European Commission Evaluation of the Consortia Block Exemption Regulation

Submission by World Shipping Council

4 November 2022

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Annex Report by Charles River Associates (CRA), 4 November 2022, *Liner shipping consortia: Assessment of freight rate developments, Prepared for World Shipping Council*

I. Introduction

1. The European Commission is currently evaluating the EU Consortia Block Exemption Regulation ("**CBER**")[1] and weighing stakeholder feedback on whether the CBER should be renewed ("**Evaluation**"), including submissions made in response to the Commission's "Call for Evidence" (the "**Feedback**").[2] In the present submission, the World Shipping Council ("**WSC**") will address certain themes, arguments and factual issues that emerge from the Feedback. In addition, we will address certain topics, related to consortia and the CBER, that have been debated in other contexts (*e.g.*, industry reports and trade press), even if they do not explicitly feature in the Feedback (as we assume that the Commission will weigh all potentially relevant information that comes to its attention).[3] Where appropriate, WSC will refer to its own submission of 3 October 2022 in response to the Call for Evidence ("**WSC Paper**").[4]

2. First, we will address topics that concern the functioning, and competitiveness, of the liner shipping industry and consortia, namely: (i) market concentration; (ii) cross-consortia membership; (iii) the notion that consortia might operate as a barrier to entry; (iv) the impact of consortia on prices; and (v) vertical integration.

3. Second, we will address topics that concern the competition law framework related to consortia, namely: (i) the need for sector-specific guidance; (ii) potential amendments to the CBER; and (iii) the long-term perspective which should guide the Evaluation.

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[1] Commission Regulation (EC) No 906/2009 of 28 September 2009 on the application of Article 81(3) of the Treaty to certain categories of agreements, decisions and concerted practices between liner shipping companies (consortia), OJ (2009) L 256/31.

[2] Ref. Ares(2022)5649105. The submissions received by the Commission are available here: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13519-EU-competition-law-evaluation-of-the-Consortia-Block-Exemption-Regulation/feedback_en?p_id=31369245

[3] In certain instances, WSC has referenced (and included weblinks for) sources that require a paid subscription to access content (*e.g.*, sector-focussed media outlets). If the Commission does not have access to such sources, WSC would be happy to submit the relevant articles upon request

[4] Submission of 3 October 2022 by WSC, the International Chamber of Shipping ("**ICS**") and the Asian Shipowners' Association ("**ASA**"), available here: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13519-EU-competition-law-evaluation-of-the-Consortia-Block-Exemption-Regulation/F3347045_en

II. Industry characteristics and trends

A. Market concentration

4. Numerous stakeholders that oppose a renewal of the CBER claim that market concentration in the liner shipping industry has increased considerably in recent years.[5] Whilst such claims were understandable during the prior evaluation (due to certain mergers and acquisitions which took place during the period 2014-2017),[6] they are unfounded with respect to the current Evaluation. Since the Commission last prolonged the CBER in 2020, there has not been a material change in concentration in the liner shipping industry, as evidenced by the following.

5. First, based on global capacity share/ Herfindahl-Hirschman Index ("**HHI**") data, compiled and presented by RBB Economics ("**RBB**") in the table below, concentration levels have remained stable throughout the period 2018-2022.

Table 1

	Share			Number of carriers			
Period	**Top 10**	**Top 5**	**Top 3**	**Above 10%**	**Above 5%**	**Above 1%**	**HHI**
Nov 2018	85.6%	66.4%	46.6%	4	7	12	1051
Mar 2019	85.6%	66.3%	46.6%	4	7	12	1046
Oct 2022	85.9%	65.7%	47.5%	4	7	12	1043

Source: Alphaliner Top 100 database, 26 October 2022[7]

6. Second, the Commission has not issued a single merger decision since the prior evaluation which concerned (i) a concentration between two or more carriers that

[5] See, *e.g.*, submissions made by the German Federal Competition Authority (Bundeskartellamt), the European Association for Forwarding, Transport, Logistics and Customs Services ("**CLECAT**"), the Italian Federation of International Freight Forwarding Companies ("**FEDESPEDI**"), the Netherlands Association for Forwarding and Logistics ("**Fenex**"), FoodDrinkEurope (an organisation representing Europe's food and drink industry), the Hamburg Exporters' Association ("**Verein Hamburger Exporteure**"), and the Italian Federation of Transport Workers ("**FILT-CGIL**").

[6] See, *e.g.*, Commission Staff Working Document, Evaluation of the Commission Regulation (EC) No 906/2009 of 28 September 2009 on the application of Article 81(3) of the Treaty to certain categories of agreements, decisions

and concerted practices between liner shipping companies (consortia), SWD(2019) 411 final ("**2019 SWD**"), page 12, which references six Commission merger decisions involving carriers, all of which were issued between 2014-2017. Available at https://ec.europa.eu/competition/consultations/2018_consortia/1_en_dts_evaluation.pdf

[7] ***RBB Explanatory Note***: Table 1 illustrates the global concentration measures for the top 100 carriers in November 2018, March 2019 and October 2022. Since the data only provides capacities for the top 100 carriers in the market, it does not allow for the identification of new entry or exit on the market. Also, RBB estimates that the top 100 carriers represent 98.5% of total capacity in 2022, meaning that the concentration figures provided in Table 1 slightly overstate the actual concentration.

(ii) involved any material overlap (*i.e.*, horizontally affected markets) in deep-sea or short-sea container liner shipping services. To the best knowledge of WSC, the most recent such decision was issued on 22 October 2018.[8] Indeed, at least one stakeholder which is opposed to a renewal of the CBER, the Global Shippers Forum ("**GSF**"), has acknowledged that "*[t]he container shipping market has experienced very little consolidation since 2020 […] The structure and composition of the three global shipping alliances has remained stable […] [and] the stability of the liner shipping sector is notable compared to the consolidation and restructuring that has taken place in other global industries*".[9]

7. Accordingly, the allegations of an increase in concentration do not correspond with market realities. Whilst the legal relevance of the alleged increase in concentration to the review of the CBER is not clearly articulated, it cannot in any event serve as a reason for non-renewal of the CBER.

8. WSC would also use the present opportunity to respond to a claim, concerning market concentration, included in a July 2022 report of the International Transport Forum ("**ITF**") ("**ITF Report**").[10] According to the authors of the ITF report, the well-established methodology for measuring concentration – the HHI – is not fit for purpose vis-à-vis container shipping. They claim that a so-called modified HHI ("**MHHI**") should be used instead to take account of the "*cross-company ownership in competing companies*".[11] This proposal should be rejected for several reasons.

9. First, the suggestion to apply an MHHI is based on a fundamentally false premise, namely that consortium agreements create a situation of "common ownership". Situations where competing undertakings own stakes in one another can (in certain circumstances) be theoretically problematic because there might be a dampening of competition. The theory is presumably that any loss of business by Company A in

[8] Case M.9016 - *CMA CGM / CONTAINER FINANCE*, which involved the acquisition by CMA CGM of Container Finance (and thereby its subsidiary Containerships, which provided short-sea container shipping services). WSC notes that the Commission issued a decision earlier this year in Case M.10559 - *A P MOELLER-MAERSK / SENATOR INTERNATIONAL* (29 March 2022). However, that decision did not involve horizontal overlaps for deep-sea or short-sea container liner shipping services.

[9] GSF submission, page 15 (emphasis added).

[10] ITF, *Performance of Maritime Logistics*, available at https://www.itf-oecd.org/performance-maritime-logistics

[11] ITF Report, page 33.

favour of Company B is partially compensated by Company A's right, as a shareholder, to share in the profits of Company B. However, consortia do not entail, and cannot be equated with, one carrier obtaining a stake in another (such that the former shares in the profits of the latter). Consortia members are not compensated for unused slots, and hence have a strong incentive to compete with one another to maximise the utilisation of their allocated capacity in the vessel. Thus, the very notion of applying the MHHI to determine concentration in the liner shipping sector is flawed. As explained in the WSC Paper, by reference to the Commission's merger decisional practice, there is vigorous price competition between consortium members.[12]

10. Second, the way in which the ITF Report characterises the relationship between consortia and market concentration is directly at odds with the findings of the U.S. Federal Maritime Commission ("**FMC**") in its Fact Finding Investigation 29 ("**FF29**").[13] The FMC specifically addressed this notion and explained that "*market concentration results from mergers, not from the market effects of collaborative agreements among competitors*".[14]

11. Third, the authors of the ITF Report (Olaf Merk of the ITF and Antonella Teodoro of MDS Transmodal) do not cite any third-party sources to support the appropriateness of applying the MHHI to liner shipping. Instead, the authors cite themselves, as illustrated in the following passage:

> "*Consortia could be thus be* [sic] *seen as joint ventures of two or more container carriers that pool ships to provide a jointly operated shipping service (Merk and Teodoro, 2022) […] O'Brien and Salop (2000) generalised this modification, while Merk and Teodoro (2022) applied the MHHI to container shipping. Their analysis shows the increased relevance of consortia when determining industry market concentration of liner shipping.*"[15]

12. Finally, the Feedback reveals that certain stakeholders (not only those in favour of CBER renewal) would fundamentally disagree with the notion that consortia entail common ownership amongst carriers. For instance, the European Sea Ports

[12] WSC Paper, para. 35(a).

[13] FMC Fact Finding Investigation 29, Final Report, *Effects of the COVID-19 Pandemic on the U.S. International Ocean Supply Chain: Stakeholder Engagement and Possible Violations of 46 U.S.C. § 41102(c)*, May 31, 2022, available at https://www.fmc.gov/wp-content/uploads/2022/06/FactFinding29FinalReport.pdf.

[14] FF29, page 42 (emphasis added).

[15] ITF Report, pages 32-33 (emphasis added). We also note that the wording here is potentially misleading, as the Authors refer to themselves at one point in the third person (*i.e.*, "*Their analysis*…").

Organisation ("**ESPO**") has submitted that "*alliances are to be considered as a preferred alternative to further consolidation in the sector*".[16]

B. Cross-consortia membership

13. Certain stakeholders that oppose CBER renewal – most notably the German Federal Competition Authority, Bundeskartellamt ("**BKartA**")[17] and CLECAT[18] – consider that the CBER is no longer fit for purpose due to (*inter alia*) the number of "cross-alliance consortia". According to these stakeholders, cross-consortia membership results in a "*thicket of cooperation agreements*"[19] which is problematic because the "*CBER evaluates each vessel sharing agreement (VSA) route-by-route and remains agnostic towards cooperation agreements on other routes*"[20] whereas the "*cumulative effect of consortia and alliances should be taken into account*".[21] CLECAT argues that the "*proliferation of cross-memberships between consortia*" has resulted in reduced competition.[22]

14. The above claims related to cross-consortia membership are flawed for the following reasons.

15. First, under Article 5(2) of the CBER, the market share of a consortium member is established by calculating the "*total volumes of goods carried by [that member] in the relevant market […] irrespective of whether those volumes are carried: (a) within the consortium in question; (b) within another consortium to which the member is a party; or (c) outside a consortium on the member's own or on third party vessels*".[23] Thus, the market share methodology prescribed in the CBER already takes into account cross-consortia membership in the relevant market at issue. The insinuation that a carrier's

[16] ESPO submission, page 1 (emphasis added), available at https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13519-EU-competition-law-evaluation-of-the-Consortia-Block-Exemption-Regulation/F3347036_en.

[17] The BKartA submission is available here https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13519-EU-competition-law-evaluation-of-the-Consortia-Block-Exemption-Regulation/F3346713_en.

[18] The CLECAT submission is available here https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13519-EU-competition-law-evaluation-of-the-Consortia-Block-Exemption-Regulation/F3347063_en.

[19] BKartA submission, pages 1 and 2.

[20] BKartA submission, page 1.

[21] CLECAT submission, page 1.

[22] CLECAT submission, page 8.

[23] CBER, Article 5(2) (emphasis added).

membership of a consortium in one relevant market has a negative impact on the functioning of competition in another relevant market should be rejected. To the extent that CLECAT has attempted to articulate its argument in this context, its claims are vague, unsupported by evidence and devoid of any credible competition law theory of harm.[24] Furthermore, whilst CLECAT seeks to rely on the ITF Report to support its arguments,[25] that reliance is misplaced for the reasons explained above at paras. 9-12.

16. Second, the participation by carriers in multiple consortia is not a recent phenomenon, but rather a long-standing feature of the liner shipping industry. In other words, this is not a new development which has occurred since the Commission's prior evaluation of the CBER. The stakeholders referenced above have not explained why the existence of cross-consortia membership would weigh against a renewal of the CBER in the current Evaluation when no such issues were identified during the prior evaluation (even though the Commission was clearly aware, at that time, of the "*complex network of cross-membership between consortia*").[26]

C. Consortia are not a barrier to entry

17. The WSC Paper explained the numerous efficiency benefits associated with consortia, such as the ability of carriers: (i) to offer services at lower costs; (ii) to offer a higher frequency of sailings; and (iii) to reach a greater number and greater variety of ports.[27] In light of those benefits, the Commission might be inclined to examine, as part of the Evaluation, the possibility that consortia constitute a barrier to entry; in other words, the theory that membership in a consortium is a pre-requisite to enter and compete effectively on a given trade or that the prevalence of consortia might somehow otherwise impede entry by smaller carriers. WSC would urge the Commission to dismiss such theories on two grounds.

18. First, in the report prepared by RBB, which was annexed to the WSC Paper ("**RBB Report**"), RBB demonstrated that, during the period 2021-2022, at least seven carriers

[24] CLECAT merely claims that "*consortia between carriers from different alliances create links between the three global alliances, which reduce competition even further. The interlinkages between consortia ultimately enable a few large carriers to gain vast market power and influence vessel capacity in a way that best suits their business objectives*", CLECAT submission, page 8 (emphasis added).

[25] CLECAT submission, fn. 14.

[26] 2019 SWD, fn. 79.

[27] See WSC Paper, paras. 70-73.

successfully entered Transpacific, Asia-Europe and even intra Europe trades.[28] These carriers established their presence in the relevant markets by offering independent services; thus, their entry was not dependent on joining existing, or establishing new, consortia.

19. Second, far from constituting an entry barrier for smaller carriers, consortia in fact facilitate entry by allowing smaller carriers to enter markets that they otherwise might not be able to enter, due to insufficient assets. The Commission recognized this in 2019, finding that "*consortia allow their members to pool their vessels together and provide services […] that carriers would not be able to provide on their own means*".[29] Thus, to the extent that barriers to entry exist for the provision of liner shipping services, it is the assets and resources required to operate a regular scheduled service that constitute a potential barrier whilst the option of participating in a consortium is a means to overcome that potential barrier. If carriers were discouraged from participating in consortia by the non-renewal of the CBER, this would significantly increase barriers to entry and undermine the economies of scale and scope that consortia enable carriers to achieve.

D. Impact of consortia on prices

20. The WSC Paper foresaw that some stakeholders would point to the higher freight rates witnessed during the pandemic as a factor weighing against renewal of the CBER.[30] This prediction has indeed been confirmed by the Feedback, with rate increases being a feature of multiple submissions.

21. The WSC Paper already discussed at length the exceptional set of circumstances which contributed to rate increases during the pandemic and why those increases cannot be attributed to consortia, let alone the CBER. Since submitting the WSC Paper, WSC has commissioned an expert economic report to further investigate this topic. The report, prepared by Charles River Associates ("**CRA**") ("**CRA Report**") is attached as an **Annex** below.

[28] See RBB Report, pages 19-20, in particular Table 8.
[29] 2019 SWD, Section 5.3.4, page 27 (emphasis added).
[30] WSC Paper, para. 71.

22. In the sections below, we provide a high-level summary of the CRA Report, followed by some observations regarding the evolution of prices prior to the COVID-19 pandemic and recent trends.

1. Summary of the CRA Report

23. WSC asked CRA to identify, by means of an economic analysis, the main factors that were likely responsible for the increase in freight rates during the pandemic. We briefly summarise CRA's analysis below, but trust that the Commission will review the full analysis (provided in the Annex) which includes a presentation of the relevant underlying data.

24. CRA begins it assessment by finding that freight rates on all European major trade routes increased from the end of 2020 through 2021.[31] CRA then examines the wide range of factors that could in theory have influenced shipping rates during that period. In this context, CRA distinguishes between five categories of variables: (i) measures of consortia presence;[32] (ii) cost variables; (iii) demand variables; (iv) supply variables; and (v) combined demand and supply variables.[33]

25. Based on its detailed examination of the variables referenced above, CRA draws the following conclusions.

26. First, CRA finds no evidence indicating that consortia presence caused the increase in freight rates.[34]

    a. CRA's measures of consortia presence remained relatively constant while freight rates surged.

    b. When CRA compares freight rate hikes and consortia concentration "pre-" and "post-pandemic" by trade-route, CRA finds no visible relationship indicating that freight rates increased more on routes with higher consortia presence.

[31] CRA Report, Section 2.2.
[32] CRA explains that it relies on two distinct metrics to measure the degree of consortia presence on the routes. See CRA Report, para. 41.
[33] CRA Report, Section 3.
[34] CRA Report, Section 3.1 and econometric analysis in Section 4.

27. Second, CRA finds strong evidence that freight rate increases were the result of changes in exogenous factors.[35] Specifically:

a. Bunker costs (the main variable cost for carriers) started to increase sharply shortly before the surge in freight rates.

b. Demand for shipping increased.

c. There were significant supply frictions as the percentage of inoperative capacity due to vessel delays increased significantly (often induced by port closures, port congestions, or labour shortages). That increase in "lost capacity" was unrelated to consortia presence on the specific routes.

d. Based on combined supply and demand factors, the effective utilisation rate increased, because of a decrease in the adjusted capacity (*i.e.*, capacity adjusted for capacity absorption due to port/inland delays) and an increase in volumes/demand. CRA notes that liner shipping companies were unable to increase capacity since all available vessels were utilised and there was a lack of new shipping containers.[36]

28. CRA ultimately concludes that, based on the evidence, freight rates increased primarily due to external factors such as increased bunker costs, increased demand, the pandemic, and reduced effective capacity relative to demand. CRA finds that the presence of consortia on routes does not appear to have played a role in freight rate increases.[37]

2. Price evolution prior to COVID-19

29. Leaving aside the era of COVID-19, all available evidence demonstrates a link between the prevalence of consortia and consistently decreasing shipping rates. On this point, WSC would refer in particular to the data (reproduced below) that it submitted to the Commission during the prior evaluation,[38] concerning the development of pricing

[35] CRA Report, Sections 3.2-3.5 and econometric analysis in Section 4.

[36] CRA Report, para. 70.

[37] CRA Report, para. 16.

[38] See Submission of 20 December 2018 by WSC, the European Community Shipowners' Associations ("**ECSA**"), ICS, and ASA, Annex 1, *Report by RBB Economics, 19 December 2018, Response to the EC liner shipping BER consultation*, pages 10-11, available here https://ec.europa.eu/competition/consultations/2018_consortia/wsc_ecsa_ics_asa.pdf.

between Q1 2013 and Q2 2018 with and without bunker surcharges ("**BAF**"). This data, extracted from Drewry Maritime Research, showed that:

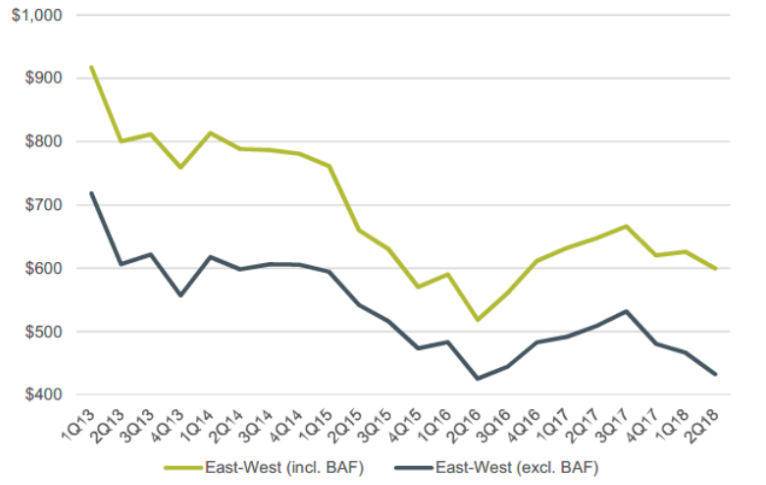
a. Global average quarterly container freight rates dropped by over 30% during the period examined.

Figure 2: Global average quarterly container freight rates (USD/TEU)

Source: Drewry Maritime Research (www.drewry.co.uk)

b. Average freight rates on the East-West routes excluding the BAF decreased by almost 40%, whilst rates including the BAF decreased by over 30%, during the period examined.

Figure 3: East-West average quarterly container freight rates (USD/TEU)



Source: Drewry Maritime Research (www.drewry.co.uk)

30. WSC would also recall the Commission's findings in the 2019 SWD, based on Drewry Maritime Research data submitted by WSC, that "*prices for customers of the liner*

shipping industry have in fact diminished in recent years alongside costs to carriers" and "*at Q3 2018 both revenues and costs per TEU remained below Q1 2013, with revenues per TEU being 23% lower compared to Q1 2013 and operating costs per TEU being 25% lower*".[39] The Commission confirmed that this view of the price evolution was shared by industry analysts, such as Alphaliner.[40]

3. Recent trends

31. Recent market data indicates that the exceptional supply and demand dynamics related to COVID-19, which led to heightened freight rates and a decline in reliability, are normalising.

32. **Rates**. Freight rates have fallen significantly and steadily in recent months. For instance, the Journal of Commerce Online ("**JOC**") recently noted that "*Asia-North Europe spot rates reached their record high on Jan. 1 [2022] at $8,367/TEU and are down 60 percent at $3,315/TEU, according to rate benchmarking platform Xeneta"*.[41] Lloyd's List has also reported on the "*pace of decline in freight rates*",[42] noting that:

a. "*[s]lack demand has been reported on both transpacific and China-Europe trades, where rates are expected to continue lurching lower amid easing congestion*";[43]

b. the "*SCFI comprehensive index has now fallen 96% since its peak in January, with rates on some trade lanes now a third of where they were at the top of the market*";[44] and

[39] 2019 SWD, Section 5.3.5.1, pages 28-29.

[40] 2019 SWD, Section 5.3.5.1, page 29.

[41] JOC, *Glut of new ocean tonnage inbound as global demand weakens*, 7 October 2022, available at https://www.joc.com/maritime-news/container-lines/2m-alliance/glut-new-ocean-tonnage-inbound-global-demand-weakens_20221007.html?utm_medium=email&utm_campaign=CL_JOC%20Breakbulk%2010/18/22%20__e-production_E-146796_TF_1018_0800&utm_source=Eloqua.

[42] Lloyd's List, *Liner shipping carriers enter another price war*, 17 October 2022, available at https://lloydslist.maritimeintelligence.informa.com/LL1142607/Liner-shipping-carriers-enter-another-price-war

[43] Lloyd's List, *Shipping rates yet to find floor as container throughput in China dips*, 12 October 2022, available at https://lloydslist.maritimeintelligence.informa.com/LL1142562/Shipping-rates-yet-to-find-floor-as-container-throughput-in-China-dips

[44] SCFI refers to the Shanghai Containerised Freight Index. See Lloyd's List, *Box freight rate decline picks up pace again*, 28 October 2022, available at https://lloydslist.maritimeintelligence.informa.com/LL1142735/Box-freight-rate-decline-picks-up-pace-again

c. according to Sea Intelligence, "*the slump in spot markets has already spread to contract rates*".[45]

33. **Reliability**. According to a recent analysis carried out by Sea Intelligence, there have been significant improvements in 2022 with respect to schedule reliability and vessel delays.[46] Sea Intelligence examined the schedule reliability of "*more than 60 named carriers across 34 different trade lanes, based on more than 12,000 monthly vessel arrivals*"[47] and found that:

a. "*Schedule reliability recorded a relatively sharp improvement in June [2022], and then again in August [2022]. Even with a slight decline in September [2022], schedule reliability was firmly above the 2021 levels, and on par to cross the 2020 levels later this year*".[48]

b. "*2022-Q2 was an improvement with respect to schedule reliability and vessels delays, and 2022-Q3 builds on that with further improvements in global schedule reliability, within both metrics of global average delay, and across-the-board improvement for the top-14 carriers, as well as for the major East/West trade lanes*".[49]

E. Vertical integration

34. Numerous stakeholders have claimed that the CBER should not be renewed due to (*inter alia*) the degree of vertical integration between carriers and other elements of the maritime supply chain.[50] On this point, WSC would respectfully refer to its comments in the WSC Paper explaining why potential issues related to vertical integration (if any) should not feature in the Commission's decision-making on whether to renew the

[45] Lloyd's List, *Liner shipping carriers enter another price war*, 17 October 2022, available at https://lloydslist.maritimeintelligence.informa.com/LL1142607/Liner-shipping-carriers-enter-another-price-war

[46] Sea-Intelligence Sunday Spotlight, October 30, 2022 – Issue 588, Review of schedule reliability in 2022-Q3, pages 8-15 ("**Sea Intelligence Reliability Analysis**").

[47] Sea Intelligence Reliability Analysis, page 8.

[48] Sea Intelligence Reliability Analysis, page 8 (emphasis added).

[49] Sea Intelligence Reliability Analysis, page 15 (emphasis added).

[50] See submissions made by: CLECAT, FEDESPEDI, the Finnish Freight Forwarding and Logistics Association ("**FIFFLA**"), Fenex, the European Barge Union ("**EBU**"), the South East European Freight Forwarders Association ("**SEEFF**") Lüders & Stange KG, the Italian Union of Transport and Services Workers ("**UILTRASPORTI**"), the European Transport Workers' Federation ("**ETF**"), Estonian Seamen's Independent Union, Vereinte Dienstleistungs-gewerkschaft ("**ver.di**"), National Section of Port Workers NSZZ Solidarność.

CBER.[51] In any event, WSC would note the following recent comments of freight forwarders on the topic of vertical integration by carriers:

a. The Chief Financial Officer of the global transport and logistics company Kuehne + Nagel was quoted as saying "*I do not see any effect coming from the vertical integration in some of our liner competitors at this point*".[52]

b. Similarly, the Chief Operating Officer of the global transport and logistics company DSV reportedly stated that although "*some shippers had gone directly to the carriers […] he was seeing cargo owners moving back to forwarders*". He was quoted as saying that: "*We are not concerned about the competitive landscape we are in […] We trust our asset-light business model, and we are confident also about being able to outgrow the market going forward*".[53]

III. Competition law framework related to consortia

A. Need for sector-specific guidance

35. When discussing the importance of the CBER, the WSC Paper explained how the CBER reduces compliance costs for carriers (in turn, allowing carriers to be more agile in response to market changes) and why it is essential for liner shipping consortia to have sector-specific guidance.[54] Based on the Feedback, it is clear that many different stakeholders – including those opposed to a renewal of the CBER – agree with WSC that sector-specific guidance is required (*i.e.*, that other sources of available guidance, such as the Commission's Horizontal Guidelines,[55] do not provide adequate guidance in relation to liner shipping consortia).[56]

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[51] WSC Paper, para. 23.

[52] Comments of Markus Blanka-Graff of Kuehne + Nagel, quoted by the JOC, *Shippers turning to spot market as demand, rates weaken: K+N*, 27 October 2022, available at https://www.joc.com/international-logistics/logistics-providers/dsv/shippers-turning-spot-market-demand-rates-weaken-kn_20221027.html?utm_source=Eloqua&utm_medium=email&utm_campaign=CL_JOC%20Daily%2010/28/22%20SUBSCRIBER_PC015255_e-production_E-147357_KB_1028_0617.

[53] Comments of Jens Lund, quoted by the JOC in the article cited at fn. 52 above.

[54] WSC Paper, Section VI, paras. 76-106.

[55] Communication from the Commission, Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements, OJ (2011) C 11/1.

[56] See submissions made by: CLECAT, FEDESPEDI, FIFFLA, Fenex, Verband Deutscher Reeder e.V. ("**VDR**"), EBU, Bundesverband Spedition und Logistik e.V. ("**DSLV**"), the Bulgarian Association for Freight Forwarding, Transport and Logistic ("**NSBS**"), the Royal Dutch Barge Association (Koninklijke Binnenvaart Nederland, "**KBN**"), Verband der Chemischen Industrie ("**VCI**"), EuroCommerce (a European organisation representing the retail and wholesale sector), Bundesverband der Deutschen Industrie e.V. ("**BDI**"), and ESPO.

36. For instance, at least five stakeholders consider that the Commission should not renew the CBER but should instead adopt new sector-specific guidelines:

a. According to CLECAT: *"The CBER should be replaced by sector-specific guidelines to ensure that the competition law framework for vessel sharing agreements is transparent, enforceable, and open to scrutiny at times of market stress*".[57]

b. FEDESPEDI calls on the Commission "*not to renew the CBER, replacing it, instead, by sector-specific guidelines to ensure that the competition law framework for vessel sharing agreements is transparent and enforceable*".[58]

c. According to both Fenex and FIFFLA: "*The CBER should be replaced by sector-specific guidelines to ensure that all stakeholders have legal clarity on the parameters of the future regime*".[59]

d. The EBU calls on the Commission "*to expire the CBER and encourage the development of specific guidelines for this sector to ensure that the competition law framework for vessel sharing agreements is transparent, enforceable and open to scrutiny at times of market stress"*.[60]

37. The above submissions, advocating the need for *more* – not less – guidance on the application of EU competition law to consortia, confirm the position of WSC that sector-specific guidance is essential; they also confirm that the Commission's findings in 2019 remain valid regarding the benefits of guidance that "*employs industry-specific terminology that is easily understandable to industry participants*".[61] In this context, WSC would also highlight the submission made by ESPO. Whilst ESPO remains neutral on the question of renewal or non-renewal of the CBER, it makes clear that "*the absence of the [CBER] could mean the absence of guidance that is given in the current regulation - guidance that is helpful for members of all alliances, as well as for the*

[57] CLECAT submission, pages 1-2 (emphasis added).
[58] See the opening para. of the FEDESPEDI feedback (emphasis added).
[59] Fenex submission, page 1 (emphasis added); see the concluding para. of the FIFFLA feedback (emphasis added).
[60] EBU submission, page 4 (emphasis added).
[61] See WSC Paper, para. 85 referring to the 2019 SWD, Section 5.1, page 17.

other stakeholders […] conditions and guidance, as given in the Consortia Regulation should exist for all consortia agreements".[62]

38. Importantly, the submissions referenced above at para. 36 also demonstrate that, for certain stakeholders seeking the abolition of the CBER, a decision by the Commission to simply not renew the CBER will not be a satisfactory outcome; such a decision would need to be accompanied by a Commission initiative to publish new sector-specific guidance (which presumably would need to be in place by 25 April 2024). WSC cannot see any merit or rationale in such an approach. For the reasons explained in the WSC Paper, the CBER remains fit for purpose for those stakeholders that actually rely upon it as part of their EU competition law compliance (*i.e.*, the carriers). Moreover, the task of preparing and consulting on new sector-specific guidelines would be burdensome and time-consuming for the Commission.

B. Potential amendments to the legal framework

39. Several stakeholders have urged the Commission to consider amendments to the CBER and/or other legislative changes. For instance:

a. GSF "*seeks to preserve the benefits [of consortia] but to achieve them through a new legal mechanism, to be developed and agreed, which is more transparent, better targeted, and more easily enforced than the current arrangements*".[63] Alternatively, if the Commission decides to renew the CBER, GSF proposes an amendment to the CBER that would oblige consortium members to make formal notifications of market share data to the Commission.[64]

b. evofenedex recommends having "*DG Move function as [a] specialized agency, similar to the FMC in the US*".[65]

c. Zentralverband der deutschen Seehafenbetriebe e.V. ("**ZDS**") proposes an array of amendments to the CBER, including but not limited to measures that would oblige consortium members to: (i) publish their antitrust self-assessments; and (ii) consult

[62] ESPO submission, pages 1-2 (emphasis added).
[63] GSF submission, Section 5, page 6 (emphasis added).
[64] GSF submission, Section 6, page 6.
[65] evofenedex submission, page 3.

their customers and service providers and report to the Commission on those consultations.[66]

d. VCI urges the Commission to lower the CBER market share threshold to 20% and to impose reporting obligations on consortia that are exempted under the CBER.[67]

e. BDI suggests that the CBER market share threshold should be "*significantly lowered*" and that uniform reporting and transparency obligations should be introduced.[68]

f. The Hamburg Exporters' Association urges the Commission (in the event that it decides to renew the CBER) to establish a European complaints body for customers of shipping companies and to empower that body to award lump sum compensation for aggrieved customers.[69]

g. BKartA considers that the largest carriers should no longer benefit from the CBER's safe harbour. BKartA therefore proposes (in the event that the Commission decides to renew the CBER) the introduction of a worldwide fleet capacity limit for a carrier to benefit from the CBER.[70]

40. The above list is a non-comprehensive overview of the patchwork of proposals that have been submitted to the Commission. WSC would urge the Commission to reject such proposals on one or more of the following grounds.

a. Certain proposals go beyond the remit of the Evaluation (*e.g.*, the proposals to create new bodies or modify responsibilities of existing bodies).[71]

b. Certain proposals are unworkably vague (*e.g.*, the proposal for a "*new legal mechanism, to be developed and agreed*").[72]

[66] ZDS submission, pages 12-13.
[67] VCI submission, page 1.
[68] BDI submission, pages 7-8.
[69] See the concluding para. of the Verein Hamburger Exporteure feedback.
[70] BKartA submission, page 6.
[71] See paras. 39.b and 39.f above.
[72] See para. 39.a above.

c. Certain proposals are inconsistent with fundamental principles of EU law (*e.g.*, the proposed obligation to publish antitrust self-assessments).[73]

d. Certain proposals would impose burdensome requirements on both carriers and the Commission, the justification for which has not been properly explained (*e.g.*, the notification and reporting requirements).[74]

41. Regarding the proposals to lower the CBER market share threshold,[75] the stakeholders behind such proposals have failed to explain why the existing 30% market share threshold is not fit for purpose. Furthermore, if the Commission were to reduce the market share threshold, this would merely reduce the benefits and relevance of the CBER; indeed, many of the concerns expressed by WSC regarding non-renewal of the CBER would apply to those consortia that would fall out of its scope under a reduced threshold.

42. Regarding the proposal to introduce a worldwide fleet capacity limit for carriers to benefit from the CBER,[76] this proposal is misguided. Carriers and consumers benefit from the efficiencies of vessel sharing (which is facilitated by the CBER) regardless of the individual size of the carriers that are members of the consortium. For instance, suppose Consortium A has three members each with a 10% market share, and Consortium B has two members, one with a market share of 25% ("**Large Carrier**") and the other with a market share of 5% ("**Small Carrier**"). Both of these consortia deliver benefits and efficiencies to the carriers and their customers. Assuming, however, that the Large Carrier would exceed the proposed worldwide fleet capacity limit (thus opting to discontinue its participation in Consortium B), this would have a detrimental impact on the Small Carrier. The Small Carrier would be denied the benefits of economies of scale and scope that sharing space and services with the Large Carrier would otherwise provide.

[73] See para. 39.c above.
[74] See paras. 39.a, 39.c, 39.d, 39.e above.
[75] See paras. 39.d and 39.e above.
[76] See para. 39.g above.

43. In light of the above, WSC respectfully reiterates its position that the Commission should extend the period of application of the CBER without amending any other provisions of the CBER.

C. Long-term perspective

44. As a final observation, WSC would note that the CBER is a vital compliance tool for liner shipping consortia which has functioned well – and served consumers well (see, *e.g.*, paras. 29-30 above) – for the last 27 years. We would urge the Commission to keep this fact front of mind throughout the Evaluation. The anomalous and unprecedented market developments associated with the pandemic should not unduly influence the Commission's decision, especially considering that the ramifications of that decision may endure long after the exceptional market circumstances have fully abated. Indeed, as demonstrated above at paras. 31-33, service improvements and declining freight rates are already evident. Thus, WSC respectfully asks that the Commission take a long-term view of the issues at stake.

IV. Conclusion

45. For all of the above reasons, and those already submitted in the WSC Paper, WSC respectfully requests that the Commission extend the period of application of the CBER without amending any other provisions of the CBER. WSC remains at the Commission's disposal for any further dialogue related to the Evaluation and would be happy to answer any questions that the Commission might have in relation to the present submission and/or the WSC Paper.

SCHEDULE OF ANNEXES

Annex Report by Charles River Associates (CRA), 4 November 2022, *Liner shipping consortia: Assessment of freight rate developments, Prepared for World Shipping Council*

ANNEX

Report by Charles River Associates (CRA), 4 November 2022, *Liner shipping consortia: Assessment of freight rate developments, Prepared for World Shipping Council*

Liner shipping consortia: Assessment of freight rate developments

Prepared for World Shipping Council

Prepared for

World Shipping Council

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1. INTRODUCTION AND SUMMARY OF MAIN RESULTS

1.1. Context of the study

1. The Consortia Block Exemption Regulation (CBER or Consortia BER)[1] exempts from the application of Article 101(1) of the Treaty on the Functioning of the European Union ("TFEU") cooperation between maritime liner carriers to provide joint services (consortia) under certain conditions in accordance with Article 101(3) TFEU.

2. The CBER notably allows carriers to jointly operate liner shipping services and engage in certain types of operational cooperation leading to economies of scale and a better utilisation of the space on vessels. Such operational cooperation cannot include price-fixing, limiting capacity, or market-sharing.

3. EU law generally bans agreements between companies that restrict competition. The economic motivation underlying the CBER is that a joint operation of liner shipping can lead to better market outcomes than without such cooperation agreements. The Commission is assessing whether to renew the CBER with respect to five criteria on effectiveness, efficiency, relevance, coherence, and added value.

4. The CBER is due to expire on 25 April 2024. We understand the European Commission ("EC") is investigating circumstances with respect to whether any of the facts that underlay the adoption of the CBER have changed. In particular, the EC is collecting information on the market changes that have occurred since the prolongation of the CBER in 2020, notably as a result of the COVID crisis. The assessment of the EC includes an analysis of the evolution of the freight rates and service quality in the recent period.

1.2. Purpose of the study

5. CRA has been tasked by the World Shipping Council ("WSC") to provide an economic analysis into one specific area, namely the identification of the main factors likely responsible for the recent freight rate developments.

6. After finding no deterioration in the parameters of competition (such as freight rates, availability, and reliability of service) in the period 2014-2019, the Regulation was extended in 2020 for four years. However, recent freight rate hikes have called consortia efficiencies into question. Freight rates have indeed been soaring as demand for goods picked back up after the pandemic triggered a sharp slump across sectors. Disruption from lockdowns and a shortage of workers and containers have further exacerbated matters.

7. Against this background, our analysis aims to identify the main drivers behind the recent increases in shipping rates and test whether we can identify any relationship between the presence of consortia and recent freight rate increases.

8. For this, we use a combination of descriptive and econometric analysis. Sections 2 and 3 describe the functioning of the market and provide insights into different potential variables

[1] Commission Regulation (EC) No 906/2009 of 28 September 2009 on the application of Article 81(3) of the Treaty to certain categories of agreements, decisions and concerted practices between liner shipping companies (consortia), OJ L 256 29.9.2009, p. 31. With effect from 1 December 2009, Articles 81 and 82 of the EC Treaty have become Articles 101 and, respectively, 102 of the TFEU. The two sets of provisions are in substance identical.

impacting shipping rates. Section 4 presents our econometric framework and discusses our regression results.

9. As highlighted in previous evaluations by the EC,[2] efficiencies from consortia do not exclusively stem from price effects. Shipping consortia can affect and have affected a wide range of qualitative factors. However, the remit of our analysis in this report is limited to explaining the evolution of freight rates and the potential role played by consortia in that respect.

1.3. Main findings

10. We find that there has been a major increase in freight rates end of 2020 through 2021 on all major European trade routes. The price hike appears to be primarily driven by a strong decline in effective capacity relative to demand. The COVID pandemic and its aftermath has caused supply frictions (e.g. through port congestions) while at the same time boosting demand (e.g. through higher e-commerce sales). This has led to serious supply and demand imbalances, driving up freight rates.

11. **We find that the disruption is unrelated to the presence of consortia. Consortia have neither caused the recent capacity decline, nor do we find any evidence relating the presence of consortia to higher freight rates. The key findings are confirmed both by a descriptive data assessment as well as thorough econometric modelling.**

Descriptive analysis

12. The data examined shows a spike in freight rates in 2021. This is true for all major seven European trade routes, although the magnitude of the rate varies ranging between +150% and +600% depending on the specific route.[3] More recent price data for 2022 suggests that freight rates have first remained at a high level throughout 2021 but have started decreasing in 2022 (**section 2.2**).

13. There is a variety of variables that we test as explanatory factors of freight rate variations. Section 3 investigates measures of the presence of consortia on the routes, cost variables, demand variables (e.g. total shipping volumes or global e-commerce sales), supply variables (capacity adjusted for delays), and combined demand and supply variables (demand relative to supply or so-called capacity utilisation rates).

14. **We do not find evidence indicating that consortia presence has caused the increase in freight rates**. Our measures for consortia presence (a measure for consortia concentration and the capacity share of consortia) are relatively constant over time while freight rates have surged recently. Also, when comparing freight rate hikes and consortia concentration "pre-" and "post-pandemic" by trade-route, there is no visible relationship indicating that freight rates increased more on routes with higher consortia presence **(section 3.1)**.

15. **On the other hand, there is strong evidence that freight rate increases were the result of changes in exogenous factors.** In particular, we find that the COVID pandemic has triggered demand and supply shifts that likely explain the freight surges.

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2 See, e.g., https://ec.europa.eu/competition/consultations/2018_consortia/1_en_dts_evaluation.pdf

3 The seven routes analysed are: Asia-North Europe, Asia-Med, North Europe-North America, Med-North America, Europe-East Coast South America, Europe-West Coast South America, and Europe-Oceania.

- First, bunker costs started to sharply increase shortly before the freight rate surge. Bunker fuel is the main type of fuel used aboard of container ships and the main variable cost of carriers, so as a result one would expect an increase in freight rates **(section 3.2)**.
- Next, we find that demand for shipping increased, as e.g. consumers shifted their purchasing online during lockdowns. In particular, e-commerce sales grew rapidly during the pandemic. As is well known from economic theory, an increase in demand generally translates into an increase in price **(section 3.3)**.
- Simultaneously, supply frictions in the shipping industry have increased significantly, as e.g. policies addressing COVID outbreaks have disrupted supply chains. We capture this effect with a so-called “capacity absorption factor” that estimates the percentage of inoperative capacity due to vessel delays. During the pandemic, delays were often induced by port closures, port congestions, or labour shortages. This inoperative capacity increased more than ten-fold and is almost perfectly correlated to the increase in freight rate. We further show that the increase in "lost capacity" itself is unrelated to consortia presence on the specific routes. In sum, we observe a decrease in effective supply (especially relative to demand), which all else equal is expected to translate into an increase in freight rates **(section 3.4)**.
- Lastly, we combine demand and supply factors and consider the impact of capacity utilisation rates on prices. We use previous demand and supply considerations to compute the effective utilisation rate defined as the ratio of observed volumes shipped over capacity adjusted for capacity absorption due to delays. We find that this effective utilisation rate is increasing during the pandemic because of a decrease in the adjusted capacity and an increase in volumes/demand. This decline in effective capacity relative to demand can be expected to be a major driver of the surge in prices. This seems confirmed empirically by our data that shows a strong correlation between utilisation rates and price surges. Moreover, note that the use of capacity utilisation rates based on *observed* demand (volumes) is likely conservative in that it may underestimate the *actual* demand which in part could not be served in practice (hence is not observed in actual volumes shipped) precisely due to insufficient capacity **(section 3.5)**.

16. In the round, the evidence at hand appears to confirm that freight rates have surged primarily due to external factors such as increased bunker costs, increased demand, the COVID pandemic, and reduced capacity relative to demand. While freight rate surges can be explained by changes in such exogenous factors, the presence of consortia on routes does not appear to have played a role.

Econometric analysis

17. We estimate the effect of consortia presence on freight rates by means of an econometric analysis to further support the findings of the descriptive assessment **(Section 4).** We use an Ordinary Least Squares (OLS) regression framework to estimate the effect of consortia presence on freight rates for the period from January 2017 to September 2022 for the seven main European East-West and North-South trade routes. We use two alternative measures, measuring both consortia concentration and consortia market shares, to capture consortia presence. For both measures we find that:

18. **Consortia presence is unrelated to freight rates surges**. If anything, the consortia measures are sometimes found to have a negative effect on the rate charged in certain econometric specifications.

19. **Supply frictions and external demand factors have been driving the freight rate development** in recent years. In particular we find that a demand shift captured by container throughput and e-commerce sales in combination with a supply decline measured by the degree of port congestions or delays exerted positive price pressure.

20. The findings are robust to a variety of specifications controlling for different sets of supply and demand variables. We therefore conclude that the econometric results support the findings of the descriptive analysis: recent freight rate hikes are unrelated to consortia presence but result from external supply and demand shocks primarily caused by the COVID pandemic.

21. After showing that supply frictions are a key driver of the freight rate hikes, we show that these frictions are not caused by consortia. Estimation results suggest that if anything, consortia presence may have increased the effective capacity by decreasing the degree of congestions and delays as found in certain specifications (**Section 4.4**). Instead, we find that these supply frictions are driven by exogenous factors primarily related to the COVID pandemic. More, a demand shift represented by e-commerce sales seems to have aggravated supply frictions, leading to more vessel delays and port congestions.

2. THE RECENT MARKET DEVELOPMENT AND GLOBAL SHIPPING CONSORTIA

2.1. Data presentation

22. The data used for this analysis comprises data on seven of the most important global shipping routes. These are: Asia-North Europe, Asia-Med, North Europe-North America, Med-North America, Europe-East Coast South America, Europe-West Coast South America, and Europe-Oceania.

23. Depending on data availability, all descriptive statistics and econometric results in this report cover at least the period January 2017 to July 2022. If we do not include monthly TEU volumes or do not weight with volumes, our analysis can be extended until September 2022. Also, our freight rate analysis is based on 40-foot (“40ft”) containers since they constitute the majority of containers, and all benchmarking focuses on them.

24. The capacity data from Drewry is the most granular data available to us. It is at service-level and provides weekly TEU capacities for all services operating on the seven global shipping routes. It also flags alliances, but not vessel sharing agreements or slot charter agreements. In order to stay as close to the consortia definition covered by the CBER as possible, we thus create our own consortium variable. For more detail, see section 2.3.

25. Drewry only reports nominal capacity data which due to delays and port congestion were less meaningful since early 2020. Hence, we incorporate capacity absorption data from Sea-Intelligence which allows us to adjust the capacity figures from Drewry to account for supply chain issues during the COVID pandemic and construct a measure of *effective* capacity.

26. The data on volumes from CTS contains monthly total TEU volumes on the seven trade routes.

27. As regards container freight rates, our dataset includes monthly indicative rates for 12 of the main port-to-port pairs[4] from Drewry. It provides numbers for the all-in rate (the freight rate charged to customers) and its different components: the base rate, the bunker adjustment factor, and the terminal handling charges. In our analysis, we focus on the all-in rate.

28. We further complement these data with various "control variables" of factors likely to affect prices. We include monthly data on bunker costs, COVID cases, a global shipping index, and e-commerce sales to control for effects of demand and supply.

29. Bunker fuel is the main variable cost of carriers. In our analysis, we use 380cSt Bunker costs in Rotterdam. Rotterdam is Europe's biggest bunkering port and one of the three largest in the world. Bunker costs in other ports closely track the rates set in Rotterdam.

30. The COVID pandemic can influence shipping rates in a multitude of ways: e.g., a high number of COVID cases can cause severe personnel shortages in ports or lockdowns and other restrictions can complicate the operational activities of ports and shipping operators. Hence, we have added new COVID cases per million inhabitants to our data from Our World in Data, calculated on a monthly level as the unweighted mean between origin and destination continent.

Brief overview of the seven routes analysed

31. Based on shipping capacity, the Asia-North Europe and Asia-Med trade routes are the most important shipping routes from a European perspective. Taken together they comprise more than 65% of the available shipping capacity of routes in our dataset.

32. Information on current shipping capacity, volumes, and freight rates (as of July 2022) are shown in Table 1. As can be seen in the table, there is substantial variation in capacities, shipped volumes, and freight rates across the seven routes.

4 E.g. Shanghai-Rotterdam, Shanghai-Genoa, Rotterdam-Houston, or Rotterdam-New York.

Table 1: Descriptive overview of capacity, volumes, and pricing across trade routes

Trade	Capacity (TEU)	Effective Capacity (TEU)	Monthly shipped volumes (TEU)	40ft Dry freight rate ($)	Share of total capacity (%)
Asia-North Europe	257,454	235,001	940,356	8,503	44.67%
Asia-Med	125,531	119,085	475,687	11,470	21.75%
North Europe-North America	86,383	75,072	288,178	7,630	14.99%
Med-North America	56,827	47,792	193,301	10,525	9.86%
Europe-ECSA	30,192	28,125	81,702	3,380	5.24%
Europe-WCSA	13,324	13,194	35,050	5,300	2.31%
Europe-Oceania	6,863	n.a.	880	8,740	1.20%

Source: Capacity data from Drewry. Capacity absorption data from Sea-Intelligence. Volume data from CTS. Price data from Drewry. Values per July 2022.

2.2. Recent freight rate development

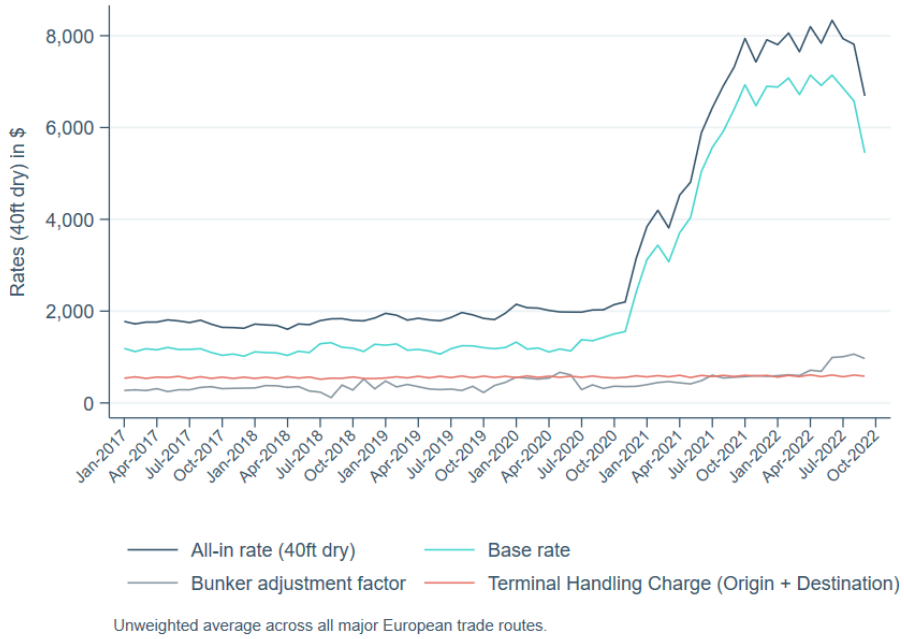
33. The all-in freight rate used in our analysis is comprised of many components including the following main ones:[5] (i) the "base rate" which is the cost of shipping a container from one point to another, (ii) "terminal handling charges" (THC) which are fees charged by shipping terminals at different ports for various services they provide (e.g., storage and positioning of containers before they are loaded on a vessel could be part of the origin terminal handling charge in our data) and, the bunker adjustment factor (BAF) which is an additional surcharge for shipping operators to compensate for the fluctuation in fuel prices.

34. As can be seen in Figure 1, there is only limited variation in the THC and BAF over time. These two variable cost components do not explain systematic freight rate trends. Our assessment focuses on the all-in freight rate, which does not only cover all cost components, but also provides the largest variation.

35. Additionally, there is substantial amounts of missing data on BAF and THC. For some routes, some prices are not available at all (e.g. the BAF is not available on Europe-WCSA or Asia-Med). For others, some prices are missing at certain times. The figure below is an average over those routes for which data is available. Therefore, it is not possible to only look at the "base rate" in our analysis which is another reason for us to focus on understanding the all-in rate fluctuations.

5 Other components are numerous other surcharges such as the currency adjustment factor, peak season surcharge, port dues, port security charge, carrier security charge, Suez Canal transit fee (if applicable), Panama Canal surcharge (if applicable), Guld of Aden surcharge (if applicable), Port Congestion surcharge. Note that this list is not exhaustive and additional surcharges are included.

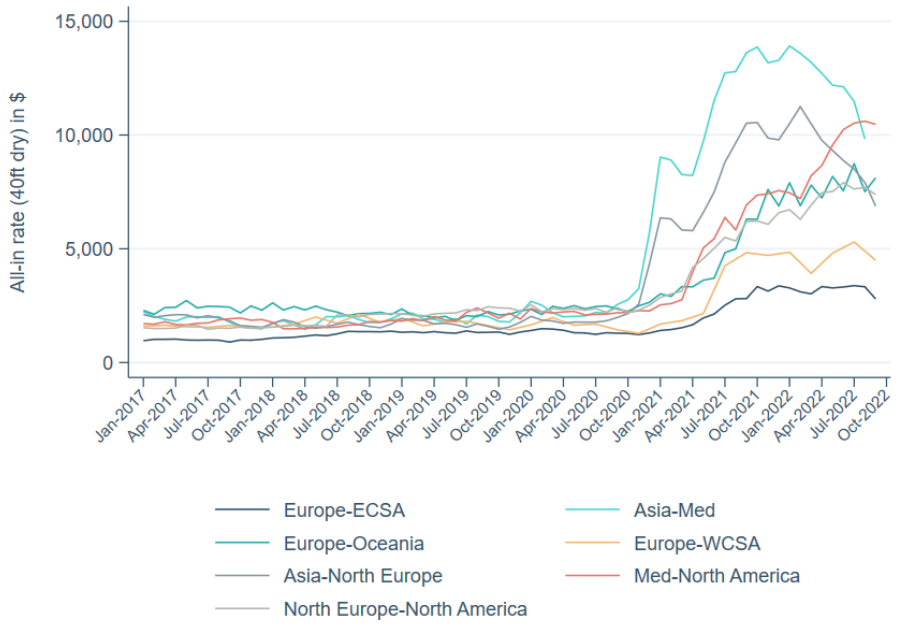
Figure 1: Average freight rate components across all major European trade routes



Source: CRA visualisation based on Drewry freight rate data.

36. Figure 2 shows that freight rates on all major European trade routes saw a massive increase from mid-2020. The freight rate surge has started earliest on the Asia-Europe trade routes and was followed with a delay of several months by freight rate increases on the remaining, major European routes. Towards the end of 2021, freight rates have started to fall again across trade-routes.

Figure 2: Average freight rates on European trade routes



Source: CRA visualisation based on Drewry freight rate data.

37. There is a large spread in the extent of the freight rate increase depending on the trade route. While freight rates on the main Asia routes have increased more than six-fold, freight rates on North Europe-North America and Europe-ECSA have increased less than three-fold.

2.3. Global shipping consortia

38. We define consortia for the purpose of our assessment in line with the consortia definition covered by the CBER as:

39. **Vessel Sharing Agreements (VSAs)**: Vessels are owned and/or operated by different carriers which engage in joint optimisation of capacity, ship scheduling and route assignment.

Alliances, which are essentially a bundle of VSAs between the same carriers operating on a global scale.

Pure Slot Charter Agreements (SCAs) where a carrier "rents" container slots on a vessel owned by a different carrier are not included in our definition. This is in line with CBER Art. 2(1), defining consortia as "interrelated agreements between two or more vessel-operating carriers to rationalise their operations,"[6] which goes beyond the scope of pure SCAs. A VSA can include one or several SCAs – this way SCAs would be captured by our consortia definition.

40. In practice, we use Drewry's Capacity Data to identify consortia presence on the main European trade routes. We define a consortium as either global alliances (captured by Drewry) or services that are operated by two or more carriers (not captured by Drewry as consortia). Additionally, we have manually revised the carrier combinations for each service over time to account for past mergers.

3. FREIGHT RATE VARIATIONS CAN BE EXPLAINED BY A RANGE OF EXOGENEOUS FACTORS

41. There is a wide range of factors that could in theory influence shipping rates. We distinguish between five categories of variables:

- **Measures of "consortia presence" (section 3.1)**. These variables are aiming at capturing the presence of consortia on the route. There is no simple or unique way of defining a synthetic measure of the degree of consortia presence on a route. For that reason, we rely on two distinct metrics, including the share of capacity on the route that is operated by consortia.
- **Cost variables (section 3.2)**. These include bunker cost, the BAF and THC charges.[7] The main variable relevant in our analysis is bunker cost that is estimated to represent 50-60% of total shipping operating costs.[8]

6 Source: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02009R0906-20200414

7 See definition in section 2.2.

8 From: https://www.morethanshipping.com/fuel-costs-ocean-shipping/

- **Demand variables (section 3.3)**. Demand variables will capture that freight rates are expected to increase as demand for freight increases. In practice, we measure shipping demand using a range of variables such as the global container shipping throughput index and global e-commerce sales.
- **Supply variables (section 3.4)**. We include supply variables in our model that will capture the availability of ships in ports. This is particularly crucial considering the significant disruptions that occurred in the market recently. In particular, we measure the share of capacity that was not available due to port disruptions or delays (see the so-called "capacity absorption" share). This measure allows us to define *effective* capacity, i.e. the nominal capacity adjusted for the capacity absorption factor.[9]
- **Combined demand and supply variables (section 3.5).** Some variables are related to both demand and supply levels. This might be the case for example of the COVID crisis that affected both demand (e.g. via increased e-commerce sales) and supply (e.g. via disruptions in ports) with varying degree and lags. Also, rather than demand or supply levels themselves, economic theory suggests that it is the level of demand relative to capacity that will have the most impact on freight rates. We thus define an effective capacity utilisation rate variable that corresponds to the ratio between demand and effective supply and assess whether freight rates seem to be driven by variation in utilisation rates on the route.

42. These five categories of factors are presented in the remainder of this section.

3.1. Consortia presence and measures of concentration

Definition of the variables of interest

43. We have defined two main metrics to measure the degree of consortia presence on the routes and over time.

44. One of these variables relies on Herfindahl-Hirschman indices (HHI). The HHI is a standard measure of concentration that is typically used in mergers. It ranges from 0 to 10,000, with a higher value indicating a more concentrated market. For example, for a market consisting of four firms with shares of 30, 30, 20, and 20%, the HHI is 2,600 ($30^2 + 30^2 + 20^2 + 20^2$). We have considered extending the notion of HHI to consortia.[10] However, it is important to note that this is only the mechanical application of a mathematical formula to consortia and does not suggest in any way that operators within a given consortium are acting as a single operator. Consortia members are of course highly restricted with respect to the dimensions, notably price, over which they can exchange information and cooperate. With this limitation in mind, it remains useful to extend the notion of HHI to consortia for the specific purposes of our analysis.

45. In practice, we have defined **two main variables of interest** that are related to consortia concentration:

9 Specifically, effective capacity = (1-capacity absorption factor) * capacity.

10 HHI variables are calculated based on capacity values. We note that the market concentration – to be interpretable from an antitrust perspective – should be measured in terms of actual volumes shipped – not capacity. We default to capacity due to data limitations.

- **Consortia Capacity Share (%).** This is the total capacity share of all consortia on the route. It has the advantage of its simplicity but does not account for the structure of consortia on each route: the capacity share will be the same for one consortium of 30% or two consortia of 15% each.
- **HHI Consortia Increment.** This variable is defined as the difference between the HHI calculated by replacing firm shares with consortia shares and the standard "HHI Carriers" (the HHI calculated based on individual operators' shares). This measure isolates the effect of consortia from the general market concentration driven by the operators' own capacity shares. It therefore captures the increment of "concentration" on the route that can be deemed *consortia-specific*.

Out of these two main variables of interest, we believe that the HHI Consortia Increment is better suited to measure the influence of consortia concentration on freight rates. In our descriptive and econometric analysis, we will therefore focus primarily on the HHI Consortia Increment.

Relationship between consortia presence and freight rate developments

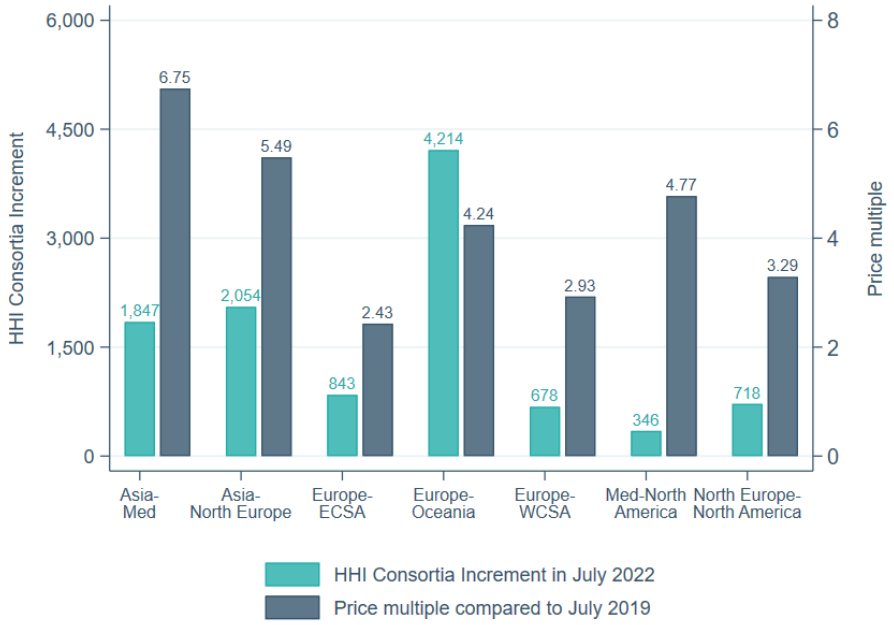
Figure 3 compares the weighted freight rate development with the Consortia Capacity Share and the HHI Consortia Increment. Based on a visual inspection, we do not see a (positive) relationship between either of the two measures of market concentration and changes in freight rates. Both are almost constant, and the Consortia Capacity Share is even slightly decreasing towards the end of the considered time period.

Figure 3: Overview of consortia presence measures and freight rates

Source: CRA visualisation based on own calculations and Drewry capacity and freight rate data.

46. Next, we provide a cross-section comparison of the HHI Consortia Increment relative to freight rate surges. Figure 4 compares the consortia presence and freight rate increases between July 2022 and July 2019 on the seven shipping routes under analysis. There is no visible relationship between freight rate increases and the presence of consortia.

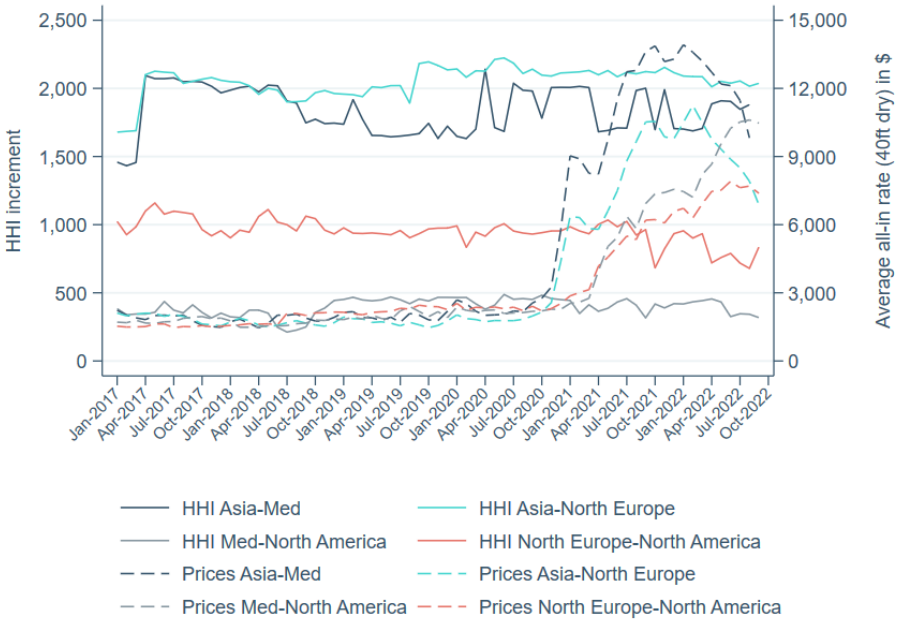
Figure 4: Comparison of HHI Consortia Increment and freight rate multiples in July 2022 compared to July 2019 per route



Source: CRA visualisation based on Drewry capacity and Drewry freight rate data.

47. Figure 5 displays the development of the HHI Consortia Increment and freight rates on the four main individual shipping routes. Again, consortia do not seem to play a role in the freight rate hikes seen recently.

Figure 5: Comparison of HHI Consortia Increment with Prices on four main routes.



Source: CRA visualisation based on Drewry capacity and freight rate data.

48. Overall, we find no descriptive evidence indicating that consortia presence has led to the increase in freight rates. On the other hand, we will see in the following sections that there is strong evidence that freight rate increases were the result of exogenous factors such as cost increases, demand surge and supply disruptions.

3.2. Cost variables

49. The price (i.e., the freight rate charged to customers) has two main "cost" components: terminal handling charges (THC) and the bunker adjustment factor (BAF). However, as established in section 2.2, both the bunker adjustment factor and the terminal handling charges have been remarkably stable over the last five years.

50. As such, they cannot explain systematic freight rate trends and we turn to actual bunker costs to potentially explain freight rate developments. This is sensible since fuel costs are one of the most important components of the variable costs of cross-ocean shipping. Bunker fuel is the main type of fuel used aboard of freight ships and the main variable cost of carriers, comprising as much as 50 to 60% of the total shipping operating costs.[11]

51. We would expect to see a strong correlation between bunker costs and freight rates. As can be seen in Figure 6, the data suggests such a relationship post-2020.

Figure 6: Development of Rotterdam bunker costs and global freight rates

Source: CRA visualisation based on bunker costs from Bloomberg BUNKRD38 Index and freight rate data from Drewry.

3.3. Demand variables

52. We consider various variables aiming to capture the effect of changing total demand for shipping. These are volumes, a global container shipping throughput index, and e-commerce sales.

11 From: https://www.morethanshipping.com/fuel-costs-ocean-shipping/

53. Note that shipping volume data is a questionable proxy for the demand for shipping capacity. Shipped volumes are an outcome of demand, supply, and prices rather than a pure measure of demand. Thus, there exists an underlying "simultaneity" of volumes affecting freight rates and vice-versa. Notably, actual volumes are constrained by supply (i.e., the available capacity) implying that in the absence of supply constraints actual volumes may have increased more than they did. In that sense we may underestimate actual demand levels by looking at realised volumes.

54. The ***global container shipping throughput index*** includes the information on container throughput in 89 international ports. It accounts for around 60 percent of global container throughput.[12] Figure 7 displays the development of the global shipping throughput index against average freight rates. While showing pronounced fluctuation due to seasonality effects, it is clearly visible that there is a consistent upward trend.

Figure 7: Development of the Global shipping throughput index and global freight rates

Source: CRA visualisation based on Drewry price data and Drewry Global container shipping throughput index.

55. Data on e-commerce sales show a similar, yet even more pronounced trend. Many of the products sold through e-commerce platforms such as Amazon or Alibaba are not manufactured in the European Union. An increase in e-commerce purchases by businesses and consumers may thus lead to an increase in demand for shipping.

56. E-commerce was already growing quite rapidly before the outbreak of the pandemic. However, according to McKinsey, e-commerce grew two to five times faster during the pandemic than it did before, further indicating the pandemic accelerated the increase in

12 From: https://www.statista.com/statistics/913398/container-throughput-worldwide/

demand for these sales channels.[13] Furthermore, data from eMarketer shows that e-commerce sales grew by 16% in 2021 and 27% in 2020.[14]

57. Table 2 displays the annual global e-commerce sales (in dollars) from 2018 to 2021 and their respective year-over-year growth rates.

Table 2: Annual global e-commerce sales (in billion $) and YoY growth

Year	Global e-commerce sales (in billion $)	YoY variation (in billion $)	YoY growth
2017	2,382	-	-
2018	2,982	600	25%
2019	3,351	369	12%
2020	4,248	897	27%
2021	4,938	690	16%

Source: eMarketer

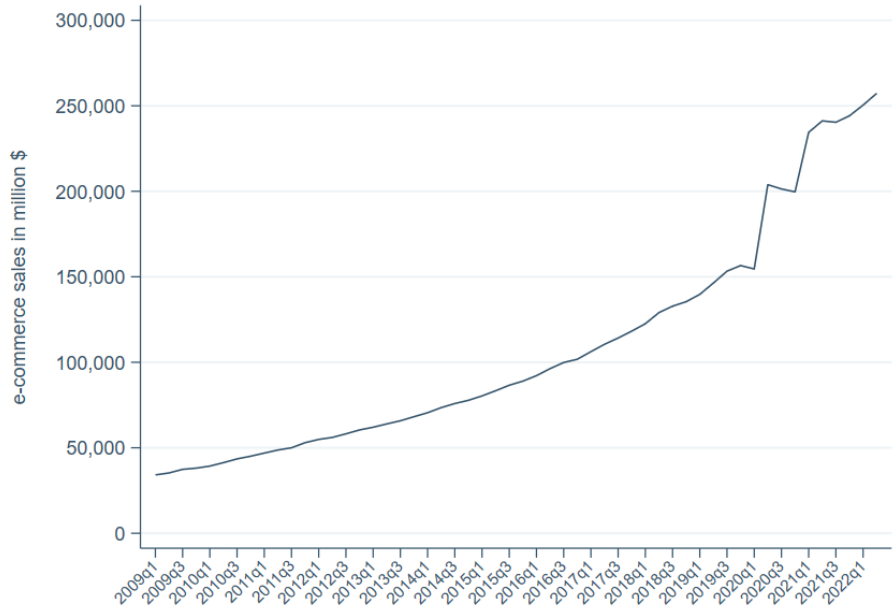
58. Figure 8 displays based on US data that there has been a long-term trend towards more online shopping. While growth rates have been steady for many years, there was a very sharp increase at the beginning of the pandemic where more additional goods were sold in one quarter than in the previous three years combined. This sharp increase was right before freight rates started to soar. Importantly, this increase was not a one-off effect since growth rates stayed high and are still larger than in the ten years before the pandemic. While we are not aware of data over such a long period in the EU, there is both qualitative as well as quantitative evidence that developments in the EU have been similar. For example, Statista estimates that e-commerce sales in Europe have grown by 8.2% in 2018, 9.3% in 2019, 31% in 2020, and 16.2% in 2021.[15]

13 From: https://www.mckinsey.com/featured-insights/coronavirus-leading-through-the-crisis/charting-the-path-to-the-next-normal/how-e-commerce-share-of-retail-soared-across-the-globe-a-look-at-eight-countries

14 From: https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/

15 Source: https://www.statista.com/outlook/dmo/ecommerce/europe#revenue

Figure 8: US e-commerce sales (in million $)



Source: CRA visualisation based on https://www.statista.com/statistics/187443/quarterly-e-commerce-sales-in-the-the-us/

3.4. Supply variables

3.4.1. Disruption of supply chain

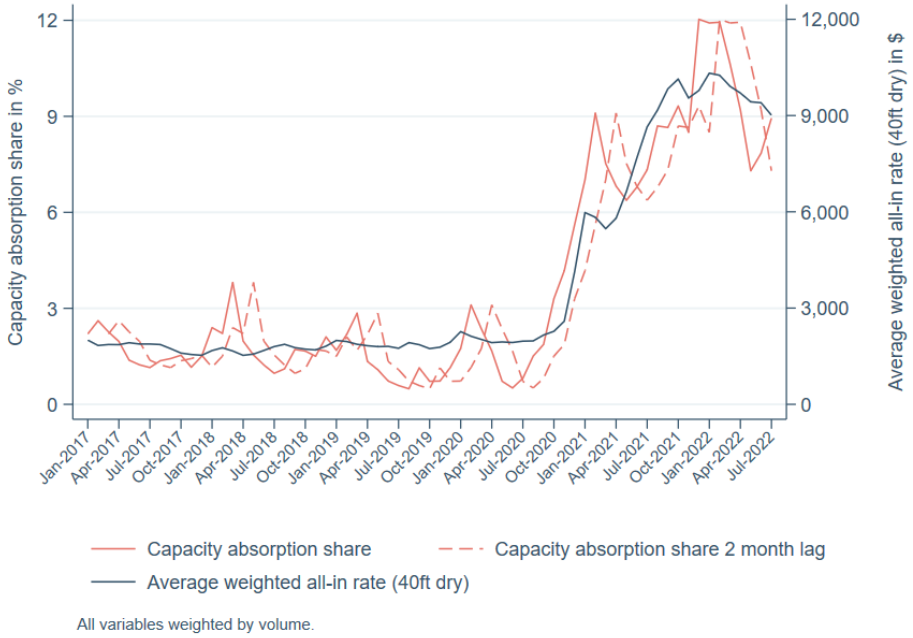
59. One of the (side-)effects of the COVID pandemic was a sharp increase in supply frictions in many industries. Due to its complexity and transcontinental nature, the container shipping industry was hit especially hard. We capture this by including a capacity absorption share variable from Sea-Intelligence. This is an estimate of the share of the deep-sea container liner fleet that is rendered inoperative due to container vessel delays, irrespective of whether the delays are caused by port closures, port congestions, labour shortages, engine failures, landside strikes, inclement weather, vessel or network issues, or other factors. Sea-Intelligence does not track this metric for the Europe-Oceania route given its low share of approximately one percent of worldwide trade. Henceforth, we exclude this route from our analysis when considering the capacity absorptions share.

60. A simple illustrative example shows how the capacity absorption factor (%) or lost capacity more simply put, is calculated: "*Imagine a 20,000 TEU container vessel arriving 6 days late in port. If the vessel had arrived on time, those additional 6 days could have been used to move cargo, leading to a loss of 120,000 TEU-days, relative to the intended liner schedule. Over a 30-day month, that vessel would have produced 30 days * 20,000 TEU = 600,000 TEU-days, for a relative loss of 20%.*"[16]

16 Source: Sea-Intelligence capacity absorption factor methodology.

61. Figure 9 displays how this "lost" capacity has increased during the COVID pandemic. It also presents a two-month lag which – besides some seasonal effects – is almost perfectly correlated with the average all-in rate.

Figure 9: Development of capacity losses and global freight rates



Source: CRA visualisation based on Drewry price data and Sea-Intelligence capacity absorption data.

3.4.2. Relationship between capacity losses and consortia concentration

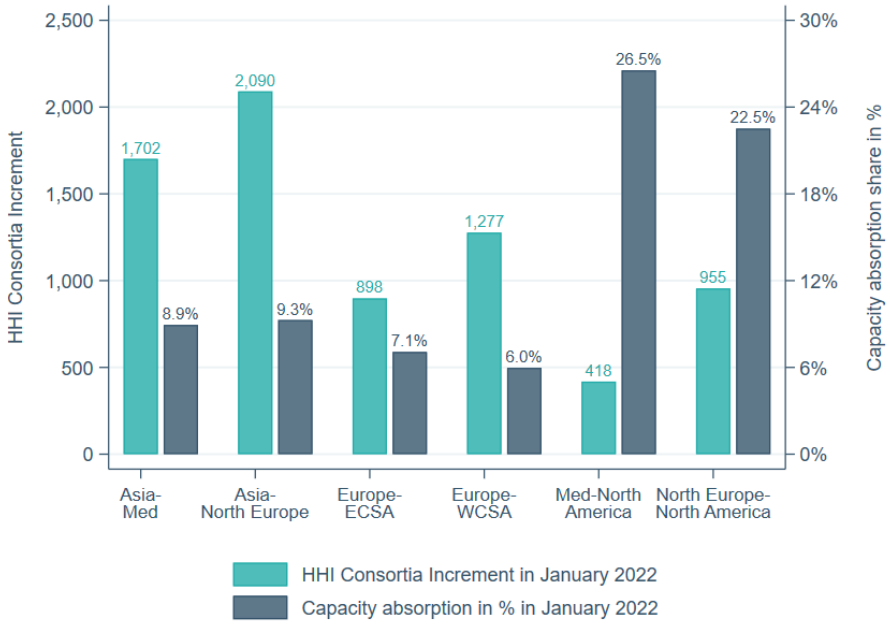
62. It seems that effective capacity was reduced relative to demand levels on the routes. While shifts in demand levels are undeniably "exogenous", one might wonder whether consortia could have played a role in the reduction of capacity around that time. While there is no qualitative evidence that this would be the case, we can test this proposition empirically.

63. Figure 10 assesses whether there is any correlation between recent increases in capacity absorption shares and the presence of consortia on routes. Specifically, it compares the HHI Consortia Increment with capacity absorption shares as of January 2022 – the month when lost capacity was at its peak and freight rates were close to their peak.[17]

64. We find no evidence of correlation between consortia presence and capacity absorption. For example, the highest capacity absorption factors are observed on North America routes where consortia concentration is relatively lower. More specifically, the highest capacity absorption factor is observed on Med-North America where concentration is lowest in terms of the HHI Consortia Increment. On the other hand, the highest HHI Increment can be found on the Asia-North Europe route whereas this route has relatively low levels of capacity absorption.

17 We note that the month that is chosen for this analysis has no impact on the results which are robust for different selected months.

Figure 10: Comparison of HHI Increment and the capacity absorption share in January 2022 per route



Source: CRA visualisation based on Drewry capacity data and Sea-Intelligence capacity absorption data.

65. Hence, we find that since mid-2020, the capacity absorption share has stopped fluctuating at around 3% and increased massively to more than 16% in January 2022. Since then, lost capacity has started to decline again. We find no evidence that this trend is in any way related to consortia presence – whereas it is consistent with COVID-induced disruptions such as port congestion.

3.5. The combined effect of demand and supply and the use of capacity utilisation rate variables

66. As explained in previous sections, the COVID pandemic has had significant impact on the shipping industry. In the context of this study, it has influenced both the supply and demand side. During the pandemic consumer demand has increased, leading to rising demand for shipping. Simultaneously, lockdowns and other less stringent measures to contain COVID limit the supply of freight shipping through longer processing times at ports and reduced labour supply. This limited supply is expressed in the high capacity absorption share.

67. Figure 11 compares COVID cases and freight rates. At a high level it appears that there is a positive correlation between the observed freight rate surges and the number of COVID cases. Although the number of COVID cases may not be “directly” related to freight rates, we have to recognise that there is a noticeable correlation between the two effects, both being driven by unprecedented forces.

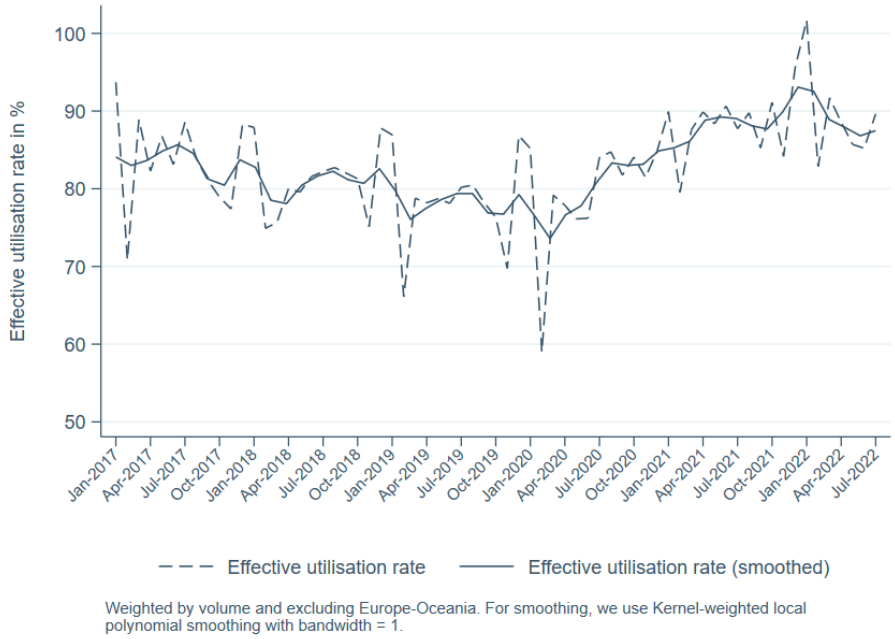
Figure 11: Comparison of COVID cases and global freight rates

Source: CRA visualisation based on Drewry price data and Our World in Data COVID data.

68. Aiming to define a variable that would be more specific to the shipping industry, the collection of capacity absorption data allows us to calculate a measure of ***effective capacity*** (i.e., the capacity from Drewry adjusted for the absorption factor to account for the inoperative capacity). We use the effective capacity to calculate the effective utilisation rate defined as the ratio between actual volumes shipped over effective capacity. An effective utilisation rate of 1 (or 100%) would indicate that all *available* capacity is being used. It is important to note that the effective utilisation rate is a function of both supply and demand variables and changes in utilisation rates can be caused by either of the two (or both).

69. Figure 12 illustrates the increase in utilisation rates that happened since the beginning of the COVID pandemic.

Figure 12: Effective utilisation rate



Source: CRA visualisation based on own calculations, Drewry capacity data, and Sea-Intelligence capacity absorption data.

70. To obtain an increase in the effective utilisation rate either volumes must increase, or effective capacity must decrease. Figure 13 shows that since the beginning of 2020 volumes have increased slightly. Simultaneously, due to a comparatively much larger increase of the capacity absorption factor, the effective capacity has declined relative to the nominal capacity. Hence, there was less effective capacity and larger effective utilisation rates. Importantly, liner shipping companies were unable to increase capacity since all available vessels were utilised and there was a lack of new shipping containers.[18] Many carriers reacted by ordering new container ships which however take years for production. For example, in 2021, container ships with a total capacity of about 1.94 million TEUs were sold worldwide. This represents an increase of 140 percent compared with 2020 when roughly 810,000 TEUs worth of container ships were sold globally.[19] This provides further evidence that there has been a strong decline in effective capacity relative to demand.

18 Source: see, e.g. https://www.vox.com/recode/22832884/shipping-containers-amazon-supply-chain

19 Source: https://www.statista.com/statistics/1290683/annual-sales-of-container-ships-worldwide/

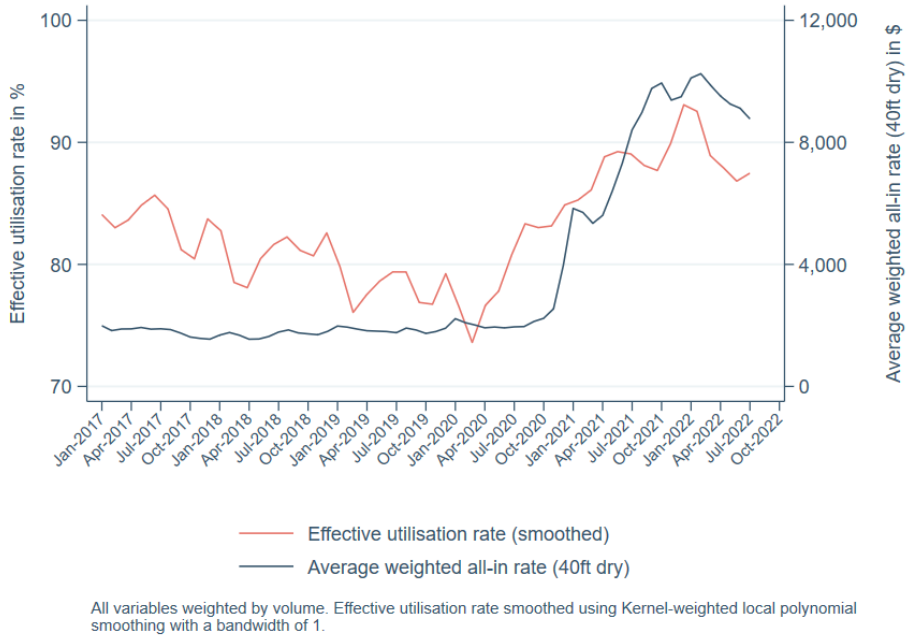
Figure 13: Comparison of (effective) capacity and volumes

Source: CRA visualisation based on Drewry capacity data, CTS volume data, and Sea-Intelligence capacity absorption data.

71. We would like to stress again that using volumes as a proxy for demand misses the actual increase in demand. Thus, basing our effective utilisation rates on observed demand (i.e. actual volumes) is likely conservative since it underestimates the actual demand which in part could not be served in practice precisely due to supply constraints (i.e. insufficient capacity). Consequently, the actual increase in the ratio of demand and supply was probably even more pronounced than the one captured by the effective utilisation rate since volumes would have greatly increased in the absence of supply constraints.

72. We investigate descriptively the relationship between our measure of effective utilisation and the development of freight rates in Figure 14. This builds on section 3.4.1 where we found a high correlation between the capacity absorption factor and the average weighted all-in rate. Unlike for unadjusted utilisation rates, we observe a strong correlation between effective utilisation rates and freight rate surges. This holds despite the conservative nature of our demand supply considerations. Interestingly, a lagged utilisation rate would show an even stronger correlation. This appears sensible given that past utilisation rates can be expected to drive future price variations. In sum, it seems very likely that the increase in the effective utilisation rate has caused the freight rate surges.

Figure 14: Comparison of the effective utilisation rate and freight rates



Source: CRA visualisation based on own calculations, Drewry capacity data, and Sea-Intelligence capacity absorption data.

73. Additionally, we have also examined in sections 3.1 and 3.4.2 whether there is any indication that consortia may have caused an increase in prices or a decrease in effective utilisation rates. First, we observed no visual relationship between freight rate increases and the presence of consortia. For example, while consortia presence stayed constant, freight rates sharply increased. Further, we investigated the relationship between capacity losses and consortia concentration. There, we found no evidence of correlation between consortia presence and capacity absorption. In fact, the highest capacity absorption occurred on the least concentrated route in terms of HHI Consortia Increment, namely, Med-North America. We conclude that there is no evidence that consortia were responsible for either the increase in freight rates or the decrease in effective utilisation. This holds irrespective of the variable used to measure concentration.

74. On the other hand, the observed freight rate surges are entirely consistent with COVID-induced disruptions. There is strong evidence showing that freight rate increases were the result of changes in different exogenous factors: these include cost increases (e.g. rising bunker costs), demand surges (e.g. unprecedented growth of e-commerce sales), and supply disruptions. The disturbances caused by the COVID pandemic led to severe increases in capacity absorption which resulted in less available capacity. However, there was simultaneously also much more demand as discussed in 3.3. Therefore, the recent freight rate hike can be explained by basic microeconomic supply and demand considerations: much more demand and less effective capacity. Our descriptive analysis concludes that exogenous factors, not consortia, caused the freight rate increases.

4. ECONOMETRIC ASSESSMENT

75. In the previous sections we have shown that there exists no descriptive evidence that suggests a link between consortia presence and the freight rate hikes in recent years.

Instead, freight rate hikes seem to be the result of a supply and demand imbalance primarily caused by the COVID pandemic.

76. In the following section, we confirm this proposition by means of an econometric assessment which allows us to consider all potential factors simultaneously and disentangle effects. We first show that consortia presence (measured by the HHI Consortia Increment and the Consortia Capacity Share) is unrelated to the recent increases in freight rates but the recent surge was indeed driven by external supply and demand factors. In a second step, we confirm that indeed external factors related to the COVID pandemic have caused supply frictions, decreasing the effective capacity. The presence of consortia itself has not caused a decrease in capacity. On the contrary, there is some evidence that consortia might have had a mitigating effect, increasing effective capacity on the routes.

4.1. Regression framework

77. Having gathered strong descriptive evidence that there exists no relationship between consortia presence and the recent freight rate hikes, it might be useful to go beyond correlative evidence when attempting to establish causal relationships. To do this, we employ a regression analysis in which we explain the output parameter of interest as a function of consortia presence and other exogenous factors. These factors have been discussed extensively in Section 3.

78. We estimate the effect of consortia on freight rates by means of regression framework.[20] In general terms, the regression framework would look as follows:

$$Freight\ rates_{tx} = \beta_1 * costs_{tx} + \beta_2 * demand_{tx} + \beta_3 * supply_{tx} + \beta_4 * consortia\ presence_{tx} + \beta_5 * market\ concentration_{tx} + \cdots + \epsilon$$

4.2. Data scope and included variables

79. We consider data from the largest seven trade routes[21] covering both the main European East-West[22] and North-South[23] trade routes in the period from January 2017 to September 2022. We estimate the effect of consortia presence on freight rates controlling for a variety of different cost, supply, and demand factors. The following provides an overview of the variables used:

- **Freight rates**. These correspond to the 'all-in rate' for 40ft containers based on Drewry data. We use the rate for 40-foot containers as these constitute the great majority of containers shipped, and price benchmarking focuses on these containers. The Drewry freight-rate data is available on a month-trade route level.
- **Measures of consortia presence**. These are HHI Consortia Increment and the Consortia Capacity Share, as defined in section 3. We also control for the HHI Carriers which is the standard HHI accounting for the firm-specific capacity shares. These variables are defined per route and month.

20 Namely a linear, Ordinary Least Squares (OLS) regression.

21 Namely Asia-North Europe, Asia-Med, North Europe-North America, Med-North America, Europe-East Coast South America, Europe-West Coast South America, and Europe-Oceania.

22 Asia-North Europe, Asia-Med, North Europe-North America, Med-North America and Europe-Oceania.

23 Europe-East Coast South America, and Europe-West Coast South America.

- **Bunker costs.** These are the Rotterdam 380cSt Bunker costs. Bunker data is available on a monthly level.
- **Capacity absorption share.** The capacity absorption captures the effects of supply frictions, e.g. from the COVID pandemic which is causing port disruptions and delays. Sea Intelligence provides the capacity absorption share on a month and trade-route level.[24]
- **Effective utilisation rate (2 months lag).** We make use of the capacity absorption share to calculate the effective capacity. The effective utilisation rate is then calculated dividing monthly TEU volumes by effective capacity. We use a 2-month lag of this variable considering that today's utilisation rates are likely to drive future freight rate variations. This has also been confirmed by our descriptive analysis set out in section 3.5. Moreover, introducing a lag allows us to mitigate issues related to reverse causality.[25] A higher utilisation is expected to lead to higher prices.
- **New COVID cases per million inhabitants.** We use the number of new COVID cases per million inhabitants as a proxy for lockdown intensity and a variety of other government interventions that negatively impact the ordinary course of business in the shipping industry. We thus expect a positive effect of COVID intensity on freight rates. Data on the number of COVID cases is available on a monthly level.
- **Global container shipping throughput index (2 months lag).** The *Global container shipping throughput index* is an index of total shipped volumes globally. We also use a two-month lag consistently with the utilisation rate variable. A higher throughput is indicative of higher demand and can thus be expected to lead to higher freight rates.
- **Global e-commerce sales.** The global (annual) e-commerce sales are another proxy for shipping demand. Many of the goods bought and sold online are shipped across the globe. We would therefore expect that a rise in e-commerce sales causes a rise in demand for shipping. In turn, this would lead to higher shipping rates.
- **Volume shipped on the route (2 months lag).** The total shipped volumes on a shipping route in a given month. We use shipped volumes as a proxy for overall demand and expect higher levels of volumes shipped to lead to higher prices. Monthly volume data on a trade route level was obtained from CTS.

We further control for so-called route "fixed effects" which are used in regression models to control for route-specific characteristics (for example, a route that would tend to be more expensive than another one on average because it is costlier to operate).

4.3. Consortia effect on freight rates

80. In this section we present the results of the econometric assessment. As discussed in section 3, consortia presence is not a straightforward measure to define. We thus consider two alternative specifications capturing the degree to which consortia are 'present' on a certain trade route over time. Our primary specification measures consortia concentration

24 Data is not provided for the Europe-Oceania route.

25 While current utilisation may affect prices and vice versa, the same reverse causality does not exist for lagged utilisation, meaning the current utilisation cannot be affected by future prices.

by virtue of the HHI Consortia Increment. We then add a supplemental assessment based on the Consortia Capacity Share.

81. We find that neither of the two measures are associated with a statistically positive and significant effect on freight rates across a variety of different model specifications. The results in this section thus confirm the findings derived from our descriptive assessment of the data: consortia presence appears to be unrelated to the recent freight rate development. If anything, we find that an increase in consortia presence (either measured by concentration or Consortia Capacity Share) may in certain specifications lead to lower freight rates.

4.3.1. Primary model: HHI Consortia Increment

82. Table 3 presents the results of our econometric analysis using the HHI Consortia Increment as measure of consortia concentration.

Reading guide

83. The two values displayed for each variable are the coefficient (i.e., the estimated effect / point estimate for the effect of the variable) and the p-value[26] of the point estimate. The coefficient indicates the effect of a one unit increase in a particular variable on the dependent variable, i.e. the freight rate. The p-value value displayed in brackets helps determine whether a point estimate is statistically significant or not. Statistical significance itself is indicated by the presence of stars, with one (*), two (**) or three (***) stars corresponding to low, medium and high levels of statistical significance (which correspond to p-values of less than 10%, 5%, and 1% respectively). A variable whose coefficient does not have any star is said to be statistically insignificant. This means that its estimated effect is statistically indistinguishable from zero. In other words, statistically, this variable is not found to have an influence on shipping rates in the model.

Results

84. Table 3 below presents the results for our main regression specifications. In each specification, we control for bunker costs and the effective utilisation rate as the main cost and supply factors, while varying the specific demand controls used.

- Specification (1) constitutes our baseline specification where we use the global container shipping throughput index as our main demand variable.
- In Specifications (2) and (3) we additionally add the capacity absorption share (%) and COVID cases per million to capture the effect of supply disruptions caused by the pandemic.
- In Specification (4) we simultaneously add both COVID disruptions related variables that were added sequentially before, controlling for our full set of potential drivers of supply disruptions.

26 A p-value measures the probability of obtaining the observed results, assuming that the null hypothesis is true. In the case of our regression framework our null hypothesis is always that the variable in question has no effect on shipping rates, i.e., its coefficient is equal to zero. A P-value of 0.1 indicates that, under the null hypothesis, the chances of finding a coefficient of the same size or larger are 10%.

- Specifications (5) and (6) amend our baseline specification with respect to alternative demand variables. We first use the annual e-commerce sales volume and then in specification (6) the total (lagged) volume shipped on a trade route.

85. The point estimates for each specification are shown in the following Table.

Table 3. Regression: Freight rates – results with HHI Consortia Increment

Freight rate ($)	(1)	(2)	(3)	(4)	(5)	(6)
HHI Consortia Increment	-0.36	0.078	-0.22	0.067	0.31	-0.88***
	(0.186)	(0.723)	(0.360)	(0.751)	(0.134)	(0.001)
HHI Carriers	2.44***	1.34**	2.73***	1.69**	2.39***	2.51***
	(0.000)	(0.038)	(0.000)	(0.013)	(0.000)	(0.000)
Bunker costs	9.21***	5.86***	6.82***	5.77**	9.13***	12.0***
	(0.003)	(0.010)	(0.008)	(0.010)	(0.000)	(0.000)
Effective utilisation rate on route (2 months lag)	3761.9***	-752.2	1770.1***	-482.7	1720.1*	6949.0***
	(0.002)	(0.655)	(0.053)	(0.640)	(0.054)	(0.000)
Global container shipping throughput index (2 months lag)	135.9***	91.5***	108.4***	90.1***		
	(0.000)	(0.000)	(0.001)	(0.001)		
Capacity absorption (%) due to delays		316.4***		235.6***		
		(0.000)		(0.001)		
New Covid cases			5.20***	2.22*		
			(0.001)	(0.071)		
Global annual ecommerce sales					1.75***	
					(0.000)	
Volume (2 months lag)						0.00088
						(0.798)
Constant	-22066.1***	-9830.1***	-17374.0***	-10251.8***	-12619.3***	-9966.2***
	(0.000)	(0.003)	(0.000)	(0.002)	(0.000)	(0.001)
Route fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-Square	0.52	0.63	0.61	0.64	0.71	0.45
No. obs.	583	572	583	572	583	583

Source: CRA econometric analysis. Note: P-Values in brackets: *** P<0.01, ** p<0.05, *p<0.1. Europe-Oceania route is excluded from the analysis as the capacity absorption share (based on Sea-Intelligence) is unavailable for this route.

86. The following provides an interpretation of the results:

- **Consortia presence**. Across the first five specifications we see that the variable of interest, the HHI Consortia Increment, is not statistically significant. This means that a higher consortia concentration on trade routes is unrelated to freight rate developments. If anything, we see according to specification (6) consortia concentration has a significant *negative* effect on freight rates, meaning that higher consortia concentration leads to lower freight rates. The coefficient in specification (6) can be interpreted as follows: If the HHI increment from consortia increases by 100, then the freight rate decreases by 100 x the estimated coefficient of 0.88, meaning $88.

- **HHI Carriers.** For the HHI accruing to individual carriers (ignoring consortia) we estimate a positive, significant effect on freight rates. This suggests that higher market concentration would lead to higher freight rates on average, which, all else equal, can be expected from economic theory.
- **Bunker costs**. As expected, we see that bunker costs are positive and statistically significant across all specifications. We estimate that a one unit increase in the bunker cost index leads to an increase in shipping rates of between $5.8 and $12.0. This confirms the descriptive relationship we have established in section 3.2.
- **Effective utilisation**. Our point estimate for the effective utilisation rate is positive and significant in our baseline specification (1) as well as specifications (3), (5), and (6). The result confirms expectations that an increase in the effective utilisation rates leads to higher freight rates. It is worth noting that utilisation rates become non statistically significant whenever the capacity absorption share is included in the model (in specifications (2) and (4)) suggesting that this is the main factor affecting prices and that, in these models, a large proportion of the utilisation rate effect is already captured by demand and supply variables that are included separately.
- The two variables used to measure the COVID induced supply chain frictions, **capacity absorption (%)** due to delays and **new COVID cases**, are both of the expected sign and statistically significant. However, once they are both combined, the COVID cases variable is no longer statistically significant. This is most likely because a large proportion of the COVID induced disruptions are already captured by the capacity absorption variable. Overall, these results suggest that a large part of the recent price increases can be attributed to supply-chain disruptions related to the COVID pandemic.
- **Global container shipping throughput index.** The estimate for our main demand variable, the container shipping throughput index, is positive and highly statistically significant throughout. The same applies for e-commerce sales, our alternative demand variable used in specification (6), while the effect we estimate for volume is not statistically significant. The latter is not very surprising given the problems of using shipped volumes as a proxy of demand discussed in section 3.3 but also considering that we already control for utilisation rates in the specification which will also capture part of the role played by demand.

87. In sum, the estimation results in our primary model confirm the findings from our descriptive analysis above: higher consortia presence on routes does not lead to higher freight rates – and if anything, may have a negative effect. More, estimation results for the various cost, supply and demand variables confirm expectations from economic theory, are statistically significant and economically meaningful. Thus, our primary model appears to be correctly specified and inferences can be made with a good degree of confidence.

4.3.2. Supplemental model: Consortia Capacity Share

88. Our supplemental specification uses the Consortia Capacity Share instead of the HHI Consortia Increment to capture consortia market presence. Using this alternative measure, we confirm the main results from our primary model: we do not find any evidence that a higher Consortia Capacity Share on a certain trade route relates to higher freight rates on that route. Thus, the main result in this section appears to be robust across different measures for consortia presence.

Table 4. Regression results: Freight rates – Consortia Capacity Share (%)

Freight rate ($)	(1)	(2)	(3)	(4)	(5)	(6)
Consortia Capacity Share (%)	-34.3**	-1.33	-33.0*	-5.63	0.55	-52.0***
	(0.050)	(0.921)	(0.061)	(0.692)	(0.972)	(0.002)
Bunker costs	8.96***	5.68**	6.57***	5.55**	8.81***	11.7***
	(0.003)	(0.010)	(0.009)	(0.011)	(0.000)	(0.000)
Effective utilisation rate on route (2 months lag)	4092.4***	-592.3	2255.6**	-336.3	2280.7**	7065.0***
	(0.001)	(0.564)	(0.013)	(0.747)	(0.011)	(0.000)
Global container shipping throughput index (2 months lag)	131.8***	88.2***	104.0***	86.3***		
	(0.000)	(0.000)	(0.001)	(0.001)		
Capacity absorption (%) due to delays		322.6***		256.4***		
		(0.000)		(0.000)		
New Covid cases			5.05***	1.84		
			(0.001)	(0.104)		
Global annual ecommerce sales					1.71***	
					(0.000)	
Volume (2 months lag)						0.00085
						(0.812)
Constant	-15967.0***	-7524.5**	-10834.5**	-7002.8**	-9175.7***	-3361.4
	(0.002)	(0.026)	(0.019)	(0.045)	(0.000)	(0.363)
Route fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-Square	0.51	0.63	0.59	0.63	0.70	0.45
No. obs.	583	572	583	572	583	583

Source: CRA econometric analysis. Note: P-Values in brackets: *** P<0.01, ** p<0.05, *p<0.1. Europe-Oceania route is excluded from the analysis as the capacity absorption share (based on Sea-Intelligence) is unavailable for this route.

89. Across the first five specifications, we see that our measure for consortia market presence, the Consortia Capacity Share, is not statistically significant. This means that a higher share of capacity attributable to consortia is unrelated to freight rate developments. If anything, what we see in specification (6) is that consortia market presence has a significant *negative* effect on freight rates, meaning that higher Consortia Capacity Share leads to lower freight rates.

90. The point estimates for our demand and supply variables are of the expected sign and have similar statistical significance levels as those discussed in the context of our primary model. We find that a one unit increase in the bunker cost index leads to an increase in shipping rates between $5.6 and $11.7. We also find that an increase in the effective utilisation rates leads to higher freight rates. The capacity absorption (%) due to delays and new COVID cases also confirm our earlier findings that the COVID induced supply frictions play a significant role in recent freight developments. Finally, the global container shipping throughput index and global e-commerce sales again confirm the role played by demand in the development of freight rates.

91. We conclude that the estimation results in the supplemental model confirm the findings from our primary model as well as our descriptive analysis above: consortia presence (measured in terms of Consortia Capacity Share) does not lead to higher freight rates.

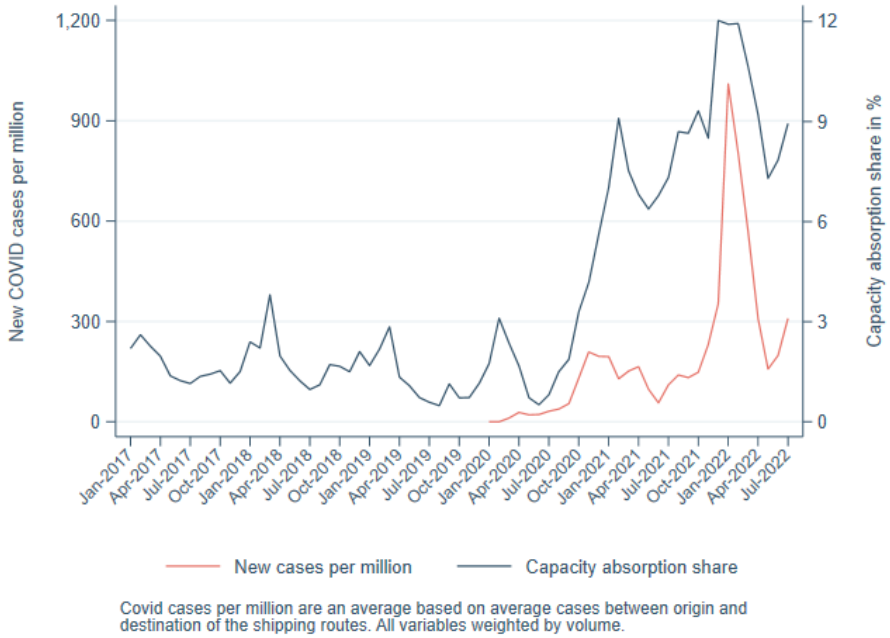
4.4. Consortia effect on capacity

92. We have shown that a key driver behind the price increase next to demand shifts appears to be a reduction in effective capacity. In this section we test whether the capacity disruptions themselves could be caused by consortia concentration. Our graphical analysis presented in the previous section already indicates that this is not supported by empirical evidence.

93. As with the analysis of freight rates, we also offer more formalised statistical tests to supplement our graphical analysis. However, we note that contrary to the price models, it is unlikely that our dataset covers all the main underlying factors that have led to the recent surge in lost capacity. We are thus primarily testing if the surge in capacity absorption is related to consortia presence, rather than aiming to fully explain the surge itself.

94. As a starting point, we note that the recent surge in lost capacity appears to be mainly driven by pandemic related frictions. Figure 15 highlights the apparent relationship between the number of COVID cases and the capacity absorption share. While we most likely lack certain variables to fully explain the observed spike in lost capacity, it thus seems appropriate to at least include the number of COVID cases in our econometric analysis of the recent capacity absorption increases.

Figure 15: Comparison of Covid cases and the capacity absorption share



95. In addition to the potential effect of consortia presence and the COVID pandemic, it may also be possible that the increase in demand for shipping during the pandemic exacerbated the existing congestions and supply chain frictions. We thus also consider this variable in our econometric analysis.

96. In sum, we specify a “simple” econometric model including variables covering these three areas:

- **Consortia presence.** As measures of consortia presence, we employ the same HHI Consortia Increment and the Consortia Capacity Share variables as previously defined.

- **The Covid pandemic.** In order to assess the impact of the COVID pandemic on port congestions and delay, we include the number of new covid cases in our model.
- **Demand variables.** We include our main demand variable which is the Global container shipping throughput index. Results are robust to the use of alternative variables such as global ecommerce sales and route-specific volumes shipped.[27]

97. Table 5 below presents the regression results when estimating the effect of consortia concentration on the capacity absorption share due to delays. We find no evidence for the notion that consortia concentration has caused supply frictions by increasing the capacity absorption. In none of the specifications we find a statistically significant, positive point estimate of our measure of consortia concentration. In certain specifications (see Specifications 3 and 4) we even find some evidence to suggest that consortia actually helped reduce the overall level of lost capacity.

98. In addition, we find that indeed external factors instead seemed to have caused a reduction in effective capacity by increasing capacity absorption due to delays. Our measure for COVID intensity (new COVID cases) has a positive and significant effect on capacity absorption throughout. In addition to this, in particular the demand shift represented by the global container shipping index appears to have aggravated the supply frictions, leading to more delays and increasing the capacity absorption share. All these effects are consistent with what can be expected from economic theory.

Table 5. Regression results on capacity absorption

Capacity absorption (%) due to delays	**(1)**	**(2)**	**(3)**	**(4)**
HHI Consortia Increment	**-0.000011**	**0.00039**		
	(0.974)	**(0.299)**		
Consortia Capacity Share (%)			**-0.093*** **	**-0.083*** **
			(0.004)	**(0.005)**
New Covid cases	0.016***	0.014***	0.016***	0.014***
	(0.000)	(0.000)	(0.000)	(0.000)
Global container shipping throughput index (2 months lag)		0.014***		0.13***
		(0.000)		(0.001)
Constant	1.82**	-14.9***	11.0***	-4.72
	(0.018)	(0.004)	(0.001)	(0.331)
Route fixed effects	Yes	Yes	Yes	Yes
Adj. R-Square	0.63	0.67	0.65	0.68
No. obs.	595	575	595	575

Source: CRA econometric analysis. Note: P-Values in brackets: *** P<0.01, ** p<0.05, *p<0.1. Europe-Oceania route is excluded from the analysis as the capacity absorption share (based on Sea-Intelligence) is unavailable for this route.

99. Results are robust to varying the measure of consortia presence. For both Consortia Capacity Share as well as HHI Consortia Increment we find that consortia presence did not cause a decrease in effective capacity by increasing congestions and delays.

100. This provides further evidence that recent freight rate increases are not linked to consortia.

27 These results are not reported here for brevity.