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Tourism in East Caribbean Countries

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Abstract

This paper studies recent developments in tourism in the East Caribbean countries (ECC) and reviews government policies to support tourism. The paper also presents a model to explain the movements of tourist arrivals to the region during 1970-86. The estimated model is used to project future tourist arrivals in the ECC.

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Summary

Tourism is an important industry for the East Caribbean countries (ECC) and in some has become the leading source of foreign exchange earnings. This paper studies recent developments in ECC tourism and reviews government policies to support tourism. Despite certain data constraints, this paper presents and analyzes a consistent data set across the region, estimates income and price elasticities of tourist arrivals, and projects the growth of ECC tourism.

The share of ECC tourist arrivals in the Caribbean region changed little between 1970 and 1980, but has risen since that time. The recent economic recovery in industrial countries and the decline in the real price of air travel owing to falling oil prices have helped to raise the growth of tourism in the ECC in the past several years. As the common currency of the ECC countries is pegged to the U.S. dollar, the depreciation of the dollar vis-a-vis European currencies also has been a contributing factor.

A model is constructed to estimate the income and price elasticities of stayover arrivals in the ECC. The income elasticity is estimated to be 1.0 in the short run and 2.7 in the long run. The price elasticity is estimated to be minus 0.3 in the short run and minus 0.8 in the long run. Based on these estimates and projections for real incomes and prices, the long-term growth of stayover arrivals in the ECC is projected to be about 8 percent a year.

Although the model performs well in predicting recent stayover arrivals, because of data limitations it omits several factors that may be important in the determination of stayover arrivals. For example, the model does not take into account the effects of changes in competitive positions owing to developments in the countries of the region or of changes in government efforts to support tourism. Therefore, developments in these and other potentially important factors may give rise to a growth rate of ECC tourism that differs from the projection of the model.

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I. Introduction

Tourism in the East Caribbean countries (ECC) is an important industry and in some countries it has become the leading source of foreign exchange earnings. ^{1/} Tourism also has fostered the development of infrastructure, employment, and entrepreneurship, and often has led to opportunities for foreign investment. Despite the importance of the tourism sector to the ECC, however, few empirical studies have been done for the region due to limitations of the available data. ^{2/} The purpose of this study, therefore, is three-fold: to develop a consistent data set across the six ECC, to analyze these data and assess recent tourism developments in the region, and to provide estimates of income and price elasticities of ECC tourist arrivals for use in projecting the growth of tourism.

The volume of tourist arrivals to the ECC appears to depend on real income in industrial countries, particularly in the United States, Europe, and Canada, and on the real price of air travel, of which fuel cost is a major component. The first oil crisis (1973-74) severely affected the volume of tourist arrivals to the ECC. In the wake of the recession that followed, stayover arrivals declined by 7 percent in 1974 and by a further 5 percent in 1975. By 1977, however, tourist arrivals had recovered to the pre-1974 level as the recession in industrial countries ended and the price of air travel stabilized. In the early 1980s the second oil crisis and world recession resulted in another decline in arrivals. But since 1983, the expansion in industrial countries and the stabilization in the price of air travel have resulted in a tourism boom in the region, as indicated by the 13 percent average annual increase in arrivals in 1983-86.

In recent years, a prominent issue for the ECC tourism sector has been whether there are opportunities for further growth and development, or whether capacity already exists to meet current and potential demand for coming years. Inadequacies in tourism-related infrastructure are still apparent in the region, and these constraints have often discouraged the provision of flights by major airlines. The other side of this "chicken and egg" problem is that regular flights are deemed a prerequisite by investors to expand accommodation.

^{1/} For this study, the ECC comprise Antigua and Barbuda (Antigua hereafter), Dominica, Grenada, St. Kitts and Nevis (St. Kitts hereafter), St. Lucia, and St. Vincent and the Grenadines (St. Vincent hereafter). Anguilla and Montserrat, which are also members of the Organization of Eastern Caribbean States (OECS), are not considered in this paper; their share of tourism in the East Caribbean region is very small. The OECS countries have a common currency unit, the Eastern Caribbean (EC) dollar, pegged since 1976 to the U.S. dollar (EC\$2.70 = US\$1).

^{2/} In fact, the only reliable tourism data available for all the ECC for a long enough period are tourist arrival data.

The structure of the paper is as follows. Section II analyzes recent developments in ECC tourism, both from the perspective of inter-regional comparisons in the Caribbean area and from the view of intra-regional comparisons among the six countries in the ECC. Section III discusses tourism policies and linkages to other economic sectors. Section IV presents a formal model of tourist arrivals to the ECC, and reports estimates of income and price elasticities. Section V uses these estimates to predict future tourist arrivals to the ECC. Section VI concludes the paper.

II. Recent Developments in ECC Tourism

1. Tourist arrivals

From 1970 to 1986, Caribbean stayover arrivals grew at a compound annual rate of 4 percent, roughly the same rate as total world stayover arrivals, maintaining for the region a remarkably stable 2 1/2 percent share of the world arrivals (Table 1). The Caribbean remains a highly desirable vacation destination, despite the fact that it is much more expensive for tourists than other similar destinations. ^{1/}

Arrivals to the ECC grew at about the same rate as arrivals to the Caribbean overall during the 1970s, but they grew faster during 1980-86. In terms of shares of stayover arrivals, the ECC grew from a 4 percent share in 1980 to a 5 percent share in 1986 (Table 2). Other regional gainers were Belize, Jamaica, the Turks and Caicos Islands, St. Maarten, and the Dominican Republic. Increases in the shares of tourists to Jamaica and the Dominican Republic coincided with the recent currency devaluations in these countries. Other more traditional tourist destinations, such as the Bahamas, Bermuda, and the U.S. territories, while remaining strong tourist attractions, have lost market shares in recent years.

a. Total arrivals

Within the ECC the number of total tourist arrivals (including stayover, cruise, excursion, and yacht visitors) increased at a compound annual rate of 7 percent from 1970 to 1986 (Table 3). The growth rates of arrivals differed substantially across countries in the region, with St. Kitts the highest, averaging 10 percent growth a year, and Grenada the lowest, at 5 percent a year. In terms of shares of total arrivals, Antigua has about 35 percent of the ECC market, Grenada and St. Lucia each has about 20 percent, St. Kitts and St. Vincent 10 percent each, and Dominica 5 percent (Table 4).

^{1/} For example, average hotel rates in the Caribbean region overall are twice as high as those for resorts and center city accommodation in Mexico and Latin America. For cost comparisons among these three regions, see Latin American & Caribbean Hotel Industry 1987 (1987).

Table 1. All Countries: Tourist Arrivals, 1970-86 1/

(In millions of stayover visitors; growth rates and shares in percent)

Year	All Countries		Caribbean 2/		Eastern Caribbean 3/		
	Arrivals	Percent Change	Arrivals	Share of World	Arrivals	Share of World	Share of Caribbean
1970	168	...	4.5	2.7	0.2	0.1	3.7
1971	182	8.3	4.6	2.5	0.2	0.1	4.0
1972	198	8.8	5.1	2.6	0.2	0.1	4.0
1973	215	8.6	5.4	2.5	0.2	0.1	3.7
1974	209	-2.8	5.7	2.7	0.2	0.1	3.3
1975	213	1.9	5.5	2.6	0.2	0.1	3.2
1976	218	2.3	5.8	2.6	0.2	0.1	3.2
1977	242	11.0	6.2	2.6	0.2	0.1	3.4
1978	260	7.4	6.9	2.7	0.3	0.1	3.6
1979	273	5.0	7.2	2.6	0.3	0.1	3.9
1980	284	4.0	7.2	2.5	0.3	0.1	3.9
1981	288	1.4	6.9	2.4	0.3	0.1	3.9
1982	287	-0.3	7.1	2.5	0.3	0.1	3.8
1983	294	2.4	7.4	2.5	0.3	0.1	4.0
1984	312	6.1	7.6	2.4	0.3	0.1	4.5
1985	325	4.2	7.9	2.4	0.4	0.1	4.9
1986	336	3.4	8.4	2.5	0.4	0.1	5.1

Sources: CTRC, Caribbean Tourism Statistical Reports, 1982 and 1986; CTRC Statistical News, December 1987; and Fund staff estimates.

1/ Revised estimate for 1984; preliminary for 1985; preliminary estimate for 1986.

2/ Revised estimates for 1980-84; preliminary for 1985; preliminary estimate for 1986.

3/ The countries in this group are Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines. Revised estimate for 1984; preliminary for 1985; and preliminary estimate for 1986.

Table 2. Selected Caribbean Countries: Tourist Arrivals, 1970-86
(In thousands of stayover visitors; growth rates and shares in percent)

Country <u>1/</u>	1970	1980	1981	1982	1983	1984	1985	1986	Avg. Growth 1970-86 <u>2/</u>	1970 Share of Caribbean	1980 Share of Caribbean	1986 Share of Caribbean <u>2/</u>
Eastern Caribbean <u>3/</u>	167	281	273	271	293	345	385	429	6.1	3.7	3.9	5.1
Bahamas	891	1,181	1,031	1,101	1,240	1,279	1,368	1,375	2.7	19.6	16.4	16.4
Bermuda	303	492	430	417	447	418	406	458	2.6	6.7	6.8	5.5
Barbados	156	370	353	304	328	368	359	370	5.5	3.4	5.1	4.4
Belize	42	64	64	67	64	88	93	...	5.5	0.9	0.9	1.2
Jamaica	309	395	406	468	566	603	572	664	4.9	6.8	5.5	7.9
Trinidad and Tobago	84	199	187	190	190	192	191	...	5.6	1.9	2.8	2.4
Turks and Caicos Islands	2	12	12	13	14	17	29	...	19.6	--	0.2	0.4
Aruba	75	189	221	220	195	210	207	181	5.7	1.7	2.6	2.2
St. Maarten	100	179	190	213	263	320	398	440	9.7	-2.2	2.5	5.2
French West Indies	81	315	290	366	370	347	341	...	10.1	1.8	4.4	4.3
Puerto Rico	1,088	1,627	1,573	1,564	1,530	1,496	1,532	1,573	2.3	24.0	22.6	18.7
U.S. Virgin Islands	670	380	344	340	345	370	412	470	2.2	14.8	5.3	5.6
Dominican Republic	63	301	340	341	380	410	425	765	16.9	1.4	4.2	9.1
Total Caribbean <u>4/</u>	4,538	7,209	6,917	7,122	7,371	7,619	7,882	8,400	3.9	100.0	100.0	100.0

Sources: CTRC, Caribbean Tourism Statistical Reports, 1982 and 1986; CTRC Statistical News, December 1987; and Fund staff estimates.

1/ Countries listed according to major island groupings.

2/ For cases where 1986 data are not available, 1985 data are considered.

3/ Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines.

4/ Some Caribbean countries are not shown in table; therefore, data for total Caribbean area exceed sum of individual country data reported.

Table 3. East Caribbean Countries: Total Arrivals, 1970-86

Year	Antigua		Dominica		Grenada		St. Kitts & Nevis		St. Lucia		St. Vincent		Total	Growth (In Percent)
	Arrivals	Percent Change	Arrivals	Percent Change	Arrivals	Percent Change	Arrivals	Percent Change	Arrivals	Percent Change	Arrivals	Percent Change		
(In thousands of persons)														
1970	82.1	...	14.2	...	71.7	...	18.9	...	70.3	...	32.5	...	289.7	...
1971	105.3	28.3	15.8	11.3	84.3	17.6	16.8	-11.1	76.1	8.3	29.7	-8.6	328.0	13.2
1972	136.1	29.2	16.8	6.3	132.0	56.6	20.9	24.4	79.7	4.7	28.3	-4.7	413.8	26.2
1973	125.3	-7.9	17.6	4.8	165.8	25.6	16.3	-22.0	92.6	16.2	26.8	-5.3	444.4	7.4
1974	98.2	-21.6	18.7	6.2	72.3	-56.4	17.3	6.1	94.9	2.5	41.6	55.2	343.0	-22.8
1975	85.3	-13.1	19.1	2.1	106.6	47.4	19.5	12.7	102.1	7.6	34.5	-17.1	367.1	7.0
1976	88.8	4.1	23.7	24.1	131.5	23.4	17.9	-8.2	125.5	22.9	31.8	-7.8	419.2	14.2
1977	101.2	14.0	29.4	24.1	137.0	4.2	16.4	-8.4	125.0	-0.4	39.9	25.5	448.9	7.1
1978	128.9	27.4	34.2	16.3	148.6	8.5	22.3	36.0	150.6	20.5	48.9	22.6	533.5	18.8
1979	158.3	22.8	28.1	-17.8	171.0	15.1	32.0	43.5	148.1	-1.7	56.2	14.9	593.7	11.3
1980	206.4	30.4	24.8	-11.7	175.1	2.4	40.3	25.9	138.7	-6.3	78.0	38.8	663.3	11.7
1981	212.3	2.9	22.9	-7.7	102.6	-41.4	47.5	17.9	89.2	-35.7	72.7	-6.8	547.2	-17.5
1982	173.9	-18.1	22.2	-3.1	85.3	-16.9	45.8	-3.6	105.3	18.0	69.1	-5.0	501.6	-8.3
1983	174.7	0.5	28.5	28.4	73.6	-13.7	57.2	24.9	111.1	5.5	74.3	7.5	519.4	3.5
1984	216.1	23.7	27.0	-5.3	63.1	-14.3	74.0	29.4	124.5	12.1	92.3	24.2	597.0	14.9
1985	260.6	20.6	28.6	5.9	129.1	104.6	79.0	6.8	151.4	21.6	78.5	-15.0	727.2	21.8
1986	293.2	12.5	36.4	27.3	156.6	21.3	84.0	6.3	174.3	15.1	83.7	6.6	828.2	13.9
(In percent)														
Average annual growth	8.3		6.1		5.0		9.8		5.8		6.1		6.8	

Sources: CARICOM Statistics Digest, 1970-81; North American Demand Study for Caribbean Tourism; CTRC, Caribbean Tourism Statistical Reports; Tourist Board data; and Fund staff estimates.

Table 4. East Caribbean Countries: Country Shares of
Total Regional Arrivals, 1970-86

(In percent)

Year	Antigua	Dominica	Grenada	St. Kitts and Nevis	St. Lucia	St. Vincent	Total
1970	28.3	4.9	24.7	6.5	24.3	11.2	100.0
1971	32.1	4.8	25.7	5.1	23.2	9.1	100.0
1972	32.9	4.1	31.9	5.1	19.3	6.8	100.0
1973	28.2	4.0	37.3	3.7	20.8	6.0	100.0
1974	28.6	5.5	21.1	5.0	27.7	12.1	100.0
1975	23.2	5.2	29.0	5.3	27.8	9.4	100.0
1976	21.2	5.7	31.4	4.3	29.9	7.6	100.0
1977	22.5	6.5	30.5	3.7	27.8	8.9	100.0
1978	24.2	6.4	27.9	4.2	28.2	9.2	100.0
1979	26.7	4.7	28.8	5.4	24.9	9.5	100.0
1980	31.1	3.7	26.4	6.1	20.9	11.8	100.0
1981	38.8	4.2	18.7	8.7	16.3	13.3	100.0
1982	34.7	4.4	17.0	9.1	21.0	13.8	100.0
1983	33.6	5.5	14.2	11.0	21.4	14.3	100.0
1984	36.2	4.5	10.6	12.4	20.9	15.5	100.0
1985	35.8	3.9	17.8	10.9	20.8	10.8	100.0
1986	35.4	4.4	18.9	10.1	21.0	10.1	100.0
Average 1970-86	30.2	4.8	24.2	6.9	23.3	10.5	100.0

Source: Fund staff estimates.

The growth rates of tourist arrivals have varied substantially over time. The first oil crisis in 1973-74 contributed to a substantial decline in arrivals. The quadrupling of oil prices not only reduced discretionary income available for tourism but also raised the prices of air travel and hotel accommodation. ^{1/} Likewise, the recession in industrial countries in 1980-82 had adverse effects on the growth of ECC tourism. On each occasion, the number of total tourist arrivals initially declined by about 20 percent and took four to five years to recover to the earlier levels.

The upswing in tourist arrivals to the ECC starting around 1978 is traceable to a number of factors, one being the liberalization of U.S. domestic air fares due to deregulation. ^{2/} Although international fares are not regulated in the same manner as domestic fares, the reduced fares for the domestic portion of air travel by U.S. residents to the ECC seem to have contributed to the upswing in tourist arrivals. Other factors that contributed to higher tourist arrivals in the late 1970s were the greater use of comprehensive package tours and the growth of the industrial economies.

There were events peculiar to the region that adversely affected tourism, such as hurricanes in 1979 and 1980 and the events of October 1983 in Grenada. In 1979 Hurricane David hit Dominica, and in 1980 Hurricane Allen hit Dominica, Grenada, St. Lucia, and St. Vincent, causing severe damage to major hotels, port facilities, and other tourist resources. The effects of the hurricane damage overlapped, however, with the period of recession in industrial economies in 1980-82, so it is difficult to discern to what extent the observed declines in tourist arrivals were due to hurricane damage or to the recession. The adverse impact of the events in October 1983 on Grenada's tourism is clear as total arrivals fell by 14 percent in 1983 despite the industrial countries' recovery that year.

b. Stayover arrivals

The growth of stayover arrivals is important for the tourist industry of each country as stayover visitors generate the most local value added of all tourist arrivals. St. Kitts and St. Lucia have both realized 9 percent average annual growth in stayovers while Dominica and Grenada have averaged under 4 percent (Table 5).

^{1/} Hotel costs increased mainly due to higher energy costs for air conditioning. See Holder (1979).

^{2/} Airline deregulation began in the United States with the Airline Deregulation Act of 1978. Restrictions on domestic air fares were gradually lifted during the 1979-82 transition period, and by 1983 all regulations on fares were eliminated. See Morrison and Winston (1986).

Table 5. East Caribbean Countries: Stayover Visitors, 1970-86

Year	Antigua		Dominica		Grenada 1/		St. Kitts & Nevis		St. Lucia		St. Vincent		Total	Growth (In Percent)
	Arrivals	Percent Change	Arrivals	Percent Change	Arrivals	Percent Change	Arrivals	Percent Change	Arrivals	Percent Change	Arrivals	Percent Change		
(In thousands of persons)														
1970	63.4	...	13.5	...	30.4	...	13.5	...	29.5	...	16.4	...	166.7	...
1971	67.6	6.6	14.7	8.9	35.6	17.1	15.1	11.9	33.2	12.5	17.4	6.1	183.6	10.1
1972	72.3	7.0	15.3	4.1	37.9	6.5	16.2	7.3	42.4	27.7	16.9	-2.9	201.0	9.5
1973	72.8	0.7	15.3	--	33.5	-11.6	14.9	-8.0	45.8	8.0	16.6	-1.8	198.9	-1.0
1974	69.9	-4.0	14.5	-5.2	14.7	-56.1	13.3	-10.7	51.8	13.1	20.8	25.3	185.0	-7.0
1975	62.1	-11.2	15.0	3.4	21.1	43.5	14.7	10.5	46.7	-9.8	16.6	-20.2	176.2	-4.8
1976	56.4	-9.2	16.8	12.0	24.6	16.6	14.8	0.7	56.4	20.8	17.9	7.8	186.9	6.1
1977	65.4	16.0	17.9	6.5	28.5	15.9	15.4	4.1	66.4	17.7	19.4	8.4	213.0	14.0
1978	77.0	17.7	20.1	12.3	32.3	13.3	20.2	31.2	75.0	13.0	28.7	47.9	253.3	18.9
1979	88.0	14.3	15.5	-22.9	32.3	--	25.1	24.3	87.9	17.2	32.8	14.3	281.6	11.2
1980	86.6	-1.6	14.3	-7.7	29.5	-8.7	32.8	30.7	79.7	-9.3	38.4	17.1	281.3	-0.1
1981	84.8	-2.1	15.2	6.3	25.0	-15.3	35.6	8.5	70.3	-11.8	41.6	8.3	272.5	-3.1
1982	87.0	2.6	18.3	20.4	23.2	-7.2	33.8	-5.1	71.5	1.7	37.1	-10.8	270.9	-0.6
1983	101.0	16.1	19.7	7.7	23.4	0.9	33.4	-1.2	77.8	8.8	37.7	1.6	293.0	8.2
1984	129.1	27.8	22.2	12.7	28.9	23.5	38.7	15.9	87.3	12.2	38.5	2.1	344.7	17.6
1985	139.8	8.3	21.5	-3.2	38.4	32.9	46.1	19.1	96.6	10.7	42.1	9.4	384.5	11.5
1986	149.3	6.8	24.4	13.5	42.7	11.2	55.3	20.0	115.5	19.6	42.1	--	429.3	11.7
(In percent)														
Average annual growth	5.5		3.8		2.1		9.2		9.2		6.1		6.1	

Sources: CARICOM Statistics Digest, 1970-81; North American Demand Study for Caribbean Tourism; CTTC, Caribbean Tourism Statistical Reports; Tourist Board data; and Fund staff estimates.

1/ To make series consistent, nonresident nationals have been excluded for 1983-86.

The breakdown of stayover arrivals by country of origin reveals several characteristics, both with regard to patterns across the region and within each country. For example, 50 percent of U.S. stayover visitors to the ECC travel to Antigua (Table 6), while Canadians and Europeans tend to favor St. Lucia and Antigua over the other islands (Tables 7 and 8). Caribbean visitors are more evenly divided in their preferred destination (Table 9), and stayover visitors from other countries (mainly South American countries) tend to favor Grenada, probably because of its proximity as the southern-most island of the ECC.

c. Cruise-ship arrivals

Cruise ships generally dock for a day or part of a day at various ECC ports. Thus, opportunities for cruise-ship passenger spending or contributions to value-added are limited. However, cruise-ship passenger arrivals are a large component of total ECC tourist arrivals (Table 10). Since 1970, Antigua has realized average annual growth in cruise-ship arrivals of some 12 1/2 percent, despite a severe downturn during the last industrial country recession. Other countries, particularly St. Lucia, experienced decreases in cruise-ship arrivals in 1980-81 due to hurricane damage to port facilities. In addition, Grenada, which receives many more cruise-ship visitors than stayover visitors, suffered declines in cruise-ship passenger arrivals in every year from 1981 to 1984. There is evidence that, due to the events of October 1983, many cruise ships were re-routed to St. Vincent in late 1983 and early 1984. In fact, St. Vincent's cruise-ship arrivals nearly doubled during this period.

2. Tourist expenditure ^{1/}

Since the beginning of the current recovery of industrial economies in 1983, the increase in tourist arrivals has given rise to an 18 percent average annual increase in tourist expenditure in the ECC region (Table 11). St. Kitts in particular has experienced a very large increase in tourist expenditure.

Per capita daily expenditure by stayover visitors is highest in Antigua (Table 12), where hotel rates are among the highest in the region and gambling facilities are available. St. Lucia has had the lowest per capita daily expenditure during the past few years, but the level of such outlays may change as a result of a new duty-free shopping complex at Pointe Seraphine.

In terms of time spent in the ECC, tourists staying in hotels tend to visit seven or eight days on average (Table 13). Hotel guests in St. Kitts stay the shortest time, six to seven days, while St. Vincent's hotel guests stay nine to ten days. Stayover visitors residing in private homes, mainly nonresident nationals visiting family members, stay twelve days on average.

^{1/} Data on tourist expenditure in the ECC are much less reliable and complete than for tourist arrivals.

Table 6. East Caribbean Countries: Stayover Visitors From the United States, 1970-86

Year	Antigua		Dominica		Grenada		St. Kitts & Nevis		St. Lucia		St. Vincent		Total	Growth (In Percent)
	Visitors	Share	Visitors	Share	Visitors	Share	Visitors	Share	Visitors	Share	Visitors	Share		
(In thousands of persons; shares in percent)														
1970	31.7	49.5	3.6	5.6	11.2	17.5	3.9	6.1	7.8	12.2	5.8	9.1	64.0	...
1971	30.6	48.0	3.5	5.5	12.4	19.4	4.0	6.3	7.7	12.1	5.6	8.8	63.8	-0.3
1972	32.5	49.1	2.7	4.1	13.2	19.9	4.2	6.3	7.8	11.8	5.8	8.8	66.2	3.8
1973	31.5	45.2	4.7	6.7	11.7	16.8	4.1	5.9	11.4	16.4	6.3	9.0	69.7	5.3
1974	30.4	49.7	3.9	6.4	4.0	6.5	3.4	5.6	12.0	19.6	7.5	12.3	61.2	-12.2
1975	26.5	51.4	1.6	3.1	5.5	10.7	3.7	7.2	8.6	16.7	5.7	11.0	51.6	-15.7
1976	22.9	42.5	1.7	3.2	6.1	11.3	4.1	7.6	13.9	25.8	5.2	9.6	53.9	4.5
1977	28.9	43.7	2.7	4.1	8.0	12.1	4.9	7.4	16.3	24.7	5.3	8.0	66.1	22.6
1978	35.6	43.7	2.6	3.2	9.2	11.3	9.1	11.2	18.3	22.5	6.7	8.2	81.5	23.3
1979	38.8	42.0	2.1	2.3	9.1	9.8	12.5	13.5	21.0	22.7	8.9	9.6	92.4	13.4
1980	34.4	42.9	1.9	2.4	6.8	8.5	12.0	15.0	14.1	17.6	11.0	13.7	80.2	-13.2
1981	32.2	43.0	2.1	2.8	5.1	6.8	12.4	16.6	11.2	15.0	11.9	15.9	74.9	-6.6
1982	36.7	48.4	3.4	4.5	5.0	6.6	10.8	14.2	11.6	15.3	8.3	10.9	75.8	1.2
1983	49.2	51.1	4.1	4.3	5.3	5.5	9.9	10.3	18.3	19.0	9.4	9.8	96.2	26.9
1984	68.3	54.2	4.2	3.3	8.4	6.7	14.6	11.6	21.1	16.8	9.3	7.4	125.9	30.9
1985	73.1	53.3	4.0	2.9	8.9	6.5	15.8	11.5	23.8	17.4	11.5	8.4	137.1	8.9
1986	79.2	51.5	5.1	3.3	11.1	7.2	19.6	12.7	28.2	18.3	10.7	7.0	153.9	12.3
(In percent)														
Average annual growth	5.9		2.2		-0.1		10.6		8.4		3.9		5.6	
Average annual share		47.6		4.0		10.8		9.9		17.9		9.9		

Sources: CARICOM Statistics Digest, 1970-81; North American Demand Study for Caribbean Tourism; CTCRC, Caribbean Tourism Statistical Reports; Tourist Board data; and Fund staff estimates.

Table 7. East Caribbean Countries: Stayover Visitors From Canada, 1970-86

Year	Antigua		Dominica		Grenada		St. Kitts & Nevis		St. Lucia		St. Vincent		Total	Growth (In Percent)
	Visitors	Share	Visitors	Share	Visitors	Share	Visitors	Share	Visitors	Share	Visitors	Share		
(In thousands of persons; shares in percent)														
1970	7.1	41.5	1.0	5.8	3.8	22.2	0.9	5.3	2.9	17.0	1.4	8.2	17.1	...
1971	7.0	39.1	0.8	4.5	4.7	26.3	0.8	4.5	3.4	19.0	1.2	6.7	17.9	4.7
1972	8.4	39.8	0.8	3.8	5.4	25.6	1.0	4.7	4.4	20.9	1.1	5.2	21.1	17.9
1973	10.1	39.0	0.8	3.1	4.1	15.8	0.8	3.1	8.8	34.0	1.3	5.0	25.9	22.7
1974	9.8	39.8	0.9	3.7	1.5	6.1	1.0	4.1	9.8	39.8	1.6	6.5	24.6	-5.0
1975	9.9	36.4	0.6	2.2	2.1	7.7	1.3	4.8	11.7	43.0	1.6	5.9	27.2	10.6
1976	8.1	32.1	0.7	2.8	2.5	9.9	1.3	5.2	11.2	44.4	1.4	5.6	25.2	-7.4
1977	8.5	28.3	2.7	9.0	2.8	9.3	1.2	4.0	13.2	44.0	1.6	5.3	30.0	19.0
1978	9.0	26.7	2.9	8.6	3.0	8.9	1.1	3.3	14.8	43.9	2.9	8.6	33.7	12.3
1979	9.2	26.1	0.7	2.0	2.9	8.2	1.2	3.4	17.8	50.4	3.5	9.9	35.3	4.7
1980	8.8	28.9	0.7	2.3	2.0	6.6	1.8	5.9	13.0	42.6	4.2	13.8	30.5	-13.6
1981	8.2	28.4	0.7	2.4	1.9	6.6	2.1	7.3	12.1	41.9	3.9	13.5	28.9	-5.2
1982	8.9	28.7	0.9	2.9	1.5	4.8	2.5	8.1	14.1	45.5	3.1	10.0	31.0	7.3
1983	7.8	29.9	1.1	4.2	1.5	5.7	2.1	8.0	10.4	39.8	3.2	12.3	26.1	-15.8
1984	12.8	38.2	1.2	3.6	1.4	4.2	2.5	7.5	12.6	37.6	3.0	9.0	33.5	28.4
1985	14.8	37.3	1.1	2.8	1.7	4.3	7.7	19.4	10.4	26.2	4.0	10.1	39.7	18.5
1986	13.6	32.5	1.5	3.6	2.1	5.0	10.8	25.8	10.2	24.3	3.7	8.8	41.9	5.5
(In percent)														
Average annual growth	4.1		2.6		-3.6		16.8		8.2		6.3		5.8	
Average annual share		33.7		4.0		10.4		7.3		36.1		8.5		

Sources: CARICOM Statistics Digest, 1970-81; North American Demand Study for Caribbean Tourism; CTCRC, Caribbean Tourism Statistical Reports; Tourist Board data; and Fund staff estimates.

Table 8. East Caribbean Countries: Stayover Visitors From Europe, 1970-86

Year	Antigua		Dominica		Grenada		St. Kitts & Nevis		St. Lucia		St. Vincent		Total	Growth (In Percent)
	Visitors	Share	Visitors	Share	Visitors	Share	Visitors	Share	Visitors	Share	Visitors	Share		
(In thousands of persons; shares in percent)														
1970	7.0	...	...	...	4.8	...	0.6	...	5.6	...	1.6	...	...	...
1971	5.9	...	...	...	4.9	...	0.7	...	...	...	1.0	...	...	...
1972	7.2	29.8	2.0	8.3	4.4	18.2	0.9	3.7	8.8	36.4	0.9	3.7	24.2	...
1973	7.7	30.3	2.0	7.9	3.6	14.2	1.0	3.9	10.2	40.2	0.9	3.5	25.4	5.0
1974	8.8	28.5	2.0	6.5	1.9	6.1	1.0	3.2	15.9	51.5	1.3	4.2	30.9	21.7
1975	6.7	26.2	2.1	8.2	3.6	14.1	1.1	4.3	11.0	43.0	1.1	4.3	25.6	-17.2
1976	6.4	19.2	4.6	13.8	4.4	13.2	0.9	2.7	15.8	47.4	1.2	3.6	33.3	30.1
1977	7.1	18.8	2.8	7.4	5.5	14.6	1.1	2.9	20.1	53.3	1.1	2.9	37.7	13.2
1978	10.1	20.5	3.3	6.7	6.9	14.0	1.2	2.4	23.0	46.7	4.7	9.6	49.2	30.5
1979	15.7	24.4	4.2	6.5	7.8	12.1	1.7	2.6	28.0	43.5	6.9	10.7	64.3	30.7
1980	20.4	28.9	4.9	7.0	6.8	9.6	3.2	4.5	31.4	44.5	3.8	5.4	70.5	9.6
1981	19.8	31.2	4.3	6.8	5.6	8.8	3.2	5.0	27.0	42.5	3.6	5.7	63.5	-9.9
1982	18.8	31.1	4.8	7.9	4.3	7.1	3.2	5.3	26.1	43.1	3.3	5.5	60.5	-4.7
1983	19.6	32.1	3.6	5.9	3.2	5.2	3.3	5.4	28.2	46.2	3.1	5.1	61.0	0.8
1984	22.9	34.2	4.3	6.4	3.0	4.5	3.5	5.2	29.8	44.5	3.5	5.2	67.0	9.8
1985	28.0	35.9	3.8	4.9	3.2	4.1	3.9	5.0	35.2	45.1	3.9	5.0	78.0	16.4
1986	30.5	42.6	5.1	7.1	4.4	6.1	4.4	6.1	23.5	32.8	3.7	5.2	71.6	-8.2
(In percent)														
Average annual growth	9.6		6.9		-0.5		13.3		10.0		5.4		8.1	
Average annual share		25.5		6.5		8.9		3.7		38.9		4.7		

Sources: CARICOM Statistics Digest, 1970-81; North American Demand Study for Caribbean Tourism; CTCR, Caribbean Tourism Statistical Reports; Tourist Board data; and Fund staff estimates.

Table 9. East Caribbean Countries: Stayover Visitors From Caribbean Countries, 1970-86

Year	Antigua		Dominica		Grenada		St. Kitts & Nevis		St. Lucia		St. Vincent		Total	Growth (In Percent)
	Visitors	Share	Visitors	Share	Visitors	Share	Visitors	Share	Visitors	Share	Visitors	Share		
(In thousands of persons; shares in percent)														
1970	14.5	...	...	...	8.9	...	4.4	...	12.1	...	6.0	...	...	...
1971	19.7	...	...	...	10.8	...	5.3	...	...	...	7.0	...	...	...
1972	19.6	27.5	5.0	7.0	11.2	15.7	9.1	12.7	19.2	26.9	7.3	10.2	71.4	...
1973	18.9	30.4	5.0	8.1	10.5	16.9	8.1	13.0	13.3	21.4	6.3	10.1	62.1	-13.0
1974	17.6	33.7	3.6	6.9	4.8	9.2	7.1	13.6	11.9	22.8	7.3	14.0	52.3	-15.8
1975	17.0	31.5	3.7	6.9	7.5	13.9	7.5	13.9	13.3	24.6	5.0	9.3	54.0	3.3
1976	16.1	27.9	6.0	10.4	8.0	13.9	7.6	13.2	12.9	22.4	7.1	12.3	57.7	6.9
1977	19.5	30.3	6.4	9.9	8.1	12.6	7.9	12.3	14.5	22.5	8.0	12.4	64.4	11.6
1978	18.7	26.4	7.9	11.2	8.8	12.4	8.3	11.7	16.5	23.3	10.5	14.9	70.7	9.8
1979	22.6	29.7	5.9	7.8	8.0	10.5	8.4	11.1	18.4	24.2	12.7	16.7	76.0	7.5
1980	21.0	26.3	5.2	6.5	7.7	9.6	12.7	15.9	18.9	23.7	14.3	17.9	79.8	5.0
1981	22.6	26.7	5.5	6.5	8.5	10.0	13.9	16.4	17.4	20.6	16.7	19.7	84.6	6.0
1982	20.7	23.5	6.7	7.6	9.7	11.0	14.8	16.8	17.7	20.1	18.4	20.9	88.0	4.0
1983	22.4	23.5	8.7	9.1	10.8	11.3	15.3	16.0	19.3	20.2	18.9	19.8	95.4	8.4
1984	23.1	22.0	9.9	9.4	13.8	13.1	16.1	15.3	21.9	20.9	20.2	19.2	105.0	10.1
1985	20.7	18.7	9.9	8.9	21.3	19.2	14.6	13.2	25.2	22.7	19.2	17.3	110.9	5.6
1986	22.6	16.0	10.5	7.4	20.0	14.2	15.1	10.7	52.0	36.9	20.8	14.8	141.0	27.1
(In percent)														
Average annual growth	2.8		5.4		5.2		8.0		10.2		8.1		5.0	
Average annual share		23.2		7.3		11.4		12.1		20.8		13.5		

Sources: CARICOM Statistics Digest, 1970-81; North American Demand Study for Caribbean Tourism; CTTC, Caribbean Tourism Statistical Reports; Tourist Board data; and Fund staff estimates.

Table 10. East Caribbean Countries: Cruise-Ship Arrivals, 1970-86

Year	Antigua		Dominica		Grenada		St. Kitts & Nevis		St. Lucia		St. Vincent		Total	Growth (In Percent)
	Arrivals	Percent Change	Arrivals	Percent Change	Arrivals	Percent Change	Arrivals	Percent Change	Arrivals	Percent Change	Arrivals	Percent Change		
(In thousands of persons)														
1970	18.7	...	0.7	...	41.3	...	5.4	...	40.8	...	16.1	...	123.0	...
1971	37.7	101.6	1.1	57.1	48.7	17.9	1.7	-68.5	42.9	5.1	12.3	-23.6	144.4	17.4
1972	63.8	69.2	1.5	36.4	94.1	93.2	4.7	176.5	37.3	-13.1	11.4	-7.3	212.8	47.4
1973	52.5	-17.7	2.1	40.0	132.3	40.6	1.4	-70.2	46.8	25.5	10.2	-10.5	245.3	15.3
1974	28.3	-46.1	1.9	-9.5	57.6	-56.5	4.0	185.7	43.1	-7.9	20.8	103.9	155.7	-36.5
1975	23.2	-18.0	0.2	-89.5	85.5	48.4	4.8	20.0	55.4	28.5	17.9	-13.9	187.0	20.1
1976	32.4	39.7	1.9	850.0	106.9	25.0	3.1	-35.4	69.1	24.7	13.9	-22.3	227.3	21.6
1977	35.8	10.5	7.5	294.7	108.5	1.5	1.0	-67.7	58.6	-15.2	20.5	47.5	231.9	2.0
1978	51.9	45.0	7.3	-2.7	116.3	7.2	2.1	110.0	75.6	29.0	13.6	-33.7	266.8	15.0
1979	70.3	35.5	7.8	6.8	138.7	19.3	6.9	228.6	60.2	-20.4	13.5	-0.7	297.4	11.5
1980	107.1	52.3	7.4	-5.1	145.6	5.0	5.8	-15.9	59.0	-2.0	28.3	109.6	353.2	18.8
1981	113.4	5.9	5.5	-25.7	77.6	-46.7	10.9	87.9	18.9	-68.0	20.9	-26.1	247.2	-30.0
1982	72.1	-36.4	2.4	-56.4	62.1	-20.0	11.1	1.8	33.8	78.8	18.8	-10.0	200.3	-19.0
1983	55.6	-22.9	6.1	154.2	50.2	-19.2	22.8	105.4	33.3	-1.5	22.4	19.1	190.4	-4.9
1984	70.7	27.2	3.2	-47.5	34.2	-31.9	34.1	49.6	37.2	11.7	41.6	85.7	221.0	16.1
1985	104.6	47.9	6.6	106.2	90.7	165.2	31.5	-7.6	54.8	47.3	22.1	-46.9	310.3	40.4
1986	127.0	21.4	11.5	74.2	113.9	25.6	27.0	-14.3	58.8	7.3	24.8	12.2	363.0	17.0
(In percent)														
Average annual growth	12.7		19.1		6.5		10.6		10.6		2.7		7.0	

Sources: CARICOM Statistics Digest, 1970-81; North American Demand Study for Caribbean Tourism; CTCRC, Caribbean Tourism Statistical Reports; Tourist Board data; and Fund staff estimates.

Table 11. East Caribbean Countries: Tourist Expenditure, 1978-86

(In millions of U.S. dollars; and in percent)

Year	Antigua		Dominica		Grenada		St. Kitts & Nevis		St. Lucia		St. Vincent		Total Expen- diture	Growth (In Percent)
	Expen- diture	Percent Change	Expen- diture	Percent Change	Expen- diture	Percent Change	Expen- diture	Percent Change	Expen- diture	Percent Change	Expen- diture	Percent Change		
1978	47.9	...	3.8	...	13.9	...	5.2	...	27.7	...	11.1	...	109.6	...
1979	62.9	31.3	2.6	-31.6	16.3	17.3	6.8	30.8	33.4	20.6	12.8	15.3	134.8	23.0
1980	60.1	-4.5	3.8	46.2	17.6	8.0	8.0	17.6	30.9	-7.5	16.7	30.5	137.1	1.7
1981	75.4	25.5	3.3	-13.2	15.1	-14.2	9.9	23.8	26.8	-13.3	13.7	-18.0	144.2	5.2
1982	80.3	6.5	6.6	100.0	14.3	-5.3	9.8	-1.0	29.5	10.1	14.5	5.8	155.0	7.5
1983	98.1	22.2	8.2	24.2	14.6	2.1	10.4	6.1	36.2	22.7	15.7	8.3	183.2	18.2
1984	129.6	32.1	10.8	31.7	17.8	21.9	15.2	46.2	39.8	9.9	15.6	-0.6	228.8	24.9
1985	147.8	14.0	9.8	-9.3	24.4	37.1	20.1	32.2	42.5	6.8	17.5	12.2	262.1	14.6
1986	166.3	12.5	10.4	6.1	26.7	9.4	25.5	26.9	54.6	28.5	18.1	3.4	301.6	15.1

Sources: Tourist boards; and Fund staff estimates.

Table 12. East Caribbean Countries: Per Capita Daily Expenditure
by Stayover Visitors, 1978-86

(In millions of U.S. dollars; and in percent)

Year	Antigua		Dominica		Grenada		St. Kitts & Nevis		St. Lucia		St. Vincent	
	Expen- diture	Percent Change	Expen- diture	Percent Change	Expen- diture	Percent Change	Expen- diture	Percent Change	Expen- diture	Percent Change	Expen- diture	Percent Change
1978	...	...	23.0	...	46.0	...	49.5	...	48.0	...	55.0	...
1979	...	...	26.2	13.9	48.4	5.2	55.0	11.1	53.2	10.8	60.0	9.1
1980	58.3	...	30.0	14.5	55.7	15.1	64.9	18.0	50.0	-6.0	67.0	11.7
1981	...	...	32.1	7.0	58.5	5.0	71.4	10.0	52.5	5.0	58.0	-13.4
1982	113.2	...	56.8	76.9	59.9	2.4	72.0	0.8	55.0	4.8	62.0	6.9
1983	115.4	1.9	59.6	4.9	61.4	2.5	76.0	5.6	60.9	10.7	67.0	8.1
1984	121.5	5.3	62.6	5.0	63.0	2.6	84.5	11.2	58.1	-4.6	72.0	7.5
1985	127.9	5.3	63.9	2.1	63.0	--	84.5	--	59.3	2.1	77.0	6.9
1986	134.6	5.2	65.0	1.7	63.0	--	87.0	3.0	59.9	1.0	81.0	5.2

Sources: Tourist boards; and Fund staff estimates.

Table 13. East Caribbean Countries: Average Length of Stay for
Guests in Hotels and Private Homes, 1978-86

(In number of nights)

Year	Antigua		Dominica		Grenada		St. Kitts and Nevis		St. Lucia		St. Vincent		Average	
	Hotels	Homes	Hotels	Homes	Hotels	Homes	Hotels	Homes	Hotels	Homes	Hotels	Homes	Hotels	Homes
1978	...	...	5.5	14.0	8.4	...	5.4	12.0	8.5	...	9.0	9.0	7.4	11.7
1979	6.8	7.0	6.4	11.0	8.4	10.0	5.2	12.0	8.5	...	9.0	10.0	7.4	10.0
1980	7.5	14.0	6.5	12.0	8.5	10.0	5.2	12.1	8.5	11.8	9.0	10.0	7.5	11.7
1981	7.5	14.0	7.3	14.5	8.5	10.0	5.4	12.2	8.5	12.1	9.0	12.0	7.7	12.5
1982	7.8	14.0	7.3	14.8	8.5	10.0	5.6	12.4	8.7	12.1	9.0	12.0	7.8	12.6
1983	7.8	14.0	8.7	14.8	8.5	10.0	6.0	12.5	8.7	12.3	9.0	12.0	8.1	12.6
1984	7.8	14.0	9.3	14.8	8.5	10.0	6.5	12.5	8.9	12.3	9.0	12.0	8.3	12.6
1885	7.8	14.0	7.2	14.8	8.5	10.0	7.0	12.5	8.7	12.3	9.0	12.0	8.0	12.6
1986	7.8	14.0	6.1	14.8	8.5	10.0	7.0	12.5	8.7	12.3	10.0	12.0	8.0	12.6

Sources: Tourist boards; and Fund staff estimates.

The direct contribution of tourism to value added in the ECC can be approximated by examining the share of the hotel and restaurant sector in GDP at current factor cost. In recent years Antigua has received 15 percent of total value added from tourism (Table 14). ^{1/} The other countries in the region received from 1 to 7 percent of total value added from this source. Tourism has further effects on value added through the demand for local transportation, entertainment, and other services, though these effects are more difficult to measure. ^{2/}

3. Accommodation

In the ECC there is a variety of tourist accommodation, including hotels, guest houses, apartments, cottages, and villas. In addition, time-share condominiums are becoming increasingly popular, particularly in Antigua. Hotel rooms dominate existing capacity in each island (Tables 16 and 17), and hotel capacity has grown fairly steadily in recent years. ^{3/} The number of guest houses, apartments, and cottages, owned most often by local entrepreneurs, fluctuates a great deal over time, and serves as a buffer when hotel capacity is fully utilized.

Hotel room occupancy rates are important indicators of capacity utilization (Table 18). These data, though difficult to collect on a consistent basis across countries, show that recent occupancy rates have been fairly high, averaging 50 to 70 percent. These rates are average occupancies and in the popular winter market occupancy rates can be in the range of 80 to 90 percent. Plans to expand and upgrade hotel capacity are tied to expectations about the number of flights to the region, and it is estimated that about 1,000-1,200 hotel rooms must exist to justify regular air service by a jumbo jet.

III. ECC Tourism Policies

1. Government incentives

The ECC governments have played an active role in the tourism industry, including direct hotel investment. In some of the islands, notably Antigua, Grenada, and St. Kitts, the Government owns hotel property, though recently there have been moves toward disinvestment and attraction of private investment. In others, the approach has been less

^{1/} For Antigua, gross tourist expenditure accounted for more than 70 percent of nominal GDP (market prices) in recent years (Table 15).

^{2/} For estimates of the distribution of visitor spending across other activities in selected ECC economies, see Tourism in the Caribbean: the Economic Impact (1982).

^{3/} Forecasts of planned hotel capacity are not reported in this study because they have not been accurate in the past and because the timing of construction is highly uncertain.

Table 14. East Caribbean Countries: Share of Hotels and Restaurants
in GDP at Current Factor Cost, 1978-86

(In percent)

Year	Antigua	Dominica	Grenada	St. Kitts and Nevis	St. Lucia	St. Vincent
1978	13.5	1.3	3.2	4.2	7.8	2.0
1979	14.4	0.9	2.9	5.5	7.9	1.9
1980	14.4	0.8	4.4	4.4	5.9	2.0
1981	13.6	0.9	4.4	4.5	6.3	2.2
1982	13.8	1.0	4.3	3.1	6.4	2.2
1983	13.7	1.0	4.5	3.2	6.9	2.2
1984	15.9	1.1	5.3	3.3	7.0	2.1
1985	16.4	1.2	6.2	3.7	6.8	2.1
1986	16.6	1.1	6.7	4.5	6.8	2.2
Average 1978-86	14.7	1.0	4.7	4.0	6.9	2.1

Source: Fund staff estimates.

Table 15. East Caribbean Countries: Ratio of Tourist
Expenditure to GDP, 1978-86 1/

(In percent)

Year	Antigua	Dominica	Grenada	St. Kitts and Nevis	St. Lucia	St. Vincent	ECC Region
1978	69.8	8.9	22.5	14.7	33.4	25.1	32.6
1979	74.2	5.7	22.9	16.7	31.5	24.7	33.7
1980	56.3	6.9	21.7	16.2	27.5	28.5	29.6
1981	60.1	5.0	18.3	17.9	21.4	19.1	27.4
1982	59.0	9.1	16.1	16.6	22.0	17.4	27.0
1983	65.2	10.2	15.5	17.5	26.1	17.2	29.8
1984	76.2	12.1	17.5	22.1	26.0	15.6	33.5
1985	74.6	9.9	21.0	27.6	25.0	16.1	34.3
1986	72.2	9.4	20.7	30.7	28.9	15.4	35.1

Source: Fund staff estimates.

1/ Nominal GDP at current market prices.

Table 16. East Caribbean Countries: Accommodation Capacity of Hotels,
Guest Houses, and Apartments and Cottages, 1978-86

Year	Antigua			Dominica			Grenada			St. Kitts and Nevis			St. Lucia			St. Vincent		
	Hotels	Guest Houses	Apts. and Cottages	Hotels	Guest Houses	Apts. and Cottages	Hotels	Guest Houses	Apts. and Cottages	Hotels	Guest Houses	Apts. and Cottages	Hotels	Guest Houses	Apts. and Cottages	Hotels	Guest Houses	Apts. and Cottages
(In number of rooms)																		
1978	1,190	...	...	...	...	...	454	57	245	...	...	...	...	...	...	...	...	...
1979	1,341	...	...	...	...	...	451	71	243	482	50	52	...	...	...	392	52	75
1980	1,606	147	126	58	82	17	450	65	232	482	50	52	1,043	106	235	380	...	...
1981	1,684	142	168	75	...	...	275	81	160	480	...	...	1,043	106	235	350	...	...
1982	1,702	166	218	136	90	37	275	73	112	493	...	...	1,043	106	235	350	...	...
1983	1,610	134	220	159	80	41	275	80	112	585	60	61	1,080	81	281	349	117	63
1984	1,684	126	242	203	113	27	257	34	106	596	...	...	1,080	71	554	304	257	134
1985	1,719	116	260	260	114	31	284	45	125	725	...	...	1,001	71	663	471	316	200
1986	1,818	70	509	...	...	...	470	50	120	950	...	...	...	...	...	...	...	...
(In percent)																		
Average annual growth	5.4	-11.6	26.2	35.0	6.8	12.8	0.4	-1.6	-8.5	10.2	...	...	-0.8	-7.7	23.1	3.1	35.1	17.8

Sources: Tourist boards; and Fund staff estimates.

Table 17. East Caribbean Countries: Hotel Rooms as a
Share of Total East Caribbean Region Hotel Capacity, 1980-85

Year	Antigua		Dominica 1/		Grenada 2/		St. Kitts and Nevis		St. Lucia		St. Vincent 3/		Total
	Hotel Rooms	Share of Capacity	Hotel Rooms	Share of Capacity	Hotel Rooms	Share of Capacity	Hotel Rooms	Share of Capacity	Hotel Rooms	Share of Capacity	Hotel Rooms	Share of Capacity	Hotel Rooms
(In number of rooms; shares in percent)													
1980	1,606	40.0	58	1.4	450	11.2	482	12.0	1,043	26.0	380	9.5	4,019
1981	1,684	43.1	75	1.9	275	7.0	480	12.3	1,043	26.7	350	9.0	3,907
1982	1,702	42.6	136	3.4	275	6.9	493	12.3	1,043	26.1	350	8.8	3,999
1983	1,610	39.7	159	3.9	275	6.8	585	14.4	1,080	26.6	349	8.6	4,058
1984	1,684	40.8	203	4.9	257	6.2	596	14.5	1,080	26.2	304	7.4	4,124
1985	1,719	38.5	260	5.8	284	6.4	725	16.3	1,001	22.4	471	10.6	4,460
(In percent)													
Average annual growth	1.4		35.0		-8.8		8.5		-0.8		4.4		2.1

Sources: Tourist boards; and Fund staff estimates.

1/ Estimate for 1981 hotel rooms.

2/ Preliminary for 1985, 1986.

3/ Estimates for 1980-82 hotel rooms.

Table 18. East Caribbean Countries: Hotel Room
Occupancy Rates, 1978-86

(In percent)

Year	Antigua	Dominica <u>1/</u>	Grenada	St. Kitts and Nevis	St. Lucia	St. Vincent <u>2/</u>
1978	61	...	33	26	72	...
1979	...	...	28	30	64	...
1980	49	...	27	29	64	...
1981	50	...	...	40	52	...
1982	45	...	...	...	53	...
1983	53	...	...	30	59	...
1984	69	...	52	50	66	...
1985	75	...	53	65	73	...
1986	67	...	53	...	69	...

Sources: Tourist boards; and Fund staff estimates.

1/ Specific occupancy rates are not available. The 1985 World Bank Economic Memorandum for Dominica indicates that occupancy rates were high in 1984, and visitor accommodation capacity was a major constraint.

2/ Specific occupancy rates are not available.

direct. In Dominica, for example, the Government is merging its Tourist Board with its Industrial Development Corporation to promote jointly tourism and investment.

Tax incentives have been used by some of the ECC governments to support their tourism sectors. 1/ For example, Grenada has approved tax concessions in a number of hotel projects, with the goal of doubling hotel capacity by 1990. Antigua allows duty-free imports of construction materials and equipment for hotels.

2. Promotion and marketing

Tourist boards have been employed in the promotion and marketing efforts by ECC governments, but in many cases little budgetary support is offered to these boards. A question facing these tourist boards is how to package their product, that is, whether to promote the ECC as a regional unit, to promote subgroups of islands, or to promote and differentiate each island. Joint promotion offers economies of scale, but joint efforts are difficult because of competitive factors.

Some steps toward joint promotion have been made. Dominica has intensified efforts to sell itself as the "Nature Island," a second and distinctive destination for tourists visiting neighboring islands. Dominica has been developing a package with St. Kitts and St. Vincent to offer special tours covering all three islands. In St. Vincent the authorities have worked out an agreement with the Government of St. Lucia whereby transit passengers to St. Vincent can bypass immigration and customs at St. Lucia's airport. Similar agreements have been proposed to the Governments of Barbados and Grenada.

Regional efforts to promote tourism include a plan by the Organization of Eastern Caribbean States (OECS) to develop a three-year cooperative marketing effort from funds available to the region under the Lomé III Agreement. 2/ Also, Caribbean tourism officials are urging the U.S. Congress to reinstate the tax deduction for business conventions on cruise ships and to include aid for technical assistance to tourism under the new Caribbean Basin Initiative II (CBI II). 3/

1/ See Mansfield (1985) for a general study of tourism taxes in developing countries.

2/ "OECS Plans Big Tourism Drive on EC Market," Trinidad Guardian (January 11, 1988), p. 5.

3/ Tourism was not a part of the original CBI bill approved in 1983. See "CBI Lobbyists Push Tourism Inclusion in New Legislation," Washington Report on Latin America and the Caribbean (December 14, 1987), p. 3.

3. Linkages with other sectors

Tourism has many linkages with other sectors in the ECC economies, and a strengthening of these linkages may be helpful for overall economic development. Four areas are receiving particular attention.

First, a stronger linkage is being encouraged between tourism and local agriculture. For example, these islands could furnish domestically many tropical fruits and vegetables that are in demand by tourists. Likewise, the fishing industry could be developed further, but in some cases price controls on fish will need to be eased.

Second, the linkage between tourism and retail trade can be strengthened. Duty-free shopping, popular among tourists in Barbados, the U.S. Virgin Islands, and other Caribbean islands, is limited in the ECC. Only Antigua and St. Lucia have duty-free shopping facilities. Although local handcrafts are available, there is almost no promotion of these items.

A third linkage exists between tourism and transportation. Although adequate taxi and ferry services exist in most of the islands, programs are under way to train drivers and guides to handle tourists. Regarding air transportation, all of the islands except Dominica and St. Vincent now have international airports, but it has been difficult to attract regular service by major carriers. In late 1984, Grenada opened a large international airport near the capital, and presently there is ample capacity. Dominica, by contrast, has two small airports, and the airport closest to the capital can only handle very small aircraft.

A fourth linkage, that between tourism and infrastructure, is an area where increasing attention is being paid by ECC Governments. Road networks linking airports, tourist sites, and major towns are in place for the most part, but their maintenance has been inadequate and increasing attention is paid to the problem. Projects are being undertaken to prevent beach erosion and to avoid pollution of beaches. Port facilities have been upgraded in many of the islands: St. Kitts now has a deep-water port, St. Lucia has just completed construction of a new cruise-ship berth and yachting facilities, and Antigua and Grenada plan expansion of their ports. In many cases these expansions facilitate not only cruise-ship arrivals but also cargo shipping.

IV. A Model of ECC Tourism

1. Determinants of tourist arrivals

Economic theory suggests that tourist arrivals depend on the real income of potential tourists and the price of tourism relative to prices of other consumption goods. This is consistent with the observation that declines in tourist arrivals to the ECC have coincided with recessions in industrial countries and increases in the price of air travel.

Although data on the real disposable incomes of industrial countries are available (Table 19), data to represent the price of ECC tourism are not easily obtained and must be estimated (Table 20). Because of this difficulty, few empirical estimates of tourism elasticities have been carried out for the Caribbean area, and none (to our knowledge) have been done for the ECC. A short study on the Bahamas proxied the tourism price by using relative wholesale prices in the United States as compared with other industrial countries. A more recent study of Barbados used air fares and hotel rates as separate price variables and obtained elasticity estimates. 1/

An ideal tourism price variable might include both air fares and hotel rates. 2/ However, a complete set of time series data on hotel rates in the ECC is not available. The only long-term time series available is the average hotel rate for Antigua. This series was tested but did not provide reasonable results because a positive correlation exists between the hotel rates and tourist arrivals. The reason for this correlation is that both the average hotel rate and tourist arrivals tend to increase when a new luxury hotel opens.

The present study, therefore, uses only the air fare to the ECC as the explanatory price variable for the tourist arrivals. The estimation uses an instrumental variable, which involves deriving movements in the air fare from operational costs in the airline industry (see Appendix for details). The reasons for the use of the instrumental variable are: first, to avoid the simultaneity problem in estimation, and second, to capture the true air fares, which are likely to be different from the reported air fares for various reasons (see Appendix).

2. The Model: income and price elasticities

We use the following partial adjustment model to estimate the income and price elasticities of tourist arrivals, which originate mainly in the United States, Canada, and the United Kingdom, to the ECC region and to individual countries: 3/

1/ See International Monetary Fund, "Bahamas: Recent Economic Developments," 1982; and Clarke et al. (1986). For broader empirical studies of world tourism expenditure from the perspective of the balance of payments, see Artus (1972) and Bond (1978, 1979).

2/ See Appendix for a detailed discussion of various estimates of air fares and hotel prices tested for this study. Strictly speaking, the best hotel price proxy would be the rate paid to tour operators, known as the "achieved" room rate, but no data are yet available for the ECC.

3/ It is difficult to specify a full structural model of the ECC tourism market because tourist arrival data are the only substantial and reliable proxy for volume of tourism, and hence it is difficult to model the supply-side explicitly. Given this constraint, we specify only a tourist arrival equation.

Table 19. Selected Industrial Countries:
Real Disposable Income, 1970-86

Year	United States (US\$)	Canada (C\$)	United Kingdom (Pound)	Y <u>1/</u>	Growth (In Percent)
<u>(1980=100)</u>					
1970	75.3	60.7	76.5	72.6	...
1971	78.1	64.7	77.4	75.3	3.6
1972	81.2	70.0	83.9	79.5	5.6
1973	86.5	75.2	89.3	84.8	6.7
1974	85.7	77.6	88.6	84.6	-0.2
1975	87.2	82.9	89.1	86.8	2.5
1976	90.4	86.3	89.0	89.3	2.9
1977	93.3	89.6	87.1	91.3	2.3
1978	97.9	95.3	93.4	96.5	5.6
1979	99.9	97.7	98.6	99.2	2.9
1980	100.0	100.0	100.0	100.0	0.8
1981	101.5	105.3	98.7	101.7	1.7
1982	102.1	107.2	98.6	102.4	0.7
1983	105.3	107.2	100.6	104.7	2.3
1984	111.5	113.1	103.1	110.2	5.2
1985	114.8	118.7	105.5	113.7	3.2
1986	119.5	121.5	109.5	117.9	3.6
<u>(In percent)</u>					
Annual growth	2.9	4.4	2.3	3.1	

Source: Fund staff estimates.

1/ The real disposable income index Y is calculated as the weighted average of United States (0.6), Canada (0.2), and United Kingdom (0.2) disposable incomes.

Table 20. Selected Industrial Countries: Airfare to the ECC
by Country of Departure 1/

Year	United States (US\$)	Canada (C\$)	United Kingdom (Pound)	NP <u>2/</u>	Change (In Percent)
<u>(1980=100)</u>					
1970	50.5	55.2	56.7	52.7	...
1971	52.2	57.8	56.6	54.2	2.9
1972	55.7	58.0	55.9	56.2	3.6
1973	59.3	61.3	61.1	60.0	6.8
1974	67.8	68.0	61.8	66.6	11.0
1975	71.5	77.9	86.6	75.8	13.7
1976	76.6	80.7	101.6	82.4	8.8
1977	84.3	85.9	88.1	85.4	3.6
1978	94.2	105.5	94.2	96.4	13.0
1979	93.0	91.5	97.0	93.5	-3.0
1980	100.0	100.0	100.0	100.0	7.0
1981	114.2	122.7	129.3	118.9	18.9
1982	125.0	124.5	160.4	132.0	11.0
1983	143.3	137.3	204.1	154.2	16.9
1984	147.6	160.3	233.2	167.3	8.4
1985	167.8	180.0	233.4	183.3	9.6
1986	171.3	192.2	216.0	184.4	0.6
<u>(In percent)</u>					
Annual growth	7.9	8.1	8.7	8.1	

Sources: Central Bank of Barbados; Fund staff estimates.

1/ The average airfare to the ECC proxied by the nominal airfare to Barbados (as most ECC visitors first fly to Barbados and then take a local flight to the ECC).

2/ The composite nominal airfare NP is calculated as the weighted average of the United States (0.6), Canada (0.2), and United Kingdom (0.2) airfares to Barbados.

$$\log Q_t^* = a_0 + a_1 \log Y_t + a_2 \log P_t + a_3 HD_t + a_4 GD_t + u_t \quad (1)$$

$$\log Q_t - \log Q_{t-1} = b(\log Q_t^* - \log Q_{t-1}) + u_t \quad (2)$$

which together yield the following dynamic equation to be estimated:

$$\begin{aligned} \log Q_t = & ba_0 + ba_1 + ba_1 \log Y_t + ba_2 \log P_t + ba_3 HD_t \\ & + ba_4 GD_t + (1-b) \log Q_{t-1} + e_t \end{aligned} \quad (3)$$

where $e_t = u_t' + bu_t$, Q is the number of stayover tourist arrivals, Y is the index of real disposable income of industrial countries, and P is the index of the price of air travel relative to the implicit price deflator of consumption expenditure. The coefficients a_1 and a_2 represent, respectively, the long-run income and price elasticities of tourist arrivals while ba_1 and ba_2 represent the short-run income and price elasticities. HD and GD are dummy variables to capture the effects of the 1979 and 1980 hurricanes ($1980-81 = 1$) and the events of October 1983 in Grenada ($1983-84 = 1$). The model incorporates a partial adjustment mechanism with the adjustment speed given by b . The t subscript represents the time period. ^{1/}

The estimation results of equation (3) are presented in Table 21. The dummy variables HD and GD are statistically insignificant for the ECC region and appear to be multicollinear with the income and price variables. The following discussion is therefore based on the regression results that omit HD and GD . The estimated income elasticities of stayover arrivals to the ECC are approximately 1.0 in the short run and 2.7 in the long run. The estimated price elasticities of stayover arrivals to the ECC are approximately minus 0.3 in the short run and minus 0.8 in the long run.

In the case of stayovers from the United States, the income elasticity is 1.4 in the short run and 3.5 in the long run, while the price elasticity is minus 0.6 in the short run and minus 1.5 in the long run. In the case of stayovers from Canada, the income elasticity is 0.7 in the short run and 1.4 in the long run, while the price elasticity is minus 0.4 in the short run and minus 0.8 in the long run. In the case of stayovers from the United Kingdom, the income elasticity is 2.5 in the short run and 3.9 in the long run, while the price elasticity is virtually zero.

^{1/} To test for the effects of unusually cold weather in the United States on ECC tourism demand, a variable measuring annual heating degree days in New York City was tested but the coefficient was statistically insignificant.

Table 21. East Caribbean Countries:
Estimated Functions of Tourist Arrivals 1/
(Annual data, 1971-86)

1. ECC Stayover Arrivals:

$$\log(Q_t) = -1.52 + 1.07 \log(Y_t) - 0.30 \log(P_t) + 0.66 \log(Q_{t-1})$$

(-1.88) (2.62) (-2.34) (3.48)

$$\text{Adjusted } R^2 = 0.95, \text{ DW} = 0.92 \text{ (h} = 3.32), \text{ SEE} = 0.07$$

2. ECC Stayover Arrivals (adjusted for first-order serial correlation):

$$\log(Q_t) = -1.17 + 0.96 \log(Y_t) - 0.23 \log(P_t) + 0.63 \log(Q_{t-1})$$

(-0.75) (1.22) (-1.57) (1.41)

$$\text{Adjusted } R^2 = 0.96, \text{ SEE} = 0.06, \text{ RHO} = 0.59 \text{ (1.21)}$$

3. ECC Stayover Arrivals from the United States:

$$\log(Q_t) = -1.74 + 1.36 (\log(Y_t) - 0.59 \log(P_t) + 0.61 \log(Q_{t-1}))$$

(-1.45) (3.87) (-2.93) (4.02)

$$\text{Adjusted } R^2 = 0.91, \text{ DW} = 1.16 \text{ (h} = 2.11), \text{ SEE} = 0.10$$

4. ECC Stayover Arrivals from Canada:

$$\log(Q_t) = 0.35 + 0.66 (\log(Y_t) - 0.36 \log(P_t) + 0.52 \log(Q_{t-1}))$$

(0.33) (2.27) (-1.41) (1.95)

$$\text{Adjusted } R^2 = 0.78, \text{ DW} = 2.13 \text{ (h} = \text{NA}), \text{ SEE} = 0.10$$

5. EEC Stayover Arrivals from the United Kingdom:

$$\log(Q_t) = -9.19 + 2.55 (\log(Y_t) - 0.03 \log(P_t) + 0.35 \log(Q_{t-1}))$$

(-2.55) (2.55) (-0.24) (1.39)

$$\text{Adjusted } R^2 = 0.88, \text{ DW} = 2.18 \text{ (h} = \text{NA}), \text{ SEE} = 0.12$$

1/ Ordinary least squares is the estimation method. Numbers in parentheses are t-values.

Q = number of visitors

Y = real disposable income of industrial countries; the weighted average of the normalized real disposable incomes (1980=100) of U.S. (0.6), Canada (0.2), and U.K. (0.2) is used for total visitors and stayover visitors.

P = the real average price of air travel to the ECC; the weighted average of the airfares (1980=100) of visitors from the U.S. (0.6), Canada (0.2), and the U.K. (0.2) is used; each airfare is normalized by the corresponding deflator of consumption expenditure for each country.

DW = Durbin-Watson statistic

h = Durbin's h statistic

RHQ = coefficient of a first-order autoregressive error term, estimated by the Beach-Mackinnon maximum likelihood procedure.

3. Individual country regression results

The results for the individual country regressions are quite varied and may not be particularly informative due to the fragile nature of the disaggregated data and the importance of country-specific factors (Table 22). 1/ The income elasticity estimates are statistically significant for Dominica, Grenada, and St. Kitts, but the price elasticity estimate is negative and significant only in the case of Grenada. The hurricane dummy is statistically significant only for Dominica where the main hotel was destroyed by hurricane. The hurricanes in St. Lucia and elsewhere rendered damage mainly to port facilities, and these damages affected cruise-ship arrivals but not stayover arrivals.

The events in Grenada in October 1983 may have affected ECC tourism, but the coefficient of the Grenada dummy is statistically insignificant. There is evidence that mainly cruise-ship arrivals were affected in Grenada (negatively) and St. Vincent (positively), but stayover arrivals were not severely affected. It appears that an increase in nontourist stayover arrivals (military and diplomatic personnel) from the United States may have partially offset the reduction in tourist arrivals in Grenada.

V. Projected Growth in Tourist Arrivals 2/

Projections of tourist arrivals can be made based on the estimated relations between the growth rates of tourist arrivals, the real price of air travel, and real income of industrial economies. From equation (1), we obtain the following relationship:

$$g(Q_t) = ba_1g(Y_t) + ba_2g(P_t) + (1-b)g(Q_{t-1}) \quad (4)$$

where $g(X) = (dX/dt)/X$ = the growth rate of X. The short-run income elasticity is ba_1 which is estimated to be about 1.0. The short-run price elasticity, ba_2 , is estimated to be about -0.3. The adjustment speed b is estimated to be approximately 0.65, indicating that about 35 percent of the growth rate of stayovers in the previous year carries over to the current year.

1/ The individual country estimates for elasticities in Dominica, St. Kitts, and St. Vincent are statistically insignificant probably due to data problems and structural changes. There were substantial differences in each country's tourist figures depending on the data sources. In particular, St. Kitts seems to have undergone a major structural change in the tourism industry as seen in the higher trend growth rate of tourist arrivals since the late 1970s.

2/ Actual and projected ECC stayover arrivals during the sample period are found to be reasonably close.

Table 22. East Caribbean Countries:
Estimated Income and Price Elasticities of Stayover Arrivals
By Country of Arrival (Annual Data, 1971-86) 1/

$$\log(Q_t) = ba_0 + ba_1 \log(P_t) + ba_2 \log(Y_t) + ba_3 HD + ba_4 GD + (1-b) \log(Q_{t-1})$$

Dependent Variable log(Q)	Estimated Coefficients <u>2/</u>					$\frac{2}{R}$	DW (h)	SEE
	log(Y) <u>3/</u>	log(P) <u>4/</u>	HD	GD	log(Q _{t-1})			
1. Antigua Stayover Arrivals:	0.89 (2.06)	-0.42 (-1.56)	0.02 (0.25)	0.13 (1.91)	0.72 (4.11)	0.92	1.43 (1.60)	0.81
2. Dominica Stayover Arrivals:	1.58 (3.76)	-0.40 (-1.95)	-0.19 (-2.11)	0.05 (0.83)	-0.17 (-0.58)	0.80	2.03	0.77
3. Grenada Stayover Arrivals:	1.69 (2.49)	-1.74 (-2.42)	0.29 (1.12)	-0.11 (-0.59)	0.08 (0.27)	0.33	1.67	0.22
4. St. Kitts Stayover Arrivals:	1.47 (2.39)	-0.41 (-1.10)	0.22 (1.59)	-0.01 (-0.15)	0.67 (3.94)	0.95	1.45 (1.50)	0.11
5. St. Lucia Stayover Arrivals:	0.52 (0.58)	-0.24 (-0.84)	-0.14 (-1.51)	-0.15 (-0.18)	0.85 (2.22)	0.93	0.09	0.87
6. St. Vincent Stayover Arrivals:	1.31 (2.05)	0.05 (0.13)	0.17 (1.09)	0.02 (0.17)	0.47 (2.18)	0.89	0.13 (7.39)	0.13

1/ Ordinary least squares is the estimation method.

2/ The estimated coefficients of log(Y) and log(P) represent the income and price elasticities, respectively. HD = hurricane dummy, GD = Grenada dummy, DW = Durbin-Watson statistic, h = Durbin's h statistic. Numbers in parentheses are t-values. The estimated constant terms are not reported.

3/ Y is the weighted real disposable income of industrial countries (United States, Canada, United Kingdom).

4/ P is the tourism price index weighted by the share of the countries' visitors.

1. Short-term projections

The recent tourism boom in the ECC should have continued into 1987 as income growth in industrial countries continued to be strong and the real price of air travel declined slightly following the drop in the oil price in the previous year. The estimated 2.8 percent increase in real disposable incomes in industrial countries in 1987, the estimated 2.4 percent decline in the real price of air travel in 1987, and the 11.7 percent growth in stayover arrivals of the previous year suggest that stayover arrivals in the ECC should have increased 7.6 percent in 1987, according to the estimated model. As it turned out, 1987 stayover arrivals in the ECC grew by about 8 percent. 1/

In 1988 tourism growth in the ECC is likely to continue, but to be less than the high average growth in 1984-86, as the downward pressure on the oil price and the depreciation of the U.S. dollar have eased. Under the assumptions of a 3.0 percent growth in the weighted real disposable income of the three relevant industrial countries and no change in the real price of air travel, stayover arrivals in the ECC are projected to increase by 5.8 percent in 1988, other things being equal.

2. Long-term projections

Long-term projections may be made based on the following equation:

$$g(Q_t) = a_1 g(Y_t) + a_2 g(P_t) \quad (5)$$

where a_1 and a_2 are the long-run income and price elasticities, which are estimated to be 2.7 and -0.8, respectively. The long-term projection assumes a constant real price of air travel (assuming no major oil price or exchange rate changes) and about a 3 percent growth in the real incomes of industrial countries. Under these assumptions, the projected long-term growth in stayover arrivals in the ECC is 8.1 percent a year. 2/

A substantially higher growth in ECC tourism than these projected rates would require a major event, such as a collapse in the oil price, that would raise $g(Y)$ and reduce $g(P)$. The effect of such an event, however, is likely to be a once-and-for-all jump in tourist arrivals. A sustainable higher long-term growth would require basic structural changes in the ECC, such as improvements in tourism-related infrastructure and the relative attractiveness of ECC tourism.

1/ Caribbean Tourism Research and Development Centre, Statistical News (December 1987). There is evidence of a slower growth in Caribbean stayover arrivals, particularly arrivals from the United States, following the October 1987 stock market crash. However, the effect of the stock market crash appears to have been temporary as arrivals in early 1988 grew rapidly again. Moreover, the strong growth in European arrivals has shown no sign of abating.

2/ See Table 23 for a matrix of possible long-term projections based on various assumptions about income and price growth.

Table 23. East Caribbean Countries:
Projected Long-Run Growth Rates of Stayover Arrivals
As a Function of Income and Price Growth

(In percent)

$$g(Q_t) = 2.7 g(Y_t) - 0.8 g(P_t) \text{ 1/}$$

		g(Y)								
		0.0	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
g(P)	-8.0	6.4	9.1	10.5	11.8	13.2	14.5	15.9	17.2	18.6
	-6.0	4.8	7.5	8.9	10.2	11.6	12.9	14.3	15.6	17.0
	-4.0	3.2	5.9	7.3	8.6	10.0	11.3	12.7	14.0	15.4
	-2.0	1.6	4.3	5.7	7.0	8.4	9.7	11.1	12.4	13.8
	0.0	0.0	2.7	4.1	5.4	6.8	8.1	9.5	10.8	12.2
	2.0	-1.6	1.1	2.5	3.8	5.2	6.5	7.9	9.2	10.6
	4.0	-3.2	-0.5	0.9	2.2	3.6	4.9	6.3	7.6	9.0
	6.0	-4.8	-2.1	-0.8	0.6	2.0	3.3	4.7	6.0	7.4
	8.0	-6.4	-3.7	-2.4	-1.0	0.4	1.7	3.1	4.4	5.8

- 1/ g(Q) = the annual growth rate of stayover arrivals in ECC.
g(P) = the annual growth rate of the weighted real price of air travel to the ECC.
g(Y) = the annual growth rate of the weighted real disposable income of industrial countries.

VI. Conclusion

This paper has reviewed recent developments in ECC tourism. The share of ECC tourist arrivals in the Caribbean region changed little between 1970 and 1980, but it has risen since that time. The recent economic recovery in industrial countries and the decline in the real price of air travel owing to falling oil prices have helped to raise the growth of tourism in the ECC in the past several years. The depreciation of the U.S. dollar vis-à-vis other currencies also has been a contributing factor.

A model was developed to estimate the income and price elasticities of the stayover arrivals. The income elasticity is estimated to be relatively large, particularly in the long run. Based on the estimated elasticities, the model projects long-term growth of stayover arrivals in the ECC of about 8 percent a year. While this is a higher rate of growth than the historical average, it is slower than the growth during the past several years because of the special factors behind the recent trends.

Although the model performed well in predicting the recent stayover arrivals, because of data limitations it omitted several factors that might be important in the determination of stayover arrivals. For example, the model did not take into account the effects of changes in the competitive position owing to developments in the countries of the region or of changes in government efforts to promote tourism. Therefore, developments in these and other potentially important factors may give rise to a growth rate of ECC tourism that differs from the projection of the model.

The Price of ECC Tourism

There are many data constraints in the estimation of the ECC tourism price. As for air travel, air fares to the ECC are not available. The reported tariff rates of major airlines are kept only for about five years at the U.S. Department of Transportation but discarded afterward without compilation. 1/ Travel agencies know only the current rates. Second, there are many subclassifications for air fares even within a given rate class, and no information is available as to which subclassification is actually applied at a given time. Third, even if the complete tariff rates were available, they might not reflect the actual price of air travel because of embedded discounts in packaged tours. 2/ Moreover, airlines added an oil surcharge over the regular tariff rates during the oil crises. The best available air fare proxy for the ECC is the fare to Barbados, as many ECC visitors first fly to Barbados and then take a local flight to the ECC destination. We obtained a series of average tariff rates from industrial countries to Barbados for 1970-86 from the Central Bank of Barbados (Table 20).

As for hotel accommodation, the data on hotel rates and average tourist expenditure are only partially available for the sample period of this study and are often inconsistent across time and countries for the ECC: moreover, average tourist expenditure data in the ECC are only rough estimates and are not independent of a tourist's income. We are able to compile a series of average hotel rates in Antigua for 1970-86. This should be a fair proxy for hotel rates faced by tourists coming to the ECC, as about one third of all stayover arrivals in the region are in Antigua.

Given these data limitations, the ECC tourism price index P can be estimated in several ways. Each of the following three estimates of P (P_1 to P_3) is a weighted-average index of the individual indices for the United States, Canada, and the United Kingdom. All indices below are normalized as 1980 = 100 unless indicated otherwise:

$$(A1) \quad P_1 = \text{TOURP}/\text{CEP} \cdot 100$$

where TOURP is the sum of the average round-trip air fare to the ECC (proxied by the average air fare to Barbados) and the average hotel rate (seven nights) in Antigua, expressed in the visitor's currency. CEP is the implicit deflator of private consumption expenditure in the visitor's currency, lagged by one year to account for the time elapsing

1/ Tariff rates can change every week and myriad discount/promotional fares make compilation of the "average" fare nearly impossible. There is a service in California, Boeing Communications Service, that compiles the tariff data on tape, but this service is prohibitively expensive.

2/ In fact, the price of a typical package tour including air fare and hotel accommodation is approximately the same price as the air fare alone if an individual arranges his own trip. See Holder (1979).

between the printing of travel brochures and the actual travel data. Using this proxy (P1), the estimated regression yields statistically insignificant income and price elasticities. When the air fare and hotel price elasticities are estimated separately in the regression, both are statistically significant, but the coefficient of the hotel price is positive.

These results do not appear to be satisfactory, so a second price proxy was tested using only the air fare component:

$$(A2) \quad P2 = AIRP/CEP*100$$

where AIRP is the average round-trip air fare to the ECC, proxied by the average tariff rate to Barbados. In this case, the estimated price coefficient is statistically insignificant. The reason for this outcome appears to be the rigidity of the reported tariff rate. Although the tariff rate reflects the true air fare in the long run, it tends to underestimate the true air fare during periods of price inflation and to overestimate it during periods of price deflation. Therefore, a change in the true air fare the tourist must pay may be estimated more accurately by looking at a change in the operational unit cost of the airline industry:

$$(A3) \quad P3 = INSAIRP/CEP*100$$

where INSAIRP is the instrumental variable that is the projected value of AIRP based on the regression of AIRP on AIRC, the estimated operational cost of the air flight to the ECC. AIRC is estimated as follows:

$$\begin{aligned} AIRC &= (OILP*EX + WAGE + WP)/3 && \text{for United States and Canada} \\ AIRC &= (2*OILP*EX + WAGE + WP)/4 && \text{for United Kingdom,} \end{aligned}$$

where

$$\begin{aligned} OILP &= \text{oil price index in terms of U.S. dollar} \\ EX &= \text{exchange rate of visitor's currency per U.S. dollar (1980=1)} \\ WAGE &= \text{wage index of visitor's country} \\ WP &= \text{wholesale price index of visitor's country.} \end{aligned}$$

The weights used to calculate the AIRC indices approximately reflect the actual cost structure of the air transportation per tourist. The transportation section of the Statistical Abstract of the United States shows that the shares of labor, fuel, and other costs for major airlines were roughly equal (each one third) in 1980. Since the flight distance to the ECC from the United States may be regarded as the average of domestic and international flights of U.S. major airlines, the weights of 1/3 were used to estimate the U.S. and Canadian AIRP. For the European AIRC, the weight of OILP is increased to reflect the longer flight distance. The effects of exchange rate changes are reflected in P3 to the extent that exchange rate changes affect AIRC. The data on OILP, EX, WAGE, and WP are obtained from International Financial Statistics, and the data on CEP are from the Fund data base.

For this case the income elasticity is positive and statistically significant while the price elasticity estimate is negative and significant. Because this proxy provides the most reasonable results, it is the basic proxy used in the empirical tests in this study.

References

- Artus, Jacques R., "An Econometric Analysis of International Travel," IMF Staff Papers, vol. 19 (November 1972), pp. 579-614.
- Bond, Marian E., "A Model of International Travel and Passenger Transportation," International Monetary Fund, DM/78/35 (April 14, 1978).
- _____, "The World Trade Model: Invisibles," IMF Staff Papers, vol. 26 (June 1979), pp. 257-333.
- Boxill, Bryan, "Visitor Spending in the Caribbean," Caribbean Tourism Research and Development Centre (CTRC), Barbados (October 1983).
- CARICOM Statistics Digest 1970-1981. The Caribbean Community Secretariat, Guyana (1984).
- Caribbean Tourism Research and Development Centre (CTRC), Caribbean Tourism Statistical Report 1982, CTRC, Barbados (1982).
- _____, Caribbean Tourism Statistical Report 1986, CTRC, Barbados (1986).
- _____, European Tourism Demand Study Update, CTRC, Barbados (1983).
- _____, North American Demand Study for Caribbean Tourism, vols. 1-2, CTRC, Barbados (1982).
- _____, Statistical News (various issues, 1987-1988).
- Chernick, S.E., The Commonwealth Caribbean: the Integration Experience, The Johns Hopkins University Press, Baltimore (1978).
- Clarke, Carl, Celeste Wood, and DeLisle Worrell, "Prices, Incomes, and the Growth of Tourism in Barbados, 1956-83," Central Bank of Barbados, Barbados (June 1986).
- Holder, Jean S., "The Impact of the Energy Crisis of 1973 on Caribbean Tourism, and the Consequences for Development," CTRC, Barbados (May 1979).
- IBRD, Economic Memorandum (various issues and countries).
- IMF, International Financial Statistics (various issues).
- _____, "Recent Economic Developments" (various issues and countries).
- _____, World Economic Outlook (April 1988).

Latin America & Caribbean Hotel Industry 1987, Horwath & Horwath International, New York (1987).

Mansfield, Charles Y., "Taxation of International Tourism in Developing Countries," International Monetary Fund, DM/85/66 (October 21, 1985).

Morrison, Steven, and Clifford Winston, The Economic Effects of Airline Deregulation, The Brookings Institution, Washington, D.C. (1986).

Tourism in the Caribbean: The Economic Impact, edited by Shirley Seward and Bernard Spinrad, International Development Research Centre, Ottawa (1982).