

Connectivity for Caribbean Countries

An Initial Assessment

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EXECUTIVE SUMMARY

Their vital relation with the Caribbean Sea is a defining factor for the many cultures, languages and countries that co-exist in the Caribbean. This factor acts as both the most important vehicle and as their most challenging obstacle to connect with the world, and represents the starting point for every single discussion around Caribbean states: the fact that they are sea-locked countries (for most), small economies, with a high level of vulnerability to natural disasters and a geographic location that calls for regional cooperation and integration.

Two of these – the fact that they are sea-locked and their location in the Caribbean - pose critical and *unchangeable* barriers to maximizing the development of their infrastructure and connectivity. In consequence, exchanges of goods and services with the rest of the world are limited to air and maritime transport modes, logistics costs are generally higher, and they face a disproportionate risk disruption due to natural disasters. This all translates into a cost premium for developing both infrastructure and transport services, regardless of the degree of efficiency of the investment decision process. In the Caribbean Growth Forum (GCF), economic growth and competitiveness of member countries are invariably intertwined with air and maritime transportation.

Caribbean countries face additional critical and *changeable* barriers to developing their infrastructure and connectivity: they are mostly small states characterized by small markets, low population density and high levels of rural population. This imposes an important limitation for developing large infrastructure assets, with their long life cycles and important upfront capital investments –even greater if made to be climate resilient--, which generally need larger, denser, urbanized markets in order to be cost effective. Given the geographic and demographic barriers faced by the Caribbean countries, the creation of this larger market is almost an imperative for Caribbean countries and can only be achieved by regional cooperation.

Tourism has emerged as a key economic pillar contributing, in 2011, up to 12 percent of all jobs and about 14 percent of the region's GDP. This contribution to the Caribbean economy translates to about US\$ 50 billion for 2011 and 2012. Almost half of these contributions can be traced to capital investment in the travel and tourism industry, one third are linked to service industries dealing with tourists (including transport services and food and leisure industries); and the remaining 20 percent are due to the multiplying effect of both capital investments and derived service.

Caribbean countries have been historically net importers, with important deficits in their current account balances. This implies that anything that can reduce the cost of key input factors to the economy is a top priority. The compound effect that high food prices can have on the competitiveness of the tourism industry, or that high fuel prices can have

on the competitiveness of the service industry, as well as small and medium enterprises and agribusiness development, is massive. Because the economies of these countries are not self-sufficient, and their domestic GDPs depend mainly on the tourism industry, an improved trade sector is fundamental to ensure sufficient imports to satisfy domestic consumption and the countries' major industry. Furthermore, these countries need to be able to compete in international markets with their own produce, in order to start diversifying their fragile economies. Currently, even with the economy concentrated in one activity, the countries could benefit from improved customs performance, and road connections to and from major production and consumption zones.

Emerging lessons

First, Caribbean countries need better logistics services with a specific focus on increasing the efficiency of customs systems and document preparation processes.

The most salient issue of Caribbean logistics is the huge costs associated with importing and exporting. From the import side, the main driver is the cost of customs and document handling, which accounts for about 48 percent of all the registered cost of imports in the Caribbean region. This share is much higher than what handling costs represent in total import costs in Singapore (34 percent). An overall pattern in the Caribbean is that the role of customs has primarily been to collect revenue, instead of facilitating trade. This conflicting role has led to the inefficient functioning of customs, which increases costs for traders. In the Caribbean, customs and excise taxes account for an average of 35 percent of GDP, whereas this number is less than four percent of GDP in developed countries. The function that customs has taken on as the primary source of revenue has created an unhealthy trade atmosphere both for the shipping and the logistics industry, with high handling fees and reduced efficiency and productivity compared to other countries and regions. The high cost of logistics stands in sharp contrast to the competitive reliability of service provision measured in time.

Second, Caribbean countries are characterized by an inter-continental air passenger capacity that is much higher than the intra-regional and domestic markets, raising questions about the sustainability of many of the routes, and indicating a need for route consolidation and a thorough reassessment of the impact of the Minimum Revenue Guarantee (MRG) arrangements. The Caribbean air transport network development is characterized by fierce uncontrolled competition between the islands for tourists abroad, rather than coordinated efforts to promote Caribbean tourism. This has led to sub-optimal routing based on distorting subsidy schemes (aka MRG) with often unsustainable volumes and load factors. Close to 82 percent (31.4 million seats) of the Caribbean air traffic involves direct inbound or outbound flights to non-Caribbean international destinations. The rest is evenly split between domestic traffic (3 million seats or 10 percent of total air flows) and direct regional connections among Caribbean states (2.6 million seats or 8.2 percent of total air flows). The result is that the network within the Caribbean is sub-optimal and does not work as a functional hub-and-spoke system. About 80 percent of the routes feeding the Caribbean feature an annual capacity of less than 30,000 passengers per year, indicating that many of those are either purely seasonal or financially unsustainable. A single hub with one-leg trips to each of the islands, could reduce the number of non-sustainable intercontinental flights, and could consolidate both the tourism and within-region airlift to the point that most passengers would be transported on sustainable routes.

Third, Caribbean regional integration is challenged by the increasingly weaker domestic and intra-regional air traffic, and their weak service competition. Air connections within countries do not even show in official schedules for OECS countries and the Dominican Republic, while the aggregate seat capacity is less than 150k in Jamaica (with a population of 2.7 million) and about 30,000 passengers per year for Haiti (with a population of 10.2 million). The intra Caribbean-regional air traffic is not only small but shrinking: Caribbean countries are less likely to connect among them than with the rest of the world, even when the use of the Caribbean hubs is considered (i.e. routes with at least one connection). Moreover, although competition for extra-regional routes exists, the market for routes within the Caribbean is very concentrated, even monopolistic.

Fourth, poor domestic and limited intra-regional air connectivity represents an opportunity to develop alternative and more competitive private-sector led services such as inter island ferries and low-cost air shuttle services. Ferry services already offer a cheaper alternative to the very costly air services. However, this is a market that is not yet fully developed, and could fill this important service gap in the near future. Currently,, ferry services are essentially limited to domestic inter-island connections and are clearly dominated by monopolies. As far as we are aware, only two routes in the whole region - the routes Saint Vincent-Bequia and Saint Kitts-Nevis - are served by two or more operators. While a deeper understanding of this market is needed, some of the salient challenges for its development include the need of regional government coordination to collectively tackle (i) regional port management and fees, (ii) high operating costs (driven by fuel prices), and (iii) financial limitations to modernize and expand the fleet.

Fifth, cruise traffic is one of the largest and growing components of the Caribbean tourism. However, cruise activities are in practice a double-edged sword for these highly dependent economies, encouraging governments to engage in protectionist behaviors, and to focus on the low-hanging rent fruit instead of developing linkages with the local economies. Spending associated to cruise travelers and crew amounts to the equivalent of 4 to 12 percent of the GDP of the economies receiving cruise ships. Moreover, the cruise ship industry fosters a very spontaneous economy around the cruise terminal area which is usually located in or around a main city. However, in terms of infrastructure, some of the Caribbean ports –and even the nearby cities – are insufficient to satisfy the capacity and the potential demand for cruise ships and the cruise tourism they bring. In Saint Kitts, the government is building another pier for cruise ships since currently the port has 1 pier that can only receive 2 ships at a time. In Antigua, there is a separate cruise terminal that holds four cruises at a time. However, when there are more than four vessels they use the cargo terminal. While the cruise industry is generally thought to be economically beneficial for embarkation ports and ports of call in the Caribbean, it is becoming detrimental, as cruise lines often try to play destinations against each other to spur the development of bigger and better port infrastructure and amenities for its passengers-often using local public funding at no cost to the cruise lines.

Sixth, maritime connectivity for freight is well structured around two coexisting and functional hub-and-spoke systems (intra-regional with a hub in Trinidad and extra-regionally with a hub in the Miami area) that effectively serve all the Caribbean countries. Yet, tariffs are high by world-wide standards, and are likely driven by high market concentration in a hand-full of shipping liners (low-competition). Understanding what is driving high freight tariffs in the Caribbean is a complex matter that involves levels of appropriation and transfer of the economies of scale of cargo transportation, the trajectory of trading routes, and the overall connectivity of ports and sub-regional hubs and transshipment centers. In fact, based on a very preliminary analysis, it is difficult to find a definite relation between the level of freight tariffs and either distances or import cost/tariffs. The only somewhat-consistent correlation –though not necessarily indicative of causality— emerges between the lack of competition, expressed in a market concentration index (the Herfindahl-Hirschman index, HH), and high freight tariffs. A rough estimate of the correlation between the two is a positive 0.6.

Seventh, regional coordination of infrastructure investments and systems is one of the key elements needed for Caribbean countries to succeed in speeding up growth and competitiveness. Some of the areas where a region approach can improve the Caribbean landscape include the advancement of (i) regionally coordinated investment in the expensive air transport infrastructure to support a functional hub-and-spoke system, (ii) regional – in block as opposed to bilateral – negotiation of tourism agreements to increase Caribbean negotiating power, load factors and competitiveness, (iii) regional policy (and investment) in customs and immigration systems that facilitate travel and trade, and (iv) regional policies that integrated air transport and ferry services in order to increase load factors for both intercontinental and regional traffic. Recent history has proved that while progress has been achieved through the creation of the economic unions and agreements, convincing Caribbean countries to coordinate their investment (and in general market) decisions is still far from being achieved.



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I CONTEXT

The Caribbean “is a region that consists of the Caribbean Sea, its islands (some surrounded by the Caribbean Sea and some bordering both the Caribbean Sea and the North Atlantic Ocean), and the surrounding coasts. The region is southeast of the Gulf of Mexico and the North American mainland, east of Central America, and north of South America. Situated largely on the Caribbean Plate, the region comprises more than 700 islands, islets, reefs, and cays. These islands generally form island arcs that delineate the eastern and northern edges of the Caribbean Sea” (Wikipedia, n.d., see Figure 1).

Figure 1: Geographic Blueprint of the Caribbean



Source: Kmusser at Wikipedia (2011).

In the Caribbean, many cultures, languages and countries co-exist having as a defining factor their vital relationship with the Caribbean Sea, which acts as both the most important vehicle to connect them with the rest of the world and their most challenging obstacle to this connection. And that is the starting point for every single discussion around Caribbean states: their condition of sea-locked countries (for the most part), small economies, high vulnerability to natural disasters and a geographic platform that calls for regional cooperation and integration.

This report will analyze the air and maritime connectivity for the Caribbean, taking a sample of 15 countries². Incidentally, the 15 countries included in the study have been organized in recent year around the Caribbean Growth Forum (CGF) so that they can work more closely together to identify barriers and prioritize actions to promote private-sector led growth³. CGF countries represent 64 percent of the Caribbean population and 59 percent of its GDP.

For the air sub-sector, connectivity is defined as a measure of non-stop accessibility, expressed as airport pairs being served. Capacity is measured in estimated number of seats. For maritime freight, connectivity is defined as the aggregated cargo capacity made available in vessel-route (multi-country) circuits.

The 15 countries taken as representative for the Caribbean are Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, the Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts & Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad & Tobago. For ease of reference, they will be referred to as the Caribbean countries⁴. To facilitate the structure of the analysis, the sample countries will be grouped in 4 categories as follows:

- **Small Island States**

Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, and Saint Vincent and the Grenadines: These 6 countries belong to the Organization of Eastern Caribbean States (OECS)⁵. They are all sea-locked island nations, with territories an order of magnitude smaller than those of their Caribbean peers, with very small populations and economies, despite the fact that all are considered middle-income countries.

- **Regional Hub Countries**

The Bahamas, Barbados, Dominican Republic, Jamaica, and Trinidad and Tobago: The common factor among these countries is that they are air hubs (The Bahamas, Barbados, and the Dominican Republic), maritime hubs (Trinidad and Tobago) or both (Jamaica). Some of the most populous countries in the Caribbean are found here (DR, Jamaica and T&T). The Bahamas and Barbados, though small in size, are among the Caribbean countries with the highest GDP per capita.

- **Continental Caribbean Countries**

Belize, Guyana and Suriname: Countries in this category are the only Caribbean countries that are connected by surface to the continent. This is a very defining element in term of possibilities for connectivity. In addition, these countries are much larger than their Caribbean peers.

² Road-network connectivity is admittedly an important element for the overall logistics chain, and particularly relevant for small island states in the Caribbean. However, this is beyond the scope of this report.

³ The Caribbean Growth Forum (CGF) is a multi-stakeholder participatory platform aimed at promoting private sector led growth in the Caribbean region. The CGF is designed to facilitate the identification, prioritization and implementation of reforms that improve the growth enabling environment in the Caribbean, while promoting public private dialogue for policy making, fostering transparency in policy delivery and disseminating knowledge of logistics and connectivity, the investment climate, and skills and productivity.

⁴ When the sample countries are being explicitly compared to the rest of the Caribbean, they will be referred to as the “countries covered by this report”, or “covered countries”, and the group not covered (not part of the sample) as the “other Caribbean countries”.

⁵ The Organization of Eastern Caribbean States (OECS) has nine members: six independent nations and three British overseas territories. The member countries are Anguilla, Antigua & Barbuda, British Virgin Islands, Commonwealth of Dominica, Grenada, Montserrat, Saint Lucia, St. Christopher (St. Kitts) & Nevis, and St. Vincent & the Grenadines.

- **Fragile Caribbean Country**

Haiti: Just its economic and social situation and recent impact of devastating natural disasters makes it a separate case. It is one of the most populous Caribbean countries and has the lowest GDP per capita of the region.

Caribbean countries throughout the 4 categories face some common challenges and share defining economic characteristics as well.

All the Caribbean states are characterized by tropical weather, flash floods and the constant threat of the destructive hurricanes that can be expected during the late summer months (the latter applies particularly to the Caribbean islands). Their vulnerability to natural disasters adds to the cost of developing infrastructure as well as adding a risk premium to cover the periodic, and almost inevitable, total or partial destruction of assets and disruption of key economic activities, such as agriculture and tourism, when a hurricane or a flood hit the islands. Moreover, the Caribbean faces a disproportionate risk due to climate change impacts including rising sea levels. This implies that infrastructure facilities should ideally be designed with some degree of resilience to such risks, which generally increases the unit cost of investment. In addition, countries need to prepare for the financial and economic costs that natural disasters might impose.

Table 1: Economic Indicators for the Caribbean Countries, 2011

Country Name	Surface Area (sq. km)	Population (persons)	GDP (US\$ millions)	GDP per Capita PPP	GDP Growth (annual %)	CPI Inflation (% change)	Gross Debt to GDP Ratio (% of GDP)	Current Account Balance (% of GDP)
Small Island States								
Antigua and Barbuda	440	89,069	1,007	19,714	2.85	3.38	87.82	-6.92
Dominica	750	71,684	450	9,629	-1.73	1.44	73.31	-11.45
Grenada	340	105,483	683	11,786	0.61	2.41	108.53	-27.97
St. Kitts and Nevis	260	53,584	599	20,895	6.94	1.41	137.01	-9.23
St. Lucia	620	180,870	1,086	10,242	0.46	4.18	71.69	-14.88
St. Vincent and the Grenadines	390	109,373	606	10,271	2.29	2.60	71.66	-30.29
Regional Hubs								
The Bahamas	13,880	371,960	7,842	22,705	1.83	1.97	51.18	-18.40
Barbados	430	283,221	4,064	15,299	0.01	4.53	85.80	-4.93
Dominican Republic	48,670	10,276,621	51,937	11,016	3.89	3.69	30.19	-6.84
Jamaica	10,990	2,707,805	14,755*	8,421	-0.45	6.90	146.89	-12.91
Trinidad and Tobago	5,130	1,337,439	18,969	29,086	1.52	9.26	36.86	12.29
Continental Caribbean								
Belize	22,970	324,060	1,377	8,438	5.29	1.32	75.42	-1.34**
Guyana	214,970	795,369	1,016	6,054	4.82	2.39	64.27	-13.85
Suriname	163,820	534,541	2,394	15,174	3.88	5.01	22.14	4.75
Fragile State								
Haiti	27,750	10,173,775	4,677	1,575	2.82	6.28	16.38	-4.45

Source: World Development Indicators (2013).

*Data from Jamaica from World bank, (2014a).

**Current Account Balance data from IMF Indicators 2014. Data for Belize and Trinidad from 2011 and Barbados from 2010.

Being mostly islands one can comfortably say that they have the natural physical barrier imposed by the surrounding sea mass. This leads to higher costs for developing infrastructure and creates a markup to overcome on the logistics costs of traded goods. Exchanges of goods and services with the rest of the world are limited to two transport modes, air and maritime, which are in general expensive and/or require an important investment in infrastructure assets. These modes are also very special in that they are defined by the dynamics of international flows and in that trade corridors are strongly influenced (and sometimes determined) by geography.

From an economic viewpoint, Caribbean countries seem to have in common high debt-GDP ratios, single digit inflation and, most notably, all are net importers (Table 1).

In fact, Caribbean countries relied on agricultural exports as the main source of hard currency until the 1990's. In the 1990's, however, the Caribbean economies suffered a collapse of their main export products, sugar and bananas, as a consequence of trade liberalization. Liberalization resulted in an erosion of preferential agreements with Europe, and both the banana and the sugar industries were unable to compete globally. The economies became stagnant and the limited competitiveness of some Caribbean economies in agricultural products became evident. With the exception of Suriname, Caribbean countries have current account deficits and, given the limited amount of land available for food production, they have to rely on imports for basic consumption.

In this economic context two sectors are particularly relevant to unlock Caribbean economies: tourism and trade. Tourism has been an important driver of the economy, and could become even more important. It is a major foreign exchange earner for the region. Trade dynamics is another area to look at very closely, as these dynamics directly impact the costs of inputs for non-tradable activities.

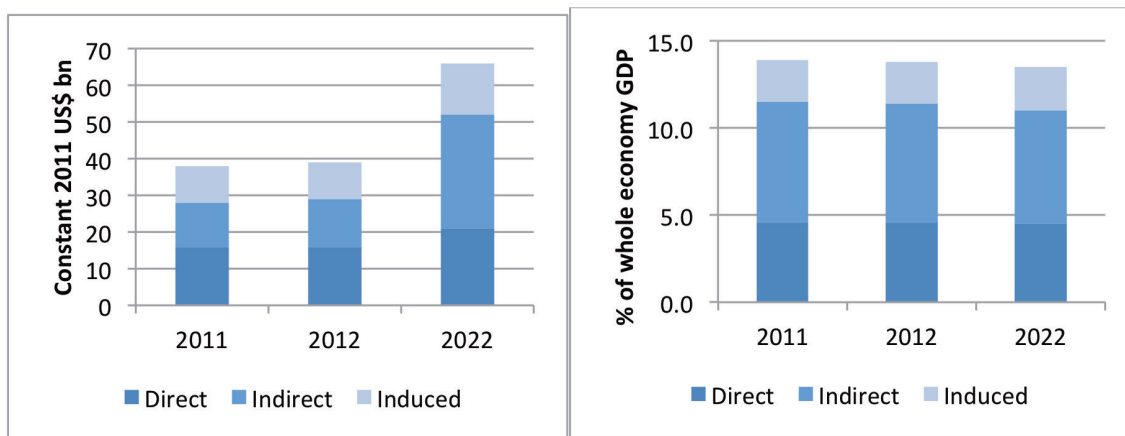
Tourism and Connectivity

With the collapse of agricultural exports, tourism has risen as one of the key economic sectors, representing an important share of local GDP, now ranging from 24% to as high as 74% of GDP in the Caribbean. The Caribbean landscapes, sceneries, and beaches have very high potential.

During 2011, the sector contributed on average up to 12% of all jobs from the Caribbean region and about 14% of the region's GDP (WTTC, 2012). This contribution to the Caribbean economy translates to about US\$ 50 billion for 2011 and 2012, with roughly the following composition (Figure 2):

- 50% due to indirect contributions such a capital investment directly involved in the travel and tourism industry, government collective spending in support of tourism activity, and supply-chain effects;
- 30% due to direct contributions linked to the GDP generated by industries that deal directly with tourists, including transport services and food and leisure industries; and
- 20% due to induced contributions associated with the multiplying effect in the economy created by the spending associated to the indirect and direct contributions (WTTC, 2012, and WTO (2013).

Figure 2: Total Contribution of Travel and Tourism to GDP in the Caribbean



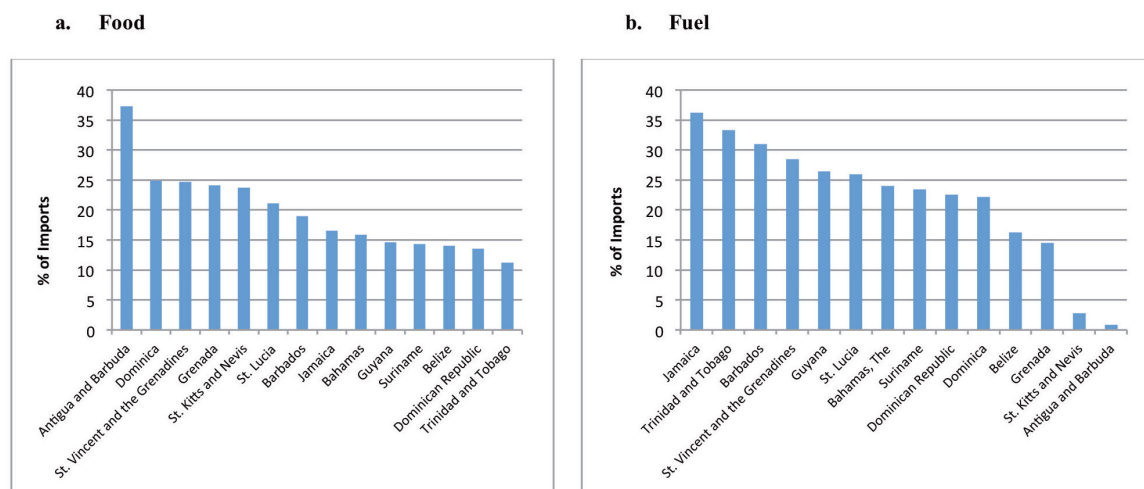
Source: WTTC (2012). All values are constant 2011 prices and exchange rates.

From a global perspective, tourism in the Caribbean holds 2.1% of the world share in the sector, with 20.8 million international arrivals in 2011 (WTO, 2012). The sector grew by 2.2% in 2010 and by 3.9% in 2011, showing a remarkable recovery after the global economic crisis. That recent recovery allowed the region to achieve an average growth rate of 1.7% annually over the 2005-2011 period. Larger destinations paved the road for such recovery. Cuba, the Dominican Republic, Barbados and Aruba all recorded recent increases in international arrivals in the order of 4-7% annual growth in 2010 and 2011 (UNWTO, 2012).

Trade and Connectivity

Caribbean countries have historically been net importers, with deficits in their current account balances. Food and fuel absorb important shares of imports representing on average 20 percent and 22 percent of total merchandise imports, respectively (Figure 3).

Figure 3: Key imports (Most recent year available for the period 2008-2012 as a percent of merchandise imports)



Source: World Bank, (2013b). For graph (a) and (b) data for St. Lucia is from 2008, Grenada from 2009, for Trinidad and Tobago from 2010, St. Kitts and Nevis and Suriname from 2011. Data for Haiti not available.

From the economic viewpoint, this implies that anything that can reduce the cost of key input factors for the economy is a top priority. The compound effect that high food prices can have on the competitiveness of the tourism industry or that high fuel prices can have on the competitiveness of the service industry, small and medium enterprises and agribusiness development, is massive. Because the economies of these countries are not self-sufficient, and their domestic GDPs depend mainly on the tourism industry, an improved trade sector is fundamental to ensure that imports are sufficient to satisfy domestic consumption and the countries' major industry. Furthermore, these countries need to be able to compete in international markets with their own produce, in order to start diversifying their fragile economies. Currently, with the economy concentrated in one activity, the countries in the region could benefit from improved performance in processes associated with international trade, as well as road connections to and from major production and consumption zones.

From the transport sector viewpoint, trade relies on good logistics. Therefore, connectivity factors are a centerpiece of this discussion. Improvements in both air and maritime connectivity can set the stage for a better business environment, and are key to improving the outlook for international trade and to increasing competition. Small islands face an important challenge due to their huge diseconomies of scales in terms of volume of trade, small populations, and isolation from big consumer centers.

This report focuses on characterizing the air and maritime connectivity in the Caribbean countries. It structures the analysis in four sections. Section II presents a quick benchmarking using existing indicators. Section III introduces regional aspects and key international agreements. Sections IV, V and VI discuss key connectivity aspects for air and maritime—both passenger and freight.

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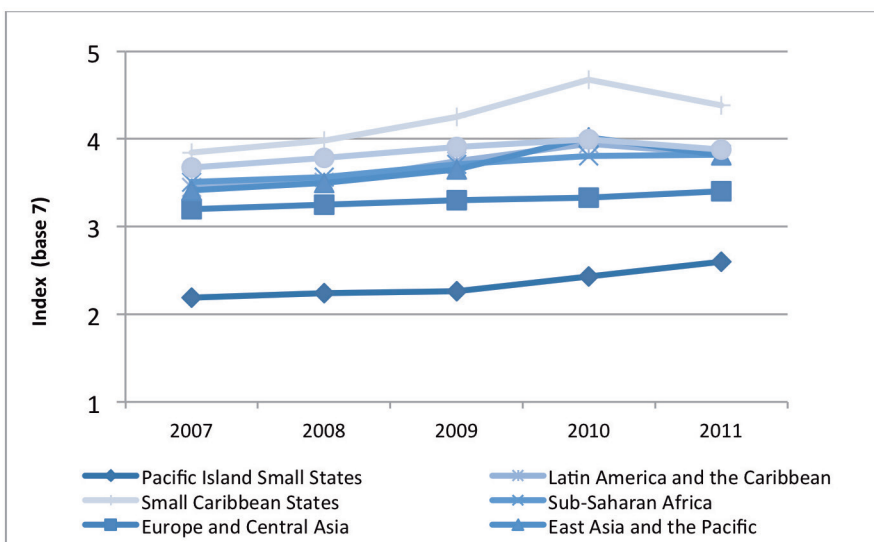
CARIBBEAN COUNTRIES IN A LOGISTICS CONTEXT: A QUICK BENCHMARKING

Key Messages

- Caribbean states rank fairly well when compared to the rest of the developing world -and in particular compared to the island states of the Pacific- in terms of port development, and time needed to process import and export transactions.
- The non-tariff costs of importing to and/or exporting from the Caribbean are very high when compared with similar countries. These elevated costs are driven to a large extent by excessive costs and inefficiencies in customs and document preparation.
- The main role of customs has primarily been to collect revenue, rather than facilitating trade. This conflicting role has led to increased costs for traders.

Caribbean states in general, and small Caribbean States in particular, have relatively well developed ports, particularly with respect to the rest of the developing world, and have improved their facilities over time (Figure 4). The rankings revealed by the quality index, together with the actual reporting of physical infrastructure and traffic, seem to indicate that Caribbean ports are relatively well equipped given their level of traffic.

Figure 4: Port Quality Index: Small Caribbean States and Other Regions



Source: World Economic Forum (2012). The index measures business executives' perception of their country's port facilities. Data are from the World Economic Forum's Executive Opinion Survey, conducted for 30 years in collaboration with 150 partner institutes.

Note: 1=extremely undeveloped to 7=well developed and efficient by international standards.

When turning to service performance indicators, Caribbean countries, with the notable exception of Haiti and Antigua and Barbuda, compare fairly well with the island states of the Pacific in terms of the amount of time needed to process import and export transactions. Nevertheless, their performance is well behind what is considered best practice, represented here by Singapore. Both for imports and exports, the continental Caribbean states take the longest time, and are therefore the least efficient, and closest to that of the Pacific islands' average, whereas the small island states and the hub countries both compare well (Figure 5).

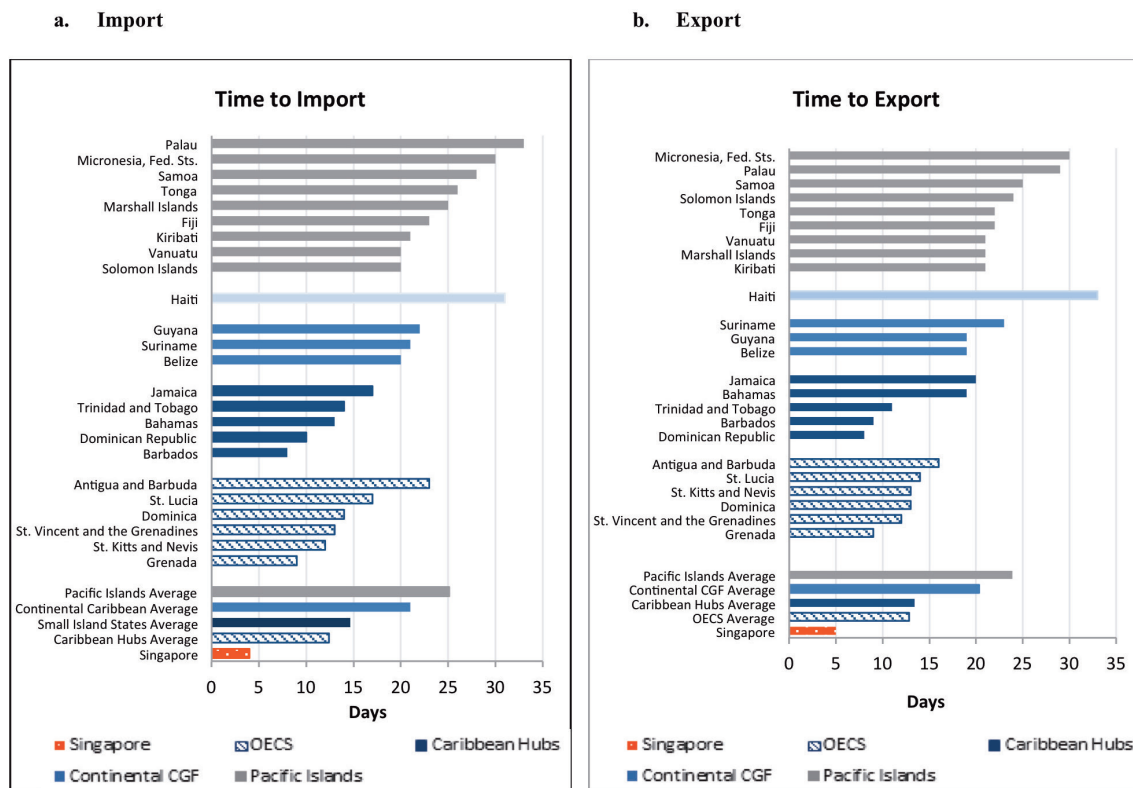
For imports, the average time needed to process imports and exports is about 25 days for Pacific islands. All of the Caribbean states, except for Haiti, are below this average. Within the Caribbean, the continental states tend to take longer to process their imports than either the small islands or the hub states. The hub states take only 12 days, small islands states average 15 days (or 13 days excluding Antigua and Barbuda), and the Continental states come in at a much higher 21 days. This comparison makes the islands (hubs or small island states) look acceptable. The story looks gloomier when their import time indicators are compared to best practice. Caribbean islands are nearly four times less efficient (Table 2) -and Antigua and Barbuda almost six times slower- than Singapore, which, with six days for import processing, stands out as the best practice of the world. Fragile state Haiti is an outlier with 31 days, which is the longest period in the Caribbean, and the second-longest period of time to import in the sample, being surpassed only by Palau in the Pacific (Figure 5a). The continental Caribbean states also show a relatively low record, all three having a 20 day or longer wait for importing, which averages out to more than five times the wait in Singapore (Table 2). Antigua and Barbuda stand out on a country level, with 23 days to realize an import (Figure 5a), making it the worst non-fragile state performer. Of note is Barbados, which has the fastest time found in the Caribbean with only eight days, followed by the Dominican Republic.

On exports, the findings are somewhat similar (Figure 5b), with all of the Caribbean groups being faster than the Pacific islands as a group, but taking a multiple of nearly 5 to nearly 7 times as long to export as Singapore (Table 2). On an individual country bases, Haiti stands out again, having the longest time to export compared to all other countries in the sample, with 33 days. Suriname is also relatively slow in exporting, with 23 days. Among the hub states, both Jamaica and the Bahamas are in the same territory as the continental states with roughly 20 days, with the remaining three hubs, Trinidad & Tobago, Barbados, and the Dominican Republic being even faster than most of the small island states, with between 8 and 11 days. With an average time to export at 8 days, the Dominican Republic, considered an advanced hub, is the closest to Singapore, which takes 5 days.

As groups, both the hub countries and the small island states tie for the shortest average time of 12 days. The continental Caribbean states, with 20 days on average, are closer to the Pacific average of 24 days.

For all of the country groups involved, exporting a container takes a little less time than importing. In general, the groups take one less day to export than to import, with the small island states taking two days less. The notable exception are the hub countries, which on average take one day longer to export than to import, which is also the same case as in the best practice case of Singapore. Again, all of the Caribbean states are an improvement on the Pacific islands averages, but still take many times longer than Singapore.

Figure 5: Caribbean Relative Trading Across Borders Performance: Time (2012)



Source: World Bank (2013a).

Note: Time estimates include the time of inland transport between the largest business city and the main port used by traders). Cost estimates based on a 20-foot container. All fees associated with completing the procedures to export or import are included, including costs for documents, administrative fees for customs clearance and technical control, custom broker fees, terminal handling charges, and inland transport. The cost measure does not include tariffs or trade taxes. These indicators exclude time and cost of physical inspections, which in most of the cases can more than double the totals.

Table 2: Ratios of Average Time to Import or Export or Container for Caribbean Countries Compared to Pacific Islands and Singapore

Group	Time to Import Ratio		Time to Export Ratio	
	Pacific Islands	Singapore	Pacific Islands	Singapore
Continental	0.8	5.3	0.9	4.5
Small Island States	0.6	3.7	0.5	2.6
Hub Countries	0.5	3.1	0.6	2.7
Fragile	1.2	7.8	1.4	6.6

Source: Authors' calculations based on World Bank (2013a).

When performance is measured as the costs of processing import and/or export transactions, Caribbean countries fare poorly even when compared against other similar developing regions such as the Pacific. The performance lag is particularly bad for imports costs (Figure 6). On an individual country basis, all of the small island states except for Dominica stand out, with St. Lucia, at US\$ 2,675 per container, being 2.6 times higher than the Pacific group, whose average is US\$ 1,021. The least costly country is Guyana, at \$745, which is still nearly 20% higher than the best performing Pacific country, Fiji, at \$635.

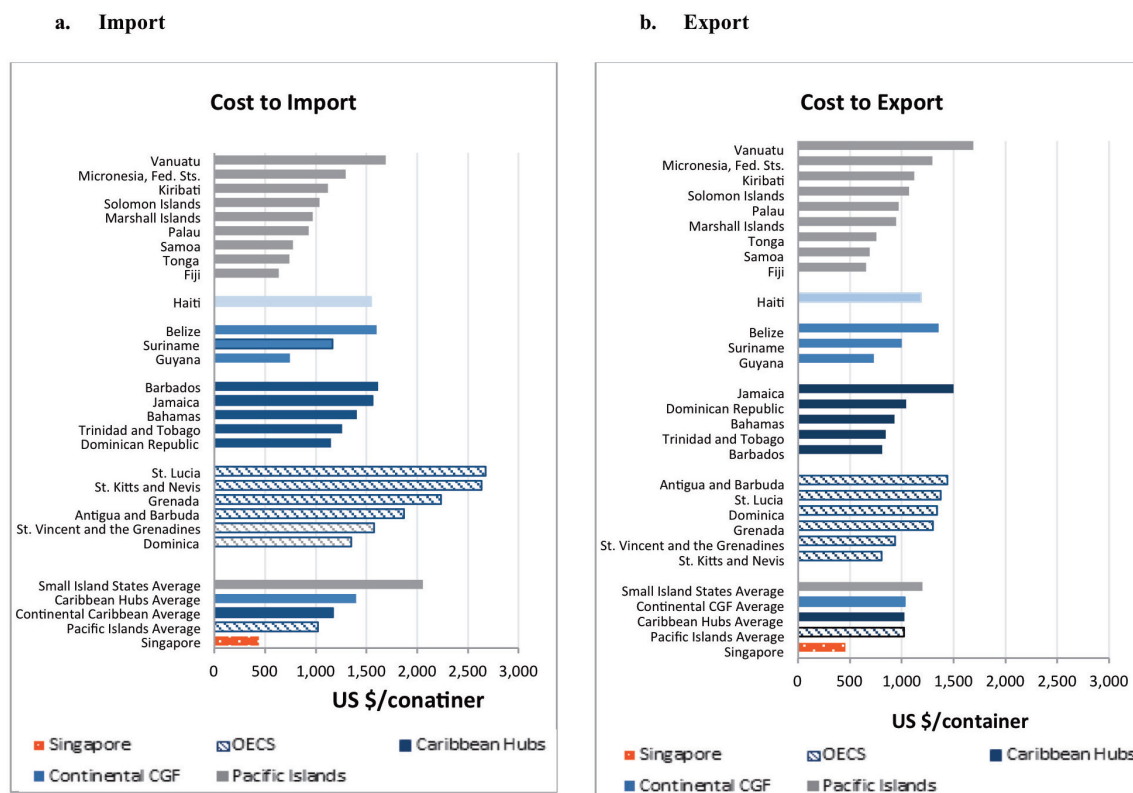
In fact, all of the Caribbean country groups averages show higher costs than the Pacific island averages for imports, with the continental Caribbean countries being the most competitive, at only 10% higher, and the small island states the least competitive, at only two times as costly (Table 3). The import costs of Caribbean hubs are still nearly 40% higher than those of the Pacific islands, and none of the individual countries beats the Pacific group's average.

As with the time to import and export, these costs are multiples of those found in the best practice case of Singapore, with a cost of \$ 439 per TEU (Table 3)⁶. The continental Caribbean countries are nearly three times as expensive, the hub countries more than three times, and the small island states are nearly 5 times as costly. Haiti also stands out as being 3.5 times as expensive, but still performing better than the small island states' average.

For export costs, most of the Caribbean states break about even with the Pacific island states, being about 2.2 times as expensive as Singapore, with the small island states being a bit higher at 2.6 times. On an individual basis, in all of the Caribbean countries it is less expensive to export a container than to import, which does not hold for some of the Pacific islands, nor for Singapore, where it is marginally more expensive to export. However, Jamaica stands out as being the most expensive country for exports, at \$1,500 per container. This amount is almost 3.3 times as high as Singapore, and nearly 50% above the Pacific average. It is even above the Caribbean hubs average, which, without Jamaica, would be 13% less than the Pacific average. Exporting from Antigua & Barbuda (which are nearly as costly as Jamaica), St. Lucia, Dominica, and Grenada costs 30% more than exporting from the Pacific, and help keep the small island states averages above that of the rest of the Caribbean.

⁶ Container traffic is commonly measured in twenty foot length container equivalents, or Twenty Foot Equivalent Units ("TEU"). A forty foot long container would be 2 TEU.

Figure 6: Caribbean Relative Trading Across Borders Performance: Costs (2012)



Source: World Bank (2013a).

Note: Times estimates include the time of inland transport between the largest business city and the main port used by traders). Cost estimates are based on a 20-foot container. All fees associated with completing the procedures to export or import are included, including costs for documents, administrative fees for customs clearance and technical control, custom broker fees, terminal handling charges, and inland transport. The cost measure does not include tariffs or trade taxes. These indicators exclude time and cost of physical inspections, which in most of the cases can more than double the totals.

Table 3: Ratios of Average Cost to Import or Export a Container for Caribbean Countries Compared to the Pacific Islands and Singapore

Group	Cost to Import Ratio		Cost to Export Ratio	
	Pacific Islands	Singapore	Pacific Islands	Singapore
Continental	1.1	2.7	1.0	2.3
Small Island States	2.0	4.7	1.2	2.6
Hub Countries	1.4	3.2	1.0	2.2
Fragile	1.5	3.5	1.2	2.6

Source: Authors' calculations using World Bank (2013a).

The high costs are driven by a number of factors (Table 4), with customs and document preparation charges being particularly dominant for imports. Within the small island states (excluding Dominica), the share of these costs is extremely high when compared to all other Caribbean countries, or Singapore (where customs and document preparation account for 34% of total import costs) and the peer-Pacific Island states (28% of total import costs), as are their nominal values. In addition, all of the small island states but Grenada and St. Kitts have very high inland transport charges, which affect both their imports and their exports. Grenada and St. Kitts, however, have the highest terminal handling charges for imports in the entire Caribbean. The hub countries also suffer from high costs related to customs and documents, with the exception of the Bahamas, where terminal handling charges are the fourth highest in the Caribbean, following St. Kitts & Nevis, Grenada, and Haiti.

Table 4: Internal Composition of Caribbean Costs

a. Import Costs							
	Customs and Documents Preparation		Terminal Handling		Inland Transportation		TOTAL COSTS (US\$ 20' Container)
	Share	US\$	Share	US\$	Share	US\$	
Hubs							
Bahamas	31	436	48	674	21	295	1,405
Barbados	52	840	26	420	22	355	1,615
Dominican Republic	38	437	36	414	26	299	1,150
Jamaica	51	796	27	421	22	343	1,560
Trinidad and Tobago	56	706	28	353	16	202	1,260
Continental							
Belize	41	656	34	544	25	400	1,600
Guyana	54	402	22	164	24	179	745
Suriname	33	384	20	233	47	548	1,165
Small Island States							
Antigua and Barbuda	47	879	17	318	36	673	1,870
Dominica	22	297	33	446	44	594	1,350
Grenada	60	1,341	32	715	8	179	2,235
St. Kitts and Nevis	63	1,660	34	869	4	105	2,635
St. Lucia	53	1,418	19	508	28	749	2,675
St. Vincent and the Grenadines	72	1,134	12	189	16	252	1,575
Fragile State							
Haiti	41	633	45	695	14	216	1,545
b. Export Costs							
	Customs and Documents Preparation		Terminal Handling		Inland Transportation		TOTAL COSTS (US\$ 20' Container)
	Share	US\$	Share	US\$	Share	US\$	
Hubs							
Bahamas	46	428	22	205	32	298	930
Barbados	52	421	3	24	44	356	810
Dominican Republic	40	416	31	322	29	302	1,040
Jamaica	51	765	26	390	23	345	1,500
Trinidad and Tobago	54	455	19	160	27	228	843
Continental							
Belize	37	501	34	461	30	407	1,355
Guyana	55	402	22	161	25	183	730
Suriname	27	270	19	190	55	550	1,000
Small Island States							
Antigua and Barbuda	31	446	23	331	47	677	1,440
Dominica	22	295	34	456	45	603	1,340
Grenada	32	416	55	715	13	169	1,300
St. Kitts and Nevis	43	346	44	354	12	97	805
St. Lucia	24	330	22	303	55	756	1,375
St. Vincent and the Grenadines	41	383	11	103	48	449	935
Fragile State							
Haiti	45	533	34	406	21	249	1,185

Source: Based on World Bank (2013a).

In the case of exports, lower customs and document charges in countries where they are particularly high for imports, i.e. the small island states, bring the other logistics bottlenecks to the surface: terminal charges in St. Kitts and Grenada, and inland transport charges in the rest of the small island states. High inland transport charges are also an issue for the Belize and Suriname, though in Belize the customs and document costs have an even bigger impact, being the third highest following Jamaica and Haiti.

The Role of Customs in Caribbean Logistics

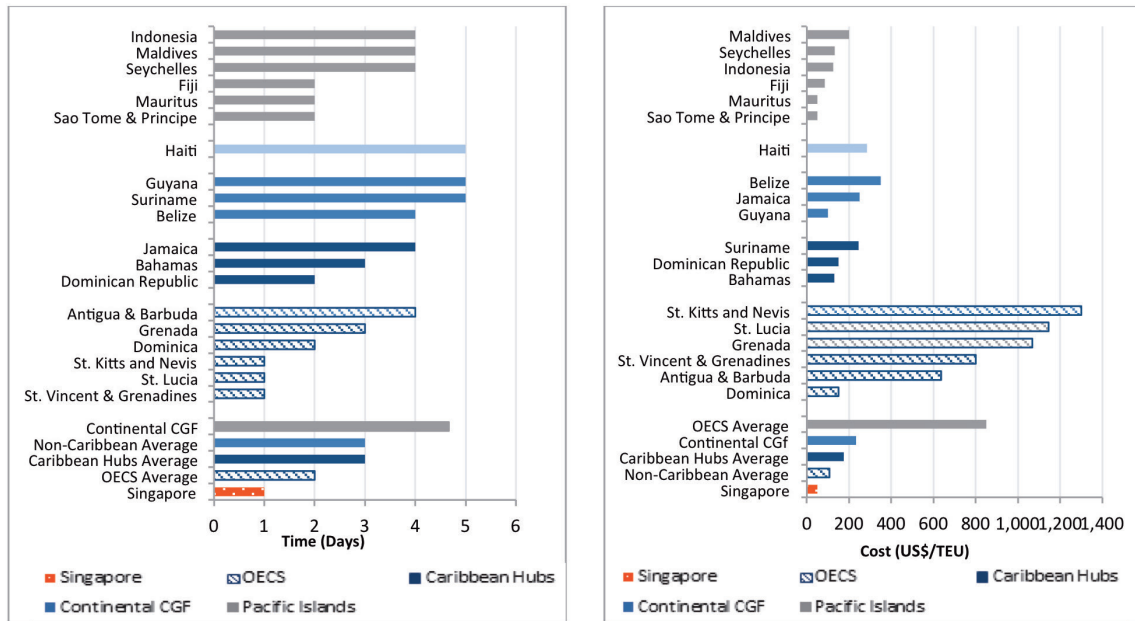
From the previous analysis, customs procedures emerge as a key issue to assess in the Caribbean countries. Logistics costs need to be reduced and overall port performance and trade facilitation to be improved. The other issue to consider is the role and impact of inland transport, particularly in Dominica, and Antigua and Barbuda; and to some extent St Vincent and the Grenadines and St Lucia. Inland transportation covers transport between the largest business city and the main port used by traders. Therefore, specific diagnostics and the underlying determinants for these costs require in-depth and country-specific analysis, which is beyond the scope of this work. However, the problem of customs in Caribbean countries is to some extent generalized and well documented.

An overall pattern in the Caribbean is that the role of customs has primarily been to collect revenue, rather than to facilitate trade. This role has led to the inefficient functioning of customs that increase costs for traders. In the Caribbean, customs and excise taxes account for an average 35 percent of GDP, whereas this number is less than four percent of GDP in developed countries. The function that customs has taken on as the primary source of revenue has created an unhealthy trade atmosphere, both for the shipping and the logistics industry, with high handling fees and reduced efficiency and productivity vis-à-vis other countries and regions (Pinnock and Ajagunna, 2012).

Customs performance varies significantly throughout the different Caribbean countries. The average time and cost required to clear customs and inspection clearing is significantly higher in Caribbean than in other island nations, with some exceptions.. In countries like Suriname, Guyana, and Haiti, it takes on average 5 days to clear customs, whereas in four of the Caribbean islands it takes just one day, matching Singapore's time (Figure 7). However, the cost of clearing customs and inspection in most of the Caribbean countries is extremely high, except Dominica. For example, it costs between US\$1,100-US\$1,300 to clear customs in St Lucia, St Kitts, and Grenada. In these countries, customs clearance is complicated, and as a result clearance times are out of line with their small transaction volumes.

Major transshipment countries in the Caribbean that should be more competitive based on the large volumes handled also exhibit higher costs and clearance times associated with customs in comparison to other island nations. For instance, in Jamaica it takes an average of 4 days and \$250 to clear customs and inspection, whereas in Mauritius it is half the time and five times less the cost. It is widely accepted that the lack of customs coordination and/or standard operating procedures with other related entities involved in trade facilitation and control, are behind some of the higher cost inefficiencies of Caribbean customs.

Figure 7: Time and Cost to Clear Customs and Inspection in the Caribbean vs. Comparative Countries



Source: Based on data from World Bank (2012a).

Simplification of customs declarations forms, procedures, and clearance is also required to improve the efficiency of customs and reduce the time and cost required to clear imports. In small island states, importing goods requires seven documents; in addition to a bill of lading, an invoice, a certificate of origin, and a customs declaration. Fortunately, there are some signs of improvement. The Dominican Republic recently implemented several reforms, including the creation of a single online customs declaration and a decrease in the tax burden on companies, thus facilitating export and import procedures (World Bank, 2009).

Box 1: OECS Customs: More than an Administrative Transaction

What are the key characteristics of best practice customs

The concept of modern customs encompasses effective, efficient, transparent and predictable operations consistent with broad strategies and goals in order to meet prevailing times demands (WCO, 2007). Customs offices around the world are currently confronting a challenging environment featuring increased and more complex international trade, just-in-time distributions models, increased security treats and organized crime, higher expectations from the public as well as private sectors, and trade facilitation negotiations. To face this changing and challenging environment, international organizations such as the World Trade Organization (WTO) and the World Customs Organization (WCO) are promoting customs best practices. In this regard, the Revised Kyoto Convention provides a set of best practices whereby the role of the Custom office is simultaneously are defined as:

- policy advisor: to provide trade statistics for macroeconomic purposes and trade negotiations,
- policy implementer, to help to regulate trade agreements,
- trade facilitator: to facilitate the doing business of the country, and
- security provider: to contribute to national security at borders.

Where are the OECS countries in relation to custom best practice?

According to the Customs Assessment Trade Toolkit (CATT), the assessed processes of the OECS customs offices are far from best practices. OECS customs performance was classified in the low to medium ranking for 'in progress' performance with average scores between 30% and 36% out of a maximum of 100% (CATT, 2010).

According to CATTs, OECS customs offices are largely characterized by their embracing of tax and duties collection as the top strategic goal, at the expense of their potential role as advisor, facilitator or security provider. OECS Customs lack proper risk management systems and have only partially implemented integrated information systems. Information systems are capable of receiving the electronic manifest before the cargo arrives, but they are unable to assess risk in advance, implement facilitation measures or to formally share information with tax administration to update risk profiles of authorized operators. The control mechanisms of OECS Customs are based primarily on physical examinations of almost 100 percent of entries, and efforts to promote voluntary compliance have not met with success.

Finally, the CATT analysis showed a lack of effective feedback mechanisms between the trading community and the Customs office to promote continual performance improvement. The latter is aggravated by the absence of formal Standard Operating Procedures (SOPs). Overall, the transition costs of dealing with OECS customs are high, especially in terms of time.

Why OECS countries have not embraced best practices?

While the Caribbean economies are highly integrated with the global economy, customs performance is lagging behind. One clear pattern is that OECS customs offices are physically examining almost all entries, a practice far removed from trade facilitation best practices. This is likely the response to a widely accepted practice of overtime pay that sets out a distorting incentive structure.

(1/3)

Box 1: OECS Customs: More than an Administrative Transaction

Overtime payments are applied all across the Caribbean. Customs brokers pay these compensations on behalf of importers/exporters, to a customs officer who performs physical examinations on the importer/exporter's premises. The broker will request the service by 3:00 pm to a supervisor officer who allocates the overtime service to available inspectors. Once the working hours are finished at 4:30 pm, the assigned inspector will go to the importer's premises to carry out the inspection. The transport costs are covered and the overtime compensation is based on an hourly rate. Once the examination is completed, the broker fills out a form for the Customs inspector to sign. Once the paper work is completed, the overall compensation amount is deposited in a specific Customs account. By end of the month the overtime compensation is paid (by a private party) in conjunction with the due salary (paid by the Government) after Government takes corresponding taxes.

These additional compensations are very attractive to and pursued by Customs officers to top up their salaries and taken as part of the aggregate income for all financial transactions including mortgage applications. Moreover, these monetary incentives lead to unnecessary delays and an excessive number of physical examinations (mostly during overtime) that approach 100% scrutiny according the CATT's examination. The average amount of time it takes to release goods can reach more than 10 times the international standard of 8 hours in some cases.

Other elements that are far from the trade facilitation best practice have been identified by the CATT diagnostics in the OECS. Those elements include incomplete harmonization and dissemination of the valuation and classification rules, lack of SOPs, non-systematic updates on customs regulations and procedures, lack of electronic payment options, and absence of operational benchmarks.

What is being done/has been done in OECS Customs?

Most of the Caribbean countries including the OECS have implemented an integrated information system solution. In the region the ASYCUDA World (AW) system has become the regional standard due its functionality and reasonable implementation cost. The roll out of an integrated information system is undoubtedly a positive move to support customs operations. The AW facilitates information lodging, minimizing input mistakes and making information more consistent.

With the help of international players, Caribbean customs offices have been working to improve their performance. Notably, the region has benefited from initiatives such as the Caribbean Regional Technical Assistance Center (CARTAC) for more than eight years, and recently the IMF and the World Bank launched the Supporting Economic Management for the Caribbean (SEMCAR) program. The SEMCAR program aims at assisting tax, customs, and public financial management streamlining in the region.

The work of CARTAC and SEMCAR customs offices points to two critical themes as priority areas: strategic thinking and the adoption of risk management systems.

In the area of strategic thinking, the SEMCAR program has produced a Strategic Management Framework (SMF). At the core of this framework are efforts to help modern customs offices learn to play the role of trade facilitator. The SMF allows for structuring a participatory process whereby Customs offices interact with key players to deal effectively with issues as complex and politically sensitive as the overtime practice, thus making it possible to find solution supported by political will and resources.

(2/3)

Box 1: OECS Customs: More than an Administrative Transaction

On the side of the risk management, the SEMCAR program has produced a Risk Management Framework (RMF). This Framework promotes the adoption of risk management practices based on risk profiling of authorized operators and agile trade facilitation. One of the OECS countries has piloted the RMF by setting up an information solution that enables data exchanges between the revenue agency and the customs office, in order to build up and update risk profiles of authorized operators. This approach to RMF is compatible with the existing core customs information system.

What else can be done in OECS Customs?

The implementation of integrated systems and the initial adoption of the SMF and the RMF are positive steps towards building modern Customs in the OECSs. However, these steps are only the beginning. Changing the culture of Customs as entities for fee collection is evidently a challenge to overcome. Dealing with distorting incentives for perpetuating and deepening inefficiencies in trade facilitation is another big challenge. For OECS critical next steps include:

- a) Removing the overtime practice. This implies that the basic salary is the only compensation for customs inspectors. However corruption might come up in order to compensate the loss of overtime compensations;
- b) Introducing a fee for customs services paid by the private sector. To be effective this fee must not be linked to physical examinations and should contribute to an overall compensation fund. Since the private sector is already paying the cost of overtime, this should not be a problem for them; and
- c) Revising salary scale and incentive for Customs officers. This action might have important fiscal implications and should come along with a reform program oriented towards converting customs offices in the Caribbean into performance-oriented entities.

(3/3)

Prepared by José Eduardo Gutierrez Ossio, based on Gutierrez, Alessandro, and Neyra (2013).

III

REGIONAL CONTEXT

Key Messages

- Caribbean countries have subscribed to many regional agreements such as CARICOM and the San Juan accord. Implementation of these agreements has failed in practice due to, among many other things, loopholes in the agreements that give too much room to bilateral negotiations under “reasonable circumstances” and/or lack of government continuity.

i. Caribbean Community

All of the Caribbean countries covered in this report⁷, with the addition of Montserrat, are members of the Caribbean Community (CARICOM), which offers some ratified treaties in the areas of customs, trade and air transport. CARICOM, established in 1973 with the Treaty of Chaguaramas, and expanded further in 2001 with the Revised Treaty of Chaguaramas, is an organization of 15 Caribbean states, and attempts to promote economic integration and equitably shared growth, along with coordinated foreign policy. In addition to the full membership of the 15 states, Caricom also has five additional associate members and eight observers.

The Caribbean countries have signed many agreements under the umbrella of CARICOM (Table 7). In general, CARICOM trade agreements include ‘liberalization’ and tariff reduction, if not complete tariff exemption, to foster trade between Caricom members and Colombia, Cuba, Venezuela, Costa Rica and the European Union. In addition, the region also benefits from the U.S. Caribbean Basin Initiative (CBI), made permanent in January 1984 through the CBI II agreement, and expanded further through the U.S. – Caribbean Basin Trade Partnership Act (CBTPA) in 2000. These unilateral U.S. agreements basically provide tariff-free access to US markets for most Caribbean exports.

CARICOM has a multilateral air services agreement that was signed by many of the member states on May 6, 1996. The agreement’s main thrust is an attempt at liberalization of air services within CARICOM, and addresses traffic both by airlines based in the CARICOM states and by airlines that fly between CARICOM members. All of the Caribbean countries covered in this report, with the exceptions of Haiti and Guyana, are members of the agreement. However, the agreement is weak because it allows some room for negotiations between the states for allowing rights on their own terms. It compels states to permit these rights under “reasonable circumstances”, but, by not granting the rights in itself, it allows the states to determine for themselves what these “reasonable circumstances” may be. In terms of so-called “fifth freedom” flights, where an airline based in country A flies to country B, drops off passengers but also picks up passengers for a subsequent country C, the states are asked to grant these rights on a reciprocal basis. There is no mention of air freight, which tends to be more liberalized, and the agreement does not supersede any existing bilateral agreement between states⁸.

⁷ Incidentally, all are members of the Caribbean Growth Forum.

⁸ The entire agreement can be found at:

http://www.caricom.org/jsp/secretariat/legal_instruments/agreement_multilateralairservices.jsp?menu=secretariat&prnf=1.

ii. San Juan Accord and Open Skies

The overall progress towards liberalization has been slow, and was seen as an essential issue in the San Juan Accord of October 2007. The San Juan Accord was signed by the Caribbean Tourism Organization, along with regional air transport and tourism ministers, select regional airline executives and representatives of relevant regional and international institutions. The Accord focuses “particularly on measures aimed at improving the management of international and intraregional air services in order to maintain and improve the vibrancy and competitiveness of the vital tourism sector while promoting greater business, social and institutional integration in the region” (Caribbean Tourism Organization, 2007, p. 1). Relative to air services, the very first recommendation of the accord specifies the need for “Accelerating the revision of the CARICOM Multilateral Air Services Agreement (MASA) and related liberalization of regional air transport sector, with a view to completion and implementation by September 30th 2008” (Caribbean Tourism Organization, 2007, p. 3).

Table 5: CARICOM's Trade Agreements

Treaty Name	Signatory States	Type of Treaty	Signed	In force since	Notified to WTO	Status
CBI (U.S. Caribbean Basin Initiative)	Antigua and Barbuda, Aruba, The Bahamas, Barbados, Belize, British Virgin Islands, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Panama, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago	Unilateral Tariff and Trade Agreement by the US	n/a	1-Jan-84	unknown	in force, made permanent by CBI II
CBI II	Antigua and Barbuda, Aruba, The Bahamas, Barbados, Belize, British Virgin Islands, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Panama, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago	Unilateral Tariff and Trade Agreement by the US	n/a	1-Jan-84	unknown	Made CBI Permanent
CBTPA (U.S.- Caribbean Basin Trade Partnership Act)	Barbados, Belize, Guyana, Haiti, Jamaica, Panama, St. Lucia, Trinidad and Tobago	Unilateral Tariff and Trade Agreement by the US, expansion of CBI	18-05-00	1-Oct-00	unknown	in force until 9/30/2020
CARIBCAN (Caribbean-Canada Trade Agreement)	Anguilla, Antigua and Barbuda, The Bahamas, Bermuda, Barbados, Belize, the British Virgin Islands, the Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos Islands	Unilateral Trade Agreement by Canada	1986	1986	unknown	in force
CARICOM - Colombia	Caribbean Community, Colombia	Bilateral Free Trade Agreement	24-Jul-94	n/a	no	unknown
CARICOM - Costa Rica	Antigua and Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago, Costa Rica	Regional/Plurilateral Free Trade Agreement	9-Mar-04	n/a	no	unknown
CARICOM - Cuba	Antigua and Barbuda; The Bahamas; Barbados; Belize; Dominica; Grenada; Guyana; Haiti; Jamaica; Montserrat; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Suriname; Trinidad and Tobago, Cuba	Regional/Plurilateral Free Trade Agreement	5-Jul-00		unknown	unknown
CARICOM - Dominican Republic	CARICOM(Antigua and Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Montserrat, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago), Dominican Republic	Regional/Plurilateral Free Trade Agreement	22-Aug-98	1-Jan-99	no	in force
CARICOM - Venezuela	Antigua and Barbuda; The Bahamas; Barbados; Belize; Dominica; Grenada; Guyana; Haiti; Jamaica; Montserrat; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Suriname; Trinidad and Tobago, Venezuela	Regional/Plurilateral Free Trade Agreement	13-Oct-92		unknown	signed - not yet in force
EC-CARIFORUM States APA	CARIFORUM States (Antigua and Barbuda; The Bahamas; Barbados; Belize; Dominica; Dominican Republic; Grenada; Guyana; Jamaica; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Suriname; Trinidad and Tobago)and European Community (Austria; Belgium; Bulgaria; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovak Republic; Slovenia; Spain; Sweden; United Kingdom;	Bilateral Free Trade Agreement	15-Oct-08	1-Nov-08	yes	in force

Source: Office of the U.S. Trade Representative (2013), World Bank (2014a).

The lack of liberalization throughout the region is seen as one of the causes of the collapse of RedJet in 2012, which barely ever got operational. The airline was not able to obtain the rights it needed to establish an efficient connective system. The problem seems to lie in the negotiability of fifth freedom flights that allows the use of “round robin” flights. Allowing ‘round robin’ flights translates in the possibility of a flight that hops around different islands before returning to its origin, a useful practice with small islands spread out over a relatively vast distance. These rights in many cases still need to be negotiated (CAPA Center for Aviation, 2012).

The possibility that many of the Caribbean countries will engage in Open Skies agreements seems remote at this point. An Open Skies agreement is an agreement that is based on allowing free market mechanisms to determine the level of services between two or more countries (though usually bi-lateral). The main points the agreements usually aim for are (1) no restrictions on international route rights, number of designated airlines, capacity, frequencies, and types of aircraft; (2) a very liberal fare regime where a fare can only be altered by regulatory intervention if both governments involved issue an objection; and (3) extremely liberal air cargo routing (so-called “7th freedom” routing), where an airline from country A can move cargo between Countries B, C, and D without ever stopping by Country A⁹.

The Caribbean states covered in this report have been slow to adopt the policies reached in such agreements as the San Juan accord, as has been the rest of the Caribbean. Some of the implementation failures may be due to lack of continuity when governments change. After agreements were reached by ministers at the time of the San Juan Accord, subsequent governments brought in officials with no prior knowledge of the Accord, and subsequently engaged on resetting policy priorities towards goals different from those originally agreed by the previous champions of reform and liberalization.

⁹ See http://en.wikipedia.org/wiki/Open_skies for more information. There are other hallmarks of an open skies agreement, such as where sales offices may be located, and the permission of cooperative marketing agreements, however, the three mentioned in the text are the most obvious and important ones.

Box 2: Small Island States and Subsidy Agreements with Air Operators

Increased and more complex international trade, just-in-time distributions models, increased Small island states with intercontinental capacity airports have been engaged in negotiations with airline operators to develop some type of bilateral commitment in support of air-transport based tourism.

The most common arrangement is for countries to pay airlines a “financial incentive” to fly into a country. This practice has been accepted since the mid 1990’s even in popular Caribbean destinations like The Bahamas. The Caribbean Hotel and Tourism Association conducted a study in 2009 assessing the use of airline subsidies. Of 35 countries queried, 9 responded, and reported a total of US\$ 50 million being paid to airlines.

Countries take different approaches as how to negotiate these agreements. In the case of St. Kitts, the Minister of Tourism and International Transport (who is also the Minister of State) personally engages in the negotiations. In St. Lucia, the agreements are negotiated by the CEO of the Tourism Board, but become effective only upon approval by the Cabinet. Generally, the agreements are in the care of either tourism boards or authorities, with (in some cases) involvement of the finance ministries. In St. Kitts, the maximum limit is US\$ 50 per passenger, though mostly per passenger rates are kept far below this level. The arrangements are of two types: Marketing Support Agreements (MSA) and Minimum Revenue Guarantees (MRGs).

When engaging in Marketing Support Agreement (MSA) a country makes funds available to an airline for marketing purposes. In some cases, the country may use the same funds for marketing, with the airline’s permission. These agreements are generally managed with each country’s tourism board or authority, and typically amount to US\$ 750,000 per year per airline, though this can vary. The funds do not have to be guaranteed and locked up in some form of an escrow. There are times when even though a fee has been determined, neither party feels obliged to exercise the agreement.

MSAs are usually signed between the small islands and their European counterparts, as a way of avoiding direct subsidies, which the European Union does not permit. European carriers (mainly British Airways and Virgin Atlantic) receive marketing support.

Minimum Revenue Guarantees (MRG) are structured, confidential agreements between a government and an airline, often expressed in an Memorandum of Understanding (MOU), guaranteeing a specified load factor or volume over a given period. The agreements can act like a future contract: If targets are not met, governments have to pay up (i.e. “take delivery”) of the unwanted capacity being provided. One complication with MRGs is that funds have to be locked up. In other words, the agreed upon amount has to be kept in escrow until the contract terminates regardless of whether the agreement ever triggers a payment. In addition, airlines have chosen to add compensation for fuel increases into the agreements, which can make MRGs even more unpredictable and open-ended. This was particularly difficult for the small islands during the fuel spike in 2007/8.

(1/2)

Box 2: Small Island States and Subsidy Agreements with Air Operators

Bilateral subsidy agreement between small island states and their American counterparts take the form of MRGs, since these are permitted in the U.S. MRGs have proven to be highly controversial. During the economic crisis, MRGs led to losses in the millions of dollars for several countries. Three of the four countries with longer runways –St. Kitts & Nevis, St. Lucia, and Grenada— have had to make such payments.

Given this experience, MSAs and MRGs are often described as a burden or rather as a “necessary evil.” In most of the small islands, the opinions have been strongly negative about having to set up financial agreements with airlines. Some countries have expressed, informally, either overall ideological disagreement with creating what could be seen as a subsidy to outside airlines, or have lamented that they feel forced to participate in what they consider an unfair and unbalanced process where the bargaining power seems to be clearly in the airlines’ favor.

Interesting enough, in recent years, the agreements have not been paid. In St. Kitts, for example, the agreements have not cost the government anything in the last two years, since the overall yearly passenger flow has met targets. St. Kitts sees the agreements as guaranteeing continued connectivity and service throughout the year: Load factors will be low off-season, but service will continue, and load factors will be much higher in-season, compensating for the low season. In the case of Grenada, load factors are now monitored actively in “real time”, and requests for flight schedule adjustments are made to, for example, American Airlines, to make sure that load factors remain reasonable.

In 2012, the net fiscal effect of the agreements amounts to between 0.12 and 0.2 percent of GDP, close to 0.6-1% of tax revenues, and 0.1-0.3 percent of public debt (Table 8). Individual ministries see these agreements as expensive items on their budgets. Also, an overall question can be raised as to who is really paying for them, since funding for most of these agreements comes from overall tax revenues.

Table 6: Impact of subsidies to overall tax revenue, GDP, and public debt (2011)

Subsidy Burden (percent)	Grenada	St Kitts and Nevis	Saint Lucia
Share on Tax Revenue	0.67	0.66	0.82
Share on GDP	0.12	0.14	0.19
Share on Public Debt	0.14	0.09	0.26

Source: Authors’ calculation based on data provided by the ECCB (2013), World Bank (2013b) and IMF (2014).

An additional aspect to the airline subsidies is the percentage of the overall ticket price the subsidy is supporting. For a trip planned starting February 4, 2013, with a return date of February 15, 2013 (two weeks stay), the average lowest cost fare over all the small islands states from the U.S. amounts to US\$806, and the average from Europe US\$1,400. If one assumes the supposed maximum subsidy of US\$50 per passenger, this would amount to 6.2% of the US fare, and 3.6% of the European fares. The question arises if the traveler could not absorb this directly, keeping the costs within the sector rather than using tax revenues.

(2/2)

Source: Briceno-Garmendia, C., Bofinger, H., Millan, M.F. and Cubas, D. (2013).

IV AIR TRANSPORT

Key Messages

- Air market is relatively small and driven by international demand originating outside the Caribbean, and is growing steadily at an annual rate of about 2 percent. Air traffic can be clearly grouped in three types: domestic; intra-regional; and extra-regional (connecting Caribbean countries with the rest of the world).
- Domestic air travel is serviced by two monopolies, and despite being highly concentrated is growing. Intra-regional airlines also face little competition and the number of routes is limited. Extra-regional air travel is a mostly competitive market with the big exception of Haiti, Grenada and St. Kitts where American Airlines holds a share of more than 50% of the market. In the other three highly concentrated markets (Trinidad & Tobago, Guyana), Caribbean Airlines has the bulk of the market share, and Suriname Airways dominates extra-regional travel to Suriname.
- Domestic traffic is becoming an increasingly important element in Caribbean connectivity, surpassing in importance the market share of direct connections among Caribbean country pairs. It is a highly concentrated market. The top three domestic routes account for as much as 80 percent of total domestic traffic. The Dominican Republic, though a large country by comparison with the rest of the islands, has had no scheduled domestic services since 2012. There are no scheduled domestic flights for small island states, nor for Guyana and Suriname. The level of domestic air traffic in Belize is surprisingly high; although changes in airport pairs have not been accompanied by an increase in actual passenger seats.
- Caribbean countries are less likely to connect among themselves than with the rest of the world, even when the use of Caribbean hubs is considered. A huge contraction of the intra-regional traffic (which has decreased 5 percent annually in the last 5 years) is a clear indicator of a troubled inter-island network. Traffic between Haiti and other Caribbean Countries is almost inexistent even with the hubs →(in practice Haiti does not belong to the hub-and-spoke air system of the Caribbean). The only exception is the reliance of continental Caribbean countries on the Caribbean hubs for their connectivity. Over 20 percent of their traffic is with the hubs.
- Each of the islands manages their own connectivity to the outside world. This may be in part because each island sees itself as an independent market from the rest, and therefore is competing with its neighbors for tourism traffic. Extra-regional routes are generally direct, without the use of any hubs in the region. The majority of traffic is related to the burgeoning tourism sector.
- By using aggregating routes, the region could cut the number of routes from the outside by more than half, from 263 to 101, and could cut inter-island routes from 36 to 16 while leaving currently sustainable direct inter-island routes untouched.

Connectivity

This section will start by presenting the overall trend and composition of Caribbean air traffic. Then it will break down the story according to route categories, and characterize each route category for the 4 distinct Caribbean country groups: Small Island States, Caribbean Hub Countries, Continental Caribbean countries, and Haiti (Fragile State).

For the air sub-sector, connectivity is defined as a measure of non-stop accessibility, expressed as airport pairs being served, with their capacities measured in estimated number of seats.

The 3 route categories used in this report group routes according to their origins and destinations:

- **Domestic Routes** are those connecting a pair origin-destination in which both airports belong to the same country.
- **Intra-Regional Routes** are those connecting Caribbean countries among themselves. This means that both airports -the one in which the route is originated and the one where the connection ends- are in the Caribbean¹⁰.
- **Extra-Regional Routes** are those connecting a Caribbean country with any other country in the world that is not in the set of Caribbean countries being analyzed, including those countries that, while part of the Caribbean, are not CGF members and are therefore not covered in this report.

The three different categories cater to very different connectivity aspects. The Domestic Routes inform elements of national and social cohesion, the Intra-Regional Routes captures sub-regional business and social dynamics (often delimited by national language, cooperation agreements, etc.), and the Extra-Regional routes, that include the connectivity of airlift outside the CGF, consolidates the connectivity for the tourism and trade industries as they comprise the ways CGF countries relate with their main tourism client-countries and goods-providers.

i. Traffic Development – Aggregate Figures

Caribbean Aggregates

The Caribbean air market is relatively small and driven by international demand originating outside the Caribbean. In 2013, air transportation in the Caribbean moved about 44 million passengers, 9 percent of the European market, and 6 percent of North America's¹¹. Close to 82 percent (46.4 million seats) of that amount involved direct inbound or outbound flights to non-Caribbean international destinations. The rest was evenly split between domestic traffic (5.1 million seats or 9 percent of total air flows) and direct regional connections among Caribbean states (7.6 million seats or 9.5 percent of total air flows) (Figure 8a).

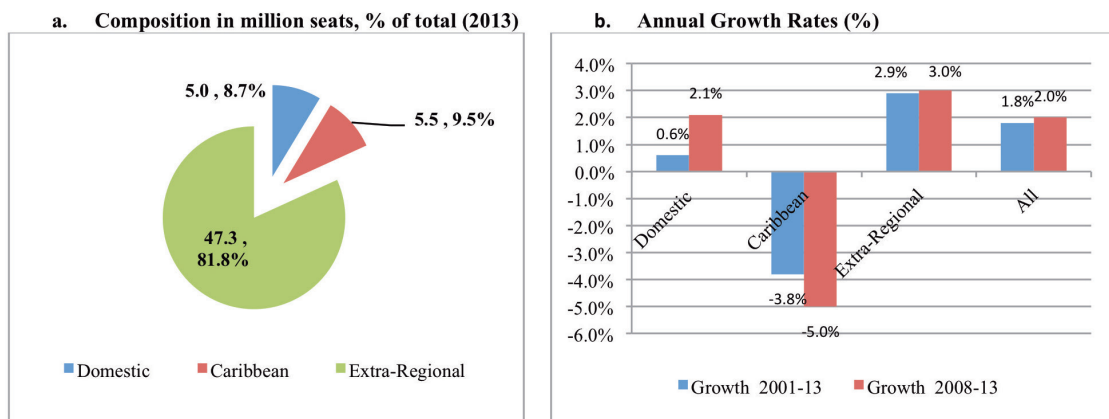
Aggregate traffic in the Caribbean has been steadily growing at an annual rate of about 2 percent during the last decade, slightly trailing the estimated annual growth rate of GDP at 2.2%¹² (Figure 8b). This overall trend is clearly driven by the steady 3 percent growth of the traffic from outside the world (non-Caribbean international connections). These averages mask a huge contraction of the traffic within the Caribbean countries that decrease 5 percent annually in the last 5 years a clear indicator of a troubled inter-island network. Domestic traffic in each of the Caribbean countries is on average growing responding to the increasing domestic traffic of Trinidad and Tobago, and the Bahamas, among their islands.

¹⁰ Occasionally this definition will be used defining as a region the whole Caribbean. The concept and principles will be the same.

¹¹ Estimate based on air seats available.

¹² Calculated using 2005 constant US\$ GDP in World Development Indicators. Due to lack of data the following countries were not included in the GDP calculation: Cuba, Curacao, Cayman Islands, Jamaica, St. Martin (French part), Sint Maarten (Dutch part), Turks and Caicos Islands.

Figure 8: Caribbean Air Traffic Capacity by Type of Route

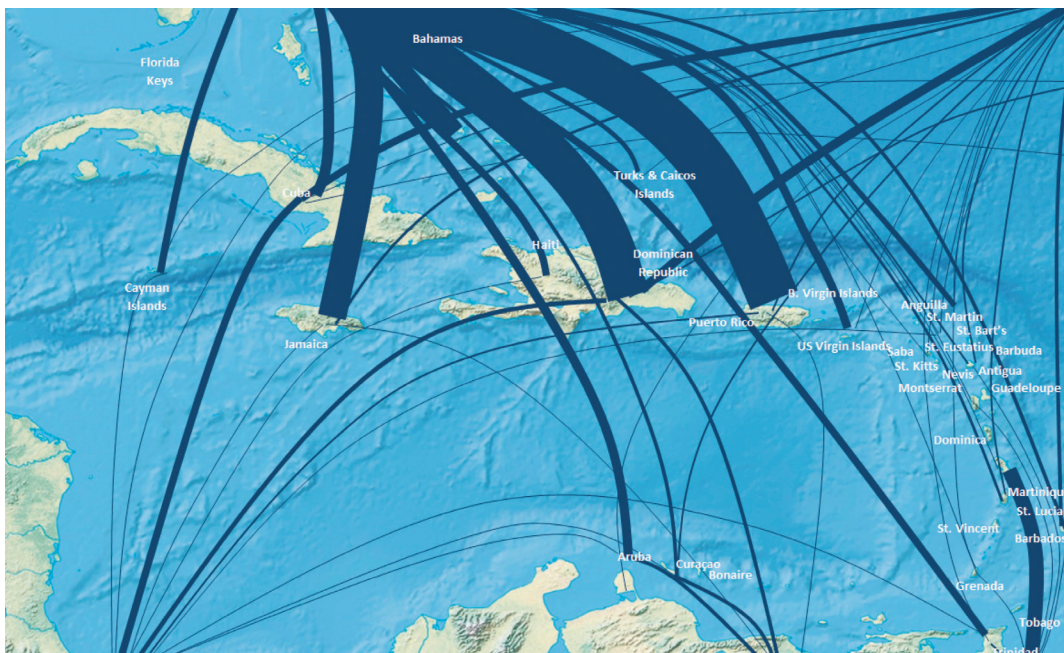


Source: Authors' calculation based on data by Diio (2014).

In general, Caribbean connectivity can be described as having two components: large long-range routes bringing tourists into the Caribbean, and an inter-country network that contains many routes with very little volume. A graphic representation of the extra-regional traffic of the Caribbean immediately reveals the presence of 5 important hubs: Puerto Rico, the Dominican Republic, Jamaica, the Bahamas in the north, and Martinique in the south (Figure 9).

In general, interlining between airlifts coming in from the outside and the domestic system is poor – LIAT, a dominant player in the Caribbean, has no interlining capabilities, meaning that passengers arriving on one of the airlines from the outside, e.g. American Airlines, would have to claim their baggage and re-check it at the LIAT check-in counter after having gone through customs. The networks are, in effect, separate, and have different purposes. Dominant routes in the Caribbean are Martinique-Guadeloupe, Aruba-Curaçao-St. Eustacius, and the Dominican Republic-Puerto Rico-Virgin Islands (Figure 9).

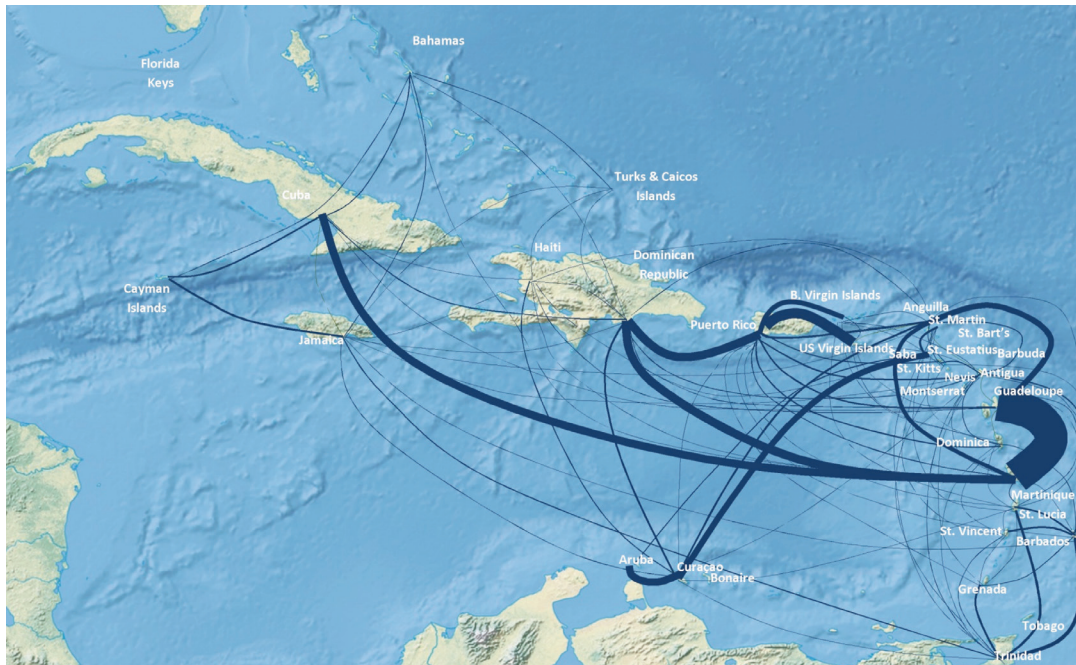
Figure 9: The extra-regional routes with the outside world in 2013 for the Caribbean overall



Source: Authors' calculations based on data from Diio (2014).

Note: Thickness of the lines representing the relative capacity in seats.

Figure 10: The intra-regional air transport network in the Caribbean overall in 2013



Source: Map based on data by Diio (2014).

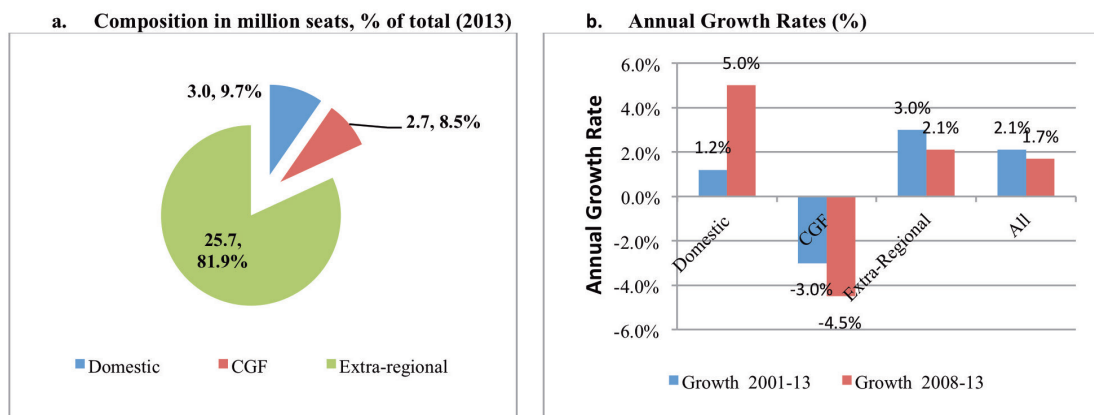
Aggregates for the Sample in the Study

A little over half of all Caribbean air traffic (53 percent) can be traced to the Caribbean countries covered in this report. The traffic composition and patterns of the countries covered do not differ greatly from those seen in the rest of the Caribbean.

The air traffic of the countries covered is dominated by extra-regional flows coming from U.S.A. and Europe. Nearly 82 percent (approximately 25 million seats) of all capacity is on routes that connect the region with nations outside the countries covered. The rest of the traffic is evenly split between domestic traffic –about 10 percent (3 million seats) and intra-regional traffic within the group –about 9 percent or 2.7 million seats. In comparison to the whole Caribbean, amongst the Caribbean countries for this report domestic traffic has grown a little faster, and extra-regional traffic with the other Caribbean countries has grown somewhat more slowly.

As in the case of the Caribbean as a whole, the intra-regional traffic amongst the countries covered has been declining precipitously, contracting annually at a rate of 4.5 percent. In contrast, domestic connectivity seems to be growing significantly, if admittedly from a low base level (Figure 11b). This is a very interesting dynamic as in relative terms domestic traffic is nowadays more significant than regional traffic. To put things in perspective, there are 117 routes combining all routes originated by covered countries (domestic and international intra-Caribbean). These routes carry about 4.8 million passenger-seats, of which 60 percent of the routes and 63 percent of the traffic is internal to each covered country (as opposed to between covered countries).

Figure 11: CGF Air Traffic Capacity by Type of Route



Source: Authors' calculation based on data by Diio (2014).

Traffic is also highly concentrated along country types. The so-called hub-countries –Bahamas, Barbados, Dominican Republic, Jamaica, and Trinidad and Tobago– capture 82 percent of the total air movement and their traffic grows at a solid 2.5 percent every year. Over 40 percent of that traffic is linked to Dominican Republic, concentrating one third of the total air movement (Table 7). The share of the Bahamas and particularly of Barbados seems to be receding.

In a far second, the group of small island states –essentially the OECS countries– reaches an estimated seat capacity of 2.5 million per year (7.8 percent of the total traffic capacity), with Antigua and St. Lucia pulling together two thirds of the total OECS (small island states) traffic. Without exception, the air transport capacity of every single country in the small island states has declined. The most salient cases are St. Vincent and St. Kitts, whose traffic declined by an annual rate of 14 and 9 percent respectively over the period 2008-13 (see Table 7).

Table 7: Traffic overview for the Caribbean countries

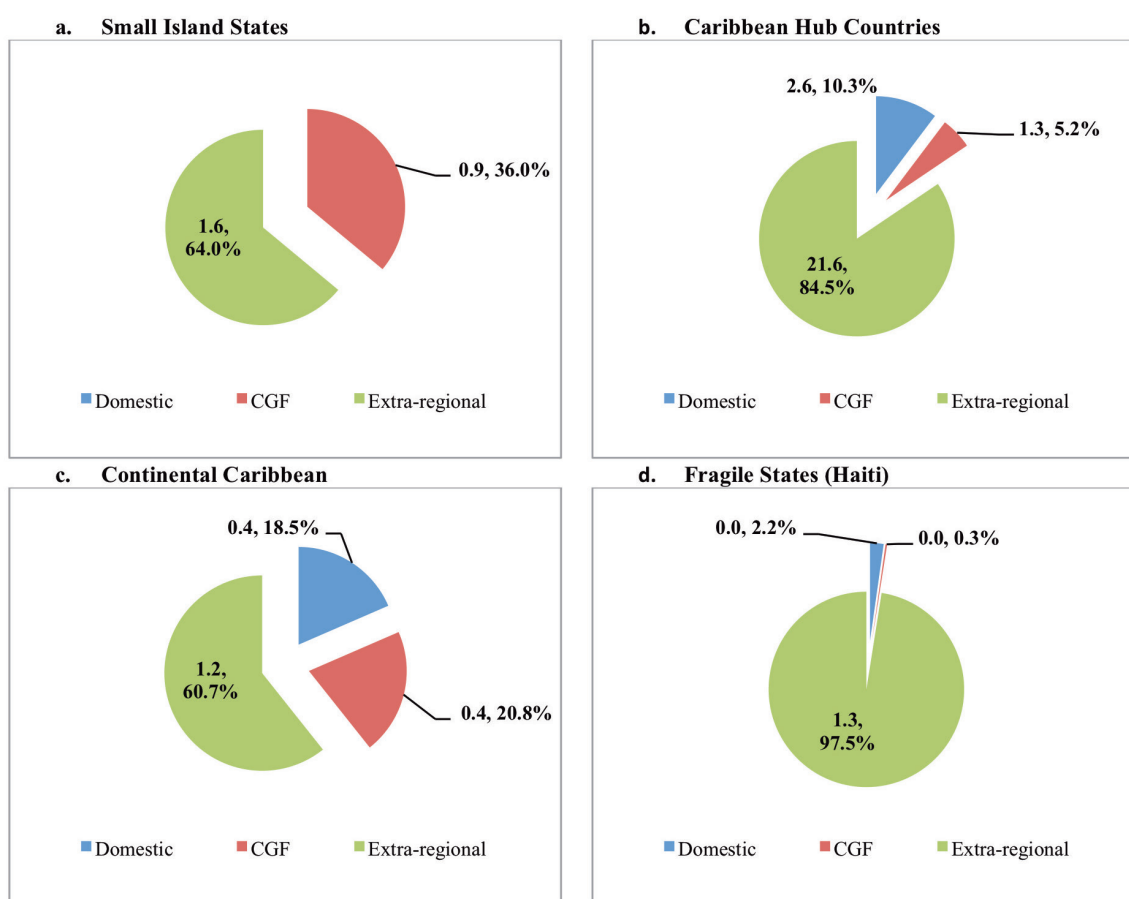
Group	Country	Estimated Seats 2013	Share 2013 (%)	Annual Growth 2001-13 (%)	Annual Growth 2008-13 (%)
Small Island States	Antigua	784,940	2.5%	-0.2%	-5.3%
	Dominica	142,740	0.5%	-2.2%	-5.4%
	Grenada	283,322	0.9%	-3.2%	-4.9%
	St. Kitts & Nevis	286,806	0.9%	-2.8%	-8.9%
	St. Lucia	829,738	2.6%	-0.1%	-0.6%
	St. Vincent & the Grenadines	122,642	0.4%	-6.2%	-14.0%
	Subtotal	2,450,188	7.8%	-1.5%	-4.9%
Regional Hubs (either maritime, air, or both)	Bahamas	5,038,319	16.1%	-1.0%	-0.2%
	Barbados	1,689,623	5.4%	-1.4%	-5.2%
	Dominican Republic	10,528,375	33.6%	6.4%	6.6%
	Jamaica	5,188,586	16.5%	1.8%	1.2%
	Trinidad & Tobago	3,085,316	9.8%	3.1%	1.5%
	Subtotal	25,530,219	81.4%	2.5%	2.4%
Continental Members of the CGF	Belize	1,089,010	3.5%	2.5%	0.6%
	Guyana	435,123	1.4%	0.0%	2.8%
	Suriname	527,865	1.7%	4.7%	5.1%
	Subtotal	2,051,998	6.5%	2.4%	2.1%
Fragile State	Haiti	1,346,202	4.3%	3.4%	2.5%
	Subtotal	1,346,202	4.3%	3.4%	2.5%
Total		31,378,607	100.0%	2.1%	1.7%

Source: Authors' calculation based on data by Diio (2014).

Continental Caribbean countries (Belize, Guyana and Suriname) and the Caribbean Fragile State (Haiti) account for the remaining 11 percent of the Caribbean traffic with 2 and 1.3 million of seat capacity per year, respectively. The traffic of each of the Continental and Fragile countries is growing solidly, with Suriname's traffic growing twice as fast as the rest of the countries in this group, likely due to the country's high annual GDP growth rate.

What drives the traffic in each category? In general it is clear that it is the extra-regional international traffic that drives the bulk of the air traffic (Figure 12). There are a few interesting issues, though. First, small island states have no scheduled domestic flights for¹³. Second, traffic between Fragile (Haiti) and other Caribbean Countries is almost inexistent even with the hubs –(in practice Haiti does not belong to the hub-and-spoke air system of the Caribbean). Third, continental Caribbean countries rely importantly on the Caribbean hubs for their connectivity. Over 20 percent of the traffic of this group is with the hubs.

Figure 12: Air Traffic Capacity by Type of Route Composition in million seats, % of total (2013)



Source: Authors' calculation based on data by Diio (2014).

¹³ In practice, this means that domestic connectivity within each country is provided by charters or very small airlines.

ii. Domestic Routes

Overview

Domestic traffic is becoming an increasingly important element in Caribbean connectivity, surpassing in importance the share originated by direct connections among Caribbean country pairs. It is a highly concentrated market, though. The top three domestic routes hold as much as 80 percent of total domestic traffic (and as much as 50% of the entire seat capacity for travel originated in Caribbean for within-Caribbean service).

Three countries concentrate over 90 percent of the total Caribbean domestic traffic, as follows: the inter-island travel of the Bahamas (1.5 million seats, 50 percent), and Trinidad and Tobago (1 million, 30 percent); and internal connections within Belize (0.4 million, 13 percent). The network within the Bahamas is comprised of 23 airport pairs, with traffic between Freeport and Nassau, the top route, having over 236,000 seats. By comparison, the densest route between two island countries, Trinidad and Barbados, has 289,000 seats, and the second to most dense, Trinidad and Grenada, only 187,000 seats.

Overall, domestic services have been growing, showing an annual growth rate of 1.5% between 2001 and 2013, with the Bahamas growing at 5.0%, and traffic between Trinidad & Tobago at 6.0%. On the other extreme of the spectrum is Jamaica, which lost 12.4 percent of seat capacity (Table 7). The loss of air transport connectivity within the island of Jamaica, however, should not be negatively viewed, since road transport has improved, and had become the preferred mode for intra-island travel.

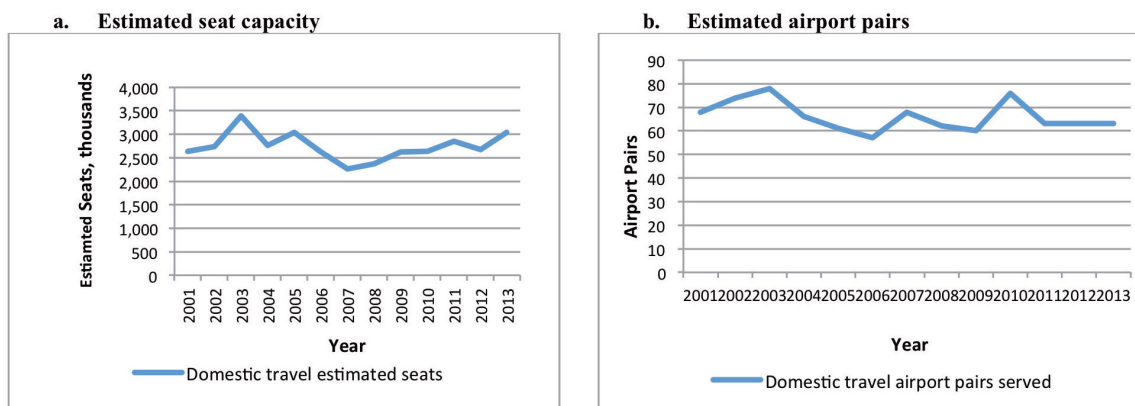
Table 8: Domestic Traffic for the Caribbean countries

Route Type	Typology	Country	Seats 2013	Shares	g01-13	g08-13
Domestic	Small Island States	Antigua and Barbuda	Scheduled services ceased 2010			
		St. Kitts and Nevis	Scheduled services ceased 2012			
		St. Vincent and the Grenadines	Scheduled services ceased 2010			
		Subtotal	-	-	-	-
	Hub Countries	Bahamas	1,503,918	49.5%	5.0%	9.6%
		Dominican Republic	Scheduled services ceased 2012			
		Jamaica	156,442	5.2%	-12.4%	-2.2%
		Trinidad and Tobago	966,732	31.8%	6.0%	5.4%
		Subtotal	2,627,092	85.6%	1.4%	6.7%
	Continental Caribbean	Belize	379,223	12.5%	-0.1%	-3.3%
		Guyana	None reported			
		Suriname	None reported			
		Subtotal	379,223	12.5%	1.4%	6.7%
	Fragile States	Haiti	30,134	1.0%		
		Subtotal	30,134	1.0%	1.4%	6.7%
	Total		3,036,449	100%	1.2%	5.6%

Source: Authors' calculations on data provided by Diio (2014).

The overall evolution of seat capacity is steady and growing slowly, but the number of airport pairs served also shows a steady, but slightly downward slope (Figure 13), suggesting that the concentration of the domestic markets is worsening.

Figure 13: Domestic travel for the Caribbean countries



Source: Authors' calculation based on data provided by Diio (2014).

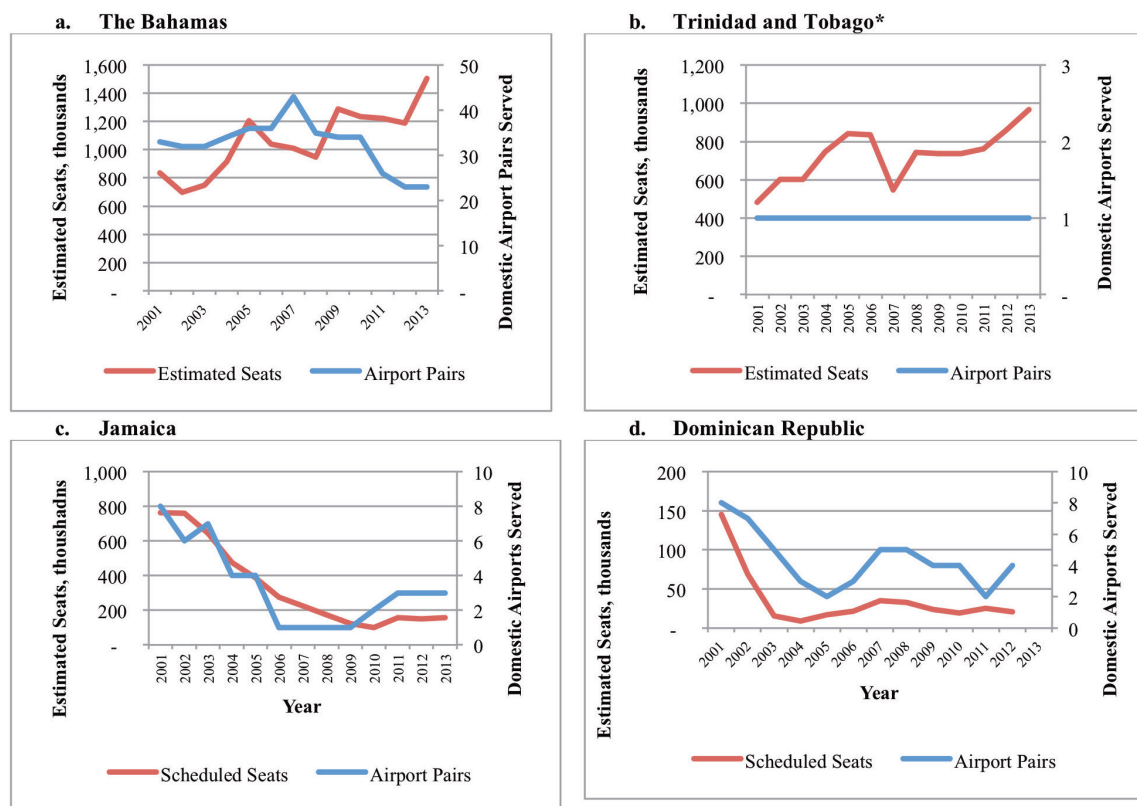
Small Island States

There are currently no scheduled domestic services for any of the small island states. Services have existed in the past for Antigua & Barbuda (for travel between the islands), St. Kitts & Nevis (between Nevis and St. Kitts), and St. Vincent & the Grenadines. These were routes with short distances and very low volumes with destinations that are now served by ferries or general aviation type charter flights.

Caribbean Hub Countries

The Bahamas and Trinidad & Tobago stand out in the region because of their high volumes of domestic travel. The Bahamas features 18 islands with a total of 64 airports and heliports, of which 12 have regularly scheduled services. There were three airlines in 2013 serving the domestic market, with the bulk of the market served by Southern Air Charters (57%), followed by Bahamas Air (26%, also the state owned flag carrier), and SkyBahamas (17%). Growth has been significant: between 2001 and 2013, capacity grew by 5.0% annually, and the recent five year annual growth rate, between 2008 and 2013 (following the economic slowdown), stood at 9.6%. The number of direct-flight airport pairs being served, however, has declined: the number of airports being served declined from a peak of 43 to 23 in 2013.

Figure 14: Domestic travel in Hub Countries



Source: Authors' calculation based on data provided by Diio (2014).

Note: Trinidad and Tobago only has one airport pair, between the two islands.

The volume of traffic between Trinidad and Tobago is also quite high (Figure 14). There is a single airport pair, served solely by Caribbean Airlines, Trinidad's flag carrier. Long-term growth has been 6.0% annually, with 5.4% annual growth over the last five years. The distance is a short 52 miles, of which only 30 miles are over water.

The dramatic decline in Jamaica's domestic connectivity (Figure 15) can be attributed to an improved road network making air travel less necessary. The bulk of air travel (60.9%) is still between Montego Bay and Kingston, with a smaller portion between Montego Bay and Negril (34.9%), and a very small amount (roughly 6,570 seats, or 4.2%) between Montego Bay and Tinson. Once the new Highway 2000 project connecting Montego Bay to Kingston is completed, it is probable that domestic air services between these regions in Jamaica will fall further, which would not be a sign of an ailing air transport system, but instead a sign of an improvement in the overall transport infrastructure.

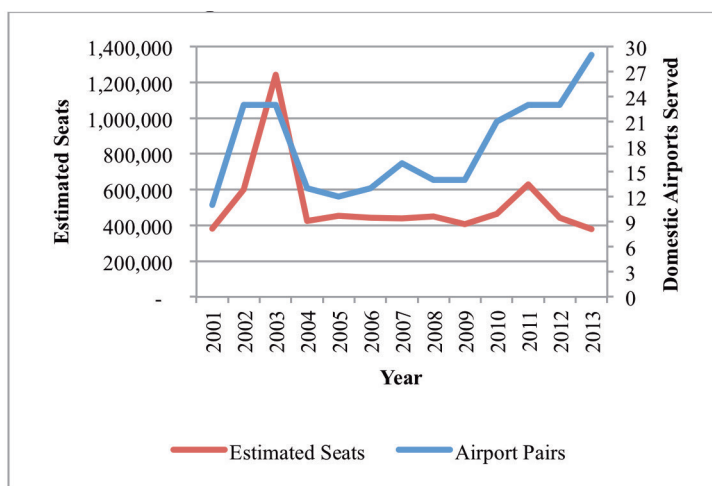
The Dominican Republic, though a large country by comparison with the rest of the islands, saw all scheduled domestic services cease by 2012. Services were provided by the flag carrier, Aerolineas Santo Domingo, S.A. and also by Servicios Aereos Profesionales, S.A., which ended up owning Aerolineas Santo Domingo, S.A. There was a massive drop in capacity from 2001 to 2004, with total seats offered for scheduled domestic routes falling from over 145,000 to 9,000 (Figure 16). It is not clear what is driving this drop. The drop may be attributed to increased road connectivity within the country, but determining the actual causes will require further research.

Continental Caribbean Countries

Neither Guyana nor Suriname show any scheduled domestic traffic. Guyana has two airlines, Trans Guyana Airways and Roraima Airways, operating a total of 11 small general-aviation type aircraft. These types of operations, though scheduled, typically do not appear in international scheduling data. Suriname's Surinam Airlines appears to have terminated all domestic scheduled operations for some time, although there are three small domestic airlines operating a fleet of 26 small aircraft, providing domestic services.

In the case of Belize, changes in airport pairs have not been accompanied by an increase in actual passenger seats, suggesting that as new routes have been added, frequencies to the previous routes have been reduced (Figure 19). These trends are driven by services provided by two small airlines, Maya Island Air, and Tropical Air. Both are flying general-aviation type aircraft, which often adjust ad hoc the flight schedules based on market conditions.

Figure 15: Domestic Travel in Belize



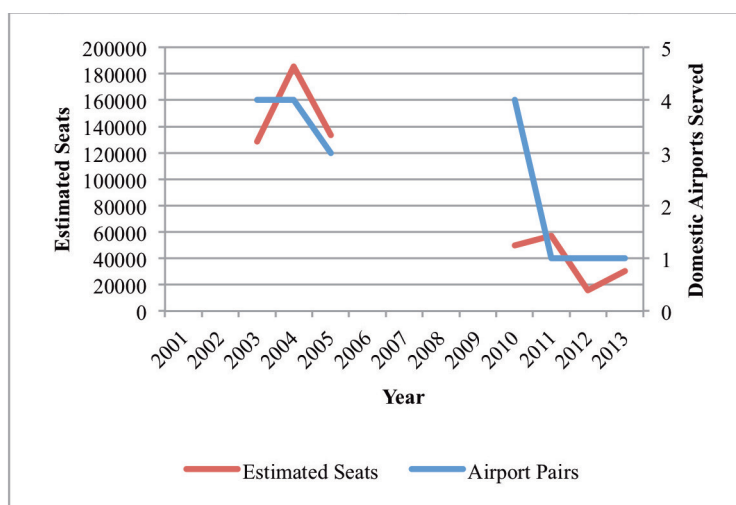
Source: Authors' calculation based on data provided by Diio (2014).

In relative terms, the level of domestic air traffic in Belize is surprisingly high. In 2013, Belize's domestic traffic was almost 3 times higher than Jamaica's and 20 times higher than DR's. This might be partially explained by Belize being a tourist destination that relies on its off-shore islands. For instance, the island of Ambergris Cay is a very popular diving destination.

Fragile State: Haiti

Haiti's domestic services are very limited, and have experienced large swings between 2001 and 2013. Since 2011 only one airport pair has been served, between Cap Haitien in the North and Mais Gate in Port-Au-Prince. Previous pairs included Cap Haitien with Port De Paix, Mais Gate with Jeremie on the far western tip, and Mais Gate with Port de Paix, on the peninsula north of Jeremie. No data was found for the period 2006-2009, which corresponds to the period between when Tropical Airways d'Haiti ceased operations and when a new airline, Salsa d'Haïti, brought domestic scheduled services back to Haiti.¹⁴ Tourism in Haiti is a very small sector and is generally limited to one isolated resort in the North owned by Royal Caribbean and accessed through its cruise ships, (Beaubien, 2013). Due to the high level of poverty (the highest in the region), most Haitians cannot afford domestic air transport.

Figure 16: Haiti's Domestic Seat Capacities and Direct Airport Pairs



Source: Authors' calculation based on data by Diio (2014).

iii. Intra-Regional Routes

Overview

The largest concentration of islands, and intra-regional routes is in the Eastern part of the Caribbean, with the small island countries Trinidad, and Barbados forming the bulk of the routes (Figure 19). Trinidad has the main connections to Suriname and Guyana, with the route to Guyana being the heaviest traveled in the Caribbean. There are no scheduled intra-regional flights to and from Belize. In the East there are mainly three hubs, from the North to the South: Antigua (for LIAT), Barbados (also LIAT), and Trinidad (Caribbean Airlines). The routes are shown by country pair, which means no distinction is made as to the airport if multiple airports exist in a country, such as in St. Lucia.

¹⁴ These figures might be an underestimate. For instance, Tortug' Air, Haiti's flag carrier, operates a fleet of three turboprop aircraft, but their schedules do not appear in any international database. The current annual capacity provided by the airline is estimated to be 90,000 seats.

Table 9: Intra Regional Traffic for Caribbean countries

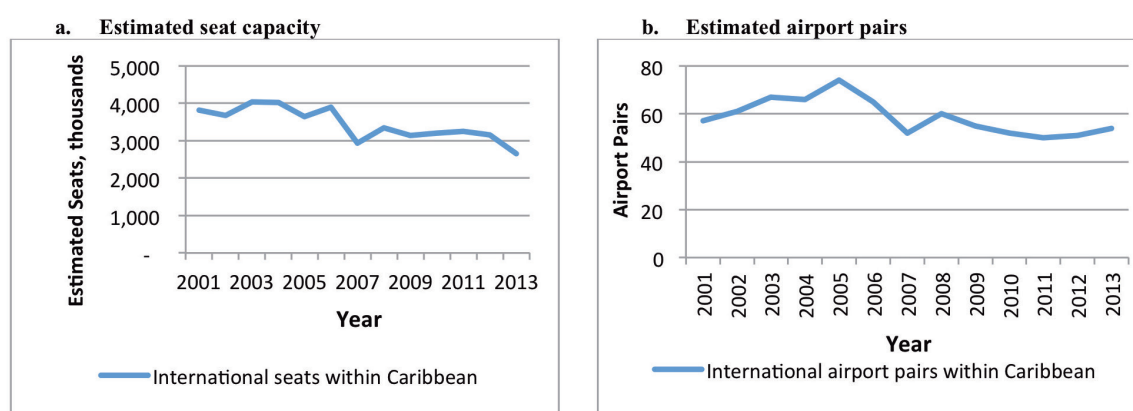
Route Type	Typology	Country	Seats 2013	Share	Growth 2001-13	Growth 2008-13
Intra-Regional Routes	Small Island States	Antigua and Barbuda	209,261	7.9%	-3.7%	-9.1%
		Dominica	78,481	3.0%	-3.6%	-6.6%
		Grenada	174,226	6.6%	-4.6%	-5.8%
		St. Kitts and Nevis	59,787	2.3%	-0.6%	-5.1%
		St. Lucia	238,433	9.0%	-4.9%	-0.2%
		St. Vincent and the Grenadines	122,642	4.6%	-5.4%	-12.9%
		Subtotal	882,830	33.3%	-4.3%	-6.6%
	Hub Countries	Bahamas	19,032	0.7%	-10.7%	-18.3%
		Barbados	409,279	15.4%	-6.5%	-11.2%
		Dominican Republic	54,652	2.1%	11.7%	2.4%
		Jamaica	68,315	2.6%	-7.4%	-11.6%
		Trinidad and Tobago	788,723	29.7%	0.0%	1.4%
		Subtotal	1,340,001	50.5%	-3.1%	-4.7%
	Continental Caribbean	Belize	No Reported Capacities			
		Guyana	340,561	12.8%	-0.1%	2.5%
		Suriname	86,996	3.3%	14.9%	-0.3%
		Subtotal	427,557	16.1%	1.4%	1.9%
	Fragile States	Haiti	3,432	0.1%	7.4%	-5.8%
		Subtotal	3,432	0.1%	7.4%	-5.8%
	Total		2,653,820	100%	-3.0%	-4.5%

Source: Authors' calculation based on data by Diio.

Trinidad and Tobago, Barbados and Guyana concentrate about 60 percent of the total Caribbean intra- regional traffic, and in general there is a clear concentration of the traffic around the hub countries (Table 8). However, what is striking from recent traffic statistics is the clear downward trend of the intra-regional market particularly in countries like the Bahamas, St. Vincent, Jamaica, and Barbados with a negative annual growth rate of over 10 percent between 2008 and 2013 (Table 9). The trend has been downward since 2005, along with a sharp decline in the number of country pairs being served (Figure 18).

The clear shrinking trend hints at a troubled intra-Caribbean network: Caribbean countries are less likely to connect among themselves than with the rest of the world, even when the use of Caribbean hubs is considered. This tendency also underscores the difficulties of achieving regional integration in practice.

Figure 17: Intra-Regional travel within the Caribbean



Source: Authors' calculation based on data provided by Diio (2014).

Small Island States

The inter-island network of the smaller island states is relatively difficult to serve, since some distances are very short, and load factors can be low. In addition, there are two systems of hubs, one inside and another outside the small islands, consisting of Barbados and Trinidad externally, and Antigua internally (Figure 19). The outside hubs add operational difficulties while in transit, especially by re-screening passengers and luggage in Barbados.

Leeward Island Air Transport, or LIAT is the dominant method of passenger transport between the islands. The company has a de facto monopoly over the small islands' internal market. LIAT states that it is "owned by the Governments of Antigua and Barbuda, Barbados and St. Vincent and the Grenadines with a combined shareholding of 90 per cent between them. The remaining 10 per cent is owned by other Regional Governments and minority shareholders" (LIAT, 2012). Dominica became a shareholder in 2013, with an US\$ 3 million equity investment. The airline dates back to 1956.

The inter-island market is mostly served by LIAT (Table 9). British Airways also connect islands but by hopping between islands to drop off and pick up passengers coming from or destined to the UK, rather than by providing inter-island service. There is not much island-to-island tourism. Tourists tend to arrive, stay in their chosen resort, and leave. The inter-island system offered by LIAT, therefore, is more targeted to government, business, and friends & family travel.

Figure 18: The inter-island air transport network within the Caribbean in 2012



Source: Map based on data by Diio (2014).

Table 10: Airlines serving passengers within the small island states (2012)

IATA Code	Airline	2012 Estimated Seats	Share 2012
LI	Leeward Islands Air Transport (1974) Ltd. (LIAT)	550,563	80.0%
BW	Caribbean Airlines	108,186	15.7%
5M	Joint Stock Company SIAT (Sibaviatrans)	27,170	3.9%
V0	Conviasa	2,288	0.3%
Total		688,207	100%

Source: Authors' calculation on data provided by Diio (2014).

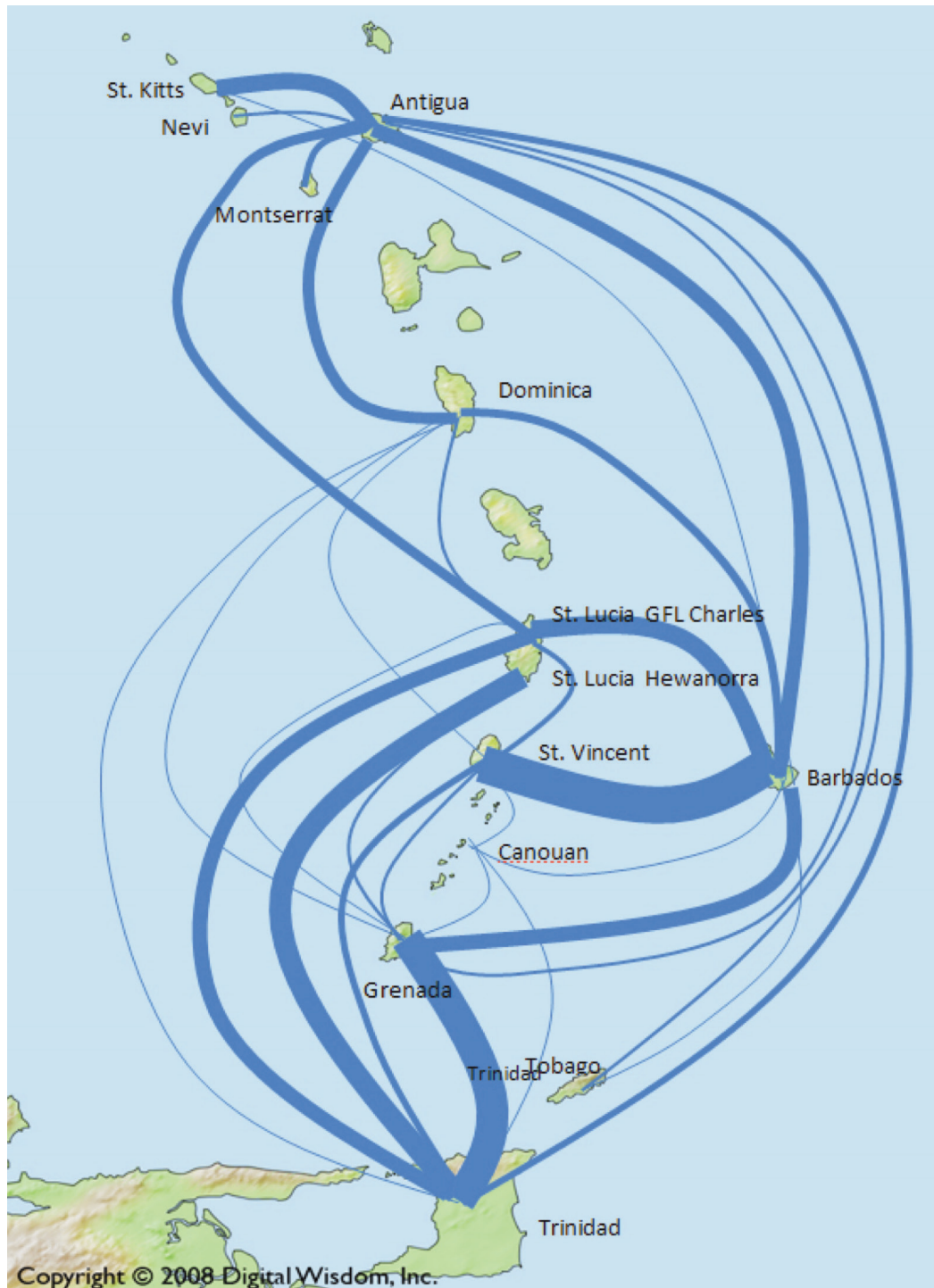
Note: Estimates exclude British Airways.

The airline operates a fleet mix including a series of Dash-8 turboprop aircraft that are now on average over 20 years old (Planespotters.net, 2014)¹⁵, and some recently acquired new ATR 42s and 72s acquired from France. Admittedly, LIAT operates in a challenging environment with thin markets, and by its own accounts (Government of St. Kitts and Nevis 2012) states that 35 percent of its 112 daily flights are not profitable. LIAT currently is not able to interline with large, intercontinental carriers. This means that the airline does not act as a re-distributor of incoming tourists from outside the Caribbean (except for two islands), but rather as a carrier for Caribbean residents. The airline has admitted that 39 of its daily routes can be considered “social”, i.e. they are not sustainable.

Two islands, though, currently depend heavily on the regional network for their tourist arrivals: Dominica and St. Vincent. Runway lengths on both islands limit operations to turboprop aircraft. The failure of the inter-island network is most likely one of the reasons St. Vincent is now building a large, new international airport, and is no longer planning any additional investments in LIAT.

¹⁵ The timeliness of the web site is not known. The site reports there 15 aircraft and one stored, however, a recent fire that consumed the maintenance hangar in Antigua on June 10, 2012 also destroyed an aircraft being serviced.

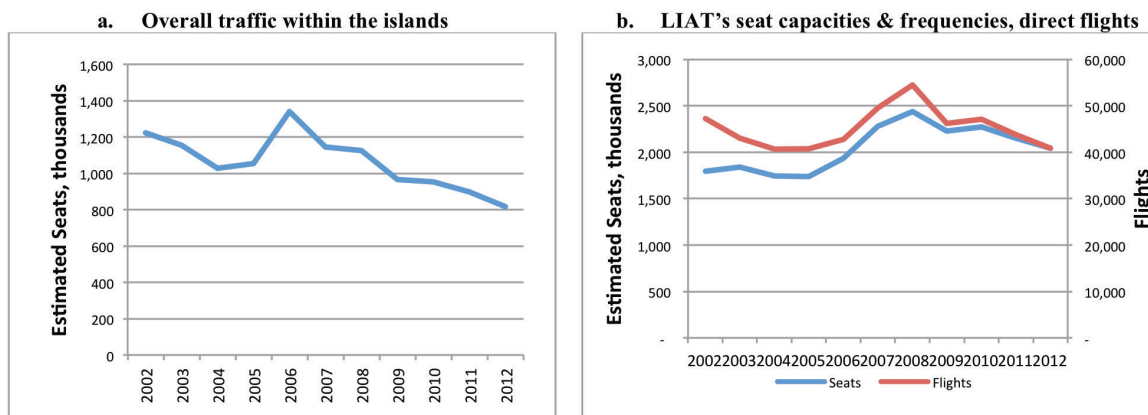
Figure 19: Traffic between the Small Island States in 2012 as measured in seat capacity



Source: Authors' calculations based on data from Diio (2014).

The internal traffic of the small island states has shown a steady decline since its recent peak in 2007 (Figure 20a). This trend is highly correlated with LIAT's history of flights and capacities (Figure 20b).

Figure 20: Small Island States Internal Air Market



Source: Authors' calculations based on data from Diio (2014).

Note: In figure (a) Traffic with Barbados and Trinidad is included, since they both act as hubs. However, since neither countries are not part of the small island states group, traffic amongst them are excluded, i.e. only traffic between them and the OECS is measured.

First, there has been a consolidation in capacity: LIAT competed with Caribbean Star at first, but in the end took over the airline. In 2007, the combined capacity of the two airlines exceeded 3.6 million seats. In 2012, after the consolidation and with Caribbean Star no longer operating, LIAT showed 2.2 million seats.

Second, after having peaked in 2008, both the frequencies (number of flights) and LIAT's related seat capacity have gone down sharply. The curves follow each other tightly because the fleet has consisted of generally identical aircraft with identical seat configurations in recent years.

Finally, anecdotally, LIAT faces operational challenges that include schedule integrity and luggage delivery issues related to (a) the complications of servicing and operating an aging fleet in a geography consisting solely of islands, and (b) operational inefficiency in the basic hub system. With respect to the latter, significant delays can be encountered in flying or luggage delivery due to the security screening of transit passengers and suitcases. In addition, as mentioned earlier, LIAT cannot currently interline with larger airlines bringing tourists into the region, hindering LIAT's efforts to become an effective distribution system for arriving tourists. LIAT is reportedly addressing the fleet issue by planning to purchase new ATR 72 aircraft from Europe, and is also looking at investing in interlining capabilities.

The latter point is extremely important for the development of the islands' internal connectivity. Ultimately, however, the air transport markets are very intertwined with the tourism and hotel industry, which see air transport as a vital pipeline for arrivals. It is widely accepted that the hotel industry sees the quality of air transport within the Caribbean and particularly within the small islands as a barrier for a more unified tourism strategy for the region.

The general consensus is that connectivity between the islands is relatively poor, while each of the islands manages their own connectivity to the outside world. This may be in part because each island sees itself as an independent market from the rest, and therefore competes with its neighbors for tourism traffic.

Without the current political obstacles to having the CARICOM countries, or the small island states as a subset, operate as a consortium, the most logical network would be one in with one international airport in the region with a hub-and-spoke system providing the distribution of arrivals to the individual islands. This, however, is an issue that would be needed to be brought into a public dialogue and be researched further.

Traffic within the small islands is complicated by several factors, some of which have already been mentioned:

- Schedules and frequencies allow for few opportunities to “island-hop” in an efficient manner.
- Immigration requirements within the group of islands on each of the islands provide additional time burdens on arrival.
- Travel using the two hubs outside the small island states, Barbados and Trinidad, offer additional encumbrances that severely affect efficient transfer:

Passengers need to be rescreened, even though they will be arriving and leaving on the same airline (LIAT), maybe even on the same aircraft.

Luggage screening of transfer luggage can cause luggage to miss the flight (this is much experienced on the flights from Barbados to St. Lucia).

- The type of equipment flown by LIAT can run into weight and balance limitations while flying into short runways such as E.T. Joshua airport on St. Vincent, also creating luggage delays.
- The current inter-island system is in no way interlined (i.e. coordinated) with the larger outside carriers, limiting the inter-island system mainly to travel by island residents. This in itself defines a more limited, and struggling, market.

One of the signs of the limited ability to fly inter-island is the need to overnight at a hub for some connections. Many of the connections listed with LIAT on their web site suggest such stays, often also because of full flights.

The matrix presented in Table 10 represents an attempt to show the nature of the connectivity problem. The matrix shows all possible combinations of travel within the small island states and with the related three hubs, using direct flights on LIAT. The numbers represent the average flights per day for one week in October 2012 for the airport pair found by looking at the row and column headers. The following examples illustrate the connectivity challenge:

- Flying from St. Kitts in the north to Grenada in the south in one day would be virtually impossible since Grenada only connects through Trinidad and Barbados. One of the routes allowing the connection is as follows:

St. Kitts > Antigua > St. Lucia > Trinidad > Grenada

with an average of only 1.4 flights a day from Trinidad to Grenada.

- Flying from Grenada to Antigua is also difficult, even though Antigua is one of the hubs. One potential connection would be:

Grenada > Barbados > St. Lucia > Antigua

with an average of 2 flights a day between Grenada and Barbados, an average of 2.4 flights per day between St. Lucia and Barbados; and an average of again only 1.4 flights out of St. Lucia to Antigua

- Flying from Dominica and Grenada is another tricky connection, this time with only one stopover. There is an average of 1.6 flights per day from Dominica to Barbados, and an average of 1.4 flights from Barbados to Grenada. This is the only connection available between Dominica and Grenada. The odds of making this connection workable are highly dependent on the flight times, and the available free seats of the aircraft involved.

In addition, the table exhibits asymmetries caused by multi-stop (“round-Robin”) flights, i.e. aircraft do not necessarily shuttle between an origin and destination, but instead fly multi-legged routes. For instance, Antigua > Dominica has 1.4 flights while the reverse direction, Dominica >Antigua, has 2.0.

Table 11: Frequency Connectivity Matrix of Direct LIAT Flights in the Small Island States for one Week in October 2012 (flights/day)

Origin	Destination								
	Antigua	Barbados	Dominica	Grenada	Nevis	Trinidad	St. Kitts	St. Lucia	St. Vincent
Antigua			1.4		0.4		3.0	2.6	
Barbados			1.6	1.4				2.4	4.0
Dominica	2.0	1.6						0.9	
Grenada		2.0				2.4			1.4
Nevis	0.4								
Trinidad				2.4				1.4	1.6
St. Kitts	3.0								
St. Lucia	1.4	3.4	1.9			1.4			1.0
St. Vincent		3.0		2.0		1.6		1.4	

Source: Authors' calculations based on data from Diio (2014).

Note: Hub connections shown in the shaded rows and columns. Trinidad and Barbados are hub countries. Antigua, which is classified as a small island state, also acts as a hub for them.

Any pair connecting via a hub with an average of less than two flights per day immediately raises the issue that there may not be a departing flight to the destination for the passenger arriving at the hub the same day. In reality, many of the connection are full, and timing of the different connections are so far spread that layover times could last all day.

Table 11 below shows a sample of traveling times between islands for Wednesday, December 5, 2012, as taken on Friday, November 30, 2012. Some connections could not even be traveled that same week on any day, while others ended up a day's journey on the shortest connection available.

The schedule is filled with very long layovers. Only the shortest (least time consuming) connections were chosen. There are few emerging facts. First, only 8 out of the possible 41 connections within the islands, are served by direct flights. Second, though the connectivity with Nevis may look critical, this is less of an issue because of the proximity of St. Kitts. However, St. Kitts' connectivity is the poorest. Third, the asymmetry of the travel times is remarkable. Only the routes Antigua/Dominica, Antigua/Nevis, Antigua/St. Kitts, direct flights both to and from them, have same travel times either way. But overall the variance between the "to" and the "from" routes is significant and contingent upon available connections and load factors. The extreme example is the pair St. Lucia-St. Vincent: going to St. Lucia from St. Vincent takes half an hour while coming from St. Lucia to St. Vincent is an overnight trip (Table 2). The cause of these poor connections is not just scheduling. In many cases, the flights that appeared that were simply full and therefore not available. It is anecdotally agreed that the northern islands of the small island states are somewhat connected, as well as the southern islands, but that connectivity between the northern and southern islands as a set is rather poor.

Table 12: Travel Time Matrix for Travel Between Small Island States, for December 5, 2012 (hours and fractions thereof)

		Destination						
		Antigua	Dominica	Grenada	Nevis	St. Kitts	St. Lucia	St. Vincent
Origin	Antigua		0.7	6.5	0.5	0.5	1.1	4.0
	Dominica	0.7		5.5	2.0	5.3	2.7	3.2
	Grenada	3.7	2.7		5.0	5.3	3.1	2.1
	Nevis	0.5	<u>2.2</u>	<u>6.0</u>		overnight	overnight	5.1
	St. Kitts	0.5	<u>7.1</u>	overnight	overnight		overnight	<u>9.2</u>
	St. Lucia	3.5	2.8	4.2	9.6	4.3		overnight
	St. Vincent	3.1	2.5	0.6	overnight	<u>9.3</u>	0.5	

Source: Authors' calculation on data collected through the reservation system at [www. LIAT.com](http://www.LIAT.com).

Note: Bolded underlined connections required another travel day, in some cases as late as December 14, 2012. Some connections require an overnight stay. Shaded connections are direct. For further details, see Appendix I.

Hub Countries

As a previous section on airport pairs showed, the regional air transport hubs are Antigua, Barbados, and Trinidad. Hubs are usually determined by the airlines serving them, and both Antigua and Barbados are shareholders in LIAT, whereas Trinidad's Piarco International Airport is the hub for Caribbean Airlines. Though both the Dominican Republic and Jamaica have very high volumes, their extra-regional traffic is for their own tourism destinations, and there is no transfer hub activity to other Caribbean countries.

Barbados acts as the southern hub for LIAT's service in the small island states, and Antigua as the northern hub. Trinidad also acts as a transfer point to LIAT, but is also the only inter-regional gateway for Guyana and Suriname.

One important element of the hub system among the smaller islands is that it is only effective in transferring passengers within the same airline. There are only two main airlines serving the smaller islands in the Caribbean, Caribbean Air and LIAT, with, as mentioned earlier, LIAT having no interlining capability, making it impossible for a passenger to check luggage with LIAT to the final destination when switching to another airline in a transfer hub.¹⁶ This sharply reduces the availability of airport pairs realistically served by the hubs (Table 13)

Table 13: Airport Pairs Served at Regional Caribbean Airport Hubs, with the Hub being the Transfer Point

Hub Airport	Theoretic Airport Pairs Served (2013)	Realistic Airport Pairs served (2013)
Antigua and Barbuda	33	14
Barbados	24	11
Trinidad and Tobago	19	7
Total (without duplication between hubs)	64	30

Source: Authors' calculation based on data by Diio (2014).

Estimating the volume of seats that are involved in the actual hub activity is difficult, since there might be several “feeder” flights bringing in passengers from different locations, with each flight having a small number of passengers going to the same final destination. However, one can state confidently that the any capacity limits will occur on the outgoing flight, and one can count how many incoming flights may be feeding the outgoing flight.

Continental Caribbean Countries

The connectivity between Belize and the rest of the Caribbean is non-existent, and the only connectivity between Suriname and the rest of the Caribbean is via Trinidad (Table 13). Belize briefly had connections with Jamaica (data shows only one year – 2003), and Suriname had a similar brief connection in 2007.

Table 14: Intra-Regional Traffic for Continental Caribbean Countries

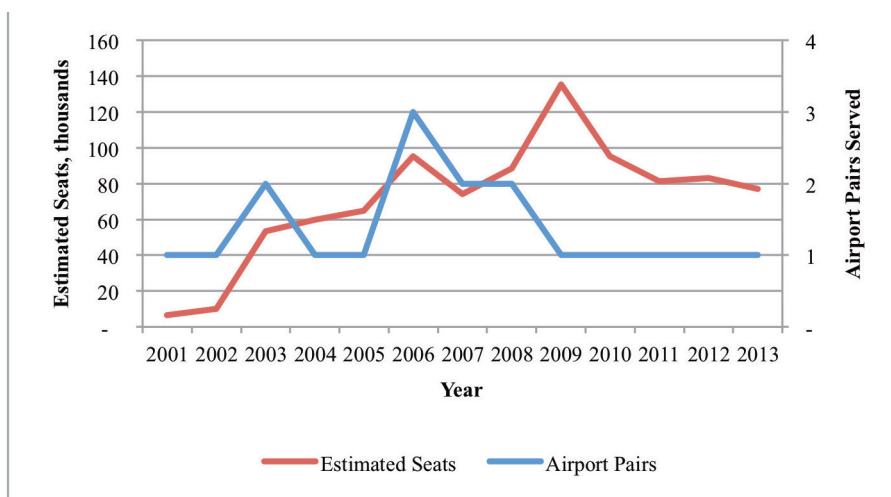
Country	Other Caribbean Country	Est. Seats 2013	Share	Growth 01-13	Growth 08-13	Notes
Belize	No connections – briefly in 2003 with Jamaica, 27,976 estimated seats					
Suriname	Trinidad	77,168	100.0%	22.8%	-2.27%	Briefly with Jamaica in 2006, 20,592 estimated seats
	Total	77,168	100.0%	22.8%	-2.27%	
Guyana	Trinidad and Tobago	280,007	82.2%	0.8%	3.6%	Antigua and Jamaica became new connections in 2013, Suriname has been intermittently connected over the years.
	Barbados	35,945	10.6%	-6.3%	-11.6%	
	Jamaica	13,455	4.0%			
	Suriname	9,828	2.9%	0.0%		
	Antigua and Barbuda	1,326	0.4%			
	Total	340,561	100.0%	-0.1%	2.5%	

Source: Authors' calculation based on data by Diio (2014).

Within the Caribbean, Suriname's sole connection is to Trinidad. There was a very brief connection, in 2006, with Sangster International Airport in Montego Bay, Jamaica. The route to Port of Spain, Trinidad is currently being serviced both by Caribbean Airways and Surinam Airways, with Trinidad's Caribbean Airways currently having by the far majority of the capacity. Volumes grew until 2010, and have been in steep decline since (Figure 22).

¹⁶ In order to switch airlines, the passenger would first have to go through immigration, then pick up their luggage, go through customs, and then go to the airline counter in the check-in area to re-check their luggage for the next flight.

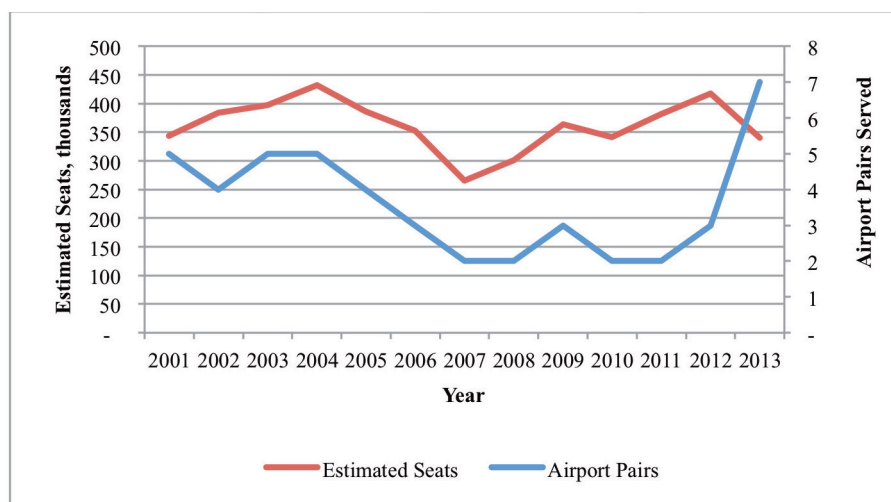
Figure 21: Intra-Regional Traffic for Suriname



Source: Authors' calculation based on data by Diio (2014).

As with Suriname, Guyana connects mainly through Trinidad, though there is also some traffic to Barbados. Caribbean Airlines dominates the Trinidad route, and the much smaller Barbados route is served by LIAT. This rise in airport pairs served from two to seven comes together with low-volume routes that may not remain sustainable. For example, Jamaica with 13,455 seats per route for 2013, Suriname with 9,828 seats per route for 2013, and Antigua with 1,326 seats per route for 2013 are all below the 30k-45k seats/route considered sustainable (Figure 23). The difference in traffic with the rest of the Caribbean can most likely be attributed to language differences: though Guyana is a lower middle income country, and Suriname is upper middle income, there is more traffic between Guyana and the rest of the Caribbean, since most Caribbean countries are English speaking, as is Guyana, while Suriname is Dutch speaking.

Figure 22: Intra-regional traffic for Guyana



Source: Authors' calculation based on data by Diio (2014).

Fragile Caribbean (Haiti)

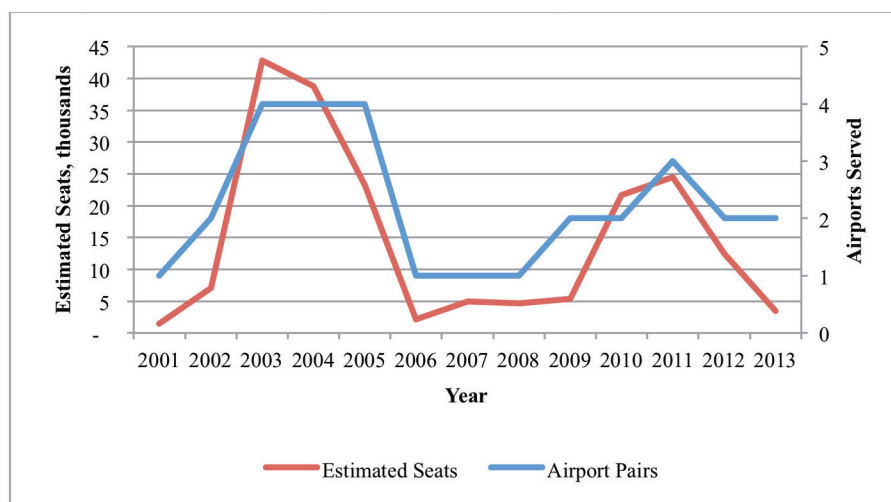
Haiti has very little intra-regional connectivity (Table 15). Traffic has spiked during two significant relief efforts: a series of storms and floods hit Haiti between 2002 and 2006, including Hurricane Ivan, and a significant spike in traffic occurred in 2010 and 2011, after the earthquakes of January, 2010 (Figure 24). The little traffic that exists is with Air Caribe of Guadeloupe between Haiti and Dominica, and with another operator between Haiti and Jamaica.

Table 15: Haiti's Connections within the Caribbean

Country	Seats 2013	Share	Annual Growth 01-13	Annual Growth 08-13
Dominican Republic	2,262	65.9%		-13%
Jamaica	1,170	34.1%	-2%	
Total	3,432	100.0%	7%	-6%

Source: Authors' calculation based on data by Diio (2014).

Figure 23: Haiti's Seat Capacities and Direct Airport Pairs with the Caribbean



Source: Authors' calculation based on data by Diio (2014).

iv. Extra-Regional Routes

Overview

The extra-regional routes are the key suppliers of airlift for the tourism sector in the Caribbean, especially for the island states. Flights are generally direct, without the use of any hubs in the region. The extra-regional capacity of this group has been declining, which may have to do with the success and draw of the resorts and hotels in the larger hub countries, especially Jamaica and the Dominican Republic, which are known for their extensively developed properties. The extra regional capacity of the Small Island States has grown at roughly 1 percent annually over the last 12 years, but growth has reversed recently, with rates of almost minus 4 percent annually since 2008. The rest of the region, comparatively, has grown above 3 percent annually, and even their most recent growth rates, though somewhat lower, has remained positive, even for fragile countries like Haiti (Table 15).

Table 16: Extra-Regional Traffic for the Caribbean Member Countries

Route Type	Typology	Country	Seats 2013	Share	Annual Growth 01-13	Annual Growth 08-13
Extra-Regional Routes	Small Island States	Antigua and Barbuda	575,679		1.6%	-3.2%
		Dominica	64,259		-0.2%	-3.8%
		Grenada	109,096		-0.3%	-3.4%
		St. Kitts and Nevis	227,019		-2.7%	-9.4%
		St. Lucia	591,305		3.1%	-0.6%
		St. Vincent and the Grenadines	No Direct Connections due to Airport Limitations			
		Subtotal	1,567,358		0.9%	-3.6%
	Hub Countries	Bahamas	3,515,369		-2.6%	-3.0%
		Barbados	1,280,344		1.4%	-2.6%
		Dominican Republic	10,473,723		6.6%	6.7%
		Jamaica	4,963,829		3.6%	1.6%
		Trinidad and Tobago	1,329,861		3.5%	-0.8%
			Subtotal		21,563,126	
	Continental Caribbean	Belize	709,787		4.3%	3.2%
		Guyana	94,562		0.3%	3.9%
		Suriname	440,869		3.6%	6.4%
			Subtotal		1,245,218	
	Fragile States	Haiti	1,312,636		3.2%	2.1%
			Subtotal		1,312,636	
		Total		25,688,338	100%	3.0%

Source: Authors' calculation based on data by Diio (2014).

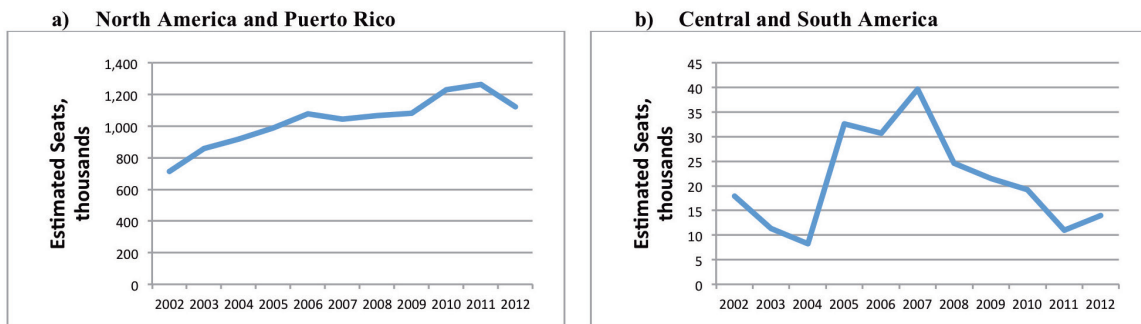
Small Island States

The extra-regional air market of the small island states is dominated by the routes with North America (Canada and the US) with traffic of about 1.2 million seats per year. In a distant second, routes to European destinations (primarily the UK), and to other Caribbean islands generate traffic of about 850 thousand seats each. The most important routes are with London, Miami, and the East Coast of the U.S (Figure 14a). In the next sections the characteristics of these routes will be discussed. Four airports with long runways, namely Antigua, St. Lucia's Hewanorra, St. Kitts, and Grenada, get direct traffic from Europe and North America.

Traffic with the American Continent

North American traffic (including traffic out of San Juan) rose by 43% from 2004 until it suffered a slight decline in 2011 (Figure 25a). As of 2012, about 40% of international travel outside the small island states is either with the U.S. or via San Juan. On the other hand, traffic with Central and South America is orders of magnitude smaller and shows erratic behavior with a clean decline trend after 2007 (Figure 25b). The reasons for the decline are not yet known at the writing of this report; however, it is known that tourism out of South America is relatively undeveloped, and that plans to market some of the small island states in countries like Brazil are now being actively considered. It must also be noted that thinner markets with low volumes are inherently more volatile.

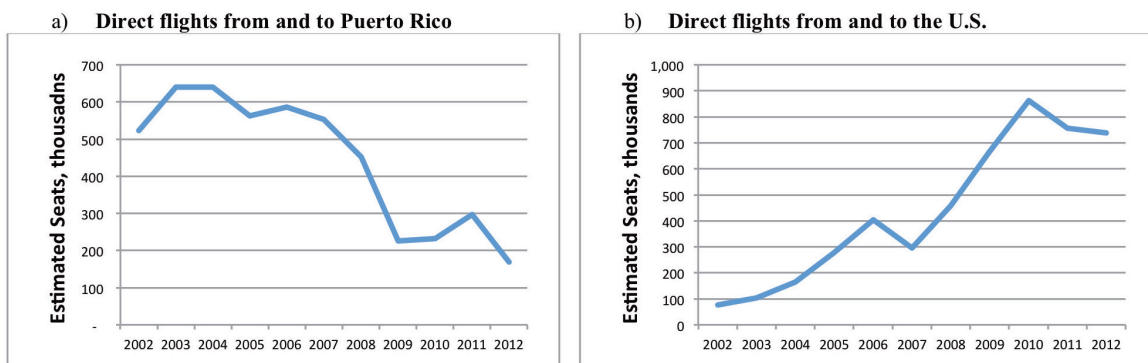
Figure 24: Traffic between the Small Island States and the Americas



Source: Authors' calculations based on data from Diio (2014).

San Juan acts as a gateway to and from North America, being American Airline's primary hub in the region. The hub and spoke system out of San Juan has shown a steady decline and has collapsed with the pulling out of America Eagle by February 2013. This hub will be virtually shut down with American Airline's bankruptcy and related consolidation of operations. American is transferring operations to Miami and other airports. The effect of the decline of San Juan is noticeable in the traffic trends between the continental U.S. and small island states, which has gone up significantly. In other words, the increase in traffic with continental US has been driven mainly by a transfer of operations rather than a pure overall expansion of the market (Figure 15a and Figure 15b).

Figure 25: The San Juan Effect on Small Island States' Air Traffic Patterns



Source: Authors' calculations based on data from Diio (2014).

Note: 2012 data not complete.

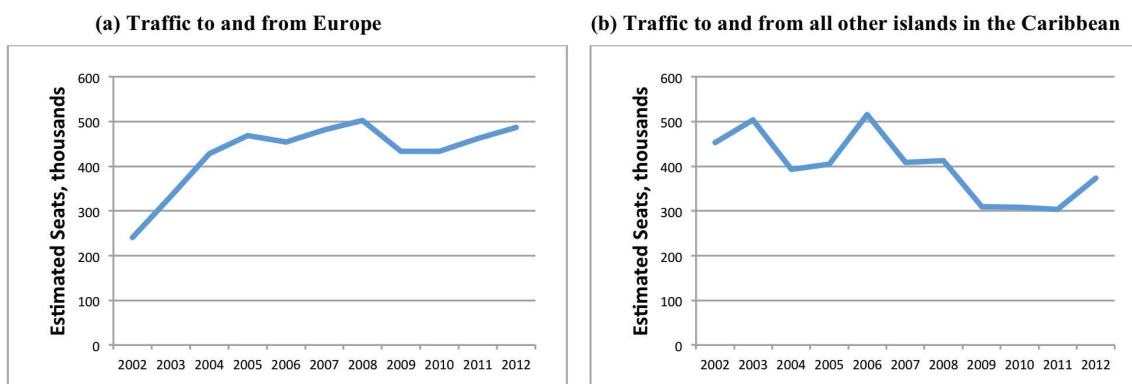
Though there currently is much discomfort in the region with the final shutting down of the San Juan hub, Figure 15a shows that the decline of the hub began long before American Airline's bankruptcy. American Eagle (flying the regional traffic for American Airlines) has now liquidated its ATR 72s, the turboprop aircraft instrumental in serving the shorter runways of the region. This means that airports such as Melville Hall in Dominica and ET Joshua in St. Vincent have lost an important connection. The shutdown occurred February 2013.

Traffic with Europe and other Caribbean Islands

Small island states' traffic with Europe and other Caribbean island are similar in magnitude but trends are significantly different. Despite the impact of the global slowdown and the European crisis, European capacities show a positive trend and have shown solid recovery since the crisis (Figure 27a). About 16% of the seat capacity of the small island states is on direct routes with Europe. The primary routes are with the U.K., dominated by British Airways and Virgin Airlines. Condor provides another link out of Frankfurt, Germany, but at much smaller volumes.

Traffic between the small island states and other Caribbean nations, and tourism from the Caribbean to the small island states, has been in decline, and is, as mentioned in an earlier section, less than 13% of the traffic within the small island states. This is an overall pattern within the small island states: Both tourism and trade with other Caribbean countries has gone down by a reported 30% (Figure 27b).

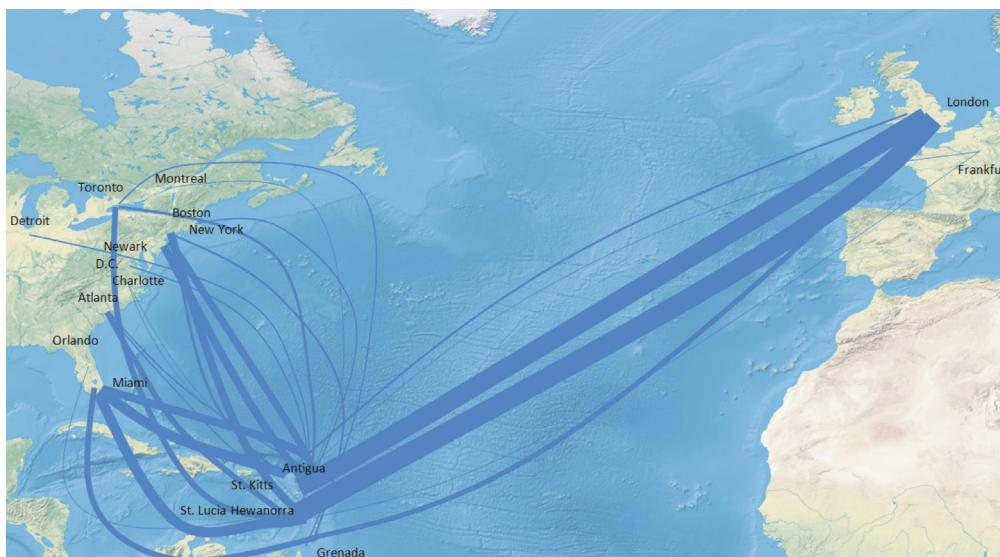
Figure 26: Small Island States' Traffic with non-American Markets



Source: Authors' calculations based on data from Diio (2014).

Note: Puerto Rico is excluded.

Figure 27: The international routes in 2012 for the small island states



Source: Authors' calculations based on data from Diio (2014).

Hub Countries

For the entire group of hub countries, international traffic is generally for their own tourism sector. The success shows a clear size differentiation: the Dominican Republic and Jamaica showed both positive rates of growth in recent years and in the long term, while the smaller islands, including Trinidad, have seen recent declines. None of the islands are engaged in large scale international hub operations involving out-of the region carriers and transferring within the Caribbean.

For three countries, the Bahamas, Jamaica, and the Dominican Republic, the majority of traffic is related to the burgeoning tourism sector. All three islands are large enough to host a variety of tourism attractions, with direct routes from the US, Canada, and Western Europe. Though Figure 10 shows that there may be some hub and spokes operations centered in these countries, they do not affect the network within the Caribbean, since the number of realistic airport pairs served is negligible. Table 17 below shows that though Jamaica's Norman Manley International Airport could possibly serve as a hub for four routes, they do not appear to be realistic, because of the distances involved.¹⁷

Table 17: Possible airport pairs served in the Caribbean with the Bahamas, Dominican Republic, or Jamaica as the transfer point

Non-hub Airport	Possible pairs served (2013)	Possible Route
Jamaica Kingston	4	Barbados – Jamaica – Bahamas Barbados – Jamaica – Haiti Antigua – Jamaica – Haiti Guyana – Jamaica – Bahamas
Jamaica Montego Bay	1	Bahamas – Jamaica – Dominican Republic
Bahamas	0	
Dominican Republic	0	

Source: Authors' calculation based on data by Diio (2014).

¹⁷ Only airport pairs that are not already served with direct flights are included in the calculations, under the assumption that there are no direct connections for the routes shown in Table 17. However, it is possible that these routes are served by other transfer operations, such as Guadeloupe with Haiti (Figure 10).

Continental Caribbean

Belize, Guyana, and Suriname have different profiles in their connections to the world outside the Caribbean. Belize has the highest number of countries it interacts with, although traffic with the U.S. makes up nearly 87% (Table 17). Guyana only shows traffic with the U.S. and Canada, while Suriname's connectivity is with the Netherlands and Curaçao. The differentiation between Guyana and Suriname's extra-regional connections, as with their intra-regional connections, are language based, with Suriname being Dutch speaking, and Guyana English speaking.

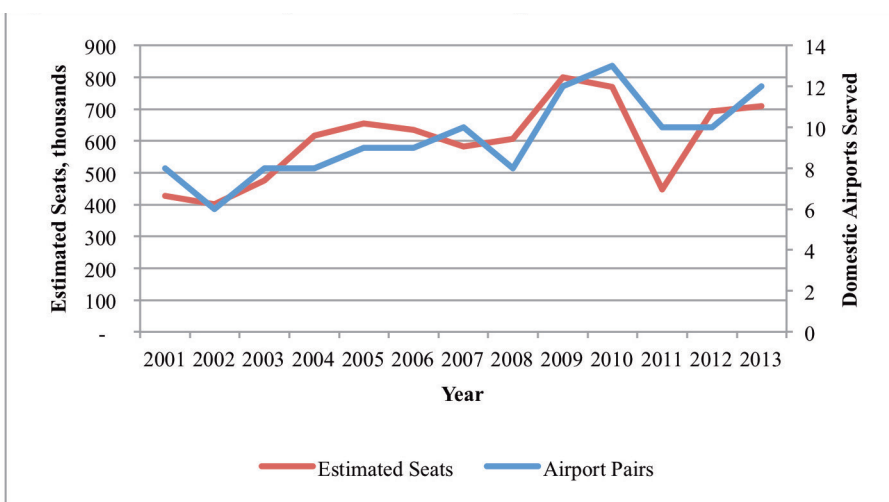
Table 18: Traffic between Belize and the Rest of the World

Country	Est. Seats 2013	Share	Annual Growth 01-13	Annual Growth 08-13
US	614,315	86.5%	4.3%	1.7%
El Salvador	71,136	10.0%	10.7%	16.4%
Honduras	7,618	1.1%		
Guatemala	7,280	1.0%	-11.8%	-3.6%
Cuba	4,758	0.7%		
Mexico	4,680	0.7%	4.6%	
Total	709,787	100.0%	4.3%	3.2%

Source: Authors' calculation based on data by Diio (2014).

Belize's traffic has grown annually in the 4 percent range, with a recent slowdown. The number of airport pairs served follows the actual capacities very closely (Figure 29). Tourism is now becoming a more important part of the economy, which will increase the demand for access. Beyond the US, the next strongest connection is with El Salvador, which has been growing rapidly at an annual growth rate of over 16% between 2008 and 2013 (Table 17).

Figure 28: Belize's Seat Capacities and Direct Airport Pairs with the Rest of the World



Source: Authors' calculation based on data by Diio (2014).

Guyana's connectivity with the outside world in general is very light, with less than 100,000 seats, and only with the U.S. and Canada (Table 18). The bulk of the connectivity is provided by Caribbean Airlines, both into the U.S. and, as of 2013, to Canada.

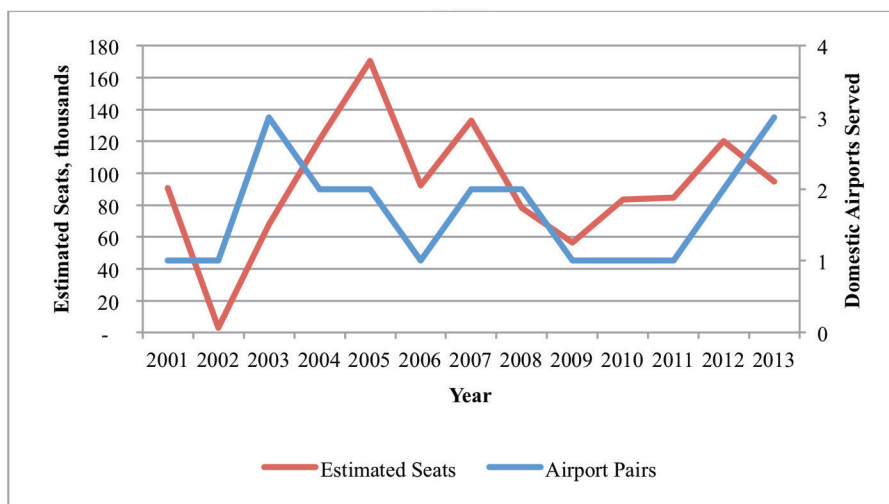
Table 19: Traffic between Guyana and the Rest of the World

Country	Est. Seats 2013	Share	Annual Growth 01-13	Annual Growth 08-13
US	72,436	76.6%	-1.9%	3.7%
Canada	22,126	23.4%		4.5%
Total	94,562		0.3%	3.9%

Source: Authors' calculation based on data by Diio (2014).

Except for Delta Airlines, which introduced service to the Guyana in 2008, no other traditional airline from the U.S. is servicing Guyana. The competition between Delta and Caribbean airlines seems to be very strong: Delta grew its capacity from 39,000 seats in 2008 to 88,000 in 2012, while Caribbean Airlines also grew their capacity from 28,000 to 64,000 seats in the same period. However, in 2013 while Caribbean has been building capacity to nearly 100,000 seats on the U.S. route, Delta has reduced its capacity to below 20,000. This interplay has created a dip in overall capacity, just as Caribbean Air added connectivity to Canada in 2013 (Figure 30).

Figure 29: Guyana's Seat Capacities and Direct Airport Pairs with the Rest of the World



Source: Authors' calculation based on data by Diio (2014).

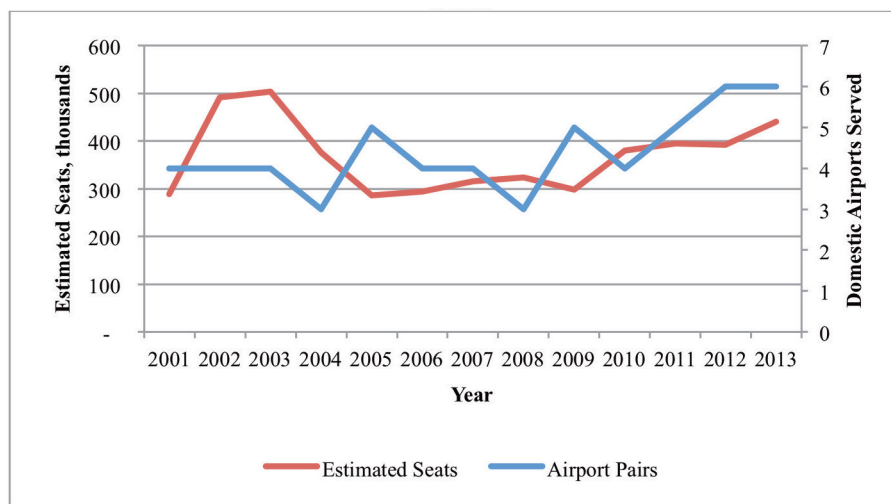
Suriname has experienced some recent growth in air traffic, in excess of 6 percent annually since 2000, due to one route with Curaçao, which has grown by a phenomenally high 37.6% annually between 2008 and 2013 (Table 19). The route with Brazil has been growing at 11.1% annually since 2008 (the route started in 2005, and the longer term growth rate has been very high at 14.9% annually). The route with French Guyana has been intermittent, with no service reported in 2008, or between 2010 and 2011.

Table 20: Traffic between Suriname and the Rest of the World

Country	Est. Seats 2013	Share	Annual Growth 01-13	Annual Growth 08-13
Netherlands	289,172	65.6%	3.2%	0.3%
Curaçao	96,824	22.0%	6.1%	37.6%
Brazil	32,760	7.4%		11.1%
Aruba	13,377	3.0%		
French Guiana	8,736	2.0%	-6.0%	
Total	440,869	100.0%	3.6%	6.4%

Source: Authors' calculation based on data by Diio (2014).

Figure 30: Suriname's Seat Capacity and Direct Airport Pairs with the Rest of the World



Source: Authors' calculation based on data by Diio (2014).

Fragile Caribbean (Haiti)

Haiti's connectivity with the rest of the world is focused primarily on the U.S. and on the Caribbean overall. There has been surprisingly steady growth since 2005, despite the fragile state of the country. Long term growth rates have been over 3 percent annually (Table 21). The majority of Haitian diaspora reside in the New York City area, and in the Miami area, which are also the airport pairs carrying 79% of the international passengers flowing traveling in and out of Haiti, which may explain some of the growth. However, the two spikes in growth between 2002 and 2004, and between 2010 and 2012, are most likely disaster-relief related, as those dates coincide with a major flooding incident in 2002, and the earthquake of 2010.

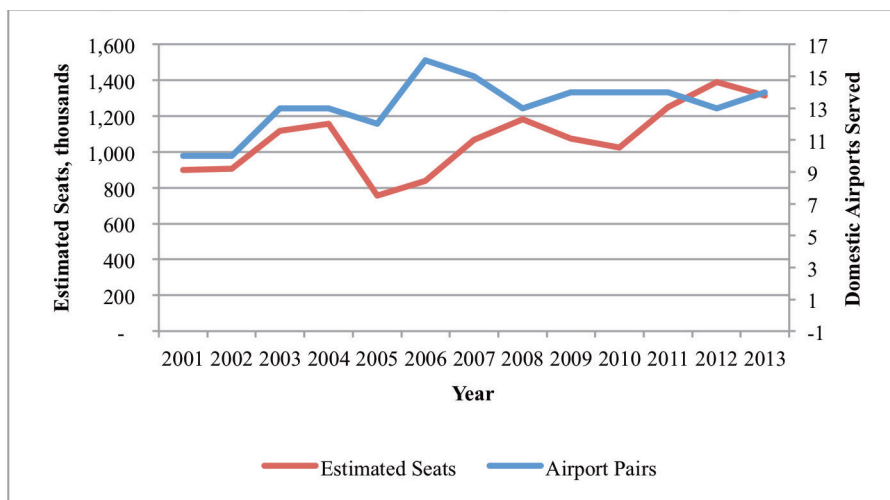
Table 21: Extra-regional Traffic with Haiti

Country	Est. Seats 2013	Share	Annual Growth 01-13	Annual Growth 08-13
US	1,130,233	86.1%	3.3%	1.4%
Panama	42,380	3.2%	5.0%	10.4%
Guadeloupe	40,469	3.1%	6.8%	7.4%
Curaçao	23,400	1.8%	-2.4%	77.6%
Turks And Caicos Islands	22,308	1.7%	-0.7%	-8.1%
Canada	21,944	1.7%	-0.8%	2.6%
Cuba	14,352	1.1%	8.5%	13.1%
Sint Maarten	10,608	0.8%		-2.2%
France	6,942	0.5%		
Total	1,312,636	100.0%	3.2%	2.1%

Source: Authors' calculation based on data by Diio (2014).

The number of airport pairs being served has oscillated between 13 and 16 since 2003 (Figure 32). The most predominant three airlines serving Haiti are from the US, with American Airlines holding a 56.6% share, Delta Airlines 11.0 percent, and the more recent Spirit airline (since 2007) 6.8%. In spite of the strong linguistic connection, Air France, at 4.7% of the market share, has only a minor market share compared to the 74.4% share held by the U.S. carriers.

Figure 31: Haiti's extra-regional Seat Capacities and Direct Airport Pairs



Source: Authors' calculation based on data by Diio (2014).

Haiti has only one airport pair per country served for the most part, with the exception of the U.S.A. (5 airport pairs), and the Turks and Caicos Islands (2 airport pairs, Table 21).

Table 22: Haiti's airport pairs with the U.S. and Turks and Caicos Islands

Country	Paired via	Seats
U.S.A	Miami	563,303
	Ft. Lauderdale	258,310
	JKF International	255,346
	Newark International	28,574
	Atlanta Hartsfield International	24,700
	Total	1,130,233
Turks And Caicos Islands	Providenciales Intl from Cap Haitien	18,850
	Providenciales Intl from Mais Gate	3,458
	Total	22,308

Source: Authors' calculation based on data by Diio (2014).

Competition

The three route networks within the Caribbean are structured very differently: domestic connectivity, as would be expected, is very concentrated with a small number of carriers, with the Bahamas, with three carriers, having the highest number, and Trinidad having the flag carrier, Caribbean Airlines, service Trinidad's only domestic route.

The intra-regional network, with more connections, also has a higher number of carriers.

Overall, the direct connections with extra-regional routes show a much higher number of carriers, coming from different regions. This is particularly pronounced in the tourist-attracting countries with the noticeable exceptions of Dominica and Grenada. Dominica can be explained by its short runway, which limits flights to smaller turboprop aircraft (in fact, St. Vincent, with the most limited runway, has no outside direct flights). Grenada, however, is a distinct exception: The Island has some very well developed tourism resorts, and has excellent runway and terminal capacities. However, it is also the southernmost island, and therefore the furthest to reach. This may limit the number of carriers flying directly into the island, especially with Trinidad close by, which may be acting as a gateway to Grenada (the traffic between Trinidad and Grenada is relatively heavy, as seen in Figure 21).

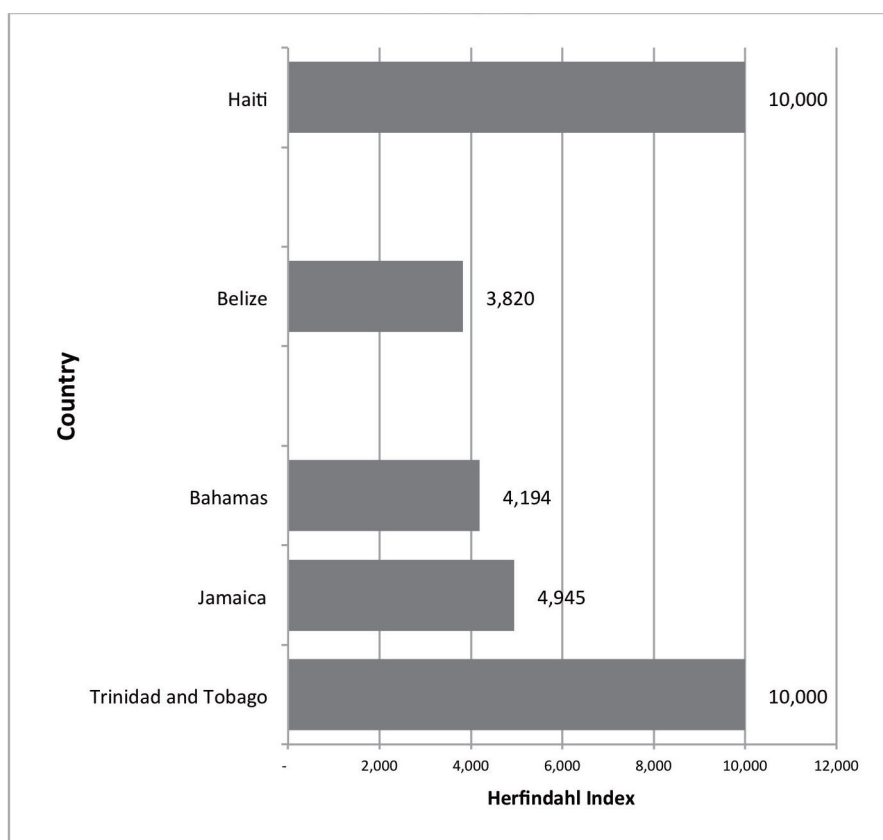
Table 23: Annual Seat Capacity and Number of Carriers in the Caribbean

Country	Domestic		Intra-Regional		Extra-Regional	
	Seats 2013	Carriers	Seats 2013	Carriers	Seats 2013	Carriers
Small Island States						
Antigua and Barbuda	none		135,538	3	649,402	17
Dominica	none		78,481	1	64,259	5
Grenada	none		174,226	4	132,548	6
St. Kitts and Nevis	none		26,520	1	260,286	12
St. Lucia	none		152,217	4	677,521	14
St. Vincent and the Grenadines	none		122,642	1		
Hub Countries						
Bahamas	1,503,918	3	19,032	2	3,515,369	20
Barbados	none		409,279	3	1,280,344	13
Dominican Republic	none		26,273	4	10,473,723	47
Jamaica	156,442	2	68,315	5	4,963,829	31
Trinidad and Tobago	966,732	1	713,882	5	1,329,861	11
Continental Caribbean						
Belize	379,223	2			709,787	9
Guyana	none		340,561	4	94,562	4
Suriname	none		86,996	2	440,869	4
Fragile Caribbean						
Haiti	35,321	2	3,432	2	1,312,636	14

Source: Authors' calculations on data provided by Diio (2014).

Since the three networks (domestic, within the Caribbean, and with the rest of the world) represent three very different markets, with very different service profiles, the competition presented in each market is very different. Market concentration can be measured with the Herfindahl-Hirschman index (HH), which ranges from 0 to 10,000, with 10,000 representing a monopoly¹⁸. Applying the index to the domestic markets (Figure 34), monopolies can be found in Haiti¹⁹ and Trinidad & Tobago. The lack of competition in the latter can be explained as a result of there being only one airport pair being served, and having a strong national airline. Belize, the Bahamas, and Jamaica appear more competitive. In this case the reason may well be the much higher number of routes being served: Jamaica has a total of three domestic routes, the Bahamas 23, and Belize 29. Although these are not monopolies, the HH values still indicate highly concentrated markets: the U.S. Department of Commerce defines all values between 1,000 and 1,800 as moderately concentrated, and at 1,800 or above as highly concentrated.

Figure 32: Herfindahl-Hirschman Index for domestic air travel in the Caribbean countries (2013)



Source: Authors' calculation based on data by Diio (2014).

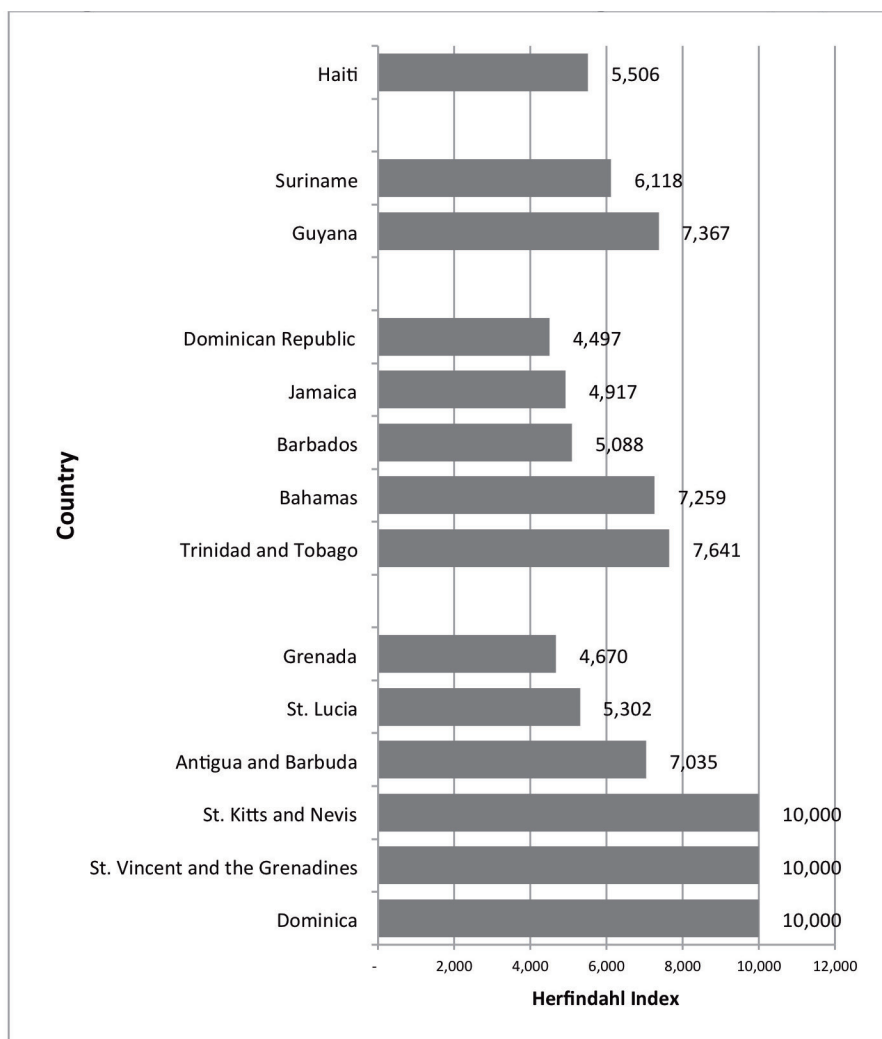
The intra-regional market is also highly concentrated, and shows three monopolies, with LIAT, in St. Kitts & Nevis, St. Vincent & the Grenadines and Dominica (Figure 24). In two cases these are perhaps state mandated through bilateral agreements, since St. Vincent has an important ownership stake in LIAT, and Dominica has also just invested. This theory is supported by the fact that Caribbean Airlines also has turboprop aircraft that could easily fly into Dominica and St. Kitts, though not perhaps into St. Vincent, yet the airline does not as per 2013 scheduling data.

¹⁸ The Herfindahl-Hirschman index is a measure of market concentration expressed as

$$HH = \sum \left(\left(\frac{\text{market portion}_i}{\text{total market}} \right) \times 100 \right)^2 \text{ and is applied here using } HH = \sum \left(\left(\frac{\text{shipping line TEU}_i}{\text{total port TEU}} \right) \times 100 \right)^2.$$

¹⁹ Haiti does have a small airline not currently reflected in the scheduling dataset, Tortug' Air.

Figure 33: Herfindahl-Hirschman Index for intra-regional air travel (2013)

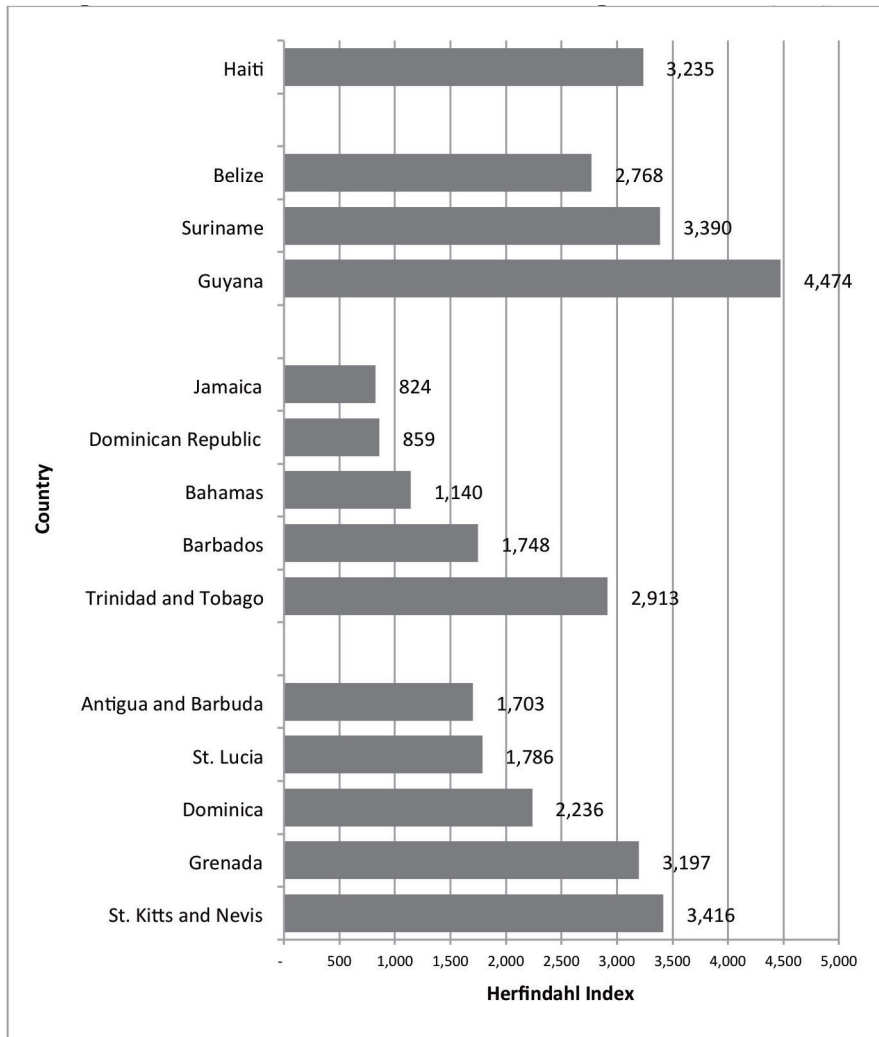


Source: Authors' calculation based on data by Diio (2014).

Market concentration in the extra-regional market with the Caribbean takes on a more complex and nuanced dimension (Figure 34). The largest tourist markets, the Dominican Republic, Jamaica, and the Bahamas, show by far the lowest concentration, with Jamaica and the Dominican Republic being in the fully competitive range of the scale, and the Bahamas on the bottom side of being moderately concentrated. Two airlines have a market share of more than 20% in Barbados: American Airlines and Virgin Atlantic.

The more concentrated markets (HH above 1,800), are all due to one airline having a market share of 40% or above. The higher level of concentration in Grenada and St. Kitts can be traced to the fact that in both markets American Airlines holds a share of 50% or higher – the only markets on the small island states where any airline plays such a dominant role. Haiti is also dominated by American Airlines (55%). In the other three highly concentrated markets, Caribbean Airlines has the largest market share in Trinidad & Tobago and Guyana, while Suriname Airways holds the largest share in Suriname (Box 3).

Figure 34: Herfindahl-Hirschman Index for extra-regional air travel (2013)



Source: Authors' calculation based on data by Diio (2014).

Box 3: What could be driving the HH Concentration in Traffic of Extra-regional Routes?

An initial assumption that is often stated is that outside airline traffic is mainly driven by tourism. One method for testing for this is by examining the relationship between hotel rooms and airline seats, which show a nearly linear relationship, and carry a correlation of 0.983 (Figure 35a).

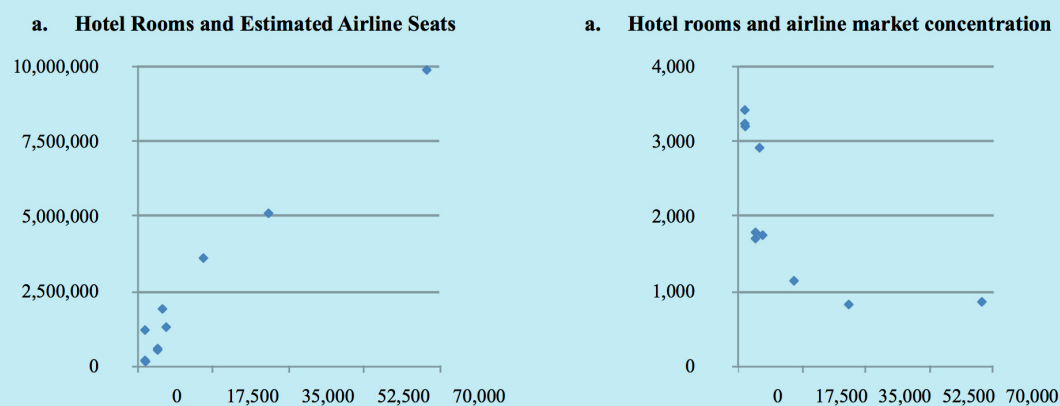
Two important items must be noted concerning hotels and air transport development:

- Stay-over tourism is the type of tourism that brings the largest benefits to the economy of the islands. It is fully contingent upon the availability of proper hotel infrastructure that takes some lead to time to develop
- The almost linear relationship between the hotel rooms and estimated seats also indicates that the best predictor of the air passenger demand is the installed and functional hotel capacity.

A scatter graph of hotel rooms and market concentration of air services in the hands of airlines (measured by the HH Index) yields a distinct hyperbolic curve suggesting that competition among airlines is related to the draw hotel rooms provide for tourism (Figure 1b). This relationship leads very quickly to a series of market distortions. The concentrated/captured market will quickly lead to bundled packages that might, as in the case of OECS, create pressure for subsidies.

This suggests that concentration in air transport with the outside world is directly related to the development and size of the overall stay-over tourism sector in the given island.

Figure 35: The relationship between the hotel industry and air transport in the Caribbean



Source: Author's calculations on data provided by Diio (2014).

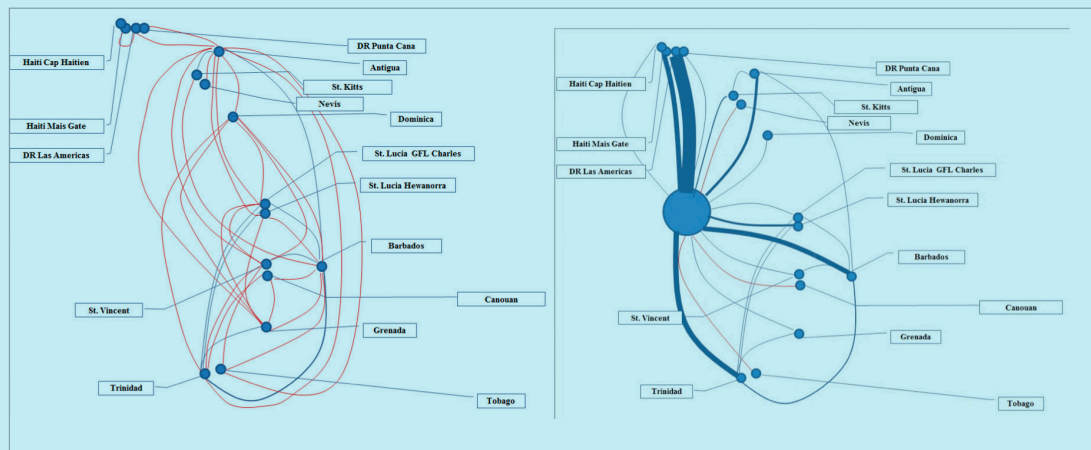
Box 4: Sustainable Routes in the Caribbean

The small island states in the Caribbean face a significant challenge both in their inter-island network as well as in how they connect to the outside world: many routes do not carry load factors high enough to be sustainable without subsidies. As a result, small island states tend to subsidize many non-sustainable routes. Routes feeding from the UK and USA to St. Lucia, for example, either have guaranteed revenue agreements or marketing agreements that governments and airlines negotiate.

Despite of unsustainability of many routes, the trend in many Caribbean islands is towards each having their own international airport on each island. In the OECS, for instance, St. Vincent is currently building its Argyle International airport, and Dominica is considering a larger airport.

Hypothetically, by feeding all of the flights from outside the Caribbean into a single hub, nearly all routes from the outside could become fully sustainable (Figure 37) removing the need for longer runways and subsidies. The passengers would then be flown to their final destination on the inter-Caribbean network, pooled with other inter-Caribbean traffic, therefore making almost all routes on the inter-Caribbean network sustainable.

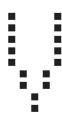
Figure 36: Before and after effect on the CGF inter-island air routes with the introduction of a central hub combining outside and within the islands airlift



Source: Authors' calculations based on data from Diio (2014).

With this hypothetical aggregation, the region could cut the number of routes from the outside by more than half, from 263 to 101, and could cut inter-island routes from 36 to 16 while leaving currently sustainable direct inter-island routes untouched.

However, several factors impede such an approach. First of all, the hub would need to be large enough to handle six million passengers or more, and would require substantial infrastructure investments. Second, there are already very large sunk costs in the current airport system, and many of these airports are also very important access points for disaster relief. Third, passengers would rather fly direct than go through a hub. Fourth, regional agreements are difficult to implement in practice.



MARITIME CONNECTIVITY: PASSENGERS

Key Messages

- Passenger traffic is of two types: domestic passenger traffic, predominantly done by ferry transportation, and tourist passenger traffic, captured by the international cruise industry.
- Ferry travel is a preferred way of traveling for residents in the Caribbean who want to get between islands in a cheaper way than by air travel. The main competitors for ferry companies are regional airlines, and to a lesser extent informal operators of small boats or water taxis
- The ferry market is not fully developed. Ferry schedules can be limited and erratic with rough crossings and delays. This represents an opportunity for the countries and the private sector to develop ferry services even further.
- More than half of the Caribbean ferry traffic is domestic. Antigua, Grenada, and Trinidad and Tobago have only one operator providing services between two islands within the same country. St. Kitts is the only country that has 3 operators providing a service for the same route. Bahamas and St. Vincent and the Grenadines are the only two countries comprised of a chain of islands providing a domestic service. Intra-regional traffic comprises only 4 percent of the total traffic, with the only route being between Suriname and Guyana: with only one vessel operating, the Canawaima Ferry provides 208 trips a year. St. Lucia, Dominica and the Dominican Republic are the only countries with extra-regional ferry traffic, comprising 30 percent of the total traffic. Saint Lucia and Dominica provide services to Martinique and Guadeloupe. The Dominican Republic has two routes to Puerto Rico, the only ferry that provides an overnight service.
- For most private operators fuel and maintenance costs represent a significant amount of their total costs and require subsidies. Initial investment costs are high and market penetration is slow. It takes approximately 2 years for passengers to start using the service.
- Caribbean hubs have relatively low ferry tariffs, while the tariffs of the small island states range up to three times as high as those of the hubs and continental countries.
- The Caribbean cruise industry has shown substantial growth, typically growing faster than the stay-over arrivals for most of the countries.
- The cruise ship industry fosters a very spontaneous economy around the cruise terminal area, which is usually located in the downtown area of the main city. However, in terms of infrastructure, some of the Caribbean ports –and even some of the cities – are not developed enough to satisfy the capacity and the potential demand for cruise ships.
- The cruise industry is generally thought to be economically beneficial for embarkation ports and ports of call in the Caribbean. However, it is becoming detrimental in some cases, as cruise lines often try to play destinations against each other to spur the development of bigger and better port infrastructure and amenities for its passengers-often using local public funding at no cost to the cruise lines.

There are two types of maritime passenger traffic within the Caribbean, namely domestic passenger traffic, predominantly done by ferry transportation, and tourist passenger traffic, captured by the international cruise industry. Over the last decade, cruise ship tourism has shown strong growth. Securing regular, sustainable access on regular basis and at affordable rates to this type of traffic is fundamental to the islands' tourist economies.

Ferry Transportation

Flying is too costly for many islanders in the Caribbean. Therefore, sea voyage is the preferred way of traveling for residents who want to get through the islands in a cheaper fashion. Some of the ferry routes are ideal for a one day trip, particularly as departures tend to be early in the morning. However, ferry schedules can be limited and erratic and crossings are rough, with delays. Immigration rules, luggage limits, and departure taxes may apply to the voyage, and sometimes the only way to pay for the ticket is in cash. Barbados, Belize, Jamaica, and Haiti do not have a ferry service at all.

There is thus a considerable potential for growth in ferry transport, if these problems can be resolved, and the consequent lack of habit of taking a ferry overcome. The potential for expansion of the ferry market is particularly strong for inter-island services. Most of the operators only provide domestic services. Since there is not enough demand, the business is not profitable for ferry operators. They have a difficult time covering their costs due fuel and maintenance costs. Therefore, in order to stay in business, some of the operators have reduced the number trips and charge high rates. All these factors, plus delays in immigration, are pushing locals to take a plane between islands, despite the higher prices.

i. Market Structure

Most ferry operators in the Caribbean are privately owned. The only operators that are public are the Canawaima Ferry that provides services to Guyana and Suriname and the Trinidad and Tobago Inter-Island Transportation Company. In the case of the private operators, even though the service is private, the facilities are provided by the ports and in all cases the port collects fees. For example, in St. Kitts and Nevis, the port collects a US\$1 fee per passenger. In order to operate, all private operators are required to obtain a ship registration established and provided by the respective Port Authority.

Public and private operators of Trinidad and Tobago, and St. Vincent and the Grenadines receive subsidies. In St. Vincent, the government started providing tax concessions on fuel and access to low interest financing for reinvestments. The rest of the operators recover costs via tariffs (Table 24).

The Bahamas has the highest number of vessels operating in the Caribbean (Table 24). This is mostly because Bahamas is comprised of 700 islands. The main two ferry companies are Bahamas Ferries and Albury's Ferry connecting the main islands with the smaller ones in the country.

At the market level, the main competitors for ferry companies are the regional airlines, and, to a lesser extent, informal operators of small boats or water taxis. Rarely do ferry companies engage in service bundling with airlines, an area in which there is an enormous potential for cargo shipping. As a consequence, airlines are also seen as competitors rather than partners.

At the ferry route level, only St. Vincent and the Grenadines, and St. Kitts have some level of competition. There are two operators providing service on the route St. Vincent- Bequia, and 3 operators in the route St. Kitts-Nevis.

Table 24: Market Structure of Ferry Operators

Country	Operator	Ownership	Subsidies (Yes/No)	Number of Vessels Operating	Type of Service
Caribbean Hubs					
The Bahamas	Bahamas Ferries	Private	No	3	Domestic
	Albury's Ferry	Private	No	12	Domestic
Dominican Republic	America Cruise Ferries	Private	No	1	Intra-Regional
Trinidad and Tobago	Trinidad and Tobago Inter-Island Transportation Company (TTIT)	Public	Yes	3	Domestic
Continental CFG					
Guyana	Canawaima Ferry	Public	-	1	Intra-Regional
Suriname	Canawaima Ferry	Public	-	1	Intra-Regional
Small Island States					
Antigua and Barbuda	Barbuda Express	Private	No	1	Domestic
Dominica	L'Express des Iles	Private	No	2	Intra-Regional
Grenada	Osprey Lines Ltd.	Private	No	2	Domestic
St. Kitts and Nevis	M&M Transportation	Private	No	3	Domestic
	Wesk Agency Ltd	Private	No	2	Domestic
	F & F Transportation	Private	No	1	Domestic
St. Lucia	L'Express des Iles	Private	Yes	2	Intra-Regional
St. Vincent and the Grenadines	Admiralty Transport	Private	Yes	1	Domestic
	Jaden Inc	Private	Yes	1	Domestic
	Bequia Express	Private	Yes	1	Domestic
	MV Barracuda	Private	Yes	1	Domestic
	MV Gemstar	Private	Yes	1	Domestic

Source: Authors' compilation based on interviews and through various other sources, including ferries' web sites.

ii. Routes

Ferry services are particularly relevant in multi-islands states for domestic traffic, such as Bahamas, Antigua and Barbuda, St. Kitts and Nevis, St. Vincent and the Grenadines, and Trinidad and Tobago. Many of the large countries, such as Dominican Republic, Guyana and Suriname have explored the potential for international routes.

Not all islands in the Caribbean have a ferry service since some of them are just comprised of one large land mass. This makes travel by ferry less necessary than among nations made up of island chains. Caribbean islands that don't have a ferry service are Barbados, Belize, Haiti and Jamaica. However, although these countries don't have a main ferry service, they usually have water taxis to transport passengers from one part of the island to another.

Domestic Routes

Most of the ferry services in the Caribbean are domestic. Antigua, Grenada, and Trinidad and Tobago have only one operator providing the services between two islands within the same country. Antigua provides approximately 624 trips to Barbuda at a distance of 28 Nautical Miles (Table 25). In Antigua and Barbuda, one of the main constraints for passengers is the rough seas, making the trip longer and unpleasant. The distance between Trinidad and Tobago is 90 Nautical miles and there is one operator serving the route with 1,600 trips a year. In Trinidad and Tobago, the ferry service provides strong competition to the regional airlines.

The Osprey ferry operator connects the main island of St. George's with Carriacou and Petite Martinique. There are more trips serving the St. Georges-Petite Martinique route, with 1,040 annual trips, than the St. George's- Carriacou route with only 728 trips annually. This may be due in part to the shorter distance (8 nautical miles) from St. George's to Petite Martinique.

St. Kitts is the only country that has 3 operators providing a service for the same route, between St. Kitts and Nevis. An advantage for passengers of this route is that the path is between islands so the water is not too rough compared to an open seas path like in other routes. Also the distance of 11 nautical miles is relatively short. Another advantage of the St. Kitts and Nevis route is that there is price collusion among all ferry operators.

Bahamas and St. Vincent and the Grenadines are the only two countries comprised of a chain of islands. In Bahamas the two main ferries connect the largest cities within the Bahamas with an average of 1,500 trips annually. Aside from the two Bahamas Ferries and Albury's Ferry there are several small companies or individual boat owners providing services to the smaller islands.

In St. Vincent, the distance between the islands is 8 nautical miles. However, Bequia Express operator provides more trips (2,000) than Admiralty transport operator (1,700). For the rest of the routes to Union Island, Mayreau and Canouan there is only one operator for each route with an average annual service of 1,200 trips.

Table 25. Domestic Ferry Routes

Route				Characteristics			
Country 1	City 1	Country 2	City 2	Frequency of Service (Annually)	Distance (NM)	No. Operators per Route	One-way Tariff USD
Antigua and Barbuda	Antigua	Antigua and Barbuda	Barbuda	624	28	1	48
Bahamas	Abaco	Bahamas	Great Guana Cay	3,080	8		17
			Elbow Cay	5,260	5		
			Man-O-War Cay	4,004			
			Scotland Cay	1,540	6		
	Scotland Cay		Great Guana Cay		2		68
	Nassau		St. Georges Cay	624	44		
	St. Georges Cay		Harbour Island		15		
	Nassau		North Eleuthera	104	43		53
	North Eleuthera		St. Georges Cay		37		
	St. Georges Cay		Current Eleuthera		21		
	Current Eleuthera		Nassau	208	32		
	Nassau		Abaco		74		
	Abaco		Freeport		60		
	Nassau		Great Exuma	104	131		53
			Governor's Harbour Eleuthera		57		
			Andros, French Creek	312	42		
			Current Eleuthera	208	32		
Grenada	St. George's	Grenada	Carriacou	728	34	3	80
	Carriacou		Petite Martinique	1,040	8		
Saint Kitts and Nevis	St. Kitts	Saint Kitts and Nevis	Nevis	5,304	11	2	15
St. Vincent and the Grenadines	Kingstown	St. Vincent and the Grenadines	Bequia	1,768	8	1	9
				2,080			
			Union Island	1,248	35		
			Mayreau		42		
	Canouan		36		11		
Trinidad and Tobago	Port of Spain	Trinidad and Tobago	Scarborough	1,560	90		8

Source: Authors' compilation based on interviews.

Intra-Regional Routes

The only intra-regional route is between Suriname and Guyana. The distance between the two countries is 150 nautical miles. The Canawaima Ferry is the only operator providing this. With only one vessel operating, Canawaima Ferry provides 208 trips in a year (Table 26).

Table 26. Intra-Regional Ferry Routes

Route				Characteristics			
Country 1	City 1	Country 2	City 2	Frequency of Service (Annually)	Distance (NM)	No. Operators per Route	One-way Tariff USD
Guyana	Muleson Creek	Suriname	South Drain	208	150	1	15
Suriname	South Drain	Guyana	Muleson Creek (Guyana)				

Source: Authors' compilation based on interviews.

Extra-Regional Routes

Within the extra- regional route, both Saint Lucia and Dominica provide services to Martinique and Guadeloupe. The route consists on one day trip. It originates in Guadeloupe going to St. Lucia, then Martinique and then going back up stopping in each country until it arrives to origin port in Guadeloupe. There is only one ferry operator, L'Express Des Iles providing this service with approximately 936 trips per year (Table 27).

In the case of Dominican Republic, the America Cruise Ferry has two routes. One route is from Santo Domingo to San Juan, Puerto Rico. The distance for this route is 252 nautical miles. The second is a shorter route from Santo Domingo to Mayaguez in Puerto Rico with a distance of 165 nautical miles. Both routes have an annual service of approximately 208 trips a year.

Table 27: Extra-Regional Ferry Routes

Route				Characteristics			
Country 1	City 1	Country 2	City 2	Frequency of Service (Annually)	Distance (NM)	No. Operators per Route	One-way Tariff US\$
Dominica	Roseau	St. Lucia	Castries	936	80	1	109
		Martinique	Fort-de-France		45		
		Guadeloupe	Guadeloupe		54		
Dominican Republic	Santo Domingo	Puerto Rico	San Juan	208	252		112
			Mayaguez		165		
St. Lucia	Castries	Martinique	Martinique	936	36		109
		Guadeloupe	Guadeloupe		135		
		Dominica	Roseau		81		

Source: Authors' compilation based on interviews.

iii. Ferry Traffic Overview

Ferries within the Caribbean vary widely in vessel type and capacities, depending specific economic, navigation, and/or physical circumstances. Most of the vessels are reportedly fully equipped with a stocked snack bar. Some of the bigger vessels are reported to have vending machines, an in-house DVD entertainment system, comfortable handicap accessible seats, large overhead compartments for hand luggage, an air-conditioned deck and a sun deck. In the case of the America Cruise Ferry that provides services between Dominican Republic and Puerto, the ferry is much bigger and sophisticated ship. Since it is an overnight service, the ship also has different types of suites for passengers to sleep in, several restaurants, a store and bars.

Currently ferry service in the Caribbean is scattered in niche markets and usually local, mainly to connect islands within the same country. More than half of the Caribbean traffic is concentrated in domestic traffic, representing 66 percent of the total ferry traffic (Table 28). Most of the domestic traffic comes from Trinidad and Tobago, concentrating 31 percent of the total domestic traffic. The intra-regional traffic comprises only 4 percent of the total traffic. The only intra-regional traffic within the Caribbean countries is between Guyana and Suriname, with only 400 seats of the total traffic. With 30 percent of the total traffic, extra-regional traffic is concentrated in very few countries: Dominica, St. Lucia and Dominican Republic.

Table 28: Ferry Traffic Overview per Market

Market	Estimated Seats	Share (%)
Domestic	5,887	66
Intra-Regional	400	4
Extra-Regional	2,644	30
Total	8,931	100

Source: Authors' compilation based on interviews.

When looking at the traffic per Caribbean country group, 48 percent of the total traffic is concentrated in the hubs. Trinidad and Tobago concentrates 20 percent of the Caribbean Hub market (Table 29). With only one ferry company operating 3 vessels, Trinidad moves approximately 1,039,119 passengers a year. Although Dominican Republic has extra-regional ferry services, this service has only 2 routes and 1 vessel for each route. Furthermore, they do not provide the service on a daily basis.

Traffic in the Continental Caribbean between Suriname and Guyana only represents 4 percent of the total ferry traffic (Table 29). The Canawaima ferry moves approximately 72,000 passengers annually between Guyana and Suriname. The ferry is considered to be essential for trade and tourism and has reinforced bilateral trade relations between the two countries (Kaiteurnewsonline, 2013).

The small island states comprise 47 percent of the total ferry passenger traffic, mostly concentrated between St. Kitts and Nevis and St. Vincent and the Grenadines. In St Kitts and Nevis, there are 4 ferry operators traveling this route, concentrating 12 percent of the total small island states' routes. Since there is more than one operator traveling the same route, passengers have more options, and are this more likely to consider the ferry service as the main way for travel between islands. St. Vincent and the Grenadines concentrates 14 percent of the total small island states' market. Although the ferry service is a domestic service, St. Vincent and the Grenadines is comprised of several islands and there are 5 operators connecting the St. Vincent with the main Grenadines islands of Bequia, Union Island, Canouan, and Mayreau.

Antigua represents only 6 percent of the ferry market of the small island states market and 1 percent of the total Caribbean passenger traffic. The Barbuda Express ferry is the only ferry operator providing domestic services between Antigua and Barbuda, with a 60 seat capacity that moves approximately 500 passengers annually. One reason for this low capacity is that their main passengers are locals and the population of Barbuda is only 1,500. Although Antigua has a small market, the ferry operator is profitable since it is the only operator providing ferry service in the country.

Table 29: Ferry Traffic Overview by Caribbean Country Group

Country	Estimated Seats	Share (%)	Share of Categories (%)
Caribbean Hubs			
The Bahamas	1,440	16	34
Dominican Republic	1,050	12	34
Trinidad and Tobago	1,800	20	42
Subtotal	4,290	48	100
Continental Caribbean			
Guyana	200	2	50
Suriname	200	2	50
Subtotal	400	4	100
Small Island States			
Antigua and Barbuda	60	1	1
Dominica	797	9	19
Grenada	320	4	8
St. Kitts and Nevis	1,039	12	24
St. Lucia	797	9	19
St. Vincent and the Grenadines	1,228	14	29
Subtotal	4,241	47	100
Total	8,931	100	

Source: Authors' compilation based on interviews.

iv. Tariffs

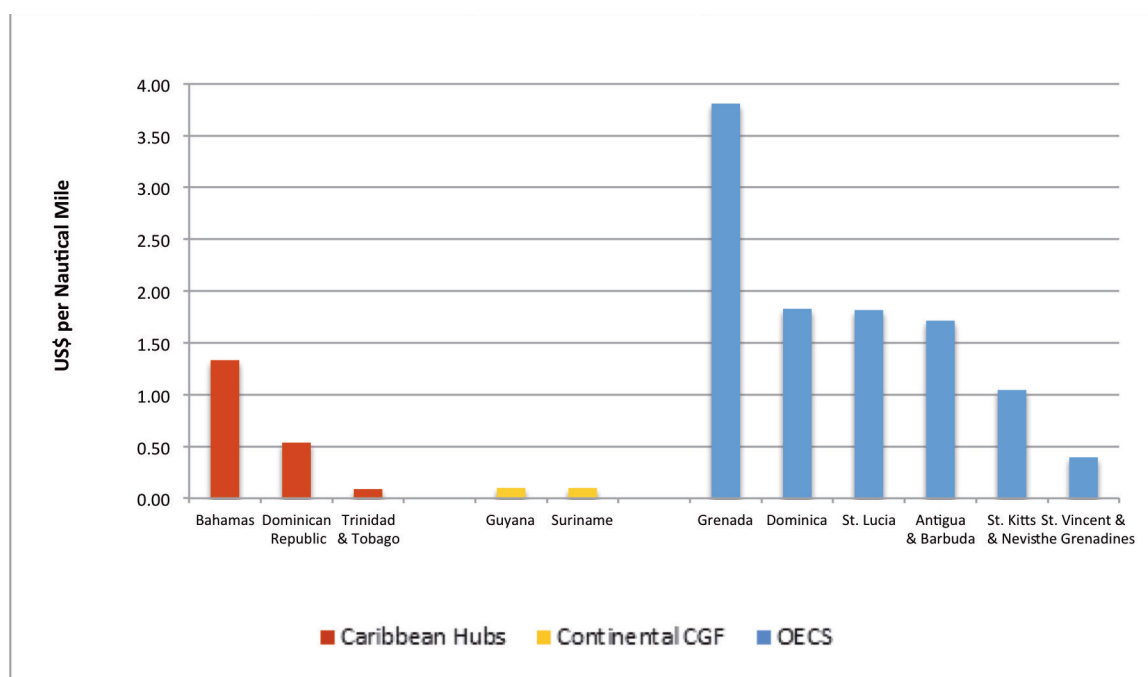
Ferry tariffs vary per country depending on the route, distance and operating costs. Most of the operating costs are dependent on fuel costs. For most private operators fuel and maintenance costs represent as significant amount from their total costs. For example in Grenada, Osprey ferry spends approximately US\$2.6 million in boat repairs and US\$1.3 million in fuel costs out of their total costs.

The Caribbean hubs have relatively low ferry tariffs, when compared to the small island states. Bahamas has the highest tariffs on this group, with an average tariff of US\$1.33 per nautical mile (NM). Trinidad and Tobago has the lowest tariff of US\$0.09/NM within the Caribbean hubs group and indeed for the whole region, due in part to the fact that the ferry operators there are subsidized by the Government.

The case of Guyana and Suriname case is similar that of Trinidad and Tobago. The ferry between these two counties costs only \$US 0.10/NM, much less than tariffs of the ferry service of the small island states and the Caribbean hubs.

The small island states have the highest ferry tariffs in the Caribbean region, up to three times higher than those of the hubs and continental countries. Grenada, with a tariff of US\$3.81 per nautical mile, has the highest rate for the small island states and for the whole region (Figure 36). Antigua and Barbuda with US\$1.71/NM and Dominica and St. Lucia with US\$1.83/NM have the second and third highest tariffs for the small island states and the whole region. The exception to such high tariffs is St. Vincent and the Grenadines, which has the lowest tariff (US\$0.40) of all the small island states and one of the lowest of the region.

Figure 37: Average Tariff in US Dollars per Nautical Mile



Source: Authors' calculation based on data collection.

v. Main Constraints

All ferry operators face some challenges to improve their service and even to provide a regional ferry service. Some of the private operators expressed that in order to have an effective regional ferry system, government coordination would be needed for both setting a consistent affordable price for port access and harmonize regulations among countries.

Aside from the high energy and fuel costs, another challenge is that initial investment costs are high and that market penetration is slow. Some of the operators are afraid to make such a high investment since it takes approximately 2 years for passengers to start using the service.

For public operators, even though their operating costs are subsidized by the government, they face some challenges in terms of financing major investment projects. One of these challenges involves persuading the government investment to buy adequate vessels in order to provide a more regional service according to each market's needs.

Cruise Industry

The cruise ship industry has become one of the largest components of tourism in the Caribbean. During the last 20 years, cruise tourism has grown significantly with cruise lines increasing the number of their ships and expanding their guest capacity (International Cruise & Excursions, 2013). Many local economies in the region are now dependent upon the economic conditions of international consumers, and on the global economic opportunities available to the cruise ship industry, rather than on local economic conditions. While the cruise industry is generally thought to be economically beneficial for embarkation ports and ports of call in the Caribbean, it is becoming detrimental, as cruise lines often try to play destinations against each other to spur the development of bigger and better port infrastructure and amenities for its passengers-often using local public funding at no cost to the cruise lines.

i. Relative Size per Country

The cruise ship industry generates economic benefits to the Caribbean countries. Bahamas has the highest cruise spending of US\$320.8 million among all destinations and among the Caribbean hubs, representing 4.1 percent of its GDP (Table 30). Jamaica has the second highest cruise spending within the Caribbean hubs with US\$89.5 million.

Within the small island states, St. Kitts receives the highest amount of cruise spending, US\$65.7 million. Cruise spending contributes 11.4 percent of St. Kitts GDP, the highest share in the Caribbean region. In contrast, in St. Vincent, cruise ship spending is low and only contributes only 0.3 percent of the country's GDP. St. Vincent is the least busy of the small island states in terms of cruise traffic.

Belize, with total cruise spending of US\$52 million is one of the highest in the region. However, total cruise spending only represents 4.2 percent of its GDP.

Table 30: Total Cruise Spending as a Percentage of GDP, 2012

Country	Total Cruise Spending (US\$ Million)	GDP (US\$ - Million)	Total Cruise Spending as a percentage of GDP (%)
Small Island States			
Antigua and Barbuda	40.4	1,007	4.0
Dominica	16.0	451	3.6
Grenada	13.2	666	2.0
St. Kitts and Nevis	65.7	579	11.4
St. Lucia	40.8	1,042	3.9
St. Vincent and the Grenadines	1.7	593	0.3
Caribbean Hubs			
Bahamas	320.8	7,842	4.1
Barbados	45.7	2,521	1.8
Dominican Republic	17.5	51,990	0.03
Jamaica*	89.5	14,755	0.6
Trinidad and Tobago*	2.3	18,730	0.01
Continental Caribbean			
Belize	51.9	1,245	4.2

Source: Cruise Industry News Annual Report (2012) and Word Bank (2013b).

In terms of number of cruise passengers, Bahamas leads all Caribbean destinations with 4 million cruise passengers visiting annually (Table 31), making it one of the main destinations for cruises in the Caribbean. Jamaica is the second highest with 1.3 million passengers. Of the Caribbean hubs, Trinidad and Tobago has the lowest number of cruise visitors, receiving only 102,000 thousand passengers annually.

Antigua and Barbuda, St. Lucia, and St. Kitts receive approximately 600,000 passengers, who account for more than half of their total annual number of visitors. In an interesting note, Grenada and St. Vincent, who are both located in the south of the Caribbean, see a huge difference in the number of annual cruise visitors: St. Vincent only receives 66,000 visitors compared to the 320,000 who visit Grenada.

Table 31: Cruise Visitor and Cruise Visitor Spending in 2012

Year	Country	Cruise Visitors (in Thousands)	Total Visitors (in Thousands)	Cruise Visitors (% of total visitors)	Cruise Visitors Spending	Total Visitors Spending (in Millions)	Cruise Visitors Spending (% on total spending)
2012	Antigua & Barbuda	608	855	71	40.4	319	13
2012	Bahamas	4,440	5,862	76	320.8	2,058 ***	16
2012	Barbados	727	1,263	58	45.7	274 ***	17
2012	Belize	682	959	71	51.9	264 ***	20
2012	Dominica	336	410	82	16	113.8	14
2012	Dominican Republic	263	4,826	5	17.5	4,209 ***	0.40
2012	Grenada	320	433	74	13.2	121.6	11
2012	Jamaica	1320	3,306****	40	89.5	2,001 ***	4
2012	St. Kitts and Nevis	632	736	86	65.7	95	69
2009	St. Lucia	646	924	70	40.8	337.3	12
2012	St. Vincent and the Grenadines	66	140	47	1.7	94.1	2
2009	Trinidad and Tobago	102***	488***	21	2.3	393 ***	6

Source: Cruise Industry News Annual Report (2012).

** Data from ECCB (2013).

***Data from UNWTO (2010).

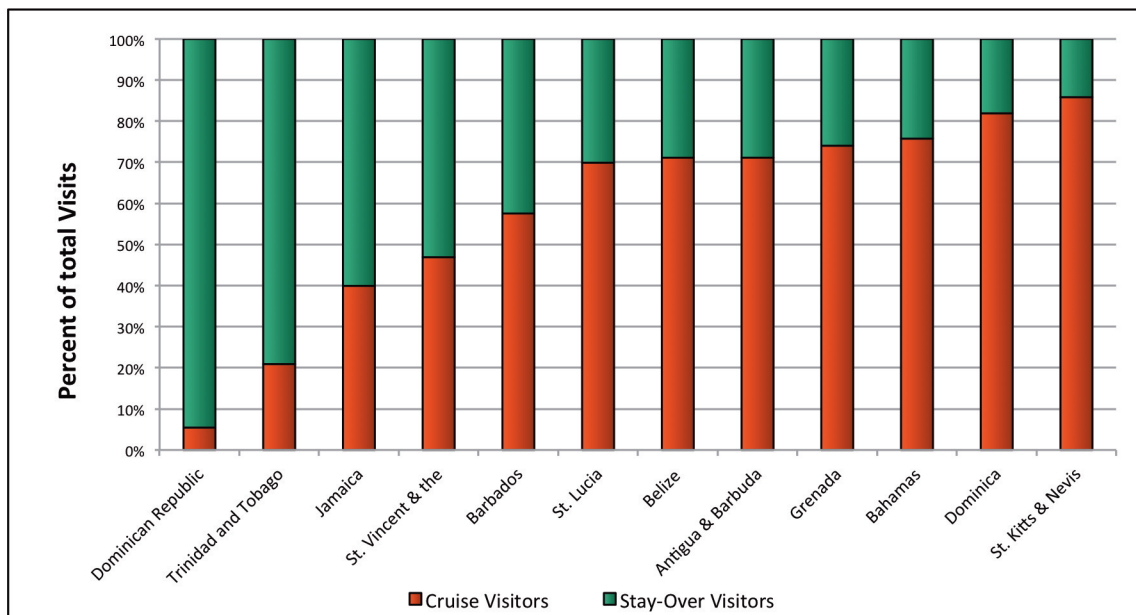
****Data From Jamaica Tourist Board (2012).

ii. Cruise Ship Visitors vs. Stay-over Visitors

The Caribbean cruise industry has shown substantial growth, typically growing faster than the stay-over arrivals for most of the countries. St. Kitts and Nevis has the highest proportion of cruise ship visits, with cruise ship visits representing 86 percent of their total visits, followed by Dominica with 82 percent (Figure 37). St. Vincent has a more balanced division between stay over and cruise visits, with stay over visitors dominating with 53 percent.

In the Dominican Republic, Jamaica, and Trinidad and Tobago, stay over visitors dominate the tourism market. In the Dominican Republic, cruise visitors represent only 5 percent of their total visitors. Bahamas and Barbados have the highest number of cruise passenger visits in the region. In the Bahamas cruise visits dominate stay over visits with 76 percent of the market. On the other hand, cruise visits represent only 58 percent of total visits for Barbados.

Figure 38: Cruise Visitors vs. Stay Over Visitors, 2012



Source: *Cruise Industry News Annual Report (2012)*.

iii. Cruise Infrastructure

The cruise ship industry fosters a very spontaneous economy around the cruise terminal area in the usually located downtown the main city. However, in terms of infrastructure, the some of the Caribbean ports –and even the cities – are not developed enough to satisfy the capacity and the potential demand for cruise ships. St. Kitts is building another pier for cruise ships since currently they only have 1 pier that can only receive 2 ships at a time. In Antigua, there is a separate cruise terminal that holds four cruises at a time. However, when there are more than four vessels they use the cargo terminal.

Within the small island states, St. Lucia has 5 berths for cruise ships with a maximum length of 503 meters (Table 32). Antigua and Barbuda has 2 berths that hold 4 ships at the same time. Dominica has the smallest berths within the small island states with two terminals holding 1 ship each. Aside from St. Kitts and Nevis and St. Vincent and the Grenadines, the rest of the ports use the cargo berths to receive cruise ships when the demand is too high and the dedicated cruise terminals fall short.

Cruise ship facilities in the Caribbean hubs are the largest in the region. Bahamas has 13 berths dedicated to cruise ships in Nassau and 3 in Freeport, since it is one of the main destinations. Within the hubs, Trinidad and Tobago has only two berths for cruise ships with a total length of 486. This might be due to its location far south in the Caribbean.

When looking at the continental country group, Belize has the highest number with 5 berths dedicated to cruise ships. Unlike Belize, Guyana and Suriname, receive less cruise passenger traffic, due to their far south location. Therefore, they have no dedicated terminal for cruises, using their cargo terminal as a cruise terminal.

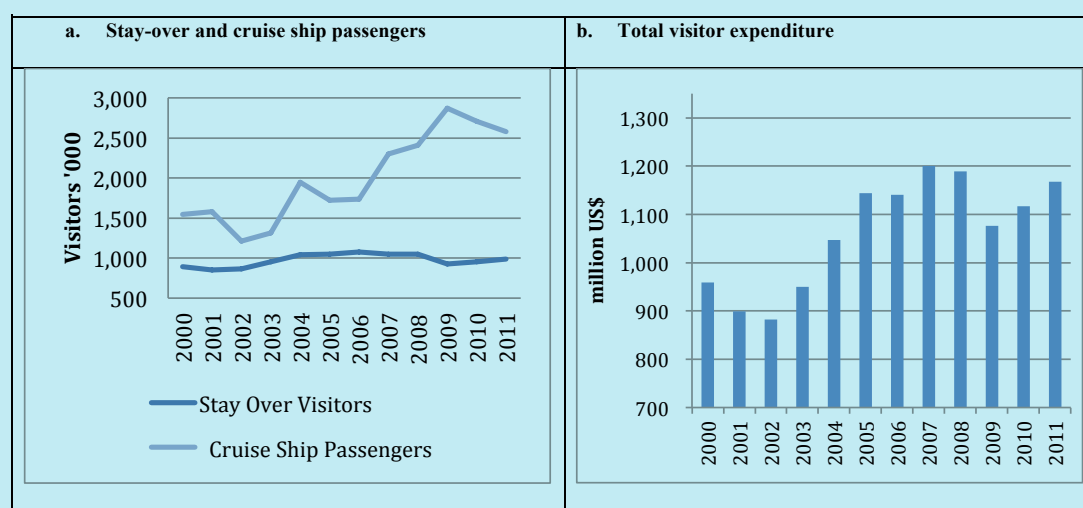
Box 5: Cruise Industry in the OECS

Between 2005-2011, international tourist arrivals in OECS decreased at an average annual rate of 1%, spiking in 2009 with 12% growth and achieving an acceptable 3.6% growth rate in 2011. The OECS countries' share in total international tourist arrivals in the Caribbean is 4.3%. This represents only a 0.6% share for all of the Americas, including North, Central, and South America.

International arrivals in OECS countries are dominated by cruise visitors that are between 2.5 and 3 times more numerous than stay-over visitors. The development of OECS tourism throughout 2000-2011 is largely defined by the behavior of the cruise-ship passenger market (Figure 39a, dashed line). During the period, the numbers of stay-over visitors remained stable at about 1 million per year (Figure 39a, solid line). This is in contrast to what is observed in the region's main destinations such as Jamaica, The Bahamas, and Aruba, where stay-over visitors dominate international tourism.

Such differences are important in terms of the impact of tourism in local economies. Passengers of a cruise ship consume by going on local excursions, and going shopping at the country being visited. Stay-over visitors spend much more on hotels, restaurants, excursions, transportation, and shopping per stay. It should not come as a surprise that between 2000 and 2011, the number of international cruise-ship passengers increased about 66% (by 40% if we include all international visitors) while the income generated by all passengers measured in terms of traceable spending increased only about 25% from approximately US\$95 billion in 2000 to US\$1,180 million in 2011 (Figure 39b). These statistics are supported by anecdotal information that points to a clear drop in per capita spending per visit of international cruise-ship visitor from the US\$120 – 150 range to the US\$ 45-50 range. This is in sharp contrast to per capita spending in the leading Caribbean stay-over destinations that averages US\$1,150 per arrival.

Figure 39: Eastern Caribbean Countries International Tourism



Source: Authors' calculations based on ECCB (2013).

(1/2)

Box 5: Cruise Industry in the OECS

The profile of international tourism in OECS countries – summarized in the mismatch between international passenger traffic and tourism receipts – introduces key strategic topics from the economic, transport sector, and fiscal viewpoints.

From the economic viewpoint, the fact that OECS international tourism is tilted towards cruise-ship passengers represents an enormous opportunity. Even with a relatively small share of international passengers in stay over (one third of total in 2011), the overall contribution of tourism to the economy is quite significant, ranging from 24% in Grenada to 74% in Antigua and Barbuda (WTTC, 2012); much higher than the 14-16% found in leading Caribbean destinations. If and when stay-over trends improve, the local economies can benefit from higher demand for:

- Traditional crops such as tropical fruits (including mango, pineapple, and papaya) and fresh produce, goods for which local production is competitive compared to imported substitutes,
- Fish and seafood that are already procured locally (except for cold water fish), and their value could be increased with more processing, Services, including those provided at yachts and marinas, where spending is the highest in the tourism industry,
- Hotel receipts linked to services and goods, which are currently sourced locally at a rate of 90%. The average occupancy rate at 62% is comparable to main competitors (Cuba, the Dominican Republic, and Jamaica). This average, however, masks an uneven occupancy rate whereby a handful of the resorts/hotels are at 92% occupancy, and the rest have occupancy at or below 40% due to poor quality and lack of investments.

From the transport sector viewpoint, focusing on increasing stay-over tourism means taking a closer look at the connectivity of the OECS islands, both among themselves and with the rest of the world, not only via air transport but also via local ferries. In particular, air connectivity is limited and acts as a constraint to growth and the development of large-scale tourism. The interplay of the air transport industry and the hotel industry is complex. The hotel industry, vulnerable to economic slowdowns in countries of visitor origin, depends on airlift for filling their rooms. The air transport industry, vulnerable to fuel prices and the seasonality of the tourism industry, depends on the draw the hotel industry creates, i.e. the demand the quality of their properties can raise. In addition, the tourists wishing to travel, who in many cases are mid- to even low- market, are deeply sensitive to (a) the price of getting to the destination as compared to alternatives, and (b) the value of services received at the destination, making their demand highly elastic.

(2/2)

Source: Briceno-Garmendia, C., Bofinger, H., Millán, M.F. and Cubas, D. (2013).

In Haiti, cruises dock at Labadee Port located in the northern side of the island. The port is located by the Labadee resort, leased by Royal Caribbean International (RCI). The only two cruise lines using this port are Royal Caribbean and Celebrity Cruise lines. The site is a private resort for cruise lines owned by RCI. The cruise ships anchor offshore and passengers are ferried to the resort.

Table 32: Port Infrastructure for Cruise Ships

Country	Port	Facility	Cruise Ship Berths	Length (m)	Maximum Depth (m)
Small Island States					
Antigua and Barbuda	St. John's	Heritage Quay and Port of St. John's	4	366	11
Dominica	Portsmouth	Cabris Cruise Ship Berth	1	91	15
	Roseau	Woodbridge Bay Port	1*	244	10
	Roseau	Roseau Cruise Ship Berth	1		12
Grenada	St. George's	Melville Street Cruise Terminal	1	335	9
St. Kitts and Nevis	Basseterre	Port Zante	1	335	10
St. Lucia	Castries	Port of Castries* Pointe Seraphine	5*	503	11
St. Vincent and the Grenadines	Kingstown	Kingstown Cruise Terminal	2	360	9
Caribbean Hubs					
The Bahamas	Freeport	Freeport Harbour	3	625	12
	Nassau	New Providence Port	13	2084	
Barbados	Bridgetown	Bridgetown Port	5	1524	12
Dominican Republic	La Romana	La Romana	2	478	10
	Santo Domingo	Don Diego	1	395	9
		Sans Souci	1	247	9
Jamaica	Ocho Rios	Ocho Rios	3	727	14
	Montego Bay	Montego Bay	6	1280	10
	Port Antonio	Port Antonio	1	62	
Trinidad and Tobago	Trinidad	Port-of-Spain	1	305	10
	Tobago	Scarborough Harbour	1	181	9
Continental Caribbean					
Belize	Belize City	Belize City Harbour	5		12
Guyana	Georgetown	La Penitence Terminal	1*	292	6
Suriname	Paramaribo	Nieuwe Haven	1*	200	6
Fragile State					
Haiti	Labadee	Labadee	-	-	-

Source: Cruise Industry News Annual Report (2012).

*Berth also used for container cargo.

iv. Main Cruise Lines

There are around 30 cruise lines that serve the Caribbean, each one having several ships going into each island serving different routes. The ships size and routes vary depending on the length of the trip. Trips can vary from 3 days to 15 days within the Americas and around 20 to 40 days if the ships are coming from Europe. The longer the length of the trip the higher the number countries included in a route (Table 33). Schedules are planned and sent to each port two years ahead of time.

Table 33: Cruise Lines and their Destinations in the Caribbean

Cruise Company	Capacity	Origin and Destination	Caribbean Ports of Call included per Route	Duration
AIDA Cruises	2500	Jamaica	Jamaica - Dominican Republic - St. Kitts and Nevis - Dominican Republic – Belize - Guyana	14 nights
Carnival Cruise	3002	Puerto Rico - Miami	Grenada - Dominica	8 days
Celebrity Cruise Lines	2449	Puerto Rico	Puerto Rico – Barbados -St. Lucia-	7 nights
Compagnie du Ponant	264	Curaçao, Martinique	Grenadines - St. Lucia - Dominica	7 days
Costa Crociere	2828		Antigua	23 nights
Cruise & Maritime Voyages	848	United Kingdom	St. Vincent and Grenadines - St. Lucia - Barbados	42 nights
Fred Olson Cruise Line	1350	Savannah, USA – United Kingdom	Bahamas	35 nights
Holland America Line	1258	FT. Lauderdale	Bahamas	7 day
MSC Cruises	2550	Miami	Bahamas	7 nights
Norwegian Cruise Line	2376	Houston	Belize	7 days
Oceania Cruises	1250	Miami	Belize - Guyana	10 days
P & O Cruises	3100	Barbados	Barbados - Grenada - St. Lucia - Dominica - St. Kitts - Barbados	14 nights
Princess Cruises	3100	Ft. Lauderdale	Ft. Lauderdale- Cayman Islands -> Mexico -> Ft. Lauderdale	5 days
Regent Seven Seas	490	Miami	Belize	7 nights
Royal Caribbean Int.	6296	Ft. Lauderdale	Haiti - Jamaica	7 nights
Saga Cruises	706	United Kingdom	Trinidad and Tobago - Jamaica - St. Lucia - Antigua - Bahamas	34 nights
Sea Cloud Cruises	96	Antigua	Antigua - St. Kitts and Nevis - Antigua	7 days
Sea Dream Yacht Club	110	Barbados	Barbados-> St. Lucia - St. Vincent and the Grenadines - Barbados	7 days
Silversea Cruises	540	Ft. Lauderdale	St. Vincent and the Grenadines- Jamaica - Bahamas	8 days
Star Clippers	228	Barbados	Barbados - St. Vincent and the Grenadines -> St. Lucia - Barbados	7 nights
Thomson Cruises	1506	Jamaica	Jamaica - St. Vincent and the Grenadines	7 nights
Crystal Cruises	1070	Miami – Costa Rica	Belize	11 days
Cunard Line	2620	United Kingdom- St Lucia	Dominica - St. Lucia	19 days
Windstar Cruises	148	Barbados	Barbados - St. Lucia - Grenada - St. Vincent and Grenadines - Barbados	7 days
Seabourn Cruise Line	208	St. Maarten	Antigua	7 days
TUI Cruises	1807	Barbados - Spain	Barbados - Dominica -St. Kitts - Grenada - St. Lucia - Barbados	22 nights

Source: Authors' compilations through the CLIA (n.d.), and cruise lines' web sites.



MARITIME CONNECTIVITY: FREIGHT

Key Messages

- Apart from the hub/transshipment ports, ports in Caribbean countries are small, and manage basically local demand in terms of imports and exports. As far as the hubs are concerned, Kingston handles the largest volume of containerized traffic, accounting for 35 percent of total throughput in the sub-region, with almost 1.9 million TEUs handled in 2011. Freeport, Caucedo, and Port of Spain, comprise 22 percent, 19 percent, and 7 percent of Caribbean throughput, respectively.
- Informal vessels provide almost all the inter-island small-parcel size, break-bulk cargo movements. Despite its niche-market domination of this part of the market, the informal shipping industry is largely in decline – it is, however, surviving surprisingly well in St Vincent, with 21 informal vessels operating.
- Hub countries consist of two types: major global transshipment centers receiving large vessels crossing the Pacific Ocean and then the Panama Canal, or crossing through the Atlantic Ocean in either and east-west or north-south direction. An estimated 130 routes went through the hub countries, representing an estimated 37 carriers in 2011.
- The inter-continental transshipment hubs such as Kingston, Caucedo, Port of Spain have the lowest HH levels indicating highest level of competition and lowest level of concentration of the cargo market. They capture big levels of traffic and many shipping lines dock there for their transshipment.
- The smaller, more touristic ports of the Hub countries show a highly concentrated market, as expected, given that their facilities are not for mainly for transshipment and perhaps not even for cargo. The big outlier is Freeport, which is a big transshipment center but predominantly serves the U.S.A., which likely explains the very low level of competition seen.
- The freight rate for shipping a 20-foot container from Miami to St Kitts and Nevis, at about US\$3,500/container, is more than two times the tariff of shipping the same container all the way through to Hong Kong, Argentina or France. The distances to Miami from Hong Kong, Buenos Aires and France are 7, 4 and 3 times longer than from Miami to St Kitts and Nevis. The main apparent driver of the high tariff is high market concentration that leads to collusion.

Traffic Development

Maritime traffic can be basically divided into two categories, boxes and bulk. For boxes, during 2011, ports in Latin America and the Caribbean handled over 41.3 million TEUs, representing an increase of 11.1% in comparison to the previous year (UNECLAC pg.2, 2012). Asia was the global leader in terms of cargo volume handled in 2011, accounting for 60 percent of total traffic; China alone handled almost 30 percent of global cargo traffic. In contrast, the Caribbean accounts for a tiny share of global traffic of the world (Table 34).

Table 34: Latin America and the Caribbean Share in World Port Throughput (2011)

Region	Throughput (Million TEUs)	Market Share (%)
Asia (excl. China)	175.9	31%
China	164	29%
North Europe	62	11%
Mediterranean	46.7	8%
North America	45	8%
South/Central America	36.2	6%
Other Regions	27.1	5%
Caribbean (excl. Panama)	5.1	1%

Source: Based on data from World Bank (2012b).

The maritime network for containers in the Caribbean consists of two components: inter-continental traffic being transshipped through one of several transshipment hubs in the Caribbean, and the inter-island Caribbean feeder network that in the north has Miami as a main hub, and in the south Trinidad. The main Caribbean intercontinental hubs are the Bahamas, the Dominican Republic, Jamaica, Puerto Rico, and, to a lesser extent Trinidad. For intra-Caribbean traffic Curaçao and Trinidad stand out as hubs.

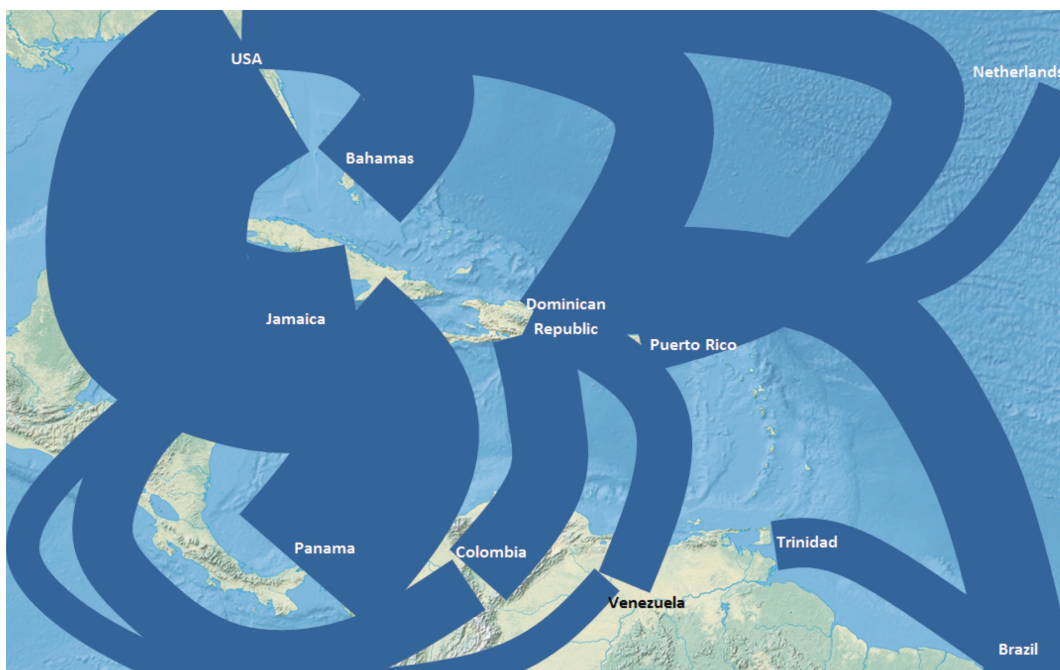
This dual system defines two type of routes in the international maritime container network: Feeder routes (local routes), and main routes. Within the Caribbean system, this translates into three different route networks:

- the actual routes stopping at the smaller regional hubs and moving from island to island, bringing much needed imports into the Caribbean,
- the routes supplying the main hubs for the Caribbean, and
- the mainline routes that simply pass through the region, using important hubs for larger transshipment operations that are not related to imports or consumption with in the Caribbean.

The routes are very different from routes found for passengers in air transport: in air transport, one can assume that a trip with more than three stops will be less likely, and most passengers are not likely to tolerate a high number of stops or transfer points. Globally, on average, a container ship makes six port calls before returning to its home port, and the Caribbean is close to that average with seven ports.

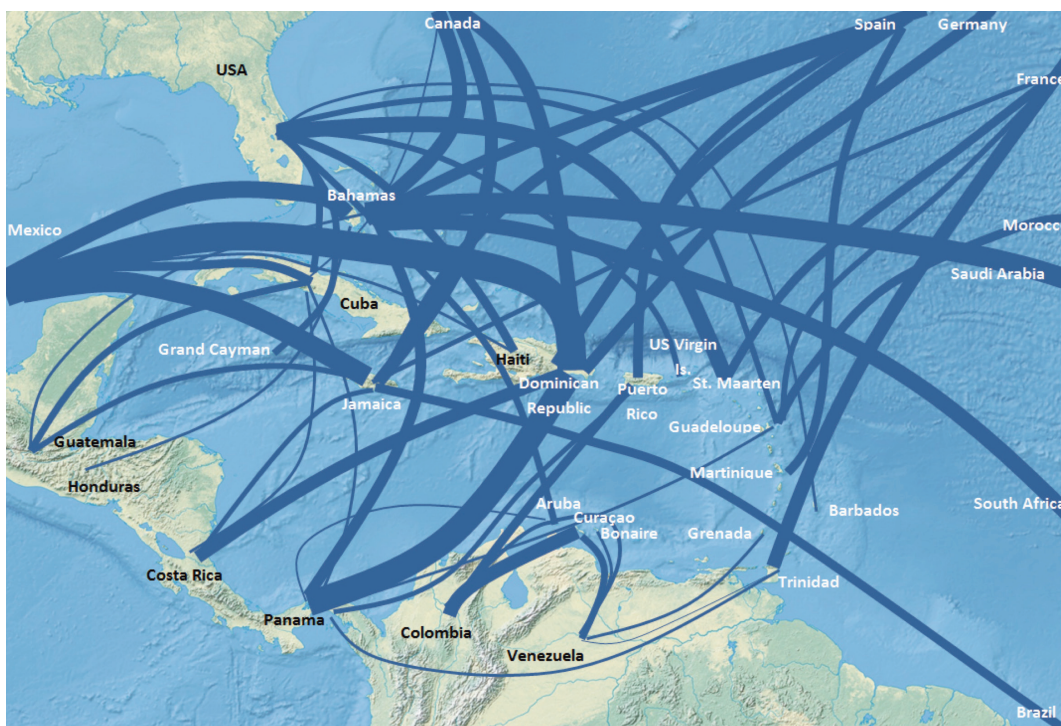
Intercontinental hubs have a very high volume of container ships that arrive from outside the Caribbean and go mainly between hubs (Figure 41). Kingston (Jamaica) is the most important intercontinental hub. The line system supplying the intra-region or local hubs shows smaller volume routes of which some feed directly into some of the smaller Caribbean states (Figure 42). CMA-CGM, France, provides service into the French islands of Guadeloupe, Martinique, and St. Martin, in addition to the regional hub of Trinidad. Some of the same vessels that connect France to the French Caribbean islands also service some of the smaller island states.

Figure 40: Estimated TEU capacity flows in the top twelve routes with the Caribbean for 2011



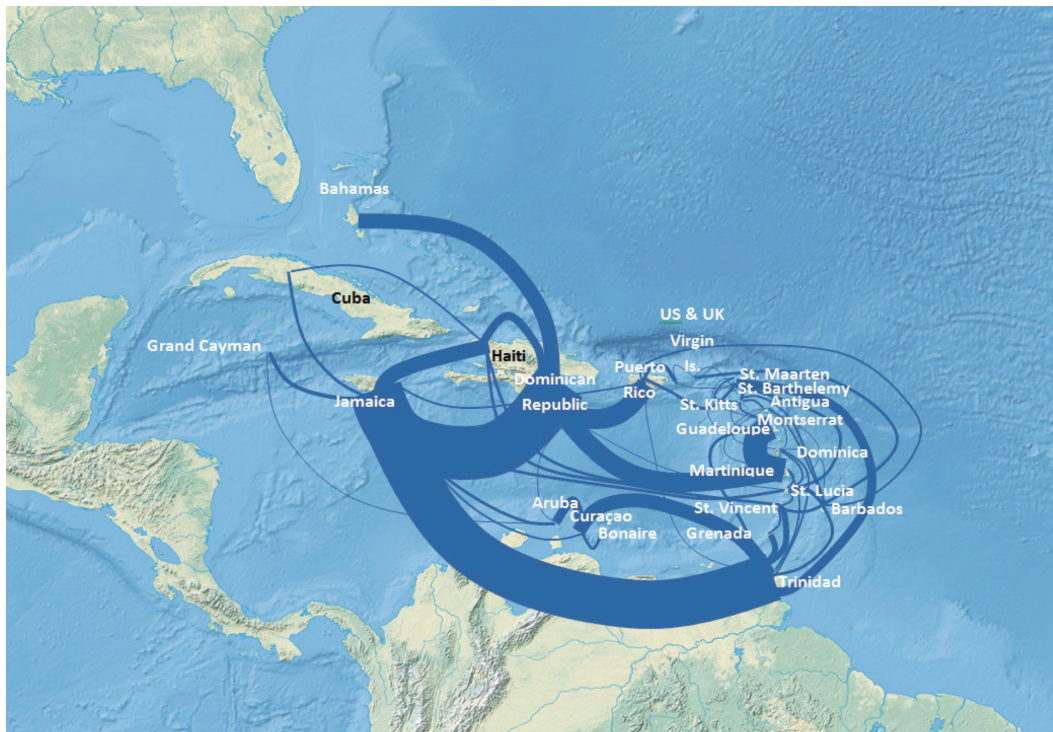
Source: Authors' calculations based on data provided by the Containerisation International Yearbook (2012).

Figure 41: Estimated TEU capacity flows entering the Caribbean in 2011, excluding the 6 largest intercontinental flows



Source: Authors' calculations based on data provided by the Containerization International Yearbook (2012).

Figure 42: Estimated TEU capacity flows within the Caribbean islands, 2011



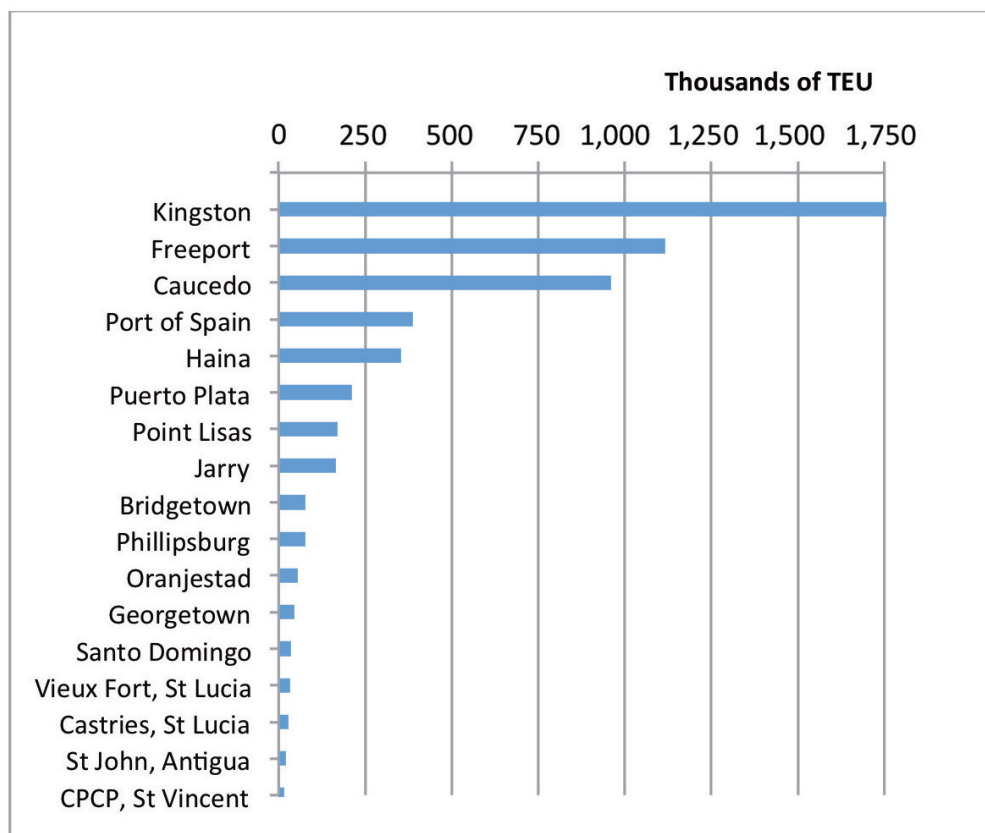
Source: Authors' calculations based on data provided by the Containerization International Yearbook (2012).

The network in the Caribbean is often described as a feeder network, though in fact each of the small islands had only one known route deemed as feeder line in 2011, with the rest being termed main lines (Containerisation International Yearbook, 2012). This may be because of the complex systems of hubs: there are three main international gateway countries that supply the small island states: the United States (ports in Florida such as Miami, Riviera Beach, Ft. Lauderdale, and Portsmouth, Virginia being the most important), Trinidad, and Jamaica. In addition, smaller transfer hubs are located in Barbados and Vieux Fort, St. Lucia. Jamaica, though an important hub in the Caribbean, is a stop on only had four of the known routes. However this may have underplayed the importance of the port of Kingston: Figure 43 shows an extensive flow between Trinidad and Jamaica, and eight of the known routes stopped in either one or both ports in Trinidad. One mainline route, for example, originated from Portsmouth, USA, with the first stop being transatlantic in Le Havre, France, then continuing on to another transatlantic stop in Guadeloupe in the Caribbean, before stopping by in both Trinidad and Barbados and then moving up the small island country chain.

Apart from the hub/transshipment ports, ports of Caribbean countries are small, and manage basically local demand in terms of imports and exports. For small island states, the country with the most movements in metric tons accounted for only 1.3 million tons a year in 2012, compared to 57 million tons a year moved in Panama or 22 million tons in Jamaica (Figure 46). Antigua and Barbuda moved about 1 million tons per year, declining after a peak in 2008. In St Vincent and the Grenadines, the movements were about 411 thousand metric tons in 2010, and in St Lucia 628 thousand for the same year. Interestingly, during the financial crises of 2008-09, Antigua and Barbuda increased its metric ton throughput, which then started to decrease in 2009. Saint Lucia and Saint Vincent, however, had downturns both years (Figure 21).

Kingston handles the largest volume of containerized traffic, accounting for 35 percent of total throughput in the sub-region, with almost 1.9 million TEUs handled in 2011. Following Kingston are Freeport, Caucedo, and Port of Spain, comprising 22 percent, 19 percent, and 7 percent (in 2010) of Caribbean throughput, respectively. The remaining ports in the Caribbean combined made up roughly 18 percent of the sub-region's total throughput (Figure 20).

Figure 43: Port container traffic in the Caribbean, 2011



Source: UNECLAC (2012).

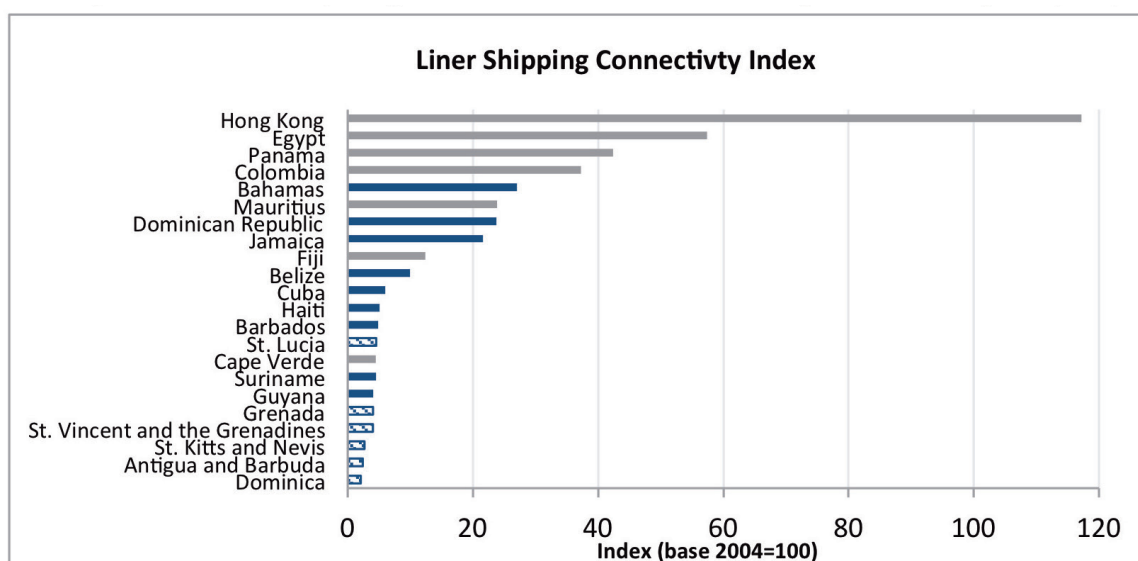
Maritime Connectivity

The ability to connect to global transport networks is now widely used by policymakers as a factor of competitiveness to promote international trade or address the needs of remote regions in large countries. Although geographical remoteness plays a role in shaping connectivity, it is not the sole determinant: policy also plays an important role in areas such as air transport, maritime shipping, and trade facilitation and, more broadly, logistics. Concretely, policy choices regarding the degree of liberalization of air transport and shipping markets, as well as the level of investment in key infrastructure such as ports and airports, can affect the number of countries to which a country is directly connected, and the regularity of service between them. Both of these factors affect a country's connectivity, in the sense of its position in global networks relative to other countries (Arvis, Duval, Shepherd, & Utotham, 2013).

The measure used most commonly to evaluate maritime connectivity is the UNCTAD Liner Shipping Connectivity Index.²⁰ The higher the index, the easier it is to access a high capacity and high frequency global maritime freight transport system, and thus effectively participate to international trade. The definition of connectivity, therefore, involves time-bound capacity.

For the Caribbean countries the liner shipping connectivity index shows that these countries remain very much disconnected from the shipping lines, despite their close location to mayor transshipment ports and major shipping routes (Figure 47). The connectivity is lowest in small island states, order of magnitudes below well-performing countries. This problem of lack of connectivity is common to small islands, though, since the Pacific Islands also have low levels. According to literature on the topic this has an impact on trading all along global value chains (Arvis & Shepherd, 2011).

Figure 44: Connectivity comparison between small island states' ports and other ports (2012)



Source: UNCTAD, 2012.

²⁰ The index indicates a country's integration level into global liner shipping networks. The index base year is 2004, and the base value is on a country showing a maximum figure for 2004. It takes into account containership deployment, container carrying capacity, number of shipping companies, liner services, vessels per company, and average and maximum vessel size.

The largest ports in the region, such as Kingston, Freeport, Caucedo, and, to a smaller degree, Port of Spain, serve as the leading transshipment hubs for east-west and north-south traffic in the Caribbean basin, and are therefore served by frequent direct shipping services, including some of the major shipping lines. These major ports are serviced by shipping lines such as CMA-CGM and ZIM that use Kingston as their hub, and MSC operating through the hub of Freeport.

Other smaller destinations do not appear to attract direct services due to lower volumes. Container traffic between the transshipment ports of Kingston and various ports in the Caribbean region is still too low and thus too expensive for global carrier lines to operate independently. This gap is filled by specialist regional carriers that focus on intra-regional traffic, and specialize in less than container load (LCL) cargo (Box 5).

Box 6: Principal Specialist Carriers in the Caribbean

- **Tropical Shipping:** Tropical Shipping pioneered containerization of banana and plantain shipments to Houston and Miami. The company operates services from Canada and the US East Coast to the Caribbean, mostly out of the port of Tampa, Florida, using Caucedo as a hub for inter-island services. Tropical Shipping is one of the largest container carriers in the trade and offers direct service to more than 25 islands in the Caribbean, specializing in large capacity refrigerated services.
- **Seaboard Marine:** The single largest carrier at the Port of Miami, and using Kingston as its hub, Seaboard Marine directly services a large number of ports in the region with a fleet of more than forty vessels.
- **Crowley Liner Services (CLS):** A US-owned and operated logistics company, Crowley Liner Service has extensive services to key hubs like Kingston and Rio Haina, and deploys relay vessels to the smaller islands. CLS has links to Hamburg Sud.
- **Tecmarine:** Based in Port Everglades, Florida, this carrier with its small fleet focuses on trade between the United States and Jamaica, the Dominican Republic, and Haiti.
- **Caribbean Feeder Services (CFS):** CFS is the largest independent feeder operator serving the Caribbean, Mexico, Central America, Colombia, and Venezuela. CFS focuses its activities solely on the provision of container slots and does not own containers itself. CFS has an annual transport volume of approximately of 250 thousand TEU.
- **Bernuth Lines Ltd:** Established in 1974, Bernuth Lines Ltd. operates container services in the Caribbean with its own container terminal in Miami. The present fleet comprises six company-owned older vessels and five time-chartered, more modern vessels. Ship carrying capacity varies between about 100 and 500 TEU.
- **CMA-CGM:** The third largest container carrier in the world after MAERSK and MSC. Through its former individual partner company, CGM, the group has long had close relations with the Caribbean. The company offers a weekly service with a fleet of four modern vessels:

**Portsmouth (UK) – Le Havre – Castries – St. Johns – Bridgetown – St.
George's – Kingstown- Portsmouth (UK)**

From Castries there is a weekly connection to Port of Spain. While not accepting LCL cargo, CMA-CGM closely cooperates with a number of Non Vessel Operating Common Carriers (NVOCCs) in particular for services to Port of Spain.

Box 6: Principal Specialist Carriers in the Caribbean

ZIM-Lines: The Israeli owned and operated company offers a weekly feeder service with a modern fleet of container vessels. It uses the services of regional liners like Tropical Shipping and Seaboard Marine to reach destinations not directly served. It operates the following rotation:

Kingston – Castries – Kingstown – Point Lisas – St. George’s – Georgetown – Kingston

- **Geest Line:** For more than 50 years, Geest Line has provided links between the UK and the Caribbean and carries more cargo between Europe and the Windward (St. Lucia, St. Vincent, and the Grenadines, and Grenada) and Leeward islands (Dominica, Antigua and Barbuda, St. Kitts and Nevis, and Anguilla) than any other shipping line. The origins of the service lie in the eastbound shipment of bananas. Westbound there was a natural opportunity for a general cargo service. Service is maintained with a wide range of break-bulk and containerized cargo carried on weekly westbound departures out of Portsmouth in the UK and Le Havre in France. Geest Lines is the only main-line operator that will presently carry inter-island LCL - not shipped through NVOCCs - and break-bulk cargo. Their schedule is:

Portsmouth (UK) – Le Havre – Fort de France – St. Johns – Basseterre – Bridgetown - Roseau – Port of Spain – St. George’s – Kingstown – Vieux Fort – Manzanillo (Colombia)

(2/2)

Informal Shipping and Routes

The informal sector, active mostly in the Leeward and Windward islands, is characterized by locally owned operators operating small ships of various types and capacities. They use mostly converted fishing boats or small ro-ro ships²¹ with stern ramps – these latter vessels, however, are usually not used in the traditional ro-ro manner carrying trucks, trailers, private vehicles and other wheeled cargo. Instead, cargo is moved on board via stern ramp by forklift trucks and small trailers and then stowed on deck conventionally.

These informal vessels provide almost all the inter-island small-parcel size, break-bulk cargo movements (Table 14). Despite its niche-market domination of inter-island break-bulk movements, the informal shipping industry is largely in decline, although it is surviving surprisingly well in St Vincent.

There are about 16 vessels operating out of Dominica: most of these are based at Portsmouth in the North. They carry local produce, personal effects, and smaller scale-industrial products, with empty containers as additional outgoing cargo and construction material and manufactured goods as additional incoming cargo.

There are five informal vessels operating out of Grenada. Three of the vessels are based in Grenville on the Windward coast, and two in St Georges. The three boats based in St Georges serve mainly Trinidad, bringing in building materials, wholesale goods for retailers, and other general cargo, and taking out agricultural produce only occasionally. The ratio of imports to exports is reported to be 10:1. Almost all of the vessels operating out of Grenada make a single weekly trip to Trinidad, leaving on a Tuesday and returning on a Friday.

²¹ Ro-ro stands for “Roll on/roll-off,” and refers to ships designed to carry wheeled cargo.

There are 21 informal vessels operating out of St Vincent, mostly based in Kingstown. As in Grenada, almost all make a single weekly trip to Trinidad, leaving on a Tuesday and returning on a Friday, with cargo being off-loaded on Friday afternoons and Saturday mornings. Imports include building materials, wholesale goods for retailers, and other general cargo. Exports are mainly agricultural products.

Table 35: Regional Break-Bulk Informal Traffic within the Small Island States and Barbados (metric tonnes)

	Barbados	Dominica	Grenada	St Lucia	St Vincent & Grenadines	Trinidad & Tobago	Total
Barbados	-	359	21	323	206		908
Dominica	251	-	723	821	538	1,765	4,097
Grenada	196	9	-	41	66	3,542	3,853
St Lucia	874	21	148	-	316	1,722	3,081
St Vincent & Grenadines	8,643	169	211	910	-	24,039	33,971
Trinidad & Tobago	NA	118	22	743	681	-	1,564
Total	9,964	675	1,124	2,837	1,807	31,067	47,475

Source: Based on data from World Bank (2012b).

Two informal vessels operate out of St Lucia's ports in Vieux Fort and Castries. Contrary to practice elsewhere, their monthly sailing schedule is announced well in advance. The South-bound round trip is:

St. Lucia – St. Vincent – Grenada – Trinidad – St. Vincent – Barbados – St. Lucia

The round trip takes two weeks, and there are about 25 round trips per year.

Commonly, the informal vessels are owned and operated by their captain. In other instances they may be owned by a local business entrepreneur who may operate and own more than one ship. Almost all either employ local agents on the islands to call, or negotiate directly with those wishing to move cargo. Much business is conducted informally, and relies on the consignees knowing how to contact the captain, or which agency to approach.

While this informal approach has worked well in the past, new businesses are not so well informed, and there is a clear problem on some of islands of matching ships with business. Consultants have found that in Grenada there is often no advertising of schedules, and sometimes even no knowledge of the existence of the service.

The only informal vessels offering container, reefer or chilled cargo services are a ro-ro vessel operating out of Portsmouth (Dominica), which will transport containers, and a converted ferry with a compartment of 400 cubic feet for chilled cargo, based in St. Vincent. (Isik, 2012).

Competition

The 140 routes that serve the Caribbean routes brought an estimated 19.7 million TEU in capacity to the Caribbean region in 2011, with about 40 carriers, and a fleet of roughly 140 vessels. Of that amount, 90% was solely for the Hub countries, and only 5% reached the small island states, 2.6% the continental countries of Belize, Guyana, and Suriname, and 2% for Haiti.

Small island states were served by an estimated total of 7 carriers with an estimated 15 routes²² in 2011. Though it is assumed that the small island states handle mainly feeder traffic, there were a number of mainline routes that also went to Europe (Le Havre in France), and to northern South America. CMA-CGM is one of the largest shipping lines in the world, and provides connectivity between the US, France, and the Caribbean. Tropical's capacities are highly approximate, assuming a weekly frequency of two vessels with 400 TEU. In fact, all of the shipping lines serving the small island states originated from outside the Caribbean, with five from the US, one from France (also serving Guadeloupe), and one from the UK²³

The hub countries consist of two types: major global transshipment centers receiving large vessels crossing the Pacific Ocean and then the Panama Canal, or crossing through the Atlantic Ocean in either an east-west or north-south direction. An estimated 130 routes went through the hub countries, representing an estimated 37 carriers in 2011. The roles of the hubs are different: while all received traffic from each other, the Dominican Republic, for example, focuses much more on South America and Europe than on direct shipping originating from the Far East, which is more likely to go to Jamaica (Table 30).

²² 13 routes can be found in the Containerization International Yearbook of 2012 with their actual stops, which will henceforth be termed the "known" routes.

²³ See Annex II for details.

Table 36: Annual Capacity and Number of Carries in the Caribbean

Country	Port	Est. Annual TEU Capacity	Carriers
Small Island States			
Antigua and Barbuda	St. John's	115,856	4
Dominica	Roseau	113,256	5
Grenada	St. George's	165,523	5
St. Kitts and Nevis	Basseterre	128,076	6
St. Lucia	Castries	170,723	6
St. Lucia	Vieux Fort	138,840	4
St. Vincent and the Grenadines	Kingstown	197,347	5
Hub Countries			
Bahamas	Freeport	1,999,466	7
Bahamas	Nassau	54,600	2
Barbados	Bridgetown	221,780	7
Dominican Republic	Boca Chica	50,821	2
Dominican Republic	Caucedo	4,543,902	16
Dominican Republic	Manzanillo	71,188	4
Dominican Republic	Puerto Plata	129,220	3
Dominican Republic	Rio Haina	1,210,495	16
Jamaica	Kingston	7,312,131	19
Jamaica	Montego Bay	146,829	3
Trinidad and Tobago	Point Lisas	300,471	7
Trinidad and Tobago	Port of Spain	1,687,959	11
Continental Caribbean			
Belize	Belize City	40,248	3
Guyana	Georgetown	203,769	6
Suriname	Paramaribo	264,375	7
Fragile Caribbean			
Haiti	Port au Prince	388,118	7

Source: Authors' calculation on data found in the Containerization International Yearbook (2012).

Note: The estimated capacity served on each island is calculated multiplying the capacity of each vessel in TEU by the frequency. This is only an approximate measure, since vessels typically have many stops on each route, and use transshipment ports for transfers. A vessel carries many containers for many different final destinations, and each port only receives a fraction of what is carried.

Table 37: Main Regions and/or Hubs Served by the Hub Countries

Country	Countries that the most dominant routes in the hub pass through
Bahamas	US, South Africa, Panama, Central America, South America, a few Far East, no Caribbean transfer
Jamaica	US, Far East, South America, some Caribbean transfer
Dominican Republic	US, South America, Europe, Jamaica, Trinidad, no Caribbean transfer
Trinidad	Panama & Jamaica, South America, US, Europe, serves as main Caribbean transfer
Barbados	US, Trinidad, Dominican Republic, Jamaica, serves as main Caribbean transfer

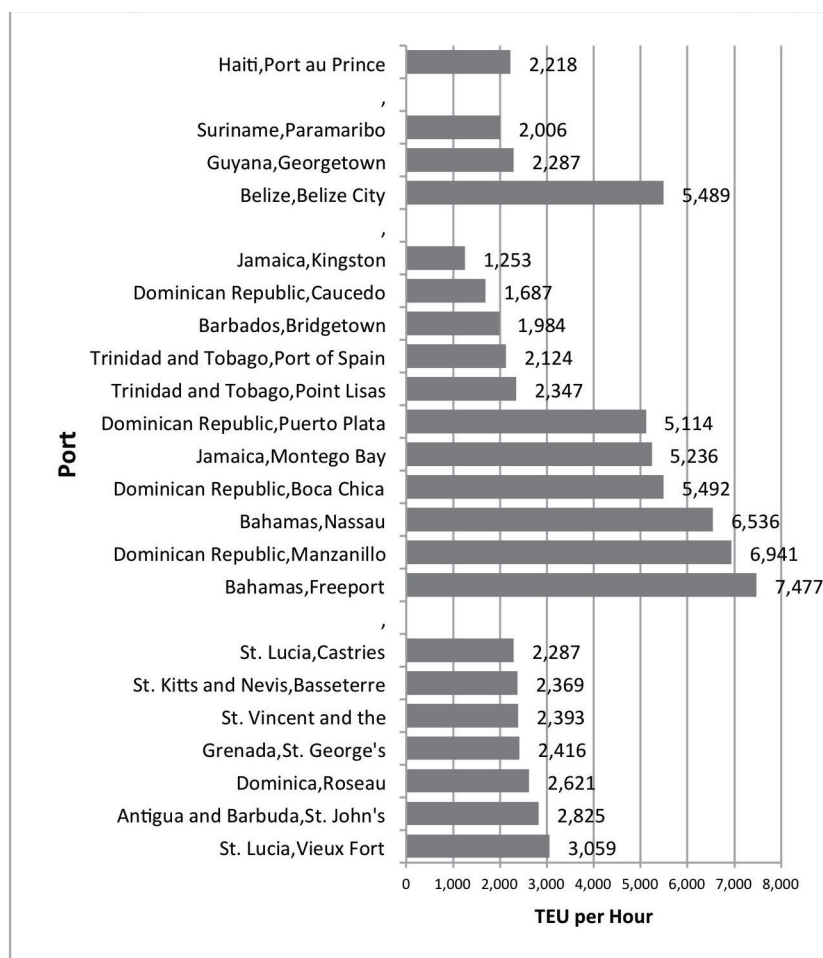
Source: Authors' calculation on data found in the Containerization International Yearbook (2012).

In the case of the Continental Caribbean, Belize is unique. Only three routes served the country, of which only one touched the U.S. (Port Everglades), and the remaining two Central American routes pass through Kingston, Jamaica as the main hub. Guyana was served by six routes, all of which passed through Trinidad, four of which stopped in the U.S., and two of which passed through Kingston, Jamaica. Suriname had seven routes, of which one had its main hub in Rio Haina in the Dominican Republic, six went through Trinidad, and four went through the U.S. Almost all routes were basically Caribbean routes, with one route going through the U.K. and the Netherlands.

Seven carriers connected to Haiti in 2011 via 12 routes, mostly focused on connectivity with the US and Caribbean: eight of the 12 routes were dedicated Caribbean routes (including the US, and other Caribbean hubs), one route was dedicated to the Far East, one route to South America (also with a Caribbean component), and one was dedicated to U.S. and Haiti only. Five of the carriers, listed in Table 3, also provide service to the smaller Caribbean islands.

The market concentration of the freight cargo for the Caribbean presents a very diverse story.

Figure 45: Herfindahl-Hirschman Index for Caribbean Ports (2012)



Source: Authors' calculation on data found in the *Containerization International Yearbook* (2012), and *Tropical Shipping* (2014).

The story of the Caribbean intercontinental hub countries has three parts. First, the inter-continental transshipment hubs such as Kingston, Caucedo, and Port of Spain present the lowest HH levels indicating highest level of competition and less concentration of the cargo market, they capture high levels of traffic and many shipping lines dock there for their transshipment. Second, the smaller, more touristic ports of the hub countries present a highly concentrated market, as expected, given that their main functions are not for transshipment and perhaps not even for cargo. Finally, the big outlier is Freeport. Freeport is no doubt a big transshipment center but it predominantly serves the U.S.A., which likely explains the very low level of competition seen there.

The surprise of the small island states is their moderately competitive cargo transport market. What explains the level of competition is the intra-island system of routes whereby ship lines follow routes with big vessels that touch every island every time they do the route. Interestingly, Vieux Fort, the only transshipment port of the small island states shows the lowest level of competitions among the small island states.

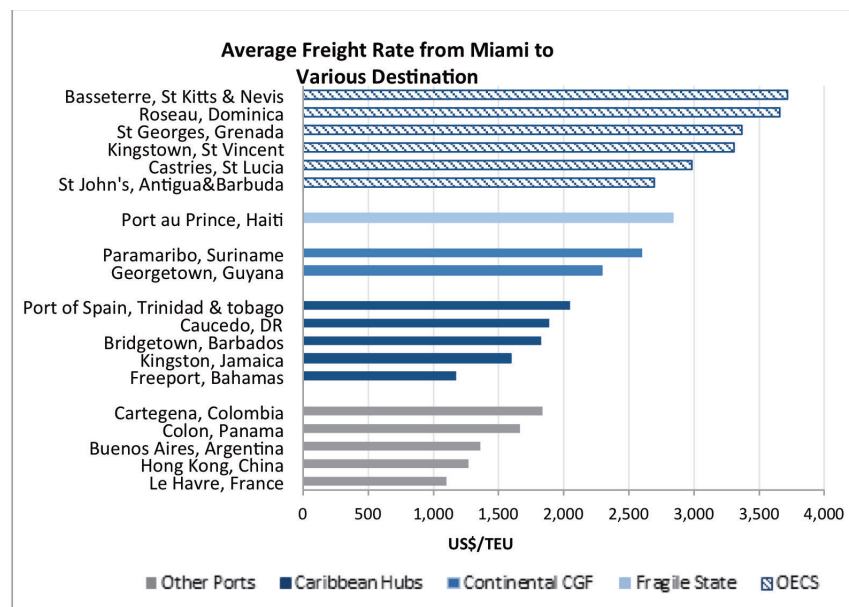
Finally, Belize is an outlier of the analysis. The country has a highly concentrated market, likely because it is a very small market that does not piggy-back onto regional shipping routes (like the small island states).

Freight Tariffs

A final consideration is freight tariffs and what factors might be driving them.

In absolute terms, the freight rate for shipping a 20-foot container from Miami to St Kitts and Nevis, at about US\$3,500/container, is more than two times the tariff of shipping the same container all the way through to Hong Kong (US\$1,270), Argentina (US\$1,360) or France (US\$1,100) (Figure 8). The distances to Miami from Hong Kong, Buenos Aires and France are 7, 4 and 3 times longer than from Miami to St. Kitts and Nevis.

Figure 46: Average Freight per TEU Shipped from Miami to Different Destinations

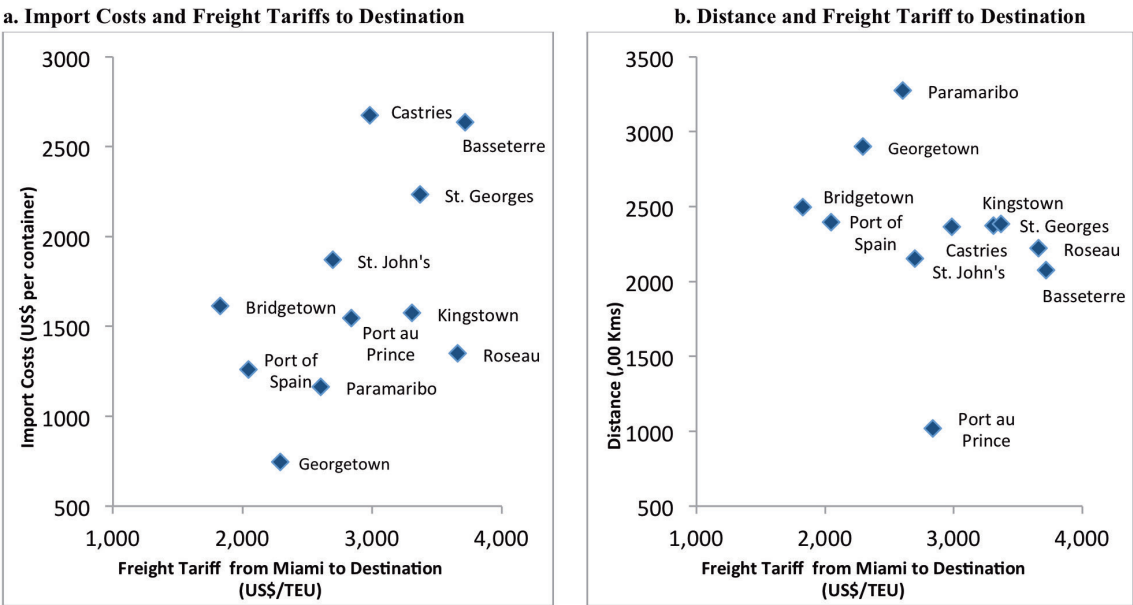


Source: Based on data from *Shipping Lines in World Bank* (2012b).

The first consideration is how distances affect tariffs. This is a complex manner that involves the appropriation and transfer of the economies of scale, the trajectory of trading routes, and the overall connectivity of ports and sub-regional hubs and transshipment centers. In fact, it is difficult to find a definite relation between freight tariffs and distances with the available data (Figure 48b).

The second consideration is the relation between import costs and tariffs. This relation seems more promising and shows a positively sample correlation of over 0.5 (Figure 48a).

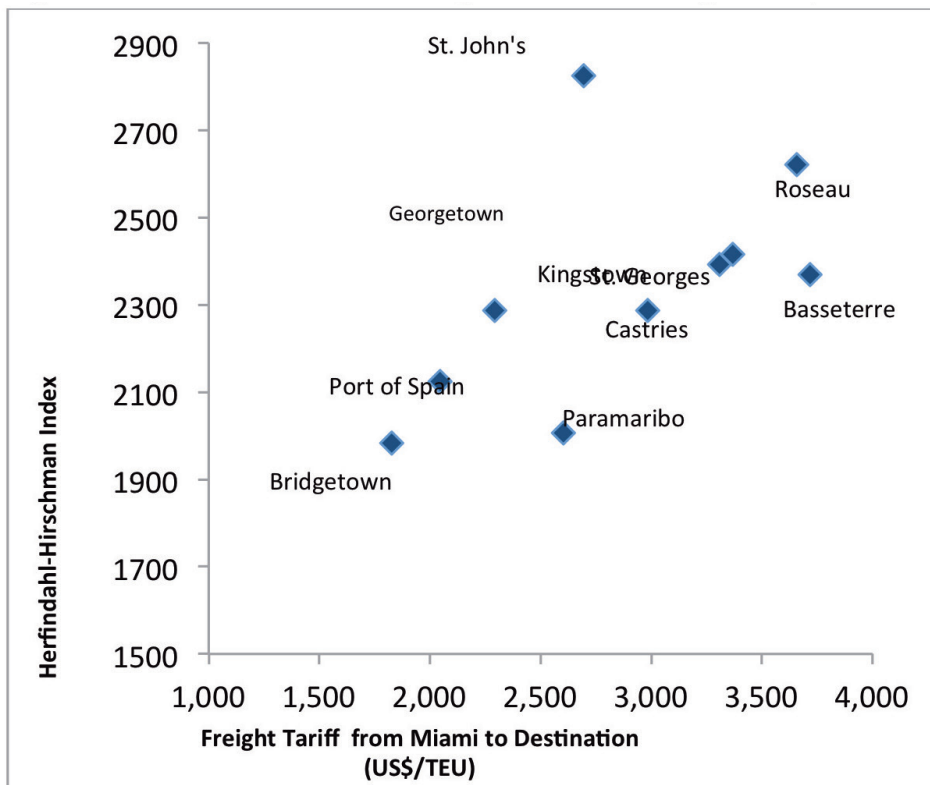
Figure 47: Correlation between Freight Tariff and Various Factors



Source: Based on data from World Bank (2012b) and World Bank (2013a).

Finally, there is the competition element. The correlation between the lack of competition, expressed in the HH, and high freight is clearly positive, and roughly equal to 0.6 (Figure 48).

Figure 48: Correlation between Freight Tariff and Competition (HH Index)



Source: Authors' estimations.

The last point, though controversial, is bolstered by the fact the one of the major players in the region, Tropical Shipping, ranks roughly at 34th place in size globally along the shipping lines, but is one of the most profitable, with a reported return on capital of between 18 to 28 percent, as compared to Maersk, the world's largest, with a return of roughly 4%. In fact, the individual markets in the Caribbean are highly concentrated, with but a few exceptions in some of the larger transshipment hubs. The high concentration reduces competitiveness, which makes collusion in pricing more likely.





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Appendix

I

Air Traffic Data

Traffic breakdown by country and route type for the CGF

Route Type	Typology	Country	Seats 2013	g01-13	g08-13
Domestic	Small Island States	Antigua and Barbuda	Scheduled services ceased 2010		
		St. Kitts and Nevis	Not Applicable		
		St. Lucia			
		St. Vincent and the Grenadines	Scheduled services ceased 2010		
		Subtotal	-		
	Hub Countries	Bahamas	1,503,918	5.0%	9.6%
		Dominican Republic			
		Jamaica	156,442	-12.4%	-2.2%
		Trinidad and Tobago	966,732	6.0%	5.4%
		Subtotal	2,627,092	1.4%	6.7%
	Continental Caribbean	Belize	379,223	-0.1%	-3.3%
Intra-Regional	Fragile States	Haiti	30,134		
	Total		3,036,449	1.2%	5.6%
	Small Island States	Antigua and Barbuda	209,261	-3.7%	-9.1%
		Dominica	78,481	-3.6%	-6.6%
		Grenada	174,226	-4.6%	-5.8%
		St. Kitts and Nevis	59,787	-0.6%	-5.1%
		St. Lucia	238,433	-4.9%	-0.2%
		St. Vincent and the Grenadines	122,642	-5.4%	-12.9%
		Subtotal	882,830	-4.3%	-6.6%
	Hub Countries	Bahamas	19,032	-10.7%	-18.3%
		Barbados	409,279	-6.5%	-11.2%
		Dominican Republic	54,652	11.7%	2.4%
		Jamaica	68,315	-7.4%	-11.6%
		Trinidad and Tobago	788,723	0.0%	1.4%
		Subtotal	1,340,001	-3.1%	-4.7%
	Continental Caribbean	Belize	No Direct Scheduled Traffic		
		Guyana	340,561	-0.1%	2.5%
		Suriname	86,996	14.9%	-0.3%
		Subtotal	427,557	1.4%	1.9%
	Fragile States	Haiti	3,432	7.4%	-5.8%
	Total		2,653,820	-3.0%	-4.5%
Extra-Regional	Small Island States	Antigua and Barbuda	575,679	1.6%	-3.2%
		Dominica	64,259	-0.2%	-3.8%
		Grenada	109,096	-0.3%	-3.4%
		St. Kitts and Nevis	227,019	-2.7%	-9.4%
		St. Lucia	591,305	3.1%	-0.6%
		St. Vincent and the Grenadines	No Direct Scheduled Traffic		
		Subtotal	1,567,358	0.9%	-3.6%
	Hub Countries	Bahamas	3,515,369	-2.6%	-3.0%
		Barbados	1,280,344	1.4%	-2.6%
		Dominican Republic	10,473,723	6.6%	6.7%
		Jamaica	4,963,829	3.6%	1.6%
		Trinidad and Tobago	1,329,861	3.5%	-0.8%
		Subtotal	21,563,126	3.2%	2.5%
	Continental Caribbean	Belize	709,787	4.3%	3.2%
		Guyana	94,562	0.3%	3.9%
		Suriname	440,869	3.6%	6.4%
		Subtotal	1,245,218	3.7%	4.3%
	Fragile States	Haiti	1,312,636	3.2%	2.1%
	Total		25,688,338	3.0%	2.1%

Source: Authors' calculations on data by Diio (2014).

International traffic within the Caribbean

Country 1	Country 2	2013	Share	Growth 2001-2013
Guyana	Trinidad and Tobago	289,289	18.8%	1.1%
Barbados	Trinidad and Tobago	188,604	12.2%	-3.6%
Trinidad and Tobago	Saint Lucia	127,283	8.3%	5.5%
Grenada and South Grenadines	Trinidad and Tobago	102,635	6.7%	-3.9%
Barbados	Saint Vincent and Grenadines	82,004	5.3%	-6.7%
Suriname	Trinidad and Tobago	77,168	5.0%	17.0%
Antigua and Barbuda	Saint Kitts and Nevis	59,787	3.9%	-0.8%
Barbados	Antigua and Barbuda	56,329	3.7%	-2.1%
Barbados	Saint Lucia	49,803	3.2%	-11.4%
Barbados	Dominica	44,525	2.9%	7.3%
Antigua and Barbuda	Dominican Republic	43,979	2.9%	28.4%
Barbados	Grenada and South Grenadines	37,284	2.4%	-9.3%
Antigua and Barbuda	Trinidad and Tobago	36,803	2.4%	-6.8%
Barbados	Guyana	35,945	2.3%	-7.1%
Antigua and Barbuda	Dominica	32,656	2.1%	-7.8%
Jamaica	Bahamas	31,824	2.1%	-7.2%
Antigua and Barbuda	Saint Lucia	27,573	1.8%	-6.4%
Trinidad and Tobago	Saint Vincent and Grenadines	25,844	1.7%	-2.3%
Jamaica	Trinidad and Tobago	25,545	1.7%	
Grenada and South Grenadines	Saint Lucia	23,920	1.6%	-1.3%
Barbados	Jamaica	19,071	1.2%	-9.2%
Antigua and Barbuda	Guyana	16,068	1.0%	30.2%
Saint Lucia	Saint Vincent and Grenadines	14,950	1.0%	1.2%
Guyana	Jamaica	13,455	0.9%	
Guyana	Suriname	9,828	0.6%	0.0%
Grenada and South Grenadines	Saint Vincent and Grenadines	9,711	0.6%	-8.1%
Jamaica	Dominican Republic	7,852	0.5%	-3.8%
Antigua and Barbuda	Jamaica	6,968	0.5%	-7.0%
Barbados	Saint Kitts and Nevis	6,630	0.4%	4.7%
Dominica	Saint Lucia	6,578	0.4%	-10.9%
Dominica	Saint Vincent and Grenadines	5,369	0.3%	1.1%
Antigua and Barbuda	Grenada and South Grenadines	4,680	0.3%	-1.5%
Saint Vincent and Grenadines	Trinidad and Tobago	3,536	0.2%	
Saint Vincent and Grenadines	Grenada and South Grenadines	3,536	0.2%	
Dominica	Trinidad and Tobago	3,315	0.2%	
Antigua and Barbuda	Saint Vincent and Grenadines	3,185	0.2%	-9.5%
Bahamas	Trinidad and Tobago	3,120	0.2%	
Haiti	Dominican Republic	2,262	0.1%	
Dominica	Grenada and South Grenadines	2,145	0.1%	2.3%
Jamaica	Haiti	1,170	0.1%	-1.8%
Dominican Republic	Jamaica	559	0.0%	-13.0%
Totals		1,542,788	100.0%	3.0%

Source: Authors' calculations on data by Diio (2014).

Airlines providing international inter-island services within the Caribbean

Rank	Airline	Seats 2013	Share
1	Caribbean Airlines (formerly BWIA West Indies Airways Limited)	1,441,271	15.1%
2	Leeward Islands Air Transport (1974) Ltd. (LIAT)	881,283	9.3%
3	Southern Air Charters Co. Ltd.	851,760	8.9%
4	Jetblue Airways Corporation	685,230	7.2%
5	Insel Air	603,616	6.3%
6	Seaborne Airlines	533,611	5.6%
7	Bahamasair	504,816	5.3%
8	Sun d'Or International Airlines	455,832	4.8%
9	Cubana de Aviacion, S.A.	389,636	4.1%
10	Air Caraibes	369,863	3.9%
11	Air Guyane S.P.	356,954	3.7%
12	Windward Islands Airways	324,324	3.4%
13	Cayman Airways Ltd.	314,782	3.3%
14	Dutch Eagle Express N.V.	285,480	3.0%
15	Cape Air	251,784	2.6%
16	Air Sunshine, Inc.	248,170	2.6%
17	British Airways P.L.C.	219,466	2.3%
18	Interisland Airways Limited	168,155	1.8%
19	Executive Airlines, Inc.	128,674	1.4%
20	Air Saint Barthelemy	122,590	1.3%
21	Air France	98,969	1.0%
22	Tiara Air Aruba	65,364	0.7%
23	Sunrise Airways S.A.	33,592	0.4%
24	Transportes Aereos Nacionales de Selva (TANS)	33,150	0.3%
25	Caicos Express Airways	25,896	0.3%
26	Montserrat Airways	21,996	0.2%
27	Vensecar Internacional, C.A.	21,840	0.2%
28	Anguilla Air Services	19,656	0.2%
29	BVI Airways	15,808	0.2%
30	Surinam Airways Ltd.	13,104	0.1%
31	Jet Ops	7,995	0.1%
32	Virgin Atlantic Airways Limited	7,904	0.1%
33	TUI Airlines Belgium	7,852	0.1%
34	KLM Royal Dutch Airlines	3,302	0.0%
35	Conviasa	2,275	0.0%
36	Iberia	2,210	0.0%
37	Thomas Cook Airlines U.K. Ltd.	1,391	0.0%
38	Condor Flugdienst GmbH	1,170	0.0%
39	Blue Panorama Airlines S.p.A.	559	0.0%
40	United Airlines, Inc.	533	0.0%
Total		9,520,771	100.0%

Source: Authors' calculations on data by Diio (2014).



Appendix

II

Maritime Traffic Data

Carrier	2011 Estimated Annual Capacity	Share (%)
Small Island States		
Bernuth Lines Limited (now part of King Ocean Services Limited)	58,240	16.4
CMA CGM S.A.	90,844	25.6
Crowley Liner Services Incorporated	58,344	16.5
Geest Bananas Limited	13,416	3.8
Seaboard Marine Limited	34,320	109.7
Seafreight Line Limited	57,467	16.2
Tropical	41,600	11.7
Total²⁴	354,231	100
Continental CGF		
Bernuth Lines Limited (now part of King Ocean Services Limited)	116,688	23.0
Caribbean Feeder Services Limited	26,416	5.2
CMA CGM S.A.	108,498	21.3
Europe Caribbean Shipping	34,944	6.9
Hybur Limited	13,832	2.7
Industrial Maritime Carriers LLC	24,440	4.8
Seaboard Marine Limited	68,640	13.5
Seafreight Line Limited	114,935	22.6
Total	508,393	100
Fragile State		
Seaboard Marine Limited	138,355	35.6
Crowley Liner Services Incorporated	84,708	21.8
Seafreight Line Limited	57,467	14.8
CMA CGM S.A.	48,360	12.5
Caribbean Feeder Services Limited	31,668	8.2
Rickmers-Linie GmbH & Cie KG	19,760	5.1
Antillean Marine Shipping Services Corporation	7,800	2.0
Total	388,118	100

Source: Authors' calculation on data found in the Containerization International Yearbook (2012)

²⁴ Caribbean Feeder service, present throughout many islands, did not serve any routes in the small island states, according to the Containerization International Yearbook of 2012.





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