An analysis of maritime transport and its costs for the Caribbean

ACKNOWLEDGEMENT

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Introduction

The Caribbean is largely made up of small and specialised open island economies, which import a large proportion of their consumer goods. In addition, any local production of goods and services is heavily dependent on the import of raw materials and unfinished parts. In 1996, the Caribbean's level of foreign trade, as a proportion of GDP, was 78 per cent, compared with 25 per cent for Latin America for the same period (Hoffmann, 1997). Based on these figures, it can be inferred that Caribbean countries are more dependent on foreign trade than other regions.

Maritime transport is the primary mode of commercial transport for the Caribbean. For island States such as these, trade in goods is conducted either by air or by sea. However, from an economic standpoint, air transport is only feasible for certain types of products and, as such, maritime transport remains the sole mode of transport for most goods. From this, it can be concluded that Caribbean countries are more dependent on maritime transport than other regions.

Most Caribbean countries export only a few commodities such as bananas, sugar or bauxite -- commodities for which a buyer can easily choose alternative sources of supplies. This means that countries in the region must accept prices determined by the international market for their export products. Moreover, these products have a low value and high transport costs, which have a significant impact on regional exporters. High shipping costs will even impede trade of any commodity once a competing country can offer the same product, inclusive of transport costs, at a lower rate. Thus, the industries of a country with high shipping costs experiences difficulties in exporting their products. Moreover, any dollar spent to transport a commodity directly to the market reduces the income of the Caribbean exporter and, as a result, firms in such countries might be forced to pay lower wages to compensate for higher transport costs, in order to be able to compete on world markets. It also increases the price of imported consumer goods and commodities. Thus, the whole economy of a country would benefit from any savings that result from the lowering of the transport costs.

In summary, it can be said that high transport costs have a direct negative impact on trade and foreign investment. This relationship was identified in a recent World Bank Study (1994). Similarly, Radelet and Sachs (1998) concluded that "countries with lower shipping costs have had faster manufactured export growth during the past thirty years than countries with higher shipping costs".

For the Caribbean, especially, maritime transport costs are still high in comparison to other countries. For countries in the region, transport and insurance costs as a percentage of the value of their imports are as much as three times higher than the world average (Hoffmann, 1997). There are diverse reasons for higher transport costs, that is, economies of scale in ports and in shipping, the degree of competition, port dues and tariffs, waiting times in ports or insurance premiums. Knowledge of the potential factors that influence these costs is essential. Hence this document, which seeks to analyse maritime transport and the possible determinants of its costs.

To examine maritime transport and its costs, the analysis has been divided into three parts. Firstly, an overview of Caribbean foreign trade is given and the impacts on maritime transport and its costs for this region are considered. This analysis was done using import and export data for Barbados, Dominica, St. Lucia and Trinidad & Tobago for the period 1999.[1] The information was obtained from a prototype of a trade and transport database, which has been created by the Economic Commission for Latin America and the Caribbean (ECLAC) Subregional Headquarters for the Caribbean. These countries were chosen as representative of the Caribbean: Dominica and St. Lucia – representing small open economies with dependency on a few export commodities; and Barbados and Trinidad & Tobago -- representing larger economies with a more diversified product structure.

The second part of this document is a detailed analysis of the determinants that impact on maritime transport costs. Data used in this part of the study was obtained from various sources, namely ports, shipping lines and agents, as well as other research studies. However, it must be noted at this juncture that because of a lack of statistical information, no comprehensive analysis could be undertaken on the factors having an impact on transport costs and, as such, selected samples were used.

The final section of this document provides governments, regional and international organizations, such as the Association of Caribbean States (ACS) or the Caribbean Shipping Association (CSA), with a few preliminary recommendations of possible areas for future activities, aimed at facilitating foreign trade and maritime transport. The key purpose of this section is to highlight what could be done by the public sector to promote trade, reduce transport costs and generally to assist the private sector involved in shipping.

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[1] Only import and exports of goods. Trade in services is not included

Part I: Overview of Caribbean foreign trade and its impact on maritime transport and its cost

This section investigates the international trade of various Caribbean countries by looking at the different aspects of the transport elements involved. Through these analyses, it should be possible to gain a better idea of the overall transport structure and the importance of maritime transport services for the Caribbean. Firstly, the significance of maritime transport for the region is described, supported with the available import and export data. Total import and export volumes of the Caribbean countries and differences between them are illustrated. The foreign trade of the selected Caribbean countries is then divided into sections of the Standard International Trade Classification (SITC), and also into different regions of origin and destination, with a view to demonstrating imbalances in trade. Finally, the resulting impacts on transport costs are also discussed.

I.   Available data

Data on foreign trade was obtained from a prototype of a trade and transport database, which has been created in recent months by the ECLAC Subregional Headquarters for the Caribbean. At present, import and export data is available for Barbados, Dominica, St. Lucia and Trinidad & Tobago. The data is obtainable on a five-digit level of the SITC and contains information on the values (in local currency), the volumes (in kilograms), and the countries of origin (for imports) and destination (for export). For two countries, Barbados and Trinidad and Tobago, information on the mode of transport and the ports of arrival (for imports) and departure (for exports) is also available. It is to be expected that over the next few months, more countries will be included in this database.

For the purposes of this document, only imports and exports of goods and not of services are analysed, and a three-digit level of the SITC is used to classify the goods. For transport, the volume of trade is more important than its value and, thus, imports and exports of the Caribbean countries were examined with respect to volume as opposed to values. Further, imports and exports of *Minerals Fuels, Lubricants and Related Materials (SITC 3)* were excluded from this study because of the following. Figure 1 shows the high percentage of Petroleum imports and exports (SITC 3) of total trade for Barbados and Trinidad & Tobago).

Figure 1: Percentage of petroleum imports and exports to total trade, 1999

	imports	exports
■ Barbados	54%	68%
□ Trinidad & Tobago	67%	59%
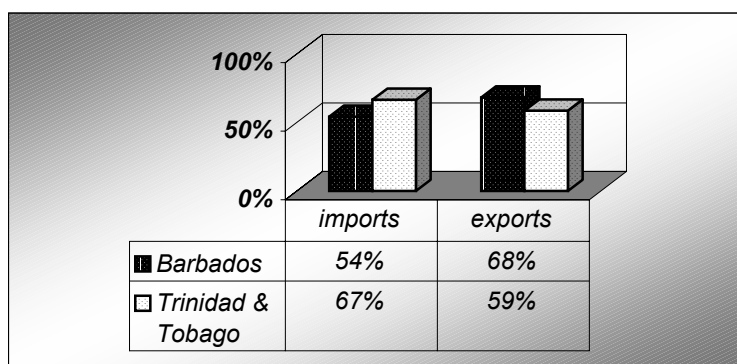
Source: ECLAC Port-of-Spain

Petroleum exports and imports are a highly specialised sector and shall not be considered in a general study on maritime transport in the Caribbean, as it is an entirely different market. The ports are not common user ports, but usually specialised terminals, which often belong to the same economic interest as the owners of the cargo. If this market were to be also taken into consideration, the findings of this study would be skewed.

The mode of transport was also not taken into account in this study, due primarily to a lack of information for Dominica and St. Lucia in this regard. However, this should not unduly influence the conclusions of this section, as the following figure illustrates.

Figure 2: Percentage of maritime transport (volume), 1999

	imports	exports
■ Barbados	97%	99%
□ Trinidad & Tobago	98%	100%
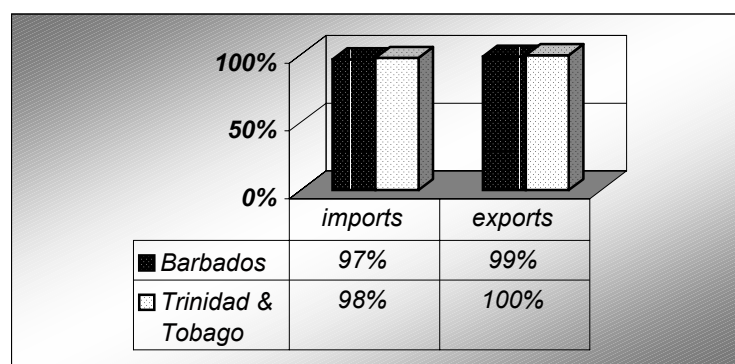
Source: ECLAC Port-of-Spain

As can be seen, with respect to the volume, maritime transport amounts to more than 97 per cent of total transport for Barbados and Trinidad and Tobago, both for imports and exports. For the other countries, they being island States as well, it can be concluded that this relationship would be similar. For any foreign trade of these

countries, it must be remembered that volume-wise, for more than 97 per cent of total trade, maritime transport was the involved mode of transport. This demonstrates again the strong dependency of Caribbean countries on efficient and cost-effective maritime transport services.

II.   Total Trade

Among the individual Caribbean islands there are noticeable differences regarding the import and export volumes. In examining trade, the traditional approach is to focus on its value, instead of its volume. The following chart shows the value of imports and exports of the CARICOM countries.

Figure 3: Imports and Exports of goods for CARICOM countries, 1998
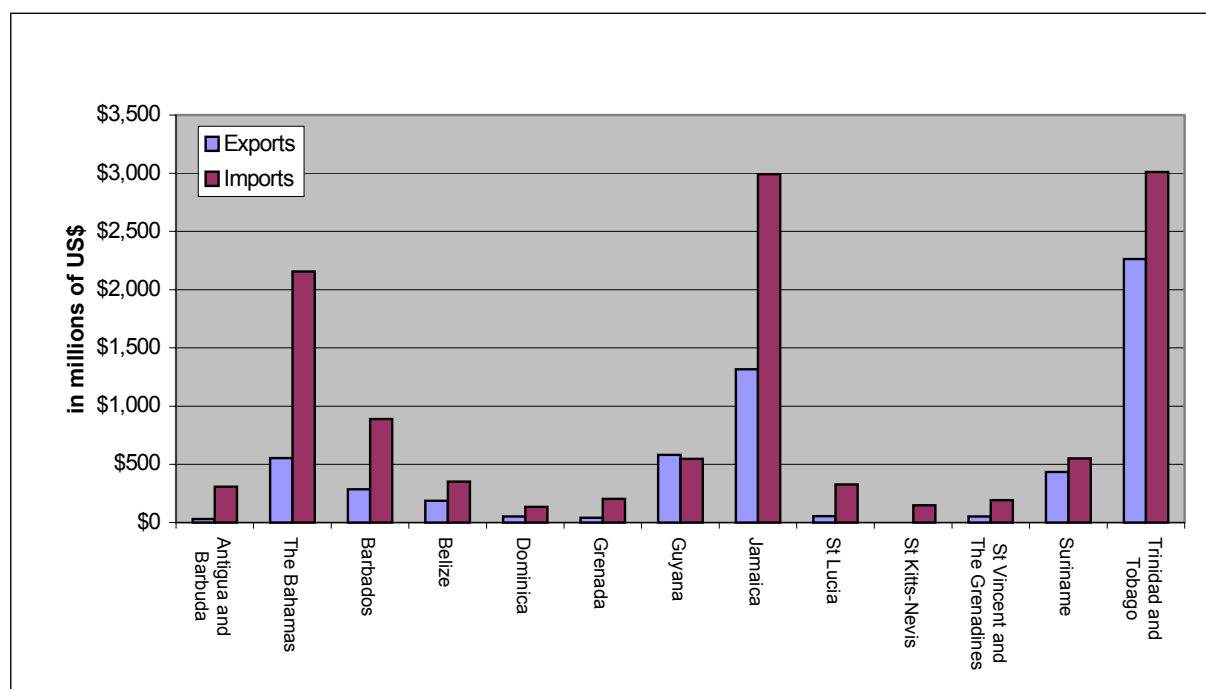
Source: Association of Caribbean States (ACS), Port of Spain, Data for Montserrat not available

Jamaica and Trinidad and Tobago are by far the strongest traders in the region. On the other hand, small countries such as, Antigua and Barbuda, Dominica or St. Kitts and Nevis, for example, have very little merchandise export at all due to small, undiversified production systems. It also can be seen that most of the countries have a large trade deficit. In this chart, only Guyana, Suriname and Trinidad and Tobago seem to have achieved balance between their import and export values. However, further examination will reveal that volume-wise, and with respect to the composition of trade,

almost every country is strongly imbalanced due to exports of relatively low value raw materials and imports of high value consumer and investment goods.

An aggregate way of measuring the costs of international transport would be to look at the differences between the *costs, insurance and freight (CIF)* and the *Free on Board (FOB)* values of the imports of a country. Thus, for maritime transport, the difference between CIF and FOB are the costs for freight and insurance. It is obvious that the total costs for the whole chain of transport are not reflected by this definition of transport costs.

This measurement of transport costs is also not an accurate way to examine efficiency in transport. For example, a country A imports or exports refrigerated products with a relatively low value and another country B imports or exports high value goods. All things being equal, country A will face higher CIF/FOB ratios than country B, if only because of the differences in product structure. It is also obvious that any variation in the FOB value of low value goods affects the costs of transport measured in the CIF/FOB ratio very strongly.

In summary, the differences between the CIF and the FOB values provide information about the estimated total freight and insurance costs that a country would have paid for its imports. Different countries could only be compared if all other conditions, for example, same product compositions of imports or same FOB values are guaranteed. In reality, these conditions are not given and, thus, the method of comparing the CIF/FOB ratios is not sufficient to analyse efficiencies in transport services.

However, it is interesting to know how much Caribbean countries pay for the transport of their imports, in comparison to the world average.

**Figure 4: The costs of transport and insurance as a percentage of the
value of the imports, 1997**
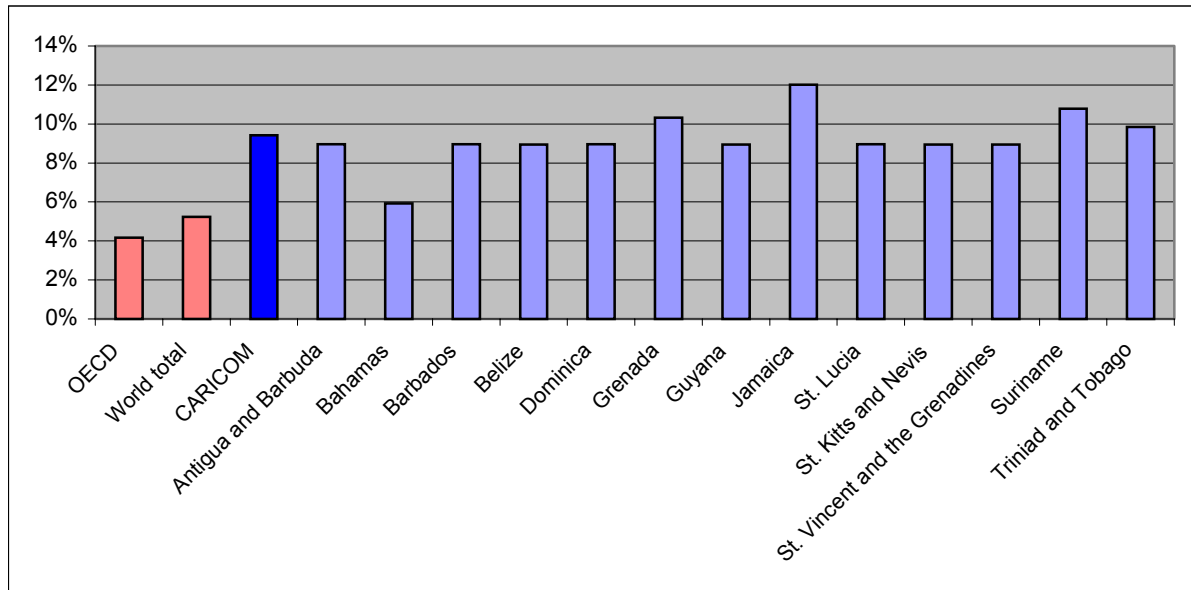
Source: UNCTAD, Review of Maritime Transport (1999)

As the chart reveals, Caribbean countries pay more for the transport of their imports than the world average. The World Bank (1994) stated that there is a relationship between maritime transport, foreign trade and economic growth. In particular, there is a negative relation between foreign investment and transport costs, meaning that inefficient transport hampers trade and the development of non-maritime industries and services. Less expensive transport then would directly promote foreign trade and, at the same time, more trade would also lead to a further reduction of transport costs due to economies of scale.

However, as was explained previously, the total costs as shown in Figure 4 are influenced by various and diverse components. The composition of trade, the value of the goods, port dues and tariffs, waiting times in ports, economies of scale, sea freight rates and insurance premiums, are all variables which impact on total costs. In order to determine the impacts of these factors more precisely, a further analysis of maritime transport in the Caribbean will be required.

In looking at transport, the volume of trade is more important than its value. For the purposes of this study, the focus will be on volumes instead of values. The following table shows the total trade of selected Caribbean countries, with respect to volumes.

Table 1: Total trade with respect to volumes, 1999

Tons	BARBADOS	DOMINICA	ST_ LUCIA	TRINIDAD AND TOBAGO
Imports	438,163.61	127,476.19	414,113.63	2,376,099.59
Exports	134,476.38	376,120.49	79,781.59	8,239,021.47

Source: ECLAC Port-of-Spain, Petroleum excluded

The table reveals some interesting findings. With regard to values (see Figure 3), all countries had an export deficit, whereas, with respect to volumes, the situation was the reverse. On the one hand, Barbados and St. Lucia still import more than they export; on the other hand, Dominica and Trinidad and Tobago exported much more than they imported. Figure 5 illustrates this relationship.

Figure 5: Imports as percentage of exports
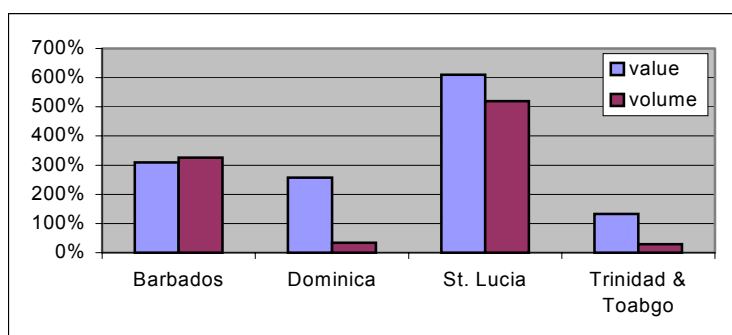
Source: ECLAC Port-of-Spain

As the figure reveals, the trade patterns vary from country to country. Both Barbados and St. Lucia, in terms of the value and the volume criteria, have far more imports than exports; whereas volume-wise, Dominica and Trinidad and Tobago have a considerable surplus of exports. However, the figure does not explain what kinds of products are traded. This will be done in the next section.

III.   Trade by SITC sections

Data available at the ECLAC Subregional Headquarters for the Caribbean made it possible to group the trade into individual SITC sections, which allows for a more precise determining of the trade structure. The following page illustrates the foreign trade structure of Barbados, Dominica, St. Lucia and Trinidad and Tobago, according to different SITC sections (with the exclusion of petroleum products).

Figure 6: Import structure for selected Caribbean countries by volume
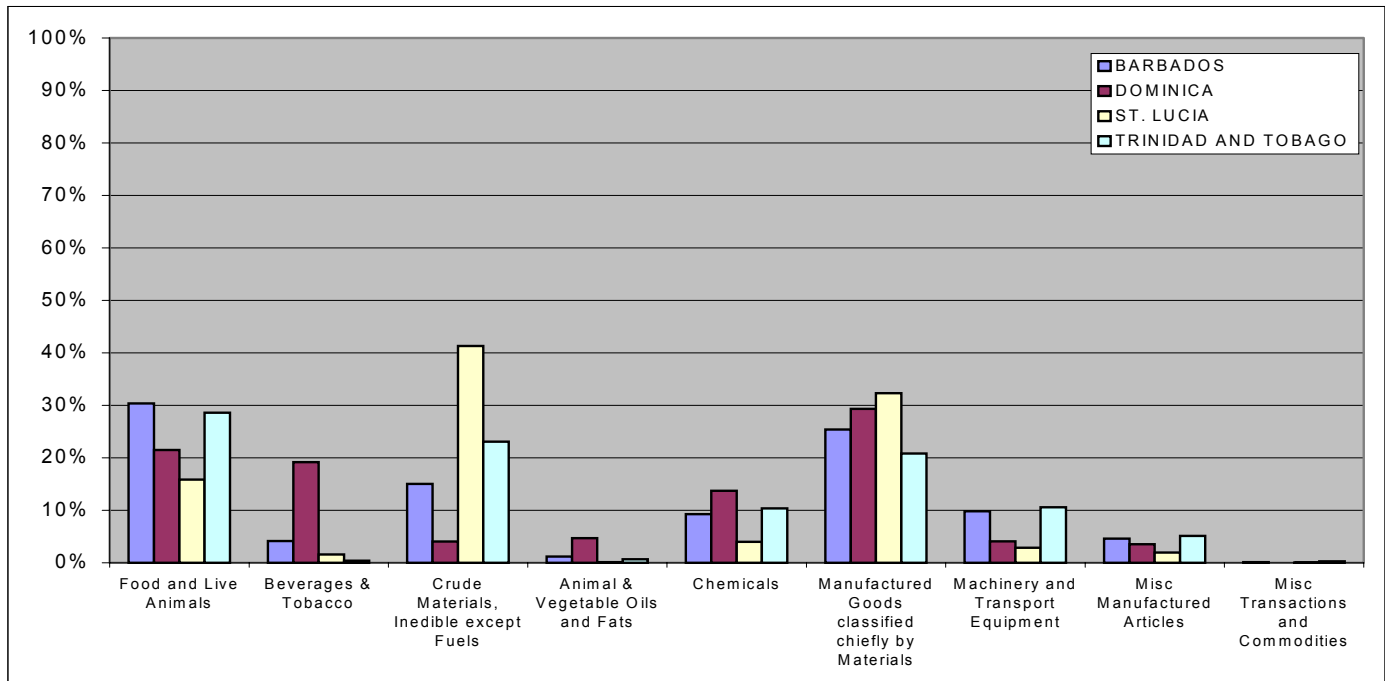
Source: ECLAC Port-of-Spain

Figure 7: Export structure for selected Caribbean countries by volume
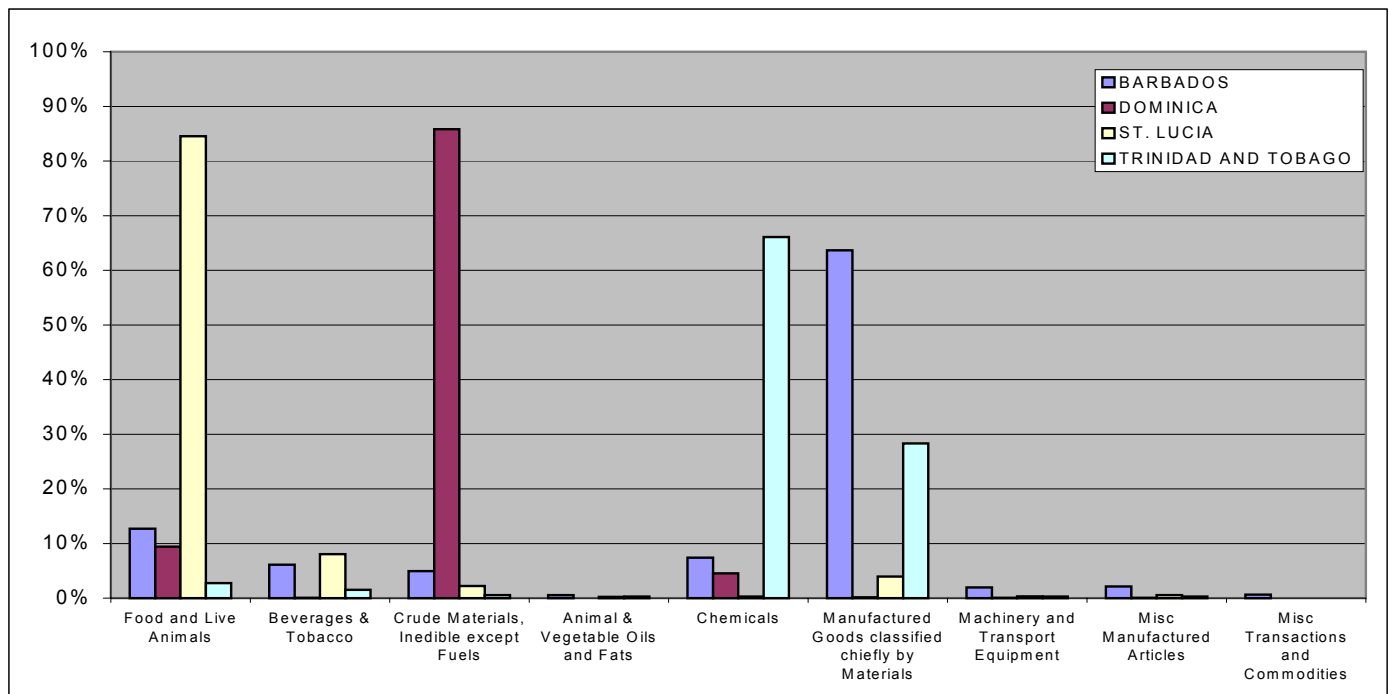
Source: ECLAC Port-of-Spain

These figures reveal some interesting findings. There are major differences between the import and export structure of each country. Looking at imports, it can be

seen that *Food and Live Animals (SITC 0), Crude Materials - Inedible except Fuels (SITC 2)*, and *Manufactured Goods classified chiefly by Materials (SITC 6)* are imported almost evenly. The other SITC sections also comprise a certain percentage of total imports.

On the other hand, for exports, the situation is completely different. Each country has its own principal export product or SITC section, respectively. *Food and Live Animals* account for 80 per cent of the exports of St. Lucia. For Dominica, 80 per cent of its exports is made up of *Crude Materials, Inedible except Fuels*. Trinidad and Tobago specialises in the exports of chemicals (after petroleum and its derivatives[2]), and Barbados' principal export products are *Manufactured Goods*. The following figures will confirm that the countries are not only specialised in SITC sections, but also in individual products.

Table 2: Principal Export products of St. Lucia (by Volume), 1999

SITC section 0: Food and live animals					
Country	SITC code	Product description	Volume (in tons)	Percentage within SITC 0	Percentage of total exports
St. Lucia	057	Fruit and nuts, fresh or dried	67,018	99%	84%
	075	Spices	170	0%	0%

Source: ECLAC Port-of-Spain

As can be seen from the table, St. Lucia has one primary export product. The export of *Fruits and nuts, fresh or dried* accounts for 99 per cent of all exports (mainly bananas) within SITC section 0, and up to 84 per cent of the total export volume.

Table 3: Principal Export products of Dominica (by Volume), 1999

SITC section 2: Crude Materials, Inedible except Fuels					
Country	SITC code	Product description	Volume (in tons)	Percentage within SITC 2	Percentage of total exports
Dominica	273	Stone, sand and gravel	322,752	100%	86%
	292	Crude vegetable materials, n.e.s.	16	0%	0%

Source: ECLAC Port-of-Spain

This table shows the same situation for Dominica. One product accounts for 86 per cent of total exports. The difference with St. Lucia is that the export volume is much larger due to the type of cargo being exported. It is obvious that stones would be heavier than fruits, in the case of St. Lucia.

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[2] The SITC section 3, Petroleum and its derivatives was not taken into account in this study

Table 4: Principal Export products of Trinidad & Tobago (by Volume), 1999

SITC section 5: Chemicals					
Country	SITC code	Product description	Volume (in tons)	Percentage within SITC 5	Percentage of total exports
Trinidad & Tobago	522	Inorganic chemical elements, oxides and halogen salts	2,984,072	55%	36%
	512	Alcohols, phenols, phenol-alcohols and their halogenated, sulfonated, nitrated or nitrosated derivatives	1,822,425	33%	22%

Source: ECLAC Port-of-Spain

Apart from petroleum products, Trinidad and Tobago is a large exporter of chemicals as well. Again, this country has specialised in only two main products: *Inorganic chemical elements (SITC 522)* and *Alcohols and phenols (SITC 521)*, which together account for more than 50 per cent of exports of non-petroleum goods.

Table 5: Principal Export products of Barbados and Trinidad & Tobago (by Volume), 1999

SITC section 6: Manufactured Goods classified chiefly by Materials					
Country	SITC code	Product description	Volume (in tons)	Percentage within SITC 6	Percentage of total exports
Barbados	661	Lime, cement, and fabricated construction materials	72,824	85%	54%
	642	Paper and paperboard, cut to size or shape	2,722	3%	2%
Trinidad & Tobago	676	Iron and steel bars, rods, angles, shapes	1,181,644	51%	14%
	671	Pig iron and spiegeleisen, sponge iron, iron or steel granules and powders	499,372	21%	6%

Source: ECLAC Port-of-Spain

Lime, cement and fabricated construction materials are the principal export products of Barbados. It accounts for 54 per cent of total exports. *Manufactured Goods* are an important SITC section for Trinidad and Tobago as well. That country mainly exports *Iron and steel bars* and *Pig iron and spiegeleisen* from this SITC category.

In summary, each country has specialised in a few commodities. For St. Lucia and Dominica, one product accounts for more than 80 per cent of total exports. It can be concluded that this is the general situation in many small islands.

Representatives of Caribbean governments often highlight the dependence of their countries on the export of a few low value added products to European and North American markets. The trading regions shall be examined in the next section.

IV.   Trade by Regions

With regard to transport, it is important to know the respective points of origin and destination of a given voyage, which can be revealed by a perusal of foreign trade data. Once these are ascertained, it is then possible to calculate roughly the percentage of the trade that is imbalanced on specific trading routes. This section provides an illustration of the trade structure for Caribbean islands with respect to their trading partners, and highlights the differences between them.

The following charts outline the significance of different trading regions for the four selected Caribbean countries, for both imports and exports.

Figure 8: Regions of product origin for imports (volume), 1999
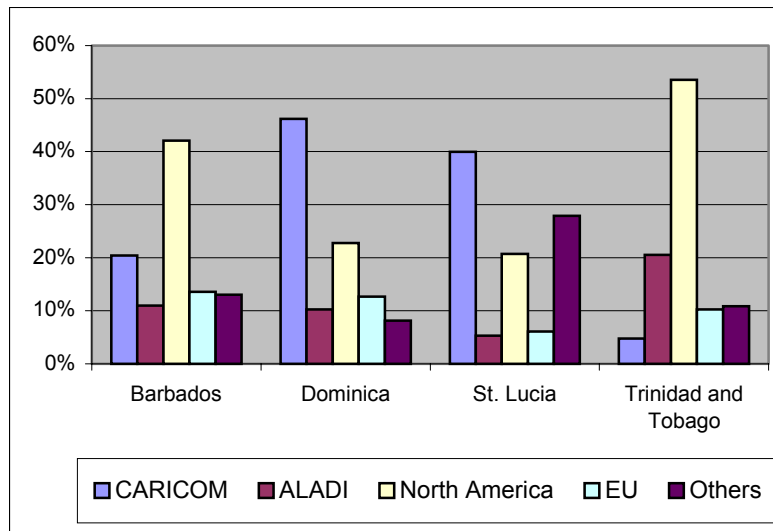
Source: ECLAC Port-of-Spain

As can be elicited from this chart, CARICOM trade plays a major role for the smaller islands. For Dominica and St. Lucia, most of their imported products originate within CARICOM. Lower relative competitiveness means that the larger CARICOM countries are able to gain important shares of the markets of the smaller ones. On the other hand, for Barbados and Trinidad and Tobago, the United States and Canada are their largest trading partners. It can be said, however, that in terms of imports, goods are traded with all regions. For exports, though, the situation is completely different, as the following chart illustrates.

Figure 9: Regions of product destination for exports (volume), 1999
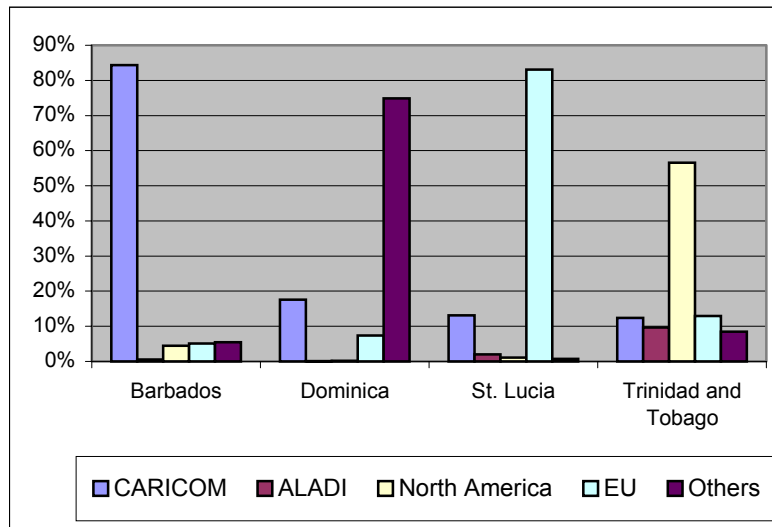
Source: ECLAC Port-of-Spain

Each country exports to a different region of destination. Over 80 per cent of the exports of Barbados are shipped within CARICOM. Dominica exports almost all of its goods to another region grouped in *Others*. St. Lucia ships over 80 per cent of its goods to Europe. For Trinidad and Tobago, the trade picture is not as extreme. Its major trading partner is North America, followed evenly by CARICOM, the Latin American Integration Association (ALADI), the European Union (EU) and other regions. This will now be examined in further detail.

Table 6: Exports by principal trading countries regarding volume, 1999

Barbados	Volume (in tons)	Percentage of total exports	Dominica	Volume (in tons)	Percentage of total exports
SURINAME	32,409.44	24%	GUADELOUPE	229,229.57	61%
ST. LUCIA	20,316.40	15%	UNITED KINGDOM	27,589.49	7%
TRINIDAD AND TOBAGO	12,078.62	9%	U. S. VIRGIN ISLANDS	23,286.04	6%
JAMAICA	12,053.12	9%	ST. LUCIA	21,419.63	6%
ST. KITTS AND NEVIS	10,519.18	8%	ANTIGUA AND BARBUDA	20,110.43	5%
ST. VINCENT	6,996.60	5%	MONTSERRAT	13,074.49	3%

Table 6: Exports by principal trading countries regarding volume, 1999 (continued)

St. Lucia	Volume (in tons)	Percentage	Trinidad and Tobago	Volume (in tons)	Percentage of total exports
UNITED KINGDOM	66,228.03	83%	U. S. A.	4,328,228.29	53%
TRINIDAD AND TOBAGO	2,525.19	3%	UNITED KINGDOM	399,684.02	5%
BARBADOS	2,363.43	3%	MEXICO	353,511.65	4%
ANTIGUA AND BARBUDA	2,197.11	3%	FRANCE	348,532.95	4%
VENEZUELA	1,564.41	2%	CANADA	330,816.53	4%
DOMINICA	1,215.16	2%	JAMAICA	229,643.97	3%

Source: ECLAC Port-of-Spain

The table clearly demonstrates the dependency of Caribbean countries on single trading partners. Each country being examined has one trading partner accounting for a large percentage of its total exports. For Barbados, the five largest trading partners all belong to CARICOM, and exports to these five countries account for up to 70 per cent of total exports. Dominica trades 61 per cent of its exports with its neighbour, Guadeloupe, and St. Lucia's exports to a single country are as much as 83 per cent of its total exports – in this case the United Kingdom, its largest trading partner, resulting from preferential treatment for its bananas. Trinidad and Tobago's principal trading partner is the United States, with 53 per cent of its total exports, which is due mainly to exports of chemicals.

In summary, especially the smaller islands of Dominica and St. Lucia possess one trading route with a large amount of traded volume, while for the other routes there is only a small amount of volume traded. For example, Dominica exports 229,229 tons to Guadeloupe, followed by only 27,589 tons to its second largest trading partner, the United Kingdom. For St. Lucia, the trade picture is quite similar. More than 66,000 tons are exported to the United Kingdom, while only 2,525 tons are exported to its second largest trading partner, Trinidad and Tobago. This must have an impact on available shipping services, a relationship that will be discussed in the next section.

V.   Conclusion: Impacts of foreign trade on transportation services

This section identifies the causalities between foreign trade and maritime transport. The impacts of small volume, import and export imbalances, and a country's specialisation in few commodities will be examined. Also, the consequences of the availability of transportation services, and the choice of trading partners, will be analysed.

Maritime transport is in fact the key mode of transport. Thus, a reduction of its costs would have a stronger impact in most Caribbean countries than in virtually any other region of the world. However, due to their relatively small volume of foreign trade, only a few direct lines, from Asia, Europe or North America service most Caribbean countries.

Caribbean countries export only a small number of commodities to a few trading partners, with a large part of this trade being moved -- most probably -- by chartered vessels. In the case of St. Lucia, for example, a specialised banana ship which takes cargo directly to the United Kingdom and makes use of a port, which has specialised facilities for these cargoes, offers obviously lower relative unit costs than a general cargo ship, which carries different types of cargo to a transhipment centre, from where the cargo is distributed. Thus, product diversification would lead to increased unit costs, and from the perspective of cheaper maritime transport, it would not make sense if each and every country tries to export a diversified portfolio to many destinations on its own. This suggests room for joint marketing by the countries of a mix of products to benefit from scale economies

Looking at the import and export structure of Caribbean countries, it must be noted that these exports consist primarily of fruits and raw materials in large volumes, whereas imports comprise mainly containerised cargo with a high value. This means that there are different types of cargo, which implies a demand for different types of vessels, thus leading to imbalances. In this context, the United Nations Conference on Trade and Development (UNCTAD) states that (UNCTAD 1996):

> "A Small Island Developing Country with a narrow production base may import much more (containerised and break bulk cargo) than its export merchandize. This will cause an under-utilization of transport capacities in outbound transport, while relatively high unit costs will prevail in inbound flows".

It is plausible that the export of containerised cargo is cheaper for Caribbean countries than the import, because many importers and exporters are left with empty containers on the different islands because of these imbalances. Often, shipping lines offer very cheap freight rates just to get their containers back.

Producers explain the small volume of trade as largely the result of the absence of regular, direct and competitively priced transportation services. However, the opposite might be true. Shipping transport is highly demand driven and there would be less expensive and more frequent shipping services if a greater demand for shipping services (trade) existed. By nature, ships are very mobile and are not bound to a special location or route. In addition, they can enter and exit new markets in a very short period. Shipping companies can, at any point in time, offer transport services under charter agreements, or even open new services, or increase regular service frequencies. Thus, it is true to say that foreign trade has a much stronger impact on existing shipping services.

However, it is also true that less expensive and more frequent maritime transport would also be beneficial to any bilateral trade as well. Thus, for example, intra-ACS trade could be increased if a more efficient transportation system were available and, therefore, it is necessary to discuss how the demand for transportation services could be increased in order to attract more market players offering shipping services.

The first part of this document tried to discuss maritime transport utilising available foreign trade data. Information such as the country of origin or the SITC product classification was used in this analysis to determine the reality regarding available transport services and involved costs. However, there are several factors influencing maritime transport that are yet to be examined, namely containerisation, inter- and intra-port competition, available shipping services or transhipment. These will be discussed in the next section.

Part II: Relevant factors influencing maritime transport and its cost in the Caribbean

The total cost of transport is influenced by many factors. Economies of scale, port costs, transhipment and the degree of competition, among others, all affect transportation costs. This section seeks to describe the individual determinants of transport costs, which have a major impact on the Caribbean. Each criterion will be discussed in a separate section to explain why and in which way it influences transport costs. These determinants primarily impact shipping lines by influencing the ocean freight, and ports by influencing the port charges. However, some of the described cost factors have an impact on both, whereas others only affect either the shipping lines or the ports.

In this context, a study of maritime transport costs for selected South American countries should be mentioned (Fuchsluger, 1999). Detailed customs data of imports for Argentina, Brazil, Chile and Colombia were used to investigate the possible impacts of the traded volume, the value of the goods, the transport distance and other factors on maritime transport costs. In this study, the relationship between transaction volume and transport costs per ton became quite obvious. Shipments having higher volumes led to lower transportation costs per ton, thus proving the existence of economies of scale. The influence of the cargo value per ton on importation costs was also observed. The value of the cargo is the basis for the calculation of the insurance and the insurance premium depends, among other things, on the value of the goods, the length of the cover period and the level of transportation risks. Hence, these factors must also be taken into account in any discussion of transport costs.

With regard to the study, transport distance seems to play a minor role in transport costs. Thus, there appears to be no linear relationship between distance and its resulting transport costs. Other variables, such as imbalances and transhipment, seem to have a stronger impact on transportation cost. The study pointed out that transhipment could lead to lower transport costs if the resulting additional port costs could be compensated by the cost savings achieved as a result of a reduction in the number of ships. However, this also implies that a well functioning feeder service is in place. Whichever alternative is truly more economical depends on the total volume imported on the route, the closeness of major trading routes, port costs, and likewise, state regulations. Although the study was undertaken for South American countries, it can be concluded that the findings of the study are valid for the Caribbean as well, given the nature of maritime transport.

For a better understanding of the factors influencing transport costs, this document is also recommended. In the sections following, possible determinants of transportation cost and the present situation in the Caribbean will be discussed in more detail.

I. Trade volume

Anyone who brings in larger transport volumes can generate so-called "economies of scale", meaning that transport costs per unit decrease with every additional unit. Thus, countries with greater transport volumes might be at an advantage because of economies of scale, as opposed to countries with lesser transport volumes. In the case of the Caribbean, countries have to struggle with small trade volumes and are, therefore, facing a major disadvantage.

Economies of scale affect both the decisions and the cost structure of shipping lines and ports. Higher transport volumes would allow shipping lines to use larger vessels with lower costs per unit under the condition of sufficient capacity utilisation. Ports would also benefit from larger volumes because of an increased port throughput, since, from an economic point of view, the use of more capital intensive and more efficient port equipment would make sense. These impacts on shipping services and on ports shall now be examined in more detail.

1. Impacts on shipping services

As mentioned before, the Caribbean consists primarily of a large number of low volume markets. This creates high costs of planning and scheduling for the shipping services, as well as high costs in terms of multiple port calls for a limited amount of cargo. Particularly in the Caribbean, it is very difficult for shipping lines to find ways to rationalise services given the complexity of servicing the trades. In addition, due to smaller volumes, carriers are forced to operate smaller vessels, compared with other regions, as the following table illustrates.

Table 7: Deployed capacity per voyage for different trade lanes
(Imports to the USA, 1996 Qtr 4)

Trade Lane	TEUs lifted	Capacity deployed per vouage (in TEU)	Ranking
Africa	4,149	350	6
Caribbean	33,784	277	9
Central America	69,919	263	10
East Coast South America	60,432	347	7
India/Other Asia	12,637	188	11
Med	94,683	550	3
Mideast	1,616	78	13
Northern Europe	245,857	633	2
NE Asia	920,913	1001	1
Oceania	16,877	485	5
Other Regions	2,075	129	12
SE Asia	122,145	293	8
West Coast South America	33,524	486	4
Total Imports	1,618,611	584	

Source: PIERS, On Board Review, Spring 1997

The table shows a positive correlation between average ship size and total cargo volume. In other words, the larger the volume, the larger the average capacity deployed

on a single voyage. This means that more traffic volume results in lower transport costs per unit, since increasing the cubic dimensions of a vessel leads to lower proportional increases in costs (Mc Conville, 1999). Moreover, with respect to port costs, larger vessels lead to economies of scale as well. Karl Kymer from the company Hamburg-Sued described this effect in an article dealing with port costs in Buenos Aires (La Nacion, 1999). According to Kymer, a ship owner operating a vessel carrying 200 Twenty-foot Equivalent Unit (TEU) containers will pay $70 per container for the channel access which leads to the port of Buenos Aires; however, if he operates a 1000 TEU vessel, the resulting toll is only $14 per container. It can be concluded that there is a similar relationship in the Caribbean as well. Jan Hoffmann (1997) states that a vessel that is 50 per cent larger than those currently servicing the region, can lead to a reduction in unit costs per ton mile of up to 20 per cent. In summary, the size of the vessel does impact upon the transport cost incurred.

Unfortunately, the Caribbean region is unable to benefit from these economies of scale. The deployed capacity per voyage for imports from the United States to the Caribbean is less then 50 per cent of the World-USA average (see Table 7). On average, 277 TEU containers were deployed per voyage on the Caribbean-Imports/USA trade in comparison to 584 TEU containers for the World-Imports/USA trade, for the period under review. This can be seen as another negative impact on transport costs for the Caribbean.

In addition, there is a direct relationship between the traffic outcome and the number of carriers offering shipping services. Due to their relatively small size, some Caribbean countries are served by only a few direct lines to Asia, Europe, and North America. A large part of their trade is moved either by chartered vessels, or on regular shipping lines that connect to other lines via transhipment services. The table below shows the number of inter-regional liner shipping services to the Caribbean.

Table 8: Inter-regional liner shipping services in the Caribbean, June 2000

Country or Island	Number of regular liner shipping services	
	From/ to Europe	From/ to North America
Antigua		6
Anguilla		2
Aruba	1	3
Bahamas		2
Barbados	2	8
Belize		1
Bermuda		4
Bonaire		1
Cayenne	3	
Cayman Islands		5
Colombia	13	14
Costa Rica	8	11
Cuba	2	
Curaçao	2	4
Dominica		3
Dominican Republic	6	18
El Salvador		1
Grenada		2
Guadeloupe	4	3
Guatemala	2	26
Guyana	3	4
Haiti		8
Honduras	2	22
Jamaica	4	20
Martinique	4	3
Montserrat		1
Nevis		2
Nicaragua		2
Panama	11	27
St. Barthelemy		2
St. Croix (Virgin Islands)		4
St. Eustatius		1
St. John (Virgin Islands)		2
St. Kitts		3
St. Lucia		6
St. Maarten		5
St. Thomas (Virgin Islands)		4
St. Vincent		4
Surinam	3	2
Tortola (Virgin Islands)		2
Trinidad and Tobago	4	13
Turk Islands		2
Venezuela	7	20
Virgin Gorda (Virgin Islands)		2

Source: CompairData, http://www.compairdata.com/, 16. June 2000, as quoted in Estrada and Hoffmann (2000). Note: Almost all services to North America are weekly. Most services to Europe are either weekly or fortnightly. "North America" includes Mexico.

Countries with a larger trade volume such as, for example, Jamaica, Panama, Trinidad and Tobago or Venezuela, also have more direct liner services calling their ports. A small volume of trade seems to imply fewer shipping services, and vice versa. Four direct services from Europe and 13 direct services from North America call on Trinidad & Tobago, whereas for the smaller countries of Dominica, Grenada, St. Kitts and Nevis or St. Lucia, there is no single direct service from Europe, and only a few services from North America. Thereby, it can be inferred that there is more competition between shipping lines for cargo to and from Trinidad and Tobago and thus, it is to be expected that freight charges are lower for this country than for the other smaller countries, with less competition among shipping lines.

Another interesting point is that there are no direct liner shipping services from Cayenne to North America, although Cayenne is located very near to Guyana and Suriname, both of which offer liner services to this region. Bearing this in mind, there is no logistical reason why Cayenne could not be included in this route as well. However, the close political and economic relationship between France and Cayenne might explain the lack of direct liner services to North America. If there were transport to this region available, foreign trade between Cayenne and North America would certainly benefit. In this example, the lack of maritime transport services, therefore, might have a negative impact on foreign trade. But the reason for this has to be seen in historical and political circumstances.

2. Impacts on ports

Ports are a key element in maritime transport. A port can be seen as a gateway through which exports and imports move on their way to the next stage of production, or the final consumer. This is the primary objective of a port -- to transfer the cargo between land and sea transport. For using the port and its facilities, ports costs are levied on the ship operator, meaning that an important proportion of the port costs is charged to the shipping company.

Abstractly speaking, a port is a grouping of facilities, designed specifically to ensure the interchange between sea and land transport. The investments in these facilities are extremely expensive and represent, in most cases, a large part of the inherent economic assets of Caribbean nations. The most important objective of these investments in ports is to reduce ships' turnaround times under the condition of not suffering over-capacity and thereby enhance the profitability of the port.

From an economic point of view, port costs can be divided into overhead costs and variable costs. Overhead costs are independent of traffic volume and a large proportion of these costs is related to the capital. Variable costs are related directly to the amount of traffic volume. They consist of operating costs, such as labour and maintenance costs. In the relationship between overhead and variable costs, there exists a facility for achieving economies of scale, as Figure 10 illustrates.

Figure 10: Port costs with increasing traffic
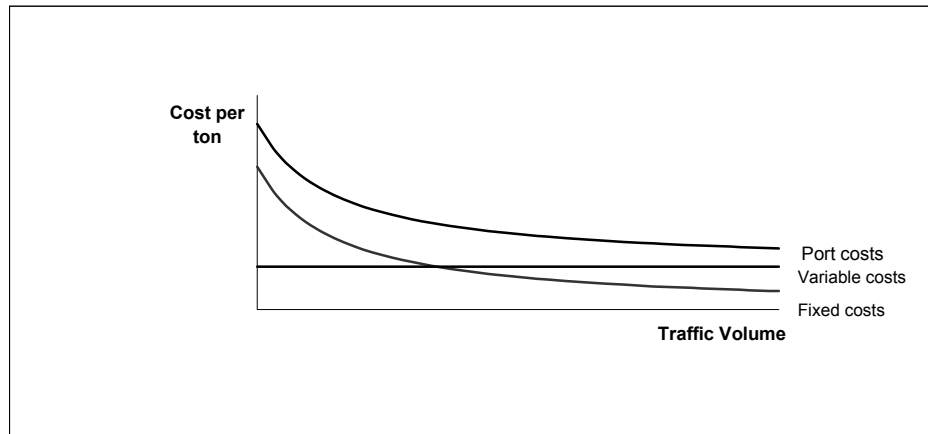
Total costs comprise the overhead costs plus the variable costs. As can be seen, the fixed costs per ton converge simultaneously against the variable costs with increasing traffic volume. That means, with increasing traffic volume the total costs per unit also decrease simultaneously against the variable costs and, thus, ports with a larger amount of tonnage throughput should experience cost savings due to economies of scale. Figure 11 gives an overview of the port throughputs of several Caribbean islands with respect to container traffic.

Figure 11: Container traffic for Caribbean ports

	St. John's (Antigua)	Oranjestad (Aruba)	Freeport (Bahamas)	Bridgetown (Barbados)	Puerto Cabello (Colombia)	Cartagena (Colombia)	Wilhelmstad (Curacao)	Cayman Islands	Roseau (Dominica, 1999*)	Rio Haina (Dom. Republic,	Point-au-Pitre (Guadeloup	Port-au-Prince (Haiti)	Kingston (Jamaica)	Fort-de-France (Martinique)	MIT (Panama)	Castries (St. Lucia)	Vieux Fort (St. Lucia)	Port of Spain (Trinidad)	Point Lisas (Trinidad)
■1997	14,550	57,511	148,798	53,834	385,107	263,789	66,603				99,643	43,735	654,523	134,110	748,767	23,844	14,995	208,666	31,286
□1998	19,787	60,000	470,000	71,334	486,774	316,530	71,554	43,332	8,131	415,629	10,000	70,612	671,070	141,650	1,117,035		15,900	230,830	36,248

Source: ECLAC based on the Perfil Maritimo, http://www.eclac.cl/espanol/investigacion/transporte/perfil/index.htm, American Association of Port Authorities and direct communication with individual ports

As can be seen in the figure, the ports of the smaller Caribbean countries such as Antigua and Barbuda, Aruba, Dominica or St. Lucia have only a small volume of traffic. For these ports it would not make sense to invest heavily in port infrastructure and expensive cargo handling equipment. It would be wiser instead, to count on less infrastructure and cheaper equipment, perhaps with higher variable operational costs, but lower overhead costs. Figure 12 illustrates this relationship.

Figure 12: Port costs per unit in dependence of the traffic volume
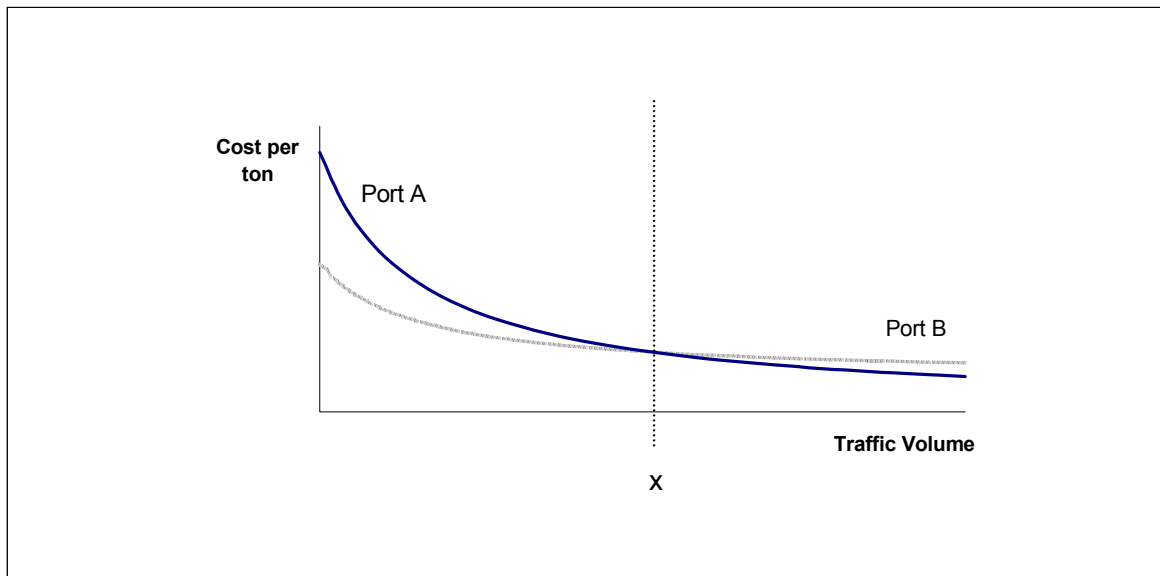
This figure shows the cost structure of two ports with different infrastructure and container handling equipment. Port A has more expensive port equipment with higher fixed costs and lower variable costs. Port B possesses less expensive port equipment with lower fixed costs and higher variable costs. As can be seen in Figure 12, up to a certain amount x, Port B is able to offer services at a lower rate. Only when the traffic volume exceeds x units, can Port A evenly allocate the higher fixed costs to a larger amount and offer services at a lower rate than Port B.

In summary, the decision as to how much money should be spent on port investments in infrastructure and cargo handling equipment depends heavily on the demand for these services. Major port investments might not be justified and would only lead to over-capacity and, thus, to higher port costs. Unfortunately, political decision makers and port managers might push for heavy investments in port infrastructures, superstructures and equipment without considering the expected cargo volume. The result would be "the inevitable creation of substantial over-capacity and poor utilisation of limited financial and economic resources" (Gustaaf De Monie, 1998).

In summary

- **Caribbean countries have to struggle with small foreign trade volumes**

- **Higher volumes could lead to a decrease in ocean freights and port charges**

- **High costs of planning and scheduling shipping services are the result of multiple port calls for a limited amount of cargo**

- **Most Caribbean ports do not have sufficient cargo traffic to justify heavy investments in expansive equipment**

II.   Transshipment

There is a significant trend towards larger vessels. Since 1980, the capacity of the largest containerships has almost tripled, and carriers, mostly operating in the major East-West routes, are employing larger ships regularly. Thus far, the largest containership effectively offers up to 8,700 TEU slots (Gustaaf de Monie, 1998). These ships have to generate extra traffic in order to achieve an appropriate capacity utilisation, hence the move by global carriers to begin including additional feeder services to their schedules.

According to *Containerisation International*, the world's 20 largest container service operators combined have a carrying capacity of more than 50 per cent of the world's total capacity, and more mergers are to be expected in the future. These global carriers have to accommodate two contradictory demands. First, the carrier must try to shorten the transit time of the cargoes carried in containers. This is most easily achieved by offering direct services and maximising the number of port calls. On the other hand, in particular for larger vessels, the carrier needs to minimise the total ship-turn-around-time per voyage through fewer port calls. These two contradictory demands can most effectively be achieved by reducing the number of direct port calls for main line vessels and covering the various regions through a dense network of feeder services. This is also known as "transshipment".

In summary, the concentration of the container shipping industry has led to important transhipment operations in the Caribbean. The choice of the main hub port has presently been made by most carriers. Major transshipment ports in the Caribbean are Freeport (Bahamas), Rio Haina (Dominican Republic), Kingston (Jamaica), Manzanillo (Panama) and Cristobal (Panama). Port of Spain (Trinidad and Tobago) is a subregional hub-port, from where cargo is mainly distributed to the Southern Caribbean islands and to Guyana. Thus, transshipment plays a major role for the Caribbean and this trend towards more transshipment is ongoing, as shown in the following figures.

Figure 13: Transshipment & Domestic Container Throughput in Port of Kingston (Jamaica)

	1997	1998	1999
■ Domestic	200,270	218,914	211,376
☐ Transhipment	454,253	452,156	477,842
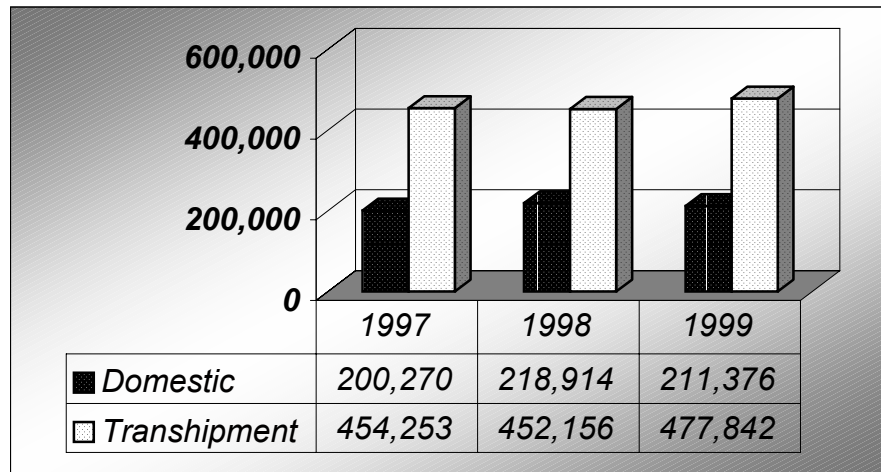
Source: ECLAC Port-of-Spain, data obtained from the Port Authority of Jamaica

As can be seen from this figure, transhipment cargo makes up more than twice the amount of domestic trade of the port of Kingston. This means that transshipment contributes significantly to economies of scale and, thus, to a downward sloping port costs curve as well. It can be concluded that local shipments of Jamaica also benefit from the transshipment of non-domestic cargo traffic.

Figure 14: Transshipment & Domestic Container Throughput in Port of Spain (Trinidad and Tobago)
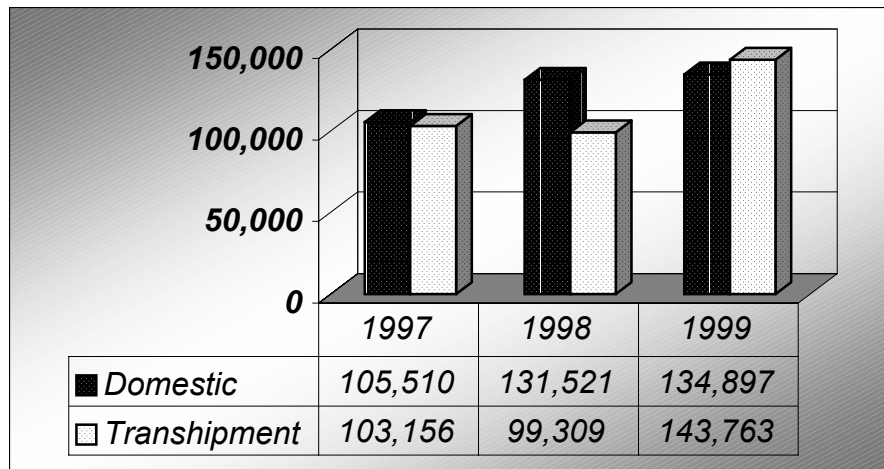
	1997	1998	1999
■ Domestic	105,510	131,521	134,897
☐ Transhipment	103,156	99,309	143,763

Source: ECLAC Port-of-Spain, data obtained from the Port Authority of Trinidad and Tobago

The port of Port-of-Spain shows a similar picture. Transhipment accounts for more than 50 per cent of the container traffic. Indeed, the growth in transhipment rates during 1998 and 1999 is phenomenal. Transhipment increased within this period by 45 per cent, demonstrating again the trend towards more transhipment and the entry of global carriers into the North-South trade lanes.

The impacts of this development are obvious. Firstly, almost all big carriers which offer shipping services in the Caribbean are presently at transhipment ports, which also leads to more competition, both for transshipment and domestic cargo. The following table, for example, shows a large number of the major carriers which call on the transshipment ports of Kingston (Jamaica) and Port of Spain (Trinidad and Tobago).

Table 9: Major carriers calling Jamaica and Trinidad & Tobago

Jamaica	Trinidad & Tobago
CARICOM Line	CMA/CGM
CMA	Crowley American Transport
Corol	Kent
CSAV	King Ocean
Evergreen	Maersk Sealand
Hamburg Sud	P&O Nedlloyd
Hapag-Lloyd	TECMARINE
Maersk	Tropical
NCS	ZIM Line
P&O Nedlloyd	
ZIM Line	

Source: Port Authority, Jamaica and Trinidad & Tobago
Note: Not all shipping lines are listed in this table

Carriers have a strong incentive to fill their main line vessels and sometimes even offer very cheap rates just to fill their slots and maintain their market share. The result is increased competition, which puts additional pressure on the ocean freight rates for cargo to these transshipment ports. For example, when the first mega-carriers arrived in Venezuela (Evergreen, Sea-Land and Maersk), the container freight rates were immediately slashed by US$500. For the Dominican Republic, where competition became very intense, the basic rate for 20 containers decreased from US$930 to US$10, between 1991 and 1997 (Containerisation International, May 1997). In summary, competition among carriers has a major impact on ocean freights, and shippers in countries with transshipment ports in particular, should benefit from it.

There is a strong impact on ports as well. Ports are competing for transshipment cargo with other ports and, thus, are forced to give particular attention to factors such as connectivity, 24-hour operational capability, and price. The following figure shows the key competitors of the port of Port-of-Spain for transshipment cargo.

Figure 15: Competitors of the port of Port-of-Spain for transhipment cargo
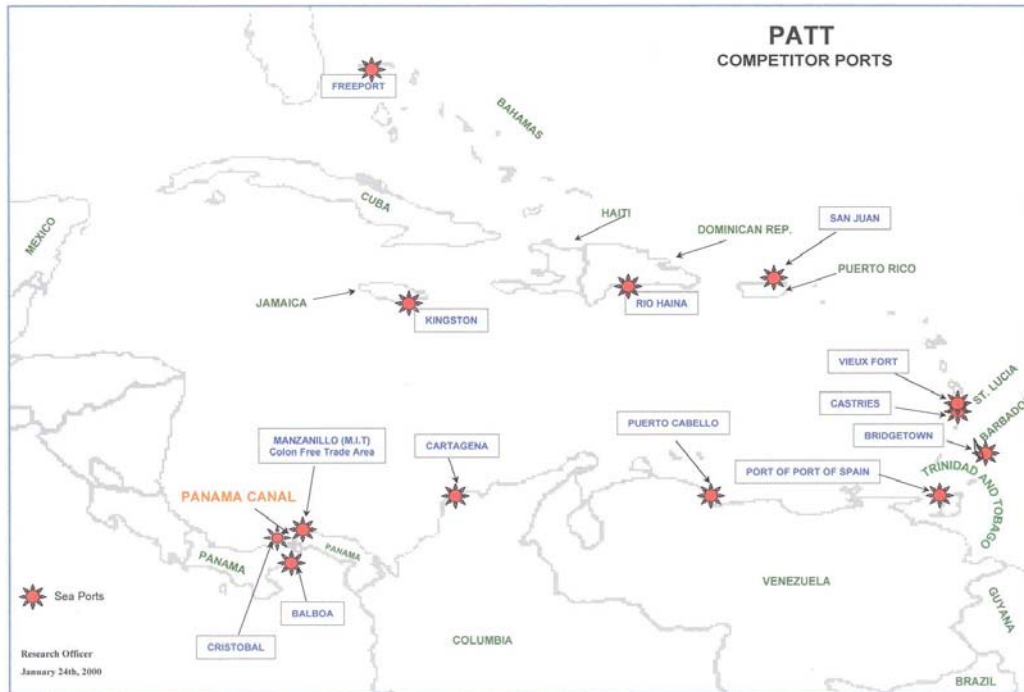
Source: Obtained from the Port Authority of Trinidad and Tobago (PATT)

As can be concluded from this figure, in order to be competitive, a transshipment port must continuously ensure its ability to handle a large amount of port traffic by improving its container terminal handling performance, in terms of a reliable high daily output and price competitiveness. As such, within recent years, the port of Port-of-Spain has had to cut its costs by reducing the number of its employees from 2,700 to 730 people (Lloyd's List, July 2000). It has also had to make significant investments in port infrastructure and superstructure. For example, amongst other things, in the year 2000, a new portainer crane was commissioned for US$7.2 million In addition, the dredging of the harbour to 12 metres has amounted to significant expenditures. These types of investments and expenses are unavoidable and must be considered in the decision-making process, should a port wish to become or maintain its role as a transhipment centre.

With respect to port costs, local shipments benefit from transshipment as well. The service type (direct service or transshipment) does have a strong impact on the resulting transport costs. Jamaica, for example, is located at a major crossroads of international trade lines. Hence, cargo from or to North America, Europe and Asia can be shipped directly without any further transshipment in the Caribbean. Trinidad and Tobago is a sub-hub instead, meaning that most cargo from outside the Caribbean (mainly Europe and Asia) is first transshipped into a hub port such as, for example,

Manzanillo (P&O Nedlloyd), Kingston (ZIM Line), Ponce (New Caribbean Service) or Freeport (Maersk). From these ports, cargo is subsequently distributed to the sub-hub in Port-of-Spain, or to the individual Caribbean islands. Thus, for a few small Caribbean countries -- such as Guyana -- cargo must be transshipped twice until it reaches its final destination, which has an enormous impact on overall transport costs. More port calls are required and additional costs such as port costs or cargo handling charges occur.

An UNCTAD (1975) report presents a simple rule for estimating the percentage of port charges in freight. Known as the "One-Third" rule, it suggests that in terms of freight costs, the sea-leg consists of one-third, and the ports at each end also comprise one-third each. This study was valid for a break bulk vessel, trading between ports of developing countries. This relation has most probably changed given the increased use of containers, improvements in port efficiency, and more expensive vessels, which has led to a smaller percentage of port costs to total costs. However, port costs are still an important factor in the calculation of freight rates, and particularly through transshipment, resulting in substantial additional transport costs. Thus, transshipment and its resulting additional port costs must be seen as one of the major reasons why transport costs to smaller Caribbean islands where more cargo is transshipped, are higher than in other regions with direct services. However, despite causing additional port costs, transshipment still can lead to lower transport costs for these countries if the resulting additional port costs can be compensated by the cost savings achieved because of the reduction of ship miles and the use of larger vessels, provided that a well functioning feeder service is in place.

Table 10 shows current freight rates for imports to Caribbean countries from different economic regions of the world.

Table 10: Freight rates for 20" container imports from different ports of departure

US$ per 20" container	Miami	Hamburg	Singapore	Cartagena
Barbados	$1,900	$2,300	$3,600	$1,700
Guyana	$1,455	$1,900	$3,400	$1,815
Jamaica	$900	$1,500	$1,200	$2,300
Suriname	$2,000	$2,100	$3,300	-
Trinidad and Tobago	$1,400	$1,700	$3,000	$1,100

Source: Data obtained by local shipping agents

Data was supplied from local shipping agents and above freight rates are calculated on an average basis. Of course, these freight rates depend on various factors such as commodity type, the port of departure or the selected shipping line. Nevertheless, these figures are useful for illustrating some valid relationships.

Firstly, the advantage of being a transshipment port becomes quite obvious. The port of Kingston is a main hub in the region, from where cargo from all over the world is distributed to the final destinations. As the table reveals, domestic imports benefit heavily from transshipment. Imports to Jamaica, which depart from Miami, Hamburg or Singapore, are much cheaper, as compared to shipping from these points to other Caribbean countries. A shipment of a 20" container from the port of Singapore to Kingston only amounts to US$1200, in comparison to freight rates which are more than double when shipping to the other Caribbean islands. This implies that domestic imports of a country with a transshipment port face lower transport costs from major trading routes. The port of Kingston is the transshipment centre for Zim Container Lines, which tranships a lot of cargo departing from Asia. In this way, domestic imports from Asia to Jamaica can be transported on its large main vessels (→ economies of scale) on a direct service. This explains, amongst other things, why these imports are much cheaper than shipments from Colombia, for example. Colombia does not lie on a major trading route and domestic imports are most likely transported with smaller vessels, and as such, do not benefit from transshipment and the resulting economies of scale.

The table also reveals another interesting fact. Although Trinidad and Tobago is a subregional hub, its freight rates for imports are not significantly lower than those of its neighbouring countries. This is so even though the port of Port-of-Spain possesses the necessary port infrastructure and more domestic trade than its smaller neighbours. Through a well-functioning feeder service with, for example, Trinidad and Tobago as transshipment centre, economies of scale might be achieved and could lead to lower transport costs for all participating countries. Both Trinidad and Tobago, Barbados, Grenada, St. Vincent and the Grenadines, Suriname, Guyana and other neighbour countries could benefit from this. More global carriers might be attracted to call at the port, and this could lead to lower transport costs because of increased competition and larger volumes. New markets could be opened up for Caribbean shippers through the global shipping network of large carriers, thus promoting the foreign trade of each involved country. In summary, it is recommended that the governments of individual Caribbean States consider more joint cooperation in the area of maritime transport, in order to lower their transport costs, and to promote foreign trade.

While becoming a transshipment hub presents certain advantages, especially in terms of transport costs, it would not make sense for each and every country or port, respectively, to become one. The decision as to where cargo is transshipped is made by the individual shipping lines and, as explained before, depends on a variety of factors. The principal characteristic of transshipment cargo is their volatility, and shipping lines might change their decision as to where they should transship from one day to another.

For example, the port of Port-of-Spain lost one Maersk service (the French W.I. service) to Puerto Cabello. The reason was that mainly transshipment cargoes were carried via this service. In Port of Spain, Maersk would ship out empty containers, while at Puerto Cabello, there was a great number of exports to carry. It made more economic sense for the line to carry full rather than empty containers, and Maersk simply changed its schedule from Port-of-Spain to Puerto Cabello as its transshipment port for this service. This example shows how advantageous it is for the port to also have a

considerable amount of domestic cargo. All else being equal, a carrier prefers to transship at a port for which it already has at least some local cargo, so as to exploit synergies. Hence, a port with significant local cargo is more likely to attract shipping lines for transshipment. Moreover, investments in ports are highly expensive and once these are made, the port needs cargo traffic to generate revenues, in order to meet its expenses, and accrue some return on its investment.

In summary

- **Higher port traffic attracts more shipping lines, which leads to lower transport costs**

- **Domestic cargo of Caribbean islands could benefit from transhipment, provided that a well functioning feeder service system is in place**

- **Cooperation among Caribbean States could lower transport costs and promote foreign trade**

- **Transshipment is very volatile and shipping lines can (and do) decide to transship at another port from one day to another, in the interest of economic feasibility**

- **There is tremendous competition among ports for transshipment cargo, and higher domestic cargo volumes must be seen as a criterion to becoming a transshipment port**

III.   Imbalances

Imbalances arise from different import and export volumes of a country or a region, respectively. Depending on the type of imbalance, either imports or exports are tendentiously more expensive. The following table highlights the situation regarding container imports and exports and the involved shipping lines, between the Caribbean and the East Coast of the United States, for the period 1998.

**Table 11: Containerised imports and exports in TEU between the
US and the Caribbean, 1998**

Carrier	Imports from the Caribbean	Exports to the Caribbean	Imbalance (% of empty containers)
Antillean Lines	14,377	31,757	55%
Bernuth Marine Shipping	288	10,205	97%
Cagema	754	10,307	93%
Crowley American Transport	9,750	46,699	79%
Evergreen Line	1,862	10,206	82%
Maersk	3,218	11,066	71%
Marine Express Inc	5,996	6,450	7%
Navieras de Puerto Rico	15,729	18,354	14%
Seaboard Marine Ltd	9,234	50,138	82%
Sea-Land Service	17,182	26,940	36%
Tecmarine Line	6,707	24,308	72%
Thompson Shipping Co	425	9,715	96%
Tropical Shipping	18,083	75,233	76%
Zim Container	912	4,761	81%
Other	11,726	74,561	85%
Total	116,243	410,700	**72%**

Source: PIERS, US Global Container Report

The table allows one to draw two very important conclusions. Firstly, as can be seen, a greater number of full containers were shipped to the Caribbean, as opposed to the other way around. By considering these regional imbalances only, it can be concluded that imports from North America to the Caribbean are related to higher transport costs due to the back hauling of empty containers. Secondly, particularly for smaller players, imbalances are more difficult to handle than for larger carriers, which seem to be able to reduce empty container shipments more effectively. *Bernuth Marine Shipping*, *Cagema*, *Thompson Shipping Co*, *and Zim Container*, the carriers with the smallest volume, also had the biggest problems with imbalances. Their imbalances accounted for up to 97 per cent of empty container movements back to the United States. For *Zim Container*, the situation was less critical, because it is a global carrier.[3]

As a result of significant import/export imbalances in the Caribbean, many carriers are forced to haul empty containers back. The following table illustrates the poor capacity utilisation for container vessels for imports from the Caribbean to the United States.

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[3] Zim tranships its containers in Kingston (Jamaica) and is able to use empty containers on other routes. By this, Zim has more opportunities to reduce empty container movements.

**Table 12: Capacity Utilisation for Container Vessels for different trade lanes
(Imports to the USA, 1996 Qtr 4)**

Trade Lane	TEUs lifted	Capacity deployed per vouage (in TEU)	Capacity Utilization	Ranking
Africa	4,149	350	56%	9
Caribbean	33,784	277	49%	10
Central America	69,919	263	66%	5
East Coast South America	60,432	347	58%	7
India/Other Asia	12,637	188	39%	11
Med	94,683	550	70%	3
Mideast	1,616	78	63%	6
Northern Europe	245,857	633	69%	4
NE Asia	920,913	1001	72%	2
Oceania	16,877	485	58%	7
Other Regions	2,075	129	57%	8
SE Asia	122,145	293	77%	1
West Coast South America	33,524	486	69%	4
Total Imports	1,618,611	584	69%	

Source: PIERS, On Board Review, Spring 1997

The Caribbean has the second worst capacity utilisation of all United States imports when compared with other world regions. Only 49 per cent of the containers were carrying cargo, the rest were empty container movements. For a container import to the Caribbean, a carrier is forced to take the resulting empty container movement into account in its calculation of the freight rates. Thus, imbalances must be viewed as a determinant of the higher transportation costs for the Caribbean as well.

As this brief overview demonstrates, imbalances result in higher import costs and should not be overlooked. However, Caribbean exporters could benefit from this situation. These imbalances make it possible to ship cargo relatively cheaply to other regions. The following diagram shows the freight rates for a 20" dry container between Trinidad and Tobago and different regions in the world, for both imports and exports.

Figure 16: Freight rates for a 20" dry container between Port of Spain (Trinidad and Tobago) and ports in other regions, both for imports and exports (August 2000)

	Miami	Hamburg	Singapore	Cartagena
☐ import	$1,400	$1,700	$3,000	$1,100
☐ export	$750	$1,200	$1,200	$1,100
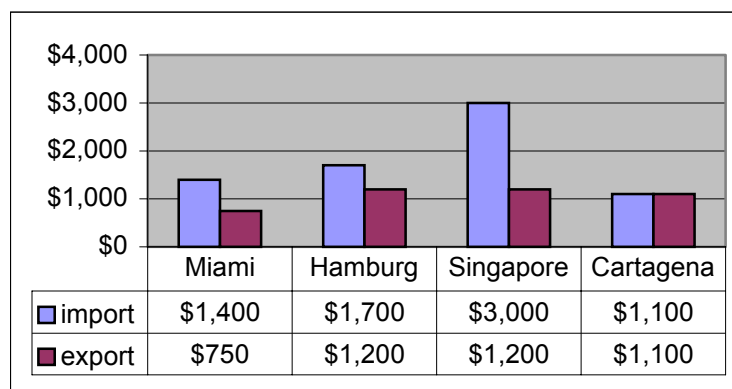
Source: Local shipping agent

The results show the impact of imbalances very clearly. The transport costs of the same type of container on the same trade lane depend heavily on the direction. For the Miami-Trinidad trade lane, an importer pays 87 per cent more for the transportation of its cargo than an exporter. For the Asia trade lane, the picture is even worse. Here, the difference in transport costs comes up to 183 per cent. The longer distance and the competition with other trade lanes are the reason for this disparity. For transports from Asia to North America, large quantities of containers are required to fulfil the demand, whereas for the reverse tour, there is an oversupply of containers. Thus, it is to be expected that containers used for exports from the Caribbean to Asia are then required on the Asia-North America route, and from there are shipped back to the Caribbean. As a result of this, imports from Asia to the Caribbean are competing for containers on the Asia-North America route. This would explain the exceptionally high transport costs from Asia to the Caribbean and the relatively low transport costs on the reverse tour.

Another interesting point is the relatively high transport costs for the Trinidad-Cartagena trade lane in comparison to the freight rates between Miami and Trinidad and Tobago. Exports to Cartagena are 47 per cent higher than shipments to Miami.

In summary

- **Due to imbalances, importers face higher transport costs than exporters in the Caribbean**

- **Smaller carriers experience greater difficulties in handling these imbalances**

- **Large carriers benefit from their global shipping network**

IV.   Peculiarity of being an island

1.   Lack of inter-modal competition

Being island States, maritime transport is often the only way to transport imports and exports. Other modes of transport such as road or rail transport or the use of pipelines is not an option and so the possibility of inter-modal competition is excluded.

In addition, the existence of other modes of transport would put pressure on the efficiency of maritime transport service providers, since a customer then could switch to other modes of transport should maritime service providers become too expensive or less efficient. However, for Caribbean importers and exporters, maritime transport is the sole mode of transport for most goods and, as such, they are heavily dependent on maritime service providers. Even if maritime transport becomes more expensive or less efficient, Caribbean shippers are not able to substitute with another mode of transport. Thus, maritime transport can be said to have a monopoly position, which might also lead to higher transport costs, especially if there is little, if any, competition amongst maritime

service providers. In summary, competition between different modes of transport also contributes to an efficient transportation system, and it can be concluded that countries with competing modes of transport have an advantage over other countries where inter-modal competition does not exist.

2.   Lack of inter-port competition

The cargo volumes for several Caribbean islands are often insufficient to justify more than one public port and this might also be responsible for a lack of inter-port competition. A single port without any competitor has a 100 per cent monopoly over cargo movements of its domestic imports and exports. This can be best illustrated in the differences between the Terminal Handling Charges (THC) for transhipment cargo and local cargo.

Figure 17: Containerised Cargo Charges for different ports

	Port-of-Spain	Point Lisas
Imports	$160.00	$140.00
Exports	$104.00	$85.00
Transhipment	$74.00	$85.00
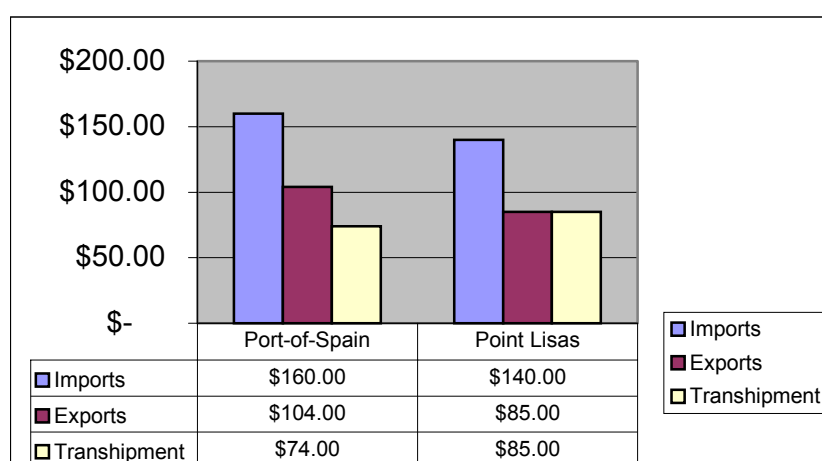
Source: Information compiled from the Port Authorities

As this chart reveals, the tariffs for the cargo handling of transshipment cargo are cheaper than the same services for import cargo. The reason is quite simple. A container containing import cargo has to be landed at the local port, whereas shipping lines can chose from among several ports for their transhipment cargo. In this way, a port must offer a lower rate for the same type of service for transshipped containers because of increased inter-port competition. For Port-of-Spain, whose transshipment cargo amounts to more than 50 per cent of its total port throughput, the difference in the container handling charges between imports and transshipment amounts to 116 per cent. This example also implies that more cost savings for port charges on imports and exports could be achieved if there were more inter-port competition for this type of cargo.

Regardless of the type of competition, experience has shown that competition is an important factor, which contributes heavily to improvements in efficiency. Thus, the lack of competition, both inter-modal and inter-port, should be viewed as another major obstacle to the increase in efficiency of maritime transport in the Caribbean. This has a direct impact on the transport cost of shipping services to and from the Caribbean islands.

In summary

- **Inter-modal competition is not existent for the Caribbean islands, thus leading to less competition in comparison to other regions**

- **Cargo volume of many small Caribbean islands only justifies one public port, thus leading to a lack of inter-port competition**

- **Competition contributes heavily to efficiency and has a direct impact on transport costs**

V. Other factors influencing transport costs

In the previous sections, several criteria such as the volume, transshipment, imbalances and the problem of being an island were discussed, in order to evaluate their impacts on the maritime transport costs for the Caribbean. However, other components that have not yet been considered also influence transport costs. Port efficiency and security, excessive customs procedures and modern working practices are variables, among others, which affect the transportation costs. These shall be described in this section of the document.

1.   Port efficiency and equipment

While this document previously asserted that due to small volumes, heavy investments in port infrastructure are not justified and would only result in over-capacity and poor utilisation of financial and economic resources, there still remain a few jurisdictions which have failed to invest sufficiently in their ports. These are primarily ports on Eastern Caribbean islands, Guyana and Suriname, which do not have cranes to move containers, or are unable to facilitate ships calling at night. This increases the waiting times for ships, and vessels calling at these ports have to carry their own gear if they want to load or discharge their cargo. Moreover, archaic container handling equipment and a sub-standard level of training of the port workers result in a large number of damaged containers. This implies additional costs for carriers, which are then levied on their clients, the exporters and importers of the country. Furthermore, ports' higher costs of stevedoring and other port services arise in less inefficient ports, which also has an impact on transport costs. The relatively high wage costs of some Caribbean countries in comparison to other port jurisdictions also contribute to these high costs.

2.   Port security

Drug trafficking is still a problem of concern in many Caribbean ports and has a direct negative impact on the cost of shipping. More inspections of ships coming from the Caribbean in Northern American and European ports directly increase the waiting time of ships in ports, which is a cost component for carriers. Shipping companies might have an incentive not to offer a shipping service to the Caribbean or not to use a Caribbean country for transshipment. There are several documented cases of shipping lines ceasing

to call at certain Caribbean ports, as a direct result of attempting to avoid delays because of inspections in United States and European ports.

3.   Excessive customs procedures

Excessive document requirements lead to delays and to longer waiting times for containers in ports. Whereas the actual loading and unloading of a container is done within a very short period, it usually takes several days to finally get a container out of the port. The requirements of original documents, which are sometimes signed by several offices in different locations, can be a very burdensome obstacle to trade and transport. Training, education and the implementation of modern information technology would be beneficial towards improvements in efficiency and trade facilitation.

According to a local shipper, inefficient customs procedures cause untold delays and result in costs to shippers who might be waiting to clear raw materials needed to run their respective operations. Necessary documents might have been prepared with the correct classification number and tariff heading number, but because of individual assessments of the product classification, the valuation officer might not accept the documentation and goods would not be cleared. In some cases, customs authorities might not be familiar with the precise nature of the shipped goods, causing unnecessary delays. At the present time, documents submitted via facsimile or in any other electronic format are not permitted by customs. However, if documents could be exchanged online between all parties involved in the shipment, foreign trade could be realised more effectively. According to an international study conducted by the United Nations, the global costs of producing paper shipping documentation accounts for US$420 billion annually, which is 7 per cent of the costs of international trade.[4] Through Electronic Data Interchange (EDI), this time-consuming and costly process could be minimised and, thus, shipping costs would be reduced.

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[4] http://www.bolero.net

VI. Conclusions

The previous sections of this document attempted to investigate the relationship between maritime transport costs and its determinants, identifying those factors which influence these costs and illustrating their impact upon maritime transport in the Caribbean. At this juncture, it must be emphasised that shipping activities and their related costs are complex and highly variable. Different shippers experience different trading circumstances and are not always exposed to the same costs. Even for similar shipments, individual cost factors might vary significantly; as a result it is quite difficult to accurately determine transport costs.

During the course of this study, several factors impacting on transport costs were identified.

There is a distinct relationship between volume and transport costs. Higher volumes attract more shipping lines, and thus lead to larger vessels servicing given routes or ports and more competition. Larger ships experience lower transport costs per unit due to economies of scale, provided that the duration and the number of port calls are limited, and that the vessel's optimal capacity is utilised. Ports benefit from larger volumes as well. If there is sufficient port throughput available, the introduction of new technologies and heavy investments in port infrastructure and cargo handling equipment makes economic sense. Once there is sufficient port traffic, a given port should be able to reduce its costs per unit because of economies of scale as well.

In recent years, several global carriers began offering shipping services in the Caribbean, with the result that an increased number of larger vessels were deployed in the region. Larger ships have a greater proportion of fixed costs among the total costs, which implies that carriers need to minimise the total ship-turn-around-time per voyage, through fewer port calls for these vessels. As a result, transhipment has become even more important. Global carriers move import and export cargo to their transhipment centres, from where they are subsequently distributed to their final destinations.

This development has led to two different types of port in the Caribbean: public ports, which may be privately owned, but can be used by general users for imports and exports of different types of cargo; and transhipment centres, which mainly service non-domestic containerised cargo. However, transhipment and local shipment mutually benefit from each other. Firstly, carriers have a strong incentive to fill their ships and often offer a cheaper rate just to avoid empty container movements. Secondly, transshipment attracts additional shipping lines to the port, which in turn increases the degree of competition amongst them and, therefore, results in a reduction in ocean freight costs. Finally, transshipping also leads to additional port costs for countries without a transshipment port in comparison to countries with their 'own' transshipment centre.

In summary, transshipment has the potential to promote foreign trade because of the significant synergies which could be realised.

It is to be expected that, for the above-mentioned reasons, there are also lower transportation costs for domestic trade for those countries with a transshipment port. However, it does not necessarily follow that each and every country or port respectively should become a transshipment centre. The decision to transship at a given port depends on a variety of factors. All else being equal, a carrier prefers to transship at a port for which it already has at least some local cargo, so as to capitalise on its synergies. This has to considered in any decision by Port Authorities in order to avoid producing over-capacity and wasting limited financial and economic resources. A better alternative would be the introduction of a well-functioning feeder service, in conjunction with subregional hub-ports, in order to justify a demand for using larger vessels. Because of this, more routing options would be available to the shippers. Also, competition among service providers would be intensified because a larger number of competitors and major carriers could offer lower rates, since they would be able to fill their ships more easily.

To summarise, a well-functioning feeder service could lead to lower transport costs for the entire region.

The distance travelled does not seem to have a major impact on shipping costs. The transport of a container from Miami to Buenos Aires costs less than the same type of shipment from Miami to any port in the Caribbean. However, another aspect needs to be taken into consideration, namely -- imbalances.

According PIERS, the Caribbean has a very poor capacity utilisation for container ships. Vessels on the Caribbean-United States trade lane only have a capacity utilisation of 49 per cent, the second worst percentage of all trade lanes carrying cargo to the United States. This leads, of course, to more empty shipments, which also incur costs to the carrier. Such costs are included in the calculation of freight rates and contribute to the more expensive transportation costs in the Caribbean. It might be concluded therefore, that shipping companies serving the Caribbean do not appear to cooperate as much as carriers in other regions, and that there is a potential to rationalise the use of existing shipping capacity in the region. CARICOM recommends that "the shipping lines work together to expand the range of on-carriage agreements/arrangements among themselves and to make these more widely known to potential shippers".[5] In this context, the benefits from a well-functioning feeder service shall be highlighted again.

As mentioned before, competition has a major impact on transport costs and contributes heavily to improvements in efficiency. However, being island States, other modes of transport, such as land transport or the use of pipelines, is not an option. This implies that inter-modal competition cannot take place and leads to less competition. Moreover, the cargo volume of several Caribbean countries does not justify more than one public port, which affects the grade of competition as well. Ports have a monopoly over cargo movements of domestic imports and exports and do not have to compete with other ports, resulting in a lack of inter-port competition. Experience has shown that competition is an important factor, which contributes heavily to efficient operations and management. Hence, the lack of competition, both inter-modal and inter-port, has to be

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[5] CARICOM, 1995

seen as one of the reasons why some ports in the region still have very poor productivity benchmarks, leading to higher transportation costs than in other regions. In summary, the island situation of the Caribbean countries limits the scope for competition and other alternatives have to be taken into consideration. Competition within a port should be fostered. It is usually feasible to have more than one terminal operator, stevedoring company, equipment or maintenance service provider competing with each other (intra-port competition).   In summary, privatisation or partial privatisation through joint ventures should be considered.

This study has sought to analyse the determinants of maritime transport costs, which have a major impact on the Caribbean, highlighting the major disadvantages and obstacles encountered while shipping goods. It also attempted to explain the reasons why transport costs are higher in the Caribbean than in comparison to other regions. Recommendations were also provided, illustrating how these obstacles could be reduced, i.e. the creation of a well-functioning feeder service or the introduction of intra-port competition. With regard to the strong dependency of the Caribbean countries on foreign trade and the expected strong increase in traffic volume envisaged in the near future, one should be conscious of transport cost and its determinants.

Part III: The role of the public sector and areas of potential improvements

There are several regional and international organizations present in the Caribbean, which undertake studies and research aimed at facilitating and promoting trade and transport in the region. The ACS established a Special Committee on Transport, which first met in May 1997 in Curaçao. This group, amongst other things, developed specific programmes to promote shipping services among member countries and to improve the efficiency of the maritime transportation system. The ACS mainly focuses on cooperation between governments and the private sector. The CARICOM aims to coordinate policies of its member States. It also supports other regional organizations by providing data, undertaking studies and participating in regional meetings. The Caribbean Shipping Association (CSA) represents national shipping associations, port authorities, port operators, carriers and other companies involved in shipping. It is a forum for discussion and regional cooperation concerning maritime services in the Caribbean. The CSA also organizes meetings and working groups for its members, and is a source of useful statistical information regarding ports and maritime transport. Other organizations, such as ECLAC, the International Maritime Organisation (IMO) and Trainmar, are also very active in the region, either by conducting research, offering expert knowledge or providing training capacity.

All these organizations assist Caribbean countries in their efforts to facilitate their transportation systems and, thus, also to promote trade. However an examination must be made of what these organizations can do and what they can not do must be carried out. Regional organizations belong to the public sector in the same way as governments, and as such, they should not get involved in commercial activities. A typical example is the West Indian Shipping Corporation (WISCO), which was run with the close involvement of governments, and which eventually became insolvent. Secondly, it must be remembered that regional groupings comprise single member countries, each of which has its individual agenda. Therefore, any planned activity is unlikely to be feasible if only a few of the members would benefit from it. Hence, only activities of common interest to all member countries are likely to be adopted by consensus.

In spite of the limitations the public sector faces, regional organizations or governments can do a great deal to further improve port and shipping services in the Caribbean. Jan Hoffmann, Sidney Rezende and Larry Burkhalter of the ECLAC Transport Unit in Santiago, Chile, wrote several articles and documents regarding this topic, and it is not the aim of this paper to repeat their work. For example, their documents examine port privatisation, market-based port labour reform, the role of regional organizations, as well as methods to assist the Caribbean shipping industry or institutional settings of port authorities and customs. For more detailed information it is highly recommended that these studies be read.

This section considers one possible area related to a potential improvement of maritime transport, the collection and interpretation of data. This topic, amongst other

things, will also be discussed at an ECLAC Experts' Meeting on Maritime Transport, which will be held on 14 and 15 of September in Port of Spain, Trinidad and Tobago.

I.   Improvements of data collection and analysis

Cheaper information technology and increased regional cooperation should result in easier access to detailed up-to-date statistics on trade and transport. The availability of reliable trade and transport data for the Caribbean would be tremendously useful for Caribbean policy makers, researchers, manufacturers and any other sectors which are involved in foreign trade and its shipping. Many issues could be easily studied, if such data were available and accessible in an homogenous format for all Caribbean countries.

CARICOM, for example, collects relevant data directly from the Central Statistical Offices or customs offices of its member countries. It has staff qualified to handle and analyse the data, but suffers from insufficient human resources and inadequate hard- and software, so that it is difficult to service external requests in a timely manner. The CSA regularly collects valuable information from its members in the form of detailed questionnaires. Unfortunately, this information is not stored in an electronic format, which makes its analysis rather cumbersome. In summary, in the Caribbean, there still exist "difficulties associated with planning in the transportation sector, owing to the paucity of easily accessible transportation data".[6]

This section provides some suggestions as to how this situation could be improved, through the establishment of centralised databases, which would be useful for both the public and the private sector.

1.   Database on foreign trade

The ECLAC Subregional Headquarters for the Caribbean has received a project profile for the establishment of a harmonised trade database for the Caribbean, and has already been promised funding to create it. Over the next 18 months, a searchable and normalised trade database will be developed at the ECLAC Subregional Headquarters in Port-of-Spain. Thus, it would soon be possible to provide information about the type of trade, the trading partners and the composition of trade. Concerning transport, however, the actual volumes traded are more relevant than the actual dollar value of the trade. For the shipping industry it would be extremely helpful to know what volumes of which products have been shipped in recent years and whether increases or decreases of traded volumes have taken place. In order to monitor and forecast future demand of shipping services, volume is a better criterion than value and, thus, it is recommended that this type of information be included in a trade database. Moreover, with regard to a country's imports and exports, ports can be divided into two major types: specialised ports, which often focus on single commodities; and public ports, which are used for the imports and exports of different types of cargo. If a trade database contains information about the port

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[6] CARICOM, 1997 Annex IV

of arrival (for imports) and the port of departure (for exports), the significance of individual ports can be determined easily.

In summary, the inclusion of information on ports and traded volumes in the proposed trade database, would benefit all actors involved in economics and shipping.

2.   Regional port database

At present, there is a lack of information regarding port statistics. For many ports no information is available in electronic format, and even when the data is available electronically, it is difficult to use it for comparison because of the different ways of reporting port throughput, in terms of productivity or in terms of connectivity. Hence, any comparative study on ports is not only cumbersome but also very time consuming. A harmonised regional port database could help to standardise definitions and procedures in order to facilitate future research. It would then be possible to monitor and to compare port costs, or the productivity of different ports by having harmonised benchmarks. Governments and ports would know what is currently achieved and what could be possible, compared to similar ports abroad. Ports could also be compared in terms of connectivity, meaning it would become possible to determine the number of liner services connecting the port with other regions in the world. In summary, a normalised regional port database would help to provide governments, ports and other parties involved in shipping with much needed information for their strategic decisions.

Ports still seem to be very prudent in publishing any comparative information, especially if they believe this could be detrimental to their operations. However, any analysis derived from such a regional port database would also help them to determine their status or position in the highly competitive maritime environment respectively, and would assist in strategic planning.

The ACS expressed its intention, in its Work Programme 2000, to encourage member countries to exchange port statistics.[7] The ACS maintains a very good relationship with both the public and private sector and, thus, could be a very good partner for any projects concerning the creation of regional port databases. The CSA announced the need for a regional port database and its decision to establish it. The Central American Maritime Transport Commission (COCATRAM) has already started a project with the aim of establishing a regional port database for Central America, and this is now in the implementation phase. This project is funded by the World Bank, and the Louisiana State University (LSU) contributes with the necessary technical expertise. Hence, with so many different organizations working on the same topic, it should be possible to find synergies and to facilitate cooperation between them in order to create a port database for the Caribbean region. In addition, duplication in data collecting and processing would be avoided and scarce resources allocated more efficiently.

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[7] Revised ACS Work Programme on Transport for 2000, ACS, Port of Spain, Trinidad and Tobago

3.   Commodity and Shipper trade database

The previously described regional port database is mainly for the benefit of government agencies and ports. Apart from this, a more detailed information system on maritime trade is needed. The idea is to include trade statistics in combination with the involved shipping services into one database. Carriers, shipping agents and shippers would benefit from such a Maritime Cargo Data System. Principal products and relevant shipping routes of a country could then be determined, the main shippers on specific trade lanes could be identified, the market share of individual carriers could be calculated, and so on. This type of information is critical to the entire shipping industry. Thus, after the initial implementation of such a Maritime Cargo Data System and the involved costs, such a system could be self-financed. Similar systems, for example, were successfully developed in Chile (Camara Maritima), in the United States (PIERS), Colombia, Costa Rica and Peru. In the Caribbean, regional organizations could also try to promote such an information system in order to facilitate the transport, and thus, trade opportunities in the region.

II.   Other recommendations

Obviously there are other public goods which should be provided by regional organizations on a regional level rather than the collection of data. In their document "Port and Shipping Services in the Caribbean – the vital link for integration", Estrada and Hoffmann (2000) outlined several activities, which could have a real positive impact on the efficiency of port and shipping services. A few of these are listed in the following table.

Table 13: Recommendations for regional organisation

Regional **training** activities. This could include specific seminars where the public sector assumes some of the fixed delivery costs, or even the development of new course material and the training of trainers in areas which are of particular importance to the Caribbean. Topics that appear particularly relevant are, for example, the regulation of privatised ports on islands with a possible monopolistic situation, and the protection of the marine environment. UNCTAD's regional Trainmar programme appears to be natural partner in such efforts.
Technical co-operation and exchange of experiences could facilitate **multimodal transport**, **promote electronic data exchange**, or increase **private sector participation** and port productivity. Such regional cooperation and coordination can take the form of events, the exchange of professional internships, or it can also partly take place via email or on the Internet. Since there will always be some countries that have advanced more than others in certain areas, the potential exists for vertical technical cooperation.
Research produces publicly available "goods", i.e. **studies**, **publications**, and **policy recommendations**. These could, for example, cover regional forecasts to facilitate national investments in infrastructure, or analyse and measure possible monopolistic abuses by maritime transport service providers.
Environmental and maritime safety and security standards are increasingly complex and difficult to comply with. For most countries, it will never be economically worthwhile to train and maintain experts on all relevant topics. Several regional entities are already in place to deal, for example, with ship inspections or waste reception facilities in ports.
It can be expected that maritime transport will increasingly become a topic at **international negotiations, for example in the framework of the WTO, OECD, or the FTAA**. It is highly recommendable that Caribbean countries strengthen their position by jointly preparing themselves for the negotiations. In particular, Caribbean countries would benefit doubly from further international deregulation: Firstly, as explained above, the island states could benefit especially

from any reduction in transport costs. Secondly, those Caribbean countries which offer maritime services at their transhipment centres and flag registries, with their nationals working on foreign ships, would benefit from easier access to foreign markets.
Physical investments, for example in port infrastructure, superstructure, or electronic data exchange, must often be accompanied by institutional reforms. Development banks which might finance a dredging programme, a new warehouse, or an information system tend to insist on a modern working environment to make the best use of their investments. Although **port modernisation, labour reform, and private sector participation** in ports are mainly national, or even local affairs, Caribbean countries could learn from the experiences of other countries in the region, and regional organisations should promote investments in ports and regional co-operation in port reform.
National and regional **maritime policies need quantitative and qualitative information** about the Caribbean maritime sector. ECLAC's Maritime Profile (LC/W.001: available under www.eclac.cl/espanol/investigacion/transporte/perfil/) provides such information on the Internet, including fleet, trade, and transport statistics. Thus far, the document covers few Caribbean countries and is available in Spanish language only. A possible co-operation between ECLAC and the ACS could be to expand the Maritime Profile to include profiles on additional countries, information in English language, and to expand the inclusion of Caribbean statistical data.
On the **private sector** side, the Caribbean Shipping Association (CSA) is active for and beneficial to its members. The ACS has already initiated some level of co-operation with the CSA. Other sectors, however, appear to be less well organised into regional organisations. At international forums, Caribbean and Latin American shippers usually are not represented. It would probably be to the benefit of the Caribbean trade community if shippers and transport intermediaries also formed regional organisations. The ACS and its Member Governments could and should actively promote the establishment and working of such associations on a national and on a regional level.

Source: "Port and Shipping Services in the Caribbean – the vital link for integration", Estrada et Hoffmann

Annex: Principal Import and Export Products of Caribbean Countries with respect to trading countries

Barbados (Imports), by Volume

Table 14: Major import products of Barbados, by volume and trading partner

SITC	Product Description	Country of Origin	in millions of local currency (percentage of total) Value	in tons (percentage of total) Volume
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	TRINIDAD AND TOBAGO	169.2 (7.0)	455,892.8 (47.5)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	SURINAME	10.8 (0.4)	39,051.2 (4.1)
061	Sugars, molasses, and honey	MEXICO	4.7 (0.2)	20,585.5 (2.1)
248	Wood, simply worked and railway sleepers of wood	U. S. A.	31.3 (1.3)	19,154.1 (2.0)
273	Stone, sand and gravel	U. S. A.	3.3 (0.1)	11,508.6 (1.2)
676	Iron and steel bars, rods, angles, shapes and sections, including sheet piling	TRINIDAD AND TOBAGO	7.3 (0.3)	10,693.4 (1.1)
781	Motor cars and other motor vehicles principally designed for the transport of persons (not public transport), including station wagons and racing cars	JAPAN	152.3 (6.3)	10,653.1 (1.1)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	CURACAO	4.0 (0.2)	10,077.1 (1.0)
061	Sugars, molasses, and honey	UNITED KINGDOM	7.7 (0.3)	9,380.6 (1.0)
047	Cereal meals and flours, n.e.s.	U. S. A.	8.1 (0.3)	8,451.0 (0.9)
634	Veneers, plywood, particle board, and other wood, worked, n.e.s.	BRAZIL	9.1 (0.4)	7,862.0 (0.8)
054	Vegetables, fresh, chilled, frozen or simply preserved; roots, tubers and other edible vegetable products, n.e.s., Fresh or dried	CANADA	5.4 (0.2)	6,789.4 (0.7)
344	Petroleum gases and other gaseous hydrocarbons, n.e.s.	TRINIDAD AND TOBAGO	5.1 (0.2)	5,914.6 (0.6)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	TRINIDAD AND TOBAGO	4.1 (0.2)	4,961.9 (0.5)
634	Veneers, plywood, particle board, and other wood, worked, n.e.s.	U. S. A.	7.4 (0.3)	4,919.8 (0.5)

Source: ECLAC Port-of-Spain

Barbados (Imports), by Value

Table 15: Major import products of Barbados, by value and trading partner

SITC	Product Description	Country of Origin	in millions of local currency (percentage of total)	in tons (percentage of total)
			Value	Volume
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	TRINIDAD AND TOBAGO	169.2 (7.0)	455,892.8 (47.5)
781	Motor cars and other motor vehicles principally designed for the transport of persons (not public transport), including station wagons and racing cars	JAPAN	152.3 (6.3)	10,653.1 (1.1)
782	Motor vehicles for the transport of goods and special purpose motor vehicles	JAPAN	54.5 (2.3)	4,228.1 (0.4)
248	Wood, simply worked and railway sleepers of wood	U. S. A.	31.3 (1.3)	19,154.1 (2.0)
897	Jewelry, goldsmiths' and silversmiths' wares, and other articles of precious or semiprecious materials, n.e.s.	HONG KONG	22.5 (0.9)	1.7 (0.0)
752	Automatic data processing machines and units thereof; magnetic or optical readers; machines transcribing coded media and processing such data, n.e.s.	U. S. A.	19.7 (0.8)	175.2 (0.0)
775	Household type electrical and nonelectrical equipment, n.e.s.	U. S. A.	18.6 (0.8)	1,697.4 (0.2)
714	Engines and motors, nonelectric (other than steam turbines, internal combustion piston engines and power generating machinery); parts thereof, n.e.s.	SWEDEN	18.2 (0.8)	8.0 (0.0)
764	Telecommunications equipment, n.e.s.; And parts, n.e.s., And accessories of apparatus falling within telecommunications, etc.	U. S. A.	18.1 (0.8)	124.1 (0.0)
781	Motor cars and other motor vehicles principally designed for the transport of persons (not public transport), including station wagons and racing cars	GERMANY	17.5 (0.7)	559.4 (0.1)
893	Articles, n.e.s. Of plastics	U. S. A.	17.1 (0.7)	2,804.4 (0.3)
553	Perfumery, cosmetics, or toilet preparations, excluding soaps	U. S. A.	15.1 (0.6)	1,389.8 (0.1)
741	Heating and cooling equipment and parts thereof, n.e.s.	U. S. A.	14.9 (0.6)	989.2 (0.1)
098	Edible products and preparations, n.e.s.	U. S. A.	14.3 (0.6)	4,686.6 (0.5)
723	Civil engineering and contractors' plant and equipment	U. S. A.	14.2 (0.6)	1,382.2 (0.1)

Source: ECLAC Port-of-Spain

Barbados (Exports), by Volume

Table 16: Major export products of Barbados, by volume and trading partner

SITC	Product Description	Country of Destination	in millions of local currency (percentage of total)	in tons (percentage of total)
			Value	Volume
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	BARBADOS	68.0 (12.9)	178,431.9 (42.0)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	TRINIDAD AND TOBAGO	24.5 (4.6)	111,546.2 (26.3)
661	Lime, cement, and fabricated construction materials, except glass and clay materials	SURINAME	2.2 (0.4)	31,969.8 (7.5)
661	Lime, cement, and fabricated construction materials, except glass and clay materials	ST. LUCIA	0.9 (0.2)	10,412.3 (2.5)
661	Lime, cement, and fabricated construction materials, except glass and clay materials	ST. KITTS AND NEVIS	2.2 (0.4)	9,384.5 (2.2)
661	Lime, cement, and fabricated construction materials, except glass and clay materials	JAMAICA	0.8 (0.1)	6,024.8 (1.4)
661	Lime, cement, and fabricated construction materials, except glass and clay materials	GRENADA	1.0 (0.2)	4,412.4 (1.0)
661	Lime, cement, and fabricated construction materials, except glass and clay materials	ST. VINCENT	2.2 (0.4)	3,476.3 (0.8)
046	Meal and flour of wheat and flour of meslin	ST. LUCIA	2.7 (0.5)	2,869.7 (0.7)
661	Lime, cement, and fabricated construction materials, except glass and clay materials	NETHERLANDS ANTILLES	1.5 (0.3)	2,460.5 (0.6)
061	Sugars, molasses, and honey	UNITED KINGDOM	55.4 (10.5)	2,221.5 (0.5)
554	Soap, cleansing and polishing preparations	JAMAICA	3.9 (0.7)	1,837.1 (0.4)
112	Alcoholic beverages	UNITED KINGDOM	4.7 (0.9)	1,626.8 (0.4)
273	Stone, sand and gravel	ANTIGUA AND BARBUDA	0.1 (0.0)	1,575.0 (0.4)
278	Crude minerals, n.e.s.	ANTIGUA AND BARBUDA	0.0 (0.0)	1,500.1 (0.4)

Source: ECLAC Port-of-Spain

Barbados (Exports), by Value

Table 17: Major export products of Barbados, by value and trading partner

SITC	Product Description	Country of Destination	in millions of local currency (percentage of total) Value	in tons (percentage of total) Volume
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	BARBADOS	68.0 (12.9)	178,431.9 (42.0)
061	Sugars, molasses, and honey	UNITED KINGDOM	55.4 (10.5)	2,221.5 (0.5)
772	Electrical apparatus for switching or protecting electrical circuits or for making connections to or in electrical circuits (excluding telephone etc.)	U. S. A.	25.9 (4.9)	174.7 (0.0)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	TRINIDAD AND TOBAGO	24.5 (4.6)	111,546.2 (26.3)
112	Alcoholic beverages	U. S. A.	8.7 (1.7)	1,456.4 (0.3)
642	Paper and paperboard, cut to size or shape, and articles of paper or paperboard	JAMAICA	6.7 (1.3)	1,290.7 (0.3)
776	Thermionic, cold cathode or photocathode valves and tubes; diodes, transistors and similar semiconductor devices; integrated circuits, etc.; Parts	U. S. A.	6.5 (1.2)	62.4 (0.0)
692	Metal containers for storage or transport	JAMAICA	6.1 (1.2)	575.0 (0.1)
874	Measuring, checking, analysing and controlling instruments and apparatus, n.e.s.	U. S. A.	6.1 (1.2)	31.3 (0.0)
112	Alcoholic beverages	UNITED KINGDOM	4.7 (0.9)	1,626.8 (0.4)
772	Electrical apparatus for switching or protecting electrical circuits or for making connections to or in electrical circuits (excluding telephone etc.)	CANADA	4.7 (0.9)	42.9 (0.0)
591	Insecticides, fungicides, herbicides, plant growth regulators, etc., Disinfectants and similar products, put up or packed for retail sale, etc.	TRINIDAD AND TOBAGO	4.2 (0.8)	506.5 (0.1)
885	Watches and clocks	U. S. A.	4.0 (0.8)	18.6 (0.0)
695	Tools for use in the hand or in machines	U. S. A.	3.9 (0.7)	419.2 (0.1)
554	Soap, cleansing and polishing preparations	JAMAICA	3.9 (0.7)	1,837.1 (0.4)

Source: ECLAC Port-of-Spain

Dominica (Imports), by Volume

Table 18: Major import products of Dominica, by volume and trading partner

SITC	Product Description	Country of Origin	in millions of local currency (percentage of total) Value	in tons (percentage of total) Volume
112	Alcoholic beverages	ST. LUCIA	2.3 (0.7)	21,516.8 (14.2)
335	Residual petroleum products, n.e.s. And related materials	TRINIDAD AND TOBAGO	8.7 (2.4)	11,775.4 (7.8)
661	Lime, cement, and fabricated construction materials, except glass and clay materials	VENEZUELA	1.9 (0.5)	11,442.8 (7.5)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	TRINIDAD AND TOBAGO	9.6 (2.7)	9,194.9 (6.1)
661	Lime, cement, and fabricated construction materials, except glass and clay materials	BARBADOS	2.6 (0.7)	9,066.4 (6.0)
411	Animal oils and fats	U. S. A.	6.7 (1.9)	5,305.5 (3.5)
012	Meat, other than of bovine animals, and edible offal, fresh, chilled or frozen (except meat and meat offal not suitable for human consumption)	U. S. A.	8.5 (2.4)	3,850.5 (2.5)
591	Insecticides, fungicides, herbicides, plant growth regulators, etc., Disinfectants and similar products, put up or packed for retail sale, etc.	GERMANY	0.2 (0.1)	3,241.1 (2.1)
562	Fertilizers (exports include group 272; imports exclude group 272)	NETHERLANDS	2.1 (0.6)	2,800.0 (1.8)
248	Wood, simply worked and railway sleepers of wood	U. S. A.	4.3 (1.2)	2,709.4 (1.8)
676	Iron and steel bars, rods, angles, shapes and sections, including sheet piling	TRINIDAD AND TOBAGO	2.0 (0.6)	2,517.1 (1.7)
061	Sugars, molasses, and honey	UNITED KINGDOM	2.2 (0.6)	2,174.7 (1.4)
342	Liquefied propane and butane	TRINIDAD AND TOBAGO	2.4 (0.7)	2,089.2 (1.4)
641	Paper and paperboard	U. S. A.	4.9 (1.4)	1,826.7 (1.2)
634	Veneers, plywood, particle board, and other wood, worked, n.e.s.	U. S. A.	3.6 (1.0)	1,786.9 (1.2)

Source: ECLAC Port-of-Spain

Dominica (Imports), by Value

Table 19: Major import products of Dominica, by value and trading partner

SITC	Product Description	Country of Origin	in millions of local currency (percentage of total)	in tons (percentage of total)
			Value	**Volume**
764	Telecommunications equipment, n.e.s.; And parts, n.e.s., And accessories of apparatus falling within telecommunications, etc.	U. S. A.	14.5 (4.0)	98.5 (0.1)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	TRINIDAD AND TOBAGO	9.6 (2.7)	9,194.9 (6.1)
781	Motor cars and other motor vehicles principally designed for the transport of persons (not public transport), including station wagons and racing cars	JAPAN	9.1 (2.5)	802.4 (0.5)
782	Motor vehicles for the transport of goods and special purpose motor vehicles	JAPAN	9.1 (2.5)	560.6 (0.4)
335	Residual petroleum products, n.e.s. And related materials	TRINIDAD AND TOBAGO	8.7 (2.4)	11,775.4 (7.8)
012	Meat, other than of bovine animals, and edible offal, fresh, chilled or frozen (except meat and meat offal not suitable for human consumption)	U. S. A.	8.5 (2.4)	3,850.5 (2.5)
411	Animal oils and fats	U. S. A.	6.7 (1.9)	5,305.5 (3.5)
752	Automatic data processing machines and units thereof; magnetic or optical readers; machines transcribing coded media and processing such data, n.e.s.	U. S. A.	5.8 (1.6)	68.1 (0.0)
641	Paper and paperboard	U. S. A.	4.9 (1.4)	1,826.7 (1.2)
248	Wood, simply worked and railway sleepers of wood	U. S. A.	4.3 (1.2)	2,709.4 (1.8)
634	Veneers, plywood, particle board, and other wood, worked, n.e.s.	U. S. A.	3.6 (1.0)	1,786.9 (1.2)
783	Road motor vehicles, n.e.s.	JAPAN	3.5 (1.0)	224.4 (0.1)
892	Printed matter	U. S. A.	3.0 (0.8)	89.8 (0.1)
759	Parts and accessories suitable for use solely or principally with office machines or automatic data processing machines	U. S. A.	2.9 (0.8)	23.0 (0.0)
022	Milk and cream and milk products other than butter or cheese	NETHERLANDS	2.8 (0.8)	969.7 (0.6)

Source: ECLAC Port-of-Spain

Dominica (Exports), by Volume

Table 20: Major export products of Dominica, by volume and trading partner

SITC	Product Description	Country of Destination	in millions of local currency (percentage of total)	in tons (percentage of total)
			Value	Volume
273	Stone, sand and gravel	GUADELOUPE	2.8 (1.9)	227,700.0 (60.5)
057	Fruit and nuts (not including oil nuts), fresh or dried	UNITED KINGDOM	37.2 (25.4)	26,832.3 (7.1)
273	Stone, sand and gravel	U. S. VIRGIN ISLANDS	0.3 (0.2)	23,050.0 (6.1)
273	Stone, sand and gravel	ST. LUCIA	0.2 (0.2)	20,700.0 (5.5)
273	Stone, sand and gravel	ANTIGUA AND BARBUDA	0.2 (0.1)	16,800.2 (4.5)
273	Stone, sand and gravel	MONTSERRAT	0.2 (0.1)	12,900.0 (3.4)
273	Stone, sand and gravel	ANGUILLA	0.1 (0.1)	11,100.0 (3.0)
554	Soap, cleansing and polishing preparations	JAMAICA	24.6 (16.8)	7,736.7 (2.1)
273	Stone, sand and gravel	ST. MAARTEN	0.1 (0.0)	4,500.1 (1.2)
057	Fruit and nuts (not including oil nuts), fresh or dried	ANTIGUA AND BARBUDA	5.2 (3.6)	2,248.8 (0.6)
273	Stone, sand and gravel	BRITISH VIRGIN ISLANDS	0.0 (0.0)	2,000.0 (0.5)
273	Stone, sand and gravel	ST. KITTS AND NEVIS	0.0 (0.0)	2,000.0 (0.5)
273	Stone, sand and gravel	MARTINIQUE	0.0 (0.0)	2,000.0 (0.5)
554	Soap, cleansing and polishing preparations	GUYANA	4.7 (3.2)	1,831.0 (0.5)
554	Soap, cleansing and polishing preparations	TRINIDAD AND TOBAGO	4.3 (2.9)	1,173.1 (0.3)

Source: ECLAC Port-of-Spain

Dominica (Exports), by Value

Table 21: Major export products of Dominica, by value and trading partner

SITC	Product Description	Country of Destination	in millions of local currency (percentage of total)	in tons (percentage of total)
			Value	Volume
057	Fruit and nuts (not including oil nuts), fresh or dried	UNITED KINGDOM	37.2 (25.4)	26,832.3 (7.1)
554	Soap, cleansing and polishing preparations	JAMAICA	24.6 (16.8)	7,736.7 (2.1)
553	Perfumery, cosmetics, or toilet preparations, excluding soaps	JAMAICA	9.1 (6.2)	881.8 (0.2)
057	Fruit and nuts (not including oil nuts), fresh or dried	ANTIGUA AND BARBUDA	5.2 (3.6)	2,248.8 (0.6)
554	Soap, cleansing and polishing preparations	GUYANA	4.7 (3.2)	1,831.0 (0.5)
554	Soap, cleansing and polishing preparations	TRINIDAD AND TOBAGO	4.3 (2.9)	1,173.1 (0.3)
553	Perfumery, cosmetics, or toilet preparations, excluding soaps	TRINIDAD AND TOBAGO	4.1 (2.8)	432.8 (0.1)
554	Soap, cleansing and polishing preparations	BARBADOS	3.2 (2.2)	649.6 (0.2)
273	Stone, sand and gravel	GUADELOUPE	2.8 (1.9)	227,700.0 (60.5)
098	Edible products and preparations, n.e.s.	UNITED KINGDOM	2.7 (1.9)	574.9 (0.2)
057	Fruit and nuts (not including oil nuts), fresh or dried	GUADELOUPE	2.6 (1.8)	1,046.8 (0.3)
553	Perfumery, cosmetics, or toilet preparations, excluding soaps	GUYANA	2.5 (1.7)	248.3 (0.1)
554	Soap, cleansing and polishing preparations	U. S. A.	2.0 (1.4)	389.0 (0.1)
057	Fruit and nuts (not including oil nuts), fresh or dried	ST. KITTS AND NEVIS	1.9 (1.3)	886.4 (0.2)
554	Soap, cleansing and polishing preparations	ST. LUCIA	1.9 (1.3)	500.9 (0.1)

Source: ECLAC Port-of-Spain

St. Lucia (Imports), by Volume

Table 22: Major import products of St. Lucia, by volume and trading partner

SITC	Product Description	Country of Origin	in millions of local currency (percentage of total)	in tons (percentage of total)
			Value	Volume
273	Stone, sand and gravel	MARTINIQUE	3.7 (0.4)	91,800.2 (18.3)
661	Lime, cement, and fabricated construction materials, except glass and clay materials	TRINIDAD AND TOBAGO	11.1 (1.2)	57,408.5 (11.4)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	TRINIDAD AND TOBAGO	23.2 (2.4)	44,518.5 (8.9)
273	Stone, sand and gravel	DOMINICA	0.7 (0.1)	20,700.0 (4.1)
273	Stone, sand and gravel	BARBADOS	0.2 (0.0)	15,014.1 (3.0)
661	Lime, cement, and fabricated construction materials, except glass and clay materials	COLOMBIA	2.8 (0.3)	14,725.3 (2.9)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	U. S. VIRGIN ISLANDS	18.5 (1.9)	13,280.4 (2.6)
335	Residual petroleum products, n.e.s. And related materials	TRINIDAD AND TOBAGO	8.5 (0.9)	13,147.5 (2.6)
278	Crude minerals, n.e.s.	U. S. A.	0.8 (0.1)	12,411.1 (2.5)
248	Wood, simply worked and railway sleepers of wood	U. S. A.	9.5 (1.0)	9,749.3 (1.9)
641	Paper and paperboard	U. S. A.	13.5 (1.4)	8,236.3 (1.6)
342	Liquefied propane and butane	TRINIDAD AND TOBAGO	5.9 (0.6)	8,152.1 (1.6)
676	Iron and steel bars, rods, angles, shapes and sections, including sheet piling	TRINIDAD AND TOBAGO	8.4 (0.9)	7,433.6 (1.5)
335	Residual petroleum products, n.e.s. And related materials	U. S. VIRGIN ISLANDS	3.3 (0.3)	7,320.6 (1.5)
012	Meat, other than of bovine animals, and edible offal, fresh, chilled or frozen (except meat and meat offal not suitable for human consumption)	U. S. A.	19.4 (2.0)	7,057.2 (1.4)

Source: ECLAC Port-of-Spain

St. Lucia (Imports), by Value

Table 23: Major import products of St. Lucia, by value and trading partner

SITC	Product Description	Country of Origin	in millions of local currency (percentage of total) Value	in tons (percentage of total) Volume
781	Motor cars and other motor vehicles principally designed for the transport of persons (not public transport), including station wagons and racing cars	JAPAN	24.8 (2.6)	2,588.5 (0.5)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	TRINIDAD AND TOBAGO	23.2 (2.4)	44,518.5 (8.9)
012	Meat, other than of bovine animals, and edible offal, fresh, chilled or frozen (except meat and meat offal not suitable for human consumption)	U. S. A.	19.4 (2.0)	7,057.2 (1.4)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	U. S. VIRGIN ISLANDS	18.5 (1.9)	13,280.4 (2.6)
752	Automatic data processing machines and units thereof; magnetic or optical readers; machines transcribing coded media and processing such data, n.e.s.	U. S. A.	18.2 (1.9)	146.6 (0.0)
764	Telecommunications equipment, n.e.s.; And parts, n.e.s., And accessories of apparatus falling within telecommunications, etc.	U. S. A.	14.7 (1.5)	227.6 (0.0)
641	Paper and paperboard	U. S. A.	13.5 (1.4)	8,236.3 (1.6)
661	Lime, cement, and fabricated construction materials, except glass and clay materials	TRINIDAD AND TOBAGO	11.1 (1.2)	57,408.5 (11.4)
821	Furniture and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	U. S. A.	10.5 (1.1)	620.2 (0.1)
248	Wood, simply worked and railway sleepers of wood	U. S. A.	9.5 (1.0)	9,749.3 (1.9)
782	Motor vehicles for the transport of goods and special purpose motor vehicles	JAPAN	9.4 (1.0)	919.2 (0.2)
634	Veneers, plywood, particle board, and other wood, worked, n.e.s.	U. S. A.	9.3 (1.0)	7,017.9 (1.4)
893	Articles, n.e.s. Of plastics	U. S. A.	9.0 (0.9)	905.4 (0.2)
741	Heating and cooling equipment and parts thereof, n.e.s.	U. S. A.	8.9 (0.9)	406.5 (0.1)
335	Residual petroleum products, n.e.s. And related materials	TRINIDAD AND TOBAGO	8.5 (0.9)	13,147.5 (2.6)

Source: ECLAC Port-of-Spain

St. Lucia (Exports), by Volume

Table 24: Major export products of St. Lucia, by volume and trading partner

SITC	Product Description	Country of Destination	in millions of local currency (percentage of total)	in tons (percentage of total)
			Value	Volume
057	Fruit and nuts (not including oil nuts), fresh or dried	UNITED KINGDOM	88.4 (58.8)	66,157.4 (82.9)
642	Paper and paperboard, cut to size or shape, and articles of paper or paperboard	TRINIDAD AND TOBAGO	4.4 (2.9)	2,268.1 (2.8)
112	Alcoholic beverages	BARBADOS	8.4 (5.6)	1,758.8 (2.2)
251	Pulp and waste paper	VENEZUELA	0.3 (0.2)	1,558.7 (2.0)
111	Nonalcoholic beverages, n.e.s.	ANTIGUA AND BARBUDA	2.2 (1.4)	1,322.7 (1.7)
112	Alcoholic beverages	GRENADA	2.8 (1.8)	548.2 (0.7)
057	Fruit and nuts (not including oil nuts), fresh or dried	ANTIGUA AND BARBUDA	0.4 (0.3)	463.0 (0.6)
112	Alcoholic beverages	DOMINICA	2.1 (1.4)	452.5 (0.6)
111	Nonalcoholic beverages, n.e.s.	DOMINICA	0.7 (0.5)	443.0 (0.6)
112	Alcoholic beverages	ANTIGUA AND BARBUDA	1.8 (1.2)	376.2 (0.5)
642	Paper and paperboard, cut to size or shape, and articles of paper or paperboard	BARBADOS	1.0 (0.6)	356.7 (0.4)
112	Alcoholic beverages	GUYANA	0.7 (0.4)	236.8 (0.3)
844	Women's or girls' coats, capes, jackets, suits, trousers, dresses, underwear, etc. (except swimwear and coated etc. Apparel), knitted or crocheted	U. S. A.	8.1 (5.4)	230.3 (0.3)
223	Oil seeds and oleaginous fruits, whole or broken, of a kind used for extracting other fixed vegetalbe oils (including their flours and meals, n.e.s.)	DOMINICA	0.2 (0.1)	200.2 (0.3)
112	Alcoholic beverages	ST. KITTS AND NEVIS	0.7 (0.5)	172.2 (0.2)

Source: ECLAC Port-of-Spain

St. Lucia (Exports), by Value

Table 25: Major exports of St. Lucia, by value and trading partner

SITC	Product Description	Country of Destination	in millions of local currency (percentage of total)	in tons (percentage of total)
			Value	Volume
057	Fruit and nuts (not including oil nuts), fresh or dried	UNITED KINGDOM	88.4 (58.8)	66,157.4 (82.9)
112	Alcoholic beverages	BARBADOS	8.4 (5.6)	1,758.8 (2.2)
844	Women's or girls' coats, capes, jackets, suits, trousers, dresses, underwear, etc. (except swimwear and coated etc. Apparel), knitted or crocheted	U. S. A.	8.1 (5.4)	230.3 (0.3)
642	Paper and paperboard, cut to size or shape, and articles of paper or paperboard	TRINIDAD AND TOBAGO	4.4 (2.9)	2,268.1 (2.8)
772	Electrical apparatus for switching or protecting electrical circuits or for making connections to or in electrical circuits (excluding telephone etc.)	U. S. A.	3.6 (2.4)	44.9 (0.1)
112	Alcoholic beverages	GRENADA	2.8 (1.8)	548.2 (0.7)
713	Internal combustion piston engines and parts thereof, n.e.s.	CANADA	2.3 (1.5)	1.1 (0.0)
111	Nonalcoholic beverages, n.e.s.	ANTIGUA AND BARBUDA	2.2 (1.4)	1,322.7 (1.7)
112	Alcoholic beverages	DOMINICA	2.1 (1.4)	452.5 (0.6)
112	Alcoholic beverages	ANTIGUA AND BARBUDA	1.8 (1.2)	376.2 (0.5)
658	Made-up articles, wholly or chiefly of textile materials, n.e.s.	U. S. A.	1.5 (1.0)	25.7 (0.0)
776	Thermionic, cold cathode or photocathode valves and tubes; diodes, transistors and similar semiconductor devices; integrated circuits, etc.; Parts	U. S. A.	1.3 (0.9)	0.9 (0.0)
642	Paper and paperboard, cut to size or shape, and articles of paper or paperboard	BARBADOS	1.0 (0.6)	356.7 (0.4)
781	Motor cars and other motor vehicles principally designed for the transport of persons (not public transport), including station wagons and racing cars	BARBADOS	0.9 (0.6)	21.5 (0.0)
111	Nonalcoholic beverages, n.e.s.	DOMINICA	0.7 (0.5)	443.0 (0.6)

Source: ECLAC Port-of-Spain

Trinidad and Tobago (Imports), by Volume

Table 26: Major import products of Trinidad and Tobago, by volume and trading partner

SITC	Product Description	Country of Origin	in millions of local currency (percentage of total)	in tons (percentage of total)
			Value	Volume
333	Petroleum oils and oils from bituminous minerals, crude	VENEZUELA	1,779.2 (10.3)	1,711,484.5 (23.9)
333	Petroleum oils and oils from bituminous minerals, crude	COLOMBIA	798.2 (4.6)	1,261,452.7 (17.6)
333	Petroleum oils and oils from bituminous minerals, crude	SURINAME	290.5 (1.7)	1,082,144.1 (15.1)
333	Petroleum oils and oils from bituminous minerals, crude	BARBADOS	142.4 (0.8)	205,128.7 (2.9)
333	Petroleum oils and oils from bituminous minerals, crude	ECUADOR	109.1 (0.6)	157,697.3 (2.2)
281	Iron ore and concentrates	BRAZIL	27.2 (0.2)	116,551.0 (1.6)
251	Pulp and waste paper	U. S. A.	23.4 (0.1)	102,954.4 (1.4)
333	Petroleum oils and oils from bituminous minerals, crude	SOUTH AFRICA	66.2 (0.4)	102,526.6 (1.4)
048	Cereal preparations and preparations of flour or starch of fruits or vegetables	IRELAND	4.8 (0.0)	100,406.8 (1.4)
273	Stone, sand and gravel	U. S. A.	5.9 (0.0)	93,742.3 (1.3)
712	Steam turbines and other vapor turbines, and parts thereof, n.e.s.	U. S. A.	7.4 (0.0)	84,078.1 (1.2)
894	Baby carriages, toys, games and sporting goods	CANADA	1.2 (0.0)	79,135.5 (1.1)
333	Petroleum oils and oils from bituminous minerals, crude	U. S. A.	154.8 (0.9)	74,950.7 (1.0)
081	Feeding stuff for animals (not including unmilled cereals)	U. S. A.	110.7 (0.6)	66,558.8 (0.9)
231	Natural rubber, balata, gutta-percha, guayule, chicle and similar natural gums, in primary forms (including latex) or in plates, sheets or strip	U. S. A.	3.9 (0.0)	63,469.7 (0.9)

Source: ECLAC Port-of-Spain

Trinidad and Tobago (Imports), by Value

Table 27: Major import products of Trinidad and Tobago, by value and trading partner

SITC	Product Description	Country of Origin	in millions of local currency (percentage of total)	in tons (percentage of total)
			Value	Volume
333	Petroleum oils and oils from bituminous minerals, crude	VENEZUELA	1,779.2 (10.3)	1,711,484.5 (23.9)
333	Petroleum oils and oils from bituminous minerals, crude	COLOMBIA	798.2 (4.6)	1,261,452.7 (17.6)
781	Motor cars and other motor vehicles principally designed for the transport of persons (not public transport), including station wagons and racing cars	JAPAN	394.3 (2.3)	7,085.0 (0.1)
792	Aircraft and associated equipment; spacecraft (including satellites) and spacecraft launch vehicles; and parts thereof	U. S. A.	318.3 (1.8)	111.1 (0.0)
792	Aircraft and associated equipment; spacecraft (including satellites) and spacecraft launch vehicles; and parts thereof	CANADA	293.5 (1.7)	30.9 (0.0)
333	Petroleum oils and oils from bituminous minerals, crude	SURINAME	290.5 (1.7)	1,082,144.1 (15.1)
714	Engines and motors, nonelectric (other than steam turbines, internal combustion piston engines and power generating machinery); parts thereof, n.e.s.	U. S. A.	259.9 (1.5)	3,890.4 (0.1)
793	Ships, boats (including hovercraft) and floating structures	U. S. A.	226.8 (1.3)	3,388.0 (0.0)
741	Heating and cooling equipment and parts thereof, n.e.s.	U. S. A.	186.0 (1.1)	4,339.8 (0.1)
333	Petroleum oils and oils from bituminous minerals, crude	U. S. A.	154.8 (0.9)	74,950.7 (1.0)
333	Petroleum oils and oils from bituminous minerals, crude	BARBADOS	142.4 (0.8)	205,128.7 (2.9)
752	Automatic data processing machines and units thereof; magnetic or optical readers; machines transcribing coded media and processing such data, n.e.s.	U. S. A.	134.7 (0.8)	440.1 (0.0)
784	Parts and accessories for tractors, motor cars and other motor vehicles, trucks, public-transport vehicles and road motor vehicles n.e.s.	JAPAN	130.0 (0.8)	12,279.3 (0.2)
782	Motor vehicles for the transport of goods and special purpose motor vehicles	JAPAN	122.3 (0.7)	2,512.9 (0.0)
081	Feeding stuff for animals (not including unmilled cereals)	U. S. A.	110.7 (0.6)	66,558.8 (0.9)

Source: ECLAC Port-of-Spain

Trinidad and Tobago (Exports), by Volume

Table 28: Major export products of Trinidad and Tobago, by volume and trading partner

SITC	Product Description	Country of Destination	in millions of local currency (percentage of total) Value	in tons (percentage of total) Volume
522	Inorganic chemical elements, oxides and halogen salts	U. S. A.	1,587.9 (9.0)	2,423,057.7 (12.1)
333	Petroleum oils and oils from bituminous minerals, crude	U. S. A.	1,980.7 (11.2)	2,296,495.2 (11.5)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	U. S. A.	892.4 (5.1)	1,414,535.5 (7.1)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	JAMAICA	916.8 (5.2)	1,190,339.5 (6.0)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	NETHERLANDS ANTILLES	580.2 (3.3)	1,005,382.1 (5.0)
512	Alcohols, phenols, phenol-alcohols and their halogenated, sulfonated, nitrated or nitrosated derivatives	U. S. A.	458.3 (2.6)	820,510.5 (4.1)
343	Natural gas, whether or not liquefied	U. S. A.	591.0 (3.3)	731,203.0 (3.7)
676	Iron and steel bars, rods, angles, shapes and sections, including sheet piling	U. S. A.	517.6 (2.9)	619,819.7 (3.1)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	BARBADOS	472.8 (2.7)	517,384.2 (2.6)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	PUERTO RICO	309.7 (1.8)	464,119.6 (2.3)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	GUATEMALA	354.6 (2.0)	429,167.8 (2.1)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	SURINAME	263.5 (1.5)	396,022.1 (2.0)
343	Natural gas, whether or not liquefied	SPAIN	248.6 (1.4)	355,194.8 (1.8)
512	Alcohols, phenols, phenol-alcohols and their halogenated, sulfonated, nitrated or nitrosated derivatives	UNITED KINGDOM	125.9 (0.7)	348,770.0 (1.7)
562	Fertilizers (exports include group 272; imports exclude group 272)	U. S. A.	156.4 (0.9)	341,312.7 (1.7)

Source: ECLAC Port-of-Spain

Trinidad and Tobago (Exports), by Value

Table 29: Major export products of Trinidad and Tobago, by value and trading partner

SITC	Product Description	Country of Destination	in millions of local currency (percentage of total) Value	in tons (percentage of total) Volume
333	Petroleum oils and oils from bituminous minerals, crude	U. S. A.	1,980.7 (11.2)	2,296,495.2 (11.5)
522	Inorganic chemical elements, oxides and halogen salts	U. S. A.	1,587.9 (9.0)	2,423,057.7 (12.1)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	JAMAICA	916.8 (5.2)	1,190,339.5 (6.0)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	U. S. A.	892.4 (5.1)	1,414,535.5 (7.1)
343	Natural gas, whether or not liquefied	U. S. A.	591.0 (3.3)	731,203.0 (3.7)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	NETHERLANDS ANTILLES	580.2 (3.3)	1,005,382.1 (5.0)
676	Iron and steel bars, rods, angles, shapes and sections, including sheet piling	U. S. A.	517.6 (2.9)	619,819.7 (3.1)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	BARBADOS	472.8 (2.7)	517,384.2 (2.6)
512	Alcohols, phenols, phenol-alcohols and their halogenated, sulfonated, nitrated or nitrosated derivatives	U. S. A.	458.3 (2.6)	820,510.5 (4.1)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	GUATEMALA	354.6 (2.0)	429,167.8 (2.1)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	PUERTO RICO	309.7 (1.8)	464,119.6 (2.3)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	SURINAME	263.5 (1.5)	396,022.1 (2.0)
343	Natural gas, whether or not liquefied	SPAIN	248.6 (1.4)	355,194.8 (1.8)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	FRENCH GUIANA	220.3 (1.2)	227,533.5 (1.1)
334	Petroleum oils and oils from bituminous minerals (other than crude), and products therefrom containing 70% (by wt) or more of these oils, n.e.s.	CUBA	168.5 (1.0)	166,236.0 (0.8)

Source: ECLAC Port-of-Spain

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