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Working Party No. 2 on Competition and Regulation

COMPETITION ISSUES IN LINER SHIPPING

-- Note by the Secretariat --

19 June 2015

This document prepared by the OECD Secretariat to serve as a background note for Item IV of the 59th meeting of the Working Party No. 2 on Competition and Regulation on 19 June 2015.

The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Organisation or of the governments of its member countries.

More documents related to this discussion can be found at: http://www.oecd.org/daf/competition/competition-issues-in-liner-shipping.htm

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1. Introduction[*]

1. Liner shipping services are provided by carriers to shippers, through the operation of (mostly) container ships, on a regular schedule, between ports. Liner shipping is a crucial sector for global trade. It is one of the keystones of globalisation. From Adam Smith's Wealth of Nations to the International Trade Theories of Paul Krugman[1] or to Jeffrey Sachs's studies[2] on the impact of shipping costs on a nation's growth path, there is wide consensus concerning the relevance of maritime transport.

2. According to the UNCTAD *Review of Maritime Transport* 2014, the share of international trade carried by sea is around 80 per cent, in terms of volume, and over 70 per cent, in terms of value. For most developing economies, the share is even higher. Furthermore, container trade volume growth has long been perceived as being possible to be forecasted by GDP performance with a multiplier effect predicted to range between three and four times the GDP growth[3].

3. Most containerised cargo cannot be transported in a cost effective way by other alternative means (Brooks, 2000). Thus, liner-shipping services can be a determining factor for the borders of the relevant markets of numerous goods, influencing the geographic arena where competitive conditions are set for those products. Inefficient and costly transportation services can affect international trade and global welfare.

4. Yet, this sector has experienced a rather peculiar history in the application of competition law. The liner shipping industry has long been characterised by cooperative agreements. Since the industry's inception in the late XIXth century, liner-shipping conferences, whereby liner shipping companies set common freight rates and regulated capacity, have been a common arrangement. Liner shipping conferences have been exempted from antitrust rules for a long time, under claims from ocean carriers that they are a requirement for profitability and stability in the sector. These claims rest on arguments that the specific nature of costs that characterise the sector renders competition in the industry unsustainable, entailing poor outcomes for all market participants.

5. The long-standing regulatory *status quo* nonetheless was questioned and revisited in the past decades. Several structural trends, which developed in the industry, prompted the re-evaluation. Independent carriers gained grounds in some trades. Other cooperative arrangements, such as consortia and strategic alliances, flourished in the industry, as an outcome of carriers' efforts to benefit from economies of scale and widen the geographic coverage of their activities. By the end of the 1990s, the U.S. passed the Ocean Shipping Reform Act (OSRA) 1998, which did not abolish conference exemptions, but introduced important pro-competitive changes, namely by no further allowing liner shipping conferences to impede conference carriers from engaging into confidential service contracts and by eliminating the statutory requirement that service contracts were to be made public. These changes led to the proliferation of confidential one-to-one service contracts between carriers and shippers.

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[1] See, for example, Krugman (1991).

[2] See, for example, Radelet and Sachs (1998).

[3] See UNCTAD *Review of Maritime Transport* 2013, page 22.

6. In 2002, the OECD issued an influential report concerning "*la raison d'être*" of liner shipping conferences. The report challenged the alleged uniqueness of the liner shipping industry, stating that "*liner shipping is about as "different" from other industries as, for example, trucking is to freight air services or freight air is to rail freight – with the exception that price-fixing is allowed in liner shipping and nearly universally dis-allowed in these other industries*"[4]. The report concluded that there was no evidence of the alleged benefits of liner shipping conferences, as the increased competition the sector experienced following competition-enhancing legislation had not yielded the trade instability that market players predicted but rather delivered service innovation and quality also having led to some of the steepest declines in observed freight rates. Nonetheless, "*carriers have not lost the price-fixing reflex*"[5] and hard-core rate-fixing keep freight rates from becoming aligned with those of the most efficient carriers. Furthermore, the report highlights that capacity agreements that go beyond operational groupings or which account for a high market share can have yield anti-competitive rates through reducing overall capacity. The report thus recommended that limited antitrust exemptions should not be allowed to cover price fixing and rate discussion and that capacity agreements should be carefully scrutinised to determine the distortion they can potentially generate in the market.

7. Since the OECD (2002) report, several countries undertook reviews of their regulatory frameworks. The most relevant of these reviews was that undertaken by the European Commission (EC), which culminated, on September 25, 2006, with the repeal of Council Regulation 4056/86 that previously granted a block exemption to liner shipping conferences, with a two-year transitional period where conferences were still allowed.

8. The last decades have brought about important changes to the liner shipping industry. The regulatory changes, the weakening of the conference system, the increase in the relevance of individual confidential service contracts, the tendency towards ever bigger vessels, the search for economies of scale and scope through horizontal and vertical integration, and the increasing relevance of strategic alliances – which have become important global actors since the 1990s, have transformed the sector.

9. This note will discuss the main developments and competition issues in liner shipping, namely:

- The regulation in different countries concerning liner-shipping conferences and their evolution;
- The role of liner shipping consortia and strategic alliances;
- The trend towards horizontal and vertical integration;
- The implications of developments in liner shipping for ports;
- Excess capacity and potential implications for competition;
- Issues related with exchange of information and price signalling.

4 OECD (2002), page 75.

5 OECD (2002), page 76.

2. An overview of the Liner Shipping Sector

2.1. A short history of liner shipping

10. Today, the seaborne transport of goods is structured as three different main segments: bulk shipping, specialized shipping and liner shipping[6] (Stopford, 2009). The last segment – liner shipping – dates back to the XIX century when the advent of the first reliable steamships offered the possibility of scheduling maritime transport services on a regular basis. At that time the cargo was limited to mail, but when later on – in the second half of XIX century - the wooden hulls were replaced by iron and steel, shortly after a fleet of ships devoted to the transport of freight arose.

11. The increasing importance assumed by liner shipping in the seaborne transport and the growing competition on the most important routes determined the rise of the conferences agreements - the first one being the Calcutta conference set up in 1875 – allegedly aimed at stabilizing the supply chain and assuring steady services in the then-main maritime routes. In general, they are "*formal agreements between carriers on a route, always setting (possibly discriminatory) prices, and sometimes pooling profits or revenues, managing capacity, allocating routes, and offering loyalty discounts"* to shippers (Sjostrom, 2004).

12. Traditional liner shipping transported general cargo in flexible vessels with cargo-handling gears that could adjust to several lot sizes and kinds of cargo. Operations of loading and off-loading liner vessels were labour-intensive, entailing long times spent by the ships at the ports of call (Talley, 2009). Port capacity or improvements in port operations did not keep up with the increasing demand for maritime transport. Therefore in some cases (and regions) port operations were so long that they determined lengthy queues at the port entrance. The idle time spent by vessels in ports – either waiting to be served and/or being served – limited the possibility to exploit the economies of scale of general cargo ships. This entailed a trade-off: an increase in vessel size, on the one hand, reduced average ship costs and, on the other hand, increased the time consumed by loading and unloading operations which restricted the annual vessel fleet capacity (Marchese, 1973).

13. During the Second World War, military reasons determined the need to technically standardise the heterogeneous general cargo, to ease the mechanization of loading and unloading: pallets represented the way to meet this need (von Schirach-Szmigiel, 1979). In the same period, most shipyards delivered a great number of standardized ships, to reduce delivery time and to accomplish military needs. "*A few type of ships dominated the war building program, which meant poor adaptation to the demands of individual routes. In particular US shipyards became famous for their Liberty-Class vessels characterized by an average construction time of around 40 days. (…)* (After the war) *the vessels served all around the world for the shipping companies of nearly all shipping nations, and many of them remained in service as multi - purpose tramp vessels for decades after the end of the war*." (Talley, 2012).

14. In the 1960s, in order to avoid competition brought by the dry-bulk segment, the general cargo fleet decided to "specialize" its service enhancing the process of unitization of cargo with the introduction of new kinds of ships: the LASH (Lighter Aboard SHip) vessels and the cellular ships (i.e. vessels specifically designed to accommodate containers). Undoubtedly, the break-through innovation in liner

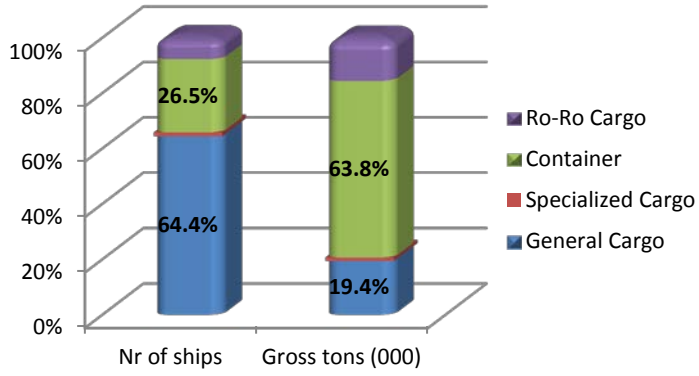
[6] Bulk shipping "*handles large cargo parcels in "bulk carriers" and oil tankers designed for the efficient transport of the very large parcels (10 to 450,000 tonnes) of homogeneous cargoes such as iron ore, coal, grain, oil etc"*. Specialized shipping "*transports large quantities of specialized trades (e.g. chemicals, gas, motor vehicles, forest products), generally using ships built for the purpose"*. Liner shipping "*specializes in the transport of small cargo parcels, which do not fill the hold of a ship, on regular services*" (Clarkson Research Studies, 2004).

shipping was the adoption of containers from 1956 on and the deployment, early after, of the first cellular ships. The adoption of containers allowed the mechanization of loading and unloading at ports and avoided the break of bulk, thus favouring the first forms of intermodal transport.

15. In order to afford the size of the investment in new vessels (full container ship), consortia were formed. With consortia, the risk associated with the new investment was spread among the carriers involved in the agreement.

16. The success of container is attested by the rapid expansion of the cellular fleet: Lloyd's Register of Shipping recorded only 20 container ships in 1966, against 11,807 general carriers, and only ten years after, container ships were 443 (+2,115%), against 12,062 general carriers (+2.16%). In the last forty years, the containerization of general cargo went on: in 2013, according to Equasis, the 4,878 container ships (with a capacity of no less than 500 gross tons) represented a fourth of the vessels deployed by the liner shipping industry, but they accounted for almost two thirds of the carrying capacity of the liner shipping fleet (Figure 1). Thus, the remainder of the note focuses on the containerized sector.

Figure 1 – The liner shipping fleet



Source: Equasis, The world merchant fleet in 2013.

2.2 A stylized picture of the liner shipping sector

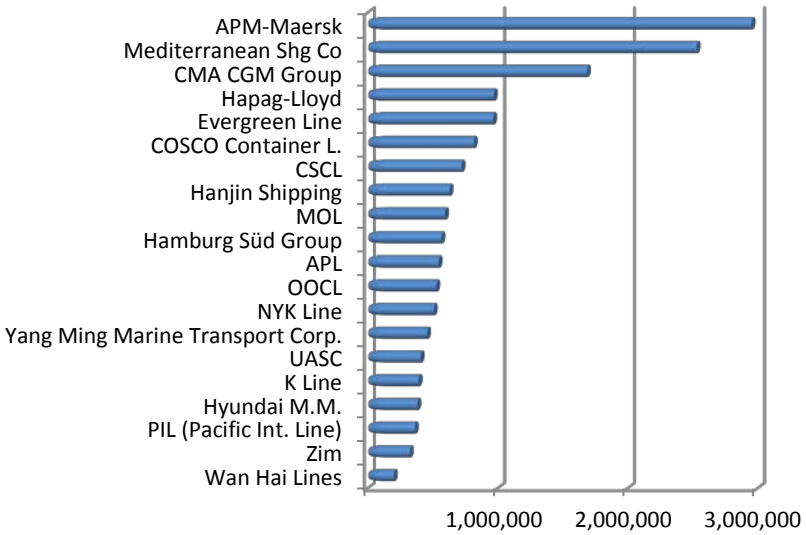
2.2.1 The supply side of the market

17. In what follows, a broader picture of the industry is developed. An important note, however, is that concentration measures and other structural indicators are only meaningful when computed for relevant markets. In liner shipping, the trade lane is an important element of relevant market definition (OECD 2002).

18. The shipping sector is often referred to as a global market, moderately concentrated, that takes the form of an oligopoly (Sys, 2009). The supply side is made of several companies but, according to data published by Alphaliner in April 2015, the five largest carriers - APM-Maersk, Mediterranean Shipping Company (MSC), CMA CGM Group, Hapag-Lloyd and Evergreen Line – control 39% of the vessels deployed by the top 100 shipping companies and almost half of the transport capacity of the market (expressed in TEU[7]).

[7] TEU, Twenty Equivalent Unit, is the standard size of a 20-foot-long box.

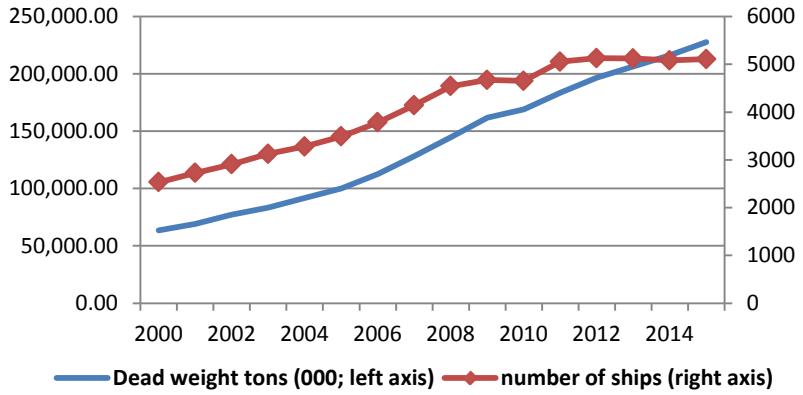
Figure 2 – The fleet of the top 20 liner companies (fleet capacity deployed in TEU)



Source: Alphaliner (accessed in April 2015)

19. In the last years, UNCTAD has recorded a slight decrease in the number of container ships serving the global market, but the deadweight tons and the gross tonnage of the fleet has continued to grow (Figure 3).

Figure 3 – Evolution of the container ship fleet



Source: UNCTAD (2015)

20. The liner service is scheduled in advance of the effective demand, thereby being characterised by high fixed costs, i.e. costs that are born irrespective of the volume of cargo shipped. According to Lim (1994) and Psaraftis et al. (2012), the fixed costs include depreciation, amortization, insurance and maintenance of the vessel (or fleet of vessels) as well as crew expenses. Variable costs are related to voyage costs (port charges and the cost of bunker) and to cargo-related expenses (e.g., stuffing, stripping, cargo inspection).

21. Assuming a volume of cargo sufficient to fill up a single vessel deployed on a certain string, since the fixed unit costs exceed the variable unit costs, that vessel presents relevant economies of scale. This means that apart from limitations deriving from the market (insufficient demand on a particular route), the process of deploying ever bigger vessels is limited only by technical or operational constraints (e.g., in terms of manoeuvrability of vessels as their size increase) or by physical barriers along the maritime route arising from the limited dimension of some channels (as at Panama or Suez) or of some seaports (e.g., from quay length, depth of port access canals.).

22. However, the liner service involves another kind of cargo-related variable costs: the terminal handling charges that increase with the size of the vessel, both in terms of charges and time spent by the vessel at the port. Therefore, there is a trade-off between the positive returns to scale from ship size earned at sea and the negative returns while the ships are in the port (Jansson and Shneerson, 1987). Cullinane and Khanna (1999) demonstrate, for a sample of routes, that the diseconomies of ship size in ports are outweighed by the economies of ship size at sea. The consequence, as discussed in Section 7, is a great pressure on port terminals to invest in quay facilities (e.g., new gantry cranes, twin lift spreaders) to keep pace with the evolution of the container ship fleet.

23. As the demand for liner shipping increased in the last three decades – due to both an increase of transport demand and an increase of the ratio of containerised cargo – the shipbuilding industry has proposed ever bigger ships. As reported by Martin et al. (2015), if the largest ships delivered in the 1970s were capable of accommodating approximately 2,000-3,000 TEU, in the 1980s the largest ships were over 4,000 TEU and in the late 1990s they reached a nominal capacity of 8,000 TEU. Currently, the largest ships deployed, as the Maersk's Class Triple E vessels, may accommodate around 18,000 TEU. The scope for exploiting scale economies is substantial. For example, in the case of ultra large container ships ("ULCS"), Drewry (2013) estimates that the bunker cost per TEU carried is 35% lower than a typical 13,100 TEU vessel (due to lower cruise speed and more efficient engines) and ship operating costs per TEU carried are also smaller. The savings per TEU are decreasing with size (Sys et al., 2008) and this cascading effect is estimated by a recent study: "*the cost savings of going from the previous to the newest generation of container ships* (19,000 TEU of nominal capacity) *are four to six times smaller than the previous rounds of savings, depending on the assumed vessel speed*" (ITF, 2015).

24. The relevance of the economies of scale is confirmed by the evolution of the cellular fleet in the recent years, as reported by Drewry "Container Forecaster" (2005, 2010 and 2013). In approximately three years, the largest class of vessels – those with a nominal capacity exceeding 10,000 TEU – recorded an increase of more than four times, both in number of vessels and in nominal carrying capacity. Thus, the structural "lumpy" nature of liner shipping capacity is reinforced by the deployment of ever-bigger ships.

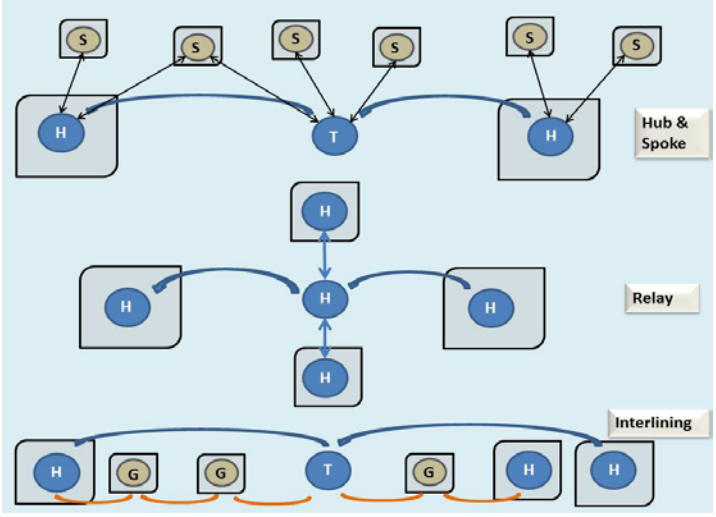
Table 1 – World cellular container fleet by size range (only ships with nominal capacity +500 TEU)

Size range	2005		2010		2013	
(TEU)	*Ships*	*TEU*	*Ships*	*TEU*	*Ships*	*TEU*
10,000 +	*-*	*-*	*42*	*476,634*	*182*	*2,328,988*
7,000-9,999	*62*	*481,440*	*245*	*2,047,310*	*383*	*3,228,046*
5,000-6,999	*265*	*1,534,648*	*467*	*2,736,622*	*548*	*3,212,490*
3,000-4,999	*567*	*2,217,741*	*858*	*3,473,331*	*936*	*3,846,156*
1,500-2,999	*976*	*2,090,532*	*1,297*	*2,808,810*	*1,207*	*2,618,873*
500-1,499	*1,173*	*1,088,073*	*1,333*	*1,244,900*	*1,499*	*1,417,003*

Source: Drewry Container Forecaster 2005, 2010 and 2013

25. The globalization of the world economy, coupled with the deployment of ever bigger vessels, has imposed a structure on the liner service based on the development of some hub ports for the transhipment of cargo from mother vessels to feeder ones *(hub & spoke*) or from east-west routes to north-south routes (*relay*) or even among different liner services (*interlining*). Figure 4 illustrates the main transhipment systems. *Relay* is based on the intersection between two main routes (e.g. North-South/East-West) while *interlining* is based on the intersection of different kinds of services on the same route.

Figure 4: Transhipment structure

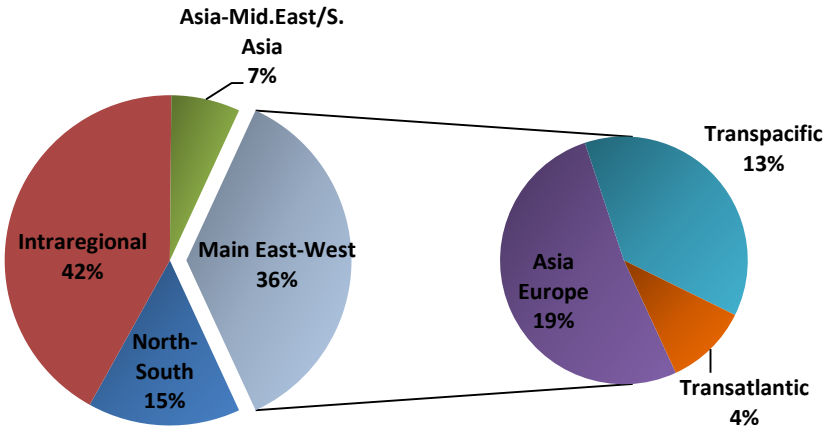


Note: circles represent ports; rectangles represent hinterlands; H represents main ports; S represents spoke ports; and T, transit ports.
Source: Own elaboration.

2.2.2 The demand side: the maritime routes

26. World container trade (176.5 million TEUs in 2013) is articulated in various trade lanes connecting different geographic regions. The main trade lanes can be categorised in: East-West (71.7 million TEUs), North-South (30.3 million TEUs) and intraregional (74.5 million TEUs). In turn, each trade lane is segmented into specific routes. For instance, within East-West trade, the Transpacific route (23.1 million TEUs), the Europe-Far East route (20.4 million TEUs) and the Transatlantic route (6.7 million TEUs) are the ones with the highest annual cargo demand. Inside intraregional trade, intra-Asia routes play a dominant role as they generated in 2013 almost 60 million TEUs of cargo volumes.

Figure 5 - Trade volumes in the main routes



Source: Elaboration from Drewry (2014).

27. The growing importance of Asia is evident from the traffic volume in the intra-Asia routes and by the data concerning the throughput in the most important ports of the world. In 2013, ten of the top 20 seaports were located in the People's Republic of China, three in (Northern) Europe, and one in North America. While in 1990, six of the top ten ports were located in Asia; in 2013 the top ten was made exclusively of Asiatic ports.

28. Another important feature in liner shipping is the existence of economies of scope, i.e., the economic advantage of offering shippers a large set of services among several maritime routes, so as to better meet shippers' demand requirements. They may be achieved by internal growth, mergers or by joining a liner alliance (Ferrari et al., 2008; Parola et al., 2014). A shipping alliance "*is a sort of consortium whose geographic scope is not a single trade, but is instead worldwide*" (Munari, 2012). Alliances operate in all relevant routes, as shown in Table 2, even if some agreements seem to be focused on a particular set of routes; this is the case of the CKYHE and G6 alliances with respect to the Asia-U.S. West Coast (USWC) trades.

Table 2 - Number of services[(1)] offered by global alliances

Trade route	Number of services	2M	Ocean Three	CKYHE	G6	Others
		Maersk; MSC	*CMA-CGM; UASC; China Shipping*	*Cosco, K Line, Yang Ming, Hanjin, Evergreen*	*APL; Hapag Lloyd; Hyundai M.M.; Mitsui; Nippon; OOCL*	
Asia-North. Europe	*22*	*6*	*4*	*6*	*5*	*1*
Asia-Med.	*15*	*5*	*4*	*3*	*1*	*2*
N. Europe-N. America	*16*	*3*	*n.a.*	*1*	*7*	*5*
Med. – N. America	*7*	*2*	*n.a.*	*0*	*1*	*4*
Asia-USWC	*41*	*4*	*5*	*13*	*14*	*5*
Asia-USEC	*23*	*2*	*2*	*7*	*5*	*7*

Note: data refers to the second quarter 2014.
(1) For the purpose of Table 2, a liner shipping service can be defined as the maritime transport of containerised cargo (and empty containers) from a geographic region (e.g., Far East) to others (e.g., North Europe) and vice versa, following a predefined sequence of called ports constituting the so-called "port rotation" of the service[8].
Source: Drewry (2014).

3. Competition Issues in Liner Shipping

29. Liner shipping conferences have been contentious in the liner shipping industry for a long time. After more than one century of worldwide antitrust exemptions to these cartel-like agreements, under claims of their necessity for price and service stability, the debate about whether they are still warranted was spurred by a report published by the OECD in 2002.

30. The debate intensified in Europe, with a major review being undertaken by the EC that culminated, on September 25, 2006, in the repeal of Council Regulation 4056/86 that granted a block exemption to liner shipping conferences. Previously, the OSRA 1998 in the U.S. introduced pro-competitive changes while maintaining antitrust exemptions to liner shipping conferences. These and similar regulatory changes in some other countries, the increasing relevance of independent carriers and of individual confidential service contracts, as well as the proliferation of non-price-fixing cooperative agreements, led to the weakening of the conference system. Nonetheless, conferences and discussion agreements are still exempted from antitrust provisions in many countries, and the debate following different perspectives concerning their impact on competition and efficiency of liner shipping services remains relevant today.

31. Innovation has brought about important changes to the sector, starting with the "containerization revolution" in the 1950s. The scope for reaching economies of scale has led the major trends that have characterised the industry: the tendency towards ever bigger vessels, horizontal cooperation - ranging from looser agreements of slot chartering to more integrated consortia and alliances, horizontal consolidation, with mergers waves that increased concentration in the industry, and vertical integration.

8 On each trade route, ocean carriers normally offer a number of shipping services that present a similar nautical route but a different port rotation, in order to diversify their supply and intercept cargo in various market contexts.

32. Strategic alliances proliferated in the industry since the 1990s, allowing carriers to benefit from scale and scope economies and enhancing the geographic coverage of their services in a response to the challenges brought about by globalization. Among the first alliances were those of Sea-Land and Maersk (1995) and the "Global Alliance" between APL, OOCL, MOL and Nedlloyd. Currently, there are four mega strategic alliances ("G6", "CKYHE", "2M" and "Ocean Three"), which account for a substantial share of vessel capacity in the main trade lanes. Almost all major liner carriers are part of a global alliance and the position of fully independent carriers in the industry has declined.

33. Horizontal cooperation and consolidation have changed the face of the industry. The liner shipping industry is thus currently characterised by four global constellations of carriers. Furthermore, in the last decades, the potential for bottlenecks at port facilities and the opportunity for economies of scope have led to vertical integration with port activities.

34. This configuration raises important questions. While these strategic alliances can bring important benefits to the industry, allowing to achieve economies of scale and scope, a higher flexibility in adjusting the capacity deployed to volatile demand conditions and a greater geographic coverage of carriers' service networks, the contestability of these mega alliances, the potential barriers to entry which may arise as a result and the capacity of independent carriers to compete in the industry remain open issues.

4. Liner Shipping Conferences

4.1 Origins, evolution and the weakening of the conference system

35. The liner shipping industry has been organized under cooperation agreements between liner carriers since its early years. After an initial experience with cutthroat competition, liners sought to achieve stability of returns by creating cooperative agreements whereby freight rates were fixed and capacity was jointly regulated through liner shipping conferences.

36. These arrangements were exempted from competition law, and dominated maritime transport worldwide. While more than a century elapsed since the first of this kind of arrangements (the Calcutta conference), they have nonetheless benefited from exemptions from antitrust law all around the world until recently. Some of these conferences have been operating for a very long time. For example, the Far Eastern Freight Conference, established in 1879, was only dissolved in 2008. This was despite the worldwide increasing relevance attributed to competition law enforcement in general.

37. However, the relevance of the conference system has been weakening. Several factors have contributed to this trend. Following containerisation, and the industry path towards ever-bigger vessels, alternative cooperation forms have emerged, namely consortia and strategic alliances. Since the 1990s, these alliances have become increasingly predominant. Furthermore, regulatory changes in the EU, the U.S. and some other countries (see Section 4.3 for a review) had an impact in the representativeness and coverage of the conference system, as well as on the degree of "conference authority" to set freight rates.

38. Little information is available or compiled which could help in characterising the share of liner shipping conferences in the current volume traded. Nevertheless, some structural changes can be underlined. At the time of the 2002 OECD report, there were around 150 conferences operating around the world, with a member portfolio ranging from 2 to 40 carriers. While their relevance was declining since the 1970s, conferences nonetheless accounted for 60% of the TEU capacity in the major trades (OECD 2002).

39. In the last decade, the role of the conference system further waned. In the East-West routes, there is currently only marginal conference activity. According to the data published by Dynamar's (in its website) in 2015, a minority of the existing agreements concern the main routes (about 18%), while almost half of them relate to the North-South routes. The top three carriers are included in many agreements but mostly on the North-South and Intraregional services, as the main routes are largely served through other cooperation agreements (strategic alliances).

40. The EU repeal of the block exemption for liner shipping conferences influenced the development of this type of agreement, at least in some specific routes. Nonetheless, some conference agreements are still in force in the East Mediterranean and for some strings of the main Far East-Europe routes (e.g., those connecting Middle East countries with India or the Far East).

41. Furthermore, a substantial share of the agreements concern Australian or African connections and tend to serve those markets, mainly from Asiatic ports. The number of carriers involved in these agreements is extremely variable: in some cases they comprise only two carriers and in few cases they include more than 10 players (with a maximum of almost 30 carriers); in general, larger partnerships occur in the Intraregional trades.

42. The majority of the liners that are part of conferences are small-medium sized companies. Yet, almost all the top 30 players (in terms of vessels deployed capacity) are included in at least one conference agreement. Half of these liners are involved in just one conference while no more than 10% engaged in more than ten of these agreements.

4.2 Discussion of the underlying reasons for liner shipping conferences and antitrust exemptions

43. Since their creation, a number of arguments have been put forward in favour of liner shipping conferences. The OECD (2002) report provides an extensive discussion of the claims and theories which have been argued by supporters of the conference system. The report lists the justifications set by carriers for liner shipping conferences and price fixing, namely that:

1. they counteract destructive marginal cost pricing which underestimate real costs;

2. they prevent consolidation in the industry;

3. the exchange of information is needed to develop future strategies; and

4. commonly set prices act as a benchmark for negotiated rates.

44. The supporters of these views argue that cartel like arrangements entailing price fixing and capacity regulation thus protect all market actors, including shippers, from excessive volatility in price and service. Under these arguments, in the absence of price fixing agreements, shippers would not be provided with frequent and regular services and the higher prices paid by shippers as a result of liner shipping conferences are outweighed by the benefits of service stability. This line of reasoning, strongly defended by carriers, rest on the alleged uniqueness of the economic features of the liner shipping industry.

45. In a joint document submitted in March 2014 to the EC, the World Shipping Council (WSC), the European Community Shipowners' Associations (ECSA), and the International Chamber of Shipping (ICS) reiterate some of these claims: "*The fundamental characteristics of the liner shipping industry that have been the basis of the consortia BER (Block Exemption Regulation) since 1995 remain unchanged today. Specifically, the industry is not concentrated; there are no regulatory barriers to carriers entering markets; the industry struggles with overcapacity for structural, cyclical and seasonal reasons, but such excess capacity cannot be utilized or easily idled; capital and operating costs are high; the industry is highly competitive with shippers having an array of service choices; and profits (where they exist) and returns on investment typically lag behind those of other major industries*".

46. However, this alleged "uniqueness" of the liner shipping industry has often been questioned. The OECD (2002) report highlights that the "unique" set of characteristics, namely high and lumpy capacity investments, fluctuating demand, structural overcapacity requirements and marginal costs below average costs when supply exceeds demand, are shared by other industries which provide regular scheduled services, namely rail and air transportation. However, antitrust exemptions are unique to the liner shipping industry and other "as unique as" industries have not experienced the chaotic scenario predicted by carriers for a liner shipping industry with unregulated competition.

47. Firms in liner shipping, as in all industries, are not expected to behave myopically but rather to incorporate their expectations in terms of demand fluctuations in their capacity investment decisions. Furthermore, carriers have alternatives to vessel purchases or vessel chartering for adjusting to demand fluctuations in a more flexible, cost efficient way, for example, through slot chartering. Unexpected low demand in the industry may generate shakeouts and exit by less efficient firms. High rates and prospects of profitability will bring new firms into the industry. Liner shipping conferences, however, artificially set prices above the competitive level, historically aligning them to those of the least efficient members, thereby generating efficiency losses with respect to a competitive equilibrium (OECD 2002).

48. Carrier claims that the lumpiness of supply increases the impossibility of a steady equilibrium find support in the so-called "*Theory of the Core*"[9]. According to this theory, a competitive equilibrium may not exist in a market with large avoidable fixed costs (indivisibilities) and marginal costs below average costs for all outputs below capacity (after which marginal cost rise steeply). Demand and supply may not intersect, as no firm would be able to profitably supply the service. In other words, "*when firm average costs are U-shaped, competition will not sustain marginal cost prices (which are the efficient prices for firms to charge) unless demand is such that the optimum production plan requires all firms to produce where marginal cost equals average cost*" (Pirrong, 1992).

49. In the academic literature, there are some applications of the theory of the core to liner shipping services (e.g. Sjostrom 1989 and 2009, Pirrong 1992 and Button 1999). Under this line of reasoning, the macro trend favouring an increase of average vessel size increases the probability of the lack of equilibrium, as demand will further fall short of saturating supply. Competition to attract additional cargo by offering the service at the marginal cost would then start an endless re-contracting among carriers and shippers such that no stable equilibrium would emerge.

50. The empty core theory then concludes that "*cooperative arrangements among firms are less an attempt to impose monopoly prices than they are a response to inefficiencies caused by the core emptiness*" (Fusillo, 2003). A consequence of those arrangements is that excess capacity still remains in the market, caused by the deployment of a number of slots on each single route well beyond the average level of demand on that single route in the year (see Section 9 on excess capacity in the sector).

[9] This theory was initially put forward by the economist Lester Telser of the University of Chicago, in 1978.

51. The applicability of the empty core theory to liner shipping has been disputed. The OECD (2002) argues that empirical evidence in the industry does not support this theory: price volatility seems to arise irrespective of the existence of liner shipping conferences and service contracts, negotiated on a one-to-one basis among carriers and shippers, provide the stability of service which defendants of the theory of the empty core claim that can only be provided by conferences.

52. Furthermore, the instability of cooperation agreements (both conferences and alliances) has been reported in the literature (Midoro and Pitto, 2000) and does not apply well to the theory of the core that considers such forms of cooperation vital for the market equilibrium. The Global Insight Report (2005) prepared for the EC during the review of the block exemption also did not find any evidence that competition among liner shipping carriers would lead to "*inherent instability*". The report concluded that stability of supply can be enhanced by competition and by the removal of the potential instability in conference membership. Sagers (2006) tests the theory of the core analysing the before-and-after the OSRA 1998 in the U.S., which provided a "*rare opportunity for natural experiment on the behavior and effectiveness of collusive cartel pricing*". He finds that competition is capable of generating favourable outcomes in liner shipping markets, contrary to the long-standing claims that competition performs poorly in this industry due to cost and capacity peculiarities.

53. Another recurring argument in favour of cooperation among liner companies is that of "*Destructive Competition*". According to this approach, the competitive interaction among firms is so intense that it leads not only to fewer suppliers surviving in the market, but also to a reduction in the quality of the liner service in terms of reliability, frequency and cost of the service. Destructive competition would be the result of high sunk costs that represent a barrier to exit the market, coupled with the rigidity of demand and supply in the liner shipping market. Market instability would emerge because when freight rates exceed the average cost, new companies will join the business and oversupply will follow, driving freight rates below the level of average costs. With overcapacity in the market, competitively setting tariffs to short-run marginal cost implies freight rates do not cover full costs. Following this line of reasoning, Haralambides (2004) considers conference price-fixing as a low cost arrangement towards self-regulation of the industry.

54. The OECD (2002) report challenges the consistency of this argument: any single firm decides to enter a market taking into account, not the pre-entry price level, but rather the post-entry price. Thus, if entry is expected to reduce price below average cost, the firm will decide not to enter the market in the first place. Furthermore, marginal costs are only below average costs in the presence of overcapacity. Exit would reduce excess capacity and bring marginal costs above average costs. But conferences prevent exit by less efficient operators, thus perpetuating overcapacity as found in the Global Insight Report (2005) for the EC.

55. The reaction of the shipping market to the recent economic crisis is particularly interesting with regards to the role of the rigidity of demand and supply as a source of freight rate volatility. The emergence of the crisis in 2008 led to a severe demand cut for liner shipping services. It immediately led to a drop in freight rates and overcapacity in all shipping routes. However, the industry reacted postponing part of the order book, idling and scrapping the less economic vessels, but also recurring to the slow steaming (Cariou, 2011), thus reducing the transport capacity of the liner fleet. This shows that there is at least a range of volume, or tons-kilometres, where the supply curve proves to be elastic.

56. One further theory put forward by defendants of the conference system is the "*Contestable Market Theory"*, which rests on arguments that the absence of significant barriers to entry and exit in the liner shipping markets allow potential competition to play a role in ensuring the efficiency of the market outcome. Haralambides (2007) argues that the contestability in the industry arises from the possibility of shifting ships between routes. However, critics to these theories question that liner shipping markets are indeed contestable (e.g., Jankoswki 1989). The EC has also argued that the theory can hardly apply to the liner shipping industry and justify conference agreements[10]. The EC further refers to the European Liner Affair Association's (ELAA) own statement that "*in the past that it has been possible in many circumstances to move vessels from one trade to another, this flexibility has been severely curtailed by the fact that vessels are increasingly designed and built for the purpose of supplying an entire string for a specific trade and range of ports"*[11].

4.3 Competition Policy vis-à-vis Liner Shipping Conferences

4.3.1 Regulatory regimes around the world and antitrust exemptions to liner shipping conferences – A historical perspective

57. Claims from the liner shipping companies on the unsustainability of the competitive market equilibrium in the industry, the dangers of price wars in the sector and the theories put forward to support these claims had made their way into policy decisions. Worldwide, liner-shipping conferences were either unregulated, or benefited from out of the ordinary antitrust exemptions.

58. In the U.S., the 1916 Shipping Act granted conferences antitrust immunity. The Act followed the so-called "Alexander Report"[12], that recognised the anticompetitive effects of liner shipping conferences, nonetheless also considering that the benefits they brought outweighed the costs. While conceding that antitrust laws should not apply to these agreements, the report nonetheless highlighted the risks of anticompetitive behaviour towards non-conference carriers. The investigation focused on practices by liner shipping conferences going beyond price fixing and joint capacity determination, namely the "*deferred rebates*" granted to shippers as a reward for conference exclusivity and the use of the so-called "*conference fighting ships*" to retaliate carriers outside the conference system by targeting the same schedules with aggressive pricing. These strategies were aimed at discouraging entry by rivals.

59. The 1916 Shipping Act thereby imposed that all conferences in U.S. routes had to be "open conferences" in the sense that conference membership had to be offered to carriers seeking to join the arrangement. It also introduced the requirement that these arrangements were subject to the approval by an independent agency – the U.S. Shipping Board (a predecessor of the current FMC – Federal Maritime Commission). This was in sharp contrast with the common practice of closed conferences around the world, whereby conference participants had the ability to exclude newcomers.

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10 See, for example, the EC Review 4056/86 Discussion Paper of June 2004.

11 ELAA submission to the EC of June 18, 2003, paragraph 5.18.

12 The Alexander Report was the outcome of an investigation lead, in 1914, by the U.S. House Committee on Merchant Marine and Fisheries, named after its chair (Joshua W. Alexander).

60. The criteria for the regulatory assessment of conference agreements raised issues within the industry, with both shippers and carriers claiming they were "vague" and discretionary and created high legal uncertainty regarding FMC rulings. This contention ultimately led to the "*Svenska case*" [13] in 1968 whereby carriers questioned the FMC's assessment of the agreement under the public interest criteria. While the Supreme Court ruled in favour of the FMC analysis by rejecting carriers' claims, these issues eventually led to changes in the regulatory approval procedure for conferences.

61. The Sipping Act of 1984 granted full exemption to liner shipping conferences, shifting the burden of proof of showing an agreement's detrimental effects on competition, transportation services and costs to the FMC. It also clarified exactly which agreements were under the scope of the exemption[14] and changed the procedure for approval by the FMC. Previously, prior approval by the FMC was a requirement ocean carriers had to meet before making the agreements effective. With the 1984 Shipping Act, it became up to the FMC to seek injunctions to agreements found to likely lead to a reduction in competition or to produce an unreasonable reduction in transportation service or an unreasonable increase in transportation cost.

Box 1. The UNCTAD Code of Conduct for Liner Conferences

The aim of organizing the worldwide liner shipping conference system and its role for the development of nations lead in 1974 to the UNCTAD Code of Conduct for Liner Conferences. This agreement followed the worries of developing nations with restrictions faced by their carriers in joining closed liner shipping conferences. The justification put forward for its creation was the need of a universally accepted code of conduct, accounting for the special needs and challenges of the developing countries concerning liner conferences serving their foreign trade. Its main provisions included the right for flag carriers to adhere to conferences operating in routes serving the corresponding country, a cargo sharing rule granting flag carriers equal rights in their mutual trade (40/40/20 basis: 40% of conference cargoes to be reserved for the flag ships of the countries at each end of the route, and 20% by third-country shipping lines), a non-binding dispute resolution mechanism, as well as a "consultation machinery" between shippers and carriers on relevant matters (such as tariffs) and a veto right in conference decision making for the flag carrier of the country served by the conference.

The UNCTAD code was never ratified by the U.S. The EU initially opposed the code due to provisions entailing discrimination based on nationality and the hard core provisions of price fixing, not being compatible with the EU Treaty. However, the code came to be ratified by EU member countries following the "Brussels Package"[15], which authorized EU members to adhere to the code under certain reservations. This allowed the code to come into force in 1983[16]. The code, which Kanuk (1984) described as the "most gigantic regulatory superstructure the world has ever seen", nonetheless never came to take upon significant relevance in practice.

13 FMC v. Svenska Amerika Linien, 390 U.S. 238 (1968) (https://supreme.justia.com/cases/federal/us/390/238/).

14 The agreements covered were those which: "*(1) discuss, fix, or regulate transportation rates, including through rates, cargo space accommodations, and other conditions of service; (2) pool or apportion traffic, revenues, earnings, or losses; (3) allot ports or regulate the number and character of voyages between ports; (4) regulate the volume or character of cargo or passenger traffic to be carried; (5) engage in an exclusive, preferential, or cooperative working arrangement between themselves or with a marine terminal operator; (6) control, regulate, or prevent competition in international ocean transportation; or (7) discuss and agree on any matter related to a service contract.*" (1984 Shipping Act, Chapter 403).

15 Council Regulation 954/79, OJ L 121, 17.05.1979 p. 1.

16 For the code to come into force there was a requirement that it was ratified by countries representing at least 25% of the total volume of world trade in 1974.

62. In the EU, the 1979 "*Brussels Package"* paved the way for the later adoption of Council Regulation 4056/86, exempting from antitrust scrutiny and litigation the so-called liner shipping conferences. The exemption was granted on the grounds that conferences allowed stability and ensured exporters regular services, in an outcome which could not be achieved by less restrictive means. It was an extraordinarily "generous" exemption, in that it contained no market share thresholds and it was unlimited in time.

63. The scope of Council Regulation 4056/86 was the subject of controversy throughout the years. While some industry players have sought to read the Council Regulation as a full *carte blanche* for self-regulation in the liner-shipping sector, the EC rebutted these claims, defending a strict interpretation of the Council Regulation. Its subject matter and scope were defined in Article 1(2), as applying only to international maritime transport services from or to one or more community ports.

64. The EC has issued a number of high profile decisions (see Box 2) where it states its view concerning the exact scope of the regulation. In a number of administrative decisions, whose matter of substance was latter upheld in a judgment by the European Court of First Instance ("CFI"), the EC states explicitly that collective fixing of tariffs for the inland leg of multi-modal were not within the scope of the block exemption. Furthermore, the EC objected restrictions to conference members' freedom to enter into individual confidential contracts with shippers, as well as conference capacity management programmes (i.e., agreements amongst the parties for them not to use a proportion of the their vessel space) primarily intended at driving prices up, with no associated benefits to service quality or cost savings.

Box 2. The litigation around the scope of Council Regulation 4056/86: some relevant cases

The extraordinarily generous block exemption for liner shipping conferences in the EU nonetheless gave rise to a litigation "saga" between carriers and the EC concerning the exact scope of application of Council Regulation 4056/86.

In its decision concerning the Trans-Atlantic Agreement ("TAA")[17], the EC considered that the agreement on a common inland tariff was not covered by Regulation 4056/86 and raised concerns regarding TAA's provisions on capacity non-utilization (or "capacity freezes"), mainly intended at driving prices up, while not leading to improvements in service quality or cost savings. The EC again objected common inland tariff fixing in the decisions concerning the Far Eastern Freight Conference ("FEFC")[18] and the Trans-Atlantic Conference Agreement ("TACA")[19], which followed the TAA. Capacity non-utilization was again an issue in the EC decision prohibiting the East Asia Trades Agreement ("EATA")[20].

In the TACA decision, the EC considered that setting maximum levels for freight forwarders' reward and to determine the terms and conditions on and under which members could enter into individual service contracts with shippers infringed article 101 of the Treaty on the Functioning of the European Union (TFEU). The EC further considered that TACA members abused their collective dominant position "by entering into an agreement to place restrictions on the availability and contents of service contracts and by altering the competitive structure of the market [by inducing potential competitors to join TACA] so as to reinforce the dominant position of the TACA", imposing fines of EUR 273 million.

17 EC Decision of 19 October 1994 in Case No IV/34.446 - Trans-Atlantic Agreement (OJ L376, 31.12.1994 p. 1).

18 EC Decision of 21 December 1994 in Case No IV/33.218 - Far Eastern Freight Conference (OJ L 378, 31.12.1994 p. 17).

19 EC Decision of 16 September 1998 in Case No IV/35.134 - Trans-Atlantic Conference Agreement (OJ L 95, 9.4.1999 p. 1).

20 EC Decision of 30 April 1999 in Case No IV/34.250 - East Asia Trades Agreement (OJ L 193, 26.7.1999 p.23). Although EATA had been terminated in September 1997, the EC nonetheless adopted a decision so as to increase legal certainty.

Following appeals by the parties on the TAA, FEFC and TACA decisions, the CFI judgments of 28 February 2002 upheld the EC conclusions in the matter of substance, namely stating that the provisions of Regulation 4056/86 relating to maritime transport should be strictly interpreted, by virtue of its unlimited duration and the exceptional nature of the hard core restrictions on competition authorised. The CFI judgment of 30 September 2003 on TACA confirmed this interpretation along the same lines.

65. In much of the rest of the world, similar provisions exempted liner shipping conferences form antitrust laws. For example, in Canada, the Shipping Conferences Exemption Act was passed in 1970, the precursor of the Shipping Conferences Exemption Act, 1987. In Australia, the exemption to liner shipping from the antitrust provisions (on cartels, contracts, arrangements or understandings that affect competition and exclusive dealing) carried over from Part X of the Trade Practices Act of 1974 to the Competition and Consumer Act ("CCA") of 2010. The exemption allows liner shipping carriers to fix prices and regulate capacity upon registration of the agreement[21].

66. In some other countries, competition law frameworks were set anew with antitrust provisions granting exemptions to liner shipping conferences (e.g. Singapore).

4.3.2 The tide starts turning: re-visiting the costs and benefits of antitrust exemptions to liner shipping conferences

The U.S. Ocean Shipping Reform Act of 1998

67. In 1998, the U.S. legislation of 1984 was revisited and the OSRA was passed by the U.S. Congress to come into force in 1999 (May 1). The OSRA marked a pro-competitive shift in the U.S. liner shipping regulatory context. While this reform did not remove antitrust exemptions for liner shipping conferences, it nonetheless adopted an approach of promoting the conditions for weakening the enforceability of the agreements.

68. The OSRA accomplished this by no further allowing liner shipping conferences to impede conference carriers from engaging into confidential service contracts and by eliminating the statutory requirement that service contracts were to be made public (while still maintaining the requirement that they are filed in with the Federal Maritime Commission). This enabled shippers to negotiate confidential contracts with individual carriers outside conference rules. Under the 1984 Shipping Act, conferences were required to publish tariffs and service contracts, making the freight rates of all competitors common knowledge in the industry – to both carriers and shippers. The OSRA also eliminated the "*me-too*" clauses – under which similarly situated shippers were to be offered the same rates.

The 2002 OECD Report on Competition in Liner Shipping

69. The time came for a critical assessment of whether antitrust exemptions were indeed a requirement for a healthy liner-shipping sector. The thought that the peculiarity of the antitrust exemptions was clearly more striking than the peculiarity of the cost and capacity specificities of the industry started gaining strength.

21 The agreements are registered if they are found to overall benefit Australian exporters and importers and impose some negotiation requirements with shipper bodies. Part X of the Competition and Consumer Act of 2010 grants to the Minister for Transport and Regional Services the power to deregister an agreement.

70. In 2002, following a discussion of a regulatory reform in the maritime sector, the OECD published an influential report questioning the endemically accepted claims of the need for antitrust exemptions to the otherwise clearly anticompetitive liner shipping conferences.

71. The report, as well as the preceding discussion, helped pave the way for a re-visitation of the adequacy of these long-standing exemptions. The review examined the economic rationale for the agreements in the industry. The report concluded it did not found compelling evidence of the benefits of such agreements for both shippers and final consumers.

72. The OECD report starts by pointing out difficulties in gathering data and the limitations of seeking to establish causal relationships between conference antitrust exemptions and freight rate movements. Nonetheless, the report rebuts claims that trends towards fright rate decreases which have characterized the industry in the past decades would support the arguments that conferences do not lead to price increases. The report rather highlights the impact of macroeconomic variables, as well as the fact that conference power had been eroding since the 1970s. According to the OECD report, the decline in prices seems rather to be associated with increased competition and decreased relevance of liner shipping conferences.

73. The trends toward a reduction of conference relevance and pricing authority, alongside an increase in the activity of independent carriers, and an increase in slot charter agreements, are interpreted as weakening the claims for the indispensability of liner shipping conferences. The OECD report further questions one of the chief motives put forward to justify the overall benefits of the conference system: that they provide freight rate and supply stability to shippers. The report finds no evidence that the argument holds in practice, with some European shippers reporting relatively more stable rates in trades where there is more competition and lower conference market shares. The report concludes that liner-shipping conferences no longer served the purpose under which they were created and deemed them to be no longer warranted.

74. While acknowledging the pro-competitive changes that the sector had experienced with confidential service contracts, the report pointed out that problems remained. Trade not affected by regulatory changes promoting confidential service contracts lacked the benefits to competition of individual one-to-one negotiations. The report further concludes that "*carriers* [had] *not lost the price-fixing reflex*", mainly in "*conferences in non-US trades, discussion agreements in non-EU trades and capacity agreements everywhere"*. Furthermore, tariffs and ancillary surcharges of conference and discussion agreements provided a "*benchmark*" for rate negotiations.

75. The report anticipates that the abolishment of the exemptions could accelerate trends towards increased competition and more efficient services at lower costs. While acknowledging that such a change could trigger a trend towards increased consolidation in the sector, it expressed the view that such a tendency would not necessarily be detrimental.

76. In light of the findings, it was recommended that limited antitrust exemptions should not be allowed to cover price fixing and rate discussion and that capacity agreements should be carefully scrutinised so as to determine the distortion they can potentially generate in the market.

77. The report acknowledged "*the wide divergence of opinions among regulators, carriers and shippers*", in a "*highly polarised debate*", where "*there is no single line of query that results in an uncontroversial finding for or against continuing liner shipping anti-trust exemptions for price fixing and rate discussions*"[22]. As a way out of the impasse, if antitrust provisions ended up being retained, the report calls on governments to build on points of agreement, namely focusing on strengthening the provisions for individual confidential service contracts in all trades. Focusing on the non-contentious areas, the OECD report sets three guidance principles for policy towards liner shipping, namely: i) "*freedom to negotiate rates, surcharges and other terms of carriage on an individual and confidential basis"*; ii) "*freedom for carriers and shippers to contractually protect key terms of negotiated service contracts, including information regarding rates (this confidentiality should be given maximum protection)";* and iii) "*freedom of carriers to pursue operational and/or capacity agreements with other carriers as long as they do not confer undue market power to the parties involved".*[23]

The repeal of the EU block exemption for liner shipping conferences

78. In March 2003, inspired by the OECD Report, and following the March 2000 Lisbon European Council request to the EC to "*speed up liberalisation in areas such as gas, electricity, postal services and transport*", the EC initiated an extensive review to the block exemption to liner shipping conferences granted by Council Regulation 4056/86.

79. The three-year review was launched with a consultation paper, issued in March, 2003, setting the main issues for discussion and inviting interested third parties to contribute with comments and relevant evidence. Following the inquiry launched, the EC received submissions from EU Member States, carriers, shipper, freight forwards, and consumer associations, among others. The public submissions were reviewed for the EC by a team of consultants from Erasmus University, with a report being issued in November 2003[24].

80. The outcome of the consultation and preliminary findings were presented by the EC in a discussion paper, in June 2004, which proposed to repeal the block exemption.

81. In October 2004, the EC adopted a White Paper, acknowledging the lack of conclusive economic evidence that could still justify the block exemption. The EC also suggested an intention to propose the repeal of the block exemption and invited third parties to comment on legal instruments to replace it.

82. During this consultation, the ELAA – European Liner Affair Association – a carrier association whose members included the main liner shipping carriers, accounting for roughly 90% of the world capacity, submitted on August 6, 2004, the only proposal received by the EC of an alternative legal instrument[25]. In particular, the ELAA, which had strongly opposed the repeal of the block exemption throughout the review process, proposed to have it substituted by an information exchange mechanism. This mechanism implied an exemption for information exchange and discussion between the carriers in a

22 OECD (2002), page 77.

23 http://www.oecd.org/industry/oecdcallsforgreateruseofindividualconfidentialcontractsinlinershipping.htm.

24 In the so-called Erasmus Report, the team of consultants also developed an analysis of freight rates and concluded that conferences did not lead to increased prices. The validity of the predictions was later questioned in the Global Insight's report to the Commission of October, 26, 2005.

25 Available at http://ec.europa.eu/competition/consultations/2004_6_reg_4056_86/elaa_proposal_06082004.pdf

pre-determined set of issues. The information covered included aggregate capacity utilisation; trade aggregated data on route-by-route basis; commodity developments by trade; aggregate supply and demand data by trade/commodity; information to each liner on their market share (by trade, region and port); the price index differentiated by type of equipment and trade; and surcharges and ancillary charges based on a publicly available and transparent formulae[26].

83. In July 2005, the EC issued a discussion paper with the outcome of the analysis pursued under the review process and an assessment of the ELAA proposal. The paper builds on reviews of third parties submissions to the EC – the EU Member states showed support to the reform, as have most shippers and freight forwarders, while carriers and carrier associations (in particular ELAA) did not share the EC's view. Furthermore, the document characterises the market structure and degree of competition in each of the main trade routes to and from the EU, assessing the estimated impact of repealing the block exemption on the degree of concentration.

84. While the EC acknowledged that some merger activity could follow the regulatory reform, this would be just slightly speeding up an already existing trend towards consolidation in the industry and its impact on concentration would be tempered whenever involving firms operating under the same consortia. The consultation paper also highlighted that liner shipping conferences and consortia need to be accounted for when computing concentration indexes. Under that analytical framework, the EC concluded that the abolishment of the block exemption should have a pro-competitive impact in many of the main EU routes.

85. In terms of the ELAA proposal, the EU considered that, in a concentrated industry such as liner shipping, the exchange of information in the extent and with the frequency envisaged in the proposal would raise serious concerns, and would not be consistent with the conditions for exemption set out in Article 101 of the TFEU. The EC acknowledge that the information sharing on capacity and commodities could offer some potential scope for efficiencies (provided some adjustments were made to the proposed level of aggregation and periodicity of the exchange). However, other parts of the arrangement raised serious concerns. In particular, the *fora* for discussion of trade data in a trade committee envisaged in the proposal, the common formulae for setting a relevant part of the pricing structure, introducing a price-fixing element in ancillary charges and surcharges (which represent 30% of total transportation cost), and a price index which could serve as a focal point for coordination.

86. On October 26, 2005, the report "*The Application of Competition rules to Liner Shipping*", commissioned by the EC to Global Insight in collaboration with the Berlin University of Technology and the Institute of Shipping Economics and Logistics in Bremen, was issued. The paper considered the economic impact (in regards to competition, investment decisions, reliability of services, competitiveness of EU liner shipping, employment and other relevant factors) of different options, namely the repeal option, maintaining Regulation 4056/86 or adopting alternative legal instruments to substitute the block exemption. The report's analysis was a major input to the EC impact assessment that accompanied the EC proposal of December 14, 2005 to repeal the block exemption, for consideration by the EU Council. In the impact assessment, the EC concluded that the repeal option would bring benefits for the industry and the consumers, as a result of which "*transport prices for liner shipping services will decline, service reliability on deep sea and short sea trades is expected to improve, service quality will either be unaffected or will improve, there will be either a positive impact or no impact on the competitiveness of EU liner shipping*

[26] As a response to an invitation by the EC to develop an analysis as to the compatibility of the information exchange system with the conditions set out in Article 101 of the TFEU, the ELAA submitted a paper conveying its view on March 10, 2005.

firms, small liner shipping carriers will not experience particular problems and no negative impact or even a positive impact on EU ports, employment, trade and/or developing countries"[27].

87. This comprehensive review led to the adoption, on September 25, 2006, of Regulation No. 1419/2006, which repealed the block exemption to liner shipping conferences, taking effect on 18 October 2008.

Reviews in other countries

88. The 2002 OECD report and the regulatory changes in the US and the EU have triggered a widespread debate on the application of competition law to the liner shipping sector, in particular on antitrust exemptions for agreements between liner shipping carriers. The issue has been the subject of reviews, reports and discussion in several other countries and has also become a key research topic, with a prolific outcome in terms of academic publications on the subject.

89. In 2010, the Israeli Parliament repealed the exemption of liner shipping from the application of competition law, in trades to and from Israel. Until then, all forms of international sea transportation were immune from antitrust scrutiny, and carriers could engage in all kinds of agreements without a requirement of prior approval by the Israeli Antitrust Authority[28].

90. In Australia, several reports have been produced on the liner shipping exemptions, showing a clear shift towards increased support for their abolishment. The Australia Productivity Commission, an independent research and principal advisory body to the Australian Government, published an inquiry report in 2005 recommending the repeal of the antitrust exemptions. The report highlights the anticompetitive risks of liner shipping conferences and the exceptionality of the exemption, without parallel in other Australian sectors with similar cost features, such as airlines and regular service road transport or rail freight. These recommendations were not however reflected in the 2010 competition law review. More recently, in March 2015, the final report of a competition law review for Australia also recommended the repeal of the exemptions on liner shipping, and that the ACCC should be given the power to grant exemptions for agreements meeting a minimum standard of pro-competitive conditions.

91. In New Zealand, the competition law – the Commerce Act of 1986 – does not apply to the liner shipping industry[29]. The industry is rather covered by a different legal framework, set by the Shipping Act of 1987. Acknowledging the crucial role international trade plays in the economy of New Zealand, and in particular, given the substantial share of freight transportation costs in firms' international trading costs, the Government of New Zealand asked the Productivity Commission to analyse international freight transport services - international shipping and international civil aviation, and whether and how their efficiency could be improved through more appropriate regulatory regimes. In its final report of April 2012, the Productivity Commission recommends the removal of exemptions for carrier agreements involving price fixing, and a registration requirement for those that do not. These recommendations led to a Commerce (Cartels and Other Matters) Amendment being presented to the parliament, envisaging the transition of international shipping to the purview of the Commerce Act of 1986.

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27 According to the EC MEMO/05/480, of 14 December 2005, "Proposal to repeal block exemption for liner shipping conferences – Frequently Asked Questions".

28 Annual Report on Competition Policy Developments in Israel, 2010, OECD.

29 The exemption is established in section 44(2).

92. In Canada, amendments to the *Shipping Conferences Exemption Act* were introduced in 2001. Although liner shipping antitrust exemptions were maintained, the changes were in line with those of the OSRA 1998 in the U.S., not allowing conferences to prevent members from entering into confidential service contracts. Just as in U.S. trades, individual confidential services contracts between carriers and shippers proliferated in Canadian trades.

93. Furthermore, according to the most recent available information, some countries, including some with recently established competition legal frameworks, have never established exemptions to liner shipping conferences, such as China; Hong Kong, China; India; Russia; Turkey; Malaysia[30]; Brazil; South Africa, among others.

94. However, several other jurisdictions have maintained the exemptions granted under their legal framework to liner shipping countries. In some of these countries, the reviews undertaken were followed by decisions to keep or renew the duration of existing conference exemptions. In Asia, jurisdictions such as South Korea and Chinese Taipei[31] provide exemptions to liner agreements. In Japan, in 2011, following a review, antitrust immunity to carrier agreements, including conferences, was extended until 2015. In Singapore, the Minister for Trade and Industry decided to extend the block exemption for liner shipping agreements for five additional years (until 31 December 2015)[32] following a public consultation launched by the Singapore Competition Commission ("SCC"). The SCC concluded that the exemption should be extended on grounds that it was still warranted and would provide legal certainty to carriers. It also highlighted that Singapore's main trade partners granted identical exemptions and the global economic downturn limited the task of fully assessing the impact of the regulatory changes introduced in the EU.

4.3.3 A discussion on the recent structural and regulatory developments

95. The latest structural and regulatory developments cast doubt on the long enduring claims of the benefits of liner shipping conferences for trade and final consumers.

96. The impact of the OSRA in U.S. trades has been extensively assessed by the FMC. In 2001, the FMC analysed the changes following the passage of the OSRA. The report concluded that there was a shift in the market towards service contracts – 200% increase in the number of these contracts in two years – to represent around 80% of the volume of trade – in an environment characterized by one-to-one negotiations between shippers and individual carriers. While conferences are still allowed, and still obliged to publish their freight rates, this overwhelming response by member carriers to deviate from those terms and compete by undercutting these rates under confidential service contracts has eroded conferences' pricing authority and brought about more competition in U.S. trades.

97. The proliferation of individual confidential service contracts strongly favours the competitive conditions in the industry. Their role was chief in the OSRA of 1998, and it has also been highlighted in other jurisdictions and by other institutions. The EU, prior to the repeal of the conference block exemption, had made attempts at ensuring that shippers were granted the possibility to engage in such contracts with

30 On 19 December 2013, following a review and stakeholder consultation, the Malaysian Competition Commission (MyCC) has granted a conditional block exemption for agreements (vessel sharing agreements and voluntary discussion agreements among liner shipping carriers), which have to be filled in with the MyCC, cannot include elements of price fixing and can last only for a "*reasonable*" period of time.

31 In Chinese Taipei, since the Shipping Act was amended in 2013, the agreements require approval of the Fair Trade Commission.

32 The block exemption had been issued in 2006 until the end of 2010.

carriers. In the TACA decision (see Box 2 for further details), the EC objected the imposition, by conferences, of restrictions on the availability and contents of service contracts.

98. The OECD (2002) highlighted the competitive impact of the OSRA, reporting that European shippers faced less divergence in rates than American shippers, due to confidential service contracts in U.S. trades. Following the 2002 report, and given the unlikelihood of a radical regulatory change towards recommendations of removing anti-trust exemptions for price fixing and rate discussions, the OECD called upon governments to focus on strengthening individual confidential service contracting. However, the OECD report also pointed out potential issues that could still remain, namely concerning the enforceability of the confidentiality of the service contracts, the risk of sensitive information sharing and the potential for conference/discussion agreements' rates to be used as a benchmark and price signalling among carriers. As such, while confidential contracting would create incentives to price off conference/discussion agreements rates, remnants of price-fixing would likely continue distorting competitive conditions in the market.

99. Sagers (2006) reports that the boost in confidential service contracting was such that within seven years of the OSRA enactment, the FMC was receiving roughly 50,000 new service contracts filings annually, while before the number averaged between 2,000 and 4,000, and had been as low as 400 yearly filings. Nonetheless, Sagers also points out that while this led to an erosion of the conference system, carriers continued sharing price and customer data within discussion agreements, with likely effects in their market behaviour.

100. More recently, in 2012, the FMC published a report analysing the impact, on U.S. liner trades, of the 2008 repeal of the EU block exemption to liner shipping conferences. The FMC report reiterated the immediate impact of the implementation of the OSRA in eroding conference power and assessed the impact, on U.S. trades of the EU repeal. The study's approach was thorough in developing a comparative analysis between the EU and U.S. trade routes back and forth the Far East during 2006-2010[33].

101. The results showed no significant repeal driven impact on average rate levels and average revenue per TEU in EU trades relative to U.S. trades, in what was interpreted by the FMC as suggesting that discussion agreements, such as the Transpacific Stabilization Agreement (TSA)[34], "*have not typically been able to raise average rate levels in spite of the member lines' ability to discuss and agree upon voluntary rate actions*" (see Box 3 on discussion agreements).

102. Furthermore, the analysis estimates that the EU repeal might have driven a slight increase on market concentration, as well as on market share and rate volatility[35]. The FMC report further estimates that the repeal may have resulted in less capacity being removed from the Far East/Europe trade, which the FMC interprets as suggesting that discussion agreements might assist liners in anticipating demand and available capacity.

103. However, as the report recognises, the fact that the EU exemption repeal took effect at the time of the onset of the 2008 global crisis poses considerable challenges in disentangling the effects of the EU

33 The method of analysis adopted comprised multiple approaches, namely a characterization of the market structure and performance on the major East/West trade lanes, as well as an assessment of the corresponding competitive conditions, and a differences-in-differences analysis of freight rates, vessel utilisation, amongst other variables, aimed at estimating the impact of the EU repeal.

34 The TSA is a carrier discussion agreement operating in the trade lanes connecting the U.S. and Asia

35 While the estimated change in concentration was small and unlikely to raise concerns, the FMC hypothesises whether the association of higher volatility of rates and market shares may be the result of larger carriers expanding their market shares.

repeal. It is also the case, as the report mentions, that the effects of the repeal might have been smaller in U.S. trades given the pro-competitive effects of the OSRA, which eroded conferences' market power.

104. The experience on liner shipping following the OSRA in the U.S. and the EU block exemption repeal, alongside with changes in some other jurisdictions, seem to show no support for the claims that conference agreements are needed to avoid a spiral to chaos in the industry. As other sectors, liner shipping markets appear to work well when more competition is allowed.

Box 3. Discussion Agreements: a longstanding difference between the EU and U.S. Regulations

The main standard features of conferences are also found in discussion agreements. They both provide liner shipping companies with recommendations to exchange information on the market, promote joint studies and establish price rates for the negotiation of service contracts. Like conferences, discussion agreements reduce free competition by allowing liner shipping service providers to set the overall market conditions and prices that will be offered at the market. The major distinction is that the latter are adopted in the form of guidelines and therefore are not binding for the participating carriers.

Discussion agreements are subject to opposite regulatory approaches in the U.S. and the E.U. competition systems. They enjoy exemption from the application of competition laws in the U.S., as well as in several Asian countries. The two major discussion agreements in the U.S.-Asia trade are the TSA and the Westbound Transpacific Stabilization Agreement (WTSA), which include the same 15 carriers as members. By contrast, discussion agreements are not exempt in the EU. This was so even prior to the EU block exemption repeal, as they were not covered by Council Regulation 4056/86.

Carriers have argued that the agreements provide stability, transparency and predictability to prices in the market. However, given the scope for price discussion, concerns are that they provide benchmarks for collusion. For example, the OECD 2002 report raises concerns about their impact on the competitive conditions in the industry and recommends that exemptions granted to these agreements should be removed.

5. Other forms of horizontal cooperation in liner shipping: Consortia and Alliances

5.1. Background and premises

105. For a long time, liner-shipping conferences represented the major cooperative paradigm in the industry and have dominated liner shipping services until the 1980s (Brooks, 2000). However, from the 1960s on, the attention of carriers has been progressively focused on cost rationalization (Stopford, 2009).

106. As previously discussed, the shipping industry is intrinsically characterized by a volatile demand, freight rate instability, imbalanced cargo flows and a heavy financial commitment in maritime assets (Stopford, 2009; Panayides and Wiedmer, 2011). Furthermore, over the last twenty years, the liner shipping industry has experienced important changes. The challenges of globalization were manifold: shippers had new logistics needs, there were higher requirements for operational flexibility as well as for a broader geographical coverage of maritime services (Brooks, 2000; Song and Panayides, 2002; McLellan, 2006). Major shipping lines have pursued strategies for lowering transport unit costs, and have ordered a large number of mega-vessels to shipyards.

107. In the middle 2000s, the sector experienced the largest increase in ship size ever, climbing from 10,000 up to 15,000 TEUs vessels. Together with the substantial growth of the world container vessel fleet, this entailed enormous financial risks undertaken by shipowners in those years. In so doing, carriers encountered two major risks: i) a general risk of fleet overcapacity, because total supply would exceed global demand, and ii) a service-specific risk of getting insufficient load factors from vessel deployment, not allowing to reach the break-even point. The global economic crisis aggravated the issues of

overcapacity in the sector (Notteboom et al., 2010) and accelerated horizontal cooperation (Panayides and Wiedmer, 2011; Caschili et al., 2014).

108. These developments in the last decades have led to a number of cooperative schemes in the sector. Besides conference and discussion/stabilization agreements, focused on revenue streams, consortia and strategic alliances became the most widespread type of cooperative agreements for reducing costs (Rimmer, 1998; Alix et al., 1999).

109. These different forms of cooperation are complementary to each other and ocean carriers resort to some of them trying to exploit their respective advantages. For instance, a shipping line can simultaneously belong to a strategic alliance, to numerous consortia as well as to some discussion agreements. All major players now adopt a multi-sided and dynamic approach to cooperation (Caschili et al., 2014).

5.2. The drivers of consortia and strategic alliances

110. The liner shipping is a capital-intensive industry. Stand-alone ownership of a vessel requires a large amount of financial resources for ocean carriers. In addition, it is rather difficult for shipping lines to differentiate the service provided, given the standardization of operations and available technology. As a result, carriers closely collaborate and formed consortia/strategic alliances to reduce capital costs and moderate financial pressure (Slack et al., 2002). In some cases of collaboration, a shipping line can join a consortium without deploying any vessel, just leasing out space (i.e., slots) on-board of the ships of partners.

111. Alliances and consortia share underlying drivers, such as cost control, to which the academic literature has devoted substantial attention (Ryoo and Thanopoulou, 1999; Midoro and Pitto, 2000; Evangelista and Morvillo, 2000). The main drivers are summarised in Table 3:

Table 3 – The motivations underlying consortia and strategic alliances

	Drivers	Broader Motivation
Efficiency driven	*Risk sharing (commercial and economic)* *Reduce financial pressure* *Reduce/moderate oversupply risk* *Achieve economies of scale (utilization rate)* *Strengthen bargaining power against terminal operators and port authorities*	*Try to survive by joining market leaders* *"Stay closer" to main direct competitors*
Market driven	*Broader geographic coverage* *Entry in new markets* *Higher service frequency*	*Reinforce own leadership by cooperating with "satellite" carriers of smaller size* *An intermediate "step" in the pursuit of a merger*
Knowledge driven	*Better knowledge of the economic and financial structure of the partners* *Better knowledge of partners' strategies*	

Source: Authors' own elaboration from Midoro and Pitto (2000) and Panayides and Wiedmer (2011).

112. With regard to ***efficiency-related drivers***, consortia and alliances provide shipping lines with the opportunity to deploy bigger ships and experience cost savings as a result of economies of scale and higher utilization rates, by pooling the demand of multiple carriers (Agarwal and Ergun, 2010). These forms of horizontal cooperation also strengthen the bargaining power of the involved carriers *vis-à-vis* terminal operators and port authorities, as they pool the capacity deployed in a specific port (Heaver et al., 2001).

113. Second, regarding ***market-related drivers***, a good frequency of maritime service is crucial for achieving a considerable market share. The "just-in-time" inventory logic of multinationals in various manufacturing sectors imposes timely and frequent transportation service. Therefore, most shipping lines offer at least one weekly departure from each port called on a service route (Parola et al., 2014). On the other hand, this imposes on carriers a heavy commitment in terms of number of ships deployed. Pooling ships together within consortia and strategic alliances enables shipping lines to group vessels with analogous technical characteristics, regardless of ownership, in order to supply the same service every week on jointly operated routes (Panayides and Wiedmer, 2011). In addition, this strategy empowers carriers to widen the geographic coverage of their maritime service network, also exploring new markets (Midoro and Pitto, 2000).

114. Finally, regarding ***knowledge-related drivers***, consortia and alliances may provide opportunities for carriers to work closely with the selected partners and to gather confidential information about market conditions and main (outsider) competitors (Tan and Thai, 2014). Also, shipping lines may be able to obtain information about the strategies of the partners which often are, at the same time, their rivals (Midoro and Parola, 2013).

5.3. Consortia

115. The term "*consortium*" refers to diverse operational and organizational solutions of horizontal cooperation. The first consortia were formed in the 1960s following the advent of containerization. In those years, this type of agreement had a rather different form and content relative to the current, typically very flexible, forms of cooperation holding the same name (Rimmer, 1998; Heaver et al., 2000). Currently, consortia are cost-reducing forms of cooperation that focus on a single maritime service. Each consortium is internally regulated by a number of specific agreements among various partners that decide to cooperate under different degrees of commitment (Panayides and Wiedmer, 2011). These internal agreements can assume three distinct forms with different degrees of integration:

- "Slot charter" - consists merely in the lease of container slots by a partner on-board of vessels operated by consortium members. Probably, this is the most common agreement among those (consortium) members that prefer to minimise their involvement within the arrangement, by not operating any vessel.

- "Slot exchange" - very similar to slot chartering, but entailing reciprocal chartering. All the partners involved deploy a certain number of vessels but, where needed, are available to lease/lease out container slots from/to partners.

- "Vessel sharing" - the strongest form of agreement. Ocean carriers in this case are prone to share their ship capacity with the partners, in order to increase ship utilization rate.

116. In practice, each consortium can be regulated by implementing a diverse set of agreements among carriers. For example, three slot charter agreements and two vessel-sharing agreements can be established within the same consortium, as members are willing to participate by committing a different amount of resources (McCalla et al., 2004).

117. Consortia typically represent a very flexible form of horizontal cooperation as they exhibit low barriers to entry and exit and require a low/moderated (minimum) degree of commitment for carriers to adhere. The flexibility of consortia also follows from the fact that they enable carriers to customize the amount of committed resources and to quickly modify it over time, as a function of market changes and customers' needs.

118. The members of consortia can include independent carriers, liner-shipping firms which are conference members, a mix of both, and carriers can participate in several consortia. According to the findings of a technical analysis conducted by the EC in 2008[36], some carriers enter into up to 40 operational agreements, and the size of a liner shipping carrier appears not to be related with the number of consortia agreements it enters into.

5.4. Global strategic alliances

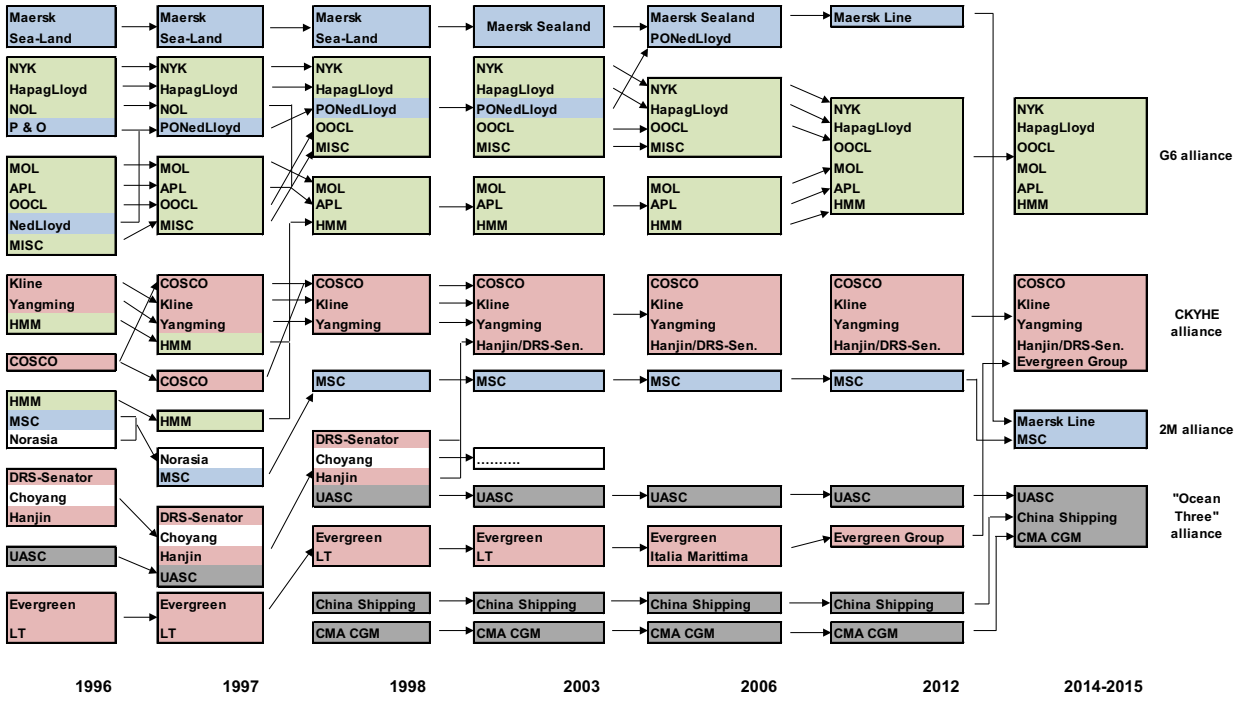
119. Global strategic alliances are cooperative agreements where liners manage several joint shipping services worldwide. In this way, alliance members are able to share investment risks and increase vessel utilization rates (Ryoo and Thanopoulou, 1999; Ferrari et al., 2008; Parola et al, 2014). These alliances are considered as a breakthrough with respect to previous forms of cooperative arrangements, as they are not limited to a single trade lane but aim at covering all major East-West shipping services, as well as some selected North-South trades (Benacchio et al., 2007). Despite the original intent of alliances in the late 1990s, which was to collaborate beyond maritime services and join forces in port operations and inland logistics, in practice ocean carriers decided to limit these agreements to shipping, in order to keep "independent" those activities of their supply chain holding a higher value-added potential (Panayides and Wiedmer, 2011). In strategic alliances, cost-reducing arrangements are the same that are applied in consortia. In fact, within a strategic alliance, members share risk in numerous shipping services utilizing multiple slot charter, slot exchange and vessel sharing agreements (Chen et al., 2008).

120. Strategic alliances have an explicit focus on cost rationalization and do not cover joint sales, marketing or price fixing, joint ownership of assets, pooling of revenues or the sharing of profits/losses and joint management and executive functions (Panayides and Wiedmer, 2011; Drewry, 2014). Strategic alliances, instead, aim for full integration of the service capabilities of the parties and not for price fixing. Marketing strategies are carried out on an individual firm basis and can vary between the different partners of the alliance (Midoro and Parola, 2013).

121. Intrinsically, strategic alliances had a long-term perspective and intended to commit members for many years on common objectives. Nonetheless, the ten earlier years of activities of these agreements have been highly unstable as their members changed frequently because of merger activity, switch of partners from an alliance to another, entry/exit activities, bankruptcy of members, among other reasons (see Figure 6). During a subsequent phase, strategic alliances entered a more mature stage and their composition stabilized.

36 EC *Technical Paper On The Revision Of Commission Regulation (EC) No 823/2000 on the Application of Article 81 (3) of the Treaty To Certain Categories of Agreements, Decisions and Concerted Practices Between Liner Shipping Companies (Consortia) As Last Amended By Commission Regulation (EC) No 611/2005 Of 20 April 2005*, October 2008.

Figure 6 - The evolution of strategic alliances (1996-2015)



Source: Authors' own elaboration from various sources.

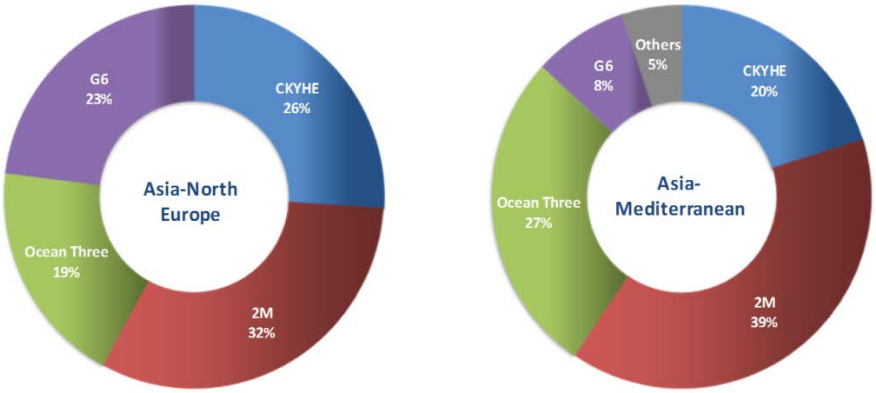
122. Later on, in 2012, this phase of stability has been suddenly broken by a new reshuffling of players, changing the paradigm of the game once again. The financial pressure imposed by growing economies of scale coupled with the economic background left by the crisis (e.g. deteriorated financial structure of firms, unstable market conditions) drove major ocean carriers to join forces into new alliances.

123. The number of strategic alliances rapidly rose from two to four, and the attempted P3 alliance failed following a rejected by the Ministry of Commerce of China ("MOFCOM") (see Box 4). The subsequent moves of Maersk and MSC triggered a chain reaction in the industry and other players responded by entering/creating horizontal partnerships. Currently, four major strategic alliances operate in the market. Two pre-existing arrangements are the G6 Alliance[37] and the CKYHE Alliance, which Evergreen has recently joined. In addition, there is the 2M Alliance, composed by the two main market players, Maersk and MSC, as well as the newly formed "Ocean Three" Alliance, where CMA-CGM, UASC and China Shipping partner together (Drewry, 2014). In particular, the 2M deal includes 185 vessels and 2.1 million TEUs of slot capacity, covering 22 services on the Transpacific, Asia-Europe (North and Med) and Transatlantic trade lanes.

124. As a result of alliance formation, the position of "independent carrier" practically disappeared in the industry, leaving the floor to four big constellations of players. On the East-West service, capacity is concentrated on a handful of players. Figure 7 unveils the massive capacity share of the four mega-alliances in Asia-North Europe and Asia-Med trades.

37 G6 resulted from the merger between the Grand Alliance and the New World Alliance a few years earlier.

Figure 7 - Capacity shares of the four mega-alliances in Asia-North Europe and Asia-Med trades



Note: Based on effective headhaul vessel capacity as of August 2014. Effective capacity = total vessel capacity less estimated space allocated to wayport and out of scope cargo.

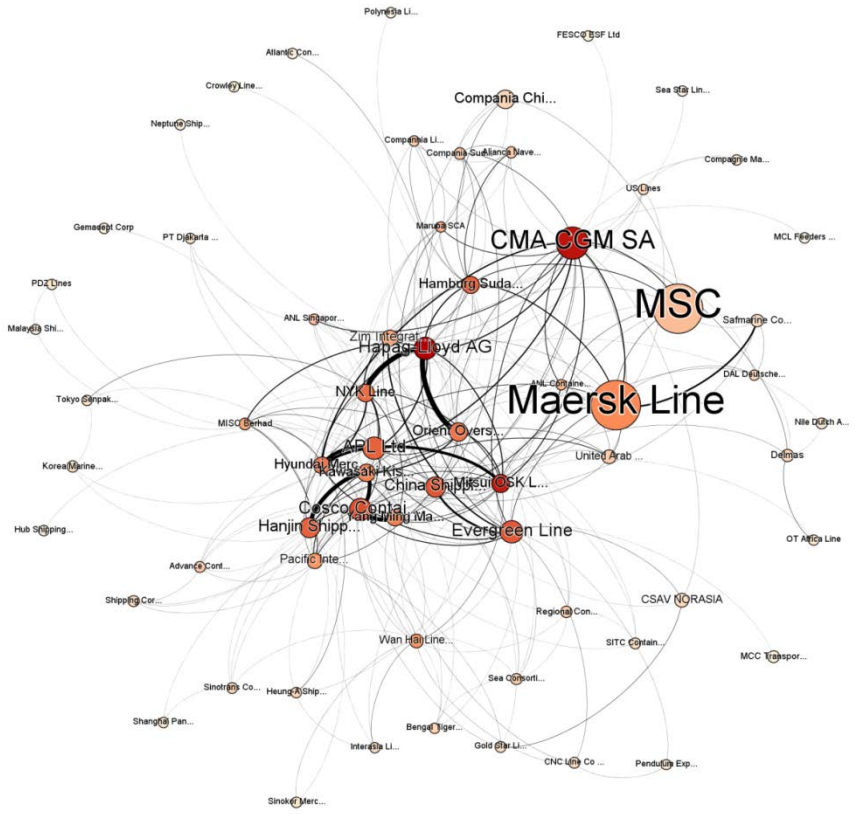
Source: Drewry (2014).

125. Over the last ten years the growing resort to horizontal forms of cooperation drove carriers to largely enter into strategic alliances and a number of consortium agreements at the same time. This means that shipping lines often collaborate in numerous consortia joining (on single services) players which do not belong to their strategic alliance. This behaviour enabled carriers to be more flexible and to reduce the dependence from the partners of their main (strategic) alliance.

126. These cooperative agreements form a widely intricate network worldwide. "*Any attempt to visualise all these cooperations, would probably result in a spider's web and the picture would already require to be changed, by the time the visualisation was finished*" (Sys, 2010). Figure 8 is such an attempt, and unveils the network of capacity sharing arrangements existing among various carriers. In particular, in the figure, the dimension of the circles illustrates the fleet size of each carrier, while the width of the line connecting two shipping lines indicates the number of capacity sharing agreements established by the two parties on a worldwide scale. Each capacity sharing agreement is related to a single maritime service and can be part either of a consortium or of a strategic alliance.

127. This network entails close coordination and organizational interdependency among leading carriers (Caschili et al. 2014 and Parola et al. 2014), in a business environment which may potentially raise issues of information exchange (see Section 10). Furthermore, the intense cooperation of carriers (i.e., capacity sharing) on specific trade lanes may raise entry barriers to newcomers and make the survival of independent shipping lines more difficult.

Figure 8 – The intricate network of cooperative agreements in the liner shipping industry (2012)



Source: Caschili et al. (2014).

5.5 Competition Policy vis-à-vis liner shipping consortia and alliances

128. Many regulatory frameworks exempting liner-shipping conferences also confer immunity to consortia and strategic alliances, under identical conditions. This is the case, for example, in the US, where consortia agreements roughly correspond to what is designated as "*vessel sharing agreements*" (FMC 2012).

129. In the EU, however, consortia were not covered by the block exemption provided by Council Regulation 4056/86 and they were subject to a specific regulatory framework since the introduction, in 1995, of a consortia block exemption. Specific exemptions exist also in Israel and Singapore. In Israel, the repeal of a longstanding exemption on liner shipping conference agreements was substituted with a consortia block exemption, in a regulatory change inspired by the EU experience.

130. The EU consortia block exemption was granted in 1995 and subsequently extended several times as it is perceived to have been working well. The most recent extension was provided in June 2014 to last until April 2020, and was preceded by a public consultation. Under this block exemption, a group of liner shipping companies with a joint market share below 30%[38] on the relevant market upon which the consortium operates can enter into a consortia agreement for joint cargo transportation services without being subject to the provisions of Art. 101 of the TFEU. This immunity is granted on the account that the

[38] This threshold was of 35%, but was reduced to 30% as per Commission Regulation (EC) No 906/2009 of 28 September 2009.

agreements allow carriers to rationalize their operations and achieve economies of scale in the operation of vessels and the utilisation of port facilities, thereby promoting technical and economic progress. Provided they are subject to strong enough competition from outside lines, the EU considers that consortia generally help to improve the productivity and quality of liner shipping services.

131. The EU regulation applies to consortia agreements consisting of "*one or a set of separate but interrelated agreements between liner shipping companies under which the parties operate the joint service*"[39], including vessel-sharing and co-ordination of routes and schedules.

132. Consortia and strategic alliances may entail higher degrees of integration in terms of operation. Thus, consortia and alliances can constitute highly integrated joint-ventures. This necessarily raises the question of whether certain consortia and alliances, under some jurisdictions' competition law frameworks, could actually be treated as mergers (See Box 4 on the P3 merger agreement for an interesting example).

Box 4. The case of the P3 Case Global Alliance

On June 2013, Maersk (Denmark), CMA CGM (France) and MSC (Switzerland), announced their intention to form the "P3" Global Alliance. The parties are the three largest container-ship carriers in the world, in terms of number of vessels and TEU, according to the UNCTAD Review of Maritime Transport, 2014. The alliance entailed a long-term vessel sharing agreement on Asia to Europe trade, transpacific trade and transatlantic trade, and the creation of a network centre in England and Wales to deal with the operation matters of the alliance.

The US FMC gave its approval to the alliance on March 20, 2014[40] as it considered that the agreement was not likely, at that time, to lead to a reduction in competition which could entail "an unreasonable increase in transportation cost or an unreasonable reduction in transportation service under section 6(g) of the Shipping Act". Nonetheless, the FMC considered it was not possible to rule out the possibility that, in the future, circumstances could allow the parties to unreasonably restrict supply or increase prices. As such, Parties' reporting requirements were strengthened, so as to allow a close monitoring and timely intervention if required.

On June 3, 2014, the EC announced[41] it had no intention, at that stage, to open proceedings regarding the P3 alliance, however stating it would keep a vigilant eye on the impact of the alliance on the competitive conditions in the market.

The Ministry of Commerce of China, MOFCOM, initiated merger proceedings concerning the P3 agreement on December 19, 2013 and it decided to further review the concentration on January 18, 2014. On June 14, 2014, after several rounds of potential remedies discussions, MOFCOM announced its objection to the joint venture. The decision followed concerns that the alliance would restrict competition on container liner shipping in the Asia-Europe trade as MOFCOM considered that the deal:

- *would create "a compact association different from the loose traditional shipping alliances in nature (…) based on vessel sharing agreements and accommodation swap agreements", with parties only retaining vessel property as the network centre would independently manage vessel operations;*
- *would strengthen the parties' market power and allow them to squeeze rivals as P3 would account for 46.7% of capacity in the route;*
- *would lead to a change from a "relatively segmented" to a "highly concentrated" market structure and strengthen barriers to entry;*
- *would strengthen parties' bargaining power vis-à-vis cargo owner and ports[42].*

39 Commission Regulation (EC) No 906/2009 of 28 September, 2009.

40 http://www.fmc.gov/NR14-06/

41 http://www.reuters.com/article/2014/06/03/eu-shipping-maersk-idUSL6N0OK40Q20140603.

Following MOFCOM's decision, two of P3 parties, Maersk and MSC, have proposed an alternative deal, which was named the "2M" alliance, while CMA CGM formed the Ocean Three alliance with China Shipping and United Arab Shipping Co.

133. The weakening of the conference system and the trend towards alternative forms of cooperation – consortia and strategic alliances, with started intensifying in the 1990s, marks a move in the industry that the OECD (2002) characterised as a shift from coordination against shippers to cooperation with shippers. Nonetheless, the representativeness of these strategic alliances today is overwhelming and while important synergies can be achieved, competition agencies and regulators should keep a close oversight of industry developments and the implications of mega strategic alliances involving the main carriers for the degree of competition in the market.

6. Horizontal Consolidation

6.1 The drivers of horizontal mergers

134. Mergers may offer carriers the opportunity for rationalizing supply, achieving economies of scale and scope, as well as diversifying the portfolio of vessels in terms of size (Alexandrou, 2014; Fusillo, 2009; Van de Voorde and Vanelslander, 2009).

135. Technological shocks can act as important triggers for mergers, for example, by impacting on the share of fixed costs on total costs and providing further opportunities for realizing economies of scale (Fusillo, 2009 and United Nations, 1998). In liner shipping, events such as containerization and the structural trends which followed, namely that towards ever-bigger container vessels, have been, and still are, important drivers of horizontal consolidation in the industry.

136. Mergers can be ways for liner shipping carriers to enter new markets, expand their geographic coverage and meet shippers' demands for wider coverage networks. Horizontal mergers may also serve the purpose of strengthening the buyer power of carriers *vis-à-vis* global shippers or stevedores (Cariou, 2008).

137. There has been some speculation about the impact of regulatory changes, such as the OSRA 1998 in the U.S. and the repeal of the block exemption for liner shipping conferences in the EU in 2006 (which took effect in 2008), in the degree of concentration in the market. More specifically, it has been hypothesized that the weakening of the conference system would eliminate the associated "*pricing cushion*", proving incentives for carriers to consolidate in order to achieve cost synergies and maintain market power (Fusillo, 2009).

138. The drive towards horizontal consolidation has also been one of the arguments raised by carrier associations within the review process of the EU Council Regulation 4056/86. Carrier associations claimed that the increasing drive towards consolidation could entail a less favourable outcome for consumers than liner shipping conferences. In the analysis carried out during the review process, the EC concluded that the repeal was unlikely to lead to a significant increase in concentration, particularly in the case of mergers involving carriers which are part of the same consortia.

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42 http://english.mofcom.gov.cn/article/policyrelease/buwei/201407/20140700663862.shtml

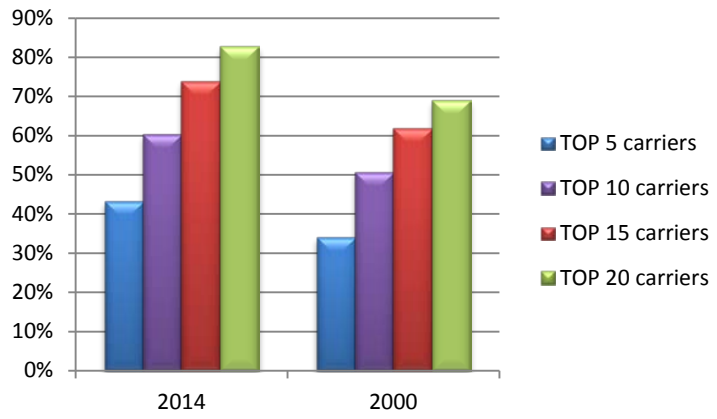
139. The OECD (2002) report points out that the move towards consolidation has coexisted with antitrust exemptions. Alexandrou et al. (2014) examine the impact of different regulatory regimes on the determinants of the likelihood of carriers engaging in mergers. He analyses three different periods, namely the years prior to the passage of the OSRA, the years after 2000 until the EU conference block exemption repeal took effect in 2008, and the years after 2008. The authors find that the regulatory changes led to some increase in the likelihood of firms engaging in merger activity, in the attempt to find alternative ways (to conferences) to realise economies of scale and scope.

140. While there is a tendency towards consolidation in the industry, it is also important to highlight the role of consortia and other strategic alliances, which offer looser arrangements that nonetheless deliver opportunities for rationalization and achieving economies of scale and scope. According to Van de Voorde and Vanelslander (2009), alliances and vessel sharing agreements, rather than mergers, have been the preferable alternative of liner shipping carriers, most likely due to the flexibility that those arrangements offer. These authors also analysed merger activity until 2008 and concluded that the takeover drive that started in the end of the 1990s came to a relative halt, with fewer moves since 2000. Das (2011) has also studied mergers from 1994 to 2006, and concluded that alliances were dominant in the strategic choice between partnerships and acquisitions. Das also finds that mergers have an underlying strategic motive of preventing rivals from engaging in alliances with the target firm, thereby being more likely to be selected (as opposed to partnerships) when firms are faced with more intense competition.

6.2 Mergers and market structure evolution in liner shipping

141. In the last decades, there has been a tendency towards consolidation in the industry. This move is illustrated by the evolution of the magnitude of the share of vessel capacity accounted for by the largest liner shipping carriers. While the top 5 carriers represented around 34% of vessel capacity in 2000, their share, in 2014, of vessel capacity deployed, exceeded 43%. The representativeness went from 50.8% to 60.4% for the 10 largest carriers and from approximately 69% to almost 83%, for the top 20 carriers.

Figure 9: Share of worldwide vessel capacity for the largest carriers



Note: The data used for 2000 concerns vessel capacity. For 2014, the share is computed in terms of deployed vessel capacity.
Source: Based on data from various editions of the UNCTAD Review of Maritime Transport.

142. It is important to highlight that these figures serve the purpose of drawing a broader picture of the industry. They are not however, concentration measures for relevant markets. Indeed, structural indicators are only meaningful in terms of the degree of competition when assessed with respect to relevant markets.

143. Mergers have played an important role in shaping the market structure in the industry. In a study covering mergers in the industry in the period of 1984 to 2011, Alexandrou et al. (2014) concluded that the level of rapid growth experienced by liner shipping carriers in the past three decades was unattainable through organic growth only. The case of the Maersk is illustrative. This liner shipping carrier from Denmark, currently accounting for 15% of total deployed vessel capacity (TEU) worldwide[43], experienced a number of important mergers and acquisitions. After acquiring Safemarine, CMB-T and SeaLand in 1999, in 2005 it accounted for a worldwide turnover of roughly EUR 28 billion[44], through the acquisition of P&O Nedlloyd. P&O Nedlloyd was itself the outcome of a high profile merger in 1997, integrating the P&O Group and Royal Nedlloyd Line.

144. The liner shipping sector has been strongly affected by the economic downturn drove by the 2008 crisis. The demand contraction for liner shipping services may have driven carriers towards merger activity, and may have created opportunities for larger carriers to acquire rivals facing financial constraints.

145. While not emerging in the data concerning the degree of asymmetry in the industry, conferences, strategic alliances and consortia can have an impact in the competitive conditions, entailing further consolidation, particularly in the case of arrangements entailing a high degree of integration between carriers operating in the same relevant markets.

146. In several merger cases, the EC took account of the parties' memberships in conferences, consortia and strategic alliances when assessing a merger's potential to raise competition concerns. Furthermore, clearance decisions have, in some cases, been subject to the commitment to withdraw from consortia and other alliances in the relevant markets where the merger was found to raise competition concerns. This was the case, for example, in the high profile Maersk-P&O Nedlloyd merger in 2005 and, more recently, in 2014, in the decision concerning the merger between Hapag Lloyd and Compañia Sud Americana de Vapores S.A. ("CSAV") (a Chilean line) (see Box 5).

Box 5. Remedies and cooperation agreements: Two examples of EU merger cases

In the Maersk-P&O Nedlloyd ("PONL") merger in 2005, the EC expressed concerns about the links the merger would create between Maersk, the largest liner shipping carrier worldwide, and the conferences and consortia to which only PONL was a member. The EC analysis took into account structural elements and the links of the merging parties with conferences (then still exempted from antitrust provisions in the EU) and consortia, to assess the risk of anticompetitive effects associated with market sharing and price increases. Competition concerns were also identified in the trade between Europe and South Africa, in particular in the transportation of refrigerated goods in reefer containers where the merging parties overlap was substantial and their joint market share was in excess of 50%. The merger was cleared subject to the divestiture of PONL's operation in the trade lane Europe-South Africa and PONL's withdrawal from conferences and consortia in relevant markets where joint market shares were substantial.

More recently, in September 2014, the EC issued a decision clearing the Hapag Lloyd – CSAV merger. The merger led to the creation of the fourth largest carrier worldwide, and the merging parties were found to be important rivals on the trade between Northern Europe and the Caribbean and South America's West Coast. The merger was cleared by the EC subject to remedies which included CSAV's withdrawal from Ecuador Express and the Euroandes vessel sharing agreements in the Northern Europe–South America West Coast and North Europe to West Coast South America trade lanes, respectively.

43 According to the information on http://www.alphaliner.com/top100/.

44 According to EU IP/05/1026, Brussels, 29 July 2005.

Sources: EC Decisions on cases COMP/M.3829 - Maersk/PONL (29 July, 2005) and COMP/M.7268 - CSAV/ HGV/ Kuhne Maritime/ Hapag-Lloyd AG (14 September, 2014).

7. Liner Shipping Competition and Ports

147. Ports are key nodes of the maritime transport network and they currently face several changes with the evolution of the shipping liners' strategies. Their role within the maritime network has changed over the last decades as a result of innovation (containerization in *primis*) (e.g., Goss 1990, Meersman et al. 2009). Before the massive investments in liner shipping and the development of intermodal transport chains, their activity was strictly related to the local traffic (e.g. Ducruet, 2009), as higher handling and inland transport costs gave them substantial market power on their local hinterland (van Klink and van den Berg 1998, Zhang 2008).

148. Starting in the 1980s in the U.S., and later in other parts of the world, the development of the logistics industry and intermodal transportation cut down the overall generalised costs of the door-to-door solutions, widening port hinterlands and providing further possibilities for port competition (e.g., Notteboom and Rodrigue, 2005). Hinterland connection services are one of the main competitive factors for a port to attract ocean carriers, and can potentially increase the scope for port replacement (Tongzon 2009). This evolution, including the development of transhipment, provided advantages to carriers, allowing port selection strategies and service rationalization (Heaver et al., 2000). The main trends in liner shipping created global carriers and had an important impact on the port industry (e.g., Cariou 2008).

149. Since the 1990s, shipping companies have speeded up their strategies choosing the more efficient ports in a given region where to concentrate traffic and then serve other parts of the region through feeder services to destination ports. The role of hubs and gateway ports can vary substantially depending on the kind of services connecting hubs among themselves and other ports (see Section 2.2).

150. The transhipment service structure, namely *interlining, relay* and *hub and spoke* systems, heavily impacted on both maritime and port markets: shipping companies concentrated traffic on the main routes; main ports have emerged – touched by the main routes – together with "ancillary" ports, in which international traffic is mainly provided by smaller vessels. In many EU transhipment hubs, for example, the share of transhipment on the overall throughput is over 70% (e.g., Gioia Tauro often overpasses 95%).

151. The transhipment revolution since the late 1990s and mega-ships increased the need for new funds while traffic concentration led port authorities and regional planners to increase the cooperation with the main liner shippers, able to assure the foreseen traffic. For this reason, recent important investments (e.g., the port of Tangier) include in their ownership structure also liner shipping carriers: ports want to bind the maritime operators in order to reduce the risk linked to big investments.

152. Thus, vertical integration with port activities (see section 8) has been not only a strategic choice of carriers in order to increase their competitive advantages but also the outcome of ports strategies seeking to reduce the investment risk and to assure a certain level of traffic (e.g. Peters, 2001). Vertical integration strengthened carriers' bargaining power *vis-à-vis* ports and local institutions (e.g., Van de Voorde and Vanelslander 2009, OECD 2011). Terminal operators and ports reacted to this strategy through new forms of collaboration among them as well as through horizontal integrations involving terminal operators (e.g. PSA, DP world) and port associations, to promote and organize port systems (e.g., Malmoe-Copenhagen, North Adriatic Port Association, Los Angeles-Long Beach). These horizontal integrations have so far only partially limited the increasing market power of the biggest ocean carriers and of global strategic alliances (e.g., Musso et al., 2000).

153. All the changes mentioned above, together with the use of mega vessels and the practice of slow steaming progressively reduced the role of small-medium regional ports[45]. While port container activity has increased worldwide in recent years (e.g. UNCTAD, 2014), the port throughput is much more concentrated in major ports. A few global carriers organize worldwide services, mainly as a result of horizontal integration in the industry. These trends reduce ports' market power with respect to the main carriers due to the higher concentration of cargo flows.

8. Vertical integration of carriers in container ports

8.1. The drivers of vertical integration

154. The deployment of mega-vessels enabled carriers to reduce unit transport costs but determined substantial operational constraints, financial risks and strategic challenges. The port phase assumed an even more critical role in shipping lines performance as ports potentially constitute an operational bottleneck undermining total transit times and service reliability. In some geographic contexts, the shortage of available port capacity further emphasized this critical issue, exposing ocean carriers to higher THCs and lower efficiency levels.

155. A number of key drivers of the vertical integration of ocean carriers can be identified. First, the entry in port operations ensures shipping lines a more efficient use of vessels which need to find suitable port facilities and minimize turnaround times (Midoro et al., 2005). In this regard, the deployment of mega-vessels (Cullinane and Khanna, 1999, De Souza et al., 2003) imposed an even stronger financial pressure on these maritime assets which are required to generate enormous cash-flows for rewarding initial investments (i.e., purchase price) and capital costs. Through vertical integration in ports, shipowners try to safeguard their maritime investments by reducing physical bottlenecks (e.g., nautical accessibility, undersized infra- and supra-structures) and boosting operational performance.

156. Second, carriers can gain more accurate control of stevedoring costs, which represent a significant portion of whole running costs. In some ports and regions the available handling capacity is scarce and stevedores might claim much higher handling charges and/or provide low quality services because of facility congestion.

157. Third, shipping lines can potentially generate economies of scope, by investing in a business, which is highly correlated and synergic with the primary industry. Ocean carriers, by controlling a longer segment of the logistics chain, might improve the quality of door-to-door services and match shippers' expectations more appropriately (Haralambides et al., 2002). The investments of carriers in some mega-terminals (e.g., Los Angeles, Laem Chabang, Maasvlakte II in Rotterdam, etc.) go in this direction (Parola and Musso, 2007, Notteboom and Rodrigue, 2012).

158. In addition, other drivers follow the need of controlling transhipment operations in key hubs that act as pivot points in deep-sea maritime services. Some ocean carriers might also find in terminal operations an opportunity to make additional revenues by serving third-party customers. Finally, carriers can be driven to invest in terminal facilities by operational reasons, such as the need to reduce unproductive times in ports, the quest for improving schedule reliability and the willingness to remove limitations of nautical accessibility.

[45] For instance, elaborating from Lloyd's List data, it can be seen how the number of inter-regional services calling at medium ports in the Mediterranean basin has drastically decreased, starting from 2011, while flows on major ports in the same region have increased (e.g., Ferrari et al., 2015).

159. Generally speaking, early entries by ocean carriers in the port industry occurred in those countries where it was possible to operate private terminals already in the 1970s and 1980s. The U.S., the U.K., Australia, Japan and Chinese Taipei (dedicated berths) were the most common and attractive locations for vertically integrated shipping lines a few decades ago. European countries opened the doors to ocean carriers relatively late[46]. For many years, carriers were *de facto* excluded from the competition "for" the terminal handling market. Table 4 shows the very limited number of market entries taking place in Europe until the late-1990s.

Table 4: The entry timing of ocean carriers into container terminals in (geographic) Europe

Timeframe	Number of "entries"		
	Lease / concession	Greenfield	Acquisition
pre-1990	*1*	*2*	
1990-1999	*2*	*2*	*3*
2000	*1*		*2*
2001		*2*	*3*
2002	*1*	*1*	*2*
2003			*6*
2004	*1*		*2*
2005	*1*	*3*	*2*
2006	*2*	*4*	*4*
2007	*1*		
2008		*5*	*2*
2009	*1*		*3*
2010		*1*	*2*
2011			*2*
Total	*11*	*20*	*33*

Source: authors' own elaborations.

160. Besides (traditional) concession agreements as a result of privatization and/or reconversion programs, ocean carriers demonstrated a growing interest towards greenfield projects (i.e., new terminals). The latter imposed higher financial investments but ensured the availability of port infrastructures characterized by superior technological standards and design (Stenvert and Penfold, 2004, Olivier et al., 2007). In particular, carriers such as Maersk (through the sister company APM Terminals), MSC, CMA-CGM, and Cosco heavily invested in new port projects often joining consortia of investors composed by highly-reputed stevedores (Parola and Musso, 2007).

161. The progressive end of privatisation opportunities, the reluctance of some port authorities to lease out (dedicated) facilities to carriers, and the need to quickly secure additional spaces in ports led major shipping lines to take-over existing terminals to by-pass the described restrictions (Parola et al., 2013). In the period 2000-2011, around 30 transactions have been carried out by ocean carriers for buying shares in private container terminals.

[46] Local stevedores tried to defend their own (consolidated) interests and port authorities preferred to lease out facilities to multi-user terminal and, in many cases, national port legislations did not allow the direct involvement of private firms in handling services, and seaports were in most cases run by public entities.

8.2. Vertical integration and hybridization of business models

162. The vertical integration of carriers in container ports led to the development of two different business models. In the traditional model, facilities are commonly run as cost centres, as port handling operations have to support the parent shipping line network (Lun and Cariou, 2009)[47]. Shipping lines enter new port projects via privatization or greenfield and often prefer to limit their financial exposure by holding a minority stake (Parola, 2015). This is the most common model in the industry as it was adopted by many carriers in the early stages of their vertical integration process in ports. The main ocean carriers investing in container terminal operations under this model are Evergreen (Chinese Taipei), Hanjin (South Korea), K Line (Japan), OOCL (Hong Kong, China), MOL (Japan), Yang Ming (Chinese Taipei), Hyundai (South Korea), and APL/NOL (Singapore).

163. In recent years, the rise of container port handling demand created opportunities for some ocean carrier groups to diverse their activities and make profits also in this industry (Stenvert and Penfold, 2004). A handful of shipping lines became hybrid operators, that is to say, firms where their main business, or that of the parent company, is still container shipping, but where a separate terminal operating (internal) division or company has been established. The major hybrid operator is currently APM Terminals, a firm belonging to the A.P. Moller-Maersk Group. This company created a separate brand name and logo and allegedly an autonomous position and strategy inside the group.

164. Some forms of dedicated services by carriers may entail decreases in terminal utilization rates and increases of spare capacity. There might be the risk to "freeze" a share of (unexploited) container handling capacity, thus limiting switching possibilities from a terminal (or port) to another. This situation may harm small/medium sized carriers, not having a terminal of reference, and looking for free negotiations of handling charges in multi-user facilities.

165. The hybrid business model may present advantages to this respect but concerns with potential foreclosure of rivals' access to key facilities may emerge. Indeed, while vertical integration can bring upon important benefits, it may also raise concerns of foreclosure regarding the access to good quality services for potential third-party customers. In OECD (2011), concerns are raised as to the risk of discrimination where a port is a vertically integrated entity downstream and withholds access to the upstream infrastructure to its rivals in liner shipping services. Similar concerns are shared by ITF (2015) with respect to the increasing tendency of vertical integration of the liner services with terminal and hinterland transport operations carried out by the main liner carriers.

9. Excess capacity in liner shipping: characterisation and potential competition concerns

166. As already mentioned in previous sections, overcapacity is an important feature of the liner shipping industry. A number of reasons can contribute to overcapacity in the industry: the need to maintain the service schedule in front of a cyclical demand such that ships leave the port even if they have spare capacity; trade routes which have historically been severely imbalanced; the lumpiness of supply due to the average size of vessels on a certain route; the time lag passing from the order to a shipyard to the moment when the vessel is deployed; the introduction of radical innovation (steamships, the deployment in the liner services of the liberty fleet, the adoption of container) that have resulted in a great step forward in supply. Note, however, that the flexibility provided by the several cooperative agreements such as slot chartering and vessel sharing provide opportunities for liner shipping carriers to benefit from higher flexibility in adjusting supply to demand.

[47] This model is referred to as "cost-centre approach" in the related literature.

167. Besides structural factors intrinsic to the industry, strategic reasons can also drive overinvestment in capacity. A number of studies have shown that liner-shipping conferences may have contributed to overcapacity by preventing the exit of inefficient capacity from the market (OECD 2002, Global Insight 2005). Furthermore, the potential strategic role of excess capacity in entry deterrence is well known in the industrial organisation literature (e.g., Kamien and Schwartz 1972, Spence 1977, Dixit 1980). Incumbents can use excess capacity in the industry to signal an aggressive response to entry, decreasing the prospects of post-entry profits for the potential entrant, and thereby lessening its incentives to actually enter the market.

168. The presence of excess capacity in liner shipping raises the issue of whether it can be strategically created/used so as to deter entry by rival carriers in relevant markets. Fusillo (2003) tests this hypothesis and concludes that the most important carriers may be favoured by adding additional capacity, while not excluding the possibility that the results follow from the "core emptiness" (see Section 4.2) coupled with the lumpiness of supply. Wu (2009) also raises the role that strategically holding excess capacity for deterring entry and maintaining market power might play a role in determining the fleet size of ocean carriers. In general, overcapacity might contribute to raising entry barriers as argued by Luo et al. (2014), and the impact of mergers and acquisitions in terms of capacity growth could spur an increase of capacity concentration in the market. In the analysis supporting the TAA decision[48], the EC highlighted that the maintenance of excess capacities reduces incentives to enter in a given market, thus limiting the pressure arising from potential competition. Currently, the overwhelming relevance of strategic alliances raises issues with how excess capacity can be used within these cooperative agreements.

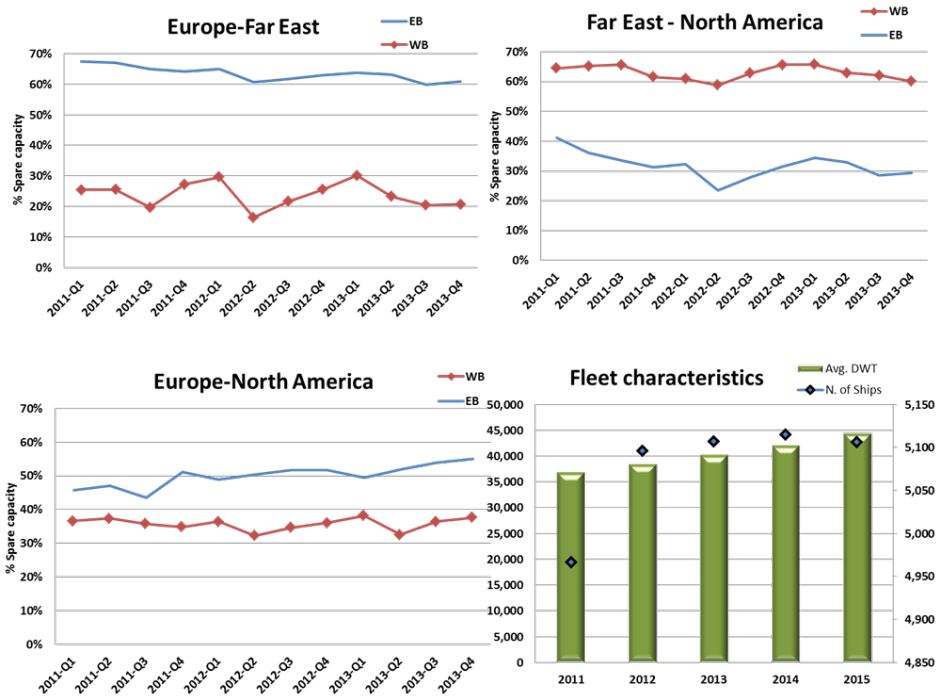
9.1. Extent of excess capacity in liner shipping

169. Figure 10 illustrates the percentages of spare capacity, from 2011 to 2013, for each of the main international routes (Transpacific; TransAtlantic; Europe-Far East), for both shipping directions, together with the trend in capacity of the container fleet. These routes are estimated to account for approximately 109 million TEU, i.e., 46% of the overall world shipped containers, in 2015[49].

48 EC decision of 19 October 1994 in Case No IV/34.446 - Trans-Atlantic Agreement (OJ L376, 31.12.1994 p. 1).

49 According to estimates by Unescap (2015).

Fig. 10 – Spare capacity on main routes



Note: EB stands for East-bound and WB stands for West-bound.
Similar elaborations are also provided by the Drewry Container Forecaster 2014. As the analytical method of Drewry is different from MDS Transmodal, figures may differ.
Source: Own elaboration from MDS Transmodal data, 2015.

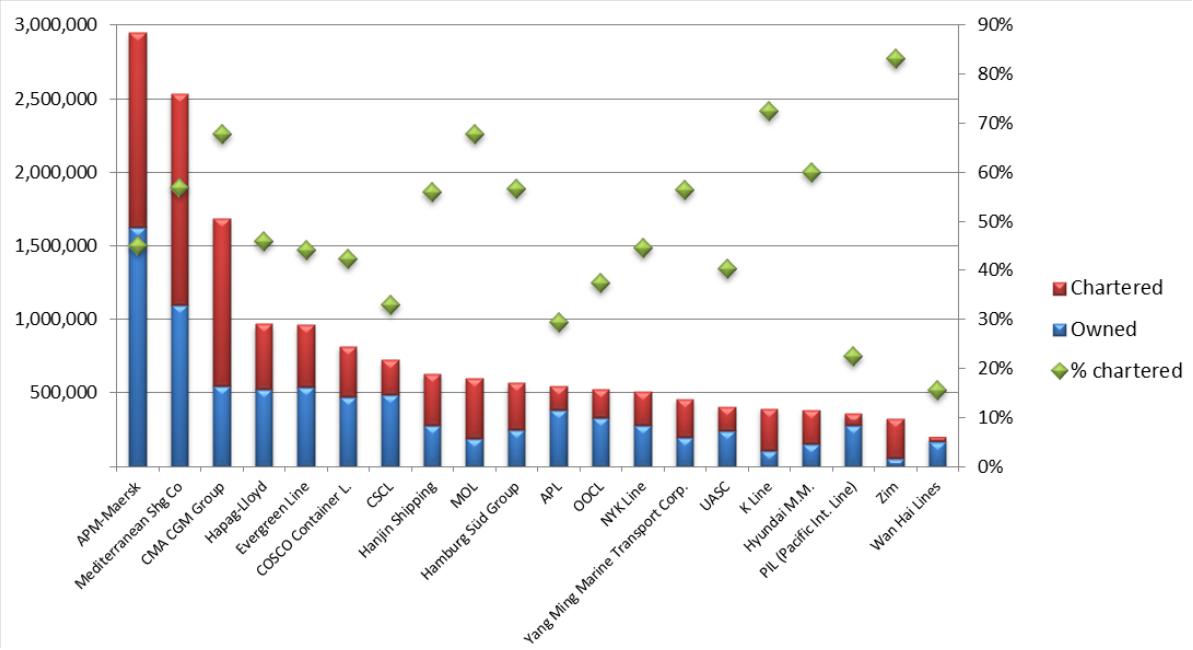
170. The West-bound and East-bound strings exhibit substantial differences in all the three major routes, creating important differences in ships loading factors. Ships on the main routes are often sailed half empty for at least a string of the overall route, creating unbalanced services that affect the potential route remunerability. Despite the unbalanced activity, it is interesting to underline that, according to UNCTAD (2014), the trade routes shown above are the only ones in which mega-container ships are currently deployed, using ships over 5.000 TEU for the Europe-North America and Asia-North America routes, while on the Far East-Europe routes the majority of the ships deployed are over 13.000 TEU. Considering other routes (i.e., intraregional and North-South) current vessels are normally below 5.000 TEU, even if a tendency in capacity growth is registered.

9.2. Distribution of capacity across carriers

171. Currently, the world fleet accounts for 5,126 container ships (according to the Alphaliner website). Charter owners account for 2,722 container vessels, which amount to 53% of the units and 48% of the TEU capacity[50]. This relevance of charter owners in the sector is relatively recent, as in the early 1990s the liner companies owned nearly ¾ of the fleet. In general, this part of the fleet is chartered by liner companies through long-term contracts. Fig. 11 highlights the share of the chartered fleet for the top 20 carriers. All liner companies manage part of their fleet by charter contracts. Eleven carriers out of the top 20 own the majority of their deployed capacity; exceptions are CMA-CGM, MOL, K-Line and Zim, whose fleet is chartered in more than 60%.

50 As recently reported by International Shipping News commenting on results from a Clarkson report.

Fig. 11 – Capacity (expressed in TEU) owned and chartered by the top 20 liner companies



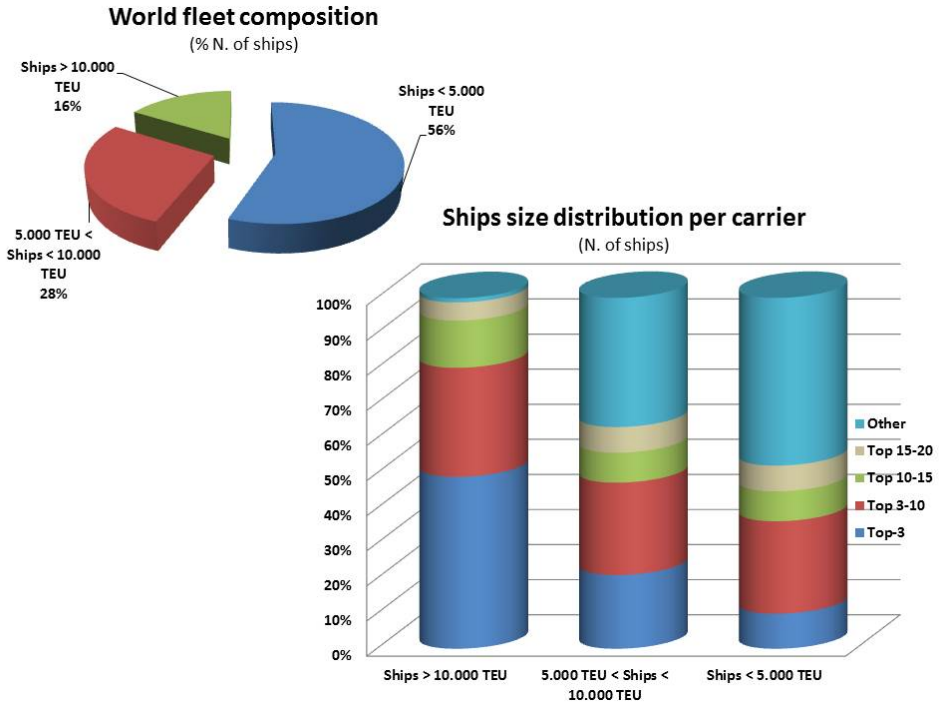
Source: Own elaboration on Alphaliner data (web site accessed on 31st March, 2015)

172. Chartered fleet represents 59% of the number of vessels managed by the top 20 carriers, and accounts for one half of the total capacity deployed (expressed in TEU)[51]. The average size of owned and chartered vessels differs amongst carriers. The top 20 carriers own vessels that on average are bigger than the vessels they charter. Yang Ming and Zim are few exceptions to this rule. In the case of CMA-CGM and CSCL, the average size of the owned vessels is twice the average size of the chartered vessels. Even if this part of the fleet is chartered through long-term contracts, its relevance with respect to the total fleet favours a certain variability of the capacity supplied by the liner shipping industry.

173. Fig. 12 shows the fleet distribution for ship size classes. According to UNCTAD (2014), currently only 16% of the world container fleet carries more than 10,000 TEU, while the majority of the ships have a capacity below 5,000 TEU. In January 2014, the top 3 carriers (Maersk, MSC and CMA-CGM) operated more than 40% of the biggest ships (over 10.000 TEU). This representativeness exceeds 70% when considering the top-10 carriers. On the other hand, about 50% of the ships smaller than 5,000 TEU are operated by companies outside the top-20 ranking, while the larger carriers have only a minor share of the smallest vessels in the world fleet.

51 Alphaliner data (website accessed on 31st March, 2015).

Fig. 12 – Vessel capacity distribution



Source: Own elaboration from UNCTAD data, (2014).

174. Almost all top-20 carriers operate with a balanced fleet composed of about one third of the largest vessels, around 30%-40% of medium sized ships, and the remainder of the fleet composed of ships smaller than 5,000 TEU. Ships over 10,000 TEU are almost only operated in the top-20 ranking. Smallest ships rather, become the majority of the deployed vessels for smaller carriers. The concentration of the supply on the main East-West service provides some bargaining power to major shipping lines *vis-à-vis* shippers.

175. These statistics illustrate well that the top-20 companies are able to operate worldwide on all the main kind of routes, while smaller carriers mainly operate on intraregional and North-South routes. Moreover, vessel gigantism seems to be a key strategy only for the main carriers.

176. The data presented above has implications for competition in the sector. The great financial effort necessary to invest in these mega-vessels introduce another form of entry barrier in the most important ocean routes and the exploitation of the economies of scale of the ultra large containerships may be actually earned only by the biggest liner carriers.

10. Information Exchange and Price Announcements

177. Exchange of information among rivals can generate efficiencies, but it can also soften price competition. "*Information exchange agreements must be seen in their role of facilitating practices for sustaining explicitly or tacitly collusive conduct among firms*" (Kühn and Vives 1994). The key elements for assessing the potential impact of the information exchange relate to the characteristics of the market and the nature of the information exchanged (OECD 2010 and OECD 2012).

178. In concentrated markets, the sharing, amongst rivals, on a regular and frequent basis, of information that reveals sensitive elements of firms' strategies in the market is more likely to raise competition concerns. Concerns are likely more acute in the case of artificially created transparency on information that has strategic pertinence, including information on price, capacity or costs. The sharing of information on price, e.g., via price announcements, can act as a focal point for coordination. The level of aggregation and the frequency of disclosure are relevant in assessing the impact of the information exchange: the lower the level of aggregation, and the higher the frequency in which information is made available, the higher the potential for the information exchange to have an impact on the degree of interdependence of firms' behaviour in the market. The age of the information also matters, with concerns more likely to emerge for more recent data.

179. Circumstances should be analysed in a case-by-case basis. For example, even if aggregate information is less likely to raise concerns, in the liner shipping industry, the exchange of information on aggregate capacity forecasts in liner shipping should be assessed with caution, in particular if they can signal the capacity deployed in the different trades, given that capacity is a primary variable in coordinated behaviour[52].

180. After the repeal of the conference block exemption in the EU, the industry aimed at establishing an industry wide information exchange system[53]. During the review process on the conference block exemption, the EC received a proposal for substituting the conference exemption for an exemption to an information exchange mechanism among liner shipping carriers (see Section 4.3.2). This proposal, made by the ELAA in August 2004, was however not accepted by the EC given the concerns that it could increase the likelihood of collusive outcomes[54]. On July 1, 2008, the EC issued a set of Guidelines on the application of Article 101 of the TFEU to Maritime Transport Services[55], aimed at facilitating self-assessment by carriers in the new - non-block exemption - era, and assisting in the transition from the previous regulatory framework. The EU Guidelines focused on the exchange of information among competitor liners and in providing an analytical framework to assess these exchanges[56].

181. The liner shipping industry displays characteristics which favour its vulnerability to coordinated behaviour and has a long history of cartel-like agreements among competitors. Carriers were allowed to jointly set prices and regulated capacity for a very long time. In some jurisdictions, conferences and discussion agreements are still exempt from antitrust provisions. Given that capacity in the industry is concentrated in the hands of a few players, active globally, which are still allowed to discuss and settle

52 EU Guidelines on the application of Article 101 of the TFEU to Maritime Transport Services, OJ C11, 14.1.2011, p. 1-72 (expired in 2010).

53 EC Staff Working Paper Document on "The Future of the Commission Guidelines on the application of Article 101 TFEU to Maritime Transport Services", issued for a consultation process that took place from May 4 to July 27, 2012.

54 For more details on the EU analysis to the proposed information exchange mechanism, see sections 10 and 11 of the EC Discussion paper on the Review of Regulation 4056/86 (July 2005) and on ELAA counterarguments, see the consultation document prepared by CRAI for ELAA (http://www.e-ca.com/sites/default/files/note_on_information_exchange_en.pdf).

55 These guidelines were published in OJ C 245, 26.9.2008, p. 2-14.

56 When the pre-set period of five years expired, the EC decided to let these guidelines lapse, as they were deemed no longer warranted, given that the "Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-operation Agreements" would entirely apply to maritime transport and provided general principles of the competitive assessment of information exchanges.

prices and regulate capacity on some trades, this raises the question of whether there might be a compliance risk for the trades where such market conduct is not allowed. The intricate network of cooperation agreements in the industry further favours the conditions for information leakage.

182. Thus, even if exemptions are abolished in some jurisdictions, the risk of information exchange may raise concerns with compliance in trades where conferences are not exempted from antitrust provisions (See Box 6). This calls for the oversight by competition authorities and regulators to avoid that, in spite of new regulations, a significant degree of interdependence in firms' strategies subsists.

Box 6. EU proceedings concerning price-signalling among liner shipping companies

Following dawn raids undertaken at the premises of liner shipping carriers in several Member States in May 2011, the EC decided, in November 2013, to initiate antitrust proceedings (case AT.39850) against several liner shipping carriers (see EC Press Release IP/13/1144, November 22, 2013). Following the EC statements, a number of carriers, as for example, Maersk, Hapag-Lloyd, Hanjin, Orient Overseas Container Line and CMAC CGM, have confirmed that they were targeted by the dawn raids.

The EC is currently reviewing the compatibility, with Article 101 of the TFEU and Article 53 of the European Economic Area (EEA) Agreement, of regular public announcements of price increases throughout the year by the liner carriers concerned, specifying the magnitude of the price increase and the date in which it was to be implemented. According to the EC, the announcements – that were similar across the different carriers - were made a few weeks prior to the announced implementation date, through press announcements, information at the carriers' websites as well as specialised trade press, since 2009.

The EC expressed concerns that by engaging in these price announcements, liner shipping carriers could be signalling to their rivals their intentions concerning future pricing strategies, softening price competition, and thereby harming consumers, in a behaviour which could consubstantiate a concerted practice.

11. Regulation Asymmetries across Different Jurisdictions

183. Liner shipping is subject to different regulatory provisions in different jurisdictions. Since 2008, the EU block exemption granted to liner shipping conferences has been abolished. In the U.S., while conferences can still benefit from such exemptions, the OSRA of 1998 led to the proliferation of confidential service contracts that significantly weakened the conference system. In some countries, newly created competition legal frameworks have not included exemptions to liner shipping conferences. Several other countries have chosen to maintain the antitrust exemptions.

184. These asymmetries have an impact on liner shipping and international trade. The awareness as to these potential impacts is high. Throughout its review of Council Regulation 4056/86, the EC established bilateral contacts with its international counterparts in the U.S., Canada and Australia, to discuss whether the repeal of the conference block exemption would give rise to an international conflict of laws. As stated in the discussion paper of July 2005, the immediate consequence of the repeal of the block exemption by the EU is that both EU and non-EU carriers that were, at the time, part of conferences operating on trades to and from the EU would have to suspend any conference activities on those trade lanes, while they would be allowed to continue being part of conference activities on other (non EU) trades. On top of the non-compliance risk that these asymmetries entail (as discussed in the previous session), they can impact on the relative prices of different trade routes. Shippers in jurisdictions where anticompetitive agreements are allowed may be faced with an anticompetitive disadvantage with respect to shippers in jurisdictions where these agreements are not allowed, creating distortionary effects.

185. For these reasons, the repeal of the EU block exemption raised concerns amongst U.S. shippers. The potential impacts of this EU regulatory change on U.S. trade were also addressed in the Antitrust Modernization Commission in 2006. The FMC decided to study whether the EU block exemption repeal had a negative impact in US trades. On January 2012, the Bureau of Trade Research published a report with the main findings (FMC 2012) (see Section 4.3.3). The report did not found elements of concern for U.S. shippers. However, the results probably follow from the impact of confidential service contracts in jeopardising conference market power and authority to set prices in U.S. trades. While no other studies were developed to this regard, the distortionary effects are expected to be higher in other trades where confidential service contracts are uncommon and where conferences have higher market power.

186. In the reviews undertaken by the different jurisdictions, benchmarking with the regulations of the main trade partners is recurrently highlighted as an important element on assessing whether antitrust exemptions to liner shipping conferences should be maintained. This may have been an important factor for lack of pro-activity in reviewing regulatory frameworks.

187. Another example of the impact of asymmetries in liner shipping regulatory environments relates to the attempted P3 global alliance. The deal required the approval by the FMC and MOFCOM, and could be the target of further investigation by the EU, had it decided to open proceedings concerning the alliance. While there were extensive contacts between these regulators, the deal was approved by the FMC, the EU announced it would not, at the time, open proceedings regarding the agreement, and MOFCOM assessed the alliance under merger proceedings and blocked the deal (see Box 4). Subsequently, two of P3 parties, Maersk and MSC, formed the "2M" alliance, while the CMA CGM formed the Ocean Three alliance with China Shipping and United Arab Shipping Co. The three agencies have shown willingness in increasing cooperation among them and exchange information given the increasingly global nature of the industry and carrier alliances, and since then hold regular summits to discuss industry developments.

188. Thus regulatory asymmetries have essentially strengthened the challenges posed to regulation by the inherent international nature of the activities concerned. These challenges and the fragmented authority over global arrangements have been further aggravated by the emergence of global strategic alliances. Shipper associations, such as the European Shippers' Council, have also expressed their concerns with global carrier alliances, and have claimed the need for a global authority in the industry to watch the impact on competition of vessel sharing alliances.

189. Asymmetries in antitrust application to liner shipping across different jurisdiction could thus have distortionary effects on global trade and may also give rise to legal uncertainties. Benefits could be achieved by a global approach to liner shipping services (e.g., through greater regulatory harmonisation, stronger collaboration among agencies, or eventually, through the creation of an international consultative body with a supervisory role) to provide a level playing field oriented to an efficient and competitive environment to the benefit of final consumers[57].

[57] See Phang (2009) for a discussion of the relevance of an integrated international policy for two crucial sectors for global trade, namely liner shipping and airline transportation.

12. Conclusions

190. Conspicuous antitrust exemptions to the cartel-like arrangements in the liner shipping sector have prevailed for more than a century and still exist in many countries today. Conferences emerged in the infancy of the industry, at the end of the 19th century, and it is not excessive to say that after the longstanding dominant conference system, competition is still in its infancy in the sector.

191. Important regulatory changes have taken place in the last two decades. The OSRA 1998 in the U.S. has led to a proliferation of individual confidential service contracts, with freight rates being set in bilateral negotiations, outside conference rules. In 2002, the OECD published a report that questioned the regulatory *status quo* and recommended the elimination of exemptions for conferences and discussion agreements as no evidence of their alleged benefits to consumers was found. Shortly after the OECD report, the EU undertook an in-depth review of its regime, which also found no support for sustaining the longstanding block exemption for liner shipping conferences. Consequently, the block exemption was repealed in 2006.

192. More than a decade after its publication, and the changes that have taken place, the recommendations contained in the OECD report remain still relevant. While many countries still retain antitrust exemptions to liner shipping conferences, no solid evidence has been brought to support them. Furthermore, the recent FMC 2012 report does not show a deterioration in the viability of liner shipping carriers in EU trades, post-repeal, relative to comparable U.S. routes. The weakening of the conference system in U.S. trades due to confidential service contracts may explain the absence of substantial differences. This, however, provides no support for the exemptions for the conference system; rather it further questions their usefulness. One way or the other, there seems to be little justification for the longstanding exemptions in the sector.

193. These developments are at odds with the predictions of some market players and some theories concerning the industry's doomed fate under more competitive conditions.

194. The sector has also undergone other important structural changes. Innovation (containerisation *in primis*) has created further opportunities for exploiting the economies of scale and scope that characterise the industry. The globalization of the world economy has increased the importance of a worldwide presence of liner carriers. Carriers have engaged in mergers and new forms of cooperation, not entailing price fixing, to achieve cost/capacity rationalization and widen the geographic coverage of their network of services. These alternative forms of cooperation provide carriers with higher flexibility in adjusting the capacity deployed to effective demand, further weakening the case for conference exemptions. The sector has also been faced with the sharp reduction in demand driven by the economic crisis that started in 2007/2008, and which accelerated the trend towards consolidation and cooperation. Thus the new market equilibrium is the result of all these changes and it is not easy to isolate the impact of each of them.

195. Currently, the industry is characterised by an intricate network of cooperation agreements, with four global alliances involving the main carriers worldwide, and accounting for a substantial share of trade in the main routes, coexisting with an element of vertical integration.

196. These alliances can be beneficial and bring about important efficiencies. Nonetheless, important issues remain which call for a vigilant eye from competition authorities and regulators:

- A few main players, active globally, account for a substantial share of capacity in the main trades. Regulatory asymmetries between jurisdictions imply that while these players are still permitted to discuss and jointly set prices and regulate capacity in some trades, such behaviour is not allowed in trades to and from jurisdictions that do not exempt conferences and discussion agreements. This increases the risk of non-compliance in those jurisdictions, posing important enforceability challenges.

- Concerns with exchange of information are aggravated by the elaborate map of cooperation agreements among firms in the industry. Competition agencies should devote considerable relevance to information exchange in the industry, to ensure that the new regulations indeed bring about a more competitive interaction among market participants.

- Competition authorities and regulators should carefully scrutinise the impact of strategic alliances on the competitive conditions, striking the right balance between the efficiencies they entail and their potential anticompetitive effects. Shippers have expressed concern about the increasing power of alliances on some important routes as testified by the recent formation of the Global Shippers Alliance - grouping together the Asian, American and European associations – that aims to counterbalance the power of allied carriers.

- Merger control should take into account the impact of these cooperative arrangements on competition conditions in the relevant trade lanes, avoiding a move towards excessive concentration and interdependency.

- The increasingly global scale of market players in services that are already international in nature poses important challenges for enforceability. These challenges are aggravated by the heterogeneity in regulatory regimes, which can lead to distortions in global trade. The recent case of the P3 alliance is illustrative of how the same deal can be analysed under different proceedings in different jurisdictions, with distinct decisions being reached. The balancing exercise inherent to agreements that can bring important efficiencies raises the likelihood of different agencies reaching different conclusions. A global approach to liner shipping services, allowing for the benefits of a competitive interaction, would strongly mitigate legal uncertainty for market players, avoid potential distortionary effects in various markets, and set the stage for a level playing field oriented to efficient market outcomes, to the benefit of global trade and final consumers.

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