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Caribbean container port catchment areas: 1998 - 2016 evolution and the risk of over- investment

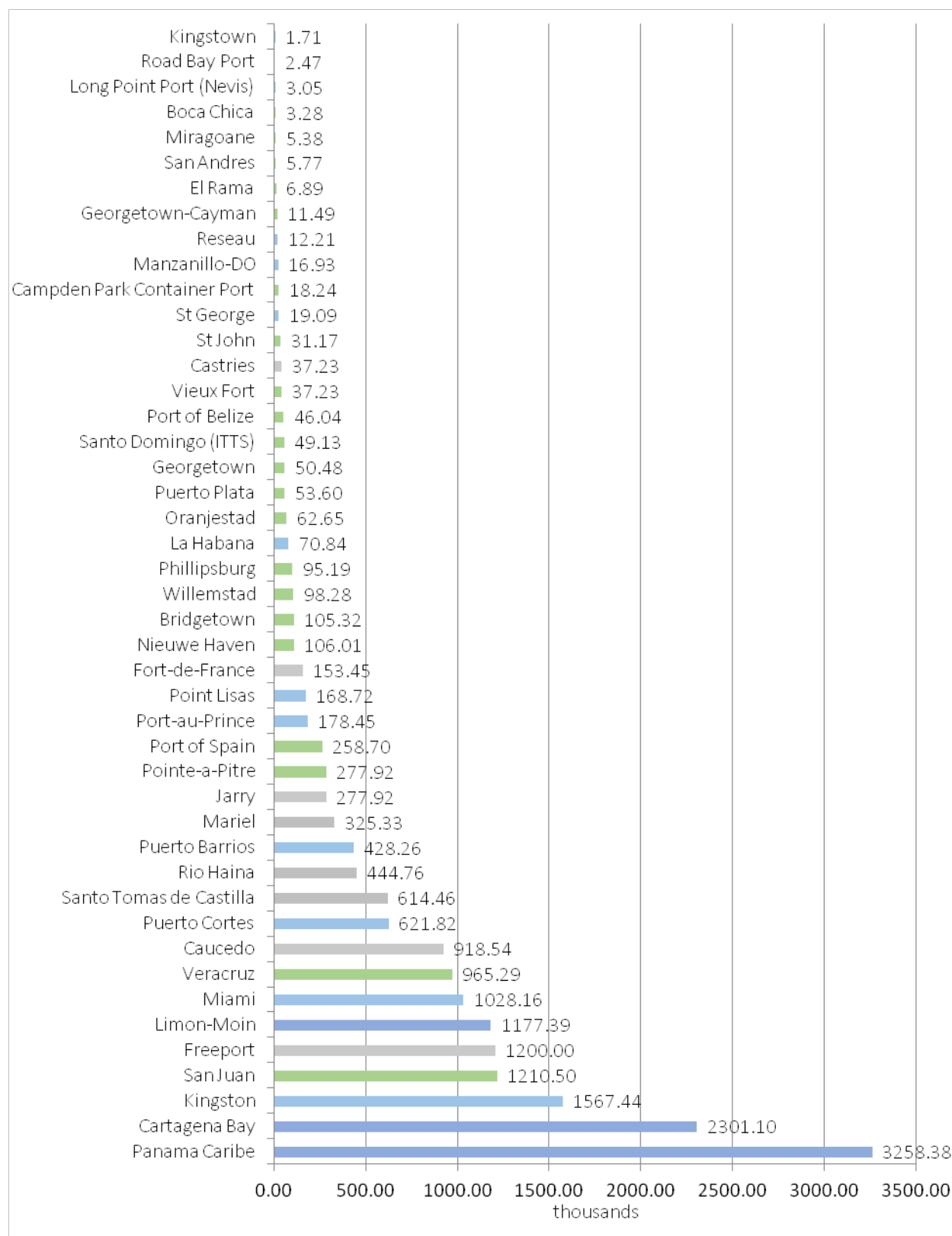
Ricardo Sanchez, UN-ECLAC



The Caribbean, also known as the *Mar de las Antillas*, is an area of 2.7 million km². It is easy to see the importance of its size by comparing it with other similar seas such as the Mediterranean (2.5 million km²), the North Sea (650 thousand km²), or the Baltic (420 thousand km²).

From the economic, and the port and logistics points of view, the Caribbean is a key for the global maritime movements, constituting a relevant area for globalization and international trade. As trade grows, flows are accommodated according to the advantages of different transport routes and hubs. In this context, the Caribbean basin is highlighted; and has assumed a key role for the region and for the world.ⁱ In fact, the position of the Caribbean within the global container shipping network is influenced by two contrasting situations. One is the “intermediate” location in the main global routes and the other is the situation of “isolated” small islands, without significant hinterlandsⁱⁱ. But the Caribbean also has larger islands that combine bigger hinterlands with the possibility of offering transshipment services on the biggest trade routes. This implies that the Caribbean basin is extremely heterogeneous (see figure below).

Figure 1 Caribbean throughput 2016. Sample of ports, in TEU



Source: author based on Maritime and Logistics Profile, UN-ECLAC, accessed on July 6, 2017

In summary, the Caribbean acts similarly to the Mediterranean Sea of ancient times, being one of the main transport routes that ties different zones of the world, strategically linking the flows of Asia, those

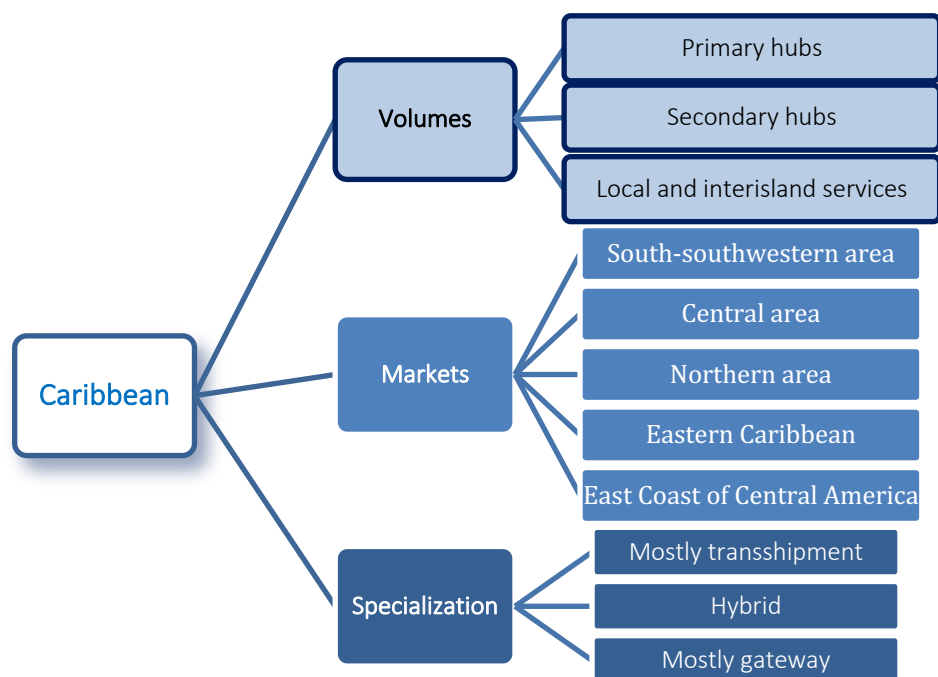
of the Americas and Europe, in both east-west and north-south routes, but also connects different sub-regions of the Americas and of the Caribbean itself.*

Consequently, from the port and trade points of view, it is incorrect to consider the Caribbean basin as a single market. On the contrary, it has to be classified as several markets, considering its various routes and their connectivity, as it happened in the old *Mare Nostrum*. In turn, it is important to highlight two important aspects:

1. Due to the aforementioned heterogeneity, it is possible to classify the Caribbean container port scenario from different perspectives, as shown in the following figure.
2. The Caribbean has demonstrated to be very dynamic: in the period under review it shows large variations in its port activities.

Following previous studies (especially Sánchez, 2014a; Wilmsmeier, Monios and Pérez-Salas, 2014ⁱⁱⁱ and Sánchez, 2014b, among others) it is possible to enhance the classification criteria for Caribbean container ports:

Figure 2 Classification of container ports in the Caribbean



Source: the author

1 THE CARIBBEAN FROM THE POINT OF VIEW OF VOLUMES

From the point of view of total containers transferred, the Caribbean ports can be classified into primary hubs (more than 1 million teu per year of 2016), secondary hubs (between 100,000 and 1

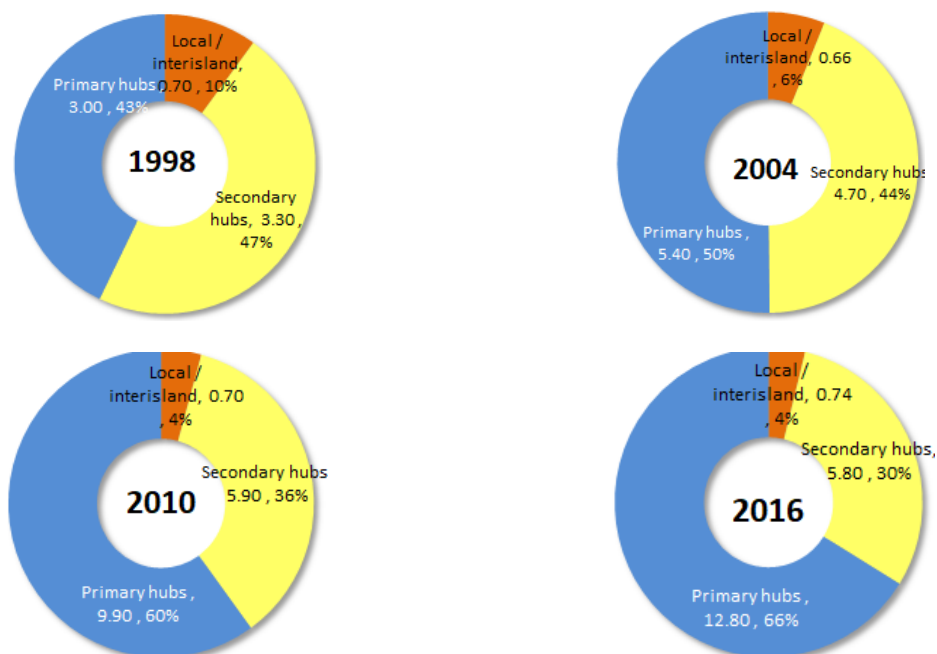
* In this study, all ports of the Caribbean and some of the Gulf of Mexico have been considered. Notice that this document takes into account all the Panama's terminals located in the Atlantic, **but none on the Pacific side**.

million teu of 2016), as well as those ports serving local traffic and local ports, which are able to act too as inter-island transshipment mini-hubs (less than 100,000 teu of 2016).

In some Caribbean cases, the term «hub» must not be taken in the “classic” way. For instance non US shipping lines are banned from transshipping cargoes between Puerto Rico and the US mainland because of the Jones’ act. However there is transshipment between San Juan and the neighbouring Caribbean islands. Freeport, not far away from San Juan, on the contrary plays the role of a real hub in the “hub and spokes” strategy in this part of the Caribbean. Although it is not likely, the day the US abandon the Jones’ Act, Freeport will be in trouble since San Juan will attract much more transshipment of cargoes bound to the US ports.

Figure 3 Evolution of primary, secondary and local ports 1998-2016

Throughput in millions TEU, share in %



Source: author based on Maritime and Logistics Profile, UN-ECLAC, accessed on July 6, 2017

Primary and secondary shares have changed, and there is also a big difference in evolution. For example, the primaries in 1998 were 30% out of the total, while in 2016 they were 66%. On the other hand, the "locals" have not varied significantly in total movements throughout the period. In the table and figure below it is possible to see the composition over time:

Table 1 Primary and secondary members, variation between 1998 and 2016

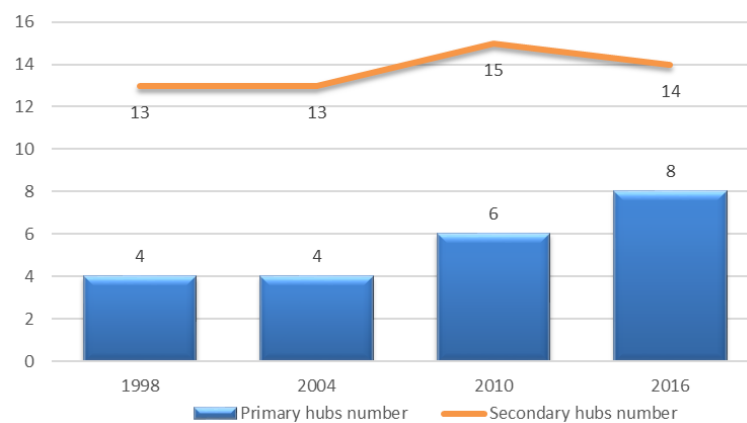
1998		2004		2010		2016	
Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary
Panama	Freeport	Panama	Limon-M.	Panama	Limon-Moin	Panama	Veracruz
Kingston	Limon-Moin	Kingston	Cabello	Kingston	Miami	Cartagena	Puerto Cortes

Cabello	Rio Haina	Freeport	Cartagena	Cartagena	Puerto Cabello	Kingston	ST de Castilla
Miami	Veracruz	Miami	Veracruz	San Juan	Veracruz	San Juan	Rio Haina
	Cartagena		Rio Haina	Freeport	Puerto Cortes	Freeport	Puerto Barrios
	Puerto Cortes		Puerto Cortes	Caucedo	ST de Castilla	Limon-Moin	Mariel
	Port of Spain		Port of Spain		Port of Spain	Caucedo	Jarry
	Puerto Barrios		ST de Castilla		Puerto Barrios	Miami	Pointe-a-Pitre
	ST de Castilla		La Habana		Rio Haina		Port of Spain
	Fort-de-France		Puerto Barrios		La Habana		Port-au-Prince
	Jarry		Fort-de-France		Port-au-Prince		Point Lisas
	Pointe-a-Pitre		Point Lisas		Point Lisas		Fort-de-France
	Havana		Jarry		Jarry		Nieuwe Haven
					Pointe-a-Pitre		Bridgetown
					Fort-de-France		

Source: the author

It is interesting to notice that the stagnation of the secondary hubs between 2010 and 2016 (and a general decline), as well as the noticeable growth of the primaries, has been accompanied by an increase in the size of the primary group, **which indicates a greater competition.**

Figure 4 Evolution of primary, secondary and local ports 1998-2016



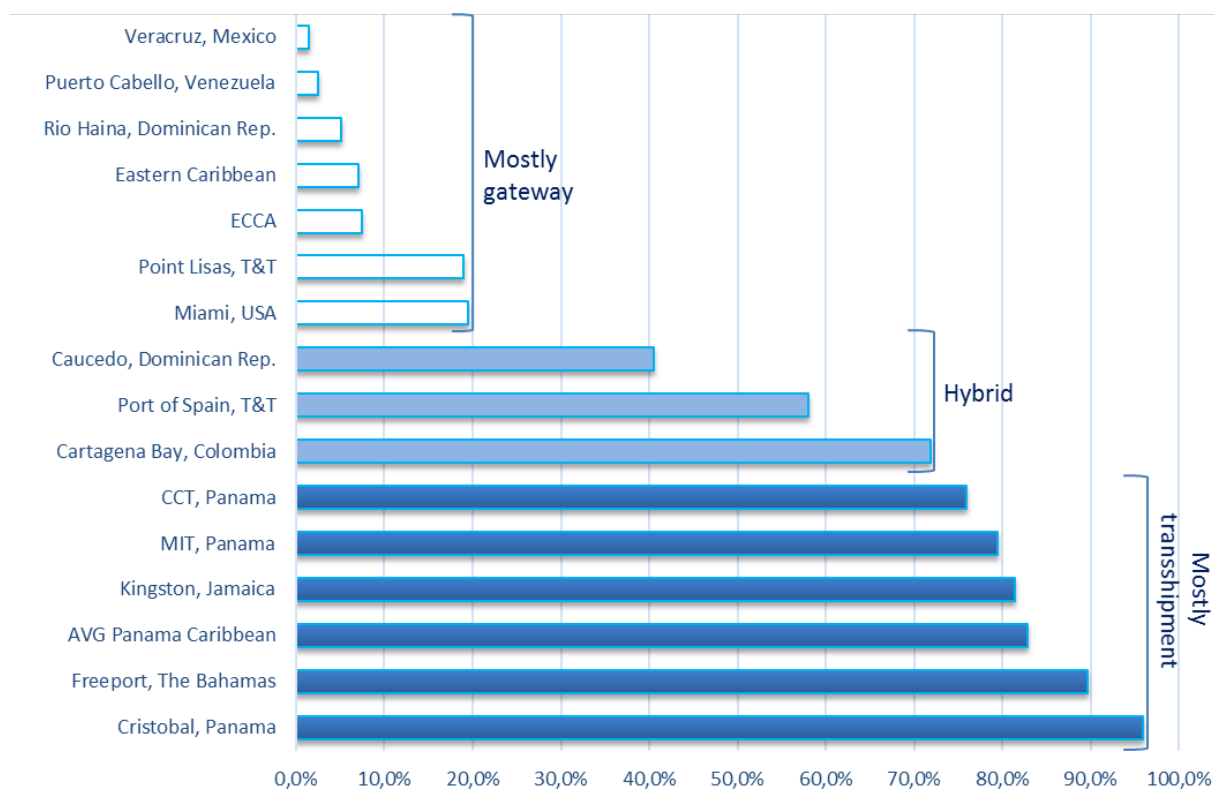
Source: the author

2 THE CARIBBEAN BY SPECIALISATION

The Caribbean basin port system is classified by transshipment hubs (minimum of 70% transshipment cargo), hybrid ports (between 30 and 70% transshipment cargo), gateway ports (less than 30% transshipment cargo); notice that the last category are often multipurpose ports that also serve the cruise industry.

Figure 5 Classification according to specialization levels 2016. Sample of port terminals

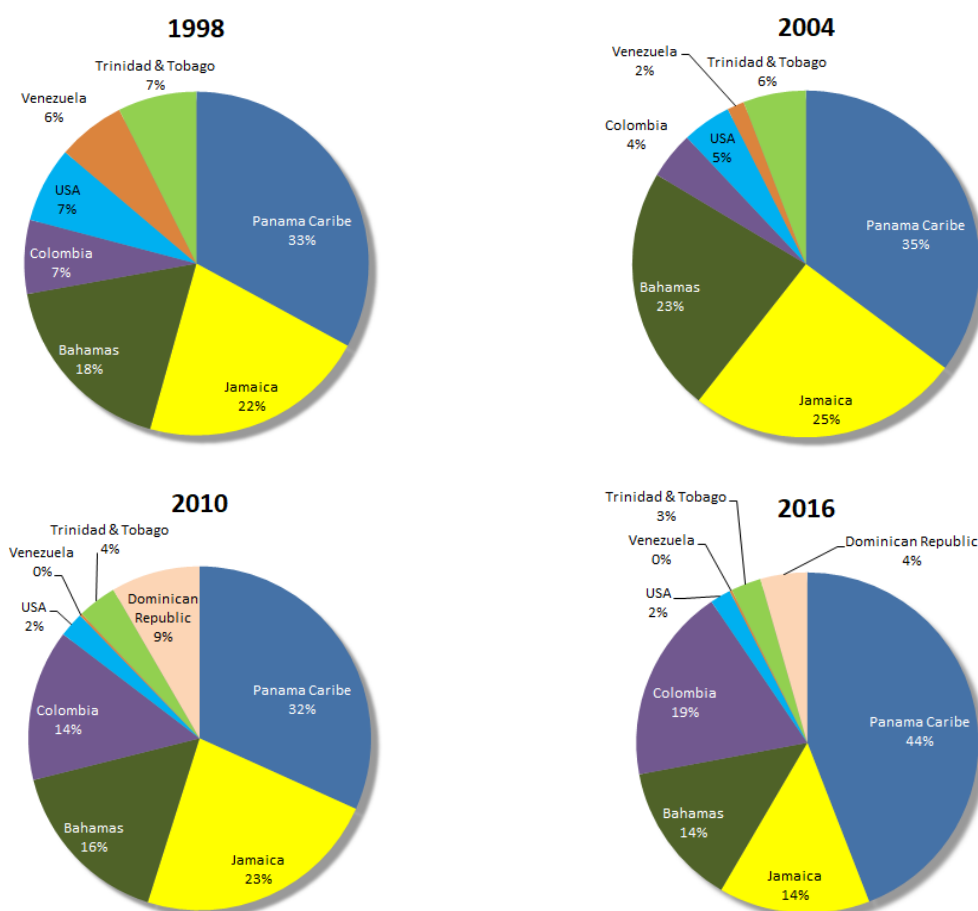
In % of transshipment out of the total throughput



Source: author based on Maritime and Logistics Profile, UN-ECLAC, accessed on July 6, 2017

Figure 6 Evolution of main transshipment hubs 1998-2016

Share in %



Source: author based on Maritime and Logistics Profile, UN-ECLAC, accessed on July 6, 2017

The south Caribbean hubs like Colombia and Panama went from 40% in 1998 to 46% in 2010 and 64% in 2016, highlighting a strong shift of port catchment in benefit of the Southern ones.

3 THE CARIBBEAN AND ITS MARKETS

Depending on the classification by specialisation, its location within the transport networks and the economic profile of the countries, one can determine different markets. Consequently, inside the basin, five different markets can be identified, within a mix between local traffic, gateway traffic and points serving global routes. The following table and figure show these different markets:

Table 2 Primary and secondary members, variation between 1998 and 2016

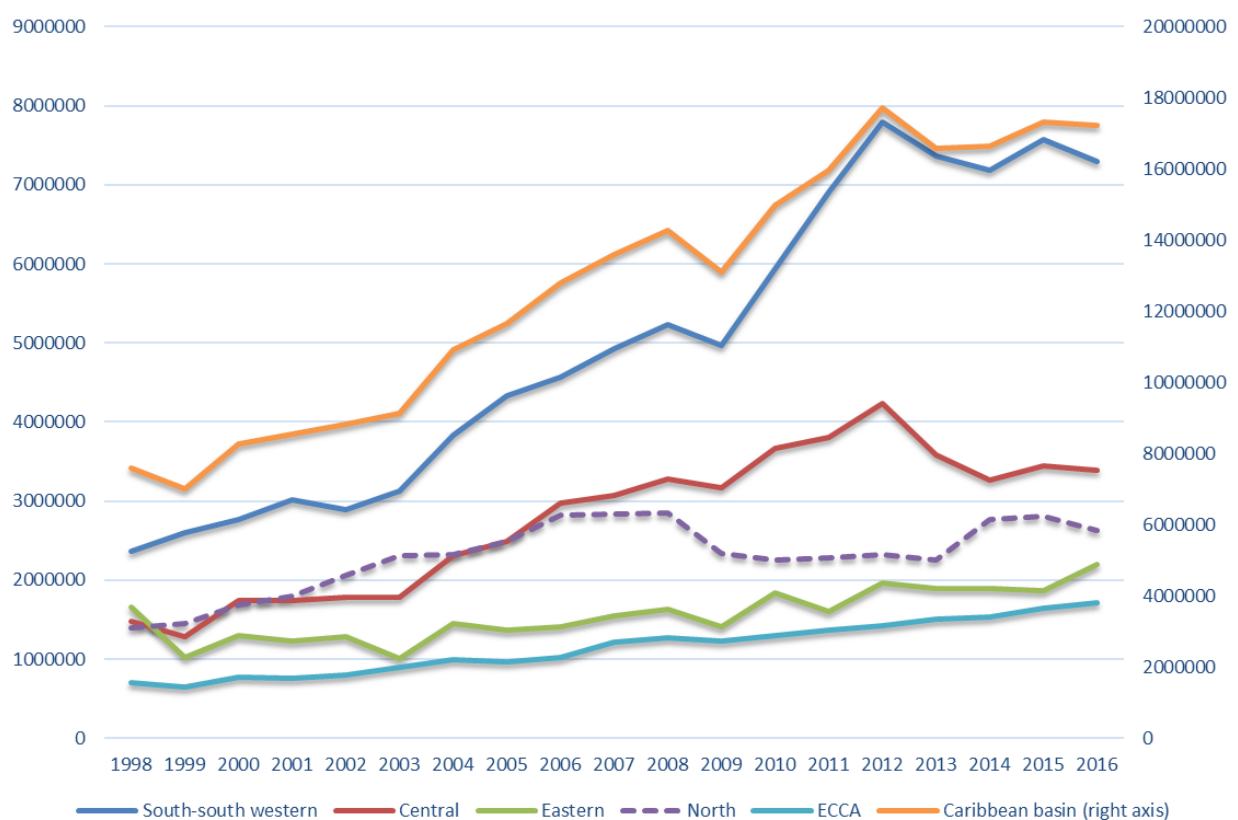
Market	Countries included
South-southwestern	Panama, Colombia, Venezuela and Costa Rica

Central	Jamaica, Haïti and the Dominican Republic
Northern	The Bahamas, USA (south Florida and P.R.) and Cuba
Eastern	the small islands of East Caribbean
ECCA	Nicaragua, Honduras and Guatemala

Source: the author

Note: Mexican ports at Gulf are not strictly "Caribbean", they are not included

Figure 7 Container port activity by sub-region 1998 – 2016, in TEU



Source: the author

The evolution of each market has been different over the analysed time. The following table shows CAGR of each sub-region between 1998 and 2016:

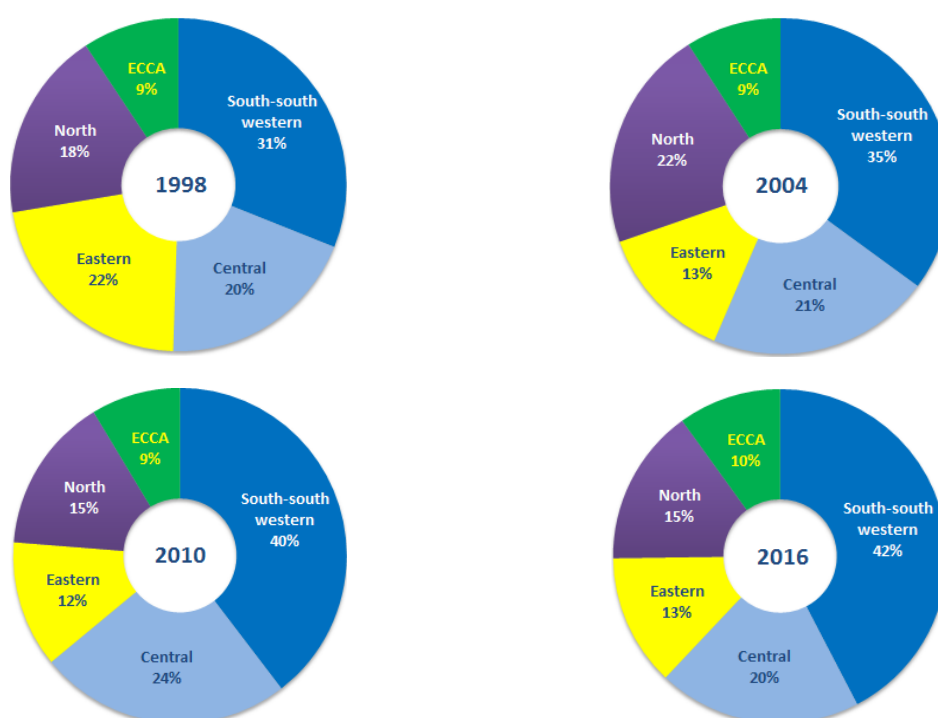
Table 3 CAGR by sub-region and the whole basin 2016/1998

South / south-western	6,5%
ECCA	5,1%
Central	4,7%
Caribbean basin	4,6%
North	3,6%
Eastern	1,6%

Source: the author

Between sub-regions changes are very significant, as is possible to see in the next figures:

Figure 8 Evolution of 5 Caribbean port catchment areas 1998-2016, in %



Source: the author

The following figures allow the changes within each sub-region to be observed. In the case of ECCA, share among countries is more stable.

Figure 9 Evolution of East Coast of Central America ports 1998-2016

Throughput in millions TEU, share in %



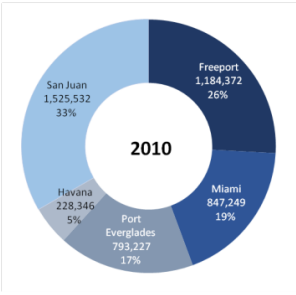
Source: author based on Maritime and Logistics Profile, UN-ECLAC, accessed on July 6, 2017

In the case of North-Caribbean ports and countries it is possible to see an increasing presence of Cuba and the split between Havana and Mariel. At the same time, Freeport, The Bahamas, after a big initial push, is currently in stagnation, although it remains (jointly with San Juan) the first single ports within the sub-region, in terms of operated volumes. Notice that Port Everglades main destination loaded containers are the Caribbean (35%) and the East Coast of Central America (37%), meanwhile Miami addressed 16% to Caribbean and 34% to ECCA. The combined ports of Georgia and Florida send 9% of the total shipments to the Caribbean and 9.3% to ECCA.

Figure 10 Evolution of North Caribbean ports 1998-2016

Throughput in millions teu, share in %

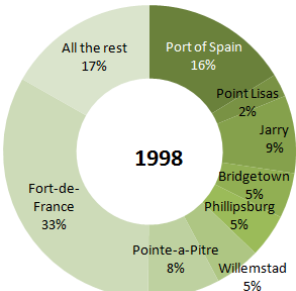




UN-ECLAC, accessed on July 6, 2017, and own info.

The Eastern Caribbean ports, following its own characteristics of mainly local traffics, remain on a fairly equivalent basis, with T & T in the lead (although declining with respect to the sample's beginning).

Figure 11 Evolution of Eastern Caribbean ports 1998-2016

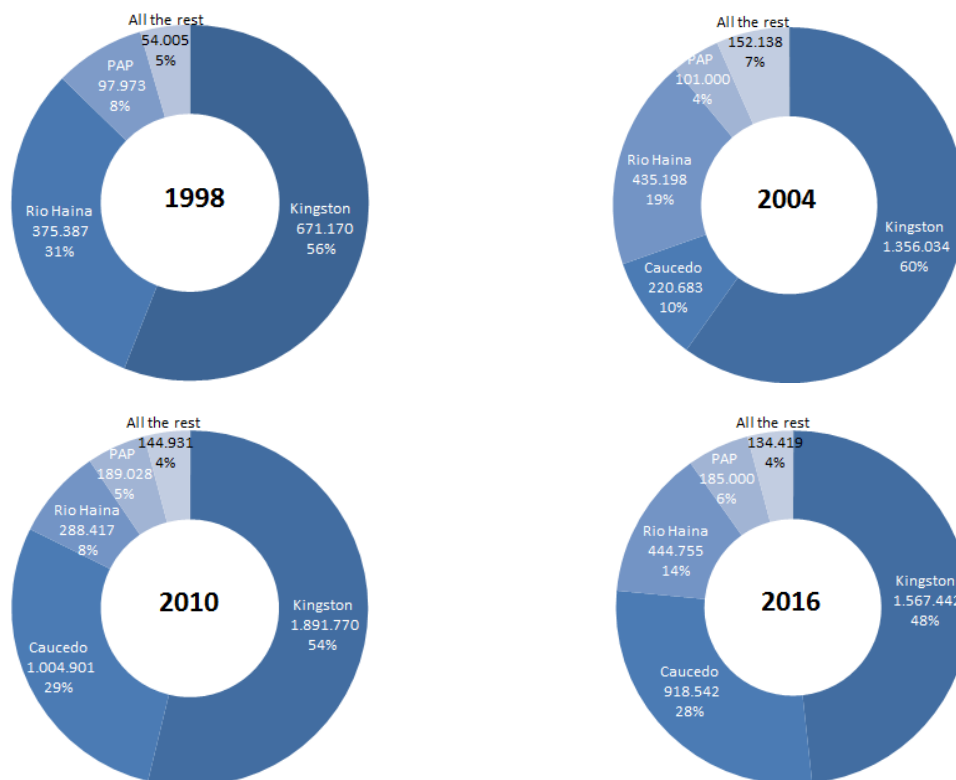


Source: author based on Maritime and Logistics Profile, UN-ECLAC, accessed on July 6, 2017

In the Central Caribbean market the emergence of Caucedo is highlighted, as well as the increasing share of Dominican Republic which went from 31% out of the total in 1998 to 42% in 2016. In the meanwhile, Kingston, Jamaica, decreased from 56% in 1998 to 54% 2010 and 48% in 2016. It is possible that new developments in Kingston configure a new competitive situation in the future.

Figure 12 Evolution of Central Caribbean ports 1998-2016

Throughput in millions teu, share in %



Source: author based on Maritime and Logistics Profile, UN-ECLAC, accessed on July 6, 2017

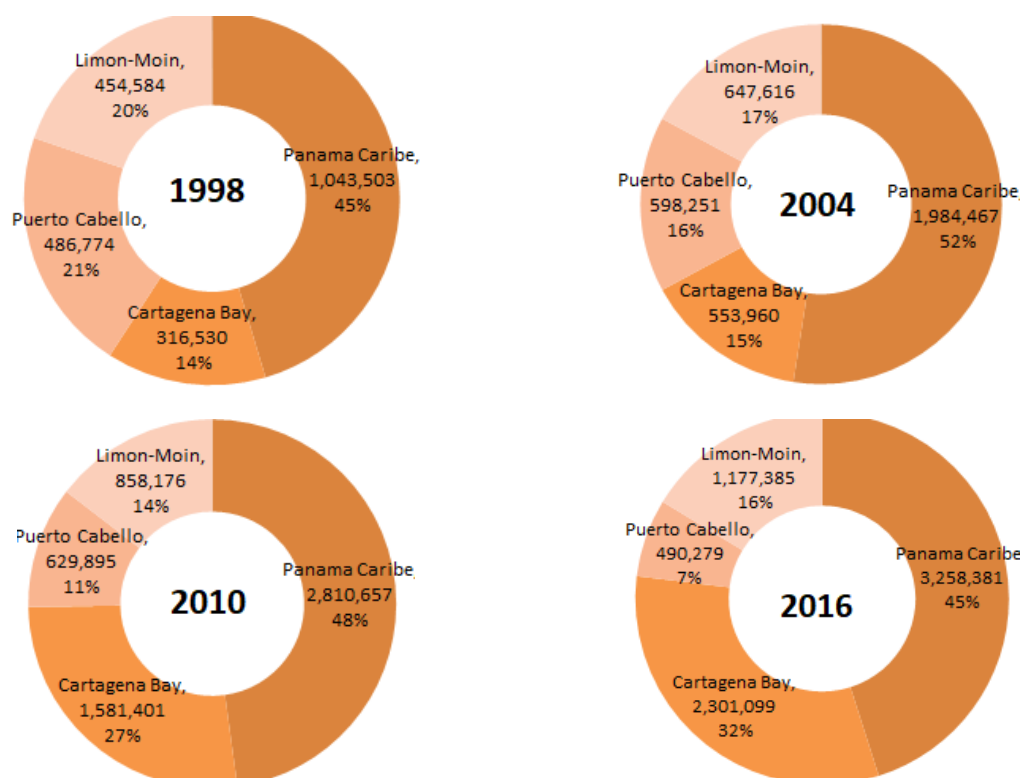
Note: PAP means Port-au-Prince. Port Lafito, Haïti, is not included

The South/South-western Caribbean market is the most dynamic and growth leader sub-region within the whole basin. Regarding positive performance there is a significant growth of Cartagena, Colombia, with approx. 300 K teu in 1998 (14% of sub-region) going to 2.3 million teu in 2016 (32%) and Panama (3 terminals at Atlantic side) going from 1 million teu in 1998 to 3.3 million in 2016. Puerto Cabello, Venezuela, should be highlighted in an opposite sense, because it decreased from 21% out of the total in 1998 to only 7% in 2016.

It is a fact that the South/South-western sub-region was the biggest attractor of cargoes, both for gateway and especially transshipment services and, consequently, for investments in the field of expansion or greenfield port developments. This is a part of reality now and in the future, since big projects are in progress.

Figure 13 Evolution of South/South-western ports 1998-2016

Throughput in millions TEU, share in %



Source: author based on Maritime and Logistics Profile, UN-ECLAC, accessed on July 6, 2017

Finally, Limón-Moín, currently under expansion and construction is already a big player, but possibly a bigger one in the future.[†]

4 SOME REFLECTIONS TOWARDS THE FUTURE: IS THE CARIBBEAN AT THE RISK OF OVER-INVESTMENT?

Firstly, some crucial considerations are related to economy, business and shipping.

When thinking about the future of the Caribbean in the port field, there is a set of relevant facts to examine. However, our main focus in this paper shall be on two of them: the opening of the third set of locks in the Panama Canal (with larger ships sailing the Caribbean) and the stagnation of world trade.

In a scenario where one part of the Caribbean basin, the South/South-western sub-region, was the biggest attractor of cargoes and investments in port expansion projects, both of the aforementioned factors are completely contradictory. On the one hand, the process of upgrading the Panama Canal acted as trigger for a lot of port projects that seem to be based on the following (simplified) idea: "the

[†] Right now, new facilities in Moín show a good grade of advance, although has experienced some construction troubles that are delaying the opening for a few months (until 2019).

bigger infrastructure, the bigger ships, the better economies of scale, the huge cargoes, the bigger ports" ... therefore to invest in upgraded or new port facilities will be a necessity and a good business. On the other hand, as history has demonstrated: cargo does not follow infrastructure or ships^{iv}. On the contrary, trade create the demand while infrastructure and vessels just organise supply, but cargo is a consequence of the economy and trade developments, and does not derive from the supply of infrastructure or logistics services.

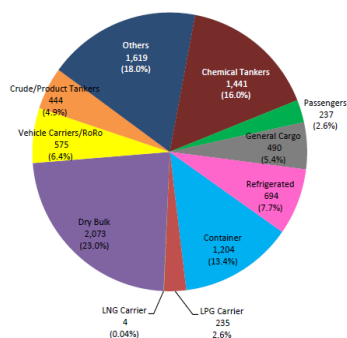
Since the original announcement of expansion, the "new" Panama Canal was usually considered a game changer for the shipping business. In mid-2016 the third set of locks was opened, and in some sense previous expectations have been reached.

In particular, a big push is observed in neo-panamax ships for containers, LPG and LNG. The next figure shows operating information since October 2016 to June 2017 and for a full year from the opening.

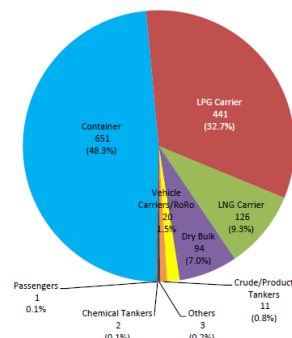
Figure 14 Panama Canal traffic composition

In units, share in %

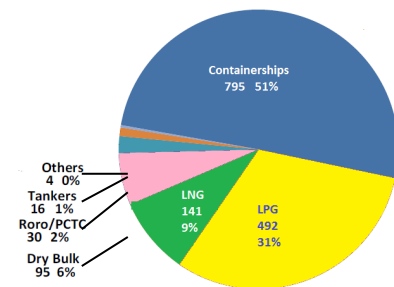
Panamax Oct-16/Jun-17



Neo-panamax Oct-16/Jun-17



Neo-panamax Jul-16/Jun-17



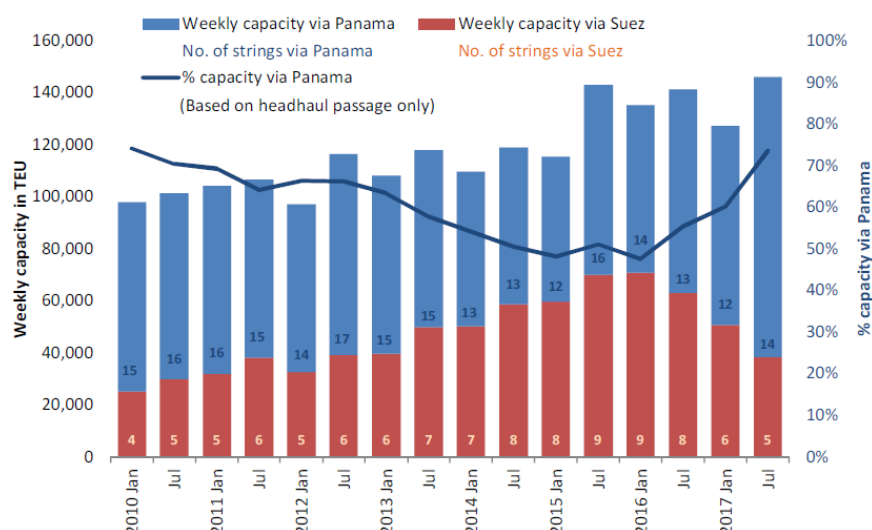
Source: Panama Canal Authority site, accessed on July 16, 2017/ Alphaliner Volume 2017, Issue 30

In other words, 795 big containerships have transited the Panama Canal, a category which was unable to transit before the expansion. At the same time, see the difference between short and long comparisons, that reconfirm the importance of neo-panamax containerships.

The following figure allows understanding the recovery of traffics from Suez Canal to Panama Canal in the services from Asia to USEC. This is another expected outcome of the upgraded Canal.

Figure 15 FE-USEC All-water services 2010-2017

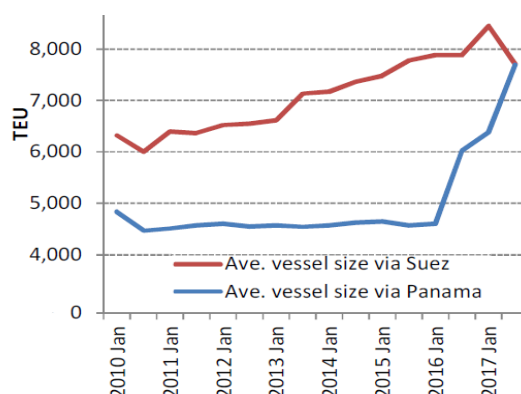
In units, share in %



Source: Alphaliner Volume 2017, Issue 30

Similar conclusion is observed about the average of vessel size using the Panama Canal.

Figure 16 FE-USEC All-water services average vessel size



Source: Alphaliner Volume 2017, Issue 30

A good example of the consequence of the opening of the 3rd set of locks of the Panama Canal is the rationalisation of the EUROSAL sling 1 and 2 services deploying vessels of a 4500 teu capacity recently merged into a single one deploying vessels of 10000 teu capacity. A much bigger service offering the same frequency.

In summary, some expected results of the new scenario with the expanded Panama Canal playing the starring role have been verified. **However, until now, the expected gains related to more cargo have not been observed.**

The reason behind this situation is the poor performance of trade and international economy. In fact, this is not a new scenario: deceleration in the regional average of throughput began several years ago: 6.0% in 2012, 1.3% in 2013, 2.4% in 2014, 2.5% in 2015 and -0.9% in 2016. The cases that exhibit a drop in 2016 regarding 2015 are the following: Cuba (-19.1%), T&T (-17.9%), The Bahamas (-14.3%), Panama (-9.1%), St. Lucia (-7.5%), Jamaica (-5.2%), Martinique (-3.6%), and Colombia (-3.6%), while

others grew, especially the Dominican Republic (8.3%), Costa Rica (7.3%), and Curaçao (9.2%) while Antigua & Barbuda, Montserrat, Barbados, Guadeloupe and Aruba show increasing rates of 2-digits.^v

In 2017, for the first quarter, the situation has varied but remains heterogeneous: while the Dominican Republic has grown almost 39% and Panama 12%, in other cases a decreased performance can be observed. The latter is mainly seen in Colombia and The Bahamas.^{vi}

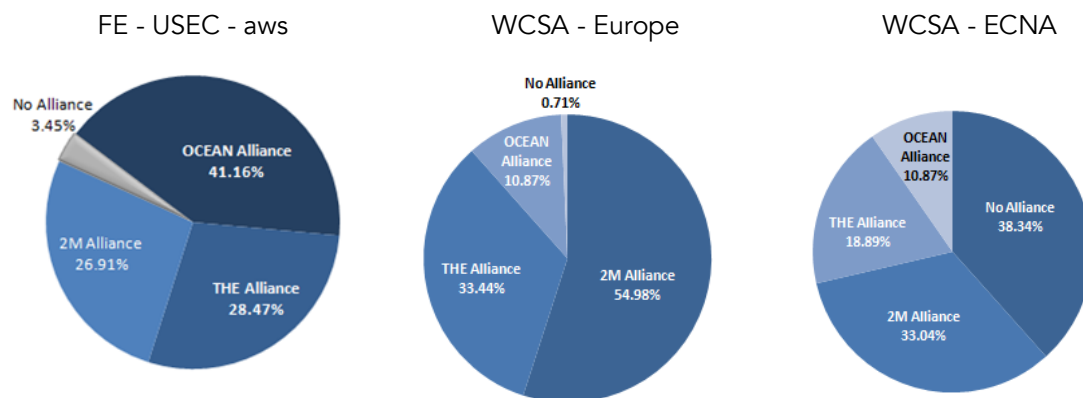
From the liner shipping market point of view, a strong presence of alliances is observed in the case of Far East – US East Coast all water services, which are the main passing through lines inside the Caribbean basin.

Correspondingly, other important passing through services, such as WCSA-North America and WCSA-Europe presents similar behaviour.

Notice that only in the case of WCSA-ECNA the value of No-Alliance is more important.

This information represents only a first approach to the relationship between ports and liners, which could be crucial to understand the possible effects of concentration on port business. Nevertheless, for further research it should be important to analyse the concentration of alliances or individual companies at the level of ports in each regular line.

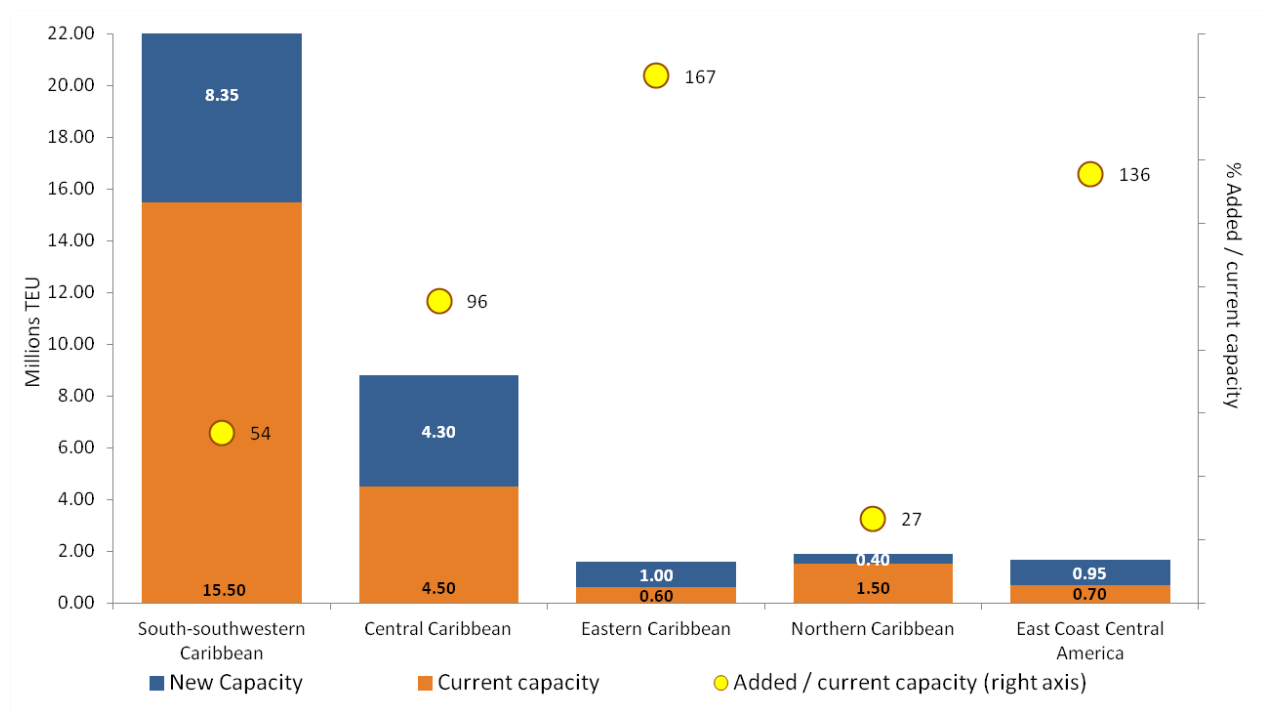
Figure 17 FE-USEC All-water and WCSA to Europe and ECNA services provided by alliances and not alliances, in%



Source: the author, based on WLS July 2017

At the same time, as a result of the last 10-years process before mentioned (since the announcement of Panama Canal 3rd set of locks construction), Caribbean ports have been under expansion, as the next figure of current and future capacity shows.

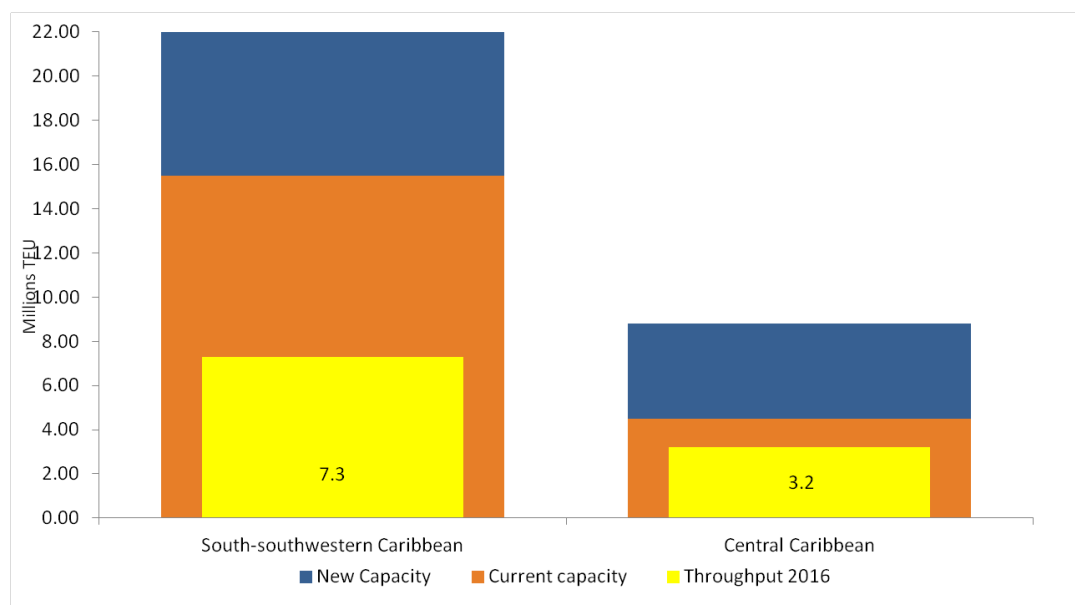
Figure 18 Current and future capacity by sub-region, 2017



Source: author based on own calculations and information from Dynaliners (several issues)

As is observed, Central and S/S-W hubs are main recipients of expansion or greenfield projects. However, as is showed in the next figure, current and future capacity is strongly above the latest throughput statistics (2016).

Figure 19 Current and future capacity by sub-region vs throughput 2016



Source: author based on own calculations and information from Dynaliners (several issues).

This is a wake-up call about the risk of over-investment that could be hitting the above-mentioned areas.

Secondly, some geographical considerations are necessary. The next map shows main passing through (blue colour lines) and touching (red colour broken lines) trade services (CDB, 2016, page 50)^{vii}. Jointly with services serving regional trades configure, in a simplified way, the main Caribbean connectivity for both global and regional shipping connections.

Within the map, blue colour broken line represents the attempt to challenge the traditional Windward Passage in the ECNA targeted services by the Yucatan Channel, as one of the possible main objectives of new facilities operating at Mariel Cuba, among others.

That representation reconfirms the geographical importance of Jamaica for some trades and of the Dominican Republic for other ones, in the central sub-region. Colombia (mainly Cartagena) and Panama Atlantic (possible challenged by Moin in the future) appears with a similar power. But it is necessary, at the same time, to highlight the interesting potential of T&T (jointly with other small islands) in the Eastern Caribbean).

The main uncertainties about the future are the ports in the Bahamas (facing multiple challenges), in Venezuela -the latter depending on the political evolution of the country- and in Cuba, mainly in relation to the future of US-Cuba relationships.



Some of the ongoing port projects

The following list is a part of ongoing projects of port facilities expansion or greenfield:

1. **Limón-Moín: APM Terminals, Moin Container Terminal**, planned for 2018^{viii}, should be finally open in 2019.
2. **Kingston: CMA CGM's Kingston Freeport Terminal Ltd** (new concession and dredging to 15.5 metres)^{ix}. The Terminal Link (CMA CGM/51% and China Merchants/49%) terminal had a navigation channel of 14.2 metres and to raise capacity to 3.2 million TEU^x.

3. **Urabá, Colombia: Puerto Antioquia Company**, new port in Bay of Urabá near Turbo, planned for end 2019^{xi}.
4. **Cartagena: APM Terminals, Cartagena Terminal** at Muelles El Bosque, for a capacity of 250,000 TEU and 1.5 million tonnes of general cargo^{xii}.
5. **Haïti: GB Group + SSA America, Port Lafito**, a greenfield project in the north of Port-au-Prince^{xiii}, already is in operation.
6. **Panama Caribbean: Panama Colon Container Port (PCCT)** at Isla Margarita on the Atlantic end of the Panama Canal. Phase I planned to 2019. In June 2017 was placed its first stone.

The following projects were not taken into account for the previous calculations:

- Veracruz II, México;
- ICTSI Terminal in Puerto Cortés, Honduras;
- Goat Island (near Kingston), Jamaica.

1. Concluding thoughts

Undoubtedly, from the port and logistics points of view, the Caribbean is a key player for the global maritime movements, constituting a relevant area for globalization and international trade.

Such relevance is often accompanied by an erroneous view of the Caribbean as a single entity. It is usual to see “the Caribbean” being referred to in such terms.

The Caribbean is, in any case and in many ways, an aggregate with roots and features that are shared, but extremely heterogeneous and dynamic at the same time. From the standpoint of ports, it joins together such heterogeneous conditions as follows: the “intermediate” location in the main global routes, a set of “isolated” small islands, and larger territories that combine bigger hinterlands with the possibility of offering transshipment services on the biggest trade routes. Consequently, from the port and economic points of view, it is incorrect to consider the Caribbean basin as a single market. On the contrary, it has to be classified as several markets, considering its various routes and their connectivity. Consequently, it is possible to classify the Caribbean container port scenario from different perspectives, with the coexistence of some ports with a 1600 containers of annual throughput and others with more than 3 million.

From a specialization standpoint there is also a great diversity, with the Caribbean basin’s featuring some ports with over 80% of transshipment within their overall throughput, together with others that do not exceed 10%.

The other outstanding feature of the Caribbean is its dynamism. To that effect, the paper highlights some observations:

- ✓ The primary hubs (those whose throughput was of over a million containers equivalent to that of 2016) went from 43% in 1998 to 66% in 2016.
- ✓ The primary hubs were 4 in 1998 and 2004, but increased to 6 in 2010 and to 8 in 2016.

- ✓ The secondary hubs, on the other hand, remained between 13 and 15 throughout the entire period (15 at the end), but taking into account the increase of primary hubs, this implies an overall increase from 17 to 25 (+50%).

As was shown throughout the paper, the evolution of each market has been different over the analysed period. The South/South-western Caribbean market is the most dynamic sub-region and growth leader - within the entire basin. In fact, that area increased its cargo attraction by an annual average (CAGR) of 6,5% between 1998 and 2016, while the other sub-regions achieved by a 5,1% (ECCA), 4,7% (Central hubs), 3,6% (Northern hubs) and 1,6% (Eastern sub-region).

Up until now, the growth leaders are Cartagena, Colombia, with approximately 300,000 TEU in 1998 (14% of sub-region) going to 2.3 million teu in 2016 (32%) and Panama (3 terminals at Atlantic side) going from 1 million teu in 1998 to 3.3 million in 2016.

It is a fact that the South/South-western sub-region was the biggest attractor of cargoes, both for gateway and especially transshipment services and, consequently, for investments in the field of expansion or greenfield port developments.

The proof is that in 1998 Panama and Cartagena made up over 59% of the south/south-western sub-region's aggregate, and 87% in 2016. Simultaneously, within the overall Caribbean basin, both port areas made up 40% of the total in 1998, and 63% in 2016. This shows a shift in the market's distribution that was very strongly in favour of the south-southwest. It allows us at the same time to understand the enormous investment attractions under-way there which will undoubtedly sharpen the inter-port competition in that sub-region, where big projects are in progress.

Simultaneously, a great pressure is being seen from the liner shipping companies to obtain a shareholding position in transshipment hubs on the region, either full (such as KFTL, APMT Moin), or partial (APMT Cartagena). In any way, if the tendency is confirmed, it would seem that the trend for the building of bigger ships is repeating itself regardless of the demand of the market: the alleged "logic" of cost reduction through economies of scale might now be translating to the building, purchasing or improving of transshipment terminals without any evidence of changes in market demand.

Certain facts have recently been made relevant that might once again alter the market dynamics of the Caribbean:

- the opening of the third set of locks in the Panama Canal (with larger ships sailing the Caribbean);
- the stagnation of world trade;
- a new scenario of an increased inter-port competition with some signals of over-capacity.

These facts have the potential to affect all the basin's sub-regions, but mainly those that are involved predominately in transshipments (south/south-western, central and northern hubs).

The process of upgrading the Panama Canal acted as trigger for a lot of port projects that seem to be based on the following “truthiness”[‡]: “the bigger infrastructure, the bigger ships, the better economies of scale, the huge cargoes, the bigger ports”... therefore to invest in upgraded or new port facilities will be a necessity and a good business. Since the original announcement of expansion, the “new” Panama Canal was usually considered a “game changer” for the shipping business. In mid-2016 the third set of locks was opened, and in some sense previous expectations have been reached. In particular, a big push is observed in neo-panamax ships for containers, that is another expected outcome of the upgraded Canal.

However, jointly with the arrival of bigger containerhips, **the expected gains related to more cargoes have not been seen**. Basically, this occurs because cargo does not follow infrastructure or ships. On the contrary, cargoes create the demand and infrastructure and vessels just organise supply, but cargo is a consequence of the economy and trade developments, and does not derive from the supply of infrastructure or logistics services. Another case of “truthiness” is affecting us?

At the same time, especially regarding South/south-western and central hubs, the previous process of huge attraction of cargo has triggered several expansion, upgrading or greenfield projects, exacerbating the process of investments that could lead to over-capacity in some of these sub-regions, as shown in this paper.

If all the projects used in the assessment are confirmed, there could be an installed over-capacity that will affect the conditions for port competition. This is a wake-up call about the risk of over-investment that could be hitting some Caribbean port sub-regions.

Due to this occurring at the same time that the process of liner shipping companies concentration is being confirmed, it is necessary to enhance the investigation on the effects of the combination of these factors. Such reassessment must take into account the differences between sub-regions of the Caribbean basin.

South / south-western sub-region:

- Is it really affected by over-investments and extra-pressures coming from customers and liner shipping companies strategies?
- In any case, it is a sensitive region regarding the future of trade vis-à-vis the big investments made based on the Panama Canal expansion expectations.
- It is a sub-region especially reliant on new alliances and mergers among liner shipping companies.
- The future of Panama's port policies could be a “game change” for the entire Caribbean basin, whether future projects are in the Atlantic or in the Pacific.

[‡] Truthiness is the quality of preferring concepts or facts one wishes to be true, rather than concepts of facts known to be true. Meyer, Dick (2006); “The Truth of Truthiness”. CBS News; December 12. Basically, it is the belief that a particular statement is true based on the intuition or perceptions of a group of individuals, without regard to evidence or factual or intellectual examination. Another example of “truthiness” in the maritime business is the belief on the economies of scale.

- Although this study could not incorporate the situation of Panama Pacific ports, future research should do it, due to the fact that Caribbean ports can be served from the Panamanian Pacific side ports too.
- Another keystone issue is the future of the Cartagena Bay, from the point of view of port development.
- The opening of Moin's new facilities and the political future of Venezuela complete the above list of big players who will define the future scenario of S/S-W sub-region.

Central / Northern sub-regions:

- ECNA-targeted trades will be really the source of fight between the Windward Passage and the Yucatan channel?
- Future of Cuba in terms of an open economy and the relationships with the United States. The future of US-embargo. Is it possible an alternative way for Cuba without liberalization or without US government open strategy?
- Should Cuba address their efforts towards gateway or to transshipment?
- In principle, it seems to have a double way: gateway for an 11.5 million inhabitants country and transshipment facilities on both eastern (Santiago) and western (Mariel) coasts.
- If Cuba is entering the transshipment business their main adversaries would mainly be The Bahamas and Jamaica, which finally is the fight between the Passage and the Channel...
- From the ports point of view, the future of Cuba is related to:
 - Windward Passage, centred at Santiago de Cuba (Chinese company doing a port development, right now just to Panamax scale but with actual chances to enhance in the future, remembering the strategic location condition of the Passage)
 - Yucatan channel, Mariel: upgraded to 984 additional feet of piers in 2019.
- The future of Haïti is directly linked to this discussion since it is closely related to Windward Passage (all ports in Haïti have a strategic location within that Passage)
- It could be the Windward Passage is over-invested in the future?
- Another source of further research is the future of The Bahamas, especially Freeport since it is facing huge challenges practically in all possible scenarios.

ECCA sub-region:

- It would seem to have an ample potential for expanding its relationship with the Caribbean, for which it relies heavily on the strategies undertaken by the liner shipping companies specialized in the Caribbean and the United States.
- There doesn't seem to be much potential for the competition for transshipment on the major liner shipping companies, due to its being distant from those maritime routes.

- It might have a new opportunity in relation to the future strategies for regional integration undertaken by Moín, which might enhance the potential of ECCA ports.
- The proposed canal across Nicaragua has up until now proven to be implausible, so it is not likely to act as a “game changer” for the region.

Eastern sub-region:

- These ports, as well as the ECCA ones, should take the advantage of location for enhancing their regional trades sharing. However, the dynamics of current intraregional flows and regular lines act as an obstacle that requires more knowledge and action in order to solve those restrictions.
- There might be opportunities for improving its integration in some north-south routes, and even for intra-regional transshipment. For instance, although the Trinidadian ports (PoS and PLisas) could be the “natural” transshipment hub for the north coast of South America, it is not the case. Not so good productivity and port congestion in these ports have induced the shipping lines to use Cartagena, Colon and also Caucedo and even Kingston as hubs for the North Coast of Latin America (in particular, Venezuela). With Trinidad not playing the role of hub, one could say that a hub is “missing” in the south east Caribbean. This situation constitutes a huge potential for future port development in benefit of the Eastern sub-region.
- Due to its own characteristics, it should improve on its operativity and efficiency, and to analyse and to build a long-term port development plan.
- To that effect^{xiv}:
 - Sub-regional ports require to enhance port efficiency;
 - The maritime connectivity for these ports is limited;
 - The formulation of a specific sub-regional port strategy should be considered;
 - Policy makers should consider the regional and competitive environment;
 - Policy makers should consider to grant port organizations greater autonomy;
 - Policy makers should consider to recognize the need for labour restructuring and work towards a viable long-term solution

For the entire basin, a further point of interest to reflect on the future will be the impact made by the changes that are taking place in the ports industry worldwide, and the way it will translate on the Caribbean. Among these is the progressive integration of operators from China, who are at the same time bidding to strengthen their position among the top global operators.

In such line of thinking, it could be argued if the change of main port companies share in the Caribbean will be similar to its worldwide counterpart? For instance, new big-companies scheme should lead to a consolidation process (and, consequently, to consolidate operations shocking the current scenario).

ⁱ Sanchez, R. J. (2014b): Protagonista del mundo. Revista Pórtico 19. Cartagena, Colombia.

ⁱⁱ Sanchez & Wilmsmeier (2009): Maritime sector and ports in the Caribbean: the case of CARICOM countries. UN ECLAC NRID Series 140. Santiago

ⁱⁱⁱ Wilmsmeier, G., J. Monios and G. Pérez-Salas (2014): Port system evolution – the case of Latin America and the Caribbean; *Journal of Transport Geography* 39, 208-221.

^{iv} Sánchez & Wilmsmeier (2017): Economies of scale in the liner container shipping industry: challenging the beliefs.

Port management implications in decoupled supply and demand market conditions.

^v UN-ECLAC Port Ranking 2016, <http://www.cepal.org/en/pressreleases/trade-containers-regions-ports-falls-09-2016>

^{vi} UN-ECLAC Maritime Bulletin 66 http://www.cepal.org/sites/default/files/news/files/boletin_maritimo_66_eng.pdf

^{vii} Caribbean Development Bank (2016): Transforming the Caribbean port services industry: towards the efficiency frontier

^{viii} Dynaliners Weekly 15/2015, 10 April 2015

^{viii} Dynaliners Weekly 24/2017, 16 June 2017

^{ix} Dynaliners Weekly 2/2017, 13 January 2017

^x Dynaliners Weekly 02/2016, 15 January 2016

^{xi} Dynaliners Weekly 51-52/2016, 13 December 2016

^{xii} Dynaliners Weekly 33/2015, 14 August 2015

^{xiii} Dynaliners Weekly 22/2017, 02 June 2017

^{xiv} See Caribbean Development Bank (2016): Transforming the Caribbean port services industry: towards the efficiency frontier, pages 76-81.