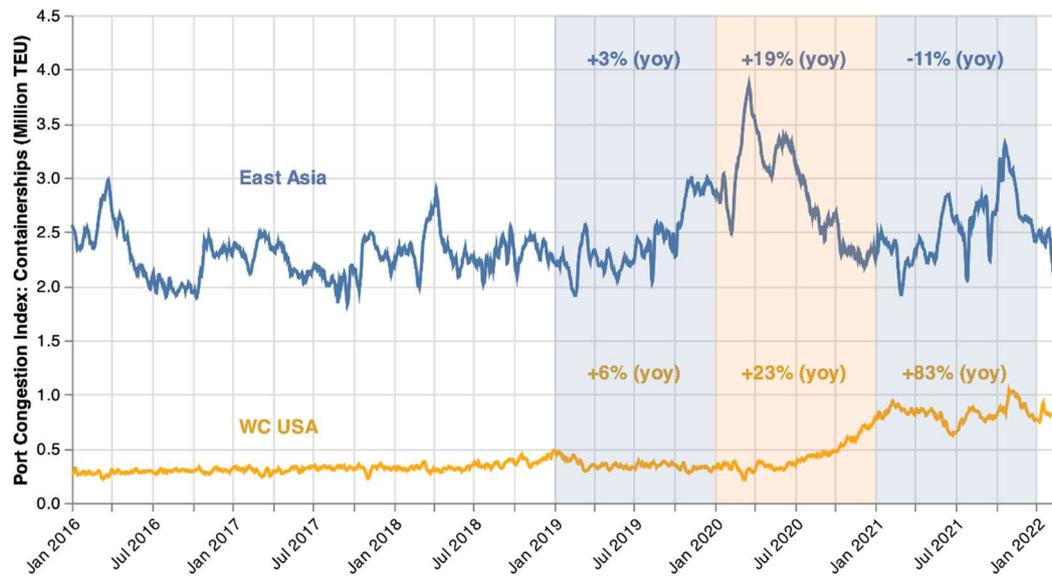
Figure 14: Freight on Stationary Ships



Source: Kiel Institute for the World Economy 2022.

Furthermore, the index shown in Figure 13 provides key insights to the impact of the COVID-19 crisis on global supply chains. At the beginning of the crisis, lockdowns and border closures immediately disrupted international supply flows. However, supply chains recovered in the second half of 2020.

Figure 15: Container Trade: Port Congestion



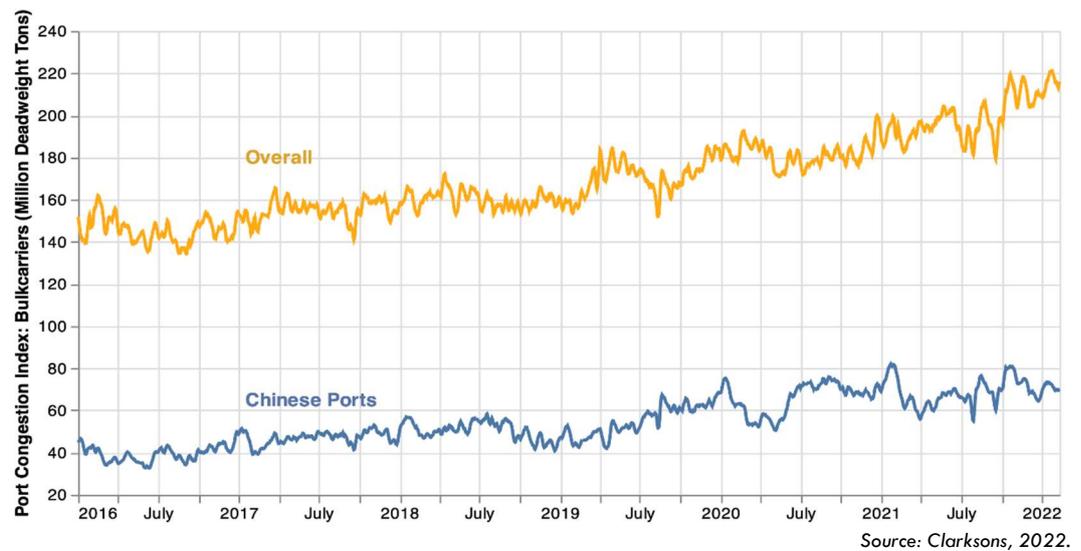
Source : Clarksons, 2022.

Since 2021 the index indicates increasing substantial global supply bottlenecks, contributing to stagnation in industrial production and international trade. A reason for this is freight being stuck on stationary ships (see Figure 14). The share of goods on stationary ships rose sharply by five percentage points in 2021. At the peak, about one seventh of all goods shipped at sea in 2021 were stuck.

More than in previous years, logistical elements adjacent to the sea-leg influenced seaborne trade. Hence public attention turned to the shipping industry when port congestion disrupted supply chains and world trade.

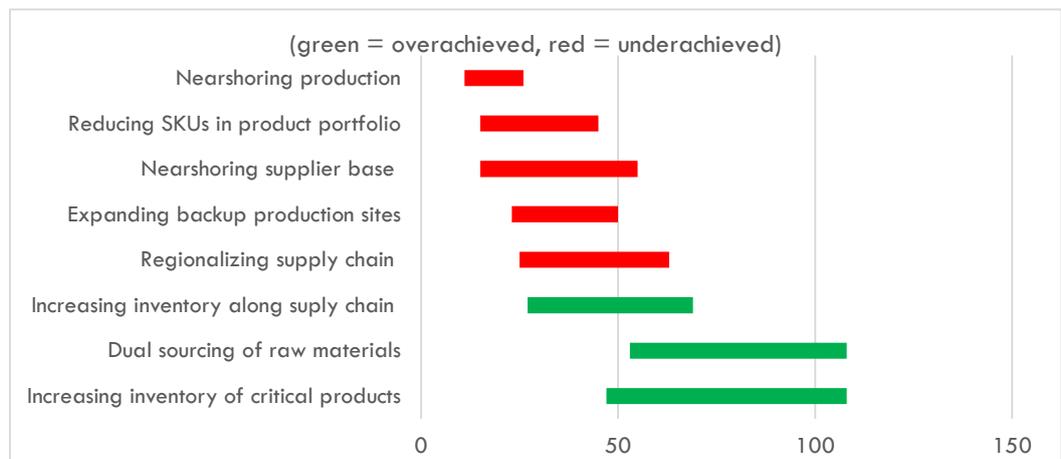
Port closures, lack of truck drivers and other land-based transport, as well as politically driven trade tensions in the bulk trade – such as those between China and Australia - created bottlenecks in the hinterland and global ports, slowing down supply chains and decreasing transport capacity. Figure 15 shows that port congestion for containerhips on the US West Coast increased to unprecedented levels in 2021. Meanwhile, the main increase in China occurred in 2020<sup>2</sup>. Port congestion in the bulk-carrier trade also increased, especially in China. The increase since 2016 has been twice as strong as globally (see Figure 16).

Figure 16: Bulk Trade: Port Congestion



In response to the economic impact of the pandemic, many countries which typically supported globalisation and free market policies, swiftly shifted towards support to nearshore production, first for medical supplies and later anything deemed “critical”. McKinsey (Alicke, Barriball und Trautwein 2021) revealed that original plans to redesign supply chains mostly failed. Instead of nearshoring, most companies increased inventories, disrupting aims to optimise just-in-time strategies, shown in Figure 17.

Figure 17: Supply Chain Adaptation



Source: McKinsey (Alicke, Barriball und Trautwein 2021).

<sup>2</sup> Very similar results are shown in the “Disruption Indicator” from Kühne & Nagel and others.



A highly likely outcome of the pandemic will be redesigned supply-chains, with industries increasing component inventories, referred to as “The shift from ‘just in time’ to ‘just in case’” (Masters and Edgecliffe-Johnson 2021). Longer contracts, multiple suppliers and other tools will be employed to stabilise supply chains and build resilience against possible further disruptions.

## 6. COVID-19 and governmental actions: Effects on the shipping industry

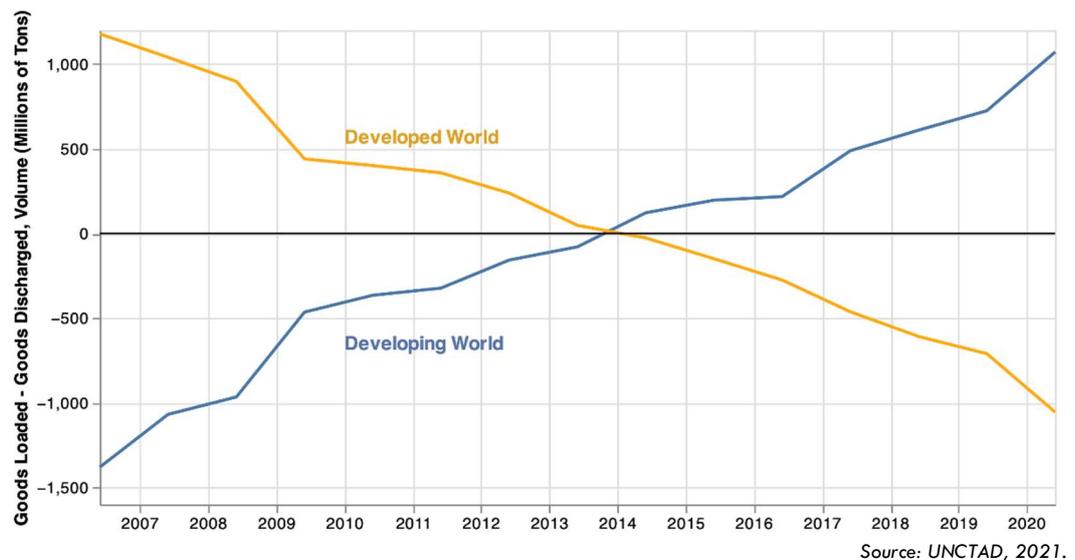
The pandemic had major implications for seaborne trade, which created challenges for national economies and disruption to supply chains. Most countries experienced a spike in inflation as a result.

The shift from the traditional behaviours towards a more home-based version of working life affected consumer spending, with less money spent on services (travel, going out, eating out) and more money spent on hobbies and physical improvements on homes. Exports from China to the US alone rose during 2021 by almost 20%, compared with pre-pandemic levels. The consequences were dramatic, causing unforeseen imbalances on trade-lanes.

Global maritime trade dropped 3.8% in 2020 to 10.6bn tons due to new consumption patterns, different usage of raw materials, as well as disrupted production and supply chains (UNCTAD 2021). Dry cargo remained the major cargo, making up 72% of the total freight shipped internationally. A decade ago, this share was closer to two thirds.

Developing countries, comprising the largest share of maritime trade by volume, were adversely hit as seaborne trade experienced a structural shift, widening the trade deficit for their national economies, while imports exceeded exports. The balance shifted from a maritime trade surplus to a combined deficit of 1.1bn tonnes in 2020, strongly increased by import demand from China (Figure 18). The tidal change occurred in 2013 when the developing world imported more than it exported. That imbalance has widened in 2020.

Figure 18: Trade Imbalances



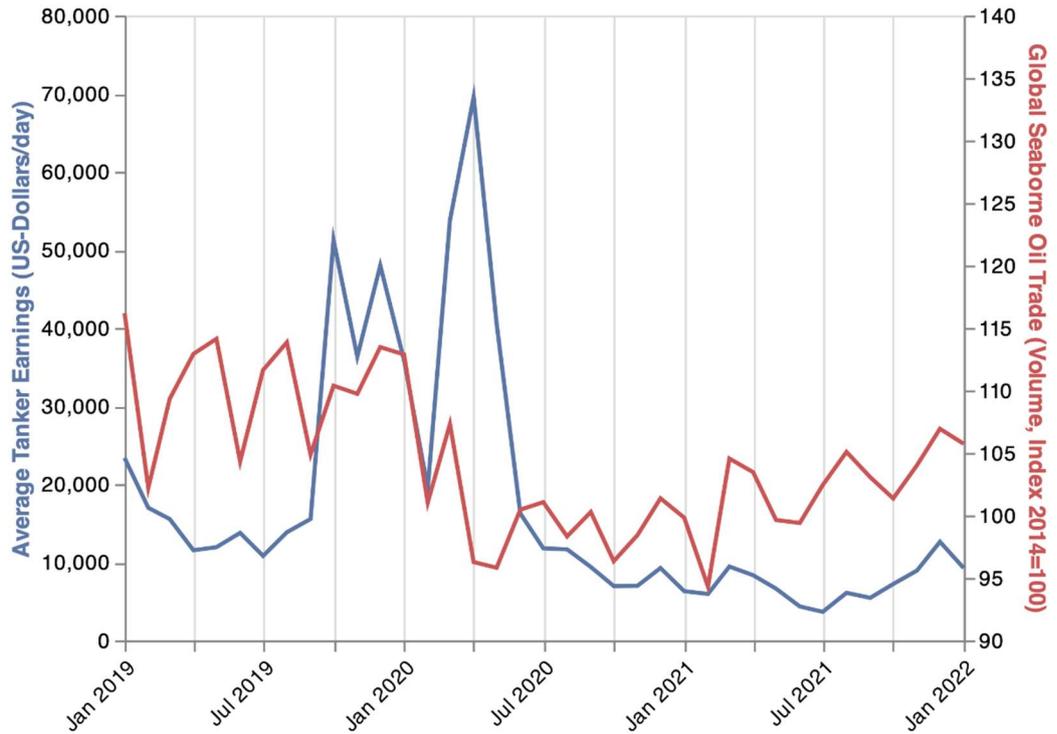
New trade imbalances became especially significant in the container trade. Containers arrived in large numbers, in unexpected places, to be used for storage. It took months to adapt to these new demand patterns. Unexpectedly, in the second half of 2020, container trade expanded significantly, resulting in a shortage of ships to meet the increased demand. Price inelasticities for seaborne trade services indicate that rates will remain high if the gap between supply and demand persists.

As a result of the pandemic, the tanker trade (Figure 19) experienced extreme volatilities in 2020 and 2021. With oil prices dropping dramatically, oil production reduced due to lower consumption of oil products, due to factors such as reduced car and air traffic and reduced energy consumption with the shutdown of some factories.

Tankers were repurposed to serve as floating storage, which in turn created the contango effect, with the future price of oil forecast to be higher than the spot price. When demand for tankers as floating storage facilities reduced, the market had significant overcapacity in 2021 and freights rates bottomed out.

Oil trade decreased since 2019 in a highly volatile fashion. Freight earnings are after a brief hiatus at an all-time low at the end of 2022, as Figure 19 indicates.

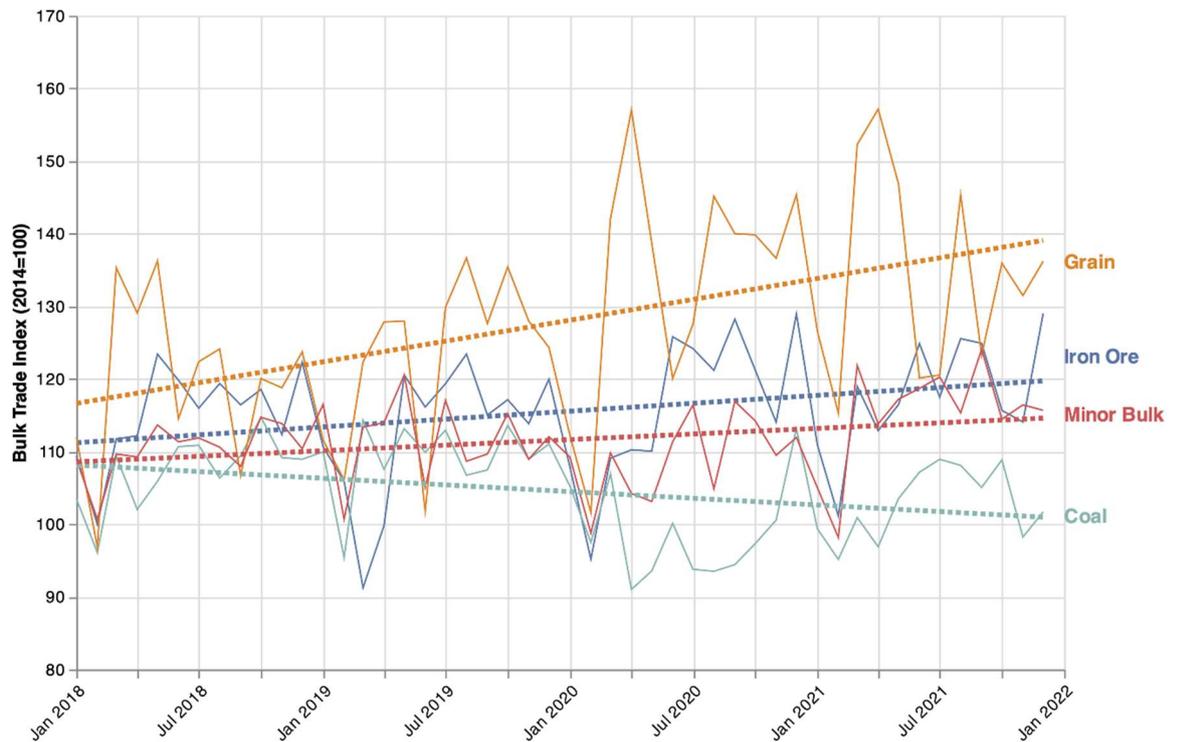
Figure 19: Oil Trade and Tanker Earnings



Source: Clarksons, 2022.

The effects of the pandemic on the global supply chain resulted in energy shortages. In addition, measures implemented to promote gas consumption instead of coal also have an impact on the shipping industry. Moreover, in the wake of the current Black Sea crisis, energy supply routes are being reconsidered and further changes are expected.

Figure 20: Trends in Bulker Cargos



Source: Clarksons, 2022.

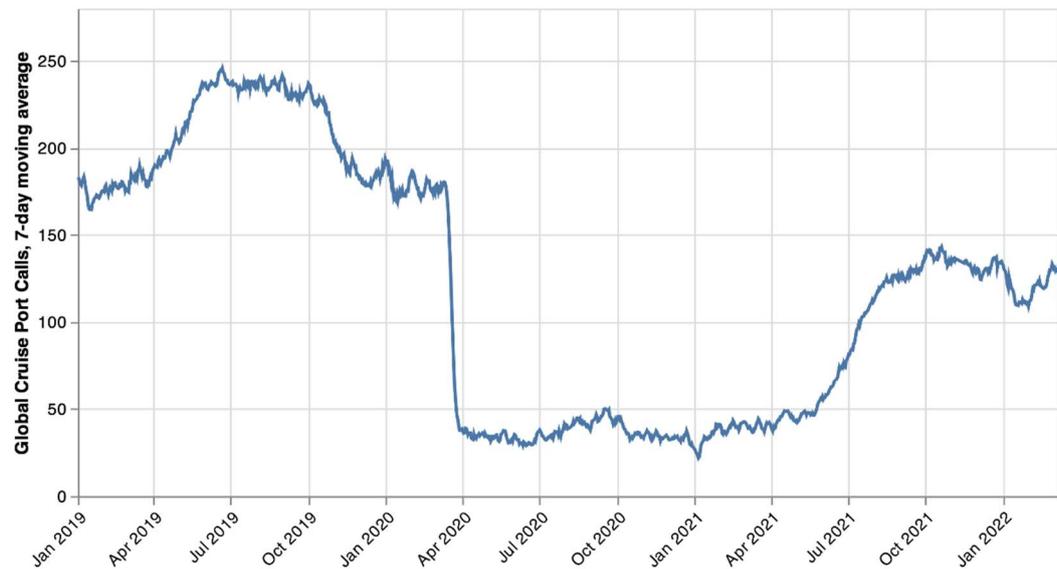
Bulk markets have fared rather well throughout the pandemic, with brief peaks and troughs. However, underlying seismic economic and political shifts have left their mark on major bulk trades (including ore, coal, grain).

In 2020, a significant slowdown in levels of production and construction led to a significant decline in iron ore transport as F

Figure 20 shows. Climate policies will in most regions phase out coal usage in the developed world. However, energy shortages increased usage of coal in the third and fourth quarter of 2021. Coal is starting to be phased out, minor bulks are stagnant while grain had the largest seasonal growth.

Unexpectedly poor grain harvests in 2021 increased seasonal trade. Geopolitical issues, such as those between Australia and China and the US-China, can also affect trade. On a positive note, large infrastructure programmes around the world, such as in the United States, are expected to increase demand for construction materials. Conversely, China's declining property market could also impact shipping.

Figure 21: Cruise Activities



Source: Clarksons, 2022.

Passenger and cruise operations were more affected by COVID-19 than any other shipping industry segment. Travel restrictions, strict hygiene protocols and social distancing brought cruises to a complete standstill for months and led to long-lasting reductions in passenger numbers.

Smaller shipping segments, such as the multi-purpose (MPP) and Heavy Lift segments, experienced rollercoaster macro-economic effects. A decline of approximately 10% in oil production and an at times dramatic fall in oil prices in 2020 halted planned constructions on- and offshore. Ship demand for projected cargo dropped and rose to unprecedented levels in 2021, with increased demand following stimulus packages and spill-over effects from the container trade.

## 7. Restrictive COVID-19 Policies: Impact on UN SDGs

The shipping industry is the most economically and environmentally sustainable transportation method for carrying high volume goods in bulk globally, compared with other transport modes.

In 2019, it accounted for over eleven billion tonnes of cargoes transported around the globe, including vital food and medical goods, energy, raw materials, and manufactured goods. This equates to over 70% of world trade by value and 90% of world trade by volume.

Shipping plays a key role in fulfilling the Sustainable Development Goals (SDGs), set by the United Nations (UN) in 2015, within the framework of the 2030 Agenda for Sustainable Development. Sustainable maritime transport – in the context of the three UN Pillars of Sustainability: The Economy, Environment and Society – is a strategic enabler for the UN SDGs.

Figure 22: The 17 UN Sustainable Development Goals (SDGs)



For decades, the global shipping industry has been consistently working towards striking a balance between the three Pillars of Sustainability, in support of the UN SDGs. This includes the implementation of global initiatives and regulations adopted by the IMO, ILO and WHO to (among other things):

- Promote health and wellbeing (SDG 3).
- Support quality education (SDG 4), decent work and economic growth (SDG 8).
- Address shipping’s impacts on ocean and marine ecosystems (SDG 14); and
- Substantially reduce greenhouse gas (GHG) emissions and address climate change (SDG 13).

To foster further sustainability improvements, for the benefit of society and national economies, the global shipping industry requires national and intergovernmental post pandemic policies that support a sustainable, resilient recovery, paving the way to long-term economic, environmental, and social sustainability.



Government policy responses to the pandemic, including those impacting seafarers, sometimes deviated from internationally binding Conventions, having a negative impact on shipping's ability to fulfil those longstanding commitments to the SDGs. In December 2020, the ILO concluded that governments had breached seafarers' rights and failed to comply with provisions of the ILO MLC during the COVID-19 pandemic (ILO 2021).

The ILO also expressed deep concern that the emergence of new COVID-19 variants appeared to increase restrictions adopted by governments, some of which contradicted the provisions of the ILO MLC, with consequences for seafarers.

Governments did not strike a balance between prioritising national health requirements of the WHO IHR, and those of the ILO MLC, designed to address the health and transit needs of seafarers, exposing seafarers to greater risks.

Strengthened collaborative initiatives between all actors in the maritime logistics chain (including governments and international organisations), will ensure that the shipping industry can continue to contribute effectively towards the UN 2030 Agenda.

## 8. Key findings, Conclusions, and Calls to Action (CTAs)

The pandemic presents a unique opportunity to rethink maritime transport policy and practice, to benefit seafarers, the global economy, the environment, etc. “Before COVID, emphasis in transport policy was on demand management, ‘smart’ technological interventions, and sustainable mobility. The public health crisis has necessitated an urgent reconsideration of transport and its contribution to post-COVID economic recovery” (Budd and Ison 2020).

During a pandemic or a similar global emergency, strategic priorities are likely to overlap and vary across countries. It is essential, however, that policies governing public health and public policy are coordinated to the fullest extent possible, to avoid unnecessary socioeconomic risks. In the event of similar crisis in future, national governments should consider the “five Rs” – Resilience, Return, Reimagination, Reform, Resolve – to safeguard transport service sustainability (Tardivo, Zanuy und Martín 2021). While international organisations have shown high potential for meaningful action during the COVID-19 crisis, the lessons learnt from the pandemic need to serve as the foundation for a future global collaborative framework between governments and industries. The key findings and conclusions of this research are outlined below:

### 8.1 Key findings

1	COVID-19 related restrictions significantly hindered the shipping industry’s ability to repatriate seafarers to their countries of residence and to effect crew changes, rendering hundreds of thousands of seafarers unable to leave their ships and having to serve onboard beyond their original contracts.
2	Governmental action was globally diverse and uncoordinated. Some government policy responses to the pandemic failed to comply with key International Conventions, including the ILO MLC which address seafarers’ specific needs. In December 2020, the ILO concluded that governments breached seafarers’ rights during the pandemic.
3	Governments failed to strike a balance between prioritising national health requirements of the WHO IHR, and those of the ILO MLC, designed to address the health and transit needs of seafarers, exposing them to greater risks.
4	In order to put some structure in place it was left to the shipping industry partners to produce protocols which can be found at COVID-19   International Chamber of Shipping ( <a href="https://www.ics-shipping.org">ics-shipping.org</a> ). These protocols were then shared by the IMO and ILO with a wider audience including member states.

### Conclusions

1	Lack of appreciation for the strategic role of seafarers in facilitating world trade meant that they were not prioritised early enough for access to testing facilities and COVID-19 vaccinations. The nature of the global shipping industry requires better international coordination between International Organisations, National Governments, and other Stakeholders to address similar crises in the future.
2	National actions to contain and mitigate the effects of the pandemic negatively affected seafarers and international shipping, due to their impact on global supply chains and crewing. Some policies also affected the industry’s ability to fulfil its longstanding commitments to the UN SDGs with unintended consequences for the global economy.
3	During a pandemic or similar crisis there should be better global and cross-border level co-operation, led by a coherent framework to address the specific nature of the role of seafarers. Adherence to International Conventions throughout this process is crucial.

## Calls to Action (CTAs)

The ongoing ‘crew change’ crisis in shipping is not only a humanitarian emergency, but also has safety and trade implications, as it continues to undermine the safe operation and flow of the maritime supply chains throughout the world.

Based on this and other lessons learnt from the pandemic, national governments should implement concrete policy actions to address these challenges at the highest levels, including by supporting and strengthening the role of UN Agencies, such as ILO, IMO and WHO.

Collaboration between governments, international organisations, and the shipping industry (seafarers and employers) will be crucial to safeguard maritime trade, sustain the shipping labour force, as well as protect the rights of seafarers.

To assist policymakers in addressing the challenges identified in this research, outlined below are specific Calls to Action (CTAs) for national governments, international organisations, and the shipping industry (seafarers and employers).

<b>1</b>	Define the meaning of key workers	International Organisations
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- Define the scope of the term “key workers” through an agreed global definition that includes seafarers.
- Prioritise access to vaccinations for seafarers, as key workers.
- Introduce measures that facilitate the ability of seafarers to work at sea.
- Facilitate and prioritise seafarer movement to and from ships (e.g., ‘green lanes’).

<b>2</b>	Recognise all seafarers as key workers	National Governments
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- Cooperate to get global recognition of seafarers as key workers.
- Build on the strength of previous initiatives and declarations.
- Extend this recognition to front-line logistics workers.
- Make such recognition binding.

<b>3</b>	Ensure an open, global, and freely accessible labour market for seafarers	International Organisations National Governments
----------	---	---

- The labour market for seafarers needs to remain global and open.
- Strive for a forward looking, rules-based multilateral trading system, underpinned by global cooperation that extends to the labour market.
- Promote free and fair competition in shipping labour markets and oppose protectionism.
- Co-operate to halt any potential proliferation of protectionism in maritime labour markets. All national economies benefit from an open labour market.
- Maintain high quality and binding shipping labour standards for all countries.

4	Sustain global labour standards for seafarers	International Organisations National Governments
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- Strengthen rules and regulations enshrined in the ILO MLC.
- Ensure that all ratifying countries fully comply with their ILO MLC obligations.
- Support ILO social partners (seafarers and employers) to fulfil all their obligations under the ILO MLC.

5	Encourage quality training of seafarers and life-long learning	Employers Unions
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- Create continued opportunities for life-long learning for seafarers, specifically for the transition from sea to shore.
- Enhance seafarer training to create resilience, especially in labour supply countries.

6	Support training for seafarers' future roles	Employers Unions National Governments
---	--	---

- Develop new education and training frameworks to enable seafarers to adjust to the shipping industry's evolution in key areas, such as decarbonisation and digitalisation.
- Facilitate co-operation between governments and industry to develop transformative digitalisation strategies that consider the needs of seafarers.
- Facilitate training on digital transformation and security against cyber threats.

7	Support maritime labour-supply countries to enhance training facilities	International Organisations
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- Support seafarer supply countries in establishing state-of-the-art training centres.
- Prioritise training of young cadets as well as re-training.
- Focus on activities designed to increase the number of female seafarers.

8	Maintain and strengthen the roles of IMO and ILO as global regulators for seafarers	National Governments
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- Support an ambitious revision of the IMO's STCW Convention to ensure the appropriate training to reflect the evolving role of seafarers.
- Cooperate to achieve full ratification of the ILO MLC and encourage states to ratify Convention 185 for easier movement of seafarers.
- Recognise the roles of the other UN Agencies (e.g., WHO) in working with the ILO and IMO for a fully integrated approach to address seafarers.
- Promote effective national co-ordination between government shipping ministries and non-maritime agencies and raise awareness of the critical strategic importance of international shipping.
- Adhere to internationally agreed governmental obligations and standards to facilitate crew changes, repatriation and medical treatment of seafarers.

9	Ensure adequate medical care and equitable access to vaccines	National Governments
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- Emphasise the right of seafarers to immediate medical care, support, and supplies.
- Ensure the immediate repatriation of deceased seafarers, in accordance with the requirements of the ILO MLC.
- Grant seafarers priority access to vaccination and other protective measures, irrespective of their nationalities.
- Strike a balance between prioritising national health requirements of the WHO IHR, and those of the ILO MLC, which address seafarer health and transit needs.
- Adopt a globally accepted vaccination passport system to help facilitate seafarer travel to and from ships.

10	Provide mechanisms that promote balanced post pandemic recovery	International Organisations National Governments
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- Maintain established principles of international shipping policy, to ensure the continued provision of efficient maritime supply chains.
- Allow for proportionate use of subsidies in support of pandemic recovery.

Provide proportionate subsidies to support training and employment of seafarers.



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## 11. Table of Acronyms

<b>BIMCO</b>	Baltic and International Maritime Council, trade association
<b>COVID-19</b>	Coronavirus Disease 2019
<b>G7</b>	Group of Seven, consisting of Canada, France, Germany, Italy, Japan, UK, USA. They consider themselves the world's largest advanced economies and liberal democracies.
<b>G20</b>	The Group of Twenty, consisting of 19 countries and the EU. Composed of accounting for around 90% of gross world product, 80% of international trade and 65% of the global population.
<b>ICS</b>	International Chamber of Shipping, trade association
<b>ILO</b>	International Labour Organisation, specialised UN agency
<b>IMEC</b>	International Maritime Employers Council, employer group
<b>IMF</b>	International Monetary Fund
<b>IMO</b>	International Maritime Organisation, specialised UN agency
<b>ITF</b>	International Transport Workers Federation, union
<b>MLC</b>	Maritime Labour Convention (also: MCL, 2006)
<b>SARS</b>	<b>S</b> evere <b>A</b> cute <b>R</b> espiratory <b>S</b> yndrome, viral respiratory disease
<b>SDGs</b>	<b>S</b> ustainability <b>D</b> evelopment <b>G</b> oals, UN initiative
<b>STCW</b>	Convention on Standards of Training, Certification and Watchkeeping for Seafarers
<b>UN</b>	United Nations
<b>UNCTAD</b>	UN Conference on Trade and Development, specialised UN agency
<b>WHO</b>	World Health Organisation, specialised UN agency
<b>WMU</b>	World Maritime University, IMO affiliate

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### Imprint



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