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Executive summary

This paper discusses maritime cabotage in the current context of international maritime connectivity. Its purpose is to assist policy-makers in identifying and analysing options for improved connectivity.

Maritime cabotage refers to sea transport between two ports in the same country. It involves different operations and different services serving the domestic, intra-regional and international markets. Service patterns vary depending on whether cabotage is part of a hubs-and-spoke network or a regional short sea service.

Maritime cabotage markets represent considerable business and trade potential, particularly in countries with longer coast lines and in archipelagic countries. From the perspective of supply chain efficiency, maritime cabotage can be of interest to improve door-to-door services as it can enhance efficiency in the logistic supply chain, promote the carriage of larger cargo volumes at lower costs and guarantee service continuity.

Maritime cabotage services are generally excluded from trade liberalization commitments. In addition, cabotage restrictions remain in place in the applied regimes of most countries and take the form of conditions that need to be met by foreign vessels in order to be able to provide maritime transport services between two ports within the same country. Relevant restrictions include, among other limitations, requirements relating to (i) ownership and flagging (related, for example, to foreign equity limits, nationality/residence requirements for crews and managers) and (ii) registration.

The restrictive nature of maritime cabotage regimes is indicative of the sensitive nature of this sector. Originally motivated by security concerns, maritime cabotage restrictions today are more related to building national capacity in shipping to derive revenues and employment benefits.

The present research suggests that some developing countries appear to have succeeded in building their supply-side capacity by implementing certain policies in addition to their cabotage regimes. Meanwhile, a number of other developing countries seem to have faced challenges in leveraging cabotage restrictions in order to build their supply-side capacity. Overall, it would appear that cabotage regimes in these developing countries have not been strictly applied and the use of waivers seems to be common practice. The experience of two developed countries, which had relaxed their respective cabotage regimes in the 1990s, suggests (at least in one of the cases) that although opening up the domestic shipping industry to international competition entailed challenges in terms of domestic trade-offs with different constituencies, it did lead to improved efficiency and reduced freight rates.

Maritime transport connectivity is about the nature of maritime connections, including aspects such as the number of regular maritime services, their frequency and reliability. Maritime transport connectivity is an important determinant of trade costs. Developing countries, in particular SIDS and LDCs, face relatively higher transport costs, given their access to fewer, less frequent, less reliable and more costly transport connections.

Improved liner shipping connectivity can help reduce trade costs and has a direct, positive bearing on trade volumes. In this context, the most important impact of cabotage restrictions in terms of

connectivity relates to restrained competition, which leads to increased costs and less efficient transport operations.

An environment witnessing the deployment of ever-larger ships, cascading of vessels from main trade routes to secondary routes and growing concentration in liner shipping can lead to a possible deterioration of maritime connectivity in many developing countries. In this context, relaxing cabotage restrictions can, in some cases and for some products, present possibilities from the perspective of influencing shippers' distribution strategies, which would positively impact on service quality of shipping lines, port operators and allied industries.

Relaxing cabotage restrictions can help improve maritime connectivity by linking the national, regional and intercontinental liner shipping services. This is because, in the current environment, transhipment and feedering remain key elements of liner shipping operations from the perspective of collecting cargo from spokes ports and transferring it to hub ports and a vital part of filling very large ships. In recent years, several developing countries have relaxed their cabotage regimes as part of their broader strategies to increase competitiveness, improve connectivity and adapt to the new context and emerging trends.

It is important to highlight that, although relaxing cabotage regulation can contribute to improve a country's liner shipping connectivity, achieving this objective is a function of several policy reform parameters related to infrastructure and hinterland development. These include: investing in port facilities upgrades; improving the efficiency of seaport operations; encouraging port competition, including among neighbouring countries' ports and developing connections between ports and their hinterlands through efficient inland transport networks.

Acronyms

CO2	Carbon dioxide
EEA	European Economic Area
EFTA	European Free Trade Association
EU	European Union
I-TIP	(WTO and World Bank) Integrated Trade Intelligence Portal
LDCs	Least Developed Countries
LLDCs	Landlocked Developing Countries
MFN	Most Favoured Nation (principle)
MOC	Ministry of Commerce, People's Republic of China
NZ$	New Zealand dollar
OECD	Organisation for Economic Co-operation and Development
RTA	Regional Trade Agreement
SIDS	Small Islands Developing States
STRI	(OECD) Services Trade Restrictiveness Index
TEU	Twenty-foot Equivalent Unit
UNCTAD	United Nations Conference on Trade and Development
US	United States
USD	United States dollar
WCO	World Customs Organization
WTO	World Trade Organization

Introduction

Connectivity is about possibilities for people, companies and countries to connect with each other. In the trade sphere, physical connectivity enables the delivery of goods and services to local, regional and global markets. Maritime transport connectivity determines the extent to which countries, markets, suppliers, buyers, importers, exporters, producers and consumers are serviced by numerous, various, regular, frequent and reliable maritime transport services. Within the maritime transport sector, the liner shipping connectivity relating to containerised trade is of particular relevance.

Maritime transport connectivity is an important determinant of trade costs. Improved liner shipping connectivity contributes significantly to reducing trade costs and promoting growth in trade volumes. Many developing countries are faced with various transport and logistical challenges that undermine the level of their transport connectivity and their ability to connect to global markets. In particular, smaller and more vulnerable economies, such as Landlocked Developing Countries (LLDCs) and Small Island Developing States (SIDS), face considerable challenges in benefiting from trade opportunities, as they have access to fewer, less frequent, unreliable, and costly maritime transport connections.

In this context, improving understanding of key factors that can enhance maritime and in particular liner shipping connectivity is critical. A key factor that is increasingly arising as potentially important for maritime connectivity is the impact of maritime cabotage restrictions. By creating hurdles and bottlenecks that could undermining the smooth delivery of maritime transport services and increase operational costs, maritime cabotage restrictions can be a deterrent to an improved liner shipping connectivity.

Against this background, the present study analyses and discusses various considerations relating to maritime cabotage and the ways in which these can influence the liner shipping connectivity of developing countries, to assist policy-makers in identifying and analysing relevant options that could help leverage maritime cabotage in support of enhanced liner connectivity levels. This report is structured as follows: Section 1 introduces the concept of maritime cabotage and considers the different elements associated with maritime cabotage operations; Section 2 sets out an overview of existing cabotage regimes; Section 3 discusses the rationale for maritime cabotage restrictions and the impacts of cabotage regimes, and Section 4 analyses the specific impact of cabotage on connectivity and the possibilities of linking existing domestic liner shipping connections with overseas services, based on the time tables of the world's container shipping fleet as of May 2017. Finally, the main findings and recommendations of the study are presented in the last section.

1. Maritime cabotage in perspective

Maritime cabotage is generally defined as sea transport of (passengers and) goods between two ports located in the same country. However, countries define maritime cabotage in different manners. Examining several regulations and country experiences, Frost and Brooks (2017 and 2015) identified several characteristics attributable to cabotage operations:

- Geographical proximity (within one country or within a region), means that cabotage transport does not necessarily entail crossing the ocean;
- The nature of cargo carried by vessels via coastal waters systems may encompass containerized (multimodal) cargo, bulk, trailerized cargo or empty containers;
- The possibility of an intermodal choice to be made by the shipper between moving units by water or using one or more land-based alternatives (either by rail or by road) and
- In certain cases, cabotage takes place via chartered vessels, providing operators with flexibility to adapt to market conditions and seasonality.

For the purposes of this paper, maritime cabotage includes: (i) domestic shipping operations (domestic trade), as well as (ii) operations related to transhipment[1] (including feeder services[2] where containerized cargo moves between ports in the same country, as part of an international shipping journey, also called international relay[3]) and (iii) moving and repositioning of empty containers.

Maritime cabotage is a means to providing different services, such as domestic and intra-regional maritime transport services as well as transhipment. Providing these services requires different types of vessels (including small container vessels, ferries -such as ro-ro operators and ro-pax- and barges), which serve as feeder vessels, and tugs. Feeder vessels tend to operate from a transhipment hub and their service pattern is built around the needs of mother ships while regional services tend to operate on an end-to-end basis, with their service pattern derived from the needs of the customers.

Cabotage markets represent considerable business and trade potential for shippers. The data in Annex 1 shows the fleet deployment of liner shipping companies on services to and from a country's seaports, providing an indication of potential containerized maritime cabotage transport of domestic trade. Domestic vessel deployment represent very high shares of total vessel deployment in countries with longer coast lines, as in the case of Algeria, Australia, Brazil, China, Chile, India, Italy, Mexico, South Africa, Turkey and the United States. The potential is also high in countries with islands, where the alternative of trucking or rail transport is costlier or not available. This is the case of the British Virgin Islands, Comoros, the Cook Islands, Fiji, Indonesia, Japan, Micronesia, Papua New Guinea and Philippines.

Apart from the role of maritime cabotage as a potential enabler for business and trade growth, this type of traffic and transport entails some sustainability co-benefits given efforts aiming at promoting sustainable transport. Indeed, by moving away from more energy and carbon intensive modes of transport, such as road transport, the maritime carriage of domestic trade can lead to less negative externalities for the society, including road congestion and CO2 emissions.

[1] Defined as the shipment of goods or containers to an intermediate destination, before reaching its final destination

[2] Feedering is the transhipment from a mainline carrier onto a feeder vessel, and vice versa, for short haul distribution to ports that are too small or lack sufficient volumes to be served by a mainline carrier. It is considered an extension of the deep sea operation

[3] Defined as the movement of ocean freight containers between ocean vessels that are owned and operated by the same carrier or shipping company

From the perspective of supply chain efficiency, maritime cabotage can be of interest to improve door-to-door services as it can enhance efficiency in the logistic supply chain, promote the carriage of larger cargo volumes at lower costs and guarantee service continuity. Indeed, shifting a part of the road transport leg to maritime transport can lead to reduction of the cost of freight over long distance. This shift can also lead to (i) greater product safety by reducing the risk associated with cargo theft, and (ii) reduce the need for additional security costs (Amaya et al 2009 and Yon 2008). Having said that, the impact of maritime cabotage for the overall logistics and supply chain efficiency and costs will be a function of the specific characteristics of the product transported and its demand, distance, frequency of service and cargo volumes (Morales-Fusco et al., 2013).

2. Maritime cabotage regimes

Given the great potential associated with domestic maritime traffic for liner shipping connectivity, trade flows, business, transport costs, as well as a contributor to the sustainability agenda, it is important to improve understanding of the main restrictions that prevent the realisation of this potential. To this end, the following sections consider relevant maritime cabotage regimes, the underlying restrictions and the policy objectives and concerns that give rise to maritime cabotage restrictions. The domestic maritime transport services regimes derived from trade agreements are considered first, followed by the applied regimes.

2.1. Trade agreement-based regimes

The schedules of commitments in trade agreements (such as those related to the World Trade Organization -WTO- or Regional Trade agreements, RTAs) provide a glimpse of the conditions under which foreign service providers can have access to the market of a given country. WTO bindings act as ceilings, forbidding countries from introducing more restrictive legislation than conditions expressed in their schedules. As countries have generally tended to be cautious in their approach to binding commitments in the WTO, the bound commitments tend reflect a more restrictive scenario than the applied regimes. Differences between bound commitments and applied regimes (also called "water") reflect the national stance on the interface between domestic protection, trade openness and policies for economic development.

Out of the 164 WTO members, 61 have included commitments on maritime transport services in their schedule of commitments. Out of these 61 members, 32 have registered regulation affecting maritime cabotage operations[4].

Limitations on market access and national treatment that may affect trade in maritime transport services under each mode of supply can be found in each member's list of specific commitments, in the

[4] I-TIP services database, retrieved on: 16 September 2017

list of exemptions from the Most Favoured Nation principle[5] (MFN exemptions) and in the list of horizontal commitments.[6]

A review of countries specific commitments on maritime transport services under the GATS shows that maritime cabotage is generally excluded from the scope of the agreement and is not open for liberalization, using the following wording:

Table 1: Maritime cabotage services references in WTO lists of specific commitments

"International maritime transport of freight…	… less/except/excluding cabotage transport … excluding transportation in coastal waters"
"International rental of vessels with crew	… less cabotage"

Source: Integrated Trade Intelligence Portal Services -I-TIP- (GATS database)

A few members, i.e. Benin, Jamaica, Kyrgyz Republic, Latvia, Oman and Papua New Guinea appear to allow foreign service providers to engage in maritime cabotage. This is inferred from their WTO schedules, which indicate that they do not have restrictions on maritime freight transport services (WTO, 2010).

The lists of MFN exemptions also provide a picture of instances where some foreign providers may provide maritime cabotage services. Out of the 71 listed MFN exemptions in maritime transport services, 15 refer to cabotage or coastal shipping. Most of them are based on the reciprocity principle or on existing/future agreements (see Table 2).

Table 2: MFN exemptions related to maritime cabotage: categories and examples

Category	Examples (are exempted from the MFN principle…):
Reciprocal or based on (existing or future) agreements	• Reciprocal existing and future measures exempting vessels registered under the foreign flag of a specified other country from the general prohibition to operate cabotage transport (*Finland, Sweden*) • Existing or future laws, decrees and decisions, based on bilateral or multilateral agreements which grant cabotage and liner trade rights to trading partners (*Angola, Benin, Cameroon, Congo, Cote d'Ivoire, Gabon, Mali, Niger, Senegal*) • Access to domestic shipping is reserved for *Philippine*-owned or registered vessels. However, limited access to domestic shipping is granted to countries with which the Philippines has concluded agreements on Amity, Commerce and Navigation • Preferential treatment (is granted) to operators from the Andean sub-region concerning freedom of access to maritime freight transportation within the sub-

[5] MFN exemptions constitute a legal exception to a core principle of the multilateral trading system (the MFN treatment) according to which countries must grant all trading partners an equal trade-related treatment. This means that if a special treatment (for example lower customs duty rates) is provided to one trading partner, the same treatment is applicable to all WTO members.

[6] For more information about the structure of WTO services schedules and the way limitations are inscribed in the schedules see: "*WTO Guidelines for the scheduling of specific commitments under the GATS*", available at: https://www.wto.org/english/tratop_e/serv_e/sl92.doc or the "*Guide to reading the GATS schedules of specific commitments and the list of MFN exemptions",* available at: https://www.wto.org/english/tratop_e/serv_e/guide1_e.htm

Category	Examples (are exempted from the MFN principle…):
	region, including in coastal waters (*Bolivia*)
Unilateral	• In the cases and subject to the procedure established by the Government of the *Russian Federation*, cabotage transportation and cabotage towing may be carried out by foreign vessels

Source: I-TIP Services (GATS database)

The schedules of commitment specified the reasons invoked for justifying the need for these exemptions. These included encouraging trade; promoting regional economic integration and the development of the merchant navy in the region; preserving the regional specificity of the maritime cabotage transport; and, regulating cabotage traffic based on reciprocal agreements and existing practice (WTO, 2010).

As regards the RTAs, the present analysis reveals that 170 agreements included references to maritime transport services. Latrille (2015) examined a sample of these agreements and found that maritime cabotage was excluded from 30 agreements, representing more than one-fifth of the sample. It was concluded that there were virtually no commitments related to maritime cabotage transport in RTAs covering services, scheduled through either positive lists or negative lists. In the latter case, these commitments were found to be practically always subject to a reservation.

2.2. Applied regimes

An examination of applied regimes for maritime cabotage shows that this sector is generally reserved to national-flagged vessels or to national transporters. In certain situations, foreign vessels can provide cabotage services through a temporary cabotage license (also called waiver), provided the company complies with several requirements. These may include company registration, nationality (for the owner, managerial positions or crew) and local establishment of the company. Table 3 provides examples of these reservations, exceptions and conditions attached.

Table 3: Examples of cabotage reservations in applied regimes

Scenario	Example of applied regime
Scenario 1: • Cabotage services are reserved for national flagged vessels… • … But can be provided by foreign vessels in certain circumstances • … Subject to conditions	• Cabotage is reserved for *Argentine*-flagged vessels. This restriction also applies to cargoes which are ultimately to be exported or when, in the course of the voyage, the vessel calls at one or more foreign ports. The regulations on cabotage apply to transhipment, dredging and towing operations and any other service or commercial activity carried out in Argentine (maritime, river or lake) waters. Vessels providing cabotage services in Argentina must be owned by Argentine citizens or companies legally established in Argentina and registered as ship-owners in the National Ship-owners Register The National Executive may authorize foreign vessels to provide national cabotage services if there are no Argentine Units capable of providing them • Cabotage is reserved for Brazilian-flag vessels operated by *Brazil*ian shipping companies. Foreign vessels may only participate in cabotage when chartered by a Brazilian shipping company, for which an authorization must be obtained. Authorizations waiving this restriction may be granted when: a Brazilian-flag vessel of the required type is not available; for public interest reasons; or if the foreign

Scenario	Example of applied regime
	vessel substitutes for a vessel that is under construction in a Brazilian shipyard • Registration requirements for vessels limit foreign participation in the water transportation and shipping sector, including cabotage and tugging activities performed in Chilean ports, to minority stake holding in *Chile*an controlled firms • *China* reserves (cabotage operations related to) onward forwarding of international cargo -international relay- to 100% Chinese-owned companies flying the Chinese flag. However, foreign shipping companies may (engage in cabotage operations related to) transport self-owned and leased empty containers between coastal ports in China. Shipping and towing between domestic ports (cabotage) must be undertaken by ships flying the national flag, unless otherwise stipulated by laws or administrative rules and regulations. The Regulation on Vessel Registration stipulates that, to fly the national flag, a vessel must be registered in China and obtain Chinese nationality. Its crews are usually Chinese citizens; when it is necessary to recruit foreign crew, approval from the MOC is required. In addition, if the ship is owned by a Chinese citizen, the owner must have their residence or main business office in China; if the ship is owned by a legal person, their main business office must be in China; for a joint venture with foreign investment, no less than 50% of the company's registered capital must be owned by the Chinese partner. • Cabotage navigation and trade within Uruguay are reserved for Uruguayan-registered vessels. Uruguayan-registered vessels that operate cabotage services within Uruguay must meet the following conditions: (a) if the owners are natural persons, they must prove their Uruguayan nationality and domicile; and (b) if the owner is a company, it must show that half plus one of its shareholders are Uruguayan citizens domiciled in the country, that at least 51% of the registered voting shares are owned by Uruguayan citizens, that the company is controlled and managed by Uruguayans and that it is up to date with its social and tax obligations Examples of waiver provisions or similar cabotage authorizations: • In order to operate a coastal shipping service on a regular or permanent basis, it is necessary to obtain a route license from the Ministry of Public Works and Transport, except in the case of exceptional services. Concessions for coastal shipping services are granted only to *Costa Rica*n citizens or to companies formed in Costa Rica, with capital controlled by Costa Ricans holding at least 60 percent of the shares. Such concessions are granted for periods of six years. • Bangladesh exempts foreign feeder operators from having to obtain waiver certificates before loading and unloading cargo at ports in *Bangladesh* (in the context of a two-year general waiver)
Scenario 2: • Cabotage is strictly reserved to national transporters	• Coastal shipping is limited to national transporters (*Cameroon*) • The *Ghana* Shipping Act restricts maritime cabotage to domestic companies. • Cabotage is only open to national carriers as specified in the Shipping Administration Act 1954 (*Myanmar*)

Source: I-TIP Services (Applied Regimes database)

It is worth noting that conditions to obtain the national flag might entail fees associated with the registration of vessels and complying with restrictive conditions. Re-flagging in order to provide cabotage services might be of interest to foreign firms depending on the potential for trade. For example in the case of larger or archipelagic countries, such as Indonesia and Bahamas, the interest in

coastal trade can be substantial, given that shipping is their main access line to markets and the rest of the world.

The review of applied regimes also highlighted that there were other conditions that could apply to foreign services providers providing cabotage and, which could be different to the ones faced by the domestic services providers. For example:

- In Tonga, foreign shipping companies are permitted to offer cabotage services, provided they engage a Tongan shipping agent or an agent based in Tonga;
- In the Dominican Republic, Dominican-flagged vessels receive a 50 per cent discount on fees for the use of port facilities or demurrage services and are exempt from berthing charges, and
- In Uruguay, when a government authority issues a tender that can be provided by domestic cabotage in competition with foreign vessels, the former will be granted a preference margin of 10 per cent on the freight.

The fact that the applied regimes of a few countries (the Gambia, Dominica, Guatemala and Belize) explicitly allow cabotage for foreign service providers is also noteworthy.

Regulation, and in this case the reservations and other requirements described above, act as a market entry determinant for foreign providers of maritime cabotage services. This means that it can, in certain circumstances, nullify or significantly impair market access, becoming a barrier to trade. The OECD Services Trade Restrictiveness Index (STRI) provides useful insights in terms of classifying broad categories of restrictions that affect cabotage.

According to the methodology[7] and dataset of the OECD, cabotage restrictions mainly relate to two types of measures affecting foreign entry: (i) whether foreign-flagged ships are fully excluded from cabotage, without any exception, or (ii) whether they are partially excluded from cabotage. Table 4 features countries covered by the OECD analysis and under each applicable scenario.

A common requirement for cabotage is to register the vessel under the national flag. Conditions on flying the national flag are not considered a trade restriction per se, but in cases where flying the flag is linked to access to certain segments of the market, discrimination related to registering under the national flag is considered a restriction on foreign entry. As shown in Table 4, almost all countries impose conditions to register vessels in the national registry, limiting the provision of maritime cabotage.

[7] The OECD methodology encompasses composite STRI indices that quantify five categories of restrictions, namely restrictions on foreign entry; movement of people; barriers to competition; regulatory transparency and other discriminatory measures that impact the ease of doing business. The STRI composite indices are derived by quantifying the qualitative information in a regulatory database as binary scores. The resulting sectoral indices take values between zero (complete openness to trade and investment) and one (total market closure to foreign services providers).

Table 4: Countries fully or partially excluding foreign-flag ships from cabotage and imposing conditions to own/register vessels under national flags to provide cabotage services

Countries where foreign-flagged ships are…			Countries imposing conditions to own and/or register vessels under national flags to provide cabotage services	
… fully excluded from cabotage, without any exception	… partially excluded from cabotage			
Belgium	Australia	New Zealand	Australia	New Zealand
Estonia	Canada	*Poland*	Belgium	Norway
Greece[8]	Korea	Portugal	Canada	Poland
Italy	Chile	Slovenia	Chile	Portugal
Poland[9]	Finland	Spain	Denmark	Spain
Sweden[10]	France	*Sweden*	Estonia	Turkey
Turkey	Germany	United Kingdom	Finland	United Kingdom
United States	*Greece*	Brazil	France	United States
China	Israel	Costa Rica	Germany	Brazil
Colombia	Japan	India	Greece	China
Indonesia	Korea	Russia	Iceland	Colombia
Lithuania	Latvia	South Africa	Ireland	Costa Rica
	Mexico		Israel	India
			Italy	Indonesia
			Japan	Lithuania
			Korea	Russia
			Mexico	South Africa
			Netherlands	

Source: OECD Services Trade Restrictiveness Index Regulatory Database

3. Cabotage regimes: rationale and impact

Clearly, restrictions on domestic coastal trade are widespread. The rationale for such measures and their impact on the performance of the domestic shipping sector as well as the liner shipping connectivity and trade costs, are addressed the following sections.

[8] Greece appears as fully excluding and partially excluding cabotage. This is because existing regulation foresees a general rule under which maritime cabotage is: (i) not permitted for non-EU registered vessels and (ii) only EU registered ships enjoy the freedom to provide these services. However, at the same time, ships under the flag of third countries may participate in the Greek maritime cabotage if the number of ships of the EU fleet is not enough to cover the routes.

[9] Poland appears as fully excluding and partially excluding cabotage. This is because existing regulation foresees a general rule under which maritime cabotage is permitted for EU-flagged ships. However, at the same time, in particular circumstances, the local Maritime authority, may authorize ships flying the flag of a State other than the EU to perform shipping between Polish ports (cabotage), for a fixed period of time.

[10] Sweden appears as fully excluding and partially excluding cabotage. This is because existing regulation foresees a general rule under which maritime cabotage is restricted to Swedish- and EEA-flagged ships. However, at the same time, foreign vessels may be granted the right to perform cabotage based on bilateral agreements.

3.1. Rationale

Existing restrictions reflect the political sensitivity of cabotage operations. Historically, cabotage restrictions were justified by the need to preserve security, to avoid shipping shortages in case of conflict, when lack of access to foreign carriers could leave the military without adequate means for moving men and materiel to the war zone. From this point of view, cabotage restrictions aimed at ensuring that local shipping companies carry locally generated cargo to protect local waterways and ensure strategic deliveries and shipments.

Maintaining national merchant fleets is another important motivation for cabotage restrictions. There are several explanations for this. First, it is often argued that maintaining a national fleet may contribute to reduce the adverse impact of freight expenditures on the balance of payments. Second, it can contribute to ensure economic growth and social well-being by developing local capacity in several segments of the maritime transport value chain, particularly ship-building and repair, ship ownership, registration, operation and seafarers.

Facilitating international trade in a predictable and stable environment is another motivation for restricting the entry of foreign service providers to provide cabotage services. This is particularly relevant for locations that rely on shipping of goods and passengers such as remote islands. In this case, services offered may be insufficient if the shipping is left in the hands of unpredictable and volatile free market.

The position of domestic constituencies (supporting cabotage restrictions) in national debates on possible relaxation of cabotage regimes suggests that the rationale for many cabotage regulations today is labour interests and the need to protect local industries from foreign competition. [11] In this context, the flagging conditions (attached to operating cabotage services) described in the previous section are important. Different flags lead to different requirements for manning levels and minimum wages, as well as to different taxation levels and related regimes. For instance, concerns voiced over the relaxation of cabotage regulation in some countries related to the fact that increasing competition among transport operators may cause a reduction in the operating costs by changing employment practices, thus weakening labour and safety standards for seafarers[12].

3.2. Impact: selected examples

Few studies have thoroughly analysed the impact of cabotage regimes on the performance of the domestic shipping sector. Findings of the present research suggest that, in practice, cabotage regimes

[11] See for example: " *Lifting of cabotage policy spells doom for shipping industry*" http://www.theborneopost.com/2017/05/18/lifting-of-cabotage-policy-spells-doom-for-shipping-industry/; or "*Maritime industry says the Australian shipping sector will disappear without legislative and taxation changes*" http://www.abc.net.au/news/rural/2016-03-14/maritime-future-should-feature-at-election/7244018

[12] See for example: "*The high cost of cheap shipping*" https://d3n8a8pro7vhmx.cloudfront.net/muanational/pages/4051/attachments/original/1480042542/Reduced_NoVale.pdf?1480042542 or "*Canadian Court Sides with SIU of Canada's Claim that Cabotage Was Attacked by Issuance of Foreign Worker Permits*" https://maritimetrades.org/canadian-court-sides-with-siu-of-canadas-claim-that-cabotage-was-attacked-by-issuance-of-foreign-worker-permits/

have not been strictly applied in developing countries. This section illustrates through select examples why some countries appear to have succeeded in developing their supply-side capacity, leveraging their cabotage regimes while others have faced challenges in achieving this.

China, Brazil and India have succeeded in developing their shipping supply-side capacity. However, maritime cabotage regimes may not be the sole element explaining the success of the expansion of supply-side capacity. For example, in the case of China and India, infrastructure investment projects, programs focused on training and other incentives have contributed to this objective.

In the case of Brazil (and other countries in Latin America), Wilmsmeier (2014) suggested that cabotage restrictions may have induced an evolution in services structures leading global carriers to "convert" regional shipping lines into regional feeder operators (to overcome existing cabotage restrictions) and to increase supply-side capacity while at the same time, reducing effective competition. The impact on competition was also highlighted by a study (World Bank, 2014) which considered the link between cabotage restrictions in the Philippines and the oligopolistic shipping market structure which led to high shipping costs and low quality of service.

Other countries like Nigeria or South Africa have encountered challenges in leveraging cabotage restrictions in order to build their supply-side capacity. Weak supply capacity has thus led, in practice, to widespread cabotage waivers overriding the proper implementation of cabotage regulations. To illustrate this point, Box 1 summarizes the main findings of three studies relaying the possible factors that may explain how more than 10 years of maritime cabotage regime implementation in Nigeria have not led to the desired results.

Box 1: Cabotage regulation to enhance supply-side capacity and employment opportunities in the Nigeria's shipping sector

With a coastline of about 870 kilometres and about 3'000 kilometres of inland waterways, coastal trade is particularly important for Nigerian oil, gas and fisheries industries.

The Coastal and Inland Shipping (Cabotage) Act was passed in 2003 and its objective was to reserve commercial transportation of goods and services within Nigerian coastal and inland water, to vessels registered in Nigeria and owned by Nigerians. Its objectives included stimulating and protecting national shipping companies, increasing national ship ownership and promoting the training of Nigerians in maritime transport technology and as seafarers. This Act was part of a broader package encompassing measures related to investment attraction (including for infrastructure), training, monitoring of regulatory compliance and registration procedures.

There is a wide consensus that the Act has not achieved its objectives. Since the implementation of the Act, shipping activities by national ship-owners have declined. Foreign-owned and foreign-crewed vessels still dominate services and commercial operations of carriage of goods and passengers in the inland and coastal waters of Nigeria. In addition, there is a shortage of trained sailors, making it impossible to comply with provisions on local employment.

Different studies, such Akodu, Bisi et al. (2015); Bello-Olowookere, Ganiyu (2011) and Okeke, V.O.S. et al. (2012), suggest that this situation could derive from incomplete implementation of Government policies and that this, in turn, relates to two main reasons:

- First, institutional weaknesses that made it difficult to bridge the gap between the local capacity

and available opportunities provided by the Act. These weaknesses affected implementation and monitoring compliance with the Act. Implementation weaknesses translated, for example, in the lack of disbursement of available funds aimed at supporting ship-owners, financing ship-building and local training and capacity building. Regarding compliance, Akodu notes a possible conflict of interest between two functions of implementing agency i.e. collecting waiver levies and enforcing the cabotage regime, suggesting that income (rents) generated by waiver levies may have acted as a disincentive for proper implementation.

- Second, the provision of waivers for foreign-owned vessels, on grounds that the Nigerian fleet meeting required standards was insufficient to cater for Nigerian cabotage shipping demand, particularly in the oil sector.

Sources: Akodu, Bisi et al. (2015); Bello-Olowookere, Ganiyu (2011) and Okeke, V.O.S. et al. (2012)

In South Africa, cabotage operations are dominated by foreign-owned ships. In exploring this subject, Mabiletsa (2016) found that road freight transport prevails over coastal shipping due to lack of sustainable cargo for ships to carry over coastal routes in South Africa and between South Africa and other regional partners. As a result, foreign-owned shipping lines deploy their own feeder services, as an internal logistics arrangement but with limited services. Mabiletsa highlighted reasons preventing the cabotage regime from realising substantial growth on domestic operations. Relevant reasons included the following: (i) different ports in South Africa operate different kinds of cargo (or mix of cargo) and have different levels of productivity (ii) centres producing raw materials are disconnected from processing industrial centres. Overcoming these challenges would require engaging in wider reforms aimed at developing sustainable cargo volumes for cabotage (through investments in port improvements, logistics systems and multimodal connections) and addressing other matters affecting domestic ship-owning and operations such as financing mechanisms and shortage of skilled labour.

As concerns the perspective of developed countries, the cases of the EU and of New Zealand provide interesting insights into the impact of relaxing maritime cabotage regimes with regard to market developments, including changes on market shares by local companies, prices, frequency and quality of services. Both regimes were relaxed in the 90s.

At the EU level, the Council Regulation (EEC) No 3577/92, which was adopted on 7 December 1992, established the principle of freedom to provide services to maritime transport within Member States (maritime cabotage). This means that the EU reciprocally recognized cabotage rights between EU members, enabling EU ship owners the freedom to operate between ports in another Member State. The policy objective pursued related to market integration, i.e. creating a regional market for the provision of maritime cabotage services.

The EU implemented this regulation gradually. Almost all categories of cabotage were opened in 1999, and remaining restrictions were lifted in 2002[13]. It is important to note that the regulation foresees a differentiated treatment of vessels registered in first[14] or second registers[15]. The first has unrestricted

[13] End of Greek restrictions affecting passenger cabotage traffic.

[14] First registers are Member States' registers

access to the cabotage market in member states, and the second entailed, in a few cases, limited or lack of access.

A 2014 report by the European Commission examined developments between 2001 and 2010, in the European cabotage market, which encompasses EU and EFTA members. The following points summarize the main findings of this report to the extent that they relate to freight cabotage.

- Abolishing maritime cabotage market access barriers does not seem to have led to a significant increase in the number of ship-owners interested in providing cabotage services. The report noted that this might be linked to the inherent features of the cabotage market, which consists in limited cargo volumes, with a few exceptions of routes of very high commercial interest[16]. This could also reflect at some ship-owning companies ensuring their presence on cabotage markets of other Member States by acquiring the shares in national ship-owning companies rather than by physically deploying the cabotage services.
- Introducing public service obligations on service providers was needed in the case of less attractive commercial routes to ensure traffic to, from and between islands (in Greece, Spain and France). The introduction of regulation on this issue was found to have enabled public authorities to negotiate with ship-owners in a position of relative strength and give the administrations an element of control over the level of fares. The study also suggests that it contributed to achieve more transparency in the attribution of public service contracts and public service obligations.
- Statistical tools to track maritime cabotage were increasingly considered insufficient and unreliable because member states no longer collected some market-related statistics after liberalization. In addition, private operators were reluctant to provide data citing business confidentiality reasons.
- Vessels flying non-national flags for cabotage of goods increased. In Finland, the presence of non-Finnish European Economic Area (EEA) flags has increased from 25 per cent in 2001 to 36 per cent in 2005 and 47 per cent in 2010. In Italy, the presence of non-Italian EEA flagged vessels has increased in cargo transport in mainland cabotage from approximately 43 per cent in 2001 to almost 47 per cent in 2009. In Germany, on average more than half of the total cargo is transported by non-German EEA vessels: in 2002 this share represented 52 per cent; in 2010 it has risen to almost 56 per cent.
- Cargo volumes remained generally stable during the period (except for the crisis years), with some countries recording increased cargo volumes.
- Employment of seafarers engaged in maritime cabotage slightly decreased in the three countries where some data was available (Finland, Portugal and Spain). At least in one of these

[15] Second registers comprise: (i) "offshore registers" belonging to territories which have a greater or lesser autonomy in relation to the Member State, and (ii) "international registers", attached directly to the State which created them. Second registers have relaxed rules concerning manning (i.e. crews)

[16] Such as the one between mainland France and Corsica, where the number of ship owners providing cabotage services increased after the Regulation entered into force.

cases, this resulted from replacement of small cabotage vessels by a lower number of modern ships with higher tonnage.

- Cabotage liberalisation has had a positive impact in terms of modernisation of national fleets under pressure of wider competition and in improving the quality of services offer.
- The most important market segment for EU cabotage is liquid bulk.

New Zealand is another interesting example to look at when investigating the impact of maritime cabotage reforms. New Zealand adopted maritime cabotage liberalization in 1994, through its Maritime Transport Act. Maritime cabotage liberalization was part of a broader set of major economic reforms to open the economy to international competition. The policy objective pursued in this case was intensifying competition to ensure high quality competitive shipping services with excellent reliability and acceptable service frequency, to support export competitiveness of agricultural, horticultural, and forestry products.

Liberalization allowed international vessels visiting New Zealand to deliver imports or pick up exports. More precisely, this regulation envisaged that coastal cargoes may be carried by a foreign ship in two cases specified in Table 5.

Table 5: Eligibility criteria for foreign ships that may provide cabotage services in New Zealand, as per the Marine Transport Act of 1994

(1) Foreign ships on demise charter[17] to an New Zealand based operator who employs or engages a crew to work on board the ship under an employment agreement or contract for services governed by New Zealand law	
(2) Foreign ships…	• … passing through New Zealand waters while on a continuous journey from a foreign port to another foreign port; and • … stopping in New Zealand to load or unload international cargo; and • … whose carriage of coastal cargo is incidental in relation to the carriage of its international cargo

Source: Thompson et al. (2015)

Cavana (2004) and Liu (2009) analysed the impact of this change in the cabotage regulation of New Zealand and found that:

- The impact of liberalization was greater in the container shipping sector and particularly in the carriage of domestic containers between the North and South Islands.
- Due to the extra competition and improved carrier utilization capacity by the international ship operators, freight rates dropped fairly quickly in the period immediately following liberalization, and stabilized to some extent since that time. Cavana (2004) estimated the fall in coastal freight rates at around 20-25 per cent between 1994 and 2000. He also found instances

[17] Ship leasing arrangement in which the use of the entire vessel and all associated expenses pass on from the ship owner to the lessee (chartrer). If the lessee also has the right to appoint own master and the crew, it is called a bareboat charter.

where freight rates for containers and freight travelling from the North to the South Island dropped by up to 50 per cent.

- The drop in freight rates was not homogenous throughout the country. Liu (2009) reported that South-bound freight rates fell from around NZ$ 1'200-1'500 per TEU prior to liberalization to around NZ$ 950-1'000 per TEU and that similar change appeared to have occurred in North-bound freight rates, but only for dry cargoes. Reductions for refrigerated cargoes did not appear to have been as large. The freight rates for North-bound cargo generally decreased by much smaller amounts, since most of the international shipping lines usually travel down the coast in a southerly direction before departing from New Zealand.
- Following liberalization, international carriers secured a share of approximately 10-15 per cent of the domestic coastal container market. It appears that domestic carriers were able to retain the vast majority of the market but, in order to do so, they had to substantially reduce freight rates. It is worth noting that Cavana also found instances where some domestic shipping operators saw increases in their coastal shipping business activities.
- The number of commercial vessels permanently deployed on coastal routes in New Zealand remained largely unchanged in the 6 years since the act came into force. The only sector where there was a decline in the number of vessels deployed was the liquid bulk sector, but this decline was found to be unrelated to competition from foreign operators.
- The volume of general (and containerized) cargoes shipped around New Zealand coasts increased by about 5 per cent p.a. between 1995 and 2004. Cavana also reported a case where volumes shipped increased by about 100 per cent for one major domestic coastal ship operator.
- Liberalization led to an intensified competition for domestic cargoes between coastal shipping, rail and road and to a significant increase in the frequency of services between the major ports of the South and North islands of New Zealand.

In 2000, the Government of New Zealand undertook a review of implementation, to evaluate the need to re-introduce maritime cabotage restrictions. The review was prompted by two main reasons: (i) the loss of revenue by domestic shipping due to profit margins being cut down owing to the competition from international operators and (ii) the limited growth in the domestic industry participation[18].

The review highlighted that New Zealand ship owners, workers, and maritime industry associations supported the re-introducing of maritime cabotage restrictions, arguing that it would provide more jobs for the locals and make the domestic industry more sustainable over the long term. However, other stakeholders, including international ship operators, ports, freight and distribution services, manufacturers, and primary goods producers were against the re-introduction of the maritime cabotage restrictions, claiming that it would lead to higher domestic and international freight rates, loss of jobs, businesses, and exports, higher fuel usage, negative environmental effects, and a decline in regional economic activity.

[18] In 2000, 21 vessels operated by 9 companies provided coastal shipping services compared to 19 vessels operated by 10 companies in 1994

The review decided against the re-introduction of the maritime cabotage restrictions as an option for enhancing the domestic economy as it was estimated to lead to negative net returns for the economy. Instead, recognizing the strong support and subsidies provided by many countries to their respective shipping industries, the committee recommended levelling the playing field between international and domestic sectors of the industry to ensure fair competition. Concrete measures were proposed to achieve this objective and boost New Zealand shipping industry participation. These included the introduction of a tonnage tax and a second register for vessels.

Aside from examining the impact of cabotage regimes on cabotage operations and related market developments, it is interesting to explore the impact of these rules on international maritime connectivity, as this is an important determinant of trade costs. The next section looks into this issue.

4. Cabotage restrictions and liner shipping connectivity

A country's ability to connect to global and regional transport networks is a key determinant of its integration in global supply chains and of shipping costs, which are critical to ensure price competitiveness and success in maintaining export market shares. Maritime transport connectivity[19] is about the nature of maritime connections, including aspects such as the number of regular maritime services, their frequency and reliability. Improved liner shipping connectivity can help reduce trade costs and has a direct, positive bearing on trade volumes.

Taking this into consideration, the current section analyses: (i) the impact of restrictions on maritime cabotage on transport costs and liner shipping connectivity; (ii) emerging trends reshaping the liner shipping market; (iii) how relaxing cabotage regimes can contribute to improved connectivity in the current context and (iv) other policy spheres where reforms are required for improved connectivity.

4.1. Zooming in on the impact of maritime cabotage restrictions on transport costs and liner shipping connectivity

By effectively excluding foreigners from entering the market and treating foreign maritime service providers less favourably than domestic ones, maritime cabotage restrictions restrain competition. Lack of competition can result in:

1. Increased costs because they force carriers to resort to tranship cargoes in third countries or using domestic feeder services that are more expensive, implying added operational costs for shippers and thus, negatively affecting trade.

[19] The shipping market is made of several segments, including liner shipping and bulk shipping. Liner shipping companies provide regular services between specified ports according to time tables and prices advertised well in advance and carry cargo mainly in containers. In contrast, most bulk shipping companies operate on the spot markets and have no fixed routes or schedules. The ships are usually contracted to carry cargo from (any) port to (any) port. The cargo usually consists of a large quantity of a single commodity. Although cabotage operations is important for transporting domestic and regional trade for goods such as crude oil, petrochemicals, gasoline, ore, coal, fertilizer and grains chemicals and oil, this research focuses on liner shipping connectivity due to data availability.

2. Limited quality of logistic services provided and weak links in global trade lanes. This, in turn, can have a negative impact on efficiency in supply chains and connectivity.

Box 2 provides different estimates of the costs involved in the most restrictive example of cabotage laws.

Box 2: How the Jones Act complicates logistics and adds costs

The United States Merchant Marine Act of 1920 (Jones Act) is the most restrictive example of cabotage laws. It requires that shipping of all goods transported between US ports be carried out by ships under the US flag. The ships must be constructed in the United States, owned by US citizens, and crewed by US citizens and US permanent residents. Furthermore, the steel used in any foreign repair work on a Jones Act vessel must be less than 10 percent of the ship's total weight.

Political advocacy for the Jones Act is unwavering, led primarily by shipyards and associated industries, maritime labour unions and congressional delegations from Hawaii and Alaska. Critics of the law include domestic and foreign shippers (and their consumers) and international logistic companies.

Several empirical studies have attempted to estimate the economic effects of the Jones Act, the most comprehensive of which is a report published by the US International Trade Commission (2002), which estimated the annual economic gain from repealing the act to the residents of Puerto Rico, Alaska and Hawaii to be between USD 5 billion to USD 15 billion (in current-value dollars). Another study, by Justin Lewis found coastal water transport in the United States would be about 60 percent cheaper, and that consumers using these services would stand to gain over $500 million annually, by relaxing or eliminating the Jones Act. Waivers provided a temporary basis, for example in the case of emergencies such as hurricanes, have also raised criticism regarding the negative impact of the Jones Act in ensuring continuous supply of goods at a reasonable cost.

The alternative to using international shipping services for relay in the United States is typically to move goods via land. Estimates suggest that more than 500'000 qualifying containers moved over highway and rail in 2012. If these containers were allowed to stay on the water and tranship in international liner services, the economic benefit to supply chain participants -shippers, carriers and consumers- could exceed USD 200 million.

Sources: Bain & Company and World Bank (2013) and Kashian et al. (2017)

To understand the impact on the liner shipping connectivity, it is worth revisiting the model through which maritime shipping companies organize their routes. In the "hub-and-spoke system", the network of connections arranged like a chariot wheel, in which all traffic moves along spokes connected to the hub (at the centre). At the hub, smaller feeder vessels bring cargo that then gets loaded onto larger ships for transportation to final destinations. Similarly, containers arriving on large vessels are transhipped via smaller vessels for shipping to various destination ports. Sometimes, cargo is also transhipped or “relayed” to other mainline services using similar-sized vessels, at the hub (Frost et al. 2008). This means that all countries are not connected in the same manner: well-connected countries that are strongly connected to other well-connected countries are "hubs" while less connected countries are "spokes".

Restrictions on international operators to transport domestic trade or to provide feedering services leads to situations where a ship may call at two ports within the same country, but is not allowed transporting cargo between the two ports. This is restricts the potential to supply transport services, and represents a missed opportunity for maritime cabotage transport. It will also discourage the modal shift from land to sea transport.

Cabotage restrictions have in impact on decisions of carriers to optimize their shipping networks, particularly with regard to ensuring (by serving local routes) adequate capacity to feed transhipment ports (i.e. generating scale and volume) through feedering services and relay of cargo. Box 3 illustrates this problem.

Box 3. Impact of different cabotage regimes on connectivity: an assessment from the EU perspective

Panteia (2015) examined the impact of several maritime cabotage regimes with regard to the international competitiveness of the EU marine transport sector, as part of a study commissioned by the European Commission to review the EU maritime transport strategy. This study involved wide-ranging consultations with Member States, business representatives (shipping companies) and consumers (shippers) to discuss, among other topics, key challenges affecting shipping companies' margins.

In this respect, cabotage restrictions featured prominently. The inability of foreign-flagged vessels from moving domestic cargo within two ports of the same country resulted in cargo being carried in a less efficient way to the port of final destination and increased costs. Cabotage restrictions required shipping companies to hire national services at less competitive rates, and this, in turn, affected feedering and relay operations.

Feedering was of particular interest to industry representatives, given that they perceived an increased reliance on feeder transport as part of the transport chain. They were particularly interested in these operations in the case of growing markets (such as China, India, US and Russia) because of the high volume of goods transported that have their origin or final destination in these countries, necessitating a high level of domestic feedering.

Relay operations, as an important component in making maritime traffic more cost efficient through optimal routing was also important for shipping companies. On this issue, the EU Chamber of Commerce in China highlighted that cabotage restrictions in this country represented a serious barrier

for EU shipping companies. This is because they did not have the flexibility to optimise route networks and were forced to tranship cargoes originating in China to overseas ports (mainly to South Korea and Singapore), or to rely on a domestic-flagged vessel to transport cargo from one port to another within China. Both options resulted in additional costs and a loss of efficiency. According to the EU Chamber of Commerce, it may even be cheaper for EU-operators to tranship cargo outside of China instead of using domestic feeder services that were more expensive.

Shippers also expressed concerns about feedering and relay in terms of added operational costs to the end-to-end supply chain. The costs arose from the outsourcing of this service to domestic companies since foreign companies were unable to provide these services themselves. The respondents perceived these factors as producing negative impacts in terms of effectiveness, efficiency and reliability of service.

Source: Panteia et al. 2015

4.2. Key issues in the current context

As argued in the latest edition of the UNCTAD Review of Maritime Transport, published in October 2017, the shipping landscape has been evolving and a number of emerging trends have been reshaping the liner shipping market. These emerging trends result to a large extent from the challenges facing the liner shipping companies. A better understanding of these developments is important to better ways in which a relaxation of maritime cabotage restrictions can help improve countries' liner connectivity levels.

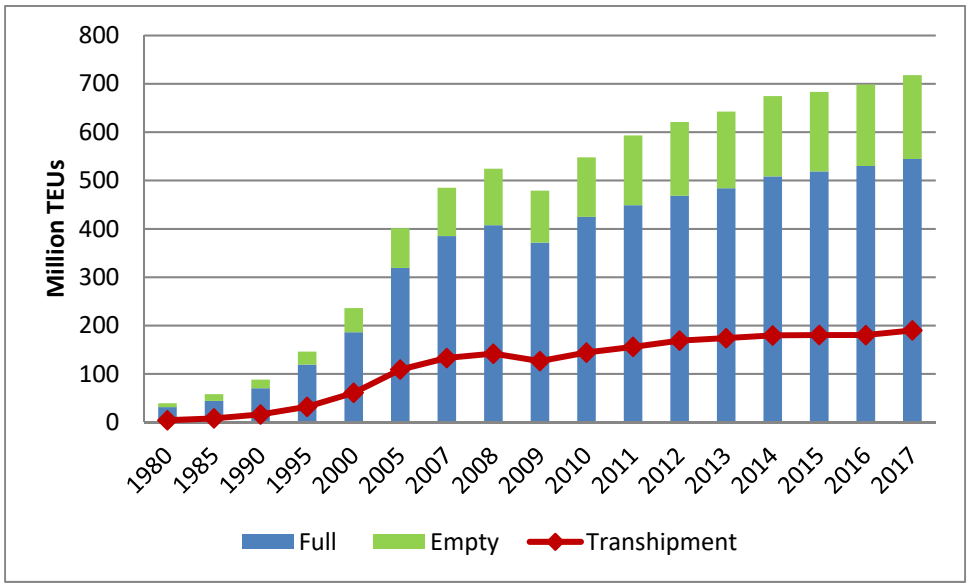
In this respect, key relevant trends worth noting include, among others, the following:

- Increased concentration, resulting from market consolidation (through mergers and acquisitions). This implies a reduced number of players controlling larger market shares;
- An oversupplied market, resulting from larger ships and lower demand growth. This has led to persistent low freight rates and lower probability of high utilization rates (due to trade imbalances in certain less attractive routes) and
- Liner shipping market alliances reshuffling and mega alliances, resulting in carriers consolidating their vessel calls into fewer port pairs and probable fewer choices for certain routes.

Efforts from liner shipping companies to cope with challenges seek to increase efficiency of transport operations and reduce costs along the supply chain. They achieve this by re-organizing their shipping networks and by revising the allocation of assets and commercial strategies. Changes in ship deployment patterns are an example of such strategies. As they are replaced with mega-vessels, vessels made redundant are "cascaded" onto secondary trade routes which, in turn, affect the transhipment vs direct call equilibrium. Reducing the number and frequency of (direct) services is another example of shipping strategies, with carriers limiting the number of calls made by their megaships, resulting in fewer ship calls at major ports.

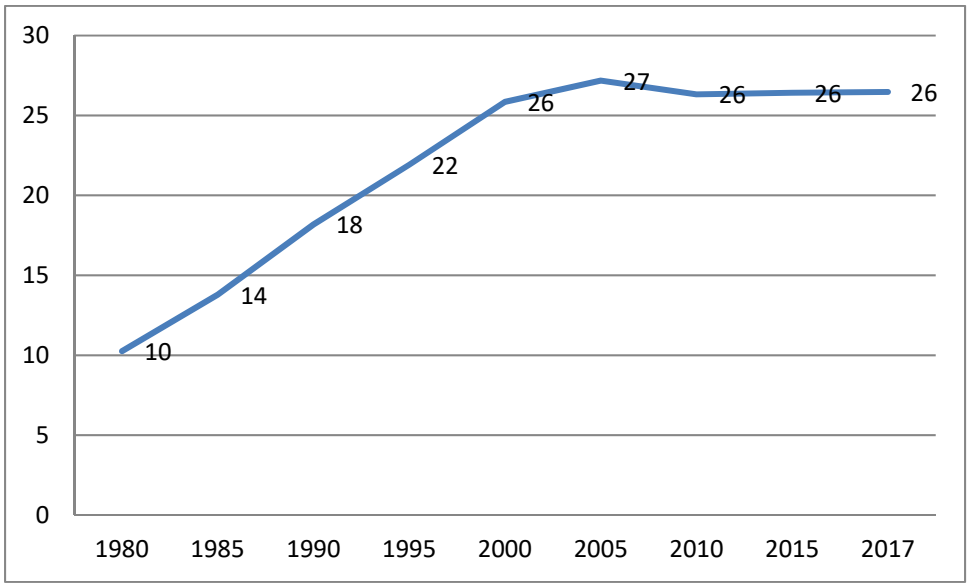
In this context, transhipment becomes essential for shipping companies to optimize the utilization of ultra-large container ships because it helps generate required cargo volumes. Figure 1 and Figure 2 show the evolution of transhipment and world container traffic between 1980 and 2017.

Figure 1: World Container Traffic, port handling (empty and full containers) and transhipment



Source: UNCTAD elaboration, based on Drewry Maritime Research data

Figure 2: World container traffic, percentage share of transhipment in port handling total



Source: UNCTAD elaboration, based on Drewry Maritime Research data

These trends have implications for ports, which are faced with challenges related to mitigating the negative impact and growing cost pressures, associated with accommodating growing vessel size. This impact is associated with the consequent requirement to upgrade equipment and infrastructure to service larger ships, an investment which, given weak demand and trade imbalances, could mean uncertain returns for ports. This impact also relates to potential port congestion and dwell time, as the increased number of containers absorbs more port capacity when handling those calls and takes more time to load and unload.

This trend can also mean increased competition among ports, particularly for transhipment ports, to capture higher traffic volumes and to lock in customers from mega-alliances. In fact, larger and more powerful alliances aiming at raising network efficiency are likely to increase pressure on ports to enhance productivity and could be expecting them, among other issues, to reduce cabotage restrictions (UNCTAD, 2017) as a pre-requisite to ensure entry of a service operator on a particular route.

The changing configuration of maritime shipping networks generates opportunities and challenges for developing countries. Opportunities relate to development of new transhipment centres, routes and ports, as well as for modernization of terminals to accommodate the arrival, loading and transit of bigger vessels. Ports with more infrastructure and capabilities to connect with other logistical nodes should have more opportunities to reap trade benefits.

For example, the expansion of the Panama Canal in 2016 represented opportunities for new inter-regional routes because Caribbean and Latin American ports could attract some of the transhipment business as larger ships will be employed on routes passing near Colombia, Cuba, Jamaica and other countries. As the difference in size between the largest and smallest container ships widens, so does the economic incentive to trans-ship cargo, with a view to ensuring that the optimal size of vessel is used on each leg of a trade route. However, these opportunities are not guaranteed to concretize. In 2015 and 2016, contractions in port-handling volumes were reported in Africa (-0.7 per cent), developing America (-1.2 per cent) and Western Asia (-0.7 per cent) (UNCTAD 2017).

This new context also entails challenges, such as those related with deviations from traditional routes that may have a negative impact in the connectivity of some countries. As mentioned in the previous section, increased vessel size implies significant costs associated with infrastructure upgrading in ports, an investment that not all ports in developing countries will be capable or willing to assume. This may lead to less frequency in maritime services (and losing direct connections) thus negatively impacting connectivity, increasing transport costs and reducing trade opportunities, as explained in Box 4.

Box 4: The impact of direct maritime connections and costs of transport in export performance in developing countries

Less than 20 per cent of coastal country pairs have a direct maritime connection between a country of origin and a destination without the need for transhipment. Developed countries have twice the average number of direct maritime connections compared to developing countries.

Lacking a direct maritime connection with a trade partner is important in terms of export performance. This is because it is associated with lower export values – up to 40 per cent lower when there is an additional transhipment –. Conversely, country pairs can reduce trade costs by 9 per cent when they add a direct maritime connection.

In addition, it is worth noting that developing countries also face higher transport costs than developed countries. In 2016, UNCTAD estimated that countries spent on average about 15 per cent of the value of their imports on international transport and insurance. Smaller and structurally vulnerable economies pay significantly more, reaching an average of 22 per cent for SIDS, 19 per cent for LLDCs and 21 per cent for the Least Developed Countries (LDCs).

Lower efficiency in ports, inadequate infrastructure, limited economies of scale, and less competitive transport markets are behind the persistent transport cost burden in many developing countries.

Source: UNCTAD (2017) Review of Maritime Transport

4.3. The contribution of relaxing cabotage regimes to improved connectivity in the current context

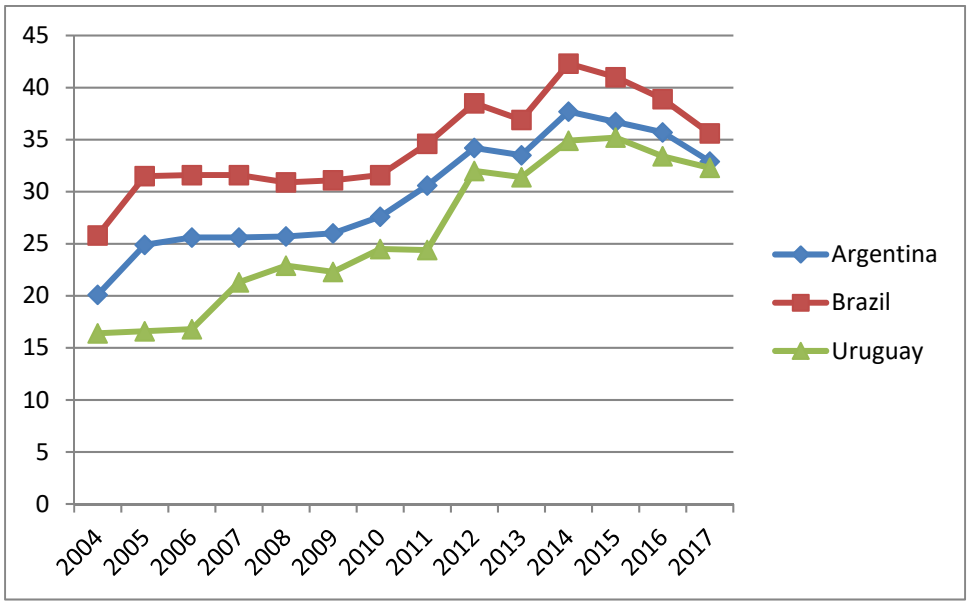
As seen in section 3.2, cabotage restrictions can be a source of inefficiencies for carriers because they raise costs and limit the quality of the services provided. In contrast, improving linkages between domestic freight transport and international freight transport can contribute, through feeder operations to generate cargo volumes and thus reducing trade costs.

Annex 1 illustrate cases where this is probably already a reality. The last column of the table reflects the extent to which (i) the maximum TEU ship capacity deployed on intra-country services is equal to (ii) the maximum TEU ship capacity in total vessel deployment. When this is the case and the figure is 100 per cent (for example for Brazil, Chile, China, Gabon, Ghana, India, Mexico, Turkey and South Africa), the intra-country connections form part of an international service.

In this context, the operation of foreign service providers in cabotage domestic markets can bring benefits with regard to certain types and quantities of cargo (mostly containerized cargo). For instance, the use of larger and more advanced foreign-flagged vessels can reduce costs by taking advantage of economies of scale and cargo optimization. Allowing the shipment of domestic cargo in the domestic leg of an international vessel with spare capacity (due to imbalanced trade) could be cheaper than shipping them on smaller ships that lack scale and transferring them to an international ship. Similarly, export and import cargo can benefit from economies of scale by avoiding unnecessary cargo transfers from a domestic vessel to an international vessel. From the perspective of connectivity, this means that relaxation of cabotage regimes can contribute to facilitate connections to feeder ports, which in turn can mean increased access to transhipment hubs.

The effect of relaxing cabotage regulations on enhancing the transhipment potential of domestic ports and therefore improving connectivity can be illustrated by the case of Uruguay (Figure 3) and Sri Lanka (Figure 4). In the Uruguay case, Argentina, Brazil and Uruguay are served by the same lines. Although a much smaller economy, Uruguay is accommodating the same services, not only for its own imports and exports, but also for transit cargo from Paraguay and for transhipment services into Argentina and Brazil, where cabotage restrictions limit the transhipment potential of national ports.

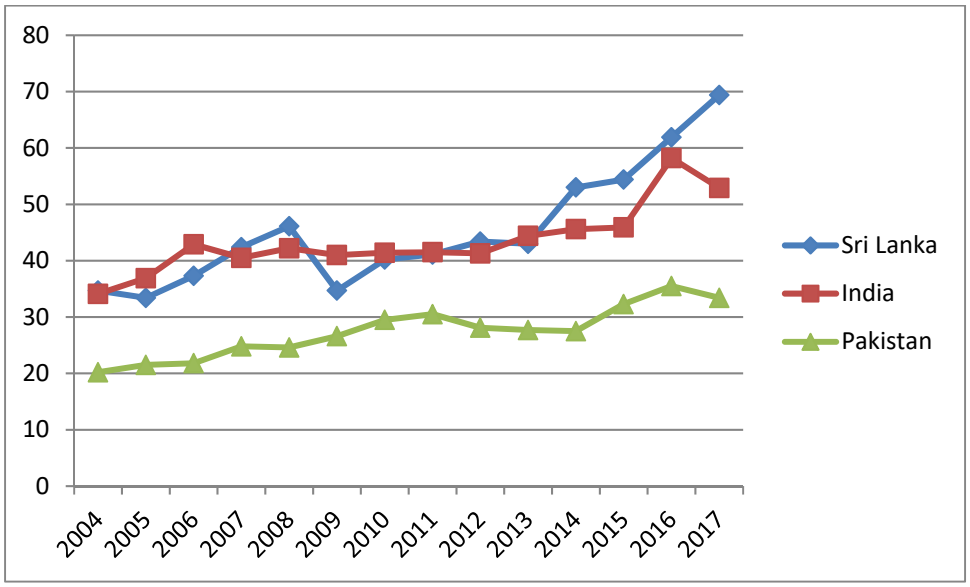
Figure 3: Liner Shipping Connectivity Index, 2004–2017 (Argentina, Brazil and Uruguay)



Source: UNCTADStat (http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=92)

The case of Sri Lanka is interesting as it has outgrown its larger neighbours. Colombo accommodates large container ships which are deployed on services between Asia and Europe, as well as some services to Africa and South America. Feedering from Colombo to ports in India can be done with ships under any flag, as these services are not affected by the Indian cabotage restrictions.

Figure 4: Liner Shipping Connectivity Index, 2004–2017 (Sri Lanka, India and Pakistan)



Source: UNCTADStat (http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=92)

In recent years, several countries have relaxed their cabotage regimes as part of their broader strategies to increase competitiveness, improve connectivity and adapt to the new context and emerging trends. In India, cabotage regime changes were recently introduced in the context of broader reforms related to improving logistics for trade and competitiveness, reducing costs. The Government has relaxed cabotage restrictions for specialized vessels, which are short in supply. In this case, enabling the transhipment of containers through foreign flagged vessels would encourage a modal shift from road and rail to coastal shipping.

Malaysia removed its cabotage policy for Sabah and Sarawak on 1 June 2017. The belief that maritime cabotage policy had restricted transport options, resulted in a monopolized shipping industry, and increased the cost of consumer goods has s motivated this change. Indeed, goods exported from Eastern Malaysia were left in transit for prolonged periods because vessels travelling out of Eastern Malaysia were unable to carry a full load. Consequently, manufacturers in Eastern Malaysia lost their ability to compete successfully in the market. By the time their goods arrive at the port of discharge, the prices of those goods were no longer competitive. The delay and issue of vessel frequency also resulted in increased port charges and a risk of cargo theft. Additionally, goods transported from peninsular Malaysia to Eastern Malaysia passed through a long supply chain before being discharged, resulting in increased freight costs. The lifting of cabotage laws is expected to make Eastern Malaysian ports more accessible, increasing trading activities and attracting more container traffic routes going through the Straits of Malacca.

Increased seaborne trade resulting from the recent Chinese economic boom had prompted several countries in Asia to compete for transhipment. Since 2013, China has gradually relaxed its maritime cabotage restrictions within the Shanghai free trade area in a bid to promote the area and boost the transhipment volumes of Shanghai. As a result, foreign registered vessels may now carry containers between Shanghai and other Chinese ports – although vessels must still have Chinese owners. Previously the formal position was that this could only be done by Chinese-owned and -flagged vessels, thereby preventing the use of, among others, foreign flagged ships of the China Ocean Shipping (Group) Company and China Shipping Container Lines. This recent change has raised concerns about Hong Kong (China), owing to its decreasing throughput and connectivity.

4.4. Required reforms in other areas for improved connectivity

Relaxing the restrictions applying to domestic shipping services -cabotage– which could be linked to international shipping services, can potentially improve a country's international connectivity by eliminating unnecessary inefficiencies. However, improving connectivity is also a function of other complementary policy measures that span a broad range of areas, including to infrastructure and hinterland development.

In relation with physical infrastructure, investing in port facilities upgrades to accommodate ever larger vessels, with the necessary water-depth and ship-to-shore container handling cranes can enable secondary and former feeder locations to berth bigger, mainline ships. Regional coordination can help in the planning of investment decisions; for example, it makes sense for ports along the same route to plan port investments jointly, to accommodate the vessels that are expected to serve this route in future.

Public–private partnerships can also help pooling financial resources, taking into account that most common user ports such as container terminals have, in recent decades, been concessioned or have involved the private sector in some other form.

Improving the efficiency of seaport operations is also an important part of a strategy to improve connectivity. In this context, adopting modern network technologies, such as cargo and vessel-tracking methods and other digital developments can contribute to modernize port operations. Transport and trade facilitation reforms, for example (i) facilitating transit in line with international standards and recommendations, including those of the United Nations, the WCO and the WTO and (ii) improving procedures for more efficient movement of goods across borders, in line with provisions of the (WTO) Trade Facilitation Agreement, can help to avoid delays and uncertainties and contribute significantly to reducing transaction costs.

Encouraging port competition, including among neighbouring countries' ports, can also contribute to improved connectivity. Competitive pressures will encourage port operators to maximize their efficiency and pass on those efficiency gains to their clients, shippers and shipping lines. Inter-port competition should not be limited to domestic seaports, but to neighbouring countries' ports as well.

Developing connections between ports and inland transport modes (hinterland connections) can be an effective instrument to enhance inter-port competition, given that such connections have implications for shipping volumes and costs, cargo loading and capacity, sailing and/or loading schedules, storage and warehousing. Indeed, facilitating the integration of rail, road, and fluvial transport networks with seaports can increase intermodal connections, expanding the market for a port's services. A competitive trade logistics market, where shippers can choose among various terminals, trucking and shipping companies can help improve maritime connectivity.

Conclusions

Maritime cabotage services are excluded from trade liberalization commitments and cabotage restrictions remain in place in the applied regimes of most countries. These restrictions can take the form of various conditions and requirements applying to foreign vessels. These may include requirements pertaining to: (i) ownership and flagging (related, for example, to foreign equity limits, nationality/residence requirements for crews and managers) and (ii) ship registration.

The restrictive nature of maritime cabotage regimes is indicative of the sensitive nature of this sector. Mainly motivated by security concerns when first introduced, justifications for maritime cabotage today are more intended to building supply-side capacity in shipping to derive revenues and employment benefits.

The present research suggests that some countries appear to have succeeded in building their supply-side capacity by implementing policies that supplement their cabotage regimes. Meanwhile, other countries seem to have faced various challenges that undermine their ability to leverage the removal of maritime cabotage restrictions in order to build their supply-side capacity. In both cases, it would appear that cabotage regimes have not been strictly applied in developing countries leading to the emergence of waivers as a common practice. The experience of two developed countries, which relaxed their respective maritime cabotage regimes in the 1990s, suggests (at least in one of the cases) that although opening up the domestic shipping industry to international competition entailed challenges in terms of domestic trade-offs with different constituencies, it did lead to improved efficiency and reduced freight rates.

The nexus between the liner shipping connectivity and the maritime cabotage restrictions affecting liner trades cannot be overemphasized. Maritime cabotage restrictions can undermine the liner shipping connectivity by reducing competition, which in turn, increases costs and reduces efficient transport operations. At the same, relaxing maritime cabotage restrictions can help improve liner shipping connectivity, reduce trade costs, stimulate trade flows and economies of scale and overall, generate revenues, employment and profits.

With the growing deployment of ever-larger ships, cascading of vessels from main trade routes to secondary routes and growing concentration in liner shipping, some observers argue that maritime/liner shipping connectivity in many developing countries could be seriously undermined. Today, transhipment and feedering remain key elements of liner shipping operations from the perspective of collecting cargo from spoke ports and transferring it to hub ports and a vital part of filling very large ships. In this context, relaxing cabotage restrictions can help improve maritime transport connectivity by helping interconnect national, regional and intercontinental liner shipping services. In recent years, several developing countries have relaxed their cabotage regimes as part of strategies to increase their competitiveness, increase connectivity and adapt to the new context and emerging trends.

It is important to highlight that, although relaxing cabotage regulation can help improve a country's level of maritime/liner shipping connectivity, this objective is a function of several policy measures than span a broad range of areas including infrastructure and hinterland development. Such complementary measures that extend beyond the relaxation of maritime cabotage restrictions include investing in port

facilities upgrades; improving the efficiency of seaport operations; encouraging port competition, including among neighbouring countries' ports and developing connections between ports and inland transport modes.

Based on this review, research and established linkages between maritime cabotage and liner shipping connectivity and in view of the current liner shipping market landscape characterized by greater market consolidation, concentration, alliance reshuffle, mega alliances, mega ships, countries may wish to review their maritime cabotage regime and assess, on a case by case basis, the merit of partially or fully relaxing existing maritime cabotage restrictions.

In addition to enhancing their liner shipping connectivity, allowing foreign service providers/sophisticated maritime transport or logistics service providers to operate in the domestic market could enable transfer of know-how, of modern best practice management methods and of expertise.

Safeguard measures to ensure progressive and tailored approaches to relaxing maritime cabotage restrictions should be favoured by favouring trial/test and temporary relaxation pilot cases and feasibility studies. An assessment, including quantitative assessment of the impacts of such measures should be carried out to ensure evidence based policy decisions in this field.

Annex: Container ship deployment on domestic services, May 2017

		Total vessel deployment					Domestic vessel deployment									
	Country	Deployed annual capacity (TEUs)	Number of ships scheduled on services	Number of operators	Number of services	Maximum ship capacity (TEUs)	Deployed annual capacity (TEUs)	Percentage of total	Number of ships scheduled on services	Percentage of total	Number of operators	Percentage of total	Total number of services	Percentage of total	Maximum ship capacity (TEUs)	Percentage of total
1	Algeria	1'290'902	66	33	33	1'315	257'678	20	25	38	11	33	11	33	1'118	**85**
2	Angola	1'275'780	78	23	15	6'950	487'659	38	41	53	11	48	9	60	3'663	53
3	Argentina	4'493'594	127	44	25	9'635	543'251	12	18	14	9	20	8	32	3'451	36
4	Australia	5'717'420	206	91	49	6'380	4'406'863	77	157	76	63	69	32	65	6'380	**100**
5	Bahamas	3'696'903	98	24	17	9'040	108'888	3	2	2	2	8	2	12	1'726	19
6	Bangladesh	2'205'834	56	30	26	2'457	107'848	5	3	5	3	10	3	12	1'700	69
7	Brazil	6'581'330	175	55	31	9'635	6'359'090	**97**	168	**96**	49	**89**	25	**81**	9'635	**100**
8	British Virgin Islands	127'998	8	3	3	1'033	127'998	**100**	8	**100**	3	**100**	3	**100**	1'033	**100**
9	Bulgaria	452'270	14	8	7	1'623	174'902	39	6	43	3	38	3	43	1'126	69
10	Canada	9'351'366	259	113	45	11'293	1'320'349	14	41	16	15	13	9	20	8'500	75
11	Chile	4'187'451	129	40	21	11'629	3'629'957	**87**	113	**88**	32	80	18	**86**	11'629	**100**
12	China	85'347'681	1'996	907	463	18'506	76'210'452	**89**	1'738	**87**	757	**83**	348	75	18'506	**100**
13	Colombia	8'617'348	298	89	52	11'629	2'434'631	28	84	28	28	31	20	38	9'863	**85**
14	Comoros	78'251	6	4	4	1'705	78'251	**100**	6	**100**	4	**100**	4	**100**	1'705	**100**
15	Congo, Democratic Republic	1'875'712	102	31	21	6'950	4'260	0	1	1	1	3	1	5	710	10
16	Cook Islands	17'301	3	2	2	623	16'185	**94**	2	67	1	50	1	50	623	**100**
17	Côte d'Ivoire	2'510'211	120	28	19	4'596	255'138	10	14	12	2	7	2	11	3'107	68
18	Croatia	1'513'976	45	15	10	11'577	86'060	6	2	4	2	13	2	20	957	8
19	Cuba	589'938	21	8	7	2'551	113'280	19	5	24	2	25	2	29	1'700	67
20	Denmark	1'795'355	44	23	20	18'341	193'648	11	4	9	4	17	4	20	1'120	6
21	Dominican Republic	3'887'786	137	47	33	9'863	509'447	13	17	12	8	17	7	21	3'398	34
22	Ecuador	2'601'031	122	36	24	9'227	14'383	1	5	4	1	3	1	4	553	6
23	Egypt	12'110'79	293	107	71	14'167	2'968'621	25	65	22	32	30	21	30	6'571	46

		Total vessel deployment					Domestic vessel deployment									
	Country	Deployed annual capacity (TEUs)	Number of ships scheduled on services	Number of operators	Number of services	Maximum ship capacity (TEUs)	Deployed annual capacity (TEUs)	Percentage of total	Number of ships scheduled on services	Percentage of total	Number of operators	Percentage of total	Total number of services	Percentage of total	Maximum ship capacity (TEUs)	Percentage of total
		3														
24	Equatorial Guinea	260'626	33	8	7	3'149	191'633	74	10	30	4	50	3	43	3'149	**100**
25	Fiji	381'355	32	20	15	2'631	208'110	55	19	59	12	60	9	60	1'617	61
26	Finland	1'966'738	76	42	39	2'365	708'391	36	26	34	17	40	14	36	2'365	**100**
27	France	18'823'473	466	176	87	17'387	2'746'237	15	86	18	22	13	14	16	16'277	**94**
28	Gabon	463'771	40	13	11	3'149	180'469	39	12	30	3	23	2	18	3'149	**100**
29	Georgia	368'050	10	6	6	1'623	57'600	16	1	10	1	17	1	17	1'600	**99**
30	Germany	26'427'472	621	253	143	18'350	5'213'249	20	125	20	39	15	35	24	18'341	**100**
31	Ghana	1'866'259	111	28	18	4'596	225'299	12	12	11	5	18	2	11	2'533	55
32	Greece	8'908'345	189	86	49	14'000	945'967	11	26	14	14	16	12	24	4'387	31
33	Haiti	676'047	24	10	10	2'501	171'214	25	10	42	4	40	4	40	1'740	70
34	Honduras	1'680'810	58	24	22	2'559	47'320	3	1	2	1	4	1	5	910	36
35	Iceland	285'406	14	8	8	1'457	223'730	78	10	71	6	75	6	75	1'457	**100**
36	India	15'291'675	371	164	90	11'569	12'158'250	**80**	290	78	117	71	62	69	11'569	**100**
37	Indonesia	8'700'671	290	146	117	8'704	4'412'786	51	184	63	85	58	77	66	4'400	51
38	Iran	3'567'190	80	36	32	12'183	918'242	26	20	25	15	42	12	38	6'500	53
39	Iraq	1'597'425	31	13	13	8'410	138'528	9	1	3	1	8	1	8	2'664	32
40	Ireland	1'152'008	34	19	19	2'551	152'100	13	5	15	4	21	4	21	970	38
41	Israel	5'071'072	132	44	30	11'890	2'626'157	52	79	60	27	61	21	70	8'325	70
42	Italy	16'614'787	454	162	103	14'167	12'017'710	72	318	70	114	70	72	70	14'167	**100**
43	Jamaica	2'674'987	100	37	27	8'858	326'595	12	10	10	5	14	5	19	1'869	21
44	Japan	18'584'569	594	291	204	12'939	13'960'932	75	462	78	252	**87**	181	**89**	9'041	70
45	Kuwait	684'788	11	6	6	3'800	271'700	40	4	36	3	50	3	50	2'759	73
46	Libya	619'384	32	22	21	1'726	257'886	42	13	41	8	36	8	38	1'145	66
47	Madagascar	570'045	27	10	9	2'514	85'938	15	6	22	4	40	4	44	1'275	51

		Total vessel deployment					Domestic vessel deployment									
	Country	Deployed annual capacity (TEUs)	Number of ships scheduled on services	Number of operators	Number of services	Maximum ship capacity (TEUs)	Deployed annual capacity (TEUs)	Percentage of total	Number of ships scheduled on services	Percentage of total	Number of operators	Percentage of total	Total number of services	Percentage of total	Maximum ship capacity (TEUs)	Percentage of total
48	Malaysia	36'663'697	906	365	196	18'506	5'739'593	16	156	17	79	22	53	27	13'908	75
49	Marshall Islands	71'354	10	5	4	1'617	9'360	13	3	30	2	40	1	25	624	39
50	Mauritania	222'487	15	7	6	1'774	123'817	56	8	53	4	57	4	67	1'162	66
51	Mauritius	2'339'459	75	16	13	10'409	13'806	1	2	3	1	6	1	8	266	3
52	Mexico	8'535'960	259	85	47	11'629	6'287'321	74	172	66	56	66	27	57	11'629	**100**
53	Micronesia	9'360	3	2	1	624	9'360	**100**	3	**100**	2	**100**	1	**100**	624	**100**
54	Morocco	12'053'640	312	105	68	18'350	734'319	6	38	12	15	14	14	21	2'069	11
55	Mozambique	469'666	31	10	9	2'920	368'606	78	24	77	6	60	5	56	2'455	**84**
56	Namibia	764'487	44	10	8	4'596	28'461	4	3	7	1	10	1	13	1'095	24
57	Netherlands	26'186'300	604	242	142	18'506	156'000	1	7	1	5	2	5	4	1'008	5
58	New Caledonia	449'054	43	18	14	2'857	21'138	5	2	5	1	6	1	7	813	28
59	New Zealand	3'441'670	136	51	32	9'890	2'229'011	65	98	72	42	**82**	24	75	4'614	47
60	Norway	829'728	26	24	23	1'300	698'820	**84**	21	**81**	20	**83**	19	**83**	1'300	**100**
61	Pakistan	6'446'292	145	50	25	8'966	882'068	14	16	11	4	8	3	12	8'558	**95**
62	Panama	11'943'496	357	114	62	12'041	2'829'557	24	89	25	24	21	14	23	9'040	75
63	Papua New Guinea	524'812	47	26	25	2'300	455'063	**87**	42	**89**	24	**92**	23	**92**	2'190	**95**
64	Peru	4'915'440	165	49	26	11'629	188'193	4	9	5	5	10	4	15	1'740	15
65	Philippines	6'056'224	195	92	76	4'818	2'468'508	41	98	50	46	50	43	57	3'477	72
66	Poland	3'032'933	69	31	24	18'348	64'231	2	10	14	2	6	2	8	865	5
67	Portugal	6'704'416	204	63	53	12'939	1'257'037	19	62	30	28	44	26	49	5'702	44
68	Republic of Korea	40'924'768	1'017	465	245	18'506	10'725'845	26	286	28	160	34	99	40	18'348	**99**
69	Russian Federation	5'513'797	238	97	85	7'392	783'696	14	29	12	22	23	16	19	3'473	47
70	Saint Kitts and Nevis	132'548	8	3	3	1'116	53'716	41	4	50	1	33	1	33	1'033	**93**

		Total vessel deployment					Domestic vessel deployment									
	Country	Deployed annual capacity (TEUs)	Number of ships scheduled on services	Number of operators	Number of services	Maximum ship capacity (TEUs)	Deployed annual capacity (TEUs)	Percentage of total	Number of ships scheduled on services	Percentage of total	Number of operators	Percentage of total	Total number of services	Percentage of total	Maximum ship capacity (TEUs)	Percentage of total
71	Saint Lucia	248'785	13	5	5	1'289	65'676	26	6	46	2	40	2	40	973	75
72	Saudi Arabia	18'444'508	354	137	59	14'159	3'248'576	18	60	17	29	21	13	22	11'421	**81**
73	Somalia	454'686	17	8	8	2'428	20'400	4	1	6	1	13	1	13	1'200	49
74	South Africa	5'247'559	192	57	32	10'409	3'230'349	62	104	54	31	54	17	53	10'409	**100**
75	Spain	21'685'890	605	213	151	18'506	10'016'158	46	269	44	107	50	73	48	14'167	77
76	Sweden	3'651'241	73	35	33	18'341	560'179	15	17	23	11	31	11	33	1'570	9
77	Syria	387'565	10	6	6	2'253	143'572	37	4	40	2	33	2	33	1'638	73
78	Taiwan	25'504'073	601	291	146	14'000	6'676'775	26	180	30	95	33	68	47	13'840	**99**
79	Tanzania	1'365'908	62	18	14	3'245	19'656	1	1	2	1	6	1	7	756	23
80	Thailand	10'615'263	338	172	90	8'750	2'821'477	27	112	33	66	38	36	40	1'867	21
81	Trinidad and Tobago	799'266	44	17	16	1'997	104'295	13	7	16	2	12	2	13	1'307	65
82	Tunisia	587'519	27	19	19	1'220	140'229	24	7	26	5	26	5	26	1'157	**95**
83	Turkey	10'147'068	285	117	89	13'336	7'776'117	77	205	72	84	72	59	66	13'336	**100**
84	Ukraine	1'875'429	60	17	12	9'492	731'289	39	15	25	5	29	4	33	6'571	69
85	United Arab Emirates	20'468'669	393	158	94	17'387	6'036'511	29	118	30	52	33	31	33	12'183	70
86	United Kingdom	24'946'063	594	235	139	18'506	3'544'693	14	75	13	38	16	30	22	18'350	**99**
87	United States	36'154'504	990	437	200	13'950	26'758'518	74	755	76	315	72	124	62	13'950	**100**
88	Uruguay	3'745'938	99	33	16	9'635	31'200	1	1	1	1	3	1	6	600	6
89	US Virgin Islands	183'222	8	4	4	1'122	58'344	32	2	25	1	25	1	25	1'122	**100**
90	Vanuatu	137'867	16	9	6	2'080	34'398	25	3	19	2	22	2	33	813	39
91	Venezuela	555'826	30	19	16	2'139	261'764	47	18	60	11	58	10	63	1'769	**83**
92	Viet Nam	15'616'63	487	230	128	13'504	1'804'686	12	61	13	28	12	25	20	2'550	19

		Total vessel deployment					Domestic vessel deployment									
	Country	Deployed annual capacity (TEUs)	Number of ships scheduled on services	Number of operators	Number of services	Maximum ship capacity (TEUs)	Deployed annual capacity (TEUs)	Percentage of total	Number of ships scheduled on services	Percentage of total	Number of operators	Percentage of total	Total number of services	Percentage of total	Maximum ship capacity (TEUs)	Percentage of total
		2														
93	Yemen	457'704	7	6	6	3'800	44'876	10	1	14	1	17	1	17	1'726	45

Source: UNCTAD Secretariat calculations, based on data provided by MDS Transmodal

Notes:

- Services that call at two or more ports in the same country are included only once for any given country (e.g. China: service '2M ALLIANCE - ALBATROSS/AE5' calls at more than one Chinese port; in our calculations we consider this service and its features only once.
- Deployed annual capacity = Average ship size x service annual frequency
- Cells highlighted in dark green mean the share of domestic vessel deployment in total vessel deployment (measured by at least one of the five indicators) is very high (meaning higher than 79%)
- Cells highlighted in light pink mean the share of domestic vessel deployment in total vessel deployment (measured by at least one of the five indicators) is high (meaning higher than 49% but lower than 80%)

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