



Post-COVID-19 scenarios for the governance of maritime transport and ports

Olaf Merk¹ · Jan Hoffmann² · Hercules Haralambides^{3,4}

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1 Introduction

The past few years have certainly been quite eventful and the thing that probably overshadowed all others was the COVID-19 pandemic. This coincided with a period of fundamental changes in maritime transport, including energy transition and the need to decarbonise shipping, the digitalisation of global supply chains, and the continued trend towards vertical and horizontal integration in shipping and ports.

The pandemic revealed systemic fallacies, but also showed the potential, as well as the need, for change. Such change is possible if we understand the systemic causes of the situation and if we can imagine ways to resolve systemic challenges. For those studying maritime transport, this means the need to assess how the governance of the maritime sector can respond to current challenges, and—better—pre-empt and prepare for similar future occurrences.

The pandemic brought to the surface again an issue we had all thought of as dead: inflation. Starting with Stiglitz (2002), a number of economists had believed that globalisation and the diversification of sources of supply around the world would strengthen competition, keeping prices constantly down. This, however, presupposed that disruptions would be localised. The pandemic, however, ‘attacked’ the

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✉ Olaf Merk
olaf.merk@itf-oecd.org

Jan Hoffmann
jan.hoffmann@unctad.org

Hercules Haralambides
haralambides@ese.eur.nl

¹ International Transport Forum, OECD, Paris, France

² UNCTAD, Geneva, Switzerland

³ Dalian Maritime University, Dalian, China

⁴ Sorbonne University, Paris, France



whole planet simultaneously and the interconnectedness of maritime systems we describe below led to disruptions in ‘global’ supply chains. Inflation thus ensued followed by shortages, supply bottlenecks, port congestion, and very high ocean tariffs. These and more are analysed below by our authors and ourselves, in an effort to seek proposals which could hopefully improve the resilience of our systems to future shocks.

1.1 The impact of COVID-19 on maritime transport chains

COVID-19 directly affected workers in the maritime supply chain. In various ports, the effective workforce declined because some of the port workers contracted COVID-19 and fell sick. Some ports—notably in China—were closed down in order to avoid transmission of the disease. The workforce in other freight transport sectors, such as rail and road freight and logistics, was also affected, leading to labour shortages in freight transport and logistics in some regions.

The largest impacts from COVID-19 on the maritime transport sector were probably due to government policies to deal with the pandemic, in particular economic lockdowns, social distancing requirements, and border closures. These measures had different effects on different shipping sectors. Lockdowns and border closures decreased the demand for passenger traffic; the effect on inter-island passenger and tourist transport in Greece, for instance, was devastating. Cruise shipping too came to a halt in all its markets. Economic lockdowns had ambiguous effects on the demand for consumer goods: they limited the possibilities for shopping, but stimulated e-commerce (Kent and Haralambides 2022). This resulted in shifts in household spending: less on restaurants, tourism, and cultural activities; more on consumer goods, such as electronics, garden equipments, and furniture and home improvements in general. Household spending was facilitated by fiscal stimulus packages in many parts of the world. The increase in demand for consumer goods, particularly in the US, translated in sustained demand for container transport.

Border closures also affected maritime trade flows, but had a larger impact on seafarers. They complicated the process of crew changes, contributing to a large number of seafarers marooned onboard ships much longer than what is considered customary. Few governments only facilitated crew changes effectively, and the situation was not helped much by the decisions of market players, including shipping companies, registries, charterers, and ports.

The shipping sector most visibly affected by the COVID-19 crisis and the related government measures was container shipping. Its performance deteriorated markedly, while freight rates increased to such an extent that discontented shippers and consignees, mainly in the USA, lodged complaints with the Federal Maritime Commission: the US competition watchdog of international shipping.

Mainstream press too, such as the Financial Times, realised that international shipping and supply chain disruptions can make interesting (and profitable) headlines. *Disruptions*, if one could call them this, manifested in spectacularly high freight rates, lacklustre schedule reliability, scarcity of cargo space on container-ships, lack of containers and chassis, and cancelled port calls. Since the beginning



of 2020, ocean freight rates more than quadrupled, schedule reliability dropped from 80 to 30%, and waiting times and turnaround times in ports increased, particularly in the US. Many of these indicators have been captured in recent reports by UNCTAD and ITF (UNCTAD 2021; ITF/MDST 2022).

Data at the time of writing (early 2022) shows that the situation is still not improving. Between the first half (H1) of 2019 (i.e. pre-COVID) and the first half (H1) of 2021, the global median time a containership spent in port increased by 11.8%, from 16.3 h in H1, 2019, to 18.6 h in H1, 2021 (the corresponding increase between 2019 and 2020 was 3%). Spectacular images of often hundreds of ships waiting for weeks to berth outside major ports in China and the US became viral and made headlines around the world. This removed ships from the global supply of tonnage, in this way contributing to the already skyrocketing freight rates. While there had been hopes that things would start to improve in 2021, unfortunately latest data indicate that containership waiting times went up even further during the second half (H2) of 2021, reaching a median time of 19.9 h in H2, 2021—i.e. 19.8% higher than in H1, 2019 (UNCTADstat 2022).

Despite their poor performance, container carriers reported record-high profits: USD 17 billion in 2020 for the ten largest container carriers, and an estimated USD 160 billion in 2021. These profits were used for dividends to shareholders, share buybacks, and a move towards further vertical integration through acquisitions of companies in logistics, forwarding, and aviation. One might be amiss not to question at this point the legitimacy, or ‘economic morality’, of such strategies by companies such as carriers, shielded from antitrust rules, vis à vis others—their competitors—who are not.

The COVID-19 impacts were not limited to shipping, but whole freight transport chains were affected. A highly mediatised part of that story was congestion in ports like Los Angeles and Long Beach, illustrated by large numbers of ships waiting at anchor. Other US ports also witnessed longer waiting times. In other parts of the world too, ports faced increases in waiting times, and cargo handling times that were ‘below norm’, coupled with significant increases in ship schedule reliability which complicated terminal planning and put more stress on hinterland transport. Interestingly, spot freight rates from Shanghai to Europe, Africa, and South America increased more than those to North America, although it was in North America that most of the container-carrying capacity was held up by waiting ships. By the same token, when the Ever Given containership of Evergreen got stuck in the Suez Canal, the freight rate that saw that biggest surge was the one to Santos, i.e. a route that does not go through via Suez. These examples showed once more the strong interconnectedness of shipping markets.

The maritime supply chain crisis has had wider economic effects. Manufacturers suffer from delays in the delivery of commodities and intermediate goods, such as car parts and electronic components, whereas agriculture exporters and other shippers face difficulties in securing cargo space on vessels. Small- and medium-sized enterprises have been particularly vulnerable to the lack of sufficient access to freight transport options. Moreover, as discussed above, higher maritime transport costs have fuelled global inflation and increased the costs of imported goods, particularly in developing countries (UNCTAD 2021).



1.2 What is the narrative?

The COVID-19 crisis more than ever reminds us that stakeholders in the maritime transport chain have different interests and perceive events with those interests in mind. So, an analysis of the current situation of maritime transport chains should start with an acknowledgement of the power of the *framing effect* and a reflection on how we are looking at the current situation: what is this crisis all about? To find out the narratives which are most convincing, more analysis, exchanges and debate are needed. This Special Issue hopes to contribute to that discussion, with a collection of articles that exhibit a multitude of angles and approaches. By means of introduction to these articles, we provide a few elements of *framing* ourselves, related to four issues that we think are central to current events: the functioning of markets, interconnectedness, resilience and decarbonisation.

2 Is the market functioning?

The fundamental explanation of the spectacular ocean freight rate increases has been a mismatch between demand and supply of available container-carrying capacity. On the demand-side, volumes did initially decline then rebounded, and in fact in some regions, notably North America, they increased. As explained above, in reaction to lockdowns and stimulus packages, the ease of ordering consumer goods led to additional demand for manufactured goods in some regions, especially from China, although over 2020–2021 there was no significant diversion from the predicted growth of global maritime trade.

On the supply side, on the other hand, ships spent 20% more time in ports in H2 2021, and containers took longer to get returned to their owners. In economics terms, we saw the *supply of shipping* curve moving to the left.

The very high freight rates led to historically high carrier profits on the one hand, and serious interruptions of global value chains on the other. Researchers and policy-makers have as a result raised the legitimate question whether the market in its current form effectively leads to the most efficient allocation of resources.

At the outset of the pandemic (i.e. H1 2020), freight rates did not decline, in spite of the more than sufficient supply, and the reduced demand for maritime transport due to the lockdowns. It thus appears that the liner shipping industry has managed to eliminate downside market risk. This has been achieved through the coordinated withdrawal of cargo-carrying capacity via alliances and other cooperative agreements. Carriers do so undisturbed, without fear of punishment from competition authorities, as many regulators have granted liner shipping exemptions from competition laws. The justification for such privileges is that cooperation among carriers would increase the efficiency of the whole transport system, which would create wider public benefits. Yet, concerns are often aired that liner companies use their antitrust privileges to create scarcity that improves their profitability, rather than reduce the transport costs of their customers, as the antitrust exemptions require.

One thus wonders if this is not exactly what happened at mid-2020: carriers withdrew ship capacity between February and September 2020, allegedly to adjust to



decreasing demand, but freight rates started to rise from June 2020 onwards. Was there enough capacity available to service the demand for containerised transport in June 2020? Or did the blank sailings, at that point in time, contribute to an artificial scarcity which pushed up rates? In other words, did we see a competitive market in action, or something else? These are questions that regulators and competition authorities should address, as they define the boundaries between what may be allowed and what may not. For example, the European competition privileges to liner shipping—as expressed in its Consortia Block Exemption Regulation, prolonged in April 2020—are only granted to cooperative agreements that fall below a market share of 30%. Yet, depending on how one determines the ‘relevant market’ (for a thorough definition of how this concept applies to shipping, see Haralambides 2019), it seems that two out of the three existing alliances that have used the privilege of joint capacity adjustments exceed the 30% threshold, as already acknowledged by the European Commission in 2019.

3 How much interconnectedness is desirable?

To say that ocean shipping is a global business carrying 80% of international trade volumes has become a cliché. Yet, the implications of this global reach, and the interconnectedness that results from it, are not often realised. The COVID-19 crisis provided a revealing example of how the interconnectedness of maritime transport chains and markets can transform local supply chain problems into a supply chain crisis of global proportions. There are three elements to this interconnectedness.

First, the largest container shipping companies offer a network of global services to their clients. Considering their global coverage, they can reposition vessels to the trade lanes where these are most needed, or where carriers can earn most. This is exactly what they did in late 2020, when they moved more ship capacity to the Transpacific route. A consequence of this was higher scarcity on Asia–Europe and North–South routes, resulting in an even stronger increase in freight rates on these routes. This global reach of main carriers is relatively new. Through the now defunct *conference* system, carriers used to specialise in certain trade routes and coordination through alliances was less developed. Capacity of carriers shifted less easily from one route to another. As a consequence, demand/supply developments on one trade route were much less interconnected to those of others.

Second, the reason why more ship capacity was needed on the Transpacific was the higher import demand in the US and the consequent west-coast port congestion. The consequence of port congestion was increased waiting times in port, resulting in the reduction of effective ship capacity. Port congestion drew a lot of media attention and has, by various observers, including the largest container shipping companies, been identified as an important cause of the current supply chain crisis. However, there is in addition a variety of different local circumstances. Analysis of AIS data from ships show considerable port congestion in the US, some congestion in China, but hardly any port congestion in Europe. Supply chains in Europe are not disrupted because of congestion, but because port congestion in the US has spilled over to global supply chains.



And that constitutes the third element of the interconnectedness, namely the link between ship schedule reliability and port congestion. Considering the character of a liner service as a string of ports connected by a ship voyage, the link between ship reliability and port congestion is obvious: if a ship is delayed in one port, it is likely it will not arrive on time to the next, as the possibility—or willingness of shipowners and operators—to make up time at sea by increasing sailing speed is limited. Port terminals plan for the arrival of a ship, for example, by positioning containers in the yard in such a way that the loading and unloading of the ship takes the least time in terms of handling equipment movements or, today, energy consumption. So, the fewer the ships respecting their announced arrival time, the more difficult terminal planning becomes and the lower the terminal's efficiency. This link between ship schedule reliability and port terminal congestion could lead to a vicious circle whereby lower ship reliability leads to port congestion, leading to even lower ship reliability. Such a vicious circle has arguably been playing out in the US since 2020. The question is what sparked this situation. Analysis of the timing of the deterioration of reliability and congestion suggests that worsening ship reliability was the cause, and port congestion the effect: schedule reliability on the Shanghai–Los Angeles route started to decline in mid-2020, whereas port waiting times at Los Angeles and Long Beach started to go up only at the end of 2020.

In summary, key events in the unfolding of the current global supply chain crisis are all related to what is happening in the US (Kent and Haralambides 2022): the increased demand for imported consumer goods from Asia, the resulting shift of containership capacity to the Transpacific route and the worsening of ship schedule reliability resulting in port congestion. Shippers in other regions have been faced with higher ocean transport costs and ship delays, whereas none of the underlying indicators would predict this: for example, there is no increase in European demand for maritime transport, which might lead to scarcity of shipping capacity, nor congestion in European ports that could explain longer transit times.

The supply chain situation in Europe is a consequence of the interconnectedness of maritime transport chains that transform a local supply chain crisis into a global crisis. Under this light, a wider international cooperation on the monitoring of competition in liner shipping would be warranted. An example is the recently announced cooperation on the monitoring of container shipping by competition authorities in US, Canada, UK, Australia and New Zealand. As part of this cooperation, a working group of these authorities will monitor carriers worldwide, in relation to disruptions in supply chains, and it will share intelligence on behaviours that restrict or distort competition.

The events during the pandemic have exposed the global interconnectedness of maritime logistics chains. The majority of known markets are often supported, determined and regulated by governments and regulation today is increasingly concerned with the environmental performance of companies. In the case of international shipping, however, an industry that operates in every known country and conceivable port, who should regulate it and how? For technical and environmental regulations, there is of course the IMO, but for economic regulation, there is no effective global governance for the liner shipping market; there is instead a collection of divergent national or supra-national (in the case of EU) frameworks that are



incoherent and uncoordinated, leaving a governance gap that liner companies could be tempted to exploit. An important discussion is thus warranted on the design of a global governance architecture to regulate liner shipping markets. Tools exist within the framework of the World Trade Organisation (WTO), but shipping has been so far exempted from WTO agreements.

4 How resilient are maritime transport chains?

The interconnectedness of maritime transport chains, as discussed above, has an impact on the resilience of the same chains: local crises easily become global crises. This risk to resilience is further augmented by two phenomena: hub-and-spoke networks and vertical integration. The last two years have seen the acceleration of both tendencies.

Hub-and-spoke tendencies were most visible at the outset of the pandemic, when carriers withdrew capacity via blank sailings. The ports most affected by blank sailings were mostly secondary ports, whereas the reduction of calls to main hub ports was moderate. Subsequently, when ship capacity was reinstated, this consolidation of port networks—benefiting the hub ports—continued; direct liner connectivity decreased in most continents, particularly in Europe, Latin America and Africa, whereas the decrease was more limited in North America, Asia and Oceania.

Vertical integration is not a new development: several shipping companies have invested in activities and infrastructure such as marine and inland terminals, road haulage, and aviation that allow them to offer door-to-door services in competition with pure logistics companies who are thus both their customers (NVOCCs) and competitors (Haralambides 2019). By eliminating *transaction costs*, vertical integration improves the interfaces between different parts of the transport chain, including the integration of digital data, but it could also reduce the flexibility and resilience of the same chain. Moreover, vertical integration may create dominant market positions, thus reducing competition with non-integrated competitors, the minute a pivotal component of the supply chain, i.e. the carrier, controls upstream, and/or downstream activities of the chain.

Shipping companies with their own terminals would normally want to use them and avoid using alternatives, even if the latter would make more sense from the perspective of their clients. When Hamburg Süd was purchased by Maersk, several of its services shifted from independent terminals to those operated by A.P. Møller, the parent company of Maersk. Analysis of ship movements in the beginning of 2021 shows that carriers diverted hardly any calls from Los Angeles/Long Beach to other US West Coast ports (ITF/MDST forthcoming). One of the possible explanations could be that several carriers have their own terminals in Los Angeles/Long Beach, but much less so in other West Coast ports.

5 When will shipping decarbonise?

COVID-19 and the lockdowns presented many people with different perspectives on their priorities in life that will likely have long-lasting impacts on issues as varied as work–life balance, tele-working, housing preferences, mobility and engagement with



the natural environment. Governments rallied behind slogans like “building back better”, suggesting that the COVID-19 crisis provided an opportunity to advance on urgent societal issues, most importantly mitigation of climate change.

Disappointingly, however, many policy-makers turned out to be more resistant to change. Within the domain of emissions reductions for international shipping, policy efforts in 2020 and 2021 resulted in the adoption of a compromise short-term measure that would see a 29% increase in GHG emissions by 2030, instead of the 30% that forms part of the baseline scenario. Cruise shipping was kept alive with government credits and state aid, without any conditions on environmental performance. Shipping’s GHG emissions rose by 5% in 2021, reaching a level higher than in 2019 or 2020 (Sporrer 2022).

How much of the record profits of liner shipping companies were dedicated to decarbonising shipping? The 2021 profits of the top ten carries are estimated to amount to USD 160 billion. To put this in perspective, the R&D fund for zero-carbon shipping proposed by shipping organisations would raise USD 5 billion in the course of ten years. A few shipping companies have ordered ships that can run on alternative fuels—which could reduce greenhouse gas emissions—but the intentions of most companies are not in line with the emission reductions that would be needed to respect the Paris Climate Agreement. In addition, the largest container shipping companies acquired airlines, the transport mode with the highest GHG emissions.

Shipping actually has an opportunity, thanks to its global nature, to advance the decarbonisation agenda more than other industries. While in other industries national governments may be inclined to free-ride and demand less from their own companies and consumers, to achieve the global public good of reducing GHG emissions, in maritime transport, instead, a multilateral regime tasked to avoid free-riding for most of international maritime trade is possible. Private sector initiatives, such as the Getting to Zero Coalition, have promoted ambitious decarbonisation goals. There has been a shift in attitude among some key industry stakeholders, now acknowledging the need to a price for carbon that would make alternative fuels competitive.

An ambitious multilateral regulatory and legal framework, enforced globally by flag and port states, is essential to help decarbonise shipping. A transparent and predictable global framework would also provide the right incentives to private sector stakeholders—shipyards, owners, and ports—to invest in the necessary vessels and technologies to achieve an ambitious decarbonisation goal without causing a shortage of supply. As we have seen during the COVID-19 pandemic, shifts in the steep supply and demand curves can easily lead to very high freight rates, and any delay in investments in new capacity risks further delays in getting freight rates back to normal, pre-COVID-19, levels.

6 The articles in this Special Issue

Solutions that help reduce market volatility, improve resilience, and help advance an ambitious decarbonisation agenda all require careful thinking about the governance of our sector. The ongoing maritime supply chain crisis has had the positive effect of



drawing attention to our sector by mainstream media. However, most articles limited their assessment to the short term, often unable to provide a clear analysis of the underlying causes of the global supply chain crisis, frequently pushing the narrative promoted by one particular set of stakeholders. This context presents a special responsibility for researchers in maritime economics: rarely has the analysis of the fundamentals of maritime logistics been more timely or relevant. The present Special Issue brings together a series of articles that address some of the above fundamental questions from different angles.

Stopford identifies two large challenges that the shipping industry has to deal with: decarbonisation and digitalisation. He wonders whether shipping companies are capable of dealing with these challenges, considering that they were not developed to manage change on the scale. He argues that by adapting organisational structures and resources, shipping companies will be crucial in achieving objectives as formulated by governments and international organisations like the International Maritime Organisation (IMO). The reason why Stopford thinks most shipping companies will have difficulties with decarbonisation and digitalisation is that over the last decades, shipping companies have prioritised cost control over commercial and technical innovation, resulting in massive outsourcing and cost minimisation. He argues that this business model leaves little room for governance-related issues, especially innovation and development. Stopford suggests that more symbiotic relations between shipping companies and nation-states could help solving this conundrum. This would allow for “practical goals to be set and funded where appropriate”, but he admits that this is a difficult course to steer because international consistency is a cornerstone of the maritime governance system. He remarks that the windfall profits made by carriers during the maritime logistics crisis in times of the pandemic should be seen as an opportunity for investments in this direction. Stopford reminds us that maritime governance should not be seen exclusively as a process of “imposing regulations from above”, but a major task of governance should be the education and training of skilled people and professional organisations, to extend standards throughout the workforce.

Monios and Wilmsmeier address two governance challenges in shipping: oligopoly and climate change. They argue that some shipping markets do not producing an optimal allocation of resources and that the liner shipping sector in particular is subject to market failure that requires correction. They observe that, during the COVID-19 pandemic, the liner shipping industry reported increasing profits while decreasing service quality. The authors show that liner shipping is characterised by an oligopolistic market structure, risking abuse of market power and reducing service quality. They suggest that this structure is difficult to change because of corporate capture of regulators. The second challenge analysed by Monios and Wilmsmeier is climate change. They suggest that the transition to zero-carbon shipping is likely to be smoother if regulators and policy-makers prioritise the quality rather than the quantity of shipping services. In their view, this means prioritising smaller companies with smaller ships, i.e. a form of container shipping that is less commoditised, transporting fewer low-value goods which would have a smaller market, if the external costs of environmental damage were internalised. A key avenue for future research according to the authors is to investigate how to improve efficiencies of



smaller ships and identify the optimum size of vessel that can combine economies of scale, flexibility of service provision and zero-carbon fuel. The authors propose various policy recommendations to improve competition in liner shipping, including ending exemptions from competition law, reviewing public port investments, and revising public subsidies to link them with clear outcomes such as decarbonisation. They argue that, while there is no global governance body that could perform this task, revision of regulations and subsidies by the European Commission would influence at minimum two of the three major East–West routes and would influence the global market to some degree. They express the hope that the increases of freight rates during the COVID-19 pandemic would finally result in action by regulators. In terms of climate change, Monios and Wilmsmeier encourage policy-makers to stop aiming at continued growth, as this is not consistent with decarbonisation, nor with expected turbulent scenarios. In their view, changing the narrative on growth can complement new thinking on both the commercial and environmental aspects of market failure in maritime transport.

Merk and Teodoro propose (and elaborate on) a range of alternative indicators of industry concentration in liner shipping. They argue that an assessment of industry concentration in this industry underestimates concentration if it does not take consortia and alliances into account. They consider five possible alternative indicators: the market share of consortia and independent operators; the share of consortia exceeding market share thresholds; the industry concentration of consortia; a modified Herfindahl–Hirschman Index that takes consortia into account; and interlinkages between consortia. The authors apply these indicators to demonstrate that concentration in liner shipping is higher than what is customarily calculated by traditional concentration indicators. They argue that the alternative indicators show how consortia help to link carriers that operate in different alliances. According to the authors, consortia between pairs of carriers in different alliances could act as bridges between the three global alliances. They suggest this as one of the main mechanisms that carriers have used to implement their remarkable “capacity management” tactics during the COVID-19 pandemic. Finally, the authors argue that their alternative market concentration indicators—in addition to the conventional ones—can help policy-makers improve scrutiny of competition in liner shipping.

According to the **Fedi, Faury, Rigot-Muller, and Montier** paper (Fedi et al.), one of the key lessons of the COVID-19 crisis is that the time has come to reform maritime alliances. Their analysis shows that rankings of the major ports in Europe did not change due to COVID-19: the three main North European container ports in 2018 were the same in 2020. This was also the case of the three main Mediterranean container ports. From their analysis they conclude that the pandemic has not been a catalyst of a new port hierarchy, but it has instead reinforced the position of the largest ports compared to the medium-sized or small ports. They also argue that the COVID-19 crisis exacerbated the shortcomings of shipping alliances, and their ability to unilaterally impose their decisions, regardless of the consequences for both transport users and ports. The authors suggest that the commercial benefits generated by the so-called ‘technical cooperation agreements’, i.e. alliances, represent a greater benefit to carriers than the simple price-fixing of conferences. They mention that the problem of equipment scarcity raises the question whether ‘scarcity’ was



artificial or actual, and consider some carrier practices to be questionable, notably as regard surcharges, and detention and demurrage charges. According to the authors, states and competition authorities bear responsibility for this situation. For Fedi et al., the existing situation calls into question the relevance of the current business model of liner shipping and its regulatory framework. They are also sceptical on the practical relevance of the current policy framework on competition in liner shipping that remains fragmented. They consider the adoption of a universal legal framework difficult, and recommend greater harmonisation of antitrust practices in container shipping, and definition of a common ‘reading grid’ of alliances in the medium-run. They also favour stronger coordination by competition authorities for a worldwide response to anti-competitive practices. The authors indicate that particular attention should be paid, *inter alia*, to the stable transport capacity offered by shipping lines, the strict respect of schedules, the prohibition of blank sailings, and the respect of transit times. They conclude that COVID-19 has offered us an unprecedented opportunity to change the ‘rules of the game’ in container shipping and that the time has come for a “paradigm shift”.

The paper by **Crotti, Ferrari, and Tei** (Crotti et al.) presents a model for assessing the effects of demand shocks, such as those caused by the pandemic, on the horizontal and vertical integration strategies of carriers. In this model, two scenarios are formulated: one with an integrated terminal, in which the carrier has a stake, and one in which an integrated and non-integrated terminal co-exist in the same port. One insight from this study is that the presence of exclusively integrated port terminals provides incentives for mergers between carriers, only when the carriers’ shareholdings in the terminals are either relatively weak, or relatively strong. These situations result in market equilibria where the merger of carriers generates large profits. The total throughput expands only in the case of significant vertical integration. In the scenario of co-existence of integrated and non-integrated terminals, mergers between carriers are always likely to occur, but the total throughput might decrease due to the merger. The two scenarios provide different results in terms of the impact of demand variations on the incentives to merge. In the first scenario, the largest effect of demand shocks on merger profits occurs in the case of zero or total integration between carrier and terminal. By contrast, in the second scenario, the impact of demand variations on merger profits is high in case carriers hold a small part of the shares in a terminal, while a rather complete integration would imply a lower sensitivity, and therefore weaker merger incentives. The authors show that integration between carriers and terminals might improve the competitive position of the private operators promoting the merger, but that this is often not the case from a *public interest* point of view. The authors suggest that in order to achieve public goals, port authorities should consider monitoring and regulation, to promote an optimal level of service. The authors also hint at the competition concerns that vertically integrated terminals can raise, as well as matters of geopolitics, when state-owned carriers merge with carriers that are integrated with terminals in strategically located areas.

The paper by **Gracia, González-Ramírez, Ascencio, and Mar-Ortiz** (Gracia et al.) assess the governance of Latin American ports. The article finds that high performing ports apply more governance best practices. They define “best governance



practices” as best practices for the internal and external management of port logistics communities. This includes elements such as a formal structure, improvement taskforce and a strategic plan for the port logistics community, priority to sustainability and supply chain integration, outreach efforts to the community, and linkages with public agencies at the national and local level, as well as with other ports in proximity. The aim of their article is to find the link between best governance practices and port performance, defined in terms of port turnaround time, connectivity, throughput, and the score on the World Bank’s Logistics Performance Index (LPI). Using various statistical measures, the authors find that, on average, the state of adoption of governance best practices is greater in high performing ports. They note that also in high performing ports the adoption of governance best practices is low, suggesting potential for further improvement.

7 In lieu of conclusions

Despite the different angles in the collection of articles in this Special Issue, there are convergences in the main findings of the articles. Four of the six articles express concerns related to the state of competition of the container shipping industry. The articles stress different but complementary elements related to the assessment and development of liner shipping competition. For example, Merk and Teodoro demonstrate that the liner industry could be considered more concentrated if alliances and consortia are taken into account in concentration indicators. Crotti et al. show that demand shocks like COVID-19 can act as incentives for further consolidation, especially in certain situations, such as when carriers are highly integrated with terminals. Monios and Wilmsmeier emphasise regulatory capture that has complicated regulatory interventions. In terms of policy measures, the articles stress the need for greater scrutiny by competition authorities and ports, and the need to end shipping-related exemptions from competition law. A sentiment expressed by several authors is that COVID-19 may be a turning point in this respect: the time for reform of maritime alliances has come, as Fedi et al. phrase it.

The need for decarbonising the shipping sector has been expounded in two articles in this Special Issue that both spell out key challenges. Monios and Wilmsmeier take note of the limited progress made to date at the international level towards formulating meaningful emission reduction measures, whereas Stopford is concerned about the capabilities of shipping companies to manage the decarbonisation of their fleets. Recommendations on this matter diverge, with Stopford suggesting closer cooperation of nation-states and shipping companies, whereas Monios and Wilmsmeier imply that the shipping industry has come to terms with “degrowth” concepts. A complementary approach—not specifically focussed on decarbonisation—is provided by Gracia et al. who demonstrate the positive role that good port governance can have on port performance, a finding that could be extended to include decarbonisation.

These articles obviously also raise new questions. While the pandemic might have revealed certain hidden truths, it has also enforced rather than weakened existing systemic features and the power relations embedded in them. Imagining alternative



futures is one thing, analysing the pathways to these alternatives is quite another. If the pandemic has shown that the time is ripe for discussion on “paradigm shifts”, it also demonstrates that quite some effort might be needed to reflect on the political economy of transformations in maritime transport.

We hope this brief editorial introduction sets the scene to the six outstanding contributions that follow on the broad issues and current challenges of maritime governance. Over the years, the development of our ‘maritime ecosystem’ has never offered us a dull moment, particularly these days when challenges such as decarbonisation and digitalisation often leave us gaping and in search of answers. We hope this MEL special issue has put forward some of these answers or, if not, at least a new ‘ship of thoughts’ has departed towards a more visible destination. This Special Issue, we hope, is just the port of departure.

Olaf in Paris, Jan in Geneva, Hercules in Rotterdam

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