

# TOURISM IN THE CARIBBEAN

THE  
ECONOMIC  
IMPACT

by *Walter D. Dill* and *Richard B. Ketchum*

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***Tourism in the Caribbean:  
The Economic Impact***

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## ***Abstract / Résumé / Resumen***

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Over the past 30 years, international tourism has become an increasingly important economic activity. The impact of tourism on the host societies is of considerable interest to policymakers, planners, and academics. This interest assumes keen proportions in the Caribbean where, it is argued, tourism makes a significant contribution to economic development.

This volume includes individual detailed studies of the economic impact of tourism in four micro-economies of the Caribbean: the United States Virgin Islands, St. Lucia, Aruba, and Antigua. These studies assess tourism's contribution to gross domestic product, employment, government revenue, and foreign exchange, and provide quantitative data. An introductory chapter provides a context for the studies and a concluding section summarizes and compares the findings, and draws implications for policy. In addition, critical areas for further research and the need for ongoing data collection and analysis throughout the Caribbean are emphasized.

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Le tourisme international est depuis une trentaine d'années une activité économique d'importance croissante. Aussi, les retombées du tourisme dans les pays d'accueil sont-elles d'un intérêt considérable pour les décisionnaires, les planificateurs et les universitaires. Cet intérêt est d'autant plus grand aux Antilles que le tourisme y joue un rôle de premier plan dans le développement économique.

Ce livre contient des études détaillées sur l'impact économique du tourisme dans quatre micro-économies des Antilles, soit les îles Vierges américaines, Sainte-Lucie, Aruba et Antigua. Ces études évaluent la contribution du tourisme au produit intérieur brut, à l'emploi, aux revenus publics et aux réserves de devises étrangères, et fournissent des données quantitatives. L'introduction précise le cadre des études et la conclusion résume et compare les résultats obtenus et dégage les implications en matière de politiques. On y trouve aussi des recommandations sur les domaines de recherche prioritaires et sur la nécessité d'organiser la collecte et l'analyse des données dans les Antilles.

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En los últimos 30 años el turismo internacional ha llegado a ser una actividad económica de creciente importancia. El impacto del turismo en la sociedad receptora es de particular interés tanto para quienes toman decisiones, como para planificadores y académicos. En el Caribe, donde según se dice el turismo constituye un aporte significativo al desarrollo económico, este interés asume proporciones de especial importancia.

El presente volumen incluye una serie de estudios detallados sobre el impacto económico del turismo en cuatro microeconomías del Caribe: las Islas Vírgenes de los Estados Unidos, Santa Lucía, Aruba y Antigua. El capítulo introductorio provee un marco de referencia para los estudios. Estos evalúan la contribución del turismo en el producto interno bruto, el empleo, los ingresos del gobierno y las divisas extranjeras, aspectos sobre los cuales proveen información cuantitativa. La sección de conclusiones resume y compara resultados, derivando implicaciones sobre política de turismo. Enfatizan, así mismo, áreas críticas para futura investigación y la necesidad de una permanente recolección y análisis de información sobre el turismo en el Caribe.

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To Dr François Bélisle, a contributor who shared the task of editing the volume, the editors are especially grateful.

To all those individuals who have been involved over the years in the research studies and the publication, we express our sincere appreciation.

## *Preface*

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The relationship between tourism and economic development is a topic of interest to policymakers, planners, and researchers everywhere tourism plays an important role within the social and economic fabric of society. This interest assumes keen proportions in the Caribbean, where, it is argued, tourism makes a significant contribution to economic development.

According to this argument, tourism has the potential to provide much-needed foreign exchange and employment opportunities. It can also help broaden the economic base of these countries through its linkages with the agricultural, industrial, and service sectors of the economy. However, the benefits from, and dependence upon, tourism differ significantly from island to island. Yet, in spite of the vital importance of tourism in the Caribbean, there is a lack of systematic and reliable research on its economic impact, which makes integrated planning extremely difficult.

The Caribbean Tourism Research and Development Centre (CTRC)<sup>1</sup> has recognized the need for a comprehensive study of the economic impact of tourism within the region. In 1976, in pursuit of this aim, CTRC requested financial support from the International Development Research Centre (IDRC) of Canada. With IDRC funding, a CTRC mission undertook an exploratory tour of several islands in the region to assess interest in such a study and to seek the participation of researchers, policymakers, and practitioners. After this mission, IDRC and CTRC jointly sponsored a regional meeting in Barbados in December 1976. As a result of the meeting, several worthwhile project proposals and qualified researchers were identified. A research network was established, consisting of national teams in Barbados, Jamaica, Puerto Rico and the U.S. Virgin Islands, each responsible for conducting studies in its own country.<sup>2</sup> CTRC assumed responsibility for undertaking studies in Antigua, Aruba and St. Lucia.

Research activity began in several of the countries in early 1978. To coordinate the efforts of the network and exchange information on an ongoing basis, a series of three workshops involving the principal researchers in the network were held in St. Thomas, U.S. Virgin Islands (December 1978), Aruba (September 1979), and San Juan, Puerto Rico (June 1980). Immediately after the San Juan meeting, the researchers proceeded to Santo Domingo, Dominican Republic, where a summary of findings

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<sup>1</sup> The Caribbean Tourism Research and Development Centre (formerly called the Caribbean Tourism Research Centre) is a regional organization established in 1974 by Caribbean governments and academic and private groups directly involved in tourism. Its purposes are to promote policy-oriented research and to provide technical assistance in matters related to tourism development throughout the Caribbean.

<sup>2</sup> The research teams were: the Barbados Ministry of Tourism and Barbados Institute of Management and Productivity (BIMAP); the Institute of Social and Economic Research (ISER), University of West Indies, Mona, Jamaica; the Compañia de Turismo and associated consultant and planning bodies, Puerto Rico; and the Office of Policy Planning and Research, Department of Commerce, U.S. Virgin Islands.

and policy recommendations was presented to regional and national policymakers and representatives of international funding agencies at the fourth annual Caribbean Tourism Conference. At this conference, policymakers asked that the research findings be made public and be widely disseminated in the region.

The purpose of this publication is to present the major findings for four of the countries studied: Antigua, Aruba, St. Lucia and the U.S. Virgin Islands. These countries were chosen as they are representative of the microstates of the Caribbean. The publication should be of particular interest to Caribbean policymakers and planners, to the private sector in tourism, to the academic community, and to international development agencies. In view of the importance of the topic to the region, it is hoped that this publication will stimulate further research and intellectual activity.

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## *Introduction*

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### *International significance of tourism*

Throughout history, people have traveled for a wide variety of reasons. However, only since 1950 has tourism come of age as an important international economic activity, largely as a result of sustained prosperity, development of efficient, mass, air transport, and a large increase in leisure time. During the past 30 years, mass tourism has replaced the traditional, more-individual ways of traveling.

A complex tourism industry has developed to respond to consumer demands (Lundberg 1980). Functioning primarily as an intermediary, the tourism industry closes the gap between the tourist, the "consumer" in economic terms, and the international destination, the "producer" of the goods and services sought by consumers. The industry comprises a wide range of individual enterprises supporting the mass movement of people across regions or international borders, including a multifunctional and geographically dispersed system of wholesale and retail travel agents, airline companies, hotels, tour operators, advertising agencies, and other related enterprises.

The product offered by international tourism destinations is different from those sold by other economic sectors. It is an export item made up of a series of services. Unlike other exports, international tourism is produced and consumed within the destination, even though it is sold in the external marketplace. Tourism is thus an invisible export; few physical goods leave the area of production, as the product is consumed locally by the foreign visitor.

The number of world international tourist arrivals has grown from 25 million in 1950 to an estimated 285 million in 1980 (Table 1).

International tourism has become the second largest international trade item in the world, surpassed only by oil. According to the World Tourism Organization (WTO), international tourism in 1979 generated earnings of U.S. \$75 billion, a figure representing 5.5% of international trade.

The major share of international tourism arrivals and earnings are generated and captured by developed countries, particularly in Europe and North America. It has been estimated by WTO that Europe and North America jointly accounted for 85% of international arrivals and 80% of tourist earnings in 1979. Developing countries enjoy only a minor share of the industry. For example, the Caribbean, one of the better-known destination regions, received fewer than 3% of world tourism arrivals between 1970 and 1980 (Table 2).

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Table 1. World international tourist arrivals.<sup>a</sup>

Year	Arrivals (millions)	% change from previous year
1950	25	—
1960	71	—
1970	168	—
1971	182	+8.3
1972	198	+8.8
1973	215	+8.6
1974	209	-3.0
1975	213	+1.9
1976	218	+2.3
1977	242	+11.0
1978	260	+7.4
1979	270	+3.8
1980 <sup>b</sup>	285	+5.6

<sup>a</sup> Source: Caribbean Tourism Research and Development Centre (1981:7).

<sup>b</sup> Preliminary.

Table 2. Tourist arrivals in the Caribbean.<sup>a b</sup>

Year	Caribbean arrivals (millions)	Caribbean (as % of world arrivals)
1970	4.26	2.5
1971	4.62	2.5
1972	5.05	2.6
1973	5.41	2.5
1974	5.65	2.7
1975	5.48	2.6
1976	5.77	2.6
1977	6.22	2.6
1978	6.94 <sup>c</sup>	2.7
1979	7.60	2.8
1980	7.60 <sup>d</sup>	2.7

<sup>a</sup> Caribbean Tourism Research and Development Centre (1981:8).

<sup>b</sup> Caribbean as defined by membership in CTRC, plus Bermuda and Surinam.

<sup>c</sup> Revised series since 1978.

<sup>d</sup> Provisional estimates.

Even so, developing countries are fully aware of the potential benefits to be derived from this activity,<sup>1</sup> and most of those having suitable tourism resources are well on the way to exploiting them (Goffe 1975). In the context of small and comparatively undiversified economies like those of most Caribbean islands, even a modest tourism industry can have a significant impact.<sup>2</sup> This is not to suggest that there may not be significant social, economic, and environmental costs associated

with tourism development. Indeed, there is an extensive body of literature dealing with these issues.<sup>3</sup> Nevertheless, it is often argued that tourism can be a major catalyst for economic and social development in that it can:

- Generate jobs, a particularly important consideration in areas plagued by unemployment and subject to unmet economic expectations by the young;
- Provide hard-currency foreign exchange with which to pay for consumer and capital imports that small countries cannot produce locally (Armstrong and Francis 1974);
- Generate taxes and other direct and indirect revenues for government, which can be used to extend educational, health, and other public services to the local population;
- Stimulate activity in the agricultural, industrial, and commercial sectors of the economy that come into contact, directly or indirectly, with the tourism industry;<sup>4</sup>
- Foster foreign and local investment and capital formation.

### *The Caribbean: A brief overview*

The Caribbean consists of several hundreds of islands grouped politically in some 30 island states (Fig. 1). (Some definitions include mainland countries; however, for the purposes of this discussion we define this geographical region as encompassing island territories only, including the Bahamas.) A total population of about 30 million, speaking four main languages and several dialects, inhabits the region (Table 3). The more populated countries (Cuba, the Dominican Republic, Haiti, Puerto Rico, and Jamaica) account for more than 85% of the total Caribbean population. The balance of the population, fewer than four million people, is shared among hundreds of smaller islands.

Geography has played a key role in setting a complex regional mosaic, made even more diverse by British, French, Spanish, and Dutch colonial inheritances, which have greatly contributed to the pervading political, economic, and cultural differences characterizing the region today. Insularity, wide variations in area, topography, population size, ethnic background, and resource availability, and continuing ties with metropolitan countries have preserved or enhanced differences within a relatively small area.

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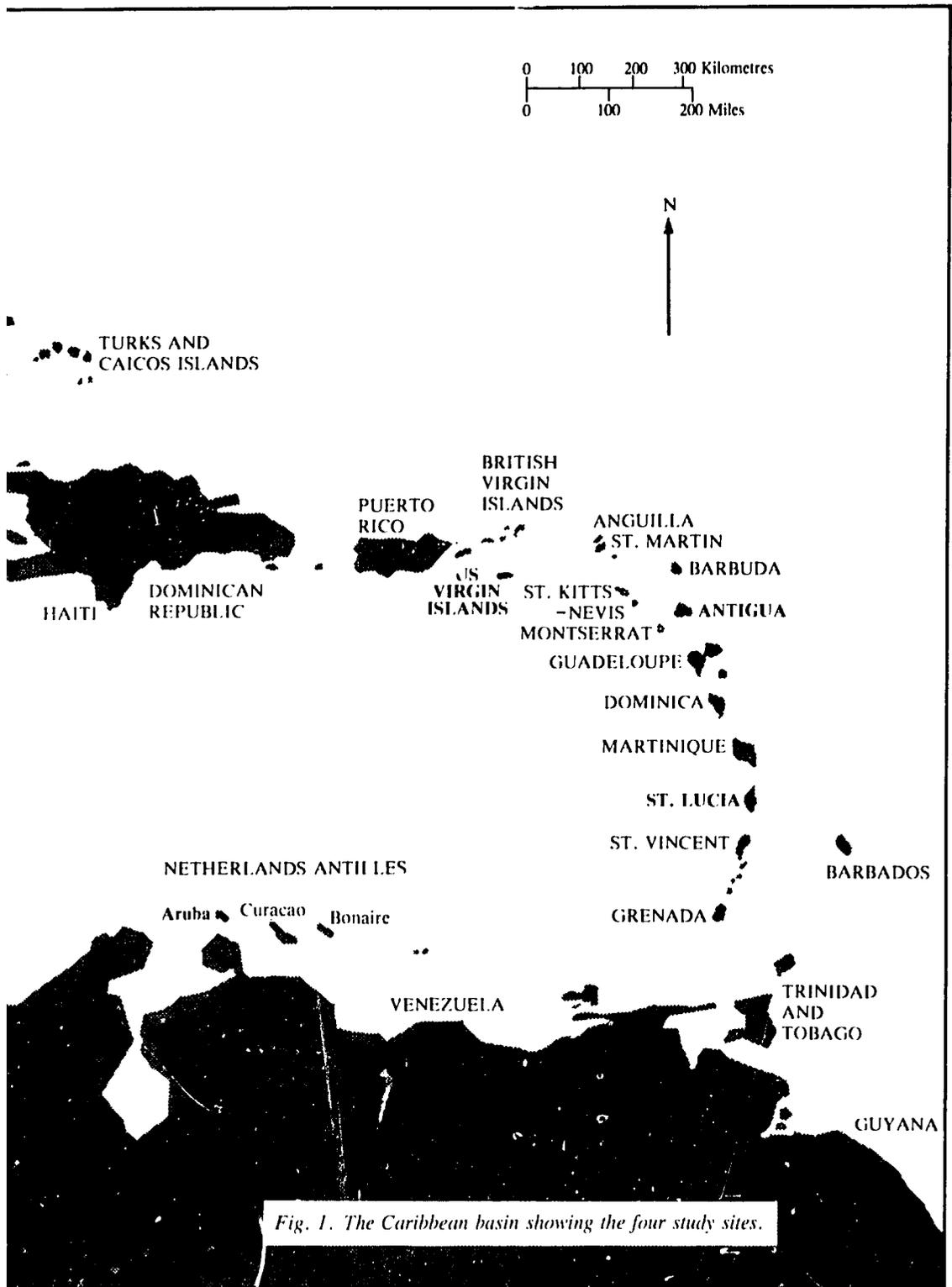
<sup>1</sup> Recognition of the growing importance of tourism in developing countries is reflected in the rapidly expanding literature on the subject (see Davis 1968, Sessa 1970, Erbes 1973, Peppelen and Templema 1973, Rutazibwa 1973, Theuns 1973, Renau 1974, Jud and Krause 1976, De Kadt 1979). Such literature is usually highly relevant to the Caribbean tourism industry. In addition, several studies have been undertaken on the Latin American tourism industry, generally including the Caribbean (see Crompton de Calvo 1969, Cullinan 1969, Grynbaum 1971, Mings 1971, 1981, Krause et al. 1973, IDB 1974, Ladman and Bond 1975).

<sup>2</sup> See CECD 1972, Bryden 1973, 1975, Jones 1976, Britten 1977, Young 1977, Carrington and Blake (undated), Doxey (undated).

<sup>3</sup> The literature includes discussion of socioeconomic (Forster 1964, Butler 1974, Lundberg 1974a, b, Bélisle and Hoy 1980, Jefferson [undated]) and environmental costs (Goldsmith 1973, Gooding 1977, OECD 1980), including public investment requirements in tourism infrastructure, tourism-induced inflationary pressures, and the impact on the sociocultural fabric of society (Hiller 1976a, b, UNESCO 1976, Nettleford 1977).

<sup>4</sup> See Archibald 1970, Momsen 1972, 1973, Alleyne 1974, Birla and McIntosh 1974, Brown 1974, Bryden 1974, Bélisle 1980.





*Fig. 1. The Caribbean basin showing the four study sites.*

Table 3. Selected Caribbean statistics.<sup>a</sup>

Countries	Tourist arrivals	Hotel rooms	Population (000)	GNP	
				Total (U.S. \$ million)	Per capita (U.S. \$)
Antigua	100000	1350	74	80	1070
Bahamas	1181260	11441	231	640	2780
Barbados	369915	6680	253	610	2400
Belize	62000	1076	131	130	1030
Bermuda	491640	9420	59	560	9440
Cuba	na	na	9865	13920	1410
Dominica	14322	157	79	30	410
Dominican Republic	301070	3800	5286	5220	990
Grenada	29418	765	108	70	630
Guadeloupe	115000	3402	332	1080	3260
Haiti	134000	1419	4963	1280	260
Jamaica	395340	9500	2184	2710	1240
Martinique	158462	2235	326	1530	4680
Netherlands Antilles	611751	5951	260	920	3540
Aruba	188917	2306			
Bonaire	22715	307			
Curacao	178578	1668			
St. Martin	221541	1670			
Puerto Rico	1679340	9330	3415	10140	2970
St. Kitts & Nevis	32585	584	50	40	780
St. Lucia	88000	1245	122	90	780
St. Vincent	38430	510	106	50	490
Trinidad & Tobago	210000	2141	1152	3900	3390
U.S. Virgin Islands	700001 <sup>b</sup>	4531 <sup>c</sup>	105	590	5580

<sup>a</sup> Sources: Columns 1 and 2: 1980 data from Caribbean Tourism Research and Development Centre (1981:126). Columns 3, 4, and 5: 1979 data from 1980 World Bank Atlas, p. 18.

<sup>b</sup> All air arrivals, tourist and nontourist.

<sup>c</sup> Includes only accommodations listed on official USVI rate sheet.

However, from an economic standpoint, the structure and behaviour of the region have been strikingly uniform. During colonial times, the function of the region was to supply a narrow range of staple exports of raw materials to a limited number of metropolitan countries in exchange for essential food and manufactured imports. Such economies were vulnerable to fluctuations in demand for, and price of, their staple exports. In this sense, the traditional Caribbean economy was a dependent and open system producing what it did not consume and consuming what it did not produce.

Since World War II, deep political transformations have taken place throughout the Caribbean. While some countries such as Haiti, the Dominican Republic, and Cuba have been independent for several decades, many others have achieved independence only in the last 20 years; these include Barbados, Jamaica, Trinidad and Tobago, the Bahamas, and several islands in the Lesser Antilles. Other territories retain various forms of modified dependency in their relationships with metropolitan countries; these include Puerto Rico, the U.S. Virgin Islands, the Netherlands Antilles, Martinique and Guadeloupe, and several small British territories.

Achievement of political self-determination was accompanied, in some cases, by attempts to change economic and social structure, as the governments of these countries began pursuing policies leading toward economic modernization, more equitable income distribution, and nation-building as chief aims of their leadership. The new economic strategy resulted in moving the export base away from traditional agricultural staples toward other export sectors, such as light manufacturing and tourism. Although this has created new economic opportunities within island states, the spectre of export reliance and import dependence persists.

As a result, the contemporary Caribbean economy is afflicted with several chronic weaknesses. First, small markets in both population and income continue to limit diversification possibilities domestically. Second, in the export sectors, the small, open, insular system is highly dependent not only on foreign sources of demand, as it has been historically, but also on foreign sources of strategic intermediate supplies — chemicals, fertilizers, raw materials, and machinery and parts. Consequently, the export sectors exhibit less than optimal linkages within the local economy, and thus the income and employment impacts of these industries are also less than optimal. Third, the new export sectors by nature are highly sensitive to metropolitan business cycles and, in addition, face intense competition from other developing-country suppliers. As a result, the foreign-exchange earnings from these exports are often an unstable and insufficient base not only for withstanding the short-run vagaries of international economic fluctuations, but also for planning long-run additions to capital stock and productive capacity. As in the past, food shortages and balance-of-payments problems persist in the region, especially among the non-fuel-producing island nations.

Finally, the most serious manifestation of persistent structural problems is the extent of unemployment in the region. Despite the lack of reliable statistics, it can be stated that, for most Caribbean countries, the level of unemployment is in the range of 15-35% and is probably increasing. This is striking in view of the persistent emigration so characteristic of the region.

In the 1980s, the Caribbean will have to respond creatively to rapidly changing internal and external conditions. This response will undoubtedly be constrained by the fragility of Caribbean economic and social structures and by their limited capacity to withstand external pressures. Tourism, in spite of such limitations as the need to import goods for tourist consumption, can contribute to economic diversification and the expansion of foreign-exchange earnings and employment.

## *Tourism in the Caribbean*

Tourism is not a recent phenomenon in the Caribbean, but a long-standing magnet for North American and European visitors and investors (Taylor 1973). Many attractive beaches, an ideal climate, and proximity to major markets have given the Caribbean an advantage in competing for international tourists. However, it is only with the advent of mass tourism in the late 1950s and early 1960s that tourism has become a major economic activity in the Caribbean.

The decade of the sixties was characterized by great optimism toward the potential for a viable tourism industry in the Caribbean. In the initial rush to capitalize on rapid expansion of tourist demand, local governments provided generous financial incentives to attract foreign investors willing to develop hotels and related projects. These incentives were supplemented by the provision of such infrastructure as airports, roads, electricity, and related public services, financed in part by foreign aid. Aware of the tourism potential and the availability of attractive hotels and infrastructure, airlines expanded their services, establishing links to a growing number of cities in the United States and Canada. Tourists, lured by the natural beauty, warm climate, and friendliness of the local population, flocked to the many resorts throughout the region. The investment scramble during the early 1960s resulted in a proliferation of foreign-run hotels, many inadequately financed, run by inexperienced operators, or both. The 1970s were also a decade of tourism growth in the Caribbean, except for a 3% decline in tourist arrivals in 1975 over the previous year. This moderate decline, however, was in sharp contrast with the average yearly growth of more than 7% experienced in the first part of the decade.

The decline was caused by two factors. The first was the energy crisis of 1973-1974. As a result of large increases in oil prices, the economies of the principal tourism-generating countries experienced recession; transportation costs rose rapidly, which reduced travel to the Caribbean. Second, some strong nationalistic expressions with racial overtones were focused against tourism, an industry viewed as dominated by, and existing for, foreigners. Although the cases of violence were few, widespread publicity compounded the negative impact of these events. In some islands, such as Jamaica, demand for tourist accommodations fell. Many hotels, particularly those financially vulnerable or lacking management expertise, went into liquidation; several were taken over by local governments.

The evolution of the Caribbean tourism industry in the 1960s and 1970s is reflected in the literature on this topic. Early studies on the economic impact of tourism in the Caribbean<sup>5</sup> were quite optimistic regarding the actual and potential impact. Some of these studies, however, came under serious criticism<sup>6</sup> on substantive and methodological grounds. Furthermore, several authors argued that economic benefits created by tourism were largely overshadowed by associated economic and social costs. They asserted<sup>7</sup> that the exposure of the local economies to foreign investment, management, and imports precluded the use of tourism as an effective tool for economic development in the region. As perceived by some critics, tourism was capable of solving only some of the pressing problems associated with extreme

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<sup>5</sup> See Great Britain, Ministry of Overseas Development 1966, Zinder and Associates 1969, IDB 1974, OAS 1974, Shankland Cox Partnership 1974.

<sup>6</sup> See Levitt and Gulati 1970, Bryden and Faber 1971.

<sup>7</sup> See Grynbaum 1971, Perez 1973-74, 1975a, b.

unemployment, but at the cost of obliterating cultural identity and of creating a class of semiskilled service personnel with few opportunities for advancement.

Tourism demand in the Caribbean increased steadily after 1975, bringing renewed optimism about the vitality of the industry. Several factors influenced this increase in tourism demand, including improvements in economic conditions in North America, more professional, better funded marketing and promotion directed at the marketplace by individual tourism destinations, opening of new air links to more North American cities, gradual opening of promising new markets in Europe and South America, and increasingly successful promotion of summer vacations in the Caribbean, which is gradually reducing seasonal variations in tourist demand and allowing the industry to operate more efficiently year-round. In 1980, however, the number of tourist arrivals appeared to stabilize.

At present, there is considerable variation in the magnitude and characteristics of tourism in various Caribbean islands. For instance the Bahamas, Bermuda, Jamaica, and Puerto Rico each command approximately 10 000 hotel rooms, whereas very small destinations, such as Montserrat and Dominica, have fewer than 500 hotel rooms (Table 3). In between, the number of hotel rooms ranges from about 6500 in Barbados to 2300 in Aruba, 1400 in Antigua, and 1250 in St. Lucia. With some exceptions, the number of visitors is roughly proportional to hotel capacity.

Although there is heavy reliance on North American winter visitors, the markets pursued by each destination and the level of resources available for marketing and promotion are often varied. Barbados attracts a growing, diversified volume of visitors from the U.S., Canada and increasingly Europe. While Puerto Rico and the U.S. Virgin Islands depend largely on visitors from the eastern seaboard of the United States, Aruba complements that flow with a growing Venezuelan and South American trade.

The role played by tourism within the local economies also varies from destination to destination.<sup>8</sup> For some, such as the Bahamas, the U.S. Virgin Islands, and Cayman Islands, tourism is the major economic activity contributing to the gross domestic product and employment generation (Ramsaran 1979). In other more economically diversified islands, for instance Barbados, Puerto Rico, and Jamaica, tourism accounts for a smaller yet considerable portion of the gross domestic product and of total employment (see Doxey 1971, IBRD 1972).

Caribbean tourism appears to be facing a challenging growth period ahead. A new wave of hotel construction looms over the next few years. Some destinations, having experienced sizable spurts in demand, are operating close to plant capacity, and new projects are either under construction or in the planning stages. There is also a growing recognition within governments of the costs and benefits associated with tourism, of the role played by tourism within local economies, and of the need to apply long-range planning strategies based on accurate market and product information.<sup>9</sup> At the regional level, tourism organizations such as the Caribbean Tourism Association (CTA), the Caribbean Hotel Association (CHA), the Caribbean Tourism Research and Development Centre (CTRC), and the Eastern Caribbean Tourism Association (ECTA) have facilitated coordination and exchange of information about tourism.

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<sup>8</sup> See Cazes 1972, Hills and Lundgren 1974, 1977, Pollard 1976b, c.

<sup>9</sup> See Doxey 1973, Pollard 1976a, Holder 1980.

## *The research project*

Although it is recognized that tourism plays a key role in the economies of almost all the Caribbean islands, the understanding of the exact nature and magnitude of that role is limited. The few comprehensive studies of tourism impact within the region have relied on guesstimates and have pointed to the dearth of reliable empirical data. Except for statistics on tourist flows, hotel establishments, and occupancy rates, data are lacking for many islands, which makes tourism planning extremely difficult.

Recognizing the lack of reliable data, studies were developed in seven Caribbean tourist destinations: Antigua, Aruba, Barbados, Jamaica, Puerto Rico, St. Lucia, and the U.S. Virgin Islands. The choice of these seven study sites obeyed the criterion of maximum cross-sectional representativity within the Caribbean with respect to colonial heritage, cultural and linguistic background, level of development as measured by GNP, population size, and size of the tourism industries in terms of the number of tourist arrivals and number of hotel rooms (see Table 3).

The choice of four territories — Antigua, Aruba, St. Lucia, and the U.S. Virgin Islands — for inclusion in this volume was based on several factors. First, all four island territories are small in area and population; they are considered microstates, along with many of the other small island states in the Caribbean. In area, they range from St. Lucia, the largest, covering 609 km<sup>2</sup>, to Aruba, the smallest, with 182 km<sup>2</sup>. By contrast, Jamaica and Puerto Rico, among the larger islands in the Antilles, have areas of about 11 000 km<sup>2</sup> and 9000 km<sup>2</sup> respectively. In population, the four islands fall within a relatively narrow range. The most populated of the four islands is St. Lucia with 122 000 inhabitants. These figures compare with a population of 260 000 in Barbados, 2.2 million in Jamaica, and 3.4 million in Puerto Rico.

Second, like many Caribbean islands, Antigua, Aruba, St. Lucia, and the U.S. Virgin Islands are characterized by limited economic diversification. In these islands, tourism plays a relatively more important role than in islands such as Puerto Rico and Jamaica where other sectors, including agriculture, mining, and industry, make significant contributions to gross domestic product (GDP).

Third, in size of the tourism industry, the four islands are representative of most Caribbean destinations. Antigua, Aruba, and St. Lucia, with tourist arrivals in 1980 of 100 000, 188 917 and 88 000 respectively (Table 3), are representative of islands with a small tourism industry. The U.S. Virgin Islands, with tourist arrivals of 700 001 in 1980, falls into the intermediate range, in contrast with Puerto Rico and the Bahamas, which had 1.7 and 1.2 million tourist arrivals respectively in 1980.

Thus, in area, population size, degree of economic diversification, and the importance and size of the tourism industry, the four islands are representative of microstate economies that predominate in the Caribbean. At the same time, there is considerable variation among the four islands, which is representative of the cultural, social, and economic diversity in the Caribbean. Antigua and St. Lucia have ties with Britain, Aruba with Holland, and the United States Virgin Islands with the United States and previously Denmark. From an economic perspective, variations in resource base, degree of diversification and stage of development are reflected in substantial differences in gross domestic product and per-capita income. The U.S. Virgin Islands enjoys the highest level of per-capita income, U.S. \$5580 in 1977. Aruba, largely due to its reliance on two modern sectors, tourism and oil refining, has the next highest per-capita income, estimated at U.S. \$4000 in 1980. Both Antigua and St. Lucia have much lower per-capita incomes, U.S. \$1070 and U.S. \$780 respectively in 1979.

The common objective of the studies was to measure selected aspects of the impact of tourism on the economies of the Caribbean. To fulfil this objective, the researchers collected and analyzed quantitative data related to the magnitude and composition of:

- Tourism expenditures and receipts;
  - The contribution of tourism to GDP;
  - Employment generated by tourism, directly and indirectly;
  - The contribution of tourism to government revenues and, where possible, the extent to which these are balanced by expenditures;
  - The contribution of tourism to foreign exchange earnings;
  - Leakages of foreign exchange resulting from imports of goods and services;
- and,
- Linkages between tourism and other sectors of the economy, and the extent to which tourism stimulates growth and production throughout the economy.

The research approaches and methods applied in these studies varied from country to country, depending on the nature, availability, and reliability of existing data. In the four country studies presented in this volume, there were wide gaps in the availability of basic tourism information. Thus, the researchers set out to develop reliable and comprehensive data and expended considerable time and energy in collecting new, primary data on tourist expenditures and the cost structure of hotels, restaurants, and other tourism subsectors. These data, in turn, provided the base for assessing the impact of tourism on gross domestic product, employment, government revenues, and foreign-exchange earnings.

#### *Limitations and strengths of the studies*

The research project has four basic limitations. First, the project scope was purposefully restricted to certain economic issues. While recognizing that tourism is a highly complex human activity involving social, cultural, political, and environmental concerns, the researchers opted to narrow their focus to those economic aspects that could be more readily quantified and used for policy purposes. The project represents a forward step, and it is hoped that other studies will deal explicitly with issues not covered in this project.

Second, the following issues were not covered, even though they are relevant to the economic impact of tourism in the Caribbean:

- The impact of inflation on tourist activity, and *vice versa*;
- The role of the private sector and government in ownership and management of hotels;
- The impact of increasing air-travel costs;
- Means of improving productivity and career advancement for employees;
- Tourism and income distribution in host societies;
- Incentives for tourism promotion; and,
- Other exogenous factors, such as foreign competition and world economic and political influences.

Third, data collected and analyzed in this set of studies were generally based on primary and secondary sources fixed in time. Therefore, while the project presents a useful snapshot of the impact of tourism for 1978-1980, it cannot adequately reflect the dynamic nature of the Caribbean tourism industry. This points to the need to set up mechanisms for ongoing research to maintain up-to-date, policy-relevant information.

Fourth, just as it was recognized from the outset that, among the study sites, there would be wide variations in data availability and quality, so the different backgrounds and interests of the researchers were expected to affect operational definitions and methods of analysis. As a result, the findings of the studies are not strictly comparable, nor should they be evaluated on that basis, because realities and needs vary considerably from island to island.

Notwithstanding these limitations, the studies display significant strengths. First, they represent pioneering endeavours to collect and analyze empirical data related to tourism, thereby providing important information with respect to the economic impact of tourism in countries considered to be representative of the microeconomies of the Caribbean.

Second, in addition to providing substantive knowledge, the researchers contributed to the development of methodologies that may have wider application both geographically and over time. Moreover, the project laid the foundations of an ongoing system to collect and analyze tourism data that should prove most useful in the monitoring of the economic impact of tourism.

Third, the findings of the studies should be of critical interest to Caribbean policymakers and tourism planners. Indeed, on the basis of the studies, several of the researchers have already been requested to contribute to major planning efforts in several parts of the Caribbean.

Finally, the studies were conducted by teams that included several locally based researchers. The experience gained by team members should prove valuable in future studies of this kind.

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## *Definitions*

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The following are general definitions of the main terms used in this volume. The reader should refer to individual country chapters for variations in operational definitions used in each study.

***Tourism industry sector.*** Consists of a number of subsectors that provide goods and services to visitors. Although there is some definitional variation from destination to destination, the subsectors generally include hotels, restaurants, shops, bars and nightclubs, other entertainment (such as casinos), taxis, car rentals, tour operators, etc.

***Tourists-visitors.*** All those entering a destination by air and sea and for purposes other than gainful employment or permanent or semipermanent residence. Includes vacationers and business travelers.

***Stayover-overnight.*** Those who stay in the destination 24 hours or more.

***Day trippers-excursionists.*** Those who stay in the destination for less than 24 hours. Most of these are cruiseship passengers. A smaller number arrive by other waterborne means or by air.

***Tourist expenditures-receipts.*** Money spent by tourists-visitors on goods and services provided by the destination. This excludes expenditures that do not enter the destination (such as airfares paid to international airlines and commissions to travel agencies in sending countries). Although there is some variation among studies, tourist receipts generally include those from stayover tourists and cruiseship passengers, disaggregated into such categories as hotel room, food and beverages, restaurants outside hotels, gift shops, ground transport, and entertainment.

***Gross tourism foreign exchange.*** Foreign exchange that flows into the destination due to expenditures by tourists. Since tourists must change foreign exchange into local currency when entering most destinations, gross tourism foreign exchange is equivalent to tourist expenditures-receipts.

***Leakages.*** The loss of tourism foreign exchange caused, in large part, by the need to import goods and services required by the tourism industry.

***First-round leakages:*** foreign-exchange earnings flowing out of the tourist destination almost immediately upon receipt. A large portion of these leakages is due to the import of goods such as foods and liquor required by hotels, restaurants, and other subsectors of the tourism industry. Generally, purchases of imported goods from local intermediaries are included.

***Second-round leakages:*** foreign-exchange earnings that circulate at least once through the economy of the tourist destination before flowing out.

***Net tourism foreign exchange.*** Gross tourism foreign exchange minus first-round leakages.

**Tourism value added.** The value of the tourism industry's output minus the value of the inputs it purchases from other industries or sectors. The value added of tourism is equivalent to its contribution to gross domestic product.

*Direct value added:* the sum of wages, salaries, rent, interest, and profit associated with the subsectors of the tourism industry including hotels, restaurants, local transport, shops, entertainment etc.

*Indirect value added:* additional value added created in other sectors of the economy, such as government and construction, as a result of local purchases made by the tourism subsectors that receive the initial tourist expenditures, and the chain reaction that this engenders.

**Linkages.** The extent to which the subsectors of the tourism industry use goods and services available in other sectors of the economy. If most goods and services used by the tourism industry are produced domestically, tourism is said to have strong linkages with other sectors of the economy and a low level of leakage.

**Tourism employment.** The number of full- and part-time jobs generated by tourism.

*Direct employment:* employment created by the first round of tourism expenditure within the subsectors of the tourism industry (especially hotels, restaurants, local transport, shops, and entertainment).

*Indirect employment:* employment created by the second round of tourism expenditure, particularly in nontourist sectors of the economy, such as government and construction, that although not directly involved with tourism partially benefit from it.

**Tourism government revenues.** Tax and nontax income collected by various public agencies due to the existence of a tourism industry. These taxes and revenues include those directly paid by the tourists-visitors such as bed occupancy tax and airport revenues. They also include revenues from other indirect sources such as income tax of tourism employees and sales tax on their local expenditure.

## *United States Virgin Islands*

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JEROME L. McELROY AND JOHN F. TINSLEY\*

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### *Country overview*

#### *Geography and people*

The United States Virgin Islands form the eastern extremity of the Greater Antilles archipelago of the Caribbean Basin. They comprise 68 volcanic islands and cays, a total land mass of 136 square miles. The three major inhabited islands are St. Croix (84 square miles), St. Thomas (32 square miles), and St. John (20 square miles). They were discovered by Columbus in 1493, colonized by the Danes between 1672 and 1733, and purchased by the United States from Denmark in 1917 for \$25 million.

The Virgins are located approximately 1700 miles south-southeast of New York, 1100 miles east-southeast of Miami and 40 miles east of Puerto Rico. Only 5 miles separate the two smaller inhabited islands, St. Thomas and St. John, each of which has a rugged and mountainous topography distinguished by a central east-west spine falling abruptly down the north and south slopes to the sea. St. Croix, 40 miles to the south, has rolling hills, upland pastures, and a broad central plain that divides the arid, rocky east end from the lush, tropical and agricultural west end.

According to provisional U.S. census estimates, the 1980 population was 95 930: 49 280 in St. Croix, 44 170 in St. Thomas, and 2480 in St. John. Historically, the majority of islanders settled in the cities: the capital of Charlotte Amalie in St. Thomas, the sister towns of Frederiksted and Christiansted in St. Croix, and Cruz Bay and Coral Bay in St. John. Since 1960, however, because of heavy immigration stimulated by rapid economic growth, less than one fourth of the population has remained in these urban areas (McElroy and Albuquerque 1981).

Partly due to the plantation legacy of sugar monoculture and partly because of a long history of immigration from nearby islands, the U.S. Virgins retain a richly heterogeneous ethnic composition. A recent survey indicated this distribution: Virgin Islanders 42%, West Indians 31%, U.S. mainlanders 16%, Puerto Ricans 8%, and others, primarily Latin Americans and Europeans, 3% (Mills 1978). Other demographic facts: overall population density of 705 persons/square mile (St. Thomas 1380/square mile), average household size of 3.9 persons, and relatively low crude birth (26.6) and death (5.5) rates per 1000 population.

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The U.S. Virgins are an unincorporated U.S. territorial possession. This limited affiliation will allow a variety of options in self-determination, but at present the decision-making power rests mostly with Congress and various U.S. government agencies, as does the approval of any future changes in status. Internal affairs fall under the jurisdiction of the insular legislature of 15 senators, an elected governor, and his cabinet.

### *The historical setting*

Immediately after colonization, two distinct export economies developed — plantation agriculture in St. Croix and a trade emporium in St. Thomas. During the 18th century, strong European demand for textiles and sugar stimulated the rapid expansion of St. Croix's cotton and sugar staples. In the 19th century, however, sugar entered a period of decline as a result of the loss of metropolitan preferences, emancipation, absentee mismanagement, soil depletion, and the proliferation of competitive, low-cost suppliers.

By the late 18th century, St. Thomas had become an international distribution centre linking colonies and metropolises, as well as a stopover point for European travelers and foreign businessmen with Caribbean and South American commercial interests (Lewis 1972). Raw materials were imported from within the region and re-exported to North America and Europe in exchange for industrial goods and processed foodstuffs. However, the invention of steam transportation fractured the transshipment role of St. Thomas, already reeling from abolition of slavery, sugar's decline, and periodic natural disasters. These economic dislocations contributed to a drastic population decline of one half from 1835 to 1930, years of persistent emigration and natural decrease.

The modern era began with a new territorial policy of export diversification through tourism and light manufacturing in the 1950s. With the addition of heavy industry on St. Croix, the 1960s witnessed a massive resurgence of growth. Tight labour markets resulted from the impulses of expanding tourism, manufacturing exports, residential and commercial construction, and a growing local government. It was a period of truly unprecedented economic change. Gross territorial product (GTP) grew 10% per year per capita in real terms; personal income increased fourfold. Electric and water production expanded by 20% per year. The stock of housing more than doubled (McElroy 1978).

### *The contemporary setting*

The most significant feature of the contemporary economy is its highly open structure. For example, in 1979, the combined value of imports (U.S. \$3.8 billion) and exports (\$3.1 billion) exceeded estimated GTP (\$565 million) 12 times over. This openness has increased dramatically since 1960, largely due to the expansion of local petroleum and alumina activities, as well as resource price inflation. In 1979, these two industries alone accounted for 92% of all Virgin Islands trade (95% of exports and 88% of imports).

Another aspect of the territory's external dependence that highlights its openness is the heavy weight of imports in the composition of trade (excluding petroleum and alumina products). Between 1970 and 1979, imports averaged 80% of the total. In addition, territorial trade is heavily concentrated with the U.S. During the past decade, the U.S. accounted for 75-80% of the total: 89% of exports and 72% of imports. The bulk of imports consists of food (20% of the total), consumer durables,

Table 1. Distribution of employment, 1979.<sup>a</sup>

Category	No. employed	% of total
Manufacturing	3180	8.1
Construction & mining	2840	7.2
Transport & utilities	2010	5.1
Wholesale trade	640	1.6
Retail trade	6580	16.7
Finance & banking	1490	3.8
Services <sup>b</sup>	5900	15.0
Government	13470	34.3
Total nonagricultural wage & salary employment	36110	91.9
Other <sup>c</sup>	3200	8.1
Total employment	39310	100.0
Unemployment	2320	5.6
Labour force	41630	--

<sup>a</sup> Source: USVI Department of Labor (1981).

<sup>b</sup> Includes hotels, personal, business, legal, educational, amusement, and repair services.

<sup>c</sup> Includes agricultural workers, domestics, unpaid family workers, and self-employed.

construction materials, and tourist merchandise, and the principal light industrial exports include watches, pharmaceuticals, textiles, rum, jewelry, and perfumes and cosmetics (McElroy 1979).

The economy is export-propelled. The production base has two broad components: the export sectors of tourism and manufacturing and the internal sectors of government, local services, and residential construction. Although official statistics do not delineate these five sectors, Table 1 presents the distribution of employment in 1979 according to standard industrial classifications (SIC). These data underline the overwhelming significance of government, which accounts for 34% of all jobs, and the dominant role of the service sector, which absorbs more than 70% of private nonagricultural employment.

### *The research project*

The U.S. Virgin Islands were selected for analysis for a variety of reasons.

First, tourism is the base of the private economy and pervades the social and physical ambience of the territory. In 1979, the number of air and cruise visitors combined exceeded the resident population by more than 13 times. The industry's infrastructure dominates the tiny insular landscape: the deep-draft cruiseship harbour in St. Thomas, two international airports, the extensive national park in St. John, and several large hotels overshadowing the shorelines. Because of the islands' smallness and the relatively well developed tourist sector, the flow of visitors has a significant impact on the work, leisure, and shopping patterns of residents.

Second, the character of Virgin Islands tourism has been shaped by close political ties with the U.S. mainland. Territorial affiliation has provided an advantageous foothold on the affluent U.S. travel market as well as easy access to federal funds for supplying essential air, land, and sea transport infrastructure. In addition, specific privileges enacted by Congress, including duty-free importation by U.S. citizens of merchandise purchased in the islands, as well as preferential policies

followed by federal agencies administering territorial affairs, have had a bearing on the tourist economy.

Third, the Virgin Islands economy, based as it is on tourism, has regional significance as the territory is a major growth pole within the eastern Caribbean. Because of the labour intensity of tourism and related construction, the U.S. Virgins have consistently needed large-scale imports of workers from Puerto Rico and the nearby West Indian islands. On the one hand, these guest workers have become the permanent base of the insular economy; on the other, their patterns of emigration and home remittances have substantially affected conditions in the labour-exporting countries.

Fourth, the territory lacks a consistent, systematic quantitative base for reliably gauging tourism's economic contributions and for accurately monitoring the industry's year-to-year performance. Previous research (Checchi 1976) and ongoing local government efforts have been hindered by data deficiencies and excessive aggregation and estimation procedures. This study provides a benchmark analysis, using the most recent data and methods. It also identifies gaps in information that demand further research.

Finally, and related to the above, the results should aid discussions on a broad range of policies. These include complex decisions on the allocation of resources to tourism, agriculture, manufacturing, and environmental interests. This baseline information will also be useful for assessing the impact of local and U.S. legislative proposals on the industry, as well as for anticipating the consequences of changing international travel patterns. Such quantitative realism is especially crucial at a time when Virgin Islands tourism is beset by shrinking discretionary income and escalating air fares in the primary North American market and by intense competition from other Caribbean destinations.

This analysis focuses on six criteria:

- Total air and cruise expenditures;
- Net foreign-exchange earnings from such spending;
- Related investment;
- Contributions to gross territorial product;
- Effect on tax revenues; and
- Employment.

Several surveys supplied the primary data. The most extensive were detailed air tourist profiles by Davidson-Peterson (1978) and Murphy-Mills (1980). The Davidson-Peterson sample consisted of 6965 air tourists in 1976 and 4932 in 1977, representing 1.7 and 1.1% of total air tourists respectively. The Murphy-Mills sample comprised 8242, or 1.7% of estimated air tourists in 1980.

The Virgin Islands Department of Commerce conducted a series of studies that included two cruise passenger surveys in winter 1978-1979 and winter 1980-1981, a 1979 hotel survey of revenues and expenses and employment characteristics, and a similar but less detailed survey of the charter-boat sector in spring 1980. The cruiseship surveys covered samples of 679 and 4370 and represented 0.6 and 1.5% of cruise arrivals over the respective periods. The hotel survey covered 54 properties on St. Thomas and St. Croix containing 2780 rooms, or 82% of the total 3380 large and small hotel accommodations available in the territory.

The various questionnaires were developed by Department of Commerce staff with the assistance of consultants, and field workers distributed them for self-administration in the airport departure areas in the case of the exit surveys and in the public lounge areas of the cruiseships in the case of the cruise surveys. The field

workers remained available to answer questions and collected the questionnaires on completion.

In addition, secondary sources used included: demographic data from the U.S. census for 1980, economic and financial data from the U.S. Economic Census of Outlying Areas for 1977, employment information from monthly and annual reports prepared by the Virgin Islands Bureau of Labor Statistics, government tax and revenue data from the local Department of Finance, and tourism statistics and general economic indicators from the Commerce Department's annual Comparative Growth Statistics. Moreover, the local Department of Commerce in conjunction with the St. Thomas-St. John and St. Croix hotel associations compiled monthly information on hotel occupancy (e.g., Appendix B) and visitor origin. Other published research on the territorial economy and regional tourism behaviour was also consulted (see bibliography).

Other techniques were developed and refined. Gross tourist expenditure and receipts for 1979 were obtained by estimating overnight visitors, aggregating 1-day air and cruiseship visitors, and applying to these totals the average expenditure data from the respective air and cruise surveys. Foreign exchange earnings from these gross tourist receipts were calculated by estimating the import content from hotel and expenditure survey figures. (Details are provided in Appendix C.)

The proportion of public and private investment that could, in 1979, be attributed to tourism was estimated as described in Appendix D.

The contribution to GTP was derived by netting out estimated first-round tourist-induced imports from gross expenditure and investment and then applying the territory's income multiplier to these net tourist-spending streams. Taxes and government revenues flowing from tourism were calculated by estimating the historical share of local taxes and revenues to GTP and applying this ratio to estimated tourist GTP. Finally, through a variety of techniques discussed in Appendix E, tourism employment was derived by aggregating jobs directly associated with visitor spending in hotel, restaurant, gift shop, and transport and allied sectors.

These estimates are the best and most comprehensive available, but they should be considered with some caution because of gaps in data and the varying quality of the surveys. They are subject to revision as more complete and updated information surfaces through continuing research.

## *The tourism industry*

### *Facilities and infrastructure*

The U.S. Virgin Islands boast a host of amenities. These include a sunny, tropical climate (25-28°C), numerous beaches, scenic overlooks, two championship golf courses, tennis, diving, sport fishing, a rich, Danish, architectural heritage, and some of the finest sailing waters in the world. There are abundant dining opportunities and nightlife. There are also an underwater sea observatory and extensive freeport shopping on St. Thomas, a national park and campsites on St. John, and an underwater national park and a rural tradition and old world charm in St. Croix.

Tourist overnight accommodations in 1979 numbered 127 commercial properties containing a total of 4989 rooms, 9978 beds, and 222 campsites (Table 2). Of these facilities, 65% were hotel accommodations, 22% were self-catering apartments and condominium units, and the remainder were small guesthouses and cottages (9%) and campsites (4%). The hotels were relatively small; only 11 contained 100 rooms or more. The 22 resort hotels with full services (restaurant, bar, and entertainment)

Table 2. Overnight accommodations by island, 1979.<sup>a</sup>

	St. Thomas-St. John		St. Croix		Total	
	No. of properties	No. of rooms	No. of properties	No. of rooms	No. of properties	No. of rooms
Hotels						
Large	17	2003	5	593	22	2596
Small	13	270	19	514	32	784
Total	30	2273	24	1107	54	3380
Apartments & condominiums	10	337	19	820	29	1157
Guesthouses	33	373	8	79	41	452
Campsites	3	222	—	—	3	222
Total	76	3205	51	2006	127	5211

<sup>a</sup> Source: Appendix A.

contained 50% of all visitor accommodations. About 56% (2762) of all hotel rooms (excluding campsites) were on St. Thomas, 40% (2006) were on St. Croix, and 4% (221) were on St. John. More than 90% (202) of the campsites were on St. John. Most of these properties were on or near the shoreline.

The overnight sector is supported by two international airports, Harry S. Truman in St. Thomas and Alexander Hamilton in St. Croix. In 1980, about 45% of air tourists arrived directly from the U.S. by American Airlines and Eastern Airlines. More than half were carried by commuter lines (primarily Prinair and Aero Virgin Islands) from San Juan, Puerto Rico; fewer than 2% arrived by Leeward Islands Air Transport from the eastern Caribbean.

The cruise trade is supported by an exceptional, deep-draft harbour in St. Thomas, which is the destination for more than 90% of such passengers and has the largest Caribbean liquor and gift-shopping complex, located in Charlotte Amalie. An extensive road network provides easy access for sightseeing and watersports. More than 3750 taxis or rental cars were available in 1978.

### *Tourism profile*

For almost three decades, tourism has been the base of the insular economy. The remarkable expansion of the industry has resulted from three favourable factors.

First, Virgin Islands officials judiciously constructed local tax incentives to attract U.S. capital and, primarily through federal financing, provided the basic transport infrastructure.

Second, U.S. territorial status afforded the islands competitive advantages denied to U.S. states and other Caribbean destinations. They include the Jones Act exemption, which allows trade between the U.S. and the territory in cheaper, non-U.S., cargo vessels, duty-free status, which allows import of foreign luxury goods at a low (6% *ad valorem*) duty, the duty-free allowance of 1 gallon of liquor and up to \$600 in merchandise for returning U.S. citizens, and other concessions such as the U.S. passport exemption.

Third, proximity to the affluent postwar U.S. market, with which the Virgins share a common language and currency and long-standing commercial links.

Table 3 records the phenomenal growth of air arrivals since 1950. Over these 30 years, annual tourist air arrivals, estimated to be about 70% of total air arrivals,

Table 3. Air and cruiseship visitors, 1950-1980.<sup>a</sup>

	Air		Cruiseship		
	Arrivals	% change	Arrivals	Visitors	% change
1950	12650	—	15	7692	—
1951	39333	210.9	7	3124	-59.4
1952	40718	3.5	12	5293	69.4
1953	44094	8.3	20	12300	132.4
1954	45795	3.9	30	13323	8.3
1955	54864	19.8	33	16000	20.1
1956	63000	14.8	36	18500	15.6
1957	76200	21.0	48	22035	19.1
1958	85800	12.6	74	35420	60.7
1959	107400	25.2	89	37000	4.5
1960	124400	15.8	126	49700	34.3
1961	146600	17.4	167	57000	14.7
1962	187712	28.6	131	57368	0.6
1963	215809	14.9	169	64239	12.0
1964	285610	32.3	261	110625	72.2
1965	354641	24.2	238	109341	-1.2
1966	436775	23.1	255	117659	7.3
1967	516295	18.2	296	133357	13.3
1968	771991	49.5	376	172912	29.7
1969	743970	-3.6	523	233973	35.3
1970	646215	-13.1	502	255957	9.4
1971	695322	7.6	517	306201	19.6
1972	729110	4.9	727	403833	31.9
1973	643579	-11.7	961	535535	32.6
1974	544236	-15.4	804	471264	-12.0
1975	518739	-4.7	722	451403	-4.2
1976	539466	4.0	758	487623	8.0
1977	604909	12.1	758	514797	5.6
1978	740231	22.4	767	548228	6.5
1979	826813	11.7	821	602944	10.0
1980	691990	-16.3	894	691374	14.6

<sup>a</sup> Source: USVI Department of Commerce. Financial years 1950-1967; Calendar years 1968-1980.

increased from fewer than 10 000 to nearly 600 000; most of this expansion occurred during the boom years of the 1960s. Today, the Virgin Islands rank third in the Caribbean in air visitors behind Puerto Rico and the Bahamas. Table 3 also indicates the rapid growth in cruise traffic, especially after 1967. Since that year, the number of cruiseship visits more than tripled, while cruise passengers increased fivefold. After 1973, the territory was the major cruiseship destination in the region.

Air and cruise sectors experienced cyclical downturns in the mid-1970s because of worldwide recession and inflation. This instability was reflected in the hotel occupancy rate for the territory. It fell to a low of 43.8% in 1974, recovered, and then reached historic highs in 1978 (74.1%) and 1979 (75.3%). In 1980, the rate declined to 65.9% coinciding with a 15% falloff in air arrivals. This falloff, attributed to the U.S. recession and increases in air fares of 30-40% in 1979-1980, was partially offset

by an expanding number of cruise passengers, who for the first time in 1980 equalled the volume of air arrivals.

### *Visitor origin*

In recent years, several major surveys, conducted under the local Department of Commerce, have sought demographic, socioeconomic, and other market details on tourists. During 1976-1977, Davidson-Peterson (1978) surveyed visitors departing from the two territorial airports. Murphy-Mills (1980) updated and expanded these data. Table 4 presents data from these surveys, complemented by Department of Commerce data. These figures demonstrate the overwhelming significance of the U.S. market, averaging consistently 85-90% of total air tourists. Traditionally, the eastern seaboard has accounted for half the U.S. total. Some of the variations in the European share have been due to international currency fluctuations and availability of low-cost intercontinental air service. Similarly, regional shifts in the U.S. market have been attributed partially to seasonal bargains in air fares.

Evidence of visitor satisfaction was conflicting. On the one hand, surveys indicated increasing stability in the market between 1976 and 1980, with a rising proportion of repeat visitors. On the other, the number of visitors who indicated they probably or definitely would not return increased from 8% in 1976 to about 15% in 1980. Between 1977 and 1980, the overall rating of the islands' facilities, services, and environmental amenities declined 8-9% (Murphy-Mills 1980). Specifically mentioned were congestion, poor quality of public utilities and services, and high cost.

The Department of Commerce also conducted two cruise passenger surveys, one during December 1978 through February 1979 and a second from November 1980 through March 1981. Both studies highlighted the continuing popularity of St. Thomas as the premier Caribbean shopping centre for liquor and gift merchandise. Visitors consistently spent roughly twice as much in the Virgin Islands as in other Caribbean ports. Origin data, only available for 1980-1981, indicate U.S. dominance, 90% of the total. Local estimates of 1980 visitor origin for air and cruise tourists combined suggested about 91% U.S., 4% Canada, and 3% Europe, with the remaining 2% from Puerto Rico and other countries (Newbold and Rozynski 1981).

Table 4. Origin of overnight visitors, 1976-1977, 1979-1980.<sup>a</sup>

Region	Percent of total			
	1976	1977	1979	1980
United States	84.3	92.4	87.0 <sup>b</sup>	90.4
Puerto Rico	10.5	3.9	7.2	3.6
Europe	—	—	2.8	3.0
Canada	—	—	1.5	1.7
Latin America	—	—	1.1	0.5
Other <sup>c</sup>	5.2	3.7	0.8	0.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

<sup>a</sup> Sources: Davidson-Peterson (1978), USVI Department of Commerce (1980a), Murphy-Mills (1980).

<sup>b</sup> Includes 3.1% Virgin Islands interisland visitors.

<sup>c</sup> Primarily West Indians. Includes Europe, Canada, and Latin America for 1976 and 1977.

### *Seasonality*

Historically, the seasonal behaviour of tourism has been quite pronounced. According to the monthly hotel occupancy data (Table 5), in 1979 and 1980, substantially higher rates were recorded for winter over summer. The highest rates were uniformly in February and March; the lowest in September. Data from 1972-1978 (see Appendix B) indicate the durability of this seasonal variation. Traditionally, airlines and hotels have responded to the slower summer demand by offering reduced fares and room rates, group packages, and specialty (e.g., honeymoon) vacations.

Table 5. Monthly hotel occupancy rates (%) by island, 1979 and 1980.<sup>a b</sup>

Month	1979			1980		
	St. Thomas- St. John	St. Croix	USVI	St. Thomas- St. John	St. Croix	USVI
January	79.0	81.0	80.0	82.1	75.7	80.3
February	93.5	93.3	93.4	93.7	86.2	91.7
March	90.0	87.6	89.7	86.2	70.0	81.6
April	78.4	79.0	78.6	68.7	58.1	66.0
May	84.5	63.4	77.4	61.4	47.3	58.2
June	71.9	65.0	69.6	55.3	40.2	52.4
July	70.1	58.2	63.9	58.1	46.6	55.3
August	78.9	61.6	72.5	58.2	50.5	54.3
September	59.7	52.4	57.2	45.4	31.0	40.8
October	72.2	65.1	70.1	62.3	37.6	55.3
November	86.9	78.7	84.2	70.1	50.2	65.2
December	68.4	63.2	66.6	69.9	49.7	64.6
Average	77.8	70.7	75.3	67.6	53.6	63.8

<sup>a</sup> Source: USVI Department of Commerce (1980a).

<sup>b</sup> Based on a sample including over 95% of total hotel rooms of large and smaller hotels that include 70% of all visitor accommodations available. Monthly figures are weighted averages based on the number of total hotel rooms available for those reporting hotels. Thus, the base varies slightly according to the number of hotels reporting each month.

Table 6. Selected characteristics of overnight visitors, 1977 and 1980, by season.<sup>a b</sup>

Average	Year	Winter	Spring	Summer	Fall
Age (years)	1980	41.2	38.2	35.5	38.1
	1977	39.9	37.2	35.5	38.8
Income (U.S. \$)	1980	35502	33914	31823	34641
	1977	33051	30760	26733	32160
Length of stay (nights)	1980	8.0	6.1	7.0	6.6
	1977	8.5	7.5	7.7	7.0
Spending on hotel (U.S. \$)	1980	638	462	429	434
	1977	511	256	274	277

<sup>a</sup> Sources: Davidson-Peterson (1977), Murphy-Mills (1980).

<sup>b</sup> Seasons defined as: Winter, 15 Dec.-20 Apr.; Spring, 21 Apr.-31 May; Summer, 1 June-31 Aug.; Fall, 1 Sep.-14 Dec.

Table 7. Cruiseship passengers, 1974-1980, by month.<sup>a</sup>

	1974	1975	1976	1977	1978	1979	1980
January	59145	53779	53733	61232	59611	79362	84164
February	55072	51346	53940	56881	55825	68126	72271
March	59005	50771	64558	61648	67915	78196	70157
April	43212	41404	42810	50051	44161	54764	60102
May	30277	27352	26426	27635	36769	40669	45674
June	27900	29157	32012	31804	36225	30910	44279
July	37578	37200	32834	33801	34649	41950	57013
August	33384	30082	33843	37589	42230	42063	45690
September	16544	18328	24012	23082	25190	17286	30900
October	32255	30475	28945	27605	34741	37250	52092
November	36391	33907	40485	46850	46503	48697	50945
December	40501	47602	54025	56619	64409	63671	78087
Total	471264	451403	487623	514797	548228	602944	691374

<sup>a</sup> Sources: USVI Department of Commerce, USVI Port Authority.

Seasonal influences have been reflected in other ways. Table 6 records variations in selected characteristics of overnight visitors for 1977 and 1980. In some cases, the fluctuations imply measurable economic impacts. For example, in 1980, the average length of stay varied 15-25% between the winter and the spring or fall periods. Moreover, the winter-summer difference in the average spending per party on hotel accommodations for 1977 and 1980 was roughly 30-40%. This instability is further exacerbated by the seasonality inherent in the cruise trade. Since 1974 (Table 7), the heaviest cruise-passenger period has coincided with the popular winter season for overnights. Likewise, during each of the past 7 years, September has been the slowest cruise-visitor month. Adjusting to these fluctuations remains a difficult, persistent problem.

### *Economic impact of tourism*

To measure the importance of tourism in the territorial economy, we first present estimates of gross expenditure for overnight and 1-day (mainly cruise) visitors as well as the level of tourism-related investment (construction) spending. Next, the impacts of these two major spending streams on the balance of payments, GTP, local government revenues, and insular employment are measured. The relative size of the tourist economy in the insular system and the relative size of contributions by source (overnight, cruise, and investment spending) and subsector (hotel, restaurant, gift shop, and transport) are discussed. The appendices explain the statistical methods used.

#### *Gross tourist expenditure*

In recent years, the Virgin Islands have become a leading international tourist destination. Since 1972, the territory has received more than a million air and cruise tourists annually. The islands now rank first in Caribbean cruiseship tourists and third in air tourists behind Puerto Rico and the Bahamas (Steigenberger Consulting 1979).

In 1979, there were an estimated 1 270 407 visitors, composed of 542 744 (45%) overnighers arriving by air and 727 663 (55%) 1-day visitors (see Appendix C). Of these latter, 602 944 were cruiseship passengers, 99 534 other waterborne tourists arriving by private yacht, ferry boat, etc., and 25 185 air tourists (so-called day-trippers), most of whom were overnight visitors to Puerto Rico spending 1 day shopping in St. Thomas.

Gross expenditures from these 1.3 million visitors were calculated on estimated per-capita expenditure of about U.S. \$520 per overnight tourist and \$84 per 1-day visitor. Total air and cruise receipts from tourism in 1979 were \$343.3 million (Table 8). Of this, overnighers contributed \$282.2 million (82%) and cruise and other 1-day visitors spent \$61.1 million (18%).

This total, about 61% of GTP, was about twice the size of the entire operating budget (U.S. \$174.2 million) of the Virgin Islands local government, 3.8 times that of all individual and corporate income taxes collected (\$89.7 million), and 4.7 times that of the estimated total value (\$73.1 million) of construction, excluding heavy industry.

These findings emphasize the overwhelming importance of tourism in the territorial economy, as well as the dominant role of overnight tourists in the local tourism industry. Although overnighers represented fewer than half of total visitor arrivals, they accounted for four-fifths of gross expenditures. This was because, first, they spent money on hotel accommodation and meals, which was not necessary for cruiseship passengers, and, second, their average stay was 8 days (7 nights). A breakdown of visitors' spending is given in Table 8.

Table 8. Gross expenditures from tourism by source and type of expenditure, 1979.<sup>a</sup>

Item	Overnighter		1-day visitor		Total <sup>l</sup> (U.S. \$ million)
	Average <sup>b</sup> (U.S. \$)	Gross <sup>c</sup> (U.S.\$ million)	Average <sup>d</sup> (U.S. \$)	Gross <sup>e</sup> (U.S. \$ million)	
Hotel	293.83	159.5	—	—	159.5
Meals	50.45	27.4	2.10	1.5	28.9
Nightclubs	8.96	4.9	—	—	4.9
Interisland transport	28.59	15.5	—	—	15.5
Sports activities	27.94	15.2	—	—	15.2
Sports equipment	16.66	9.0	—	—	9.0
Taxi & tours	10.66	5.8	3.83	2.8	8.6
Liquor	12.79	6.9	13.63	9.9	16.8
Duty-free & gifts	67.73	36.8	64.48	46.9	83.7
Other <sup>f</sup>	2.37	1.3	—	—	1.3
<b>Total</b>	<b>519.98</b>	<b>282.3</b>	<b>84.04</b>	<b>61.1</b>	<b>343.3</b>

<sup>a</sup> Source: Table C-2, Appendix C.

<sup>b</sup> Includes both on-island expenditures and a portion of prepayments (34.7%) returned to USVI.

<sup>c</sup> Average expenditures in Column 1  $\times$  542 744 overnight tourists. Total may not sum exactly because of rounding.

<sup>d</sup> Source: Table C-4, Appendix C.

<sup>e</sup> Average expenditures in Column 3  $\times$  727 663 1-day tourists.

<sup>f</sup> Sum of Columns 2 and 4. Total may not sum exactly because of rounding.

<sup>g</sup> Includes primarily prepayments for charterboats.

Table 9. Distribution of gross expenditures.

Sector	Overnighters		1-Day		Total	
	% <sup>a</sup>	U.S. \$ (million)	% <sup>b</sup>	U.S. \$ (million)	%	U.S. \$ (million)
Hotel	56.5	159.5 (100) <sup>c</sup>	0.0	0.0	46.5	159.5
Restaurant & nightclub	11.4	32.2 (95.5)	2.5	1.5 (4.5)	9.8	33.7
Gift shops	24.1	67.9 (54.5)	92.9	56.8 (45.5)	36.3	124.7
Transport <sup>d</sup>	8.0	22.6 (89.0)	4.6	2.8 (11.0)	7.4	25.4
Total	100.0	282.2	100.0	61.1	100.0	343.3

<sup>a</sup> Derived from Table C-2, Appendix C.

<sup>b</sup> Derived from Table C-4, Appendix C.

<sup>c</sup> Values in parentheses are percentage sectoral expenditure contributions by type of tourist.

<sup>d</sup> Includes interisland travel, tours and sightseeing, car rentals, charterboating, and the returned fraction of prepaid airfare.

Table 9 presents the distribution of gross expenditures by source of visitor and by the major subsectors, hotels, restaurants, gift and liquor shops, and transport and allied services. These last included all forms of on-island and interisland travel and charterboating. These figures again demonstrate the significance of overnighters, who were responsible for all tourist hotel receipts, 95% of visitor restaurant-nightclub revenues, and 89% of transport service purchases by tourists. Moreover, although overnighters averaged only 24% of their budgets on liquor and other merchandise, they accounted for more than half of the total gross expenditures for such items. One-day visitors, who typically spent 93% of their budgets on duty-free goods, accounted for only 46% of tourist expenditure on gift shops.

Table 9 indicates that the hotel sector received the largest share (46.5%) of gross receipts in 1979, with 36.3% going to gift shops, 9.8% to restaurants, and 7.4% to transport services. The table thus shows the significance of freeport shopping in the territory, which suggests the base of Virgin Islands tourism is rather balanced between hotel and gift-shop sectors; consequently both demand similar attention in planning and research.

It is also germane to point out that gross receipts of the gift-shop sector were fairly evenly distributed by source of visitor. Table 8 shows average per-visit spending by overnighters (U.S. \$80.52) and 1-day visitors (\$78.11) about equal. Liquor and merchandise vendors should appreciate the importance of this demand pattern to their planning, advertising, and operations.

### *Tourism investment*

Because of the significance of related investment in small, tourist-dominated economies (a frequent omission in tourism impact analyses), several steps were taken to estimate current and induced investment due to visitor activity. For purposes of this study, investment was defined narrowly as construction in new plant, thus excluding new equipment purchases and net additions to inventory. The latter omission is

substantial in view of the high volume of gift shops. Hence, the investment figures that follow are conservative and partial.

The value of construction permits issued during the past two decades is shown in Table 10. These figures parallel the growth of tourism in the territory during the 1960s and the cyclical instability during the 1970s. Figure 1 shows the relationship between construction permit value (PV) and air arrivals, an appropriate index for

Table 10. Value of construction permits (U.S. \$ 000) <sup>a b</sup>

Fiscal year	Value of permits	Calendar year	Value of permits
1960	7479	1970	80218
1961	9383	1971	71332
1962	11195	1972	68455
1963	13847	1973	46182
1964	19964	1974	36338
1965	17884	1975	28232
1966	32969	1976	30749
1967	33226	1977	42261
1968	48086	1978	41295
1969	66862	1979	73139

<sup>a</sup> Source: USVI Department of Commerce.

<sup>b</sup> These figures include both public and private construction exclusive of Hess Oil and Martin Maritta activity, the two largest heavy industrial processors, which are exempt from permit-reporting requirements.

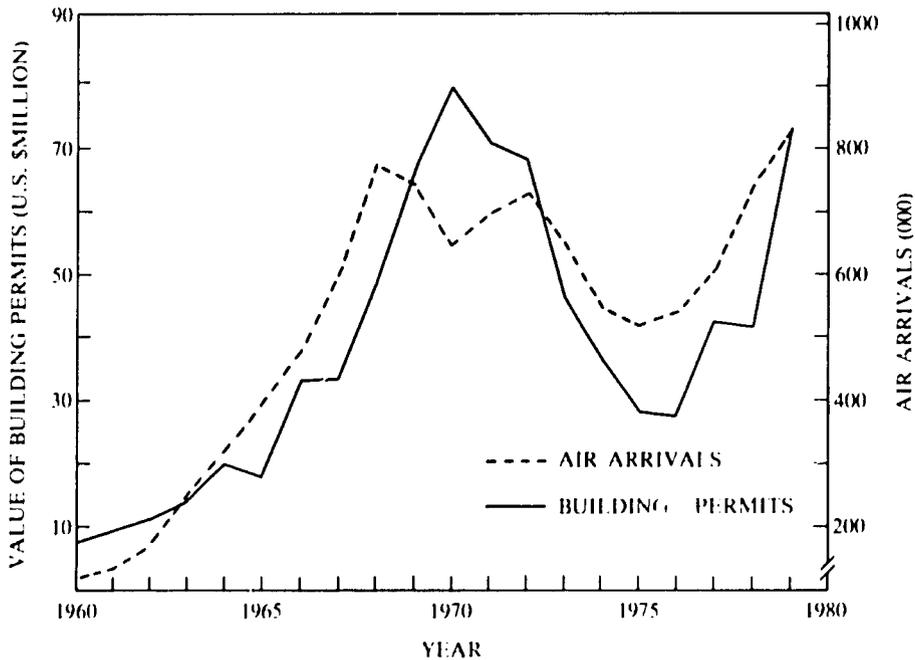


Fig. 1. Air arrivals and value of construction permits, 1960-1979. Source: USVI Department of Commerce.

visitor activity. The correspondence indicates the influence of tourism on the level of new construction. Comparative analysis of the trends demonstrates that construction lags tourism activity by 1 or 2 years. For example, air arrivals turned down from their 1968 peak and bottomed out in 1975, whereas PV peaked in 1970 and recovered during 1976-1977.

Expansion of hotel rooms in 1960-1979, another obvious indicator of tourism investment, is detailed in Table 11. Although, over the entire period, net additions averaged 189 rooms per year, this growth was uneven, with about two-thirds occurring in the 1960s. Between 1960 and 1970, on the average 220 rooms were added each year whereas after 1970 only 153 new rooms were built annually. Figure 2 shows the trend, especially the erratic fluctuations during the 1970s, when there was some disinvestment. Hotel closings were most pronounced in 1973, after social disruption in fall 1972 in St. Croix. Since the mid-1970s, there have been two major expansions, the opening of the largest hotel (350 rooms) in the territory in 1975 and, in 1978, the revival of another major property previously closed.

Table 11. Hotel rooms in the U.S. Virgin Islands.

Year	No. of rooms	Year	No. of rooms
1960	1397	1970	3599
1961	1537	1971	4439
1962	1643	1972	4317
1963	1828	1973	3807
1964	1895	1974	3939
1965	2099	1975	4552
1966	2206	1976	4460
1967	2494	1977	4767
1968	2684	1978	4552
1969	3258	1979	4989

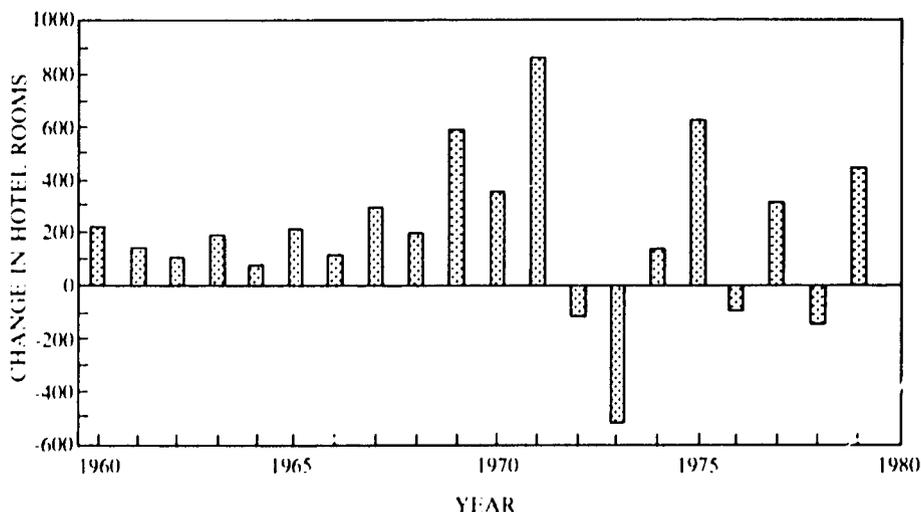


Fig. 2. Change in number of hotel rooms, 1960-1979. Source: USVI Department of Commerce.

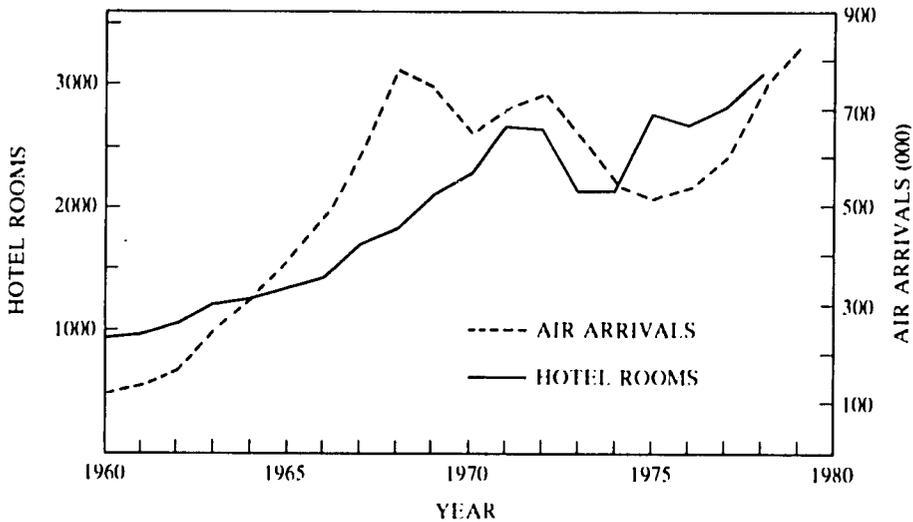


Fig. 3. Air arrivals and hotel rooms, 1960-1979. Source: USVI Department of Commerce.

Air arrivals and available hotel rooms display a loose correspondence (Fig. 3). Variations may partly be because hotel room data exclude some additions in condominiums, which have become in recent years the primary factor in expansion.

For 1979, direct tourism-related investment in construction was estimated to be U.S. \$19.0 million (see Appendix D). This total represented 26% of all 1979 investment exclusive of heavy industry, measured by PV. It consisted of \$12.1 million in investment in new second homes, hotels, condominiums, apartments, and other tourism-related commercial or industrial activity, and \$6.9 million in expenditures on public infrastructure.

A further estimated U.S. \$4.4 million in induced investment occurred in 1980 as an indirect result of visitor spending in 1979. This estimate was based on the historical lag in construction noted in Fig. 1, and the reasonable assumption that the 1979 tourist peak would have a positive impact on investor plans. In fact, the provisional estimate of construction activity for 1980 (\$103.1 million) was over 40% higher than the level in 1979 (\$73.1 million). In summary, total investment deriving from tourism in 1979 was calculated to be \$23.4 million composed of \$19.0 current and \$4.4 induced.

#### *Foreign exchange, leakages, balance of payments*

The terms foreign exchange and balance of payments cannot, strictly speaking, be directly applied to the U.S. Virgin Islands. As a U.S. possession, the territory has no independent balance-of-payments accounts. Its foreign trade is aggregated with that of other U.S. states and territories to form the composite U.S. balance of payments. Moreover, most territorial trade is with the U.S. and Puerto Rico and thus is not foreign in the formal sense. Likewise, tourist receipts from U.S. visitors cannot be considered true foreign exchange.

For purposes of this study, however, we constructed a limited balance-of-trade account in which all off-island trade was considered "foreign." Because the influence of heavy industry tended to obscure the behaviour of the other economic sectors, trade in petroleum and alumina products was excluded from the analysis.

Table 12. U.S. Virgin Islands trade balance (U.S. \$ 000).<sup>a</sup>

Calendar year	Imports			Exports			Balance of trade	
	Total	Petroleum & bauxite	Excluding petroleum & bauxite	Total	Petroleum & alumina	Excluding petroleum & alumina	Overall	Excluding petroleum & alumina
1970	400615	169956	230659	260590	206198	54392	-140025	-176267
1971	551650	306338	245312	331477	265423	66054	-220173	-179258
1972	596242	336684	259558	407556	334452	73104	-188686	-186454
1973	850628	543007	307621	618572	532195	86377	-232056	-221244
1974	2220425	1832050	388375	1658927	1580229	78698	-561498	-309677
1975	2197550	1867508	330042	1934542	1868438	66104	-263008	-263938
1976	2680743	2405556	275187	2009782	1939820	69962	-670961	-205225
1977	2975673	2640989	334684	2613500	2527147	86353	-362173	-248331
1978	3138872	2773265	365607	2542300	2442621	99679	-596572	-265928
1979	3766000	3322719	443281	3092675	2981683	110992	-673325	-332289

<sup>a</sup> Source: Tinsley (1979).

Table 13. Gross tourist spending and associated imports, by sector, 1979.

Item	Hotel	Restaurant & nightclub	Gift shop	Transport	Total
Gross tourist spending (U.S. \$ million)	159.5	33.7	124.7	25.4	343.3
Cost of goods sold and other foreign purchases (as % of operating income) <sup>a</sup>	40	49	56	15	44.9
First-round tourism imports (U.S. \$ million) <sup>b</sup>	51.0	13.2	55.9	3.1	123.2
Net foreign exchange (U.S. \$ million) <sup>c</sup>	108.5	20.5	68.8	22.3	220.1
Estimated GTP (U.S. \$ million) <sup>d</sup>	96.6	18.2	61.2	19.8	195.8
Second-round tourism imports (U.S. \$ million) <sup>e</sup>	11.9	2.3	7.6	2.5	24.3
Total imports (U.S. \$ million)	62.9	15.5	63.5	5.6	147.5
Gross expenditure multiplier <sup>f</sup>	0.606	0.540	0.491	0.780	0.570

<sup>a</sup> Source: Checchi (1976) and USVI Department of Commerce (1980b).

<sup>b</sup> Gross expenditure times cost of goods sold and foreign purchases times estimated 80% import content.

<sup>c</sup> Gross expenditure less first-round imports.

<sup>d</sup> Net expenditure times territory-wide income multiplier (McElroy 1974).

<sup>e</sup> Net expenditure less GTP.

<sup>f</sup> Ratio of GTP to gross expenditure.

Table 12 presents such adjusted trade data. The figures indicate that, during the past decade, the balance of trade has been in chronic deficit, and that the size of this deficit has grown from U.S. \$176 million in 1970 to more than \$330 million in 1979. Over this period, these deficits have been financed principally by increasing U.S. government subsidies, exceeding \$60 million in 1979, and earnings from tourism.

We analyzed the foreign-exchange impact of tourism and investment for 1979 by determining first-round, direct, tourism-related imports. Net foreign-exchange earnings are defined as gross earnings less first-round tourism leakages — that is, imports specifically for visitors: foods, gift merchandise, liquor, fuel, construction materials, and so on. In the case of gross visitor expenditures, we estimated leakage from earlier hotel, restaurant, gift, and other surveys by Checchi (1976) to determine the cost of foreign goods and services, assuming 80% of this represented true import cost, the balance being handling and local transport charges. In the case of investment spending, direct imports were calculated as the average cost of materials in construction reported in Little (1974), again assuming 80% true import content.

Accordingly, Table 13 presents the first-round imports associated with gross tourist expenditure by major subsector. These data indicate the net foreign-exchange contribution (as defined above) of overnight and day visitors in 1979 was U.S. \$220.1 million. Of this total, the hotel sector was responsible for \$108.5 million (49%), gift shops contributed \$68.8 million (31%), with the remaining 20% shared evenly by restaurant and transport sectors. Because of their heavy reliance on foreign supplies, liquor and gift shops generated the highest local leakages, \$56 million or 45.4% of the

Table 14. Gross investment expenditure, imports, net foreign exchange, and GTP.

Items	Tourism share		Tourism investment
	U.S. \$ million	%	U.S. \$ million
Current investment			
Private (60%)	43.9	27.4 <sup>a</sup>	12.0
Public (40%)	29.2	23.6 <sup>b</sup>	6.9
Total	73.1	26.0	19.0
Induced investment <sup>c</sup>	16.9	26.0	4.4
Gross investment expenditure			23.4
First-round imports <sup>d</sup>			11.2
Net investment expenditure (foreign exchange)			12.2
Estimated contribution to GTP <sup>e</sup>			10.9
Second-round imports <sup>f</sup>			1.3
Total imports			12.5
Gross income multiplier <sup>g</sup>			0.466

<sup>a</sup> Based on examination of construction permit value, 1971-1973 for the private share.

<sup>b</sup> Based on estimated visitor usage of public infrastructure.

<sup>c</sup> Estimated to be 3% of GTP in 1979.

<sup>d</sup> Gross investment times 0.48, an import ratio derived from A.D. Little's estimated construction materials cost ratio of 60% of income times an assumed import content of 80%.

<sup>e</sup> Net investment expenditure times the 0.89 territorial income multiplier.

<sup>f</sup> Net investment expenditure minus GTP.

<sup>g</sup> Ratio of GTP to gross investment expenditures.

\$123 million total. On the other hand, transport and other allied services, responsible for more than 7% of gross receipts and 10% of net foreign exchange, accounted for only 2.5% (\$3.1 million) of first-round leakages. This indicates the degree of integration between this sector and the rest of the insular economy.

Net foreign exchange earned from investment in tourist facilities is detailed in Table 14. According to these figures, gross investment of U.S. \$23.3 million in 1979 was supported by first-round imports of construction materials worth \$11.2 million, netting foreign-exchange earnings of \$12.1 million.

The data on tourism investment and spending (Table 15) indicate that the total net foreign-exchange earnings of the tourist industry in 1979 were U.S. \$232.3 million, with gross income of \$366.7 million and estimated first-round leakages of \$134.4 million. More than 90% of receipts, first-round imports, and net foreign exchange resulted from spending by visitors.

Table 16 compares gross and net foreign-exchange earnings of the tourist industry with other economic indicators. For example, in 1979, gross and net tourism foreign exchange were equal to 65 and 41% respectively of the entire economy's GTP. Moreover, the net foreign exchange earned through tourism was 75% of merchandise imports net of first-round tourism leakages (excluding trade in oil and

Table 15. Distribution of gross expenditure, imports, net foreign exchange, and GTP between consumption and investment (U.S. \$ million).<sup>a</sup>

Item	Source		Total
	Consumption	Investment	
Gross expenditure	343.3	23.4	366.7
First-round imports	123.2	11.2	134.4
Net expenditure (foreign exchange)	220.1	12.2	232.3
Estimated contribution to GTP	195.8	10.9	206.7
Second-round imports	24.3	1.3	25.6
Total imports	147.5	12.5	160.0
Gross income multiplier	0.570	0.466	0.564

<sup>a</sup> Data and methods from Tables 13-14.

Table 16. Selected foreign exchange data, 1979.<sup>a</sup>

Gross foreign exchange (as % of GTP) <sup>b</sup>	65.0
Net foreign exchange (as % of GTP)	41.1
Gross foreign exchange (as % of gross exports)	330.4
Net foreign exchange (U.S. \$ million)	232.3
Net merchandise imports (U.S. \$ million) <sup>c</sup>	308.9
Net foreign exchange (as % of net imports)	75.2
Net merchandise trade balance (U.S. \$ million) <sup>c</sup>	-198.9
Net foreign exchange impact on net merchandise trade deficit (U.S. \$ million)	+33.4

<sup>a</sup> Trade data exclude petroleum and aluminum products.

<sup>b</sup> In 1979, GTP was U.S. \$564.6 million.

<sup>c</sup> Excludes first-round tourism imports of U.S. \$134.4 million.

alumina). Thus, tourism in 1979 financed 75% of merchandise imports. The net foreign-earnings impact was to reverse the 1979 merchandise trade deficit (net of tourism-related imports) from nearly U.S. \$200 million to a surplus of \$33.4 million.

### *Contribution to gross territorial product*

Tourist spending and investment generate successive rounds of respending within the insular economy, resulting in further additions to local income as well as secondary rounds of induced leakages — imported household goods, off-island wage remittances, repatriated profits, and so on.

The territorial income multiplier of 0.89 (McElroy 1974) was employed to capture the value-added contributions of these economic interactions. The results are reported in Tables 13-15. First, tourist spending and investment generated U.S. \$206.7 million in GTP in 1979, or approximately 37% of all local activity. This suggests that the tourist industry accounts for more than a third of economic activity, perhaps a conservative estimate inasmuch as the analysis excluded net inventory accumulation and investment in new equipment. The implication is that visitor activity in 1979 financed \$2230 of per-capita GTP (\$6035).

Of this total contribution, visitor spending alone accounted for U.S. \$195.8 million, or fully 35% of total GTP. Of this, according to Table 13, the hotel and gift-shop sectors were responsible for 80%. Together, these two components of local tourism generated \$157.8 million in GTP or 28% of all U.S. Virgin Islands economic activity in 1979.

Finally, the data also provide some idea of the industry's integration with the rest of the insular economy. The strength of this internal linkage was roughly measured by the gross income multiplier: the amount of GTP or value added contributed by each sector divided by the gross expenditure required by that sector to create the value added. These estimates (see Tables 13 and 15) indicate an overall 0.57 industry-wide, gross-income multiplier. This suggests that each U.S. \$1 injected through tourism into the economy generated on average \$0.57 in GTP. The construction or investment sector demonstrated the weakest internal circulation with a multiplier of 0.47, and transport and allied services exhibited the strongest with a 0.78 value. The hotel multiplier was 0.61 and that of the import-intensive gift shops was 0.49.

### *Tax contribution*

Because specific tourism taxes could not be disaggregated and because tourist activity in the Virgin Islands affects all taxes to some degree, public resources flowing from tourism were calculated indirectly.

According to Table 17, local taxes on average were equal to 22.4% of GTP over 1974-1979. Applying this percentage to the 1979 tourist contribution to GTP of U.S. \$206.7 million, we estimate tourist-induced, local-government revenues of \$46.3 million. This represented 36.4% of all such revenue of \$127.1 million in 1979, excluding sources not related to GTP (inheritance and gift taxes and revenues from the use or sale of government property). This impact was equivalent to 26% of the territorial government's 1979 operations budget of \$174.2 million. In addition, it equaled 45% of all net individual and corporate income taxes. The \$46.3 million provided nearly \$500 per resident for financing public services and infrastructure. About 95%, or \$43.9 million, derived from visitor spending; the balance, \$2.4 million, derived from tourist-related investment.

Table 17. Local taxes and revenues and GTP, 1974-1979 (U.S. \$ million).<sup>a</sup>

Year	Total taxes & revenues	Repaid <sup>b</sup> subsidies	Net taxes & revenues	GTP	Taxes & revenues (as % of GTP)
1974	213.640	105.440	108.200	438.6	24.67
1975	247.012	136.786	110.226	475.8	23.17
1976	253.666	145.796	107.870	488.0	22.10
1977	267.158	153.684	113.474	512.0	22.16
1978	283.098	175.734	107.364	542.7	19.78
1979	330.905	203.852	127.053	564.6	22.50

<sup>a</sup> Sources: 1974-1978, Annual Report of the Governor of the Virgin Islands (1978). Includes all local taxes and revenues except those not related to GTP, i.e., inheritance and gift taxes and revenue from the use or sale of government property and equipment. Excludes all nonlocal taxes: rum tax, proceeds from royalties, federal grants-in-aid, special federal grants, and all loan and bond proceeds. Data for 1979 from personal communication, A. Olive, USVI tax director.

<sup>b</sup> These are refunds of taxes paid by tax-exempt firms.

### *Direct tourism employment*

The employment analysis focused only on jobs clearly linked to tourist spending and investment. The reasons for this involved, on the one hand, long-standing data deficiencies due to chronic underreporting of alien employment and other forms of under-the-counter work and, on the other hand, the pervasive nature of tourism, which inhibited any facile allocations of indirect secondary business and induced consumption employment to tourism versus local sectors.

Because of its labour-intensive character, the tourist industry's impact on direct employment was considerable. According to Table 18, expenditure by overnight and 1-day visitors plus related investment spending supported an estimated 12 482 jobs throughout the insular economy (see Appendix E). This total represented 32% of all employment on the islands. About 95% derived from direct visitor spending; 5% was created by tourism investment. This 32% is a partial impact, because indirect employment is excluded. It seems reasonable to assume another 4000 support jobs, based on U.S. \$30 million in wages (60% of total tourism tax revenues of \$46.3 million) financing roughly 3000 public jobs at \$10 074, plus an additional 1000 jobs from induced consumption and other secondary business activity. Under these assumptions, direct and indirect tourism employment would approximate 16 500 jobs — more than 40% of all territorial employment. Roughly 60% of these tourist jobs were located in the accommodation and wholesale-retail sectors. As expected, hotels accounted for the largest share (25%) followed by gift shops (21%), restaurants (13%), and transport services (11%). The remaining jobs were mainly in construction, charterboat, and financial sectors.

To provide historical perspective, we assembled data for the most easily identifiable direct-tourist job categories for which time series were available in hotels, restaurants, and gift shops and plotted these data (see Fig. 4) with air and cruise arrivals for 1950-1979. The relationship appears long-term and quite strong, with employment noticeably leading visitor demand by 2-3 years in earlier decades and a year or less in the 1970s. Note that although employment fell off in 1969, tourist arrivals continued upward because cruise arrivals more than compensated for the decline in air arrivals caused by the U.S. recession (see also Table 3).

Table 18. Distribution of direct tourism employment.<sup>a</sup>

Industry	No. employed	% of total
Construction	587	4.7
Transport		
Taxis, tours & rentals	743	5.9
Air transport	409	3.3
Other	202	1.6
Wholesale trade	410	3.3
Retail trade		
Food & beverage	1570	12.6
Liquor, gifts & apparel	2640	21.1
Finance & real estate	352	2.8
Services		
Hotels & lodging	3090	24.8
Other	663	5.3
Charterboats	802	6.4
Self-employed & domestics	864	6.9
Government	150	1.2
Grand total	12482	100.0

<sup>a</sup> Source: Appendix E.

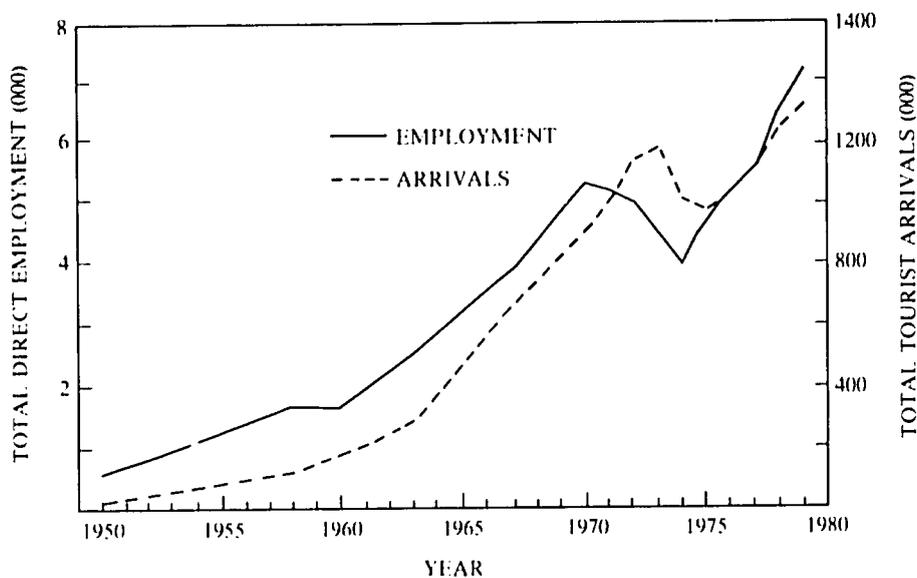


Fig. 4. Direct tourism employment in hotels, restaurants, and gift shops and total tourist arrivals, 1950-1979. Sources: USVI Departments of Commerce and Labor, U.S. Bureau of the Census.

The definite shortening of the lead in recent years may indicate a process of maturation in the labour force — that is, the staffing of various services had reached the point where only modest changes were needed to cope with fluctuations in volume of business. There may also have developed a greater sensitivity by this core group of employees to the vagaries of changing market trends.

Of this core employment, we obtained detailed information for hotel workers only (25% of all direct tourism employment) from the Department of Commerce hotel survey conducted during spring 1979. Table 19 presents data on the number of employees per room by island and size of hotel. There was a significant difference between St. Thomas and St. Croix — 0.97 employees per room in St. Thomas versus 0.76 in St. Croix. This discrepancy can largely be explained by differences in size and demand patterns.

First, St. Thomas had a larger share of large properties, and these larger hotels were generally more labour-intensive than small ones. Thus, 85% of the total rooms surveyed in St. Thomas were in hotels of more than 49 rooms, against only 49% in St. Croix. Conversely, nearly 20% of the rooms in the sample in St. Croix were in properties with fewer than 25 rooms, against only 8% in St. Thomas. Finally, of hotels with 25 or more rooms, the average size (not shown) was 109 rooms per hotel in St. Thomas and only 56 in St. Croix.

Table 19 also shows that the largest properties (more than 49 rooms) averaged one employee per room, while the smallest (fewer than 25 rooms) averaged 0.62 employees per room. The greater labour-intensity of large hotels is because of the greater array of services provided. These commonly include pool, full restaurant, beach, gift shops, water sports, sightseeing, and, in some cases, saunas, beauty shops, golf course, nightly entertainment, game rooms, and so on. This extensive range of peripheral amenities is in contrast to the smaller hotels and guesthouses, which on average provide little beyond the basics. Generally, these differences in service have been consistently reflected in different rate structures, with the larger

Table 19. Employment per room by island and by size of hotel.<sup>a</sup>

Establishment size	St. Thomas	St. Croix	Total
All establishments			
No. employed	1841	688	2529
No. of rooms	1905	902	2807
No. employed per room	0.966	0.763	0.901
Over 49 rooms			
No. employed	1593	459	2052
No. of rooms	1618	427	2045
No. employed per room	0.985	1.075	1.003
25-49 rooms			
No. employed	132	149	281
No. of rooms	136	308	444
No. employed per room	0.971	0.484	0.633
Under 25 rooms			
No. employed	116	80	196
No. of rooms	151	167	318
No. employed per room	0.768	0.479	0.616

<sup>a</sup> Source: USVI Department of Commerce (1980b).

properties charging usually more than twice the rates of the smaller hotels and guesthouses. Such service differences also explain some of the large, interisland discrepancies in labour-intensity for hotels of the same size classifications. For example, the table demonstrates that except for large properties with more than 49 rooms, the St. Thomas labour-to-room ratios were substantially higher than the St. Croix ratios.

The second factor was differences in occupancy rates. As shown in Table 20, these differences have been persistent and substantial. The average annual difference in hotel occupancy between the islands during 1972-1980 was a striking 14 percentage points — 64.5% in St. Thomas and St. John versus 50.5% in St. Croix. Such a major difference would cause significant differences in revenues, room usage, and labour demand, especially as room occupancy plays such a large role in hotel revenues. According to the survey results in Table 21, on the average, 62% of all receipts derived from rooms, with the balance from food and beverages (35.4%) and concessions and rentals (2.4%).

Seasonal influences also affect hotel employment. Figure 5 traces monthly fluctuations in employment and occupancy rates for 1975 through 1979. During this period, from the peak months of December to March to the September trough, the average annual employment variation was 14%, with a high of 18% in 1976 and a low of 11% in 1977. These seasonal variations tend to cause hotel closings during the

Table 20. Annual average occupancy rates (%) for St. Thomas-St. John and St. Croix, 1972-1980.<sup>a</sup>

Year	St. Thomas-St. John	St. Croix	Difference
1972	61.4	53.5	7.9
1973	59.3	38.5	20.8
1974	51.0	38.0	13.0
1975	55.0	44.3	10.7
1976	53.9	40.3	13.6
1977	73.9	52.3	21.6
1978	80.2	63.9	16.3
1979	77.8	70.7	7.1
1980	67.6	53.6	14.0
Average <sup>b</sup>	64.5	50.5	14.0

<sup>a</sup> Sources: Table 5 and Appendix B.

<sup>b</sup> Unweighted.

Table 21. Percentage distribution of hotel revenues.<sup>a</sup>

Hotel size	Source		
	Rooms	Food & beverages	Concessions & rentals
Large (over 49 rooms)	63.8	34.6	1.6
Medium (25-49 rooms)	65.6	26.7	7.8
Small (under 25 rooms)	40.5	58.5	1.0
Grand total	62.2	35.4	2.4

<sup>a</sup> Source: USVI Department of Commerce (1980b).

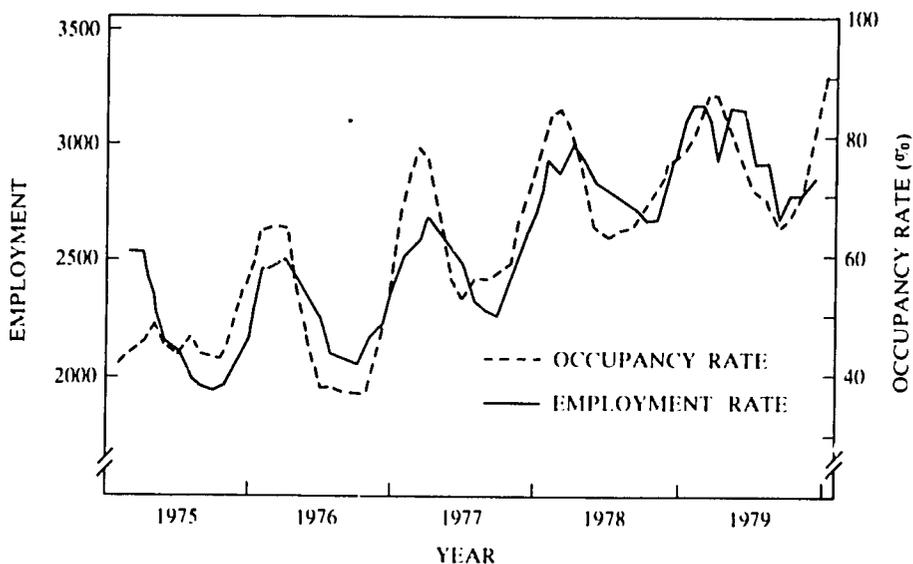


Fig. 5. Hotel and guesthouse employment and hotel occupancy rate (3-month moving average), 1975-1979. Sources: USVI Departments of Commerce and Labor, St. Thomas-St. John and St. Croix Hotel Associations.

Table 22. Number and percentage of persons employed in hotels and guesthouses.<sup>a</sup>

Employment function	St. Thomas	St. Croix	Total
<b>Administrative services</b>			
Number	210	125	335
%	12.9	18.5	14.5
<b>Food &amp; beverages</b>			
Number	820	286	1106
%	50.2	42.2	47.8
<b>Housekeeping</b>			
Number	438	178	616
%	26.8	26.3	26.7
<b>Maintenance</b>			
Number	165	88	253
%	10.1	13.0	11.0
<b>Total</b>			
Number	1633	677	2310
%	100.0	100.0	100.0

<sup>a</sup> Source: USVI Department of Commerce (1980b).

slack summer months, especially in smaller facilities that lack sufficient facilities (beaches, restaurants, etc.) to attract resident patrons. Consequently, seasonality tends to cause more layoffs in the smaller properties characteristic of St. Croix. In addition, data for 1972-1980 (see Appendix B and Table 5) indicated the average difference between peak and trough occupancy rates was 43.5 percentage points for St. Croix and 36.7 for St. Thomas and St. John.

The hotel survey also provided data on the distribution of employment by function (Table 22). These figures show roughly 50% were employed in food and beverage occupations. About one quarter of the workers were in housekeeping, 15% in administrative services, and 10% in maintenance. The major island differences were in food and beverages (50% in St. Thomas versus 42% in St. Croix) and administrative services (13% versus 19%). These divergencies probably reflected the differences in scale and service, as well as the prevalence of smaller, guesthouse-type operations in St. Croix with a smaller staff, less specialization, and pressure on administrative staff to perform extra functions in food and beverages, housekeeping, and maintenance.

The data on payroll as a percentage of gross income (Table 23) tended to confirm the findings on labour intensity, larger hotels having a significantly higher average than guesthouse-type properties under 25 rooms. These data, in conjunction with 1977 values (Table 24), confirmed the relatively high employment impact of the hotel sector within the insular economy. Only construction and selected services were near the payroll-to-gross sales ratio of the hotel and lodging sector. Manufacturing, wholesale trade, and retail trade (including gift shops and liquor stores) exhibited lower ratios and hence were less labour-intensive.

Finally, the survey also revealed that 87.6% of hotel employees were U.S. citizens (not necessarily native Virgin Islanders) and 12.4% were aliens, primarily West Indians. Locally owned properties constituted 43% of hotel rooms surveyed in St. Thomas and 77% of those in St. Croix. However, the survey did not carefully differentiate whether owners were native islanders, long-term immigrant residents,

Table 23. Hotel payroll as a percentage of gross income.<sup>a</sup>

Island	Hotel size			Total
	Over 49 rooms	25-49 rooms	Under 25 rooms	
St. Thomas	33	25	24	31
St. Croix	36	26	17	32
Total	34	25	21	31

<sup>a</sup> Source: USVI Department of Commerce (1980b).

Table 24. Payroll ratios and distribution, U.S. Virgin Islands, 1977.<sup>a</sup>

Industry	Payroll as proportion of sales	% total sales
Construction	0.307	11
Manufacturing	0.100 <sup>b</sup>	33
Wholesale	0.071	7
Hotels	0.301	11
Food & beverage	0.275	4
Selected services	0.295	19

<sup>a</sup> Source: U.S. Census of Manufacturing for the Virgin Islands (1977:5).

<sup>b</sup> Estimated because Hess Oil and Martin Marietta Alumina are excluded because of disclosure problems.

Table 25. Summary of charter boat survey results, 1979.<sup>a</sup>

Type of excursion	No. of boats	Jobs	Use (days)	Visitors	Purchases (U.S. \$)			
					Hotel	Food & beverage	Maintenance & fuel	Other
Long-term crewed	190	665	150	16796	1259700	2000000	940000	755000
Daysail crewed	15	30	100	6000	—	30000	4500	15000
Long-term noncrewed	189	60	160	21000	525000	1700000	786500	—
Daysail noncrewed	8	3	50	1600	—	—	—	—
Crewed fishing	13	26	140	560	—	60000	110000	—
Crewed diving	9	18	150	10000	—	—	160000	—
Totals	424	802	—	55956	1784700	3790000	2001000	770000

<sup>a</sup> Source: USVI Department of Commerce (1980c).

or locally registered corporations. Casual observation indicates the common Caribbean pattern of a high proportion of off-island, highly skilled administrators and food and beverage workers.

The only other employment survey was a limited one of the charterboat sector by the Department of Commerce in spring 1980. It covered 60 operators, about 12% of those commercially active during 1979. The study, summarized in Table 25, showed the popularity of water sports and the extent of this sector's link to the rest of the economy.

The findings were that, in 1979, there were 424 charter boats in service, employing 802 workers as captains, cooks, crew, and self-employed maintenance personnel (mechanics, carpenters, fiberglass specialists, and so on). Boat usage varied widely from roughly 100 to 160 days per calendar year. The most popular were noncrewed, so-called "bareboat," long-term charters (21 000). Next in importance were crewed long-term charters (16 796), crewed dive-boat charters (10 000), crewed daysails (6000), bareboat daysails (1600), and crewed fishing excursions. The total number of passengers exceeded 55 000, about equal to 10% of all overnight visitors.

The charterboat sector accounted for U.S. \$8.4 million in purchases from other businesses. This included \$1.8 million for hotel accommodations and meals before and after long-term charters, \$3.8 million in food and beverages for consumption on board; and \$2 million in fuel and maintenance. The \$8.4 million was one-third of all visitor expenditure received by the transport and allied service sector in 1979 and was equal to the total estimated wages generated in taxi and tour operations exclusive of resident use.

### *Policy and research implications*

This analysis of tourism in the U.S. Virgin Islands shows that, in 1979, it was the source of 37% of GTP, 36% of local government revenues, 31% of employment, and 26% of all construction excluding heavy industry. The study also underlined the unique importance of tourism as an employment creator and a foreign-exchange earner in this small, resource-poor, service economy with few alternative industrial opportunities and necessarily high import propensities.

The findings have also highlighted some of the significant, long-term questions that deserve policy attention.

- First, the exit surveys have revealed that visitor satisfaction and overall rating of service declined in recent years. Such evidence points to the need for a long-term policy on territorial tourism. The issues are difficult: quantity versus quality of visitor demand; promotion of an appropriate image; whether new plant is desirable; type of service offered, and so on. The overwhelming role of tourism and the stability that a growing core of repeat visitors could offer demands a serious evaluation of the options.

- Second, the structure of tourist import leakages and intersectoral linkages must be better understood if policymakers are to design more articulated and appropriate strategies for maximizing the multiplier and GTP impacts of visitor spending. As a preliminary, we suggest much greater emphasis on proposals to stimulate the transport and allied sectors. These businesses, such as taxis and charterboats, are employment- and wage-intensive and characterized by a high degree of local purchases. This approach is also compatible with evidence previously discussed, that the core sectors — hotels, restaurants, and gift shops — have achieved

a certain degree of maturity and stability since the boom phase of the 1960s; hence greater attention should be paid to the support subsystems during the 1980s. In addition, these sectors tend to be less cyclically and seasonally sensitive to the vagaries of international tourism than the core sectors because of their greater reliance on the domestic market.

- Third, there is indirect evidence of the need for greater public and private development of skilled, local talent -- managerial, technical, and administrative. This could include more resources for training promising islanders in recognized institutes off-island; and the tourism marketing seminars of the Department of Commerce could expand to include local workshops on food and beverage operations, accounting, personnel management, labour relations, and so on.

- Fourth, more planning should be directed toward the negative aspects of seasonal tourism. This could take a variety of forms -- for instance more aggressive marketing for off-season convention business, bargain vacation plans with budget airline fares, special summer packages for West Indians, Puerto Ricans, and local residents. To be effective, however, such initiatives will require greater coordination among the various government agencies responsible for maintaining and improving the infrastructure to reduce the inconvenience that off-season construction causes for visitors.

- Finally, this study points to certain necessary, obvious research that could be added to the Department of Commerce's ongoing program. Needs include: accurately establishing the visitor-air arrival ratio; spending and demographic profiles of over-night visitors by income, origin, and type of accommodation; similar data for 1-day visitors, cruise passengers, and other water-borne visitors; details on the structure of tourist imports by subsector from surveys cross-checked by trade schedule figures; and at least empirical data on profit and wage remittances and the export of invisible services such as ticket agent and airline commissions.

Such information should improve marketing programs and assist policymakers. In addition, it should enable local officials to judge better the impact of changes in the international environment, such as U.S. extension of legislative privileges (duty-free and convention tax-exemptions) to other tourist destinations and currency realignments. Considerable attention must be given to forecasts of the U.S. economy because of its dominant influence on Virgin Islands tourism. Only with such research effort can the territory retain its position as a leader in Caribbean tourism in the face of competition and global instability.

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## ***Appendix A: List of Overnight Accommodations, 1979***

The list is based on the U.S. Virgin Islands 1979 Winter Rate Sheet (USVI Department of Commerce, Division of Tourism). Because the rate sheet excludes certain hotels that fail to provide visitor origin and occupancy data as well as other properties that advertise individually, other properties were taken from the 1978-1979 Caribbean Yearbook and the 1979 Virgin Islands Telephone Directory.

### **St. Thomas**

<i>Hotels</i>	<i>No. of rooms</i>	<i>Hotels</i>	<i>No. of rooms</i>
Bluebeard's Castle	125	Point Pleasant	62
Bolongo Bay	37	Sapphire Beach	100
Carib Beach	96	Secret Harbour	60
Frenchman's Reef	350	Shibui	20
Island Beachcomber	50	St. Thomas Sheraton	223
Limetree Beach	84	Sugar Bird	99
Magens Point	32	Virgin Isle	200
Pineapple Beach	165	Windward Passage	144

	<i>No. of rooms</i>	<i>Guesthouses and villas</i>	<i>No. of rooms</i>
<i>Smaller hotels</i>			
Crown Colony	17	Beverly Hills	12
Harbor View	8	Danish Chalet	15
Hotel 1829	17	Driftwood Inn	7
Mandahl Inn	8	Domini Hus	7
Mafolie	23	Estate Thomas	13
Michele	42	Galleon House	15
Morning Star	24	Garden Street Inn	7
Pavillions & Pools	25	Hilltop	18
Seett	31	Island View	11
Villa Olga	15	Maison Gireaux	9
Thatch Farm	20	Midtown	28
Pelican Beach	23	Miller Manor	22
Tropic Isle	17	New Holiday Isles	18
<i>Apartments and condominiums</i>		Ramsey's	14
Cowpet Bay	90	Skyland	4
Frenchman's Cove	4	Violet's Villa	16
Mahogany Run	36	Villa Fairview	15
Mandahl Estate	4	Villa Santana	11
Red Hook Mt.	6	West Indian Manner	10
Sapphire Bay	75	Limestone Reef	8
Tropaco Point	3	Sea Horse	25
Watergate	105	Sign of the Griffin	5
West Indies Terrace	4	Sugar Bird Villas	24
		The Point/Water Isle	4
		Larry's Hideaway (campsite)	20

## St. Croix

	<i>No. of rooms</i>	<i>Smaller hotels</i>	<i>No. of rooms</i>
<i>Hotels</i>			
Buccanneer	142	Sprat Hall	25
Gentle Winds	134	The Frederiksted	41
Grapetree Beach	150	The Inn	25
Hotel on the Cay	55	<i>Apartments and condominiums</i>	
St. Croix by Sea	112	Barrier Reef	120
<i>Smaller hotels</i>		Cave Bay Reef	9
Anchor Inn	30	Caribbean View	20
Cave Bay Plantation	31	Coakley Bay	100
Caravelle	45	Coral Princess	24
Charte House	26	Cruzan Princess	34
Club Comanche	40	Estate Carlton	84
Hams Bay	15	Estate Questa Verde	25
Holger Danske	43	Granada Del Mar	36
King Christian	38	Harbor Beach	18
King Frederick	11	Island Inn	10
King's Alley	22	Mill Harbour	86
Lodge	17	Queen's Quarter	50
Pelican Cove	36	Reef Golf & Beach	34
The Royal Roost	14	Sugar Beach	45
Royal Scotia	18	Tamarind Reef	66
Skyway Inn	25	Turquoise Bay	10
Smithfield	12		

<i>Apartments and condominiums</i>	<i>No. of rooms</i>	<i>Guesthouses and villas</i>	<i>No. of rooms</i>
Vista Mar Apartments	39	Arawak Cottages	13
Waves at Cave Bay	10	Cottages by Sea	6
		Northside Valley Villas	5
<i>Guesthouses and villas</i>		Sunset Beach	10
Ackies	7	Villa Morales	8
Hope	20	Villas of Mary's Fancy	10

### **St. John**

<i>Hotels</i>	<i>No. of rooms</i>	<i>Other</i>	<i>No. of rooms</i>
Caneel Bay Plantation	156	Maho Bay (campsite)	96
<i>Others</i>		Noble Samuel Cottages	3
Cinnamon Bay (campsite)	106	St. John Passion	2
Est. Zootenvaal	4	Serendip Apartments	10
Gallows Point	6	Sun Fish Villas	10
Holiday Homes	8	Ruth H. Wilford	5
Sewer Guest House	15	Vacation Villas	2

## **Appendix B. Monthly hotel occupancy rates, 1972-1978**

Table B-1. St. Thomas and St. John.<sup>a</sup>

	1972	1973	1974	1975	1976	1977	1978
January	62.4	61.5	42.8	55.7	55.9	78.2	86.3
February	77.1	81.7	59.0	69.4	79.7	91.4	94.5
March	71.6	68.6	49.3	63.4	65.2	84.1	90.1
April	69.9	59.1	54.6	61.5	62.0	71.9	79.8
May	56.6	60.4	44.9	51.9	50.1	65.4	79.8
June	50.9	49.9	39.7	45.5	42.4	58.9	69.0
July	66.4	63.5	55.2	51.7	50.2	70.2	79.2
August	72.7	71.9	61.2	58.6	46.9	80.1	80.7
September	36.8	37.5	35.9	32.7	35.8	59.3	69.8
October	47.9	45.5	47.1	45.9	41.9	69.6	75.4
November	58.2	59.2	57.9	63.1	57.3	78.1	84.9
December	65.7	52.9	64.7	60.1	59.6	79.0	72.9

<sup>a</sup> Source: USVI Department of Commerce. Based on a sample of reporting hotels representing 90% of all hotel rooms available.

Table B-2. St. Croix.<sup>a</sup>

	1972	1973	1974	1975	1976	1977	1978
January	57.5	42.5	25.6	47.5	55.8	62.1	79.8
February	80.7	69.6	38.8	62.6	76.3	79.3	89.4
March	72.6	53.6	50.0	56.8	57.7	67.8	86.5
April	64.1	43.1	35.4	40.4	44.3	56.6	60.9
May	47.7	41.2	29.8	31.2	32.4	39.6	54.8
June	43.8	39.6	31.6	35.7	22.6	34.8	47.5
July	52.1	54.9	37.7	37.0	28.9	36.0	57.0
August	56.2	47.0	48.0	46.0	33.1	43.5	57.6
September	31.2	16.4	31.7	31.5	25.1	32.3	49.1
October	39.9	13.1	38.9	38.2	27.9	46.3	47.5
November	47.4	18.6	36.8	47.7	34.0	60.0	67.9
December	48.9	22.9	51.1	56.5	45.7	69.4	69.0

<sup>a</sup> Source: St. Croix Hotel Association.

### *Appendix C: Gross tourist expenditures*

To estimate gross tourist expenditures for 1979, we determined the number of overnight tourists, cruise passengers, and other 1-day visitors, applied per-capita expenditure values from surveys, and finally summed the products of the two sets of variables as detailed below.

#### *Overnight visitors*

Overnight visitors arrive in the Virgin Islands by air. However, local port authority data on air arrivals include traveling Virgin Islands residents and businessmen as well as visitors. As a result, the territory does not have an accurate, up-to-date count of overnight air tourists. Instead, local officials have relied on the estimate by Davidson-Peterson (1978) that visitors constituted 71% of air arrivals in 1976-1977, updated by Murphy-Mills (1980) to 72.4%, and cross-checked with a formula independent of air-arrival data. This formula, which incorporates the number of hotel-type overnight accommodations available, their annual occupancy rates, and the percentage of visitors using such facilities and their average length of stay, we found to be mis-specified. As no estimate of the visitor-air arrival proportion was available for 1979, we correctly reformulated the model.

Total air tourists were drawn from two air-arrival populations — those who arrived at the two international airports on St. Thomas and St. Croix, accounting for 97% of all air arrivals, and those disembarking at the separate facilities of Antilles Airboats. These latter, excluded from the survey data, totaled 27 373 in 1979. The port authority determined that, net of residents and interisland travellers, they included 8255 visitors, whom we assumed to be overnight tourists. The group arriving at the international airports were disaggregated into three categories: those staying in conventional, hotel-type commercial establishments; those staying in campgrounds, second homes, with friends, and on boats; and 1-day visitors arriving primarily from Puerto Rico for shopping, who return home the same day. These three types of arrivals were estimated in two steps. First, overnight hotel visitors were determined using the respecified formula and, second, this figure was adjusted

upward to account for the nonhotel and 1-day visitor shares of total air tourists.

The number of overnight hotel visitors was calculated (equation 1) as follows:

$$(P \times B \times Y)/L = H$$

Where:  $P$  = annual average hotel occupancy rate (75.3% in 1979).

$B$  = total number of hotel-type beds (4989 rooms  $\times$  2 beds/room).

$Y$  = total number of nights per year.

$L$  = average length of stay for over-nighters (7.0 nights based on the Davidson-Peterson estimate of 6.9 for 1976-1977 and the Murphy-Mills figure of 7.1 for 1980).

$H$  = total number of overnight visitors staying in hotel-type accommodations.

According to this formula, the number of overnight hotel-type tourists for 1979 was:

$$(0.753 \times 9978 \times 365)/7.0 = 391\ 772$$

For the second step, we computed total international air tourists by determining the share of hotel tourists in that total and inflating the number of hotel tourists estimated above by the reciprocal of that share to include both nonhotel-type overnight visitors and 1-day visitors. Thus (equation 2):

$$H/h = IAT$$

Where:  $H$  = the number of hotel tourists estimated in equation 1;

$h$  = the proportion of international tourists arriving at the two international airports who stayed overnight in hotel-type accommodations;

$IAT$  = the total number of international air tourists.

The percentage of hotel-type tourists ( $h$ ) for 1979 was calculated as the average of the hotel-type tourist figures reported by Davidson-Peterson (1978) and Murphy-Mills (1980). As these data were given by island only and not for the entire territory, we weighted them by the estimated flow of visitors to each island to derive a composite all-island result. These procedures, set out in Table C-1, yield a 3-year all-island average of 70% hotel visitors. This value was used in equation 2:

$$391\ 772/0.70 = 559\ 674$$

From the survey data, we further estimated that 1-day visitors constituted 4.5% of this total in 1979 (3.8% in 1980), leaving a remaining share of nonhotel overnight visitors of 25.5%. Applying these percentages, we concluded the 1979 distribution of international air tourists was: 391 772 overnight hotel tourists (70% of the total), 142 717 overnight nonhotel tourists (25.5%), and 25 185 1-day visitors (4.5%). Moreover, these 559 674 air tourists were 67.7% of total international air arrivals (826 813) in 1979. Finally, to these were added 8255 Antilles Airboat overnight tourists for a grand air-tourist total of 567 929 including 542 744 over-nighters and 25 185 1-day visitors.

Note that our figure for tourist arrivals at the international airports is higher than an estimate derived from the local Department of Commerce's formulation of the model given as:

$$H/[(1 - nh)(1 - dv)] = IAT$$

Where:  $nh$  and  $dv$  are the respective nonhotel and 1-day visitor shares of the total.

Table C-1. Estimated share of hotel-type tourists, 1979.

	St. Thomas	St. John	St. Croix	USVI
1976				
% Hotel-type <sup>a b</sup>	70.0	43.6	65.8	—
% Total visitors <sup>c</sup>	60.9	9.0	30.1	100.0
Weighted percentage <sup>d</sup>	42.6	3.9	19.8	66.3
1977				
% Hotel-type <sup>a b</sup>	72.6	40.1	66.6	—
% Total visitors <sup>c</sup>	60.4	10.0	29.6	100.0
Weighted percentage <sup>d</sup>	43.9	4.0	19.7	67.6
1981				
% Hotel-type <sup>a b</sup>	79.1	48.6	80.8	—
% Total visitors	55.0	12.0	33.0	100.0
Weighted percentage <sup>d</sup>	43.5	5.8	26.7	76.0

<sup>a</sup> Includes hotels, condominiums, apartments, guesthouses, and cottages.

<sup>b</sup> Original figures for overnight visitors only from Davidson-Peterson (1978:26) adjusted for 14.6% day-trippers to make comparable with data from Murphy-Mills (1980) and estimation procedures developed in this section.

<sup>c</sup> Source: Davidson-Peterson (1978:72).

<sup>d</sup> The % hotel-type times the % total visitors to each island.

<sup>e</sup> Source: Murphy-Mills (1980:82).

Inserting the appropriate values yields:

$$391\,772 / [(1 - 0.255)(1 - 0.045)] = 550\,648$$

This figure is more than 9000 less than the number generated by the revised model below, analogously reformulated but correctly specified to be equivalent to that appearing in the text. Thus:

$$\begin{aligned} H / (1 - nh - dv) &= 391\,772 / (1 - 0.255 - 0.045) \\ &= 559\,674 \end{aligned}$$

### *Overnight visitor expenditures*

We estimated the gross expenditure of overnight visitors by applying the average amount spent per overnight visitor to the number of overnight air tourists estimated above. The 25 185 1-day air tourists were included with cruise visitors, as previous research (Davidson-Peterson 1978) had revealed similar shopping and spending patterns for the two groups.

To estimate average spending per overnight visitor, it was necessary to disaggregate expenditures into two categories: on-island purchases and prepayments. Column 1 of Table C-2 records an estimate (Murphy-Mills 1980) of the average spent on-island per party for various products and services. Column 2 provides the average expenditure per overnight person on each item assuming the same size of party (1.9 persons) in 1979 as in 1977 and 1980. In Column 3, these 1980 figures are deflated 10% to approximate the 1979 price level. We thus estimated \$409.75 was spent on-island per overnight visitor in 1979.

Prepayments for airfare, hotel, car rental, and other (charterboat) items are shown in Table C-3. Column 1 shows average spending for each party in the sample surveyed and, in Column 3, average amounts prepaid by each party are estimated.

Table C-2. Overnight visitor spending by item.

Item	1	2	3	4		5	6
	Average per party <sup>a</sup> (1.9 persons) (U.S. \$)	Average per person (U.S. \$)	Reduced by 10% (U.S. \$)	Average per person		Total (U.S. \$)	% of total
				Prepaid (U.S. \$)			
Accommodation on island <sup>b</sup>	417.44	219.71	197.74	96.09		293.83	56.51
Meals	106.52	56.06	50.45	—		50.45	9.70
Nightclubs	18.91	9.95	8.96	—		8.96	1.72
Interisland transport	37.91	19.95	17.96	10.63		28.59	5.50
Sports activity	58.97	31.04	27.94	—		27.94	5.37
Sports equipment	35.16	18.51	16.66	—		16.66	3.20
Sightseeing & tours	20.11	10.58	9.52	1.14		10.66	2.05
Liquor	27.00	14.21	12.79	—		12.79	2.46
Duty-free	121.00	63.68	57.31	—		57.31	11.02
Souvenirs	19.25	10.13	9.12	—		9.12	1.75
Tobacco	2.73	1.44	1.30	—		1.30	0.25
Other	—	—	—	2.37		2.37	0.46
Total	865.00	455.26	409.75	110.23		519.98	100.00

<sup>a</sup> Murphy-Mills (1980).

<sup>b</sup> See Table C-3.

Table C-3. Overnight visitor prepaid expenditures.

	1 Average per party <sup>a</sup> (1.9 persons) (U.S. \$)	2 % of sample prepaying item <sup>b</sup>	3 Average for sample <sup>c</sup> (U.S. \$)	4 Reduced by 15% (U.S. \$)	5 Average returned to USVI	
					Per party <sup>d</sup> (U.S. \$)	Per person (U.S. \$)
Airfare	744.10	63.87	475.25	403.96	20.20	10.63
Hotel	489.98	46.15	226.10	192.19	182.58	96.09
Car rental	155.96	1.71	2.67	2.27	2.16	1.14
All other	479.49	1.17	5.59	4.75	4.51	2.37
Total	—	—	709.61	603.17	209.45	110.23

<sup>a</sup> Source: Murphy-Mills (1981).

<sup>b</sup> This is the percent of the sample who reported prepaying something (77.7%) times the percent in this subgroup who reported particular items: airfare 82.2%, hotel 59.4%, car rental 2.2%, and all other 1.5%. Whereas prepayment of airfare is expected to be universal, we have followed a more conservative methodology.

<sup>c</sup> Column 1 times Column 2.

<sup>d</sup> Column 4 times estimated return rates of 5% for airfare and 95% for the remaining items.

Since these data were recorded by Murphy-Mills (1981), they were deflated 15% to approximate 1979 prices (Column 4). This yielded an average of \$603.17 prepaid per overnight party. Since only a portion of these prepayments are returned to the Virgin Islands, Column 5 provides estimates of the average per-party prepayments net to the territory, assuming returns of 5% for airfare and 95% for the remaining items. This yielded an average net per-party prepayment of U.S. \$209.45 or 34.7% of the \$603.17 average gross prepayment.

Finally, Column 6 provides the average net prepayment per overnight visitor of U.S. \$110.23 (\$209.45 divided by 1.9 persons per party). This sum plus the average on-island expenditure of \$409.75 per person resulted in a total per-capita overnight-tourist expenditure of \$519.98 (Column 5, Table C-2), say \$520, and gross overnight expenditure of \$282 million ( $542\,744 \times \$520$ ).

The same result of U.S. \$520 total per-capita overnight-tourist expenditure can be obtained by using the local Department of Commerce overnight-tourist expenditure model with more-aggregate data. In this case:

$$[AS + (AP \times RR)]/SU = AAPT$$

Where: *AS* = average on-island expenditure per party (U.S. \$778.50 or \$865 for 1980 deflated by 10%).

*AP* = average prepayment per party (\$603.17 or \$709.61 for 1981 deflated by 15%).

*RR* = portion of prepayment remitted to the Virgin Islands (34.72%).

*SU* = average size of the spending unit (1.9 persons).

*AAPT* = average amount spent on-island and prepaid, combined per overnight tourist in 1979.

Applying the above figures, we get:

$$[\$778.5 + (603.17 \times 34.72)]/1.9 = \text{U.S. } \$520$$

### *One-day visitors and expenditures*

One-day visitors comprise three groups: cruiseship passengers (the vast majority), other waterborne tourists arriving on ferries, primarily from Puerto Rico and the British Virgin Islands, and on private yachts and military vessels, and day-tripping air tourists. Accurate counts of the first two groups are compiled by the Virgin Islands Port Authority monthly and annually. For 1979, these three components totaled 727 663 day visitors — 602 944 cruise passengers (82.9%), 99 534 other waterborne tourists (13.7%), and the 25 185 day trippers (3.5%) estimated earlier in this analysis. We assumed the spending patterns of these day-trippers and other waterborne tourists to be the same as those of cruise passengers.

Average spending per 1-day visitor was estimated in two steps. First, expenditures for the various items were calculated from the 1978-1979 survey (USVI Department of Commerce 1979). Second, the figures of this small survey were adjusted downward, as explained below.

The calculation is shown in Table C-4. Note that figures in Column 2 are the result of a reanalysis of original data, as we found inconsistent measurements of the midpoint for various open-ended dollar intervals listed in the questionnaire responses. The new figure for total spending was U.S. \$216.08 per cruise party. As party size was 2.4 persons, average expenditure per cruise visitor for all items was \$90.04 (Table C-4, Column 3).

Table C-4. Cruise visitor spending by item.

Category	1 % spending	2 Average per party <sup>a</sup> (2.4 persons) (U.S. \$)	3 Average per person (U.S. \$)	4 Reduced 6.7% (U.S. \$)	5 % total
Liquor	74.9	35.05	14.60	13.63	16.22
Perfume	43.2	17.28	7.20	6.72	8.00
Watches	26.9	26.20	10.92	10.19	12.12
Jewelry	54.7	63.50	26.46	24.70	29.39
China & crystal	11.6	7.29	3.04	2.84	3.38
Linens	9.8	5.09	2.12	1.98	2.36
Designer clothes	17.3	10.41	4.34	4.05	4.82
Sweaters & woolens	6.6	3.16	1.32	1.23	1.46
Cameras	11.9	13.73	5.72	5.34	6.35
Taxis	76.7	9.84	4.10	3.83	4.56
Food & beverage	50.2	5.39	2.25	2.10	2.50
Cigarettes	39.7	5.72	2.38	2.22	2.64
Other	41.5	13.42	5.59	5.22	6.21
Total	—	216.08	90.04	84.05	100.01

<sup>a</sup> Authors' reanalysis of original data from USVI Department of Commerce (1979b).

Next, we reduced the per-capita figure of U.S. \$90 by 6.7% to \$84. This adjustment was based on results of the 1980-1981 cruise survey covering November to March (see Table C-5). That survey indicated monthly fluctuations in average expenditure per visitor of 16% between November and December and 22% between December and January. It also indicated an average expenditure of \$84 over the entire 5-month survey period from a sample of 4367 visitors. This figure conformed also to the results of a pilot study (sample of 298) conducted in fall 1979.

Table C-5. Monthly cruise passenger expenditures, 1980-1981.<sup>a</sup>

	Nov. <sup>b</sup>	Dec.	Jan.	Feb.	Mar.	Nov.- Mar.
Total cruise visitors	47935	75359	69513	61707	67882	322396
Total St. Thomas cruise expenditures (U.S. \$ million) <sup>c</sup>	3.7	7.0	5.0	5.3	5.8	26.8
Total number of visitors surveyed	245	866	783	1380	1093	4367
Total number of parties surveyed	129	447	366	616	515	2073
Average expenditure per visitor (U.S. \$)	77.24	92.60	71.89	85.14	84.94	84.00
Average party size	1.9	1.9	2.1	2.2	2.1	2.1

<sup>a</sup> Source: Newbold and Rozynski (1980).

<sup>b</sup> Cruiseship visitor survey for the last week of November only.

<sup>c</sup> Rounded figures.

Finally, applying this U.S. \$84 to the 727 663 1-day visitors indicates gross 1-day-tourist expenditures of \$61 123 692. This value for 1-day-visitor expenditures plus overnight air-tourist expenditures of \$282 226 880 generated a total of \$343 350 572 for all overnight and 1-day-visitor tourist spending.

### *Appendix D: Derivation of tourism investment*

To identify direct tourism investment, we first disaggregated the public and private shares of total construction activity and then estimated the tourism share for each component for 1979. Since permit value (PV) data disaggregated by sector were unavailable for recent years, we had to estimate the public and private shares. The only published source (Fitzpatrick 1978) indicated for 1970-1977 that the public share was 17.6%. This figure, however, excludes from public investment substantial tourist-related outlays, such as streets and highways and investment in water and power. In the PV recording system, such items are incorrectly classified as private commercial-industrial construction. A more accurate estimate was derived by dividing government capital expenditures (Table D-1) into total PV (Table 10). This indicated that, in 1970-1978, about 40% of construction was in the public sector.

Next, tourism investment was identified for private (60%) and public (40%) construction. For the private component, disaggregated PV data for 1971-1973 indicated:

Residential (second homes)	12% of 70% = 8%
Commercial/industrial (gift shops, etc.)	12% of 16% = 2%
Hotel/condominium/apartment	100% of 14% = 14%
Tourism share	= 24%

This cumulative 24% tourism share of private investment, derived from the depressed 1972-1973 period, we judged too conservative to apply to 1979, the most buoyant year for tourism in the territory. Thus, the residential and commercial-industrial portions were raised from 12% to 15%, yielding an estimated cumulative tourism portion of 27.5% of private investment in 1979.

The proportion of public capital expenditure attributable to tourism was roughly estimated on the basis of visitor use of local infrastructure, a calculation that was in turn based on tourist days (TD) in the islands. Thus:

542 744 overnights × 8 days	= 4.34 million TD
727 663 1-day visitors	= 0.73 million TD
Total	= 5.07 million TD

It was further assumed that tourists used the infrastructure twice as heavily as residents from casual observation of visitors' dominant use of airports and roads and their greater per-capita use of hotel air-conditions, mail, telephones, water, and so on. This doubling was factored in by increasing total TDs to 10.1 million. Finally, we assumed the 93 550 residents each spend an average of 350 days a year in the territory. This yields total person days of 42.9 million, the tourist share being 23.6%.

By applying the private and public construction shares of the PV of U.S. \$73.1 million against these tourism investment percentages of 27.5 and 23.6 respectively (weighted average 26%), current tourist-related construction activity was estimated for 1979:

	\$ million	×	Tourism share	=	\$ million
Private at 60%	43.9	×	0.275	=	12.1
Public at 40%	29.2	×	0.236	=	6.9
Total tourism investment				=	19.0

Table D-1. U.S. Virgin Islands government capital expenditures (U.S. \$ 000).<sup>a</sup>

Year	Total capital expenditures	Roads & streets	Potable water, salt water & sewage facilities	Parks & beaches	USVI Water & Power Authority
1963	4455	1190	370	188	—
1964	8227	1443	519	182	—
1965	8261	1125	970	110	—
1966	7803	1565	611	191	3995
1967	14324	3053	1315	219	1182
1968	11275	1679	1964	81	5729
1969	14572	2197	1439	235	6326
1970	10233	2650	782	55	5390
1971	19397	3740	4131	1115	7828
1972	24004	3834	6266	184	11642
1973	22427	3332	5377	54	4973
1974	14133	5144	3038	952	12130
1975	16759	5892	2279	615	8625
1976	14339	1993	5909	732	na
1977	15862	2919	2632	1800	na
1978	19957	3456	2841	1138	na
Total	226028	45212	40443	7851	67820

<sup>a</sup> Source: Christian (1978).

Finally, to this sum of current 1979 public and private tourist-related investment of U.S. \$19.0 million was added an estimate of spillover or induced investment. This is the investment in construction that occurred the following year (1980) but was stimulated by tourist expenditures and construction in the current year (1979). To measure induced investment deriving from the previous year's economic activity, first the relationship between PV and GTP in the same years was calculated for 1960-1973. The resulting regression equation was:

$$PV = 5.03 + 0.23 (GTP) \quad R^2 = 0.92 \quad T = 12.0$$

The highly significant coefficient of 0.23 indicated that every \$1 million in GTP was associated with \$230 000 of investment spending as measured by PV.

Second, the relationship between investment in the current year (t) and GTP in the previous year (t-1) was estimated, again with significant results:

$$PV_t = 8.02 + 0.26 (GTP)_{t-1} \quad R^2 = 0.90 \quad T = 9.5$$

As expected, the impact coefficient for lagged investment was larger, indicating the possibility of some spillover activity. Despite the hazardous methodology and formidable theoretical and statistical difficulties with the interpretation, we postulated that the 0.03 difference between the two coefficients represented a rough relative measure of new investment in the current year stimulated by overall activity in the previous year. Thus, overall induced investment was estimated to be 3% of previous GTP. It was further assumed that the tourism-derived portion was 26% in keeping with the analysis above. Based on these parameters including 1979 GTP of U.S. \$564 million, induced tourism construction that took place in 1980 as a result of visitor activity in 1979 was:

$$\$564.6 \text{ million} \times 0.03 \times 0.26 = \$4.4 \text{ million}$$

Thus, total construction activity deriving from tourism in 1979 was U.S. \$23.4 million, composed of \$19.0 million current and \$4.4 million induced.

### *Appendix E: Direct tourism employment*

We estimated tourism employment for 1979 in a series of steps based on total employment (Table E-1).

First, all employment in hotels and other lodgings (3090), eating and drinking establishments (1570), and liquor, gift, and miscellaneous shops (2100) were assumed to be directly supported by tourism. Another 540 jobs in specialized apparel and accessory stores catering primarily to tourists were assigned to gift-shop employment.

Second, construction employment resulting from tourist-related investment was determined by estimating the wage content of tourism construction and dividing it by the average 1979 pay per employee. In 1977, payroll was 30% of construction sales in the U.S. Virgin Islands (U.S. Bureau of the Census 1980). Thus, tourist investment of U.S. \$23.4 million yielded gross wages of \$7.02 million, which at \$11 968 per worker implies 587 jobs.

Third, employment in taxis, tours, and car rentals was calculated similarly. The 1977 census reported payroll was 33% of sales in passenger transport. This percentage, applied to 1979 gross tourist expenditures for transport of U.S. \$25.4 million (Table 9), yielded \$18.4 million in wages and, at \$11 286 per worker, 743 jobs.

Fourth, of the 610 air transport workers, 409 (67%) were assigned to tourism. This reflects the visitor share of air arrivals in 1979, determined earlier in the analysis.

Table E-1. Nonagricultural wage and salary employment, by industry, 1979.<sup>a</sup>

Type	No. employed
Construction & mining	2840
Manufacturing	3180
Transport & public utilities	
Local transit	160
Trucking & warehousing	190
Water transport	270
Air transport	610
Transport service	120
Communication	660
Wholesale trade	640
Retail trade	
Building materials, etc.	240
General merchandise	280
Food stores	940
Automobiles & gasoline	570
Apparel & accessories	540
Furniture	340
Food & beverage	1570
Gift shop & liquor	2100
Finance, insurance & real estate	
Banking	710
Real estate	460
Other	320
Other service	
Hotels, etc.	3090
Personal service	180
Business service	560
Automobile repair	200
Miscellaneous repair	200
Amusement	260
Legal services	180
Educational services	530
Organizations	150
Other services	550
Government	
Federal	660
Territorial	12810
Total	
Wage & salary employment	36110
Self-employed & domestics	3200
Total employment	39310

<sup>a</sup> Source: USVI Labor Department (1981).

Fifth, of wholesale jobs, 410 (64%) were allocated to tourism. This was consistent with the proportion of direct tourism employment (4210) in the retail trade (6580).

Sixth, two job categories were directly allocated. These were 150 government employees in tourism promotion, airport and harbour maintenance, U.S. Customs, etc. and 802 mostly self-employed charterboat operators and supply and repair personnel (USVI Department of Commerce 1980).

Seventh, for banking, insurance, and real estate employment, we assumed visitors used services in the same proportion as their use of infrastructure. In Appendix D, this share was estimated to be 23.6%, which implies 352 of the total 1499 financial jobs.

Eighth, of the remaining wage and salary jobs in transport, public utilities, and other services, the same share of 23.6% was assigned to tourism. Total transport and utilities jobs were 2010. Deducting 1152 jobs in taxis and air transport (previously counted) left 858 jobs, of which 23.6% was 202. Other services provided 5900 jobs, from which we deducted the 3090 jobs already considered in hotels and lodgings, for a remaining total of 2810; 23.6% of this left 663 jobs attributable to tourism.

Ninth, of the 3200 self-employed and domestic workers, less the 802 self-employed in charterboat activity, 36% or 864 were allocated to tourism. There is a relatively high proportion of individual proprietorships in taxi, tour, and other tourism-related businesses.

Combining all these calculations, we estimated the number of tourist-related jobs in 1979 to be 12 482, distributed between 10 816 nonagricultural wage and salary workers, 864 self-employed and domestic workers, and 802 mostly self-employed charterboat workers.

## *St. Lucia*

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BERNARD K. SPINRAD\*

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### *Country overview*

St. Lucia, a newly independent island in the eastern Caribbean, has a population of approximately 120 000 people in 235 square miles of mountainous topography. Nearby are Barbados to the southwest, St. Vincent to the south, and Martinique to the north.

The climate is subtropical, with a mean annual temperature of 26°C. Summers are hot yet tempered by the trade winds. Vegetation is lush, and drought has seldom been a problem. Except for the low-lying northern area and the southern tip, most of St. Lucia experiences heavy rainfall all year.

The island was dominated by France in the 17th century. Britain took control in 1803, and it remained a British possession until 1967, when it was granted associated statehood. St. Lucia achieved complete independence in 1979.

The population has been growing steadily, yet with a gradually decreasing rate of change. Persistent out-migration and a tendency toward a lower birthrate may account for this trend. In 1970, the population was estimated at 100 893, increasing to about 116 500 in 1978 (Table 1).

The capital, Castries, in the northwest of the island, is the principal urban centre. Although the balance of the population is primarily rural, there are towns and villages

Table 1. St. Lucia population, 1970-1978.<sup>a</sup>

Year	Population	Annual growth (%)
1970	100893	—
1971	103000	2.0
1972	105900	2.8
1973	108000	1.9
1974	109900	1.7
1975	111800	1.7
1976	113600	1.6
1977	115000	1.2
1978	116500	1.3

<sup>a</sup> Source: St. Lucia Annual Statistical Digest.

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throughout the island; the principal ones being Micoud, Vieux Fort, Dennery, Soufriere, and Laborie.

St. Lucia has not lost its French-Creole culture, which permeates all aspects of St. Lucian lifestyle. The majority of the place names are of French origin and, although the official language is English, most St. Lucians speak Creole, a French dialect common to the region.

Education is provided in government and private schools, ranging through primary schools, secondary schools, comprehensive-training schools, and teacher-training schools to a University of the West Indies centre. Primary education is free at public schools for all children.

A recent Caribbean Development Bank (CDB) study estimated St. Lucia's gross domestic product (GDP) at E.C. \$108 million for 1975, E.C. \$197 million for 1978, and E.C. \$223 million for 1979. This last value translates into a per-capita GDP of about E.C. \$1900, or U.S. \$720 (Table 2).

St. Lucia's economy is one of the strongest among the small LDCs (less developed countries) of the eastern Caribbean. Problems common to the region that have affected its development include:

- It is a very open economy, dependent largely on imports, which consistently exceed exports (Table 3). Nevertheless, the balance appears to be gradually shifting in favour of exports as the economy diversifies and expands. Leading import items during this period were petroleum products, motor vehicles, and refined sugar.

- Insufficient work to satisfy growing employment demands remains a pressing problem. The unemployment rate is reported to be around 12% but is actually much higher, particularly among the younger segments of the population.

- Bananas are St. Lucia's main export. Because of the obvious dangers of a monoculture economy, the island needs to diversify its agricultural production, which now accounts for almost 85% of St. Lucia exports. The small independent farmer produces most of the crop.

- There has always been a moderately successful industrialization program. It

Table 2. Sectoral origin of GDP at current market prices.<sup>a</sup>

Economic sector	1975		1978		1979 <sup>b</sup>	
	E.C. \$ (million)	%	E.C. \$ (million)	%	E.C. \$ (million)	%
Agriculture & fisheries	16.1	14.9	28.5	14.4	30.8	13.8
Mining & quarrying	1.5	1.4	2.3	1.2	2.9	1.3
Manufacturing	7.4	6.8	14.1	7.1	16.4	7.4
Electricity & water	2.8	2.6	4.6	2.3	5.2	2.3
Construction	11.2	10.4	32.4	16.4	22.1	9.9
Wholesale & retail trade	15.6	14.4	27.7	14.0	34.7	15.6
Hotels & restaurants	2.7	2.5	13.2	6.7	17.1	7.7
Transport & communications	8.5	7.9	12.8	6.5	16.6	7.4
Government services	19.0	17.6	28.1	14.2	33.6	15.0
Banking, insurance & real estate	16.3	15.0	24.4	12.4	31.7	14.2
Miscellaneous services	7.0	6.5	9.2	4.8	12.0	5.4
<b>Total GDP</b>	<b>108.1</b>	<b>100.0</b>	<b>197.3</b>	<b>100.0</b>	<b>223.1</b>	<b>100.0</b>

<sup>a</sup> Source: Ministry of Finance, based on Caribbean Development Bank mission estimates.

<sup>b</sup> Estimated.

Table 3. Merchandise imports, exports, and balance of trade (E.C. \$000).<sup>a</sup>

	Exports	Imports	Balance of trade	Exports (as % of imports)
1966	12108.8	28386.1	- 16277.3	42.7
1967	11669.9	29545.4	- 17880.5	39.5
1968	12552.6	29452.2	- 16899.6	42.6
1969	16543.0	41500.5	- 24957.5	39.9
1970	8725.5	54585.2	- 45859.7	16.0
1971	12227.1	68998.4	- 56771.3	17.7
1972	15117.7	68690.2	- 53572.4	22.0
1973	19233.5	74170.1	- 54936.5	25.9
1974	32908.8	91114.9	- 58206.1	36.1
1975	34453.1	100424.9	- 65971.8	34.3
1976	49911.3	126710.0	- 76798.7	39.4
1977	60983.3	160232.0	- 99248.7	38.1
1978	97520.0	219420.0	- 121900.0	44.4
1979	84270.0	268180.0	- 183910.0	31.4

<sup>a</sup> Source: St. Lucia Statistical Trade Digest.

is not nearly large enough, however, to meet the need for diversification, income substitution, and new jobs. Industry in St. Lucia is still in its infancy; to expand, it needs much more private and public investment.

- St. Lucia has been devastated periodically by tropical storms, particularly during 1979 and 1980 when hurricanes virtually destroyed the island's banana crop and caused severe damage throughout the economy.

The proximity of St. Lucia to the major tourist markets of North America, South America, and Europe, its stable politics, secluded harbours, varied scenery, and pleasant climate attract an increasing number of visitors. The potential for the development of tourism is clear.

### *The research project*

St. Lucia was chosen as a research setting for several reasons. First, it is one of the larger islands in the English-speaking eastern Caribbean and has an important political and economic role in the region. Second, compared to the economies of neighbouring islands, St. Lucia's economy is relatively diversified and stable. Agriculture is significant, and part of the production is consumed by foreign tourists. Government has met with some success in expanding the industrial base. On the other hand, the economy still depends heavily on bananas and other plantation crops, and unemployment remains undesirably high. Tourism, a young and dynamic activity, can further diversify the economy and so alleviate the unemployment problem. Finally, government and business people indicated a strong interest in this study. Their cooperation and support are deeply appreciated.

This study was based on analysis of visitor surveys and review of the transactions of hotels and other private establishments providing goods and services to tourists. Recently developed national statistics provided a macroeconomic framework for the analysis. Primary and secondary information obtained through this research gave a qualitative and quantitative picture of the island's tourist industry and its relationship to the local economy. Primary data sources included:

- Visitor expenditure and motivational surveys, conducted during summer 1977 and winter 1978 at the two airports, Vigie and Hewanorra. These surveys were designed to reveal the background, opinions, and spending patterns of stayover visitors. A total of 2937 valid survey forms were completed and analyzed, representing 5911 visitors, about 8.6% of all visitors to the destination that year. Of these, 1357 forms representing 2889 respondents were collected during summer 1977, and 1580 forms representing 3022 respondents were collected in winter 1978.

- Cruiseship passenger surveys conducted at dockside during January-February 1979. The surveys were designed to obtain estimates of expenditures by this category of visitor. A total of 70 valid forms were completed, representing 148 passengers, about 0.3% of all cruise passengers during that year. This sample is small; time and resource constraints prevented collection of a 1% sample, as intended. This shortcoming is counterbalanced somewhat by the apparent homogeneity of cruise passengers.

- Members of the St. Lucia Hotel Association surveyed on their financial operations. Data were obtained for all large hotels and most smaller ones for 1975-1978. Detailed information included operating revenues and costs by department or category, fixed expenses, debt, and management structure. This information was related to occupancy information available for the same period, permitting calculation of important financial ratios.

- Three hotel employment surveys conducted to determine the volume and structure of employment within the sector. First, the number, comparative level of responsibilities, departmental assignation, and origin of employees were determined in interviews with personnel and other management during January-February 1979. Second, the files of the National Insurance Scheme (NIS) were examined to ascertain changes in numbers of employees at specific hotels. Third, a fairly large, appropriate sample of employees from several hotels was selected and the individuals interviewed.

- Operational, employment, revenue, and cost structures for restaurants, shops, transport and tour companies, and other establishments that provide services used by tourists.

- Interviews with top managers of business and directors of government agencies involved in tourism. These yielded first-hand information on current trends and issues of importance to the industry.

In addition to these six primary sources, various secondary sources were consulted at various times. The St. Lucia Tourist Board provided visitor arrival statistics. The St. Lucia Hotel Association gave fairly detailed hotel occupancy figures from its files. Data concerning population, employment, and various economic and financial indicators were obtained from the government's statistical and other departments. Finally, national accounts statistics were obtained from a recent study by the Caribbean Development Bank.

These primary and secondary data were applied to estimate gross receipts from tourism, contribution to GDP and to foreign-exchange earnings, employment generation, and government revenues through tourism.

## *St. Lucia's tourism industry*

### *Product characteristics*

The "Helen of the Caribbean," as St. Lucia is endearingly called by its people, offers an attractive tourism product: good climate and beaches, lush tropical landscape and arresting mountain and sea views, outstanding yacht cruising, inexpensive

arts and crafts, and warm, welcoming people.

In addition to beach activities, visitors can take various island tours by land and sea, shop for local arts and crafts, or enjoy the restaurants and limited but interesting nightlife. Visitors can spend 5-10 days fairly actively before running out of things to do.

St. Lucia has two international airports. Hewanorra, near Vieux Fort, is a long-haul airport, capable of handling jumbo jets; it has ample, modern passenger- and luggage-handling facilities. Distance from Castries and the cluster of resort hotels poses disadvantages in the time and cost involved in taking passengers from the airport to the hotels. The airport at Vigie, close to Castries, handles propjet and small jet aircraft. Cruiseships arrive in St. Lucia right alongside the centre of Castries. A new port facility is being built close by to replace the original one.

St. Lucia has a fairly developed road network, particularly considering the difficult topography and the limited resources available in the island for road construction and improvement. Electricity, water, and sewerage, as well as other public services, appear adequate to serve the current needs of the tourist industry. Significant expansion in hotel plant will definitely require additional public services.

### *Tourism profile*

St. Lucia's image in international tourism is one of colourful natural beauty and harmony, with just enough sophistication to attract the well traveled vacationer. It does not attempt to compete on the same grounds with the large, more resourceful nearby tourist destinations, such as Barbados, Jamaica, or the Bahamas, yet its modest level of promotion appeals successfully to special markets.

The principal markets for stayover tourists to St. Lucia are the United States and Europe, followed by Canada and other West Indian countries (Figs. 1 and 2). Overall, the flow of stayover visitor arrivals almost tripled in the 8 years 1970-1978, and has since continued growing.

European tourism has been the star performer, having increased its share of the total market from 16.1% in 1970 to 24.4% in 1978; European arrivals increased from fewer than 5000 in 1970 to more than 18 000 in 1978, a 20% annual growth rate. In fact, St. Lucia was one of the first eastern Caribbean tourist destinations successful in tapping the European market. St. Lucia started promoting European tourism even before 1975, when most other Caribbean destinations had yet to discover Europe as a potentially profitable market.

Average length of stay is about 7.5 nights, yielding an estimated 562 750 visitor nights during 1978. As shown in Table 4, an increasing proportion of visitors stays in international-class hotels rather than private homes or commercial accommodations not belonging to the St. Lucia Hotel Association.

Seasonality is fairly pronounced, the strongest months being December through April and July, the weakest ones June and September. This pattern, common to the Caribbean, appears to be smoothing out somewhat in the case of St. Lucia.

On the other hand, there appears to be a great reliance on package-tour visitors coming primarily on charter flights. The industry as a whole, and several hotels in particular, depend to an inordinate degree on this type of traffic. Although this is part of a worldwide trend in tourism, St. Lucia may become more dependent on this type of market than neighbouring Caribbean destinations. Although large volumes of visitors brought by these charters may be beneficial in the short term, it may not be optimal, in the long run, to ignore the development of other nonpackage travel markets.

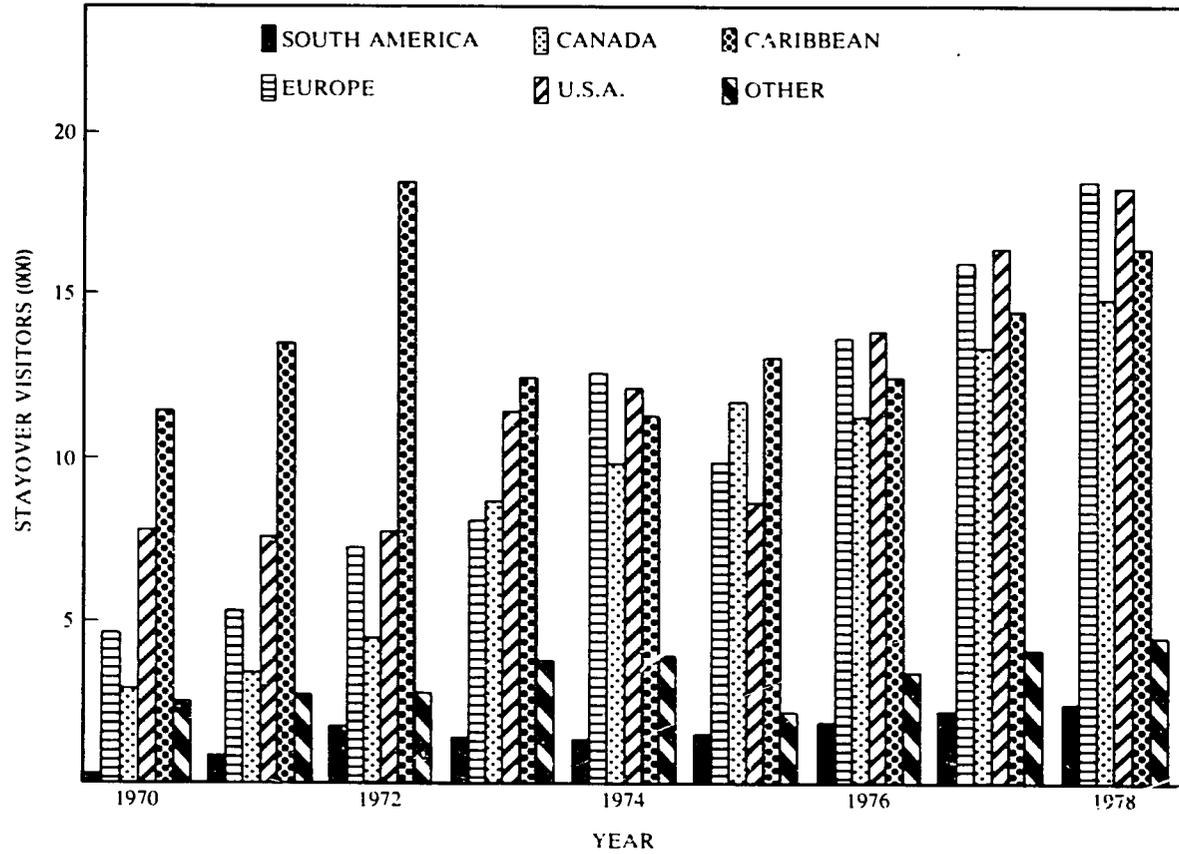


Fig. 1. Stayover arrivals by country of origin, 1970-1978. Source: St. Lucia Tourist Bureau.

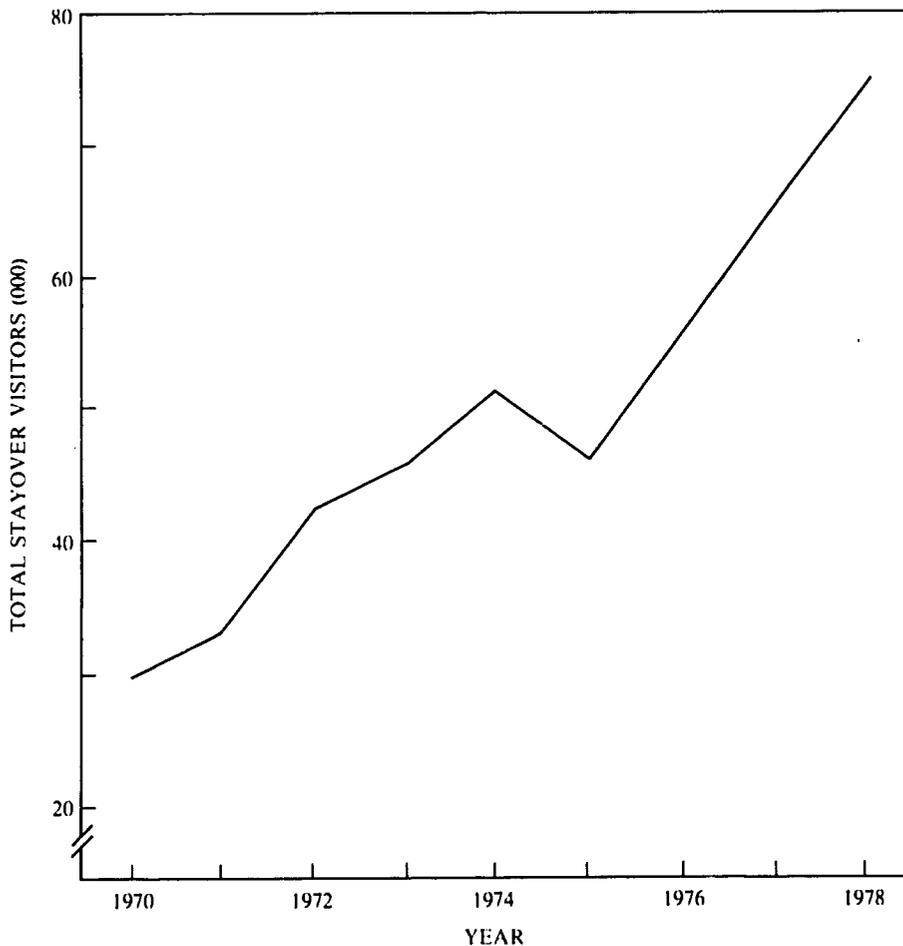


Fig. 2. Total stayover arrivals, 1970-1978. Source: St. Lucia Tourist Bureau.

Table 4. International visitor nights.<sup>a</sup>

Year	Stayover visitor arrivals	Total visitor nights	In St. Lucia Hotel Association establishment		In private homes or unassociated accommodations	
			No.	%	No.	%
1975	46736	350500	201200	57.4	149300	42.6
1976	56440	423300	290700	68.7	132600	31.3
1977	66371	497800	366700	73.7	131100	26.3
1978	75033	562750	470000	83.5	92750	16.5

<sup>a</sup> Source: Author's estimates, based on figures provided by the St. Lucia Tourist Bureau and St. Lucia Hotel Association.

Cruiseships and yacht tourism are another dimension of St. Lucia tourism (Table 5). Their numbers and economic impact are smaller than those of stayover tourism, but they do contribute measurably to the local economy while rounding the overall

Table 5. Cruiseship and yacht statistics, 1972-1977.<sup>a</sup>

Year	No. of cruiseships	No. of passengers	No. of yacht calls	No. of yacht days
1972	87	37367	1250	10515
1973	109	46845	1368	12312
1974	97	43145	1633	14715
1975	86	55448	1394	12546
1976	80	69084	1884	15072
1977	75	53287	na	na

<sup>a</sup> Sources: St. Lucia Tourist Bureau; St. Lucia Statistical Digest.

product that St. Lucia has to offer. Yachting has assumed increasing popularity due to the island's proximity to the Grenadines, one of the outstanding yachting areas in the world. Sailboat charter companies operate out of Rodney and Marigot bays.

### *The hotel plant*

During the last 10-15 years, the island's tourist industry has grown dynamically. As of 1979, some 15 hotels of different sizes and ambiance, located in three well defined areas, provided about 1100 rooms of international quality. Visitors can choose from large, enclave resorts to small, family-run establishments; prices vary accordingly.

According to the St. Lucia Tourist Bureau, the following hotels are located in the Castries area and along the northern coastal strip:

	No. of rooms	Location	Miles from Castries
Hotel La Toc	164	La Toc	3
La Toc Village	50	La Toc	3
The St. Lucian Hotel	185	Gros Islet	6.5
Caribblue (Steigenberger)	104	Cap Estate	9
Halcyon Beach Club	88	Choc Bay	3
Malabar Beach Hotel	86	Vigie	2
Halcyon Sands	57	Vigie	2
Total	734		

Additional tourist rooms are available in several small hotels, apartments, and guesthouses in the area.

At Vieux Fort, on the southern tip of the island, 40 miles from Castries and close to Hewanorra's international airport, the Halcyon Days Hotel is the largest in St. Lucia, with 256 rooms. This hotel caters largely to package tours and charter groups. Two other small hotels, the Cloud's Nest with 40 rooms and the Kimatrai with 18 rooms, complete the offering in this region.

There is only one hotel in Marigot Bay, the Hurricane Hole. Marigot Bay, a protected harbour, attracts significant numbers of pleasure boats. The Soufriere area has the 24-room Anse Chastenet. The 10-villa Dasheen Live-Inn Resort was built using local materials and an unusual architectural style. Several apartments and guesthouses are also available.

## *Economic impact of tourism*

### *Tourist expenditures and receipts*

Money spent by tourists for goods and services obtained in St. Lucia (tourist expenditures) translates into moneys received by the destination (tourist receipts), assuming that all expenditures are paid in St. Lucia or brought into the country as reimbursement for goods and services purchased overseas but consumed in St. Lucia.

Overall tourist receipts are the sum of receipts derived from:

- Visitors staying in hotel accommodations. (For the purpose of this analysis, these accommodations will be in establishments of members of the St. Lucia Hotel Association.)

- Visitors staying in private homes or unassociated commercial accommodations.

- Cruiseship passengers.

- Airliner landing fees.

- Airport departure taxes.

These are all the direct sources of receipts from tourists identified in this analysis. There may be other sources, such as port landing fees for cruiseship passengers; however, were these receipts in fact realizable, data for analysis did not become available. They would be fairly small in any case.

To arrive at an overall estimate of yearly tourist receipts and expenditures, the study used a model similar to that used to obtain expenditure estimates for Aruba (please see that chapter for a more detailed explanation of the methods used). Results from the visitor expenditure and motivational surveys and from the cruiseship passenger surveys, described earlier, were used as inputs to the model. Visitor statistics were obtained from the St. Lucia Tourist Board. Numbers of visitor nights registered in St. Lucia Hotel Association member properties during the given period were obtained from that organization. Visitor-night statistics as well as per-capita daily expenditures were further subdivided by visitor origin. Regions of origin for which this information was disaggregated are: the United States, Europe (including the United Kingdom), Canada, Commonwealth Caribbean, and the rest of the world.

Table 6. Estimated average per-capita daily expenditure, segregated by type of expenditure for stayover visitors not using package tours.<sup>a</sup>

Category	Summer 1977			Winter 1977-1978		
	Expenditure (U.S. \$)	% of total spent	No. of respondents	Expenditure (U.S. \$)	% of total spent	No. of respondents
All expenditures	44.70	100.0	967	53.75	100.0	909
Rooms & meals in hotels	30.16	67.5	869	38.85	72.3	782
Other restaurants <sup>b</sup>	6.23	13.9	806	6.54	12.2	738
Local transport	3.04	6.8	783	3.12	5.8	759
Entertainment	1.38	3.1	778	1.47	2.7	733
Shopping	3.22	7.2	792	3.32	6.2	724
Miscellaneous	0.67	1.5	651	0.43	0.8	629

<sup>a</sup> Source: St. Lucia visitor expenditure and motivational survey.

<sup>b</sup> Includes all purchases of food and beverages in restaurants, bars, and nightclubs outside the hotel in which the visitor is staying.

Survey data were complemented with secondary data, such as landing charges and airport departure taxes.

Various estimates of gross annual tourist expenditures are presented in Tables 6-9. Based on the approach outlined above, total tourist receipts (expenditures) were estimated at E.C. \$50 million for 1977 and E.C. \$66.9 million for 1978. Receipts

Table 7. Estimated per-capita daily expenditures by visitors staying at hotels of members of St. Lucia Hotel Association (U.S. \$).<sup>a</sup>

Origin	January-March		May-November		Year average
	March	April	November	December	
1977					
United States	50	48	45	55	48
Europe	46	40	35	50	39
Canada	37	36	35	40	37
Commonwealth Caribbean	40	38	38	45	39
Rest of world	45	45	45	50	46
1978					
United States	55	52	49	60	53
Europe	50	44	38	54	44
Canada	40	39	38	44	41
Commonwealth Caribbean	45	43	43	49	44
Rest of world	50	49	48	54	50

<sup>a</sup> Sources: St. Lucia visitor expenditure and motivational survey; Author's estimates.

Table 8. Total expenditures of visitors staying at hotels of members of St. Lucia Hotel Association.<sup>a</sup>

Origin	Visitor nights		Daily average per-capita expenditure		Total expenditures (E.C. \$ 000)
	No. (000)	% of total	Daily average per-capita expenditure		
			U.S. \$	E.C. \$	
1977					
United States	110.0	30	48	127	13971.3
Europe	106.3	29	39	103	10953.3
Canada	80.7	22	37	98	7908.6
Commonwealth Caribbean	55.0	15	39	103	5665.0
Rest of world	14.7	4	46	127	1862.8
Total	366.7	100	41	110	40361.0
1978					
United States	141.0	30	53	140	19740.0
Europe	136.3	29	44	117	15947.1
Canada	103.4	22	41	109	11270.6
Commonwealth Caribbean	70.5	15	44	117	8248.5
Rest of world	18.5	4	50	133	2500.4
Total	470.0	100	46	123	57706.6

<sup>a</sup> Sources: St. Lucia visitor expenditure and motivational survey; Author's estimates.

Table 9. Tourist receipts from all sources.<sup>a</sup>

Source	1977		1978	
	E.C. \$ (000)	% of total	E.C. \$ (000)	% of total
Visitors staying in hotels of St. Lucia Hotel Association	40361.0	80.7	57706.6	86.2
Visitors staying in private or unrecognized accommodations	6948.3	13.9	5379.5	8.0
Cruiseship passengers	1976.9	4.0	2637.0	3.9
Landing charges	403.9	0.8	615.2	1.0
Airport departure taxes	321.0	0.6	572.6	0.9
<b>Total</b>	<b>50011.1</b>	<b>100.0</b>	<b>66910.9</b>	<b>100.0</b>

<sup>a</sup> Source: Author's estimates.

from visitors staying in hotel accommodations are the largest contributor to overall tourist receipts, E.C. \$40.36 million (80.4% of total) for 1977 and E.C. \$57.7 million (86.2% of total) for 1978.

U.S. visitors staying in hotels are estimated to have spent approximately E.C. \$14 million in St. Lucia during 1977 and E.C. \$19.7 million during 1978, whereas visitors of European origin are estimated to have spent approximately E.C. \$11 million in 1977 and E.C. \$16 million in 1978. Canadians spent an estimated E.C. \$7.9 million during 1977 and E.C. \$11.3 million during 1978, and West Indian (Commonwealth Caribbean) tourists are estimated to have contributed E.C. \$5.7 million during 1977 and E.C. \$8.2 million during 1978. Visitors staying in private homes or unassociated commercial accommodations in St. Lucia are estimated to have spent a total of E.C. \$6 948 300 during 1977 and E.C. \$5 379 500 during 1978.

Altogether, stayover visitors spent an estimated E.C. \$63.7 million (including departure taxes) during 1978. Per capita, this translates into an average of E.C. \$112.25 (U.S. \$42.35) spent by each stayover visitor per day while in St. Lucia during 1978.

According to the last reliable data available to this study, St. Lucia received cruiseships containing 53 287 passengers during 1977. A moderate growth pattern was assumed for 1978, resulting in an estimate of 65 000 passengers in cruiseships touching St. Lucia during 1978. The cruiseship survey conducted as part of this research provided an estimate of U.S. \$17 as the average expenditure per cruiseship passenger as of late 1978 to early 1979. Allowing for inflation, this amount was adjusted downward to U.S. \$14 for passengers arriving during 1977 and to U.S. \$15.30 for those arriving throughout 1978. Total expenditures by cruiseship passengers are thus estimated at E.C. \$1.977 million during 1977 and E.C. \$2.637 million during 1978.

### *Contributions of tourism to gross domestic product*

The contribution of tourism to the gross domestic product of St. Lucia is measured by value added directly by various subsectors of the industry, plus value added indirectly in other sectors of the local economy:

- Direct value added consists of wages and salaries, rent, interest, and profits paid to persons living in St. Lucia. Payments made to individuals or companies based in other countries are excluded.

● Indirect value added is the additional value added in other sectors of the economy as a result of local purchases made by businesses (shops, taxis, tour companies, travel agencies, diving outfits, etc.) receiving the initial tourist expenditures and the chain reaction of further purchases this engenders. Furthermore, a considerable number of other establishments and persons, not individually identifiable, benefit from the tourist dollar; these include farmers and hawkers selling their produce to hotels or directly to visitors, construction workers employed in the building of hotels, villas, and condominiums, doctors, lawyers, policemen, and civil servants employed because of tourism. The size of the indirect value-added elements is a reflection of the extent to which tourism is linked to the rest of the economy.

For the purposes of this study, direct contributions of tourism to GDP were confined to those by hotels and restaurants; indirect contributions are those by other economic sectors, among them transport and communications, construction, wholesale and retail trade, government services, manufacturing, and agriculture.

The influence of tourism over the economy extends beyond hotels and restaurants. Tourists use taxis and other transport means; the construction sector builds tourist facilities; many markets, souvenir shops, and various wholesale and retail stores in St. Lucia owe their business to tourism. It is difficult to distinguish how tourism affects directly or indirectly the total economy. Thus, the above definition is narrow and somewhat artificial, applied largely as a convenience to be able to use existing national-account estimates without time-consuming modifications.

#### ***Direct contributions***

Tourists concentrate their activities and expenditures in a fairly narrow range of places and establishments. Typically, they spend most of their money at the hotel where they stay. Restaurants are another major magnet for tourists. Thus, the hotel and restaurant sector bears the most direct, close link to tourism.

According to a technical assistance mission from the Caribbean Development Bank (see Table 2), the hotel and restaurant sector added value to the economy of St. Lucia of E.C. \$2.7 million in 1975, E.C. \$13.2 million in 1978, and E.C. \$17.1 million in 1979. The sector increased its share from a paltry 2.5% of total GDP in 1975 to a more significant 6.7% in 1978 and 7.7% in 1979. Although it ranked next to lowest-contributing in 1975, by 1979, this sector had climbed to sixth of 11 sectors. This does not take into consideration other direct and indirect contributions from tourism to the overall value added to the economy.

The hotel and restaurants sector achieved high rates of growth every year since 1975; in fact, it was the fastest growing sector year after year.

#### ***Indirect contributions***

Estimates of direct and indirect contributions of tourism to GDP were obtained by assigning coefficients to each sector of the economy; these coefficients represent the proportion of the sector's contribution to GDP attributable to tourism.<sup>1</sup>

Using this approach, I estimate that, in 1978, tourism, directly and indirectly, accounted for about E.C. \$36.8 million, or 18.7% of GDP (Table 10). As much as

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<sup>1</sup> These coefficients represent the author's own evaluation, supported by available data, of how tourism quantitatively interacts with other sectors of the island's economy. Clearly, the results are grounded on the reliability of these coefficients; thus, inaccuracies may arise to the extent that these coefficients were subjectively derived. Nevertheless, the assumptions used by the author are generally conservative and are felt to provide reliable results.

Table 10. Estimate of total contribution of tourism to the economy, 1978.<sup>a</sup>

Economic sector	Sectoral distribution of GDP (E.C. \$ million)	Contribution of tourism to economic sectors		Distribution of tourism contribution to GDP (%)
		E.C. \$ million	% <sup>b</sup>	
Agriculture & fisheries	28.5	1.43	5	3.9
Mining & quarrying	2.3	—	—	—
Manufacturing	14.1	0.28	2	0.8
Electricity & water	4.6	0.69	15	1.9
Construction	32.4	8.10	25	22.0
Wholesale & retail trade	27.7	4.16	15	11.3
Hotels & restaurants	13.2	12.95	98	35.2
Transport & communications	12.8	3.20	25	8.7
Government services	28.1	1.40	5	3.8
Banking, insurance & real estate	24.4	3.66	15	9.9
Miscellaneous services	9.2	0.92	10	2.5
<b>Total</b>	<b>197.3</b>	<b>36.79</b>	<b>18.7</b>	<b>100.0</b>

<sup>a</sup> Sources: Caribbean Development Bank mission estimates (column 1); Author's estimate (columns 2, 3, and 4).

<sup>b</sup> Notes to Column 3 regarding the coefficients applied as a percentage contribution of tourism to the value added of the various sectors:

- Agriculture & fisheries: As a fertile and productive country, St. Lucia should be able to provide a considerable volume of vegetables, fruits, poultry, and fish to local hotels and restaurants. However, severe problems in quality and size control, distribution, marketing, and processing effectively constrain local tourist establishments from purchasing more of these products.

- Mining & quarrying: No linkages.

- Manufacturing: The types and quantities of goods now manufactured in St. Lucia cannot be used in local tourist-oriented establishments.

- Electricity & water: Per capita, tourists are major users of electricity and water. Although they make up about 1% of the total number of resident days (local population plus tourists), their high consumption of utility services, coupled with the induced demand by households earning their incomes principally through tourism, point conservatively to a 15% coefficient.

- Construction: This sector is intimately related to tourism through building of hotels, villas, condominiums, and commercial and other facilities directed at tourists, as well as housing for families earning their income in hotels and other tourist-related activities. The construction industry has enjoyed booms during periods of tourism expansion and contracted during periods when tourism decreased or remained stable.

- Wholesale & retail trade: This sector is closely linked to tourism. However, visitors to St. Lucia seldom buy directly from stores, and hotels do most of their own importing. Counteracting this, the various arts and crafts, textile shops, boutiques, and other retail establishments, all included in this sector, derive most of their sales from visitors.

- Hotels & restaurants: With little or no domestic clientele, hotels exist primarily for and because of international tourism. Likewise, most restaurants cater primarily to tourists; nevertheless, a small proportion of restaurant sales are to locals.

- Transport & communications: This sector is closely tied to tourism through taxi drivers, tour and bus operators, telephone and telegraph services, etc.

- Government services: Given the size of the civil service, the paucity of financial resources, and limited involvement in direct promotion of tourism, only a small contribution of tourism to value added by government can be justified.

- Banking, insurance & real estate: This sector provides substantive behind-the-scenes support to tourism by making available foreign exchange and financial services, as well as insurance for hotels, restaurants, and other shops directly or indirectly related to tourism. Moreover, services to buyers and sellers of residences oriented to the foreign market fall within this category.

- Total: Weighted average coefficient.

E.C. \$23.84 million is estimated to have been contributed indirectly by tourism through sectors of the economy other than the hotel and restaurant sector, which contributed E.C. \$12.95 million, placing tourism in a primary position among the island's industries.

These figures may be looked at from another standpoint. In 1978, average per-capita GDP was E.C. \$1700, within range of other small eastern Caribbean islands but rather low compared with other countries in the Caribbean. Without tourism, that figure would have been only E.C. \$1380. Thus, the importance of tourism for St. Lucia is undeniable.

### ***Income (GDP) multiplier of tourism***

The income multiplier of tourism is a measure of the amount of GDP generated by tourist expenditures. It is expressed as a ratio that, when multiplied by the total volume of tourist expenditures, yields an estimate of the contribution of tourism to GDP.

In small and open economies, the value of the income multiplier rarely exceeds 1.0 and generally is 0.5-1.0. This is consonant with heavy dependence on imports and limited local production. An income multiplier well above 1.0 implies low reliance upon imports, heavy local production of consumer goods, and strong intersectoral linkages. This is not the case in this part of the Caribbean.

Based on previous calculations, the income multiplier of tourism was estimated, for 1978, at 0.55, by dividing the sum of direct and indirect contributions of tourism to GDP (E.C. \$36.8 million) by total gross tourist receipts (E.C. \$66.9 million).

This means that for every \$1.00 spent by tourists in St. Lucia, an estimated \$0.55 is contributed to gross domestic product. It is noted that GDP and income to national households were equated for the sake of simplicity. This is not strictly accurate as GDP includes certain payments (profits to foreign-owned companies and wages and salaries of nonnationals) that do not accrue to nationals; consideration of these factors would yield a slightly higher income-to-nationals (ITN) multiplier.

### ***Employment generated by tourism***

#### ***Direct employment***

Direct employment generated by tourism in St. Lucia is defined, for the purposes of this report, as that employment generated by hotels, restaurants, bars, and nightclubs.

During 1978, tourism directly employed approximately 2240 people throughout St. Lucia. Of these, approximately 1840 worked in hotels, and 400 in restaurants, bars, and nightclubs.

Data from the St. Lucia Hotel Association and individual member and nonmember hotels indicate that the major nine hotels in the island employed, on the average, about 1600 people in 1978. These figures may be somewhat higher during the winter. Data specific to hotel employment, obtained through surveys, are presented in Appendix A. Research by the author indicated that approximately 240 additional people were employed by small hotels and guesthouses that are not members of the St. Lucia Hotel Association.

#### ***Indirect and induced employment***

In this study, indirect employment relates to people working in other tourism-related activities (such as taxis, shops, watersports, food wholesale companies, and travel agencies) that are largely, though not entirely, dependent on tourism.

Table 11. Employment directly and indirectly generated by tourism, 1978. <sup>a b</sup>

Employment sector	Gross GDP (E.C. \$ 000)	No. of workers	GDP per worker (E.C. \$)	Contribution of tourism to GDP (E.C. \$ 000)	Employment generated by tourism	
					No. of workers	%
Agriculture, forestry & fishing	28500	11100	2570	1430	555	10.7
Mining & quarrying	2300	25	92000	0	—	—
Manufacturing	14100	3500	4030	280	70	1.3
Electricity & water	4600	430	10700	690	65	1.3
Construction	32400	3400	9530	8100	850	16.4
Wholesale & retail trade	27700	2000	13850	4160	300	5.8
Hotels & restaurants	13200	2240	5900	12950	2195	42.3
Transport & communications	12800	2300	5570	3200	575	11.1
Government services	28100	4500	6250	1400	225	4.3
Banking, insurance & real estate	24400	525	46480	3660	80	1.5
Miscellaneous services	9200	2750	3350	920	275	5.3
<b>Total</b>	<b>197300</b>	<b>32770</b>	<b>6020</b>	<b>36790</b>	<b>5190</b>	<b>100.0</b>

<sup>a</sup> Sources: GDP estimates — Caribbean Development Bank Mission: Employment — Central Planning Unit, Government of St. Lucia: all others — author's estimates.

<sup>b</sup> Based on published GDP and employment data segregated by economic sectors, an average worker productivity ratio (GDP value added per worker) is given in Column 3. Column 5 represents estimates of direct and indirect employment generated by tourism: these are obtained by dividing estimates of tourism's contribution to GDP (Column 4), by sector, by the average productivity value in Column 3.

Table 12. Estimates of tourism's contribution to government revenues, 1978-1979.<sup>a</sup>

Tax or other source	Government revenue estimates (E.C. \$ 000)	% assigned to tourism <sup>b</sup>	Revenues attributed to tourism (E.C. \$ 000)	% of total revenue from tourism
Entertainment tax	100	75	75.0	0.8
Liquor & other licenses	110	30	33.0	0.4
Aliens' landholding licenses	650	75	487.5	5.4
Hotel occupancy tax	1300	100	1300.0	14.4
Stamps	1300	5	65.0	0.7
Landing charges	700	90	630.0	7.0
Airport rentals	60	90	54.0	0.6
Airport facilities	60	90	54.0	0.6
Airport departure tax	600	90	540.0	6.0
Work permits	100	60	60.0	0.7
Import duties	14500	15	2175.0	24.0
Consumption duties	9500	5	475.0	5.3
Excise duties	650	15	97.5	1.1
Stamp & customs duties	5500	15	825.0	9.1
Income tax	14500	15	2175.0	24.0
Nontourist related sources	9370	0	0.0	0.0
<b>Total</b>	<b>59000</b>	<b>—</b>	<b>9046.0</b>	<b>100.1</b>

<sup>a</sup> Sources: Revenues -- Government of St. Lucia; Contributions -- Author's estimates.

<sup>b</sup> Notes on column 2:

- Entertainment tax: This tax is applied either as a percentage or on a fixed-fee basis to establishments or persons providing entertainment at a price. Tax is levied on tourism-related entertainment activities, such as hotel shows, as well as on cinemas and other types of entertainment aimed at the local population.

- Liquor & other licences: This levy affects purchases by both tourists and residents, with a heavier weighting to the local population.

- Alien's landholding licences: This is levied on land, houses, and condominiums held by foreigners, most of whom (however, not all) were tourists when they purchased the land or became interested in land as a result of their temporary visit to St. Lucia. A portion of these licences are levied on foreigners in St. Lucia for purposes other than tourism.

- Hotel occupancy tax: Only hotel guests are subject to this tax.

- Sale of stamps: Foreign tourists use the local mails fairly frequently to send letters and postcards during their stay. Tourists contribute about 1% to the number of resident days but probably use the mails 3-4 times more than the local population. Likewise, hotels and tourist-related establishments buy stamps for their communications.

- Landing charges, rental of airport premises, airport facilities & airport taxes: These categories cover government revenues generated through the operation of airport facilities at Vigie and Hewanorra. Because these facilities operate almost entirely, though not exclusively, to serve the flow of tourists to the island, the assigned ratio is 90%. It does not reach 100%, however, as St. Lucian travellers, cargo planes, and other movements not entirely limited to tourism use these facilities and pay related fees and taxes.

- Work permit fees: The government of St. Lucia charges fees to allow foreigners with certain needed skills to work for a given time on the island. This affects tourism as well as other economic activities; however, given the structure of the local economy and the tendency of hotels to bring in foreign management personnel, the assigned ratio is 60%.

- Import, excise & stamp duties: These are levies on imported goods entering the country. The ratio attributed to revenues from these sources is fairly conservative, and well in line with tourism's more-than-18% contribution to GDP.

- Consumption duties: With such a high rate of consumption, tourists indirectly pay consumption duties at a much higher per-capita rate than the local population.

- Income tax: Tourism directly or indirectly generates as much as 18-20% of the island's employment. These people depend largely on tourism for their livelihood, and pay taxes on their earned income. Considering that the average wage levels and productivity of tourism-related income is close to the island-wide average, an assigned ratio of 15% is adequate, or even somewhat conservative.

Induced employment relates to people working in endeavours only peripherally related to tourism, though still somewhat influenced by it. Included in this category are the construction trades, professionals such as doctors who serve hotel employees and an occasional tourist, merchants, gasoline station attendants, etc. Cyclical variations in the volume of tourists or their expenditures do not necessarily affect the actual numbers working in such jobs, but definitely affect their level of earnings.

Estimates for employment indirectly generated by tourism or induced by it were obtained by using a simplified allocation procedure similar to that used to obtain the proportion of GDP indirectly derived from tourism. This derived approach is illustrated in Table 11.

Based on this approach, I estimated total employment (direct, indirect, and induced) generated by tourism as 5190 jobs, or 15.8% of the total of 32 770 jobs in St. Lucia's workforce for 1978. Indirect and induced employment generated by tourism is estimated at 2995 jobs (or 9.1% of total employment) with the balance of 2195 jobs being direct employment in the restaurant and hotel sector.

Average productivity of employees in the hotel and restaurant sector was estimated at E.C. \$5900 per capita for 1978. In other words, the average employee working in the various hotels and restaurants on the island produced approximately E.C. \$5900 in value added to the economy. This figure is remarkably close to the average productivity figure for the whole working force (see Column 3, Table 11).

Average productivity per worker in the hotel and restaurant sector rates above productivity in the agricultural, manufacturing, transport and communications, and miscellaneous sectors, but considerably below that of the mining and quarrying, finance (banking, insurance, and real estate), wholesale and retail trade, electricity and water, and construction sectors.

### *Employment multipliers*

The ratio of indirect to direct employment was calculated at 1.36; in other words, each job directly created in the hotel and restaurant sector will have the ripple, long-term effect of creating an additional 1.36 indirect and induced jobs.

The employment multiplier of tourism is defined as the number of jobs or fraction thereof directly and indirectly generated or induced per unit of tourist spending. For 1978, it was estimated that each E.C. \$1 million spent by tourists in the island would support 86.5 jobs. Looking at it from a slightly different angle, it is estimated that E.C. \$11 566 in additional gross tourist expenditures is required to support an additional job directly or indirectly related to tourism, or induced by it.

## *Tourism and government finances*

### *Government revenues generated by tourism*

The government of St. Lucia collects revenues from several sources. Some of these are directly linked to the tourism sector; others are linked to tourism only indirectly.

As shown in Table 12, the study estimates that tourism, directly and indirectly, generated approximately 18.2% (E.C. \$9.05 million) of all government revenues (E.C. \$49.63 million) for fiscal 1978-1979.

The ratio of government revenues to gross tourist receipts is calculated as 0.142 (average for 1977 and 1978); each \$1 spent by tourists in St. Lucia eventually generates around \$0.14 in government revenues.

	1977 (E.C. \$ million)	1978 (E.C. \$ million)
Total tourist expenditures	50.0	66.9
Government revenues related to tourism (direct and indirect)	7.5	9.0
Tourism multiplier of government revenues	0.150	0.135

### ***Government expenditure***

Tracing the allocation of government moneys from the general fund to a complex economic activity such as tourism poses significant methodological difficulties and yields results that are far from satisfactory.

To avoid these difficulties, the study traced only those government expenditures that can be pinned unambiguously to tourism. These relate to the costs of operating the St. Lucia Tourist Board (including staff, overseas offices, travel, and membership in tourism-oriented international and regional organizations) and the hotel trades school. The money spent should be viewed as a long-term capital investment to further the earning capability of the country, rather than as a current expense. The St. Lucia government contributed E.C. \$750 000 to the tourist board in fiscal 1978-1979. The hotel trades school was directly allocated E.C. \$23 220 for that year to pay three lecturers; an additional E.C. \$125 000 is calculated as its share of the approximately E.C. \$450 000 budget for common services at the Morne complex, to which the school is attached. Altogether, the tourist board and hotel trades school cost the government about E.C. \$925 000 in 1978-1979. Subtracting the expenditures for the board and the school leaves an estimated E.C. \$8.1 million net to government for provision of other services of benefit to both the resident and the visitor population of St. Lucia.

Other expenditures that government must face because of tourism are: maintenance of the airports and port; repair and upkeep of roads; salaries and other expenses of police, immigration, and customs officers; health facilities, etc. These expenditures, while of value to tourism, some in a fairly significant way, are for the benefit and welfare of St. Lucia residents. It is only a question of how much more it costs to develop and run these services due to the presence of tourists. With the exception of airport-related costs, the guess is that very little additional costs are involved, but this is not readily quantifiable.

The above should not be interpreted as an attempt to derive a cost-benefit analysis of tourism *vis-à-vis* the public sector of St. Lucia. More extensive and accurate information than now available would be required to explore cost-benefit relationships in depth.

### ***Foreign-exchange earnings and leakages***

Tourist expenditures are considered gross foreign-exchange earnings. Not all of these accrue to the destination. Some either flow out of the country almost immediately on receipt or never enter it. Imports and certain services needed to satisfy the immediate requirements of visitors are considered first-round leakages. These also include payments of travel agents' commissions, earnings of expatriate personnel, and other income retained abroad. These leakages tend to have minimum beneficial impact, as they barely circulate within the local economy; however, they are a necessary part of doing business in competitive international tourism markets and are unavoidable.

Foreign exchange that circulates at least once through the local economy before flowing out is included within the net earnings. Local businesses, households, and

government incur further expenditures; as the money circulates, it creates layers of value added and employment.

St. Lucia retained about 55% of the E.C. \$66.9 million of gross tourist receipts captured during 1978, or E.C. \$36.8 million. The balance, E.C. \$30.1 million, flowed out of the country as first-round leakages.

Estimated net foreign-exchange earnings can be compared with 1978 trade statistics. As shown in Table 3, St. Lucia exported about E.C. \$97.5 million worth of merchandise in 1978, while importing E.C. \$219.4 million. These figures exclude tourism, except to the extent that some of the merchandise imports were used by tourist-oriented establishments. The E.C. \$36.8 million in net foreign exchange contributed by tourism increased traditional merchandise exports by an additional 37.7%. Deducting E.C. \$30.1 million in first-round tourism imports from the total merchandise import bill, it can be further stated that net foreign exchange earned by tourism assisted in covering about 19.4% of all merchandise imported by St. Lucia.

### **Hotels**

St. Lucia's hotel sector is estimated to have captured E.C. \$43.7 million of foreign exchange during 1978. This represents about 65% of all tourism receipts by the island.

A review of financial statements of hotels, coupled with interviews with management, yields total imports of goods and services by hotels in St. Lucia during 1978 of close to E.C. \$15.6 million. This total is made up from six items (values in million E.C. \$): goods imported directly by hotels (5.3), goods imported by hotels through local intermediaries (4.0), advertising and promotion contracted abroad (1.5), commissions to the trade (2.6), repatriated compensation of expatriate personnel (2.0), and communications (0.2).

The above does not include other money flows also considered first-round imports, such as repatriation of profits by foreign equity and foreign exchange earned by St. Lucian hotels yet retained out of the country. While these leakages may be substantial, no corroborative data are available and any estimates are based on subjective assumptions. However, it is ventured that together these add E.C. \$3-5 million. All first-round leakages accountable by hotels therefore probably amounted to about E.C. \$20 million during 1978, or about 45% of all moneys spent by tourists at hotels. Thus, E.C. \$23.7 million of net foreign-exchange earnings were contributed by hotels to the economy of St. Lucia.

As part of this study, data concerning merchandise directly imported by hotels were obtained through the cooperation of St. Lucia's statistical department. Direct imports by hotels were isolated from the 1978 trade statistics and segregated by standard industrial trade code (SITC) categories and by month. Monthly import figures were obtained only for January through August 1978; estimates for the last 4 months were extrapolated from previous months. This information is summarized in Table 13; the figures cover costs of food, beverages, equipment, and other similar goods. The following points are noted:

- Of the 1978 import total of E.C. \$5.3 million, E.C. \$2.2 million (41.6%) consisted of food and beverage items; the balance, E.C. \$3.1 million, comprised machinery and equipment, paint, furniture, linen and silverware, capital replacements, etc.

- As expected from seasonal patterns, volume of food and beverage imports varies considerably from month to month. During the winter, hotels brought in food-related merchandise to the tune of E.C. \$247 000 per month, while the corresponding figure for the summer was only E.C. \$162 300 per month. Nonfood imports

Table 13. Direct imports by the hotel sector (E.C. \$ 000).<sup>a</sup>

Product	High season <sup>b</sup>		Low season <sup>b</sup>		Estimated total 1978 hotel imports	Imports as % of hotel	
	Average per month	Total for season	Average per month	Total for season		Food	Total
Meats	139.1	417.3	92.3	830.7	1248.0	56.7	23.6
Dairy products	30.1	90.3	10.8	97.2	187.5	8.5	3.5
Fish & crustaceans	19.6	58.8	11.2	100.8	159.6	7.2	3.0
Rice, breads & cereals	4.9	14.7	5.8	52.2	66.9	3.0	1.3
Fruits & fruit juices	10.1	30.3	5.6	50.4	80.7	3.7	1.5
Vegetables	19.8	59.4	16.2	145.8	205.2	9.3	3.9
Sugar, coffee & spices	8.0	24.0	4.2	37.8	61.8	2.8	1.2
Miscellaneous foods	12.2	36.6	9.6	86.4	123.0	5.6	2.3
Beverages	3.2	9.6	6.6	59.4	69.0	3.2	1.3
Total	247.0	741.0	162.3	1460.7	2201.7	100.0	41.6
Nonfood items	250.6	751.8	259.7	2337.3	3089.1	—	58.4
Total imports direct by hotels	497.6	1492.8	422.0	3798.0	5290.8	—	100.0

<sup>a</sup> Sources: St. Lucia statistical department; author's estimates.

<sup>b</sup> High season — January-March; Low season — April-December.

did not vary significantly between seasons.

- The largest proportion of food-related imports consisted of meat, including beef, pork, lamb, and poultry. Most of these items, with the possible exception of poultry and some locally grown beef and pork, are not produced locally. Thus, import substitution possibilities are rather limited.

- Fruits and vegetables appear to be among the import categories that could be replaced by locally grown products to some extent. However, these categories account for only 13% of all food-related items directly imported by hotels. This points to a definite limitation on the expectations that could be raised by any import-substitution campaign in the hotel sector. Nevertheless, such an effort is worthwhile in that it could produce some foreign exchange.

To determine the level of imports by hotels through wholesale intermediaries, interviews were held with top management of major importers of foodstuffs and related items, including the M&C Co., St. Lucia Cold Storage, Ocean Foods, and Peter & Co. Estimates are on file for individual hotels, but these are confidential. All-hotel figures are E.C. \$3.8 million for food and beverage imports and E.C. \$0.2 million for nonfood items for a total of E.C. \$4 million of hotel imports through intermediaries.

Hotels in St. Lucia, as elsewhere, spend considerable sums for advertising and promotion. Most of these expenditures are incurred in the international marketplaces of interest to them. The St. Lucia Hotel Association reported that its members spent E.C. \$1.83 million during 1977 for advertising and promotion. An analysis of actual operating-expense data indicates that hotels, in general, cut down their advertising and promotion during 1978; it is therefore estimated that hotels spent about E.C. \$1.5 million for this purpose during 1978.

Reasonable assumptions can be applied to arrive at an estimate of commissions paid by St. Lucia hotels to foreign-based travel-trade organizations. It was estimated that, during 1978, guests spent a total of E.C. \$43.7 million within St. Lucia hotels. About 40% of these expenditures were subject to trade commissions; the balance involved either visitors booking their own accommodations or food, beverages, and other items not intrinsically subject to commission. Thus, commissionable guest expenditures within hotels are estimated at E.C. \$17.5 million; at an average commission of 15%, a total of E.C. \$2.6 million would have been paid to foreign travel-trade organizations. This was foreign currency that either never entered St. Lucia or was sent out shortly after receipt.

Estimates of repatriated compensation of foreign personnel are arrived at by assigning an average base compensation of E.C. \$80 000 per year for each of the 25 or so expatriates working in St. Lucia hotels and other tourist-related establishments. This excludes foreign-born permanent residents of St. Lucia, considered local employees for the purpose of this analysis. This yields a total figure of E.C. \$2 million paid to expatriate personnel during 1978; it is further assumed that only 40% of that amount is spent in St. Lucia for housing, food, transport, and other local goods and services, leaving E.C. \$1.2 million outside St. Lucia.

St. Lucia hotels spent about E.C. \$350 000 on telephones and telegraph, of which at least E.C. \$200 000 (60%) was across international boundaries and repaid in foreign exchange.

#### *Other tourist-related establishments*

Tourists spent an estimated E.C. \$23.2 million in restaurants and shops, on tours and watersports, and in other tourist-related establishments apart from hotels.

Collection of statistics on imports and other foreign-exchange leakages incurred

by such establishments is a difficult, time-consuming task; the resulting information is likely to be unreliable due to mutually incompatible sources of information. To avoid these difficulties, it was assumed that patterns of imports and other leakages were similar to those of hotels. Some establishments, such as shops selling foreign-made merchandise, may have a higher import content of sales; other establishments (for instance, tour and watersport companies) operate with a significantly lower import content of sales. Overall, it should balance out; the margin of error, in any case, is relatively small, as these establishments account for only 35% of total tourist receipts, the balance being captured by hotels.

On this assumption, about E.C. \$12.8 million in foreign-exchange earnings would remain in St. Lucia out of the total E.C. \$23.2 million spent by tourists in places other than hotels; about E.C. \$10.4 million flowed out as first-round leakages.

### *Policy and research implications*

This analysis shows that tourism is a major contributor to employment, income, foreign exchange, and government revenues in this newly independent country.

#### *Growth management*

As in other Caribbean islands with a rapidly growing tourist industry, a key issue is to maintain balanced growth that can be harmoniously absorbed. Further increases must be viewed against the rapid growth in the last 10 years. This explosive growth has without question contributed to significant social and environmental changes, to which the island is still trying to adapt.

To accommodate future growth without major traumas, government and industry must adapt and mature and, in particular, create a substantial local reservoir of human resources and infrastructure to manage and support the industry. It is important for St. Lucia to preserve and enhance those elements that make it attractive to foreign visitors. It must ensure the population benefits from the economic advantages of tourism while minimizing its disadvantages. With proper planning and implementation, St. Lucia could look forward to major positive contributions to the island's economy through continued increases in visitor demand. Otherwise, future growth, if it occurs, could lead to severe negative impacts.

#### *Visitor composition*

A related issue is the increasing reliance of St. Lucia hotels on package-tour business. Undoubtedly this type of tourism can be desirable if it forms a reasonable proportion of total visitor flow; it represents a steady source of business, and package tours involve lower per-capita promotion and operational costs to hoteliers. On the other hand, when group tourism becomes a majority proportion of total visitor arrivals, the industry becomes dependent on and somewhat vulnerable to wholesale operators. As a result, the destination may experience some loss of control over the development of its industry. A plan for future development of tourism in St. Lucia ought to clearly define general market policies and objectives and, in particular, the desired mix of group and individual tourism.

#### *Employment, training, and career opportunities*

St. Lucia suffers from severe unemployment and underemployment. Although

reliable statistics are unavailable, the level of unemployment may exceed 25%; the problem is particularly severe among the young and less-educated, both in the cities and in the rural areas.

Tourism can generate significant numbers of new jobs, thus alleviating this pervading problem; however, it cannot wipe out unemployment. On the other hand, investment and balanced growth in various dynamic sectors of the economy, including tourism, could provide a solution. It is important for government to plan how each of the sectors of the St. Lucian economy can contribute to employment generation, and draw plans accordingly.

Adequate training of people working in hotels and other tourist establishments is a key issue. Tourism, after all, is a service industry, and guests expect top level, professional service for their money. In addition to the teaching of specific skills, the instilling of professional attitudes on the part of personnel directly in contact with the public should be an integral part of comprehensive training programs. Government and industry representatives should analyze training facilities and programs on the island, as well as those throughout the region that may be available to St. Lucian students. A comprehensive training program, funded to some extent by development aid, may result from this effort. Development of training programs should be tied to the issue of better career opportunities in the industry.

#### *Linkages between tourism and other sectors of the economy*

St. Lucia's open economy has precluded, to the present, development of strong linkages between tourism and other sectors of its economy. As a consequence, food and most finished goods purchased by tourists or required by hotels to satisfy tourist demand must be brought from the outside, with considerable loss of foreign currency. At present, the island's agriculture sector, although capable of providing fruits, vegetables, meats, poultry, and fish, lacks the reliability, quality control, and distribution channels to satisfy hotel demand. Steps have been taken by government and the St. Lucia Hotel Association to determine the demand by hotels. Next steps should include studying the feasibility of meeting this demand from internal agricultural sources.

#### *Local ownership of tourist-related enterprises*

Whereas the larger hotels are owned and operated by foreign concerns, some local entrepreneurs have invested in small apartments and guesthouses, restaurants, water sports, arts and craft shops, tour-operating companies, and other small establishments peripherally linked to hotels. In general, these tend to be also managed by St. Lucians or by expatriates permanently residing on the island. Emergence of local entrepreneurship and managerial capabilities is an extremely positive development that should be expanded and nurtured by government and the private sector through specific policies and advantageous lending programs.

#### *Quality of data and research capabilities*

The level and quality of data available in St. Lucia regarding tourism should be improved to provide for proper ongoing analysis and planning. Tourism must be viewed by government and private industry as a complex, important business for the island, requiring the establishment and maintenance of proper data sources. Whereas foreign expertise can provide sporadic analysis, there is no substitute for qualified local capabilities. Government and private industry should study the feasibility of a well funded, research and planning unit within the St. Lucia Tourist Board or the

Ministry of Tourism. Such a unit would be responsible for maintaining statistics, preparing forecasts, and undertaking specialized base studies as part of ongoing development plans. One of the responsibilities of this unit would be continuously to update and refine this economic impact study.

### *Appendix A: Hotel employment characteristics*

The St. Lucia Hotel Association provided data on employment in members' hotels. Table A-1 shows that hotels steadily increased their workforce in the three years 1976-1978. The composition of employment between the various departments remained remarkably steady.

The author conducted a survey of the number, level of responsibility, departmental assignment and origin of employees in January-February 1979 through interviews with personnel and other management. Details were obtained for nine of the largest hotels on the island, jointly representing more than 90% of the approximately 1150 international-quality hotel rooms.

The results of this survey are summarized in Table A-2. Conclusions are:

- Hotels lay off a substantial number of employees during the low season. At this time, there is a cyclical drop in guests, and therefore revenue, for which management compensates by cutting expenses, including personnel. This cyclical pattern obviously disrupts the job stability, advancement opportunities, and earning capability of employees. Unskilled employees, particularly those in food and beverage departments, are most subject to layoffs; supervisory, skilled, and semiskilled personnel have fewer layoffs.

- The ratio of employees per room (E/R) was 1.47:1 in the high season and 1.26 in the low season.

Table A-1. Employees in hotels belonging to the St. Lucia Hotel Association (sample of nine hotels).<sup>a</sup>

Hotel department	1976		1978	
	No. of employees	% of total	No. of employees	% of total
Administration	48	3.5	56	3.5
Accounts	85	6.2	100	6.2
Front office	59	4.3	69	4.3
Social office	15	1.1	18	1.1
Housekeeping	201	14.7	235	14.7
Laundry	19	1.4	22	1.4
Restaurant	291	21.2	339	21.2
Bars	114	8.3	133	8.3
Maintenance	137	10.0	159	10.0
Gardeners	92	6.7	107	6.7
Watersports	24	1.8	28	1.8
Security	76	5.6	87	5.5
Kitchen	208	15.2	243	15.3
Total	1369	100.0	1596	100.0

<sup>a</sup> Source: St. Lucia Hotel Association.

- Levels of employment in the administration, front office, and accounting departments were steadily maintained, with little difference in E/R ratios between seasons. Together, these departments make up close to 20% of the total surveyed hotel workforce; most employees are either supervisory, skilled, or semiskilled.

- Food and beverage departments are the largest employers, 42.2% in the high season and 40.1% in the low. However, employees of these departments are most vulnerable to seasonal layoffs. Most of these employees are semiskilled and unskilled.

- Housekeeping is the second largest department, about 23% of the hotel workforce all year. Employees of this department, though relatively unskilled and paid only minimum wages, enjoy relative seasonal stability.

- Repair and maintenance departments account for about 12% of total employment. Their skilled and semiskilled workers are mostly unaffected by seasonal variations.

- Close to 99% of employees are local St. Lucians. As expected, foreigners occupy top positions of responsibility or highly skilled jobs.

A second survey of hotel workers was also carried out. The samples were designed to represent a wide range of occupations within the hotel industry. A total of 74 interviews was conducted, representing about 5% of the total number of employees working in all hotels. All levels of skills and all departments were represented.

Table A-2. Employment by level of responsibility or training, department, and origin for selected St. Lucia hotels.<sup>a</sup>

Category	High season <sup>b</sup>			Low season <sup>b</sup>		
	Employees		E/R ratio <sup>c</sup>	Employees		E/R ratio <sup>c</sup>
	Number	%		Number	%	
Total	1537	100.0	1.47	1194	100.0	1.26
Responsibility						
Supervisory	67	4.4	0.06	44	3.7	0.05
Skilled	92	6.0	0.09	22	1.8	0.02
Semiskilled	184	12.0	0.18	139	11.7	0.15
Unskilled	1194	77.6	1.14	989	82.8	1.04
Department						
Administration	70	4.6	0.07	65	5.4	0.07
Front office	32	5.3	0.08	69	5.8	0.08
Accounting	129	8.4	0.12	115	9.6	0.12
Food & beverage	648	42.2	0.62	479	40.1	0.51
Housekeeping	360	23.4	0.34	271	22.7	0.29
Repairs & maintenance	179	11.6	0.17	144	12.1	0.15
Other	69	4.4	0.07	51	4.3	0.05
Origin						
Local	1517	98.7	1.45	1178	98.6	1.24
Nonlocal	20	1.3	0.02	16	1.4	0.02

<sup>a</sup> Source: St. Lucia hotel employment survey.

<sup>b</sup> High season — 15 Dec. 1977-15 Apr. 1978 (sample included 1045 rooms); Low season — 15 Apr.-15 Dec. 1978 (sample included 945 rooms).

<sup>c</sup> Ratio of employees per room.

Table A-3. Characteristics of average hotel employee.<sup>a</sup>

% males in sample	64	% of family income earned	37
Age (years)	28.3	Time in position (years)	2.9
Hours worked per week	40.0	Weekly salary (E.C. \$)	68.00
% with primary education	86	Service charge share	
% principal money-earners	55	(points)	3.5
Number of dependents	3.95	Previous salary (E.C. \$)	45.30

<sup>a</sup> Source: Hotel employees' survey.

As shown in Table A-3, employees on the average are just over 28 years of age and with a primary education. The majority were male. They had held their positions for a little less than 3 years, were the principal earners in their households, and supported about four other people on E.C. \$68 per week. Salary levels were substantially higher than in their immediately preceding jobs.

The majority of surveyed employees appeared satisfied with their positions, expressing no major complaints about their employers or the hotel industry in general. However, this must be tempered by the possibility that some employees, in spite of assurances of anonymity, may have feared repercussions if they indicated displeasure. Most employees indicated they intended to remain with their current employer at least for the next 2 years. Few were capable of conceptualizing future career aspirations or advancement objectives.

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BERNARD K. SPINRAD\*

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## *Country overview*

Aruba, the westernmost of the ABC islands, constitutes, with Bonaire and Curacao, the Leeward group of the Netherlands Antilles islands. It is 24 km off the coast of Venezuela, 32 km long, and 10 km at its widest point.

Its topography features a sharp contrast between tropical beaches, a semidesert landscape and unusual boulders sprawled through the island.

The average yearly temperature is 28°C, with lower temperatures from December through late January and somewhat higher temperatures from June through late August. It is pleasant year-round, with days freshened by the constant northeast trade winds.

It rains very little; average yearly rainfall is less than 600 mm/year, most of which falls in intermittent showers during October and December. Although this is a blessing in respect to tourism, the low rainfall presents a major problem for water supply and limits the potential for agricultural production. Drinking water, originally obtained by drilling onsite wells or by roof-collection systems, now comes from a modern, water-desalinization plant capable of supplying the island's needs. No hurricane has ever struck Aruba directly; such an event is unlikely as the island is completely outside the track of the great Caribbean storms.

Archaeological vestiges of native Arawak and Carib Indian cultures can still be found in the form of pottery and coloured drawings in caves.

Aruba was discovered in 1499 by Spanish colonists, who remained in control of all three ABC islands until the middle of the 17th century, when they were forced out by the Dutch. Except between 1805 and 1816, the Netherlands Antilles islands have remained continuously under Dutch administration.

Throughout its history, Aruba remained free of the negative social and human effects of slavery. As a melting pot of races and cultures, no one segment of the population of Aruba was economically subjugated by any other group. This may partially account for the local population's friendliness and ease of contact with foreigners, regardless of ethnic background.

Until the early 20th century, there was little in the way of economic opportunities that Aruba could offer to its small population other than marginal agriculture, which was limited by the aridity of the soil. Throughout this time, Aruba and Bonaire were little more than defensive buffers for Curacao, the colonial headquarters.

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After the discovery of oil in Venezuela, international oil companies sought politically stable areas in which to locate transshipment and refinery complexes for Venezuelan and Middle East oil. Shell Oil established the first Antillean refinery in Curacao. Shortly thereafter, Standard Oil developed Lago, a massive oil transshipment and refinery complex in the southeastern part of Aruba. Since its inception, Lago has had a profound economic and social impact in all phases of Aruban life. Until the late 1950s, Lago was the largest source of employment on the island, and it retains to this day its importance for Aruba's labour force. The refinery's original labour requirements stimulated a major flow of immigrants of various racial and cultural backgrounds, many of whom came from the West Indies. At the beginning of the 1950s, Lago's management introduced automated equipment. By the end of that decade, Lago had reduced its labour force to a fraction of the highest earlier levels.

Tourism became the obvious, and possibly only, alternative to absorb not only those unemployed people who remained in the island, but also the growing number of young people entering the labour force. To a large extent, tourism has succeeded. Over the past 20 years, Aruba has become a significant international tourist destination in the Caribbean, having grown severalfold since the early days of the industry. Tourism has become the major employer on the island as well as the biggest foreign-exchange earner.

About 64 000 people live in Aruba at present (Table 1), enjoying one of the highest standards of living in the Caribbean. Aruba is the second-most-populated island of the Netherlands Antilles after Curacao. The territory as a whole had a total of 250 000 people at the end of 1979; 25% live in Aruba.

Papiamentu and Dutch are the official languages. Papiamentu, derived from Portuguese, Dutch, and English, is used with minor variations throughout the Netherlands Antilles; it has become the expected means of communication among locals for both formal and informal purposes. In addition to these languages, Arubans communicate fairly effectively in Spanish and English. The ability of the population to handle several languages is an important factor for tourism, as foreign visitors can be understood when talking or requesting service in their own language.

Oranjestad, the capital city and principal population centre, has about 13 000

Table 1. Population and sex distribution, 1965-1980.<sup>a</sup>

Year <sup>b</sup>	Population				% annual change		
	Total	Male	Female	% male	Total	Male	Female
1965	59408	29228	30180	49.2	-0.8	-1.1	-0.4
1970	60733	29980	30753	49.4	1.5	1.4	1.6
1975	61982	30397	31585	49.0	0.3	0.1	0.5
1976	62288	30495	31793	49.0	0.5	0.3	0.7
1977	62755	30715	32040	48.9	0.8	0.7	0.8
1978	63049	30739	32310	48.8	0.5	0.1	0.8
1979	63931	31134	32797	48.7	1.4	1.3	1.5
1980	64344	31295	33049	48.6	1.1 <sup>c</sup>	0.9 <sup>c</sup>	1.3 <sup>c</sup>

<sup>a</sup> Source: Aruba Population Registration Office.

<sup>b</sup> On 31 Dec. for 1965-1979; on 1 Aug. for 1980.

<sup>c</sup> Annualized.

residents. It is located along the middle of the south coast near the international airport. As the shopping and commercial centre of the island, it is a prosperous and thriving community, although largely dependent on tourism: indeed, shops along its main shopping street, Nassaustraat, sell almost exclusively to tourists. Nassaustraat merchants, by their attitude and willingness to stock inventory, quickly reflect the kind of tourist season they have.

St. Nicholas, the second most important population centre, on the southeast tip of the island, is an industrial city whose economic base is the Lago refinery. It has about 11 000 residents. During the original economic boom, when Lago expanded operations, St. Nicholas was the most important urban settlement in Aruba, considerably more prosperous than Oranjestad. Since then, however, St. Nicholas has fallen on somewhat difficult times, with a shrinking economic and population base still dependent on scaled-down Lago operations. Relatively far from the hotel area, residents of St. Nicholas benefit only indirectly from tourism, mainly by filling semiskilled jobs in the hotels.

Several small-to-medium urban settlements are found between the two major cities. The towns of Santa Cruz and Noord, in the centre and west part of the island respectively, are connected to other areas by paved roads.

The beaches and most of the international-class hotels are located along the west and southwest coast of the island. The northern coastline is desolate and uninhabited.

Aruba enters the 1980s with a fairly stable population and an economy supported by tourism, oil refining and transshipment, and trade. There are serious indications of oil deposits within the confines of the island. If these signs are confirmed and oil is proved economically exploitable, a whole new panorama of development opens up.

Parallel to these economic and social trends, Aruba, with the rest of the Netherlands Antilles, has undergone major political and institutional changes, resulting initially in local autonomy and eventually, possibly, in independence.

### *The research project*

Aruba was chosen as a research setting on the basis of three distinctive characteristics. First, tourism plays an extremely important role in the island's economy. The character and tone of the industry is fairly well established, probably to a greater degree than in other islands of the Netherlands Antilles. Second, as a small-island destination within the Netherlands Antilles, it provided a valuable contrast to other destinations chosen as research subjects within the regional study. Third, Aruba maintains a fairly extensive statistical data base; as a result, valuable background and substantive information was available at the start of the study. In addition, key representatives of private business and government indicated a strong interest in this study. Their cooperation and support proved invaluable during the field work.

The methodological approach used in this study was based on building, step-by-step, a comprehensive qualitative and quantitative picture of Aruba's tourist industry, depicting in particular the financial transactions of hotels and other private establishments that provide goods and services to tourists.

Various primary data sources were used in these and complementary studies. These sources include:

- A visitor expenditure and motivational survey (VEMS) conducted in July 1980, coupled with the results of a similar survey conducted in 1977. The volume and nature of expenditures of stayover visitors were traced, permitting linkage of these estimates to visitor demographics. A total of 963 survey responses, completed and

validated during 1980, covered 2070 visitors, about 15% of all stayover visitors recorded during July and 1.1% of all visitors recorded during 1980. During the earlier VEMS, 1567 responses were collected and validated, corresponding to 3248 visitors, or about 2% of all visitors recorded during 1977.

- Cruiseship passenger surveys conducted during 1979 and 1980. These provided raw data on expenditures by this category of visitor. A total of 87 responses, representing 232 passengers, or 0.3% of all cruise passenger arrivals during that period, were completed, validated, and analyzed. The limited sample size is balanced by the overall homogeneity of cruise passengers. The sample did, however, represent the typical mix of passengers that Aruba receives, mainly from the U.S. and Venezuela.

- An extensive survey of hotel financial operations, done separately for high-rise properties in the Palm Beach area and for low-rise ones in Eagle Beach and Oranjestad. Data were obtained for almost all hotels for 1975-1978. Detailed information included operating revenues and costs by department and category, fixed expenses, debt, and management structure.

- Hotel employment surveys. These determined the volume and structure of employment within the sector. Two different surveys were carried out:

*First*, one directed at each hotel's personnel department, designed to inventory personnel requirements by department, skill and supervisory levels, origin, and gross wage or salary levels of employees.

*Second*, one conducted among a selected, representative sample of employees, designed to determine individual background, training, level of responsibility, compensation, and general views *vis-à-vis* a career within the tourist industry.

- Various surveys to determine operational and employment patterns of restaurants, shops, transport and tour companies, and other establishments that provide tourist-related services. Emphasis was on revenue and cost structures.

- Interviews with top business managers and agency directors directly or indirectly involved in tourism. The purpose of these interviews was to collect first-hand information on current trends and issues of importance to the industry.

In addition to these primary sources, secondary data sources were consulted. Information available in the Netherlands Antilles is generally good at both macro and micro levels, except for national accounts statistics, which unfortunately are not available for either Aruba or the whole of the Netherlands Antilles.

Visitor and hotel-occupancy statistics were obtained from the Aruba Tourist Bureau.

Data on population, employment, and various economic and financial indicators were obtained from island and central government departments.

Confidentially obtained income tax data were used to fill information gaps in the restaurant and shopping sectors.

Estimates of gross tourist expenditures or receipts were obtained through a computer model based on detailed analysis of the survey data. Through this model, sample results from the VEMS were disaggregated to establish a composite matrix (A) of average daily per-capita expenditure ratios. This provides more accurate results than assuming only one expenditure pattern for all visitors; tourists have different spending patterns depending on the time of year and their country of origin. Adjustments were made to account for differences in expenditure patterns between visitors travelling on their own and those on package tours. The first dimension of the matrix disaggregated these ratios according to the time of the year (winter and summer) for 1979 and 1980. The second dimension disaggregated the ratios according to country of origin. Reliable VEMS samples could be obtained for United States,

Venezuela, and Canadian visitors. European tourists are too few at present to yield reliable estimates, though this may change. The third dimension disaggregated ratios according to type of expenditure (hotels and restaurants, local transport and tours, entertainment, shopping, gambling, and miscellaneous).

Tourism statistics maintained by the Aruba Tourist Bureau were also disaggregated into a different two-dimensional matrix (B) to provide total volumes of visitor days by season and country of origin.

Multiplying the two matrices, element by element, yields a third matrix (C) whose elements contain estimates of total tourist expenditures by season, country of residence of tourists, and type of expenditure. The sum of all elements of this matrix gives estimates of total yearly tourist expenditure. Average per-capita expenditures for all visitors to the island are obtained by dividing total yearly expenditure by the number of visitors to the island. Likewise, average daily expenditure is obtained by dividing average per-capita expenditure by the island-wide average length of stay. The sum of elements across any one of the matrix's three dimensions yields total expenditure patterns for that variable. For instance, adding across the dimension "country of residence" yields estimates of expenditures by visitors from the U.S., Venezuela, Canada, and the rest of the world. By adding across "type of expenditures," estimates of expenditures in hotels and restaurants, transport, entertainment, shopping, gambling, etc. are obtained.

The procedure used to obtain estimates of expenditure by cruiseship passengers was similar to that used with stayover visitors, albeit much simplified. Per-capita expenditure estimates, segregated by type, were obtained from the sample surveys. Adjusted for price increases to cover 1979 and 1980, they were multiplied by volumes of cruise passengers obtained from official statistics.

Estimates of landing fees, fuel consumption, salaries of local personnel, and other expenses incurred by companies transporting visitors to the island by air and sea were obtained from personal interviews with responsible management. These estimates were then cross-checked against financial information from hotels and other tourist establishments.

Balance-of-payments time series from the central bank of the Netherlands Antilles were used to correlate and validate the study's own estimates.

Estimates of value added to the Aruban economy by tourism were obtained by aggregating wage-and-salary, rent, interest, and profit data from financial statements of hotels, restaurants, nightclubs, and other business establishments active in tourism.

Employment levels generated by tourism were estimated from data supplied by the Department of Economic Development (DECO), Aruba island government, and the Department of Labour and Social Affairs of the central government of the Netherlands Antilles, and supplemented by survey data.

Government revenues and expenditures generated by or incurred through tourism were estimated from data provided by the Aruba Department of Finance.

## *Aruba's tourism industry*

### *Product characteristics*

While the appealing climate and beaches are Aruba's chief selling points, other assets include a friendly hospitable population, modern hotels, restaurants, casinos, nightclubs, and shopping facilities, an interesting semidesert landscape in the interior, a rugged northern coast, and other natural formations and historical sites.

Aruba projects a sharply defined image in the international tourism market. It is projected as a "luxury" Caribbean destination — one where the visitor can find a warm, steady climate, lovely beaches, and everything else typically expected from a tropical vacation spot. On the other hand, Aruba has differentiated its product somewhat from competing Caribbean and other warm-weather destinations by providing:

- A fairly sophisticated resort atmosphere, a mixture of modern American architecture, Dutch ambiance, and Antillean friendliness.
- Gambling casinos, relatively small, yet elegant. Their mood, far from the typical frenzy of Las Vegas or Atlantic City, encourages occasional players as well as highrollers.
- Extensive shopping facilities, selling both duty-free and taxable items. These provide an added dimension to visitors from Venezuela and other countries with limited, expensive, or constrained shopping.
- A unique desertlike landscape similar to Arizona or western Texas.

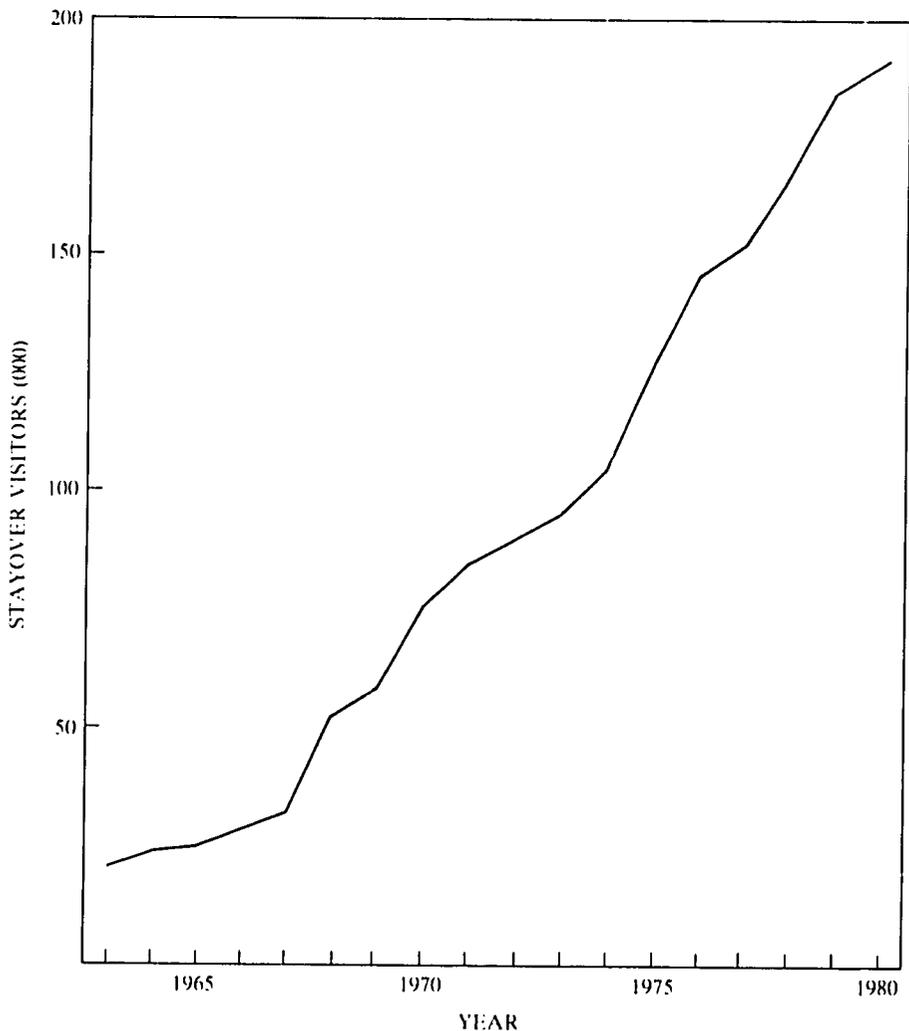


Fig. 1. Total annual number of stayover visitors, 1963-1980. Source: Aruba Tourist Bureau.

- Almost absolute safety. Tourists need not feel concerned over the possibility of theft or any similar problems. The political stability of the Netherlands Antilles is complemented by a deep respect, on the part of Arubans, for peace and safety.

Visitors may choose between two distinct types of vacation in Aruba. By staying in one of the high-rise hotels in Palm Beach, they will be part of a fairly formal environment. Guests give up a degree of closeness to the beach and nature for the more elegant surroundings of a deluxe hotel. Visitors at one of the low-rise hotels in Eagle Beach or Oranjestad usually prefer a more informal vacation, closer to the beach in a village-like environment.

Aruba overcomes a few competitive disadvantages *vis-à-vis* nearby Caribbean destinations:

- A greater distance from key North American markets. This is compensated for by shorter distances from South American markets, particularly Venezuela.
- The desertlike environment, which does not fit the expected image of a lushly tropical Caribbean resort.
- Few sightseeing activities and recreational facilities outside the Palm Beach-Eagle Beach-Oranjestad tourist circuit.
- Limited offerings of native arts and crafts, music, paintings, and other sharply defined local cultural and ethnic expressions.

### *Tourism profile*

For the past 30 years, the island government of Aruba, with the assistance of the central government of the Netherlands Antilles and the Dutch government, has pursued a strong policy to develop tourism as a key economic activity for the island. Through tax incentives and a mixed-capital investment program, the industry prospered. This was supported by infrastructural development such as a new airport and modern terminal, expansion of water and electricity facilities and improved telecommunications.

Table 2. Visitors and nights spent by place of origin, 1980.<sup>a</sup>

Origin	Visitors		Visitor-nights		
	No.	%	No.	%	Average/ visitor
United States	110783	58.6	724605	62.3	6.5
Venezuela	53967	28.6	265833	22.8	4.9
Canada	5537	2.9	37814	3.2	6.8
Colombia	4757	2.5	35285	3.0	7.4
Argentina	1805	1.0	10769	0.9	6.0
Other South & Central American	2830	1.5	16939	1.5	6.0
Netherlands	4350	2.3	43318	3.7	10.0
West Germany	410	0.2	3319	0.3	8.1
Other Europe	1540	0.8	10374	0.9	6.7
Caribbean Basin	2280	1.2	12971	1.1	5.7
Rest of world	646	0.3	3746	0.3	5.8
<b>Total</b>	<b>188917</b>	<b>100.0</b>	<b>1164973</b>	<b>100.0</b>	<b>6.2</b>

<sup>a</sup> Source: Aruba tourist bureau.

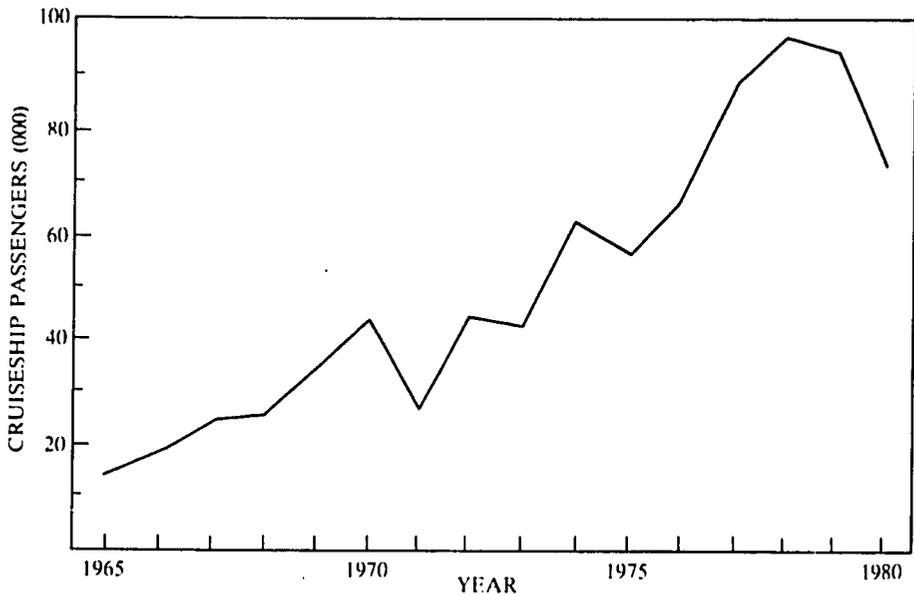


Fig. 2. Cruiseship passengers by year, 1965-1980. Source: Aruba Tourist Bureau.

Until 1958, cruiseships were Aruba's chief source of visitors. In the mid-1950s, the island government, in conjunction with private investors and supported by Dutch financial assistance, established a mixed-capital hotel development corporation, ARUVEN, which in 1959 opened, under international chain management, the Aruba Caribbean Hotel and Casino. ARUVEN has since developed two more hotels, the Sheraton and the Americana, both also under international chain management. Private investors have built six additional hotels capable of attracting considerable numbers of visitors.

At present, Aruba has about 2100 hotel rooms of international quality, and several other projects are under way. Starting from a very small number of visitors in the early 1950s, Aruba now registers annually close to 190 000 international visitors, who stay almost 1.2 million nights (Fig. 1). Most of these visitors come from the United States, particularly the Eastern Seaboard, and Venezuela (Table 2); inroads have also been made into several other markets.

Aruba's cruiseship trade registered steady growth until 1978. During 1980, numbers of cruiseships and passengers declined substantially from 1979 levels, which had been slightly below the record 1978 levels (Fig. 2). Cruiseship-passenger visits are strongly seasonal with the peak about the New Year and the trough in summer (Fig. 3).

### *The hotel plant*

Information presented herein has been generally aggregated into two main groups:

- High-rise hotels, those in the Palm Beach area. These are categorized as deluxe by the Aruba Tourist Bureau.
- Low-rise hotels in the Eagle Beach area, plus the Talk of the Town in Oranjestad. These are locally categorized as first-class properties.

This division also facilitates a global comparison between these two very distinct types of tourist accommodation.

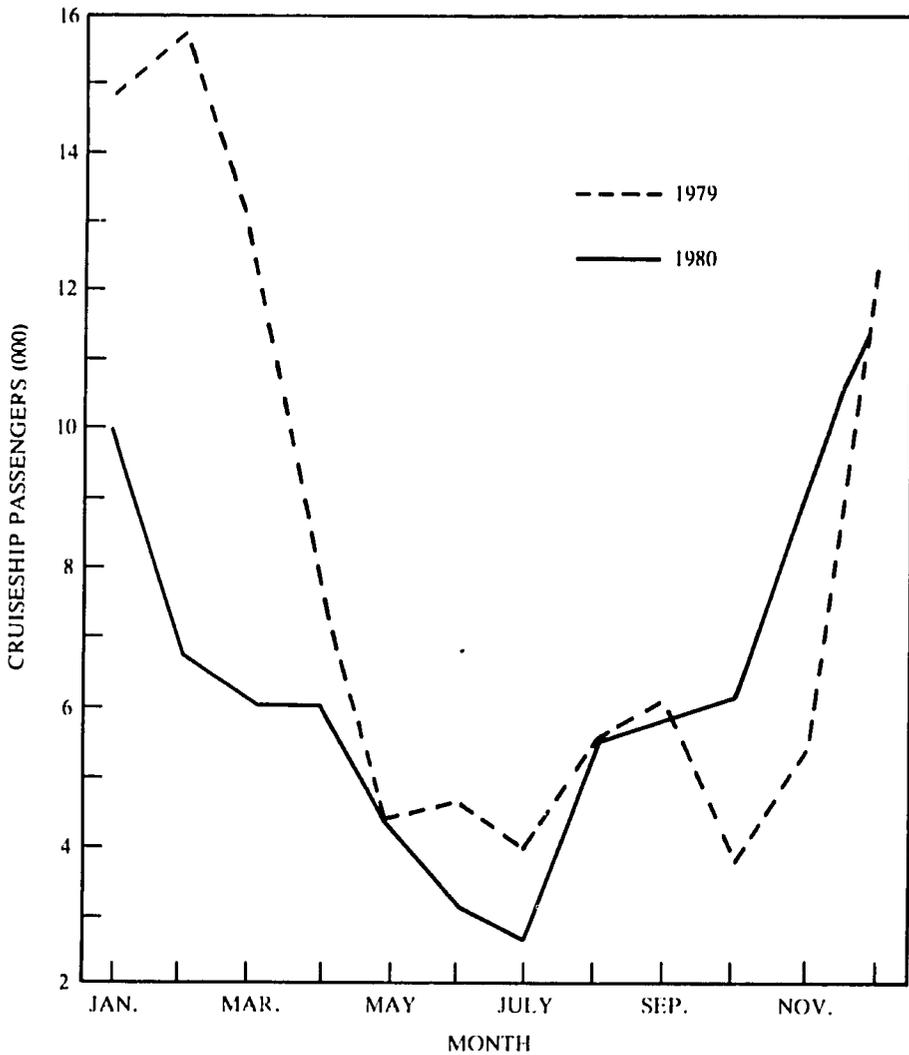


Fig. 3. Cruiseship passengers by month, 1979 and 1980. Source: Aruba Tourist Bureau.

Most hotel construction in Aruba took place in three fairly well defined phases (Fig. 4), 1958-1960, 1966-1969, and 1977-1978. Little activity took place in the intervening years, which were "digestive" periods when demand caught up with plant capacity or *vice-versa*. After a period of intensive construction in 1977-1978, Aruba's hotel plant has not increased, although several projects are planned.

### *Economic impact of tourism*

Given the complexity of the issues involved, the discussion is focused on topics for which sufficient and reliable information could be obtained. These include: gross receipts from tourism, balance-of-payments implications, employment generated by tourism, and contributions of tourism to the budget of the island government.

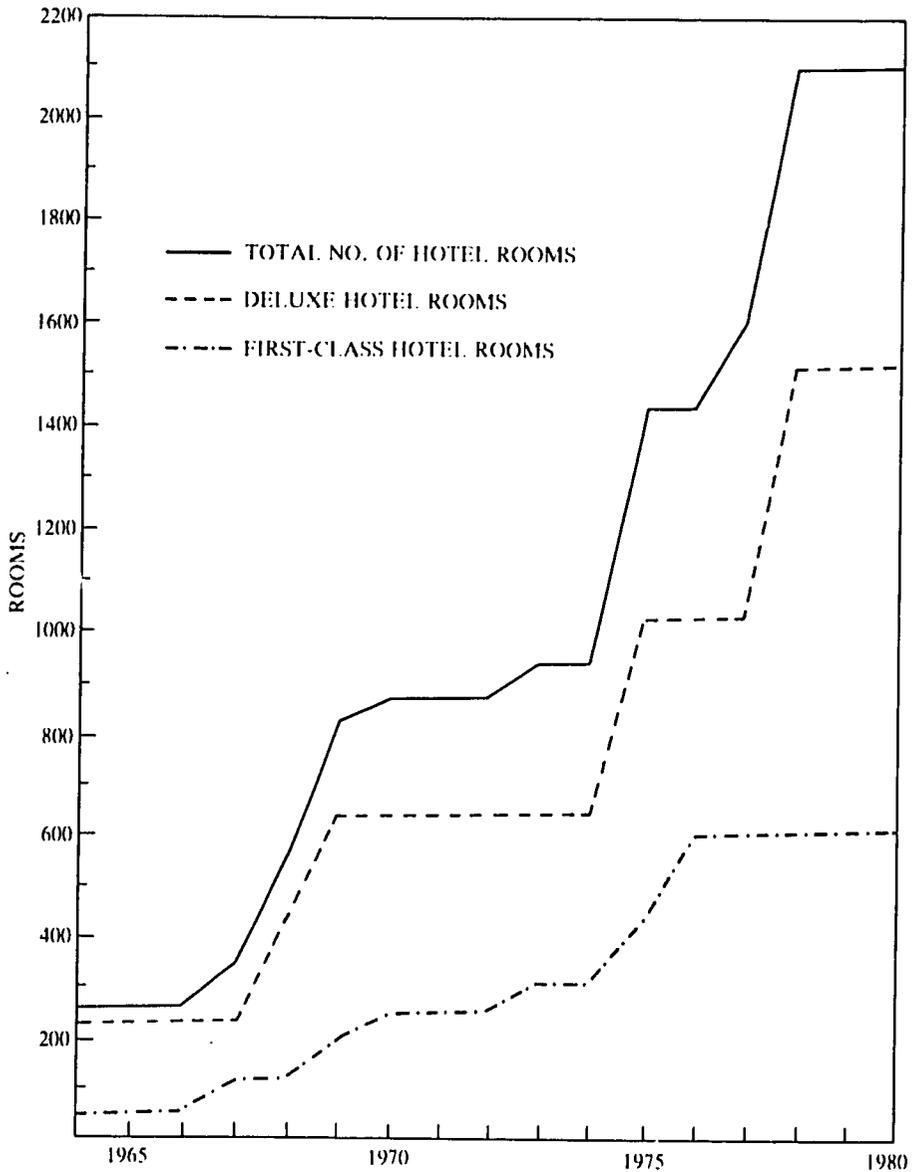


Fig. 4. Number of hotel rooms available to international tourism, 1964-1980. Sources: Aruba Department of Economic Development and author's estimates.

#### ***Gross receipts from tourism***

Money spent by tourists for goods and services while in Aruba (tourist expenditures) translates into money received by the destination as tourist receipts.

Total tourist receipts are the sum of receipts from the following sources:

- Stayover visitors.
- Cruiseship passengers.
- Airport taxes paid by passengers leaving the Netherlands Antilles through Queen Beatrix International Airport, as well as landing and other airport fees paid by airlines using the facilities.

- Port landing fees for cruiseship passengers.
- Fuel used by airlines, purchased from Lago.

These are all the sources of receipts generated directly by tourism identified in this analysis. Specifically not included because of quantification difficulties are capital investments made in Aruba by foreign investors who originally may have become interested in the island as tourists — for instance, owners of vacation (or even primary) homes and offshore company investors. There may be other sources of revenues; however, these are deemed negligible.

Taking into account the above sources of receipts, it is estimated that Aruba received about N.A. Fl 207.7 million (U.S. \$116 million) gross receipts from tourism during 1979<sup>1</sup> and N.A. Fl 225 million (U.S. \$125 million) during 1980.

These estimates were obtained through a model using principally inputs derived from surveys conducted as part of this analysis, supplemented by information drawn

Table 3. Estimated gross receipts from tourism, 1980.<sup>a</sup>

Breakdown	U.S. \$ (000)	N.A. Fl (000)	% of total
<b>Source</b>			
Stayover visitors	118241.7	212835.0	94.5
Cruiseship passengers	4185.6	7534.1	3.3
Airport revenues <sup>b</sup>	1785.0	3213.0	1.4
Other miscellaneous <sup>c</sup>	860.0	1548.0	0.7
Total	125072.3	225130.1	100.0
<b>Type of expenditure</b>			
Hotels & restaurants <sup>d</sup>	57941.6	104294.8	46.3
Local transport & tours	4659.5	8387.1	3.7
Entertainment	4776.8	8598.2	3.8
Shopping	31156.9	56082.4	24.9
Gambling & miscellaneous	26537.2	47767.1	21.2
<b>Stayover visitors</b>			
United States	65083.8	117150.8	52.0
Venezuela	40987.8	73778.0	32.8
Canada	2599.5	4679.1	2.1
Rest of world	9570.6	17227.1	7.7
Total	118241.7	212835.0	94.5

<sup>a</sup> Source: Author's estimates.

<sup>b</sup> Includes airport departure tax, estimated at approximately U.S. \$900 000 for 1980, as well as landing and other related fees.

<sup>c</sup> Includes harbour landing fees for cruiseships, bunker fuel, and related fees.

<sup>d</sup> Includes all room, food and beverage, and miscellaneous revenues by hotels as well as revenues derived from tourists by restaurants located outside hotels.

<sup>1</sup> It is noted that the Central Bank of the Netherlands Antilles estimated N.A. Fl 196.4 million (U.S. \$109 million) inflow of foreign exchange from tourism during 1979; the difference between this estimate and the one obtained above by using the model is of less than U.S. \$7 million, or about 6%. This is a very small difference and tends to confirm the validity of the estimates. Traditionally, at least in other countries, the banking system tends to underestimate true expenditures by tourists, as many monetary transactions originated by or related to tourism are not entered as such into the formal banking system and are, therefore, not countable. For instance, visitors may pay for services directly in U.S. dollars; recipients may choose to retain the foreign currency rather than exchanging it for local money.

from aviation, transport business, and government sources. A breakdown of 1980 gross tourism expenditures-receipts is included in Table 3.

### *Stayover visitors*

This segment is the single largest contributor, U.S. \$118.2 million (94.5%) in 1980. These estimates are deemed reliable within 5%; i.e., 1980 expenditures-receipts from stayover visitors could vary between \$112.3 and \$124.1 million. Table 4 summarizes estimates of gross annual expenditures incurred by stayover visitors by origin and type for 1980.

A small increase in total visitor expenditure occurred in spite of a decline of more than 5% in the number of visitor-nights between 1979 and 1980. This resulted from a measurable increase in average daily per-capita expenditures from an estimated U.S. \$85.83 in 1979 to \$101.50 in 1980. Visitors to Aruba were estimated to have spent \$625.89 on average during their stay in 1980.

Furthermore, visitors from the U.S. and Venezuela together account for about 90% of expenditures by all tourists in Aruba, leaving visitors from Canada, Europe, the rest of South America, and elsewhere the remaining 10%. The U.S. market provides the bulk of visitors as well as money spent. In 1980, it contributed 55% of all expenditures by stayover visitors and 58.6% of all visitors. Average per-capita daily expenditure of U.S. visitors was estimated at U.S. \$89.82 (\$587.50 for their whole stay) in 1980.

The Venezuelan market, on the other hand, has assumed a greater dimension in Aruba's tourism picture, with a sizable increase in the number of Venezuelan visitors (40 798 in 1979 and 53 967 in 1980). This market spends, on the average, much more than others; Venezuelans spent U.S. \$154.19 per day in 1980. Venezuelans also allot a large proportion (about 40%) of their total expenditures for shopping.

Hotels and restaurants capture about 50% of all expenditures by stayover visitors, an estimated U.S. \$57.76 million in 1980. These figures encompass money spent by foreign visitors on rooms, food and beverages, and related services obtainable in hotels, but excludes gambling, which is incorporated in a separate category. Of this \$57.76 million, it was estimated that foreign visitors spent about \$53.3 million in Aruba hotels, and \$4.5 million in restaurants outside hotels.

U.S. visitors are estimated to spend 55% of their moneys for rooms, food, and beverages. Venezuelan visitors, who spend heavily on shopping and within the casinos, direct a smaller share of their total expenditure into traditional hotel and restaurant services (38.1%).

Foreign visitors are estimated to have spent U.S. \$4.33 million during 1980 (3.7% of total) on taxis, tours, car and scooter rentals, and other means of transport inside Aruba, including airport transfers.

Altogether, visitors are estimated to have spent U.S. \$4.78 million in entertainment (4.0% of total) in 1980. The entertainment category is broader than the name implies, as it includes expenditures on watersports and all day- and nighttime recreational activities, excluding gambling.

Stayover visitors are estimated to have spent U.S. \$27.5 million on shopping during 1980. Included in this category are expenditures on merchandise sold in shops in and out of hotels. Money spent by cruiseship passengers on shopping is in addition to these figures. Venezuelans account for 55-60% of these amounts, making them the most important contributors, by a long stretch, to the tourist-oriented shops of the island. Common experience confirms this statement; however, it can now be quantitatively sustained that U.S. visitors provide a relatively small, though not negligible, proportion of the shops' revenues. The financial health of the island's merchant sector

Table 4. Gross tourist expenditures or receipts of stayover visitors, 1980.<sup>a</sup>

Category	All markets		United States		Venezuela		Canada		Rest of world	
	U.S. \$ (000)	% <sup>b</sup>								
Hotels & restaurants	57757.9	48.9	35007.7	53.7	15624.2	38.1	1729.8	66.5	5396.4	56.4
Local transport & tours	4329.0	3.7	2576.1	4.0	1063.0	2.6	151.3	5.8	538.6	5.6
Entertainment	4776.4	4.0	2938.4	4.5	1358.7	3.3	75.3	2.9	404.0	4.2
Shopping	27485.6	23.2	9382.4	14.4	16298.0	39.8	189.1	7.3	1615.8	16.9
Gambling & miscellaneous	23892.6	20.2	15179.2	23.3	6643.9	16.2	453.8	17.5	1615.8	16.9
Total	118241.4	100.0	65083.8	55.0	40987.8	34.7	2599.2	2.2	9570.6	8.1
Stayover visitors (no.)	185917		110783		53967		5537		18630	
Visitor-nights (no.)	1164973		724605		265833		37814		136121	
Average expenditure (U.S. \$)										
Per visitor	625.89		587.49		759.50		469.42		513.72	
Per visitor-night	101.50		89.82		154.19		68.74		70.31	

<sup>a</sup> Source: Author's estimates.

<sup>b</sup> Percentages are based on total for all markets.

necessitates continuing reliance on Venezuelan visitors, a reliable growth market in the past, but a potentially vulnerable one.

A total of U.S. \$23.9 million is estimated to have been spent by visitors during 1980 in gambling and miscellaneous expenses. This estimate, perhaps the least reliable one, includes net losses incurred by visitors engaging in games of chance, as well as expenditures on activities not included in the other categories. Estimates were obtained by subtracting expenditures for all other categories from the global totals calculated from the visitor expenditure and motivational survey (adjusted for seasonal differences). These were complemented by a review of financial data from casinos.

### *Cruiseship passengers*

Passengers of cruiseships spend money on shopping, local transport and tours, and some food and beverages. The major item, of course, is shopping, which takes slightly less than 90% of the estimated total. The transport item is important, particularly for taxi drivers and other small operators. Food and beverage expenditures make up only a small portion of the total; passengers may occasionally purchase a sandwich or a refreshment, but seldom a full meal, as these are generously provided on board.

Estimated gross expenditures within the island by visiting cruiseship passengers are indicated in Table 5 at U.S. \$4.19 million during 1980 (3.3% of total tourist expenditures). These estimates were based on the cruiseship surveys of 1979 and 1980, analyzed as for stayover visitor expenditures.

Table 5. Expenditures by cruiseship passengers, 1980.<sup>a</sup>

Category	All passengers		Per passenger <sup>b</sup> (U.S. \$)
	U.S. \$(000)	%	
Food & beverages	183.5	4.4	2.50
Local transport & tours	330.4	7.9	4.50
Shopping	3671.6	87.7	50.00
Total	4185.6	100.0	57.00

<sup>a</sup> Source: Author's estimates.

<sup>b</sup> Based on 73 432 passengers during year.

### *Airport revenues*

The administration of Aruba's international airport reported total revenues of about N.A. Fl 3.6 million (U.S. \$2 million). These figures are sourced to the island finance department.

Revenues include the airport departure tax paid by visitors leaving the Netherlands Antilles from Aruba as well as various landing and related fees; revenues from collection of this tax are estimated at U.S. \$900 000 during 1980.

For the purposes of these estimates, it was assumed that 90% of all airport tax revenues are derived from tourists or related sources, the balance originating through cargo or other nontourist-related business. Therefore, a total of U.S. \$1.79 million of airport revenues was included as part of receipts from tourism during 1980.

### *Harbour fees and bunker fuel*

Harbour fees relate to payments by cruiseship operators to use the Oranjestad port facilities; this is assumed to be 5% of all harbour revenues. Fuel produced by the

Lago refinery is routinely purchased by airlines serving Aruba. A total of U.S. \$860 000 was added into total tourist receipts from harbour fees and bunker fuel revenues paid locally by cruiseship and airline operators during 1980. These figures are sourced to the island finance department.

### *Foreign exchange and leakages*

Tourist expenditures represent gross earnings of foreign exchange to Aruba. However, certain goods and services must be purchased from abroad to satisfy the visitors' demands. Subtracting these imports, or leakages, from gross foreign-exchange earnings yields estimates of *net* foreign-exchange earnings. For the purpose of this analysis, only first-round leakages are subtracted to obtain net foreign-exchange earnings estimates.

First-round leakages are foreign-exchange earnings flowing out of the country almost immediately upon receipt or never entering the economy. They include food, souvenirs, and other goods and services imported by hotels and other tourist-related establishments to satisfy the immediate requirements of visitors. Also included are travel agents' commissions, foreign-exchange earnings of expatriate personnel, and other income retained abroad. This part of tourist spending has minimum beneficial impact, as it barely circulates within the economy; however, it is a necessary part of doing business and, as such, unavoidable, even when significant.

On the other hand, second-round leakages relate to foreign exchange that circulates at least once through the local economy before flowing out. These occur when local businesses, households, and government incur further expenditures, some for goods and services of foreign origin. Second-round leakages originate with consumers, that is households. Generally, they take place gradually, as the direct, local beneficiaries of tourism (job and equity holders in hotels and other tourism-related enterprises) purchase imported goods and services as part of their normal household expenditures. Repatriated profits of foreign-owned equity, servicing of foreign-based loans, as well as purchases of foreign-made capital goods required for expansion or improvement of facilities are also included in this category, as are

Table 6. First- and second-round leakage component of foreign-exchange earnings from tourism.<sup>a</sup>

	1979		1980	
	U.S. \$ (million)	% <sup>b</sup>	U.S. \$ (million)	% <sup>b</sup>
Gross foreign-exchange earnings	115.9	100.0	125.1	100.0
First-round leakage				
Private sector	46.7	40.3	50.8	40.6
Tourist Bureau	0.7	0.6	1.0	0.8
Retained locally	68.5	59.1	73.3	58.6
Second-round leakage				
Total	20.1	17.3	21.5	17.2
Retained locally	48.4	41.8	51.8	41.4
1st plus 2nd round leakages	67.5	58.2	73.3	58.6

<sup>a</sup> Source: Author's estimates.

<sup>b</sup> Percentages are based on gross foreign-exchange earnings.

foreign-currency expenses incurred by utility companies for fuel and other inputs. Before this foreign exchange ultimately leaves the island's economy, it circulates several times within it, creating several layers of indirect employment and value added. Thus, the ultimate beneficial impact of these higher-round leakages on the local economy is significantly higher than first-round leakages.

Table 6 presents a summary of first- and second-round leakages for 1979 and 1980. These estimates were obtained from a detailed analysis of the financial statements of hotels and other establishments in the tourism industry. Foreign-exchange components of reported cost items were estimated and added up across all types of establishments. It is noted that first round leakages include overseas marketing and promotion expenditures by the Aruba Tourist Bureau.

#### *First-round leakages and net foreign-exchange earnings*

As shown in Table 7, Aruba's hotel sector is estimated to have captured U.S. \$53.4 million of gross foreign exchange during 1980.

Average ratios, derived from the generalized hotel financial statements and supplemented by observation, yield the net foreign-exchange earning estimate for 1980 presented in Table 7. According to these figures, about 63% of all foreign exchange earned by the hotels in the island remains locally through the first round of expenditures. This is a fairly high proportion compared to other Caribbean destinations, particularly considering that Aruba does not produce any food items. The big difference, of course, is in the high level of wages and salaries paid, including social benefits.

Table 8 presents estimates of net foreign-exchange earnings retained and leakages through the first round of expenditure for all nonhotel establishments directly linked to tourism, including restaurants, bars, nightclubs, transport, shops, casinos, and so on. Gross income for these establishments during 1980 is estimated at U.S. \$71.6 million. These estimates were obtained by breaking down the operating costs of various types of establishments and are shown in Table 9.

Table 7. Locally apportioned component and first-round leakage of hotel revenues, 1980.<sup>a</sup>

Category	% of operating income	Apportioned component (U.S. \$ 000)	Distributed locally (%)	Retained locally (U.S. \$ 000)	1st round leakage (U.S. \$ 000)
Payroll & personnel	30	16032.5	95	15230.9	801.6
Cost of goods sold <sup>b</sup>	15	8016.2	15	1202.4	6813.8
Utilities	7	3740.9	90	3366.8	374.1
Advertising	5	2672.1	5	133.6	2538.5
Miscellaneous <sup>c</sup>	19	10153.9	60	6092.3	4061.6
Fixed expenses <sup>d</sup>	24	12826.0	60	7695.6	5130.4
Total	100	53441.6		33721.6	19720.0
% of gross income				63.1	36.9

<sup>a</sup> Source: Author's estimates.

<sup>b</sup> Food and beverage.

<sup>c</sup> Includes insurance, replacement of linen, cutlery, and glassware, office supplies, telephone and telegraph, repairs and maintenance, entertainment, and legal, accounting, and other expenses.

<sup>d</sup> Includes depreciation, taxes, and profits.

Table 8. Locally apportioned component and first-round leakage of nonhotel establishment revenues, 1980.<sup>a</sup>

Category	% of operating income	Apportioned component (U.S. \$ 000)	Distributed locally (%)	Retained locally (U.S. \$ 000)	1st round leakage (U.S. \$ 000)
Payroll & personnel	23.5	16829.9	95	15988.4	841.5
Cost of goods sold <sup>b</sup>	44.3	31743.7	15	4761.6	26982.1
Utilities	3.9	2769.7	90	2492.7	277.0
Advertising	3.1	2238.9	50	1119.5	1119.4
Miscellaneous <sup>c</sup>	0.3	238.8	60	143.3	95.5
Fixed expenses <sup>d</sup>	24.9	17809.4	90	16028.5	1780.9
Total	100.0	71630.4		40534.0	31096.4
% of gross income				56.6	43.4

<sup>a</sup> Source: Author's estimates.

<sup>b</sup> Food and beverage.

<sup>c</sup> Includes insurance, replacement of linen, cutlery, and glassware, office supplies, telephone and telegraph, repairs and maintenance, entertainment, and legal, accounting, and other expenses.

<sup>d</sup> Includes depreciation, taxes, and profits.

Table 9. Percentage breakdown of operating costs for various tourism-related establishments.

Category	Restaurants & similar	Local transport	Entertainment	Tourist shops	Gambling & miscellaneous
Payroll & personnel	23	50	50	10	30
Cost of goods sold	47	15	15	65	30
Utilities	5	3	3	3	5
Advertising	5	3	3	3	3
Miscellaneous	0	0	5	0	0
Fixed expenses	20	29	24	19	32

Cumulatively, payroll and personnel expenses constitute only 23.5% of total gross income, compared with 44.3% for cost of goods sold. This is because the latter category includes the high-import-content merchandise sold by the tourist shops, where wages and salaries constitute only a small part of gross income. Furthermore, 90% of all fixed expenses, depreciation, taxes, and profits are assigned locally. Most of these establishments are owned by Antillian concerns (even if many shops are owned by Curacao interests) and almost entirely managed locally. Likewise, they finance their operations and pay interests on loans locally, and they pay higher taxes, proportionately, than hotels, which are still protected by incentive laws. On the whole, the local component is lower and leakages are higher proportionately, than in hotels; however, individual subsectors within the tourism industry display much higher local components. For instance, transport, including watersports, relies largely on local factors of production.

Table 10 presents a composite profile of local retention and first-round leakages across Aruba's tourism industry. Based on these figures, net foreign exchange earnings generated by tourism were U.S. \$74.3 million in 1980.

Table 10. Locally apportioned component and first-round leakage of tourism industry revenues, 1980.<sup>a</sup>

Category	% of operating income	Apportioned component (U.S. \$ 000)	Distributed locally (%)	Retained locally (U.S. \$ 000)	1st round leakage (U.S. \$ 000)
Payroll & personnel	26.3	32862.4	95.0	31219.3	1643.1
Cost of goods sold <sup>b</sup>	31.8	39759.9	15.0	5964.0	33795.9
Utilities	5.2	6510.6	90.0	5859.5	651.1
Advertising	3.9	4911.0	25.5	1253.1	3657.9
Miscellaneous <sup>c</sup>	8.3	10392.7	60.0	6235.6	4157.1
Fixed expenses <sup>d</sup>	24.5	30635.4	77.4	23724.1	6911.3
Total	100.0	125072.0		74255.6	50816.4
% of gross income				59.4	40.6

<sup>a</sup> Source: Author's estimates.

<sup>b</sup> Food and beverage.

<sup>c</sup> Includes insurance, replacement of linen, cutlery, and glassware, office supplies, telephone and telegraph, repairs and maintenance, entertainment, and legal, accounting, and other expenses.

<sup>d</sup> Includes depreciation, taxes, and profits.

### *Second-round leakages*

Close to U.S. \$32.8 million, or 26.3% of overall gross tourist receipts during 1980 were wages and salaries, income taxes and other social benefits paid to labour, most of which is local. It is estimated that \$31.2 million is distributed locally to Aruban workers in the tourism industry or to the government. This implies high value added and modest first-round leakages.

Net take-home pay is substantially below the gross payroll and personnel amounts reported above, as these include taxes and other allowances for social benefits. Net wages and salaries received by workers (disposable income) go for food, clothing, housing, transport, vacations, and other goods and services, as well as for savings in some cases. Some of these expenditures are for goods and services produced locally, and others are for imported items; thus second-round leakages are incurred.

Taking the above into consideration and using additional research-based assumptions to distinguish between local and foreign expenditures, it was estimated that 1980 second-round leakages were U.S. \$21.5 million, for total first- and second-round leakages of \$73.3 million.

### *Value added by tourism*

The contributions of tourism to Aruba's gross domestic product (GDP) is measured by value added directly by various subsectors of the industry, plus value added (indirectly) in other sectors of the local economy.

- Direct value added is wages and salaries, rent, interest, and profits paid to persons living in Aruba. Payments made to individuals or companies in other countries are excluded.

- Indirect value added is the additional value added created in other sectors of the economy as a result of local purchases made by businesses receiving the initial tourist expenditures and the chain reaction of further purchases this engenders. The

Table 11. Direct value added by tourism to the island's economy, 1980.<sup>a</sup>

Subsectors	Tourist expenditure (U.S. \$ 000)	% direct value added	Gross value added	
			(U.S. \$ 000)	%
Hotels	53331.6	39.3	20959.3	42.0
Restaurants, bars & related	4500.0	41.0	1845.0	3.7
Local transport & tours	4659.5	67.1	3126.5	6.3
Shops	31156.9	22.8	7103.8	14.2
Casinos & miscellaneous	31424.0	53.8	16906.2	33.8
Total	125072.0		49940.8	100.0

<sup>a</sup> Source: Author's estimates.

size of the indirect value-added element is a reflection of the extent to which tourism is linked to the rest of the economy.

In general, a higher value added, created by high labour content and profit margins, results in a greater contribution to household incomes and therefore to GDP.

This section deals only with direct value-added components. In the absence not only of national accounts, but also of overall estimates of GDP, attempts to determine indirect value added can not yield reliable results now. Considering that DECO is currently initiating a project to formulate and maintain the required macroeconomic statistics, further work on the contribution of tourism to Aruba's GDP is left as a specific project recommended for future implementation.

Aruba's tourism industry generated an estimated U.S. \$46.4 million of direct value added in 1979 and just under \$50 million in 1980. The estimates shown in Table 11 disaggregate value added for the various subsectors of the industry. These estimates were obtained by extracting the direct value-added portions (wages and salaries, rent, interest, and profits) from the financial statements provided by hotels and other types of tourist-oriented establishments, certain subjective assumptions were made to cover data gaps.

Dividing these figures by the total population of Aruba yields an average direct value added of U.S. \$780 per capita in 1980. Reliable published sources (International Monetary Fund, World Bank) have estimated the average per-capita income of Aruba to be in the range of \$4000-4500 (\$256 million to \$288 million across the 64 000 residents of the island). This indicates that the tourism industry directly provides 17-20% of aggregate income received by the island. As indicated above, indirect value added generated through linkages to other sectors of the local economy is not included, nor are induced effects due to the respending of income by households; adding these would increase substantially tourism's contribution to Aruba's GDP and island-wide income.

### *Employment and tourism*

#### *Overall employment*

Table 12 presents recent island-wide employment estimates disaggregated by economic sector. Although obtained through various sources, these estimates are generally comparable. Employment directly generated by the tourism industry is included within category 5, Trade and HORECA (HOTels, REStaurants, CAFes). Altogether, this category provided 34.2% of the work force in 1978; however, only a portion of this employment can be ascribed to tourism.

Table 12. Employment by economic sector, 1972-1978.<sup>a</sup>

Sector	1972		1973		1974		1976		1978	
	No.	%								
Agriculture	52	0.3	52	0.3	52	0.3	65	0.3	50	0.2
Industry (includes Lago)	2146	11.6	2128	10.3	2127	10.0	2303	10.5	2100	9.2
Utilities	414	2.2	411	2.0	420	2.0	163	0.7	500	2.2
Construction	2224	12.0	4012	19.5	2943	13.9	2516	11.5	2000	8.7
Trade & HORECA	6066	32.8	6346	30.8	6349	29.9	6996	31.9	7850	34.2
Transport & communication	618	3.3	714	3.5	959	4.5	890	4.1	1050	4.6
Banking & insurance	672	3.6	736	3.6	762	3.6	1147	5.2	1450	6.3
Community & household services	3444	18.6	3452	16.7	3433	16.2	3441	15.7	2950	12.8
Total — Private sector	15636	84.4	17851	86.7	17045	80.5	17521	79.9	17950	78.2
Government (central & island)	2122	11.5	1904	9.2	3300	15.5	3563	16.2	4105	17.9
Education	769	4.1	842	4.1	823	3.9	851	3.9	895	3.9
Total — Public sector	2891	15.6	2746	13.3	4123	19.5	4414	20.1	5000	21.8
Total workforce	18527	100.0	20597	100.0	21168	100.0	21935	100.0	22950	100.0
Unemployed	2461		936		na		1711		na	
Total labour force	20988		21533				23646			

<sup>a</sup> Sources: 1972-1974, DECO, Bevolking in Aruba, 1975; 1976, DECO, unpublished statistics; 1978, Jantzen, Work opportunities and tourism, 1979.

Table 13. Direct employment in tourist establishments, 1979.<sup>a</sup>

Sector	No. of employees	% of direct employment	% of Aruba workforce <sup>b</sup>
Hotels & casinos	3046	61.4	13.2
Restaurants, bars & nightclubs visited by tourists	222	4.5	1.0
Tourist shops			
Within hotels	175	3.5	0.8
Outside hotels	825	16.6	3.6
Transport	557	11.2	2.4
Watersports	87	1.7	0.4
Miscellaneous	50	1.0	0.2
<b>Total</b>	<b>4962</b>	<b>100.0</b>	<b>21.6</b>

<sup>a</sup> Sources: Author's estimates, supplemented by data from Departments of Labour and Social Affairs, and Economic Development and from hotels and other establishments.

<sup>b</sup> 23 000 in 1979.

### *Employment generated by tourism*

The discussion is focused on jobs directly related to tourism. Not included are the large numbers of indirect jobs held by workers not directly connected with tourists or with the industry that serves them, but receiving all or most of their remuneration because of tourism in the island. Generally included within this category are architects, lawyers, and other professionals, teachers, government workers, and a host of other trades. In Aruba, it is difficult to provide a firm definition of indirect employment, as tourism pervades the island's economy.

Jobs deemed directly generated by tourism are in:

- International-class hotels and casinos.
- Restaurants, bars, and nightclubs.
- Tourist-oriented shops.
- Transport (airlines, tour companies, taxis, car rental agencies, travel agencies, and airport-related employment).
- Watersports.
- Miscellaneous activities (tourist bureau, real estate, tourism project promotion, etc.).

As indicated in Table 13, the tourism industry in 1979 generated and supported 4962 direct jobs, as defined above. This represents about 21.6% of the island's workforce, estimated at about 23 000 persons holding paid jobs.

These results were obtained by compiling data from various sources, including the actual establishments. Judgment was used to preserve compatibility between the sources. Allowing for the possibilities of minor duplication, missing information, and other errors, the estimates should be accurate within 5%.

Data available for the last 3 years point to significant growth in tourism-related employment. As shown in Table 14, total direct employment increased by 6.8% between 1978 and 1979, and by 26.5% between 1977 and 1978. This large increase was largely due to the start-up of the Corcorde and Aruba Beach Club hotels.

There appears to be a close relationship between employment in hotels and casinos and those in other categories. Increases in the number of employees working in hotels and casinos are reflected in an almost parallel increase in employment in restaurants, shops, transport companies, etc. During the last 3 years for which figures

Table 14. Direct employment generated by tourism.<sup>a</sup>

Employment category	No. of employees			% growth	
	1979	1978	1977	1978-1979	1977-1978
Total direct	4962	4644	3670	6.8	26.5
Males	2704	2471	1823	9.4	35.5
Females	2258	2173	1847	3.9	17.7
% male in total	54.5	53.2	49.7		
Antillians	4518	4230	3367	6.8	25.6
Foreigners	444	414	303	7.3	36.6
% Antillian in total	91.1	91.1	91.7		
Hotel & casino	3046	2855	2107	6.7	35.5
Males	1987	1787	1219	11.2	46.6
Females	1059	1068	888	-0.8	20.3
% male in total	65.2	62.6	57.9		
Antillians	2746	2580	1916	6.4	34.7
Foreigners	300	275	191	9.1	44.0
% Antillian in total	90.2	90.4	90.9		
All other categories	1916	1789	1563	7.1	14.5
Males	717	684	604	4.8	13.2
Females	1199	1105	959	8.5	15.2
% male in total	37.4	38.2	38.6		
Antillians	1772	1650	1468	7.0	14.1
Foreigners	144	139	95	3.6	46.3
% Antillian in total	92.5	92.2	93.9		
Direct/1000 room nights					
Hotel & casino	5.2	5.8	5.1		
Other	3.3	3.7	3.7		
Total	8.5	9.5	8.8		

<sup>a</sup> Sources: Author's estimates from data from the Department of Labour and Social Affairs.

are available, the proportion of six hotel and casinos employees for every four in other tourism-related categories appears to hold fairly steady.

Likewise, there seems to be a direct relationship between employment and the volume of tourism received by the island, as expressed in hotel room-nights; about nine direct employees are required per 1000 hotel room-nights; of these, roughly 5.5 are in hotels and casinos, the rest in related jobs (Table 14).

The above is another clear indication that the tourism industry affects all segments of Aruba, not just hotels and casinos. It is not only through the generation of employment, management of companies considering hiring new personnel must have good economic reasons to do so, including higher sales and profit volumes.

The data in Table 14, obtained from the Labour and Social Affairs Department and disaggregated by the author, also provide a breakdown of tourism-related direct employment by sex and origin. Men make up an increasing share of total direct

employment, principally in hotels and casinos; women predominate in jobs outside hotels. Antillian workers (the majority by far are assumed to be Aruban) hold more than 90% of the jobs directly generated by tourism and the proportion of Antillian to foreign workers appears stable over this 3-year period.

### *Tourism and government finances*

#### **Revenues**

The Aruba government, as well as the central government of the Netherlands Antilles, derives income from sources directly or indirectly connected with the island's tourism industry. Direct revenue sources are identified and quantified in Table 15.

Under the Netherlands Antilles system of tax collection and distribution, the central government collects income, profit, and most other direct taxes; however, a good portion of these are remitted to the island government. To keep this analysis simple, it is assumed that all revenues discussed here are accrued by the government of Aruba unless specified to the contrary. Not included in this analysis are revenues (or deficits) accrued by semi-autonomous government companies in providing goods and services to the tourism industry.

Other government revenues are generated through taxation on money respent by workers and others receiving earnings from the tourism industry — for instance,

Table 15. Government revenues associated with tourism, 1979.<sup>a</sup>

Source	N.A. Fl (000)	U.S. \$ (000)	Distribution of government tourism revenues (%)
Bed occupancy tax	2291.8	1273.2	11.9
Casino license tax	2415.6	1342.0	12.6
Airport revenues	2950.0	1638.9	15.4
Harbour revenues	173.2	96.2	0.9
Taxi & car-rental licenses	60.0	33.3	0.3
Leaseholds on hotel land	75.0	41.7	0.4
Business licenses for tourism- related establishments	35.0	19.4	0.2
Income tax <sup>b</sup>	6304.0	3502.2	32.8
Profit (corporate) tax <sup>c</sup>	2890.0	1605.6	15.0
Customs duties <sup>d</sup>	2000.0	1111.1	10.4
Government revenues from tourism	19194.6	10663.6	100.0
Total			
Aruba	17045.6	9469.8	88.8
Central	2149.0	1193.8	11.2

<sup>a</sup> Source: Author's estimates, based on data from the island government's Department of Finance.

<sup>b</sup> Income tax revenues are divided on a formula whereby the central government retains 12.5% of the total collected and remits the balance to the island government.

<sup>c</sup> Profit (corporate) tax revenues are divided on the same formula as income taxes.

<sup>d</sup> Customs (import) duty revenues, starting in 1979, are divided equally between the central and island governments.

import and excise duties on cars purchased by hotel workers or on the gasoline required to drive those cars; also, taxes paid by commercial establishments that provide goods and services to those hotel workers.

Although these indirect revenues are real and would not be received by government in the absence of the employees' income (originally generated by tourism), it is difficult indeed to arrive at reliable estimates on these items. DECO is initiating a project to design a comprehensive model of the island's economy. The above fiscal contributions could be further quantified if DECO's project results in a formal input-output matrix table.

The island government's revenues for 1979 were in the neighbourhood of N.A. Fl 125 million. Based on the above figures, tourism directly contributed about 13% of that amount; if indirect revenues are included, tourism's total contribution would be substantially higher.

Most of these government sources are directly related to the amounts spent by tourists in the island. Therefore, it is feasible to establish a direct relationship between tourist receipts and government revenues. Table 16 relates estimated gross tourist receipts captured by Aruba during 1979 and 1980 to the above estimated tax revenues.

The ratio of tourist expenditures-receipts to total government tourism revenues is estimated at 1:0.095. In other words, for each \$1 spent by tourists in Aruba, government receives, on the average, 9.5 cents. Furthermore, the island government received the largest share, 8.3 cents.

Table 16. Tourism receipts and Aruba island government revenues, 1979-1980.<sup>a</sup>

	1979	1980	Average
Gross tourism revenues (N.A. Fl, million)	208.7	225.1	—
Total government share (N.A. Fl, million)	19.2	22.0	—
Total government share (as % of gross)	9.2	9.8	9.5
Island government share (as % of gross)	8.2	8.4	8.3

<sup>a</sup> Source: Author's estimates.

### *Direct expenditures*

It is not difficult to determine the amount of government revenue attributable to tourism. However, the use of these funds — the expenditure side — follows different paths, which are much more difficult to trace.

The only government expenditures that can be assigned unambiguously to tourism relate to the costs of operating the Aruba tourist bureau (including staff, promotion costs, overseas offices, travel, and membership in international organizations, the airport, the hotel school, salaries of casino controllers, and maintenance and upgrading of tourist facilities. These expenditures should be viewed partially as a long-term capital investment toward continued growth to the industry rather than strictly as a current expense. Tourist-related government expenses for 1979 are shown in Table 17.

The island government of Aruba received from tourism during 1979 about N.A. Fl 9.2 million more than it spent on it directly. This excess presumably was used to support other government activities that, although of peripheral benefit to the island's tourism industry, primarily pursue the welfare of the population.

It might be argued that government faces many other expenditures because of tourism: maintenance, repair, and upkeep of roads, port, utilities, and other public

Table 17. Aruba island government expenditures directly related to tourism, 1979.<sup>a</sup>

	N.A. Fl (000)	U.S. \$ (000)	% of island government revenues
Aruba tourist bureau	1824.2	1013.4	10.7
Hotel training school	269.0	149.4	1.6
Airport (90%)	4504.0	2502.2	26.4
Casino controllers	686.7	381.5	4.0
Tourist-related projects <sup>b</sup>	571.8	317.7	3.4
Total	7855.7	4364.2	46.1

<sup>a</sup> Source: Author's estimates, based on data provided by the island government Department of Finance.

<sup>b</sup> These include the museum renovation, hotel district boulevard extension and pedestrian way, Eagle Beach pier, and Bubali bird preserve projects.

facilities, public servants' salaries, garbage collection, health facilities, etc. This is indeed true; however, all these costs, including the airport, are needed by the country's population. It is only a question how much more it costs to run these services because of tourism; it can be argued that tourism adds only nominally to these costs.

The above statements ought not to be construed as a cost-benefit analysis of tourism *vis-à-vis* the public sector. Rigorous exploration of cost-benefit relationships requires much more extensive data than are available at present.

### *Policy and research implications*

Tourism is the most important economic sector of Aruba in its capacity to generate employment, foreign exchange, and value added. It is second in importance to the Lago refinery in its capacity to generate government revenues.

During the past 20 years, government, private industry, and labour have managed to assemble a tourism program fueled by intensive market promotion and supported by judicious investment in infrastructure, hotels, and other facilities required to maintain the attraction of the destination and capture money spent by visitors. It can be suggested that, without tourism, Aruba would be a less prosperous island, its residents increasingly dependent on marginal or declining economic activities, and unable to provide the jobs required to support its labour force.

Aruba's tourism industry has grown rapidly, in the process achieving a remarkable balance between supply of tourist facilities and market demand. Hotels enjoy high occupancy rates year-round, with bearable seasonal variations; existing markets have been gradually expanded and significant inroads made into new ones. This growth has generally taken place with the overall support of the community, which tends to relate positively to tourists and connected business activity.

An extremely important and complex area for policy decisions and further investigation concerns one basic question: how can Aruba maintain a pattern of balanced growth over the next decade in the face of increasing competition for international markets deeply affected by uncertain economic conditions? The economic future of Aruba may hinge on finding the proper answers to this question.

The issue of growth is complicated further by the possibility of substantial offshore oil resources and their exploitation. Although it is difficult to foresee how

this development will affect the economy of this small island and its tourism sector, there is no question that the impact will be substantial. Other countries have found that oil can be a tremendous asset, or a bane, depending on how well the new wealth is managed.

To maintain and possibly expand the contribution of tourism, government should pursue policies and strategies that protect the product in the marketplace, ensure growth accords with sound planning guidelines, and, foremost, that economic benefits from tourism are shared by a wide spectrum of the Aruban population.

Framing these policies and strategies requires a firm grasp of the relevant issues and management resources to deal with forward planning as well as with day-to-day issues.

Certain policy and research issues emerge from the present work.

### *Skill and career development opportunities*

Unlike other Caribbean islands, Aruba does not have an unemployment problem; on the contrary, a scarcity of qualified people has become a constraint to growth. Hotels have had to compete with one another for skilled and semiskilled workers, in the process causing wage levels to increase.

Government has always allowed business to bring in a limited number of top management and highly skilled personnel from overseas. This is consonant with policies that clearly reserve all jobs, with the exception noted, for Antillians.

To avoid possible constraints to growth posed by the lack of adequately trained personnel, government has pursued programs to enhance the level and quality of training and career opportunities open to young Arubans entering the job market. Also, on-the-job training for those Arubans already employed but interested in upgrading their skills is being pursued. These programs should be continued and expanded. The fledgling Aruba Hospitality (hotel) Trades School should further this objective.

### *Local entrepreneurship*

Perhaps the most crucial link to be further strengthened between tourism and the domestic economy relates to the emergence of local entrepreneurial and managerial groups. Through capital formation and technological adaptation, local groups are increasing their investment in tourist-related projects; others are becoming involved in the operations and management, at middle levels and above, of hotels, restaurants, nightclubs, shops, ground handling, watersports operations, etc.

Compared to other Caribbean islands, where most aspects of the tourism industry are dominated by foreign interests, Aruba has a long tradition of local entrepreneurship and involvement. Significantly increased local participation has been achieved recently, and more is expected soon. Although the top layer of supervisory and technical personnel within hotels is largely foreign, a growing number of Arubans are being trained to occupy managerial or specialized positions.

This evolving trend should be further enhanced through specific policies and investment programs geared to encourage local entrepreneurship. This could include a pool of investment capital (possibly through a government-run development bank) available at low interest to local entrepreneurs able to present a sound business plan.

### *Leakages and linkages*

Aruba can produce only a small part of the inputs required to satisfy at a proper

level the requirements of tourists. Goods and some specialized services have to be imported and paid for in foreign currency; these are usually referred to as leakages.

A certain level of foreign-exchange leakages is unavoidable in tourism. Criticism has been leveled from some academic quarters against tourism because of the extent of these leakages, particularly in the case of Caribbean island destinations unable to supply from internal sources the goods and services required by tourists. The corollary drawn by these critics (that tourism is not an entirely beneficial economic activity) is not supported by the factual evidence presented by Aruba as well as by some other Caribbean destinations, including the Cayman Islands, the Bahamas, and Bermuda. The people of these islands enjoy high standards of living largely because of the existence of a thriving tourism industry, in spite of significant import bills and other leakages.

The key to using tourism in a serious economic development strategy is its ability to create foreign exchange, jobs with career advancement possibilities, value added, government revenues, and capital-formation opportunities. In Aruba, tourism achieves these objectives reasonably successfully, even if it results in significant import bills and other leakages; these are only part of the destination's costs of being competitive and doing business in the field. Much as an entrepreneur must buy merchandise from other enterprises to remain in business, a destination that wants to develop tourism as a meaningful export industry must allow some leakages in the form of imports from other countries.

Food and most finished merchandise purchased by tourists or required by hotels to satisfy their requirements must be brought from outside. Fruit, vegetables, fish, beef, poultry, etc. are brought from Venezuela, the U.S., Colombia, and other places, not only for tourists, but also to supply the local population. Aruba's small and struggling agricultural sector cannot be expected even to begin supplying this combined demand; there is limited production of pork and goatmeat as well as eggs; however, it is all sold to the local population.

It follows then that the possibilities of linking tourism to Aruba's agricultural sector are meagre. For instance, development of a local fishing industry could decrease by a measurable amount foreign-exchange leakages due to food imports; however, high salary and employment levels seriously conspire against the economic feasibility of such a project.

A closer relationship between tourism and other service industries, particularly trade and financial and insurance activities, appears justified. Traditionally, Aruba has depended overwhelmingly on vacationers for its tourism trade, while business travel has been almost negligible. As Aruba increases its profile as an offshore financial, transport, and possibly energy centre in the southern Caribbean, closer ties between tourism and business activities should be encouraged, by providing, for instance, upgraded hotel and communications facilities for business travelers.

### *Tourism planning and management information system*

Sound planning and management of tourism requires accurate and timely information on key indicators and research subjects. A system that provided such information would be a decision-making tool, providing advice to concerned industry and government personnel on developing trends or unusual events requiring special attention.

Design and implementation of such a system is strongly recommended. Components might include:

- Historical and current data on statistics and indicators, including:

Visitor-arrival and hotel-occupancy statistics.

Hotel-plant capacity and prevailing rates, as well as proposed projects and their level of investment.

Demographic and socioeconomic statistics, particularly concerning employment and economic impact.

Infrastructure development status and costs.

- Basic information on key market areas of interest to Aruba and on activities of competing destinations.

- Airlift situation — airlines serving Aruba and competing destinations in the Caribbean, their fares, capacity, etc.

Computers, with their great storage and information-retrieval capacity and decreasing prices, should facilitate the development of this new system.

### *Financing of tourism development budget*

Growth of Aruba's tourism industry will require government to expand its support of the funding of promotion in new and existing markets and of upgrading the product through new attractions and improved infrastructure. Provisions of these funds should be facilitated by this study's conclusions that tourism contributes substantially more to government revenues than it receives.

### *Appendix A: Hotel plant characteristics*

Commitments were made to hotel managers that, in respect to sensitive data, only figures consolidated across several properties would be published, thus protecting the confidentiality of individual establishments.

#### *Investment*

Estimates of total and per-room investment for the various hotels, as reported by developers to the island government's Department of Economic Development (DECO) are shown in Table A-1. The information was not subjected to independent audits and figures may not be entirely compatible across properties as they may cover different development items. Nevertheless, it is deemed to be useful information and presented in that spirit. Furthermore, the per-room development costs are not comparable across individual hotels; they were all built at different times, are of different quality, and have different amenities.

The two most recently built high-rise hotels, the Americana (1973-1974) and the Concorde (1976-1977), were built at costs of U.S. \$46 500 and \$60 000 per room, respectively, including allowances for common areas. Present-day comparable cost would be in the range of \$75 000-90 000 per room. The Aruba Beach Club, the most recently built low-rise hotel (1975-1976), cost more than \$36 000 per room; comparable costs today would be in the range of \$45 000-55 000 per room.

A study by members of the Aruba Hotel and Tourism Association (AHATA) estimated the industry's total investment (it is assumed that only hotels are included) at U.S. \$88 555 000 during 1979. It is unknown what basis was used to arrive at this estimate; however, it averages out to about \$42 550 per available room.

#### *Average occupancy rates*

The Aruba tourist bureau has maintained historical data on average monthly occupancy rates for all tourist-oriented hotels in the island, as reported by the hotel's management. This information greatly facilitates an in-depth analysis of the dynamic

Table A-1. Initial investment in hotels.

Hotel	Year built	No. of rooms	Total cost (U.S. \$ '000)	Cost per room (U.S. \$)
<b>High-rise, deluxe</b>				
Holiday Inn				
Phase I	1967-1968	200	4839.0	24250
Phase II	1974	187	6666.7	35700
Americana	1973-1974	200	9308.3	46500
Caribbean	1958-1959	220	6544.4	29800
Sheraton	1966-1967	202	7027.8	34800
Concorde	1976-1977	496	30000.0	60500
<b>Low-rise, first class</b>				
Manchebo	1965	72	643.3	8900
Beach Club	1975-1976	133	4905.0	36900
Divi-Divi	1968	124	1500.0	12100
Tamarijn	1974	150	3150.0	21000
Talk of the Town <sup>a</sup>	1959	64	890.0	13900

<sup>a</sup> Refurbished, 1964.

relationships between hotel plant capacity (supply) and visitor demand for accommodations.

Fig. A-1 shows the relationship between hotel room capacity and effective demand for 1968-1980. The left axis represents actual rooms and the right room-nights per year (thus each room represents 365 room-nights per year).

As shown, the plant capacity among high-rise hotels has increased more rapidly than that of low-rise hotels over the last few years, both in number of rooms and proportion of plant added. Low-rise hotels, while having a more constrained growth profile, seem to have been able to maintain a steadier and closer balance between plant capacity and demand.

There has been a high historical correlation between supply and demand; the close relationship of growth in supply in response to actual or expected increase in demand is a credit to the industry. This correlation can be further quantitatively examined by performing a regression analysis between these two variables. Least-square straight-line regression analysis for 1968-1980 yielded these results for all hotels:

$$\begin{aligned} \text{Capacity} &= 15\,032.0 + (1.3024 \times \text{demand}) \\ \text{Demand} &= -11\,541.8 + (0.7678 \times \text{capacity}) \\ \text{Regression coefficient } (r) &= 0.9833 \end{aligned}$$

The first equation seeks to explain capacity as a direct function of demand (where the latter is the independent variable). It states that, for any given increment in room-night demand, the hotel sector has supplied 1.3 times that increment.

The second equation looks at demand as a dependent variable of supply. It states that yearly room demand averages 0.768 (76.8%) of supply, less a certain fixed coefficient of close to 11 500 room-nights per year. The first coefficient, 76.8%, can be loosely interpreted as the overall occupancy rate for the whole hotel industry throughout the last 12 years.

The correlation coefficient ( $r$ ) is very close to unity. This indicates an extremely

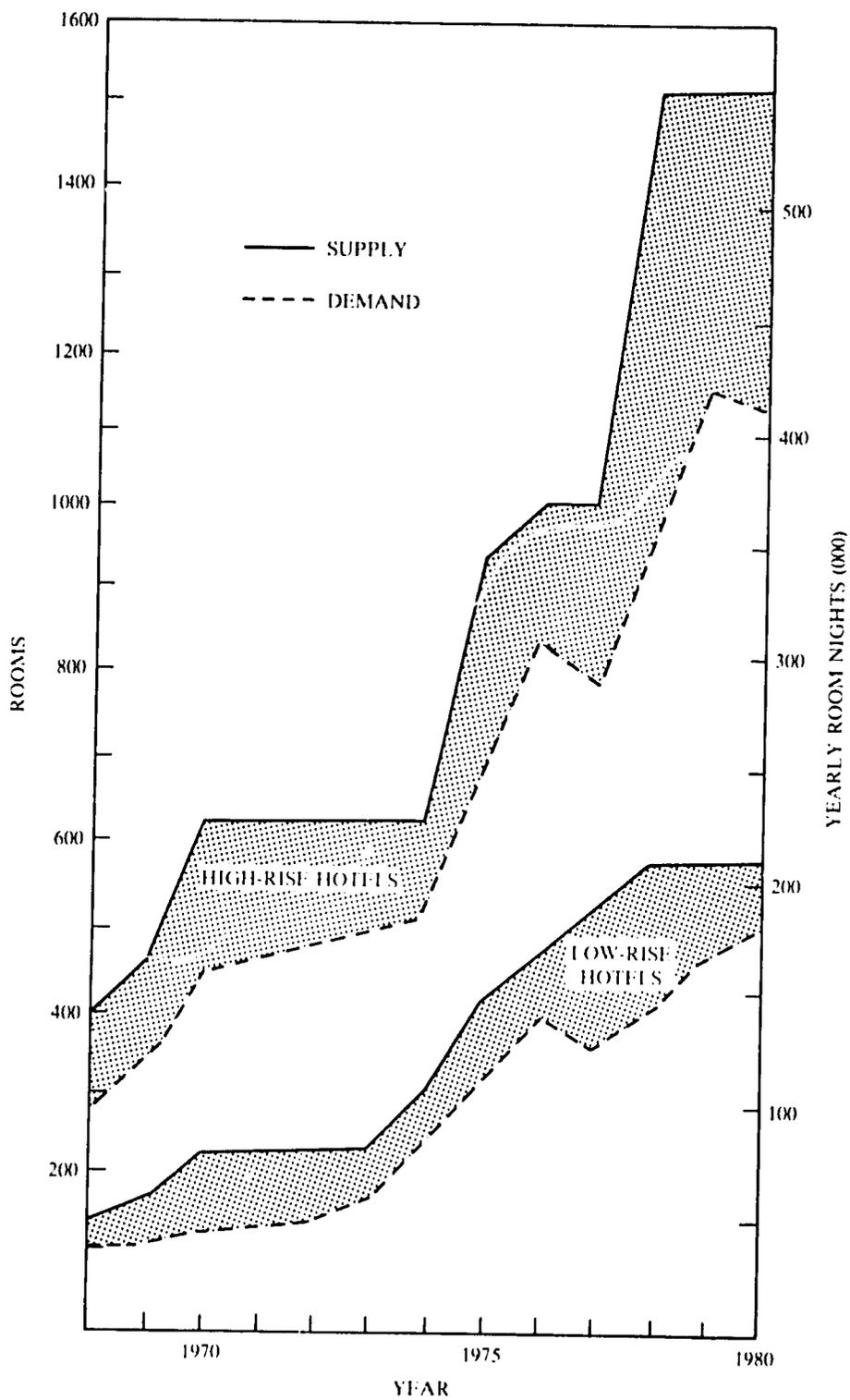


Fig. A-1. Hotel plant supply-demand relationship, 1968-1980. Source: Author's estimates.

high positive correlation between supply and demand. Note that leading or lagging one of the two variables does not improve the regression coefficients; in fact it worsens them. This implies a close-knit, cause-effect relationship over time.

Hotels in Aruba tend to operate at relatively high occupancy levels, about 70-80% year round.

The overall performance of the hotel sector of Aruba is highly sensitive to the introduction of new, competitive hotel plant. In other words, the hotel sector tends to grow at the expense, at least temporarily, of other existing hotels; the more massive the addition in relation to the existing plant, the stronger this shock effect. Absorption of new expansion to a point where the whole plant resumes high occupancy has historically required a minimum of 1-2 years.

Occupancy rates for all hotels in Aruba were above the 70% level (12-month moving average) until the second half of 1969, when the opening of the Divi Divi and the Holiday Inn caused a dip to the mid-60% level by late 1970. Afterward, occupancy rates climbed steadily until they reached an average well above 80% by early 1975 (see Table A-2).

The opening of the Tamarijn and the second addition to the Holiday Inn (undoubtedly coupled with external factors impinging upon the overall tourism market for Aruba) brought about a decline to an average of 75% by early 1976. The occupancy rate recovered afterward rapidly, reaching a high of close to 85% by mid-1977.

The opening of the Aruba Beach Club in mid-1977 and the Concorde in early 1978 had a long-lasting shock effect. Island-wide occupancy rates fell rapidly to below 65%, a record low. Although this drop could also have been precipitated by external factors, there is no doubt that a massive 30% addition to the then-existing stock had a strong impact that had to be absorbed over time.

High-rise hotel-occupancy rates remained remarkably steady until mid-1977, suffering a significant decline afterward, reflective of the whole sector. Levels above 75% have since been reached again; this average, however, masks the fact that some

Table A-2. Seasonality factors of hotel occupancy rates, 1968-1980.<sup>a</sup>

Year	Yearly average occupancy rate	Monthly occupancy rate		Standard deviation from average
		Maximum	Minimum	
1968	72.8	95.3	47.4	14.7
1969	69.8	93.4	49.6	14.6
1970	66.3	89.4	41.0	14.8
1971	69.6	93.0	45.3	15.7
1972	72.0	92.9	47.2	13.9
1973	77.1	93.8	57.0	11.7
1974	81.8	96.1	62.7	11.4
1975	75.3	98.0	49.0	15.3
1976	82.8	94.5	68.2	8.6
1977	75.3	96.5	55.1	13.9
1978	65.7	87.2	46.4	12.7
1979	77.2	96.4	46.6	14.5
1980	76.1	93.3	50.3	9.9

<sup>a</sup> Source: Author's estimates.

Table A-3. Hotel plant proforma income statement.<sup>a</sup>

	1975 <sup>b</sup>			1978 <sup>b</sup>		
	Gross operating income		Per-room average (U.S. \$)	Gross operating income		Per-room average (U.S. \$)
	U.S. \$ (000)	%		U.S. \$ (000)	%	
Gross operating income						
Room sales	12051.3	47.5	8427	24041.4	48.5	11553
Food & beverage sales	11937.4	47.1	8348	21238.1	42.9	10206
Rental & leases	216.5	0.9	151	206.9	0.4	99
Miscellaneous	1151.0	4.5	805	4049.3	8.2	1946
Total gross income	25356.2	100.0	17731	49535.6	100.0	23804
Expenses						
Payroll & personnel	7527.5	29.7	5264	14730.9	29.7	7079
Cost of goods sold	4073.5	16.1	2849	7060.5	14.3	3393
Utilities	1491.3	5.9	1043	3518.3	7.1	1691
Advertising & promotion	1228.8	4.8	859	2199.7	4.4	1057
Miscellaneous	5081.0	20.0	3553	9388.1	19.0	4511
Total expenses	19402.1	76.5	13568	36897.4	74.5	17731
Net operating income	5954.0	23.5	4163	12638.3	25.5	6073

<sup>a</sup> Source: Author's estimates, based on financial statements submitted by individual hotels.

<sup>b</sup> Basis of 1430 rooms in 1975 and 2081 in 1978.

of the high-rise hotels, particularly the older ones, are currently experiencing much lower occupancy rates, which are reflected in their financial performance.

The pattern for low-rise hotels is more erratic than for high-rise properties, possibly reflecting smaller size and marketing power. Declines appear more precipitous and recoveries more pronounced than with the high-rise properties. This pattern is particularly notable during the latest decline-recovery cycle starting in mid-1977. From a high of close to 85% (12-month moving average), occupancy rates declined to about 65% by the end of the first quarter of 1978. Since then, they have steadily increased toward previous record levels above 80%. It may be concluded that low-rise properties, while initially more vulnerable to shock effects, show a good deal of resilience by recovering rapidly to profitable levels.

### *Seasonality*

As shown in Table A-2, Aruba's tourism industry made significant progress against seasonality problems between 1968 and 1975; however, these problems seem to have intensified since then, particularly among high-rise properties. Increased competition may have led Aruba hoteliers to rely increasingly on package tours, which tend to compete with individual tourists for scarce air and hotel space during the busy winter season although contributing less during the summer. This is an important policy issue that must be addressed soon.

### *Financial performance*

Proforma financial data for tourist-oriented hotels were obtained for 1975-1978; between 76% and 88% of all rooms in international tourist-oriented hotels were represented in the sample. Information for 1979 was obtained for only 21% of the available rooms; as this percentage was deemed inadequate, data for that year were excluded.

A summary of financial profiles generalized for all international-class hotels in Aruba is presented in Table A-3 for 1975 and 1978. For 1978, total gross operating income for all hotels in the island is estimated at U.S. \$49.5 million. AHAT recently reported revenues of \$49.4 million for its hotel members during 1978; the closeness of these two figures lends them validity.

### *Hotel employment*

Information on the number of persons employed by each hotel in the destination during 1972-1979 was obtained from DECO. Matching these figures against the number of available rooms and the number of room-nights registered in each hotel, key planning ratios concerning number of employees per room and per room-night were obtained.

International-class hotels in Aruba employed an estimated 2773 people by the end of 1979, excluding casinos. With no further hotel construction or large increases in tourism volumes, employment probably remained at similar levels during 1980. This figure nevertheless represents significant growth from employment levels during the early part of the past decade. Hotels in 1972 employed only 1328 persons; thus employment has more than doubled in 7 years. High-rise deluxe and low-rise first-class properties have experienced similar increases (Table A-4). This table also presents estimates of employees per room for 1972-1979. There has been a gradual decrease in the number of employees per room. Construction of new hotel plant appears to accelerate this trend. During years when new hotel projects or existing hotel expansions come on-stream, the employee-per-room ratio decreases sharply.

Table A-4. Hotel employment, 1972-1979.<sup>a</sup>

Year	High-rise hotels	Low-rise hotels	All hotels
<b>No. of employees</b>			
1972	1040	288	1328
1973	1055	351	1406
1974	1085	409	1494
1975	1438	502	1940
1976	1593	559	2152
1977	1613	618	2231
1978	1998	628	2626
1979	2089	684	2773
<b>Annual growth (%)</b>			
1972-1973	1.4	22.8	5.9
1973-1974	2.8	16.5	6.3
1974-1975	32.5	22.7	29.9
1975-1976	10.8	11.3	10.9
1976-1977	1.2	10.6	3.7
1977-1978	23.9	1.6	17.7
1978-1979	4.6	8.9	5.6
<b>% of total</b>			
1972	78.3	21.7	
1973	75.0	25.0	
1974	72.6	27.4	
1975	74.1	25.9	
1976	74.0	26.0	
1977	72.3	27.7	
1978	76.1	23.9	
1979	75.3	24.7	
<b>Employees per room</b>			
1972	1.67	1.32	1.58
1973	1.70	1.23	1.55
1974	1.74	1.44	1.65
1975	1.43	1.25	1.38
1976	1.58	1.40	1.53
1977	1.60	1.09	1.42
1978	1.33	1.10	1.27
1979	1.39	1.21	1.34

<sup>a</sup> Sources: Department of Economic Development (DECO) and author's estimates.

The number of persons employed per room tends to increase when there is no hotel construction, but the increases are not enough to offset previous declines entirely.

These patterns are applicable to high-rise and low-rise properties. Two explanations can be advanced for the patterns:

- More efficient use by hotel management of increasingly scarce, skilled and semiskilled labour resources.

- Heavy competition during construction and initial operation of new hotels for

trained hotel employees, accompanied by considerable shifts in employment between properties.

A least-squares straight-line regression was performed on the above ratios, the results of which suggest a decline of between 2.5-3.5% per year. If this trend were to continue, by the end of the decade, hotels in Aruba will be using less than one employee per room. This has strong implications. It could mean, for instance, that the present number of hotel employees could be deployed over 700 additional hotel rooms. Clearly, expansion of Aruba's hotel plant may take place with much lower employment requirements.

Aruba hoteliers were asked to provide recent information on functional division, skill levels, origin, seasonality, and other characteristics of their personnel on specially designed survey forms. In general, management was very cooperative. Through this survey, data valid for over 58% of all hotel rooms of international class were obtained, with good representation from both high-rise and low-rise hotels. Thus, the summary in Table A-5 can be generalized to the total hotel plant of Aruba.

These figures lead to some conclusions:

- Employment is not subject to violent seasonal variations, as happens in other Caribbean tourism destinations. Total employment in 1979 decreased by only 6%

Table A-5. Hotel employee characteristics by level of responsibility or training, department, and origin, 1978-1979.<sup>ab</sup>

Category	High season <sup>c</sup>			Low season <sup>c</sup>		
	No.	%	E/R ratio <sup>d</sup>	No.	%	E/R ratio <sup>d</sup>
Total	1621	100.0	1.27	1531	100.0	1.20
Responsibility						
Supervisory	237	14.6	0.19	236	15.5	0.18
Skilled	884	54.6	0.69	829	54.4	0.65
Semiskilled	289	17.9	0.23	267	17.5	0.21
Unskilled	209	12.9	0.16	193	12.7	0.15
Department						
Administration	62	3.8	0.05	64	4.2	0.04
Front office	88	5.4	0.07	85	5.5	0.06
Accounting	163	10.0	0.13	163	10.6	0.12
Food & beverage	778	47.8	0.61	721	46.9	0.56
Housekeeping	292	17.9	0.23	262	17.0	0.20
Repairs & maintenance	141	8.7	0.11	141	9.2	0.11
Other	103	6.3	0.08	101	6.6	0.08
Origin						
Total	1140	100.0		1071	100.0	
Local employees	1116	97.9		1047	97.8	
Nonlocal employees	24	2.1		24	2.2	

<sup>a</sup> Source: Hotel employee survey.

<sup>b</sup> Rooms sampled, 1277; except for Origin, 756.

<sup>c</sup> High season — 15 Dec. 1978-15 Apr. 1979; Low season — 15 Apr.-15 Dec. 1978.

<sup>d</sup> Employees per room ratio.

between the high (winter) and low (summer) seasons. This is most likely due to guarantees provided by collective bargaining agreements. Employees below supervisory level had a higher likelihood of being laid off, and food and beverage and housekeeping personnel were more apt to be laid off than those working in other departments.

- Food and beverage departments are, by far, the largest employers, providing jobs to about 50% of the hotels' workforce; most of these jobs fall in the skilled or semiskilled categories. As expected, housekeeping is another department with heavy personnel requirements, about 18% of the high-season hotel workforce; many jobs in this department require little or no previous skills, though some inhouse training is provided.

- Skilled personnel — those employees having specific training in one or more functions — make up the bulk of hotel employees. Unskilled personnel make up less than 13% of the total hotel workforce included in the survey.

- According to information provided by the hoteliers, local employees make up more than 97% of the total. Foreign holders of work permits tend to hold supervisory and highly skilled jobs.

As part of the work leading to the formulation of this document, 279 hotel employees were personally interviewed by field personnel. The goal of this survey was to obtain first-hand information on levels of training, position, aspirations, and other issues and concerns affecting employees in the hotel industry in Aruba. The survey comprised three steps. First, personnel managers of the various hotels on Aruba were asked to inventory their staffs as to skill levels and departments where the employees worked. Second, a sample was selected, representing skill levels and various departments. Finally, after permission was granted, field interviewers contacted employees according to sample quotas.

A wide range of occupations in the hotel industry responded. They were broken down, for the purpose of this study, into seven general areas: administration, front office, accounting, food and beverage, housekeeping, repair and maintenance, and other. The classification was further extended to include the level of job-related responsibility of each employee — supervisory, skilled, semiskilled, or unskilled.

The sample of 279 employees represented almost exactly 10% of the total number of hotel employees in Aruba. Those interviewed included 3.1% of all administration personnel in Aruba, 21.2% of front-office staff, 13.5% of accounting staff, 13% of food-and-beverage employees, 14.9% of all housekeeping staff, 7.9% of repair and maintenance staff, and 30.7% of other employees.

When the responses for each variable (see Table A-6) are examined, the profile of a typical employee can be determined:

Table A-6. Characteristics of average hotel employee.<sup>a</sup>

% males in sample	59.1	% of income contributed	
Age (years)	28.5	to household	41.6
Hours worked per week	46.5	Time in position (years)	3.3
% with primary education	98.6	Weekly salary (N.A. Fl)	169
% principal money earners	37.6	Service charge share (points) <sup>b</sup>	2.75
Number of dependents	2.7	Previous salary (N.A. Fl)	116

<sup>a</sup> Source: Hotel employee survey (279 responses).

<sup>b</sup> Service charge share was reported only by employees in food and beverage departments.

- A 28 year-old male with a primary school education, usually continued in trade school.

- Worked at his present position for a little over 3 years, earning an average of N.A. Fl 169 for a 46.5-hour week; shares in gratuities or bonuses are extra. This figure represents an increase from previous employment earnings, which averaged N.A. Fl 116 per week.

- Although generally not the principal money earner in the household, the worker provides an average of 41.6% of his or her income toward supporting the household.

- For the past year, the worker has not been laid off, nor has his income been interrupted.

- He plans to stay with the hotel industry for at least the next 2 years and has no major complaints against supervisors or the general hotel management.

Those that received some education above the primary school level made up 79.6% of the sample. Those that received less than a primary or basic education made up only 1.4%, and those that only received a primary education made up 19.0%.

Dependents were claimed by only those employees who said they were the principal money earners in their households. Only 37.6% of the sample claimed to be the principal income source, and these had an average of 2.7 dependents. Those employees who asserted that they were not the principal money-earners in the family were asked the percentage of their incomes used for their families. The minimum was 1% and the maximum was 90%, the average being 41.6%.

A majority of the sample (85.5%) stated an intention to stay with the hotel industry for at least the next 2 years. A minority of these indicated a desire for a future with the hotel industry for at least the next 5 years. Those that wanted to leave the industry accounted for 11% and only 3.5% indicated no aspirations for the future.

Those employees who were looking toward continued employment and advancement in the hotel industry plan to accomplish this goal by diligent work and further study (most having gone through inhouse training). Most goals are directed toward achieving a supervisory position in the department. However, some employees voiced no hesitation about leaving their department if a promotion was offered.

A few employees mentioned factors hindering their advancement that were outside their control. For the most part, these were centred on financial matters and managerial policies.

Employees who plan to leave the hotel industry would do so if a better job presented itself. A few respondents indicated that their present hotel positions were temporary and that as soon as openings in their normal occupations (such as construction) became available, they would leave.

More than half the employees in the survey stated that they use cars as the major mode of transport to work. The average expense was N.A. Fl 18.38 per week. The balance of the respondents used the bus system, and a few used taxis.

In general, it can be concluded from the responses of the hotel employees interviewed that the average employee is male, moderately young and educated beyond the primary level. He is satisfied in the hotel industry and plans to advance himself without leaving this segment of the tourist industry. However, some employees may have feared repercussions had they exhibited negative tendencies, and this leads to the possibility of a built-in bias. Employees are not always the primary supporters of their families, but they do turn over almost half of their incomes to their support.

### *Country overview*

Antigua with its dependencies, the islands of Barbuda and Redonda, lies in the Leeward Islands chain to the north of Guadeloupe and to the east of St. Kitts and Nevis. The area of Antigua is only 108 square miles, that of Barbuda is 62 and Redonda 0.5 square mile. Population and tourism activity are concentrated on Antigua.

The island is generally low-lying, and the highest hill rises to 1330 feet in the southwest. In the north and east, the land is undulating and flat and is composed of calcareous marls and coarse sandstone; the central portion is of clay formation. The shores are deeply indented and linked by reefs and shoals, with many fine natural harbours. Both Antigua and Barbuda have superb white coral-sand beaches of the highest quality and attractiveness, offering safe swimming.

The country has traditionally had an agricultural economy, with cotton as the chief crop. Tourism has developed rapidly in recent years, however, and is assuming increasing economic importance whereas that of agriculture has been declining.

Gross domestic product (GDP) in Antigua totaled E.C. \$164.2 million in 1978 of which E.C. \$12.8 million was in agriculture (mostly livestock), E.C. \$11.0 million in construction, and E.C. \$29.7 million in transport and communications. Trade contributed a further E.C. \$19.2 million and hotels and restaurants contributed E.C. \$22.2 million, this being one of the fastest-growing sectors (Table 1).

The deficit on the current account balance of payments was about E.C. \$21.2 million in 1978, a year in which imports totaled about E.C. \$132.5 million. About half this deficit was covered by inflows of official capital and the rest by private capital inflows, which include borrowing abroad by domestic branches of foreign banks.

Imports (merchandise imports and nonfactor resources) are concentrated on food, fuel, and manufactured goods. These imports totaled an estimated E.C. \$207.5 million in 1980, compared with exports of E.C. \$172.3 million for the same year. The merchandise exports by major commodities are shown in Table 2.

The population of Antigua is estimated at 75 000 (source: IBRD); unemployment is high.

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The chapter on Antigua was prepared by the Caribbean Tourism Research and Development Centre, with technical assistance from Esmond Devas of the World Tourism Organization, based on research undertaken by TRC by Timothy Prime, former director of research and statistics at the centre.

Table 1. GDP at current prices by sector, 1973-1978 (E.C. \$ million).<sup>a</sup>

Sector	1973	1974	1975	1976	1977	1978
Agriculture						
Agriculture	1.0	0.7	1.1	1.3	0.8	1.2
Livestock	3.9	4.7	5.9	6.2	7.3	7.9
Forestry & logging	—	—	—	—	—	—
Fishing	1.8	2.4	2.6	3.3	3.5	3.7
Total	6.7	7.8	9.6	10.9	11.6	12.8
Mining & quarrying	0.7	0.8	0.7	1.1	1.0	1.2
Manufacturing	10.1	9.9	11.0	5.1	6.9	9.3
Construction	9.0	8.9	9.0	10.4	10.9	11.0
Electricity & water	1.1	1.3	1.4	1.3	2.1	3.6
Transport & communications						
Road transport	7.0	7.6	7.6	7.3	8.3	9.2
Sea transport	1.0	1.0	1.0	1.0	1.7	3.1
Air transport	6.2	5.6	6.9	8.2	9.1	10.1
Communications	2.8	4.2	4.6	5.5	6.8	7.3
Total	17.0	18.4	20.1	22.0	26.0	29.7
Trade	11.4	12.6	15.3	14.0	17.1	19.2
Hotels & restaurants	8.2	8.4	11.2	14.1	18.5	22.2
Banks & insurance	6.8	8.0	8.5	7.5	9.7	10.6
Ownership of dwellings	13.9	14.8	15.5	16.5	18.4	19.8
Producers of government services	14.3	18.0	15.3	16.6	19.4	23.5
Other services	4.8	6.5	6.7	6.2	6.9	8.4
Less imputed bank service charges	-4.1	-3.8	-3.7	-5.0	-6.6	-7.1
GDP at current prices	99.9	111.6	120.6	120.8	142.0	164.2

<sup>a</sup> Source: UNDP estimates.

Table 2. Exports (E.C. \$ 000) by major commodities, 1973 and 1977.<sup>a</sup>

Commodity	1973	1977
Clothing	977	1625
Rum	425	1599
Cotton lint	472	644
Lobster	382 <sup>b</sup>	1242
Fruit & vegetables	30	54
Corn & sorghum	na	822

<sup>a</sup> Source: IBRD.

<sup>b</sup> 1974 data.

## *The research project*

Antigua was chosen as a study site for several reasons. First, over the past decade, tourism has been assuming greater importance in the local economy, particularly in view of the declining role of agriculture. As indicated in Table 1, hotels and restaurants represented the fastest-growing sector of the economy for 1973-1978. Second, Antigua, like many other small Caribbean islands, is deficient in its data base. Thus, this study represents the first major attempt to collect data on the tourism sector. Finally, Antigua has a good international airport, able to receive large aircraft from Europe and North America, and has become an air gateway to nearby islands. In this way, Antigua plays an important role in tourism development in the Caribbean region.

In conducting this study, the researchers had access to a number of secondary data sources, including visitor statistics (tourists<sup>1</sup> and cruise passengers) from the Department of Tourism, and United Nations estimates of GDP up to and including 1978.

Two major categories of data were used in assessing the economic impact of tourism: visitor expenditure data and data on costs and revenues in the major tourism sectors, including hotels, ground transport, and restaurants. Important existing expenditure data were available in the visitor motivational and expenditure survey (VEMS) undertaken by the Caribbean Tourism Research and Development Centre (CTRC) in the summer of 1978 and the winter of 1979. The VEMS survey of air-arrival tourists was supplemented by a new survey of the expenditure patterns of cruise passengers. The cruiseship sample consisted of 1137 cruise passengers during February-March 1980.

Since tourists spend more than 60% of their money within hotels, the costs and revenues of the hotel sector were examined in great detail; they were examined separately for those hotels with fewer than 25 rooms, with 25-49 rooms, and more than 49 rooms. Revenues and costs were estimated from a sample of hotels in each of these categories. Sources used were detailed operating statements supplied by private hotels and government-owned hotels, and tax returns. Social-security records were used to establish employment in each of these hotel sectors.

The stratification by size of hotel was made because this provided a simple means of isolating groups of hotels with specific characteristics:

- Hotels with more than 49 rooms: essentially large resort hotels, all owned either by foreign companies or by the government of Antigua.
- Hotels with 25-49 rooms: a mix of hotels, with a strong component of local private ownership, but also a number of foreign-owned. Included are beach hotels and some city hotels catering to a business clientele. These hotels are all of a standard likely to be found reasonably acceptable by tourists from outside the region.
- Hotels with fewer than 25 rooms: predominantly locally owned, modest establishments catering mostly to a local and regional clientele.

Ground-transport sector revenues and costs were obtained through separate surveys of the taxi and car-rental industries, based on a sample of operators and establishments.

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<sup>1</sup> The terms "visitor" and "tourist" are used throughout this chapter according to the World Tourism Organization definition. To summarize, a nonresident crossing into Antigua for whatever reason is a visitor. Those visitors staying at least 24 hours are described as tourists; those less than 24 hours, excursionists.

Returns to the social security department were the main source of information for the restaurant sector. Discussions with restaurant owners were the basis of estimates of the proportion of their trade attributable to tourism and of the relationship between wages and tourism.

Revenues and value-added figures in other sectors directly touched by tourism were estimated by reference to the CTRC visitor survey results.

The indirect (i.e., second-round) impact of tourism expenditure was estimated, sector by sector, based on personal observation and discussions with the private sector. Necessarily, these are therefore order-of-magnitude estimates, indicative in aggregate of the overall indirect impact of expenditure by tourists.

Economic data at both macro level (estimating GDP) and the micro level (in hotels and boutiques) are subject to particularly large errors in a poorly documented and researched country with limited resources like Antigua. Nevertheless, the estimates of visitor expenditure are thought to reflect the reality of the situation reasonably well.

Help from many sources in making this analysis was received: this included private- and public-sector organizations and many individuals in Antigua and elsewhere. This assistance is gratefully acknowledged.

### *Tourism sector*

The fundamental natural attractions of Antigua are an excellent climate during the European and North American winter and a quite exceptional range of white coral beaches, even by Caribbean standards. Added to this are a picturesque, tropical, and varied landscape and one of the best hurricane-protected harbours of the Caribbean.

Further to these natural attractions, the island has become a natural air gateway to other islands in its vicinity, with a good airport able to receive all modern, commercial aircraft, and with satisfactory services to Europe and North America. The island has an adequate road network and sufficient but limited water.

The island also has a rich heritage of buildings and sites of great historical interest. Outstanding among these is English Harbour, which was Nelson's dockyard and serviced the entire British fleet in the Caribbean. Having been abandoned in the early 19th century, it has now been lovingly and faithfully restored and has come to life again as a yacht harbour. In addition, the island abounds with fortifications, of which Fort James, Monks Hill and Shirley Heights are prominent. Antiguanians themselves enjoy a varied cultural life, which visitors can most easily share at carnival time, a major fixture in the Antiguan calendar, when the steel bands that enjoy strong local support display their many skills and talents.

There are currently 32 establishments described as hotels by the Department of Tourism, of which 31 are in Antigua and 1 in Barbuda (total 1224 rooms). These range from select establishments such as Coco Point, Curtain Bluff, Haleyon Cove, and Anchorage to quite modest facilities. In addition to hotels there are a further 18 establishments listed as guesthouses, where capacity is 124 rooms. In total, capacity is therefore 1348 rooms (data for September 1980).

The guesthouses are mostly locally owned, whereas there is a considerable degree of foreign ownership of the larger hotels, most of which are scattered along the island's fine coastline outside the capital, St. John's. The luxury hotels experience the highest occupancy rates. Work is in progress (October 1980) for expansions of the Haleyon Cove by 104 rooms and the Jolly Beach by 400 rooms, for completion in 1981; this will bring total capacity to 1800-or-so rooms.

Table 3. Air and sea arrivals in Antigua, 1972-1979.<sup>a</sup>

Origin	1972	1973	1974	1975	1976	1977	1978	1979
Air arrivals								
U.S.								
No.	30897	30770	30228	26460	22891	28905	35311	38819
% of total	44	43	44	43	41	43	47	45
Canada								
No.	8315	9949	9757	9947	8066	8458	8941	9192
% of total	12	14	14	16	14	13	12	11
U.K. & Europe								
No.	7176	7687	8844	6669	6425	7024	10015	15745
% of total	10	11	13	11	11	10	13	18
Caribbean community								
No.	16887	16552	15694	13949	12538	14917	14168	na
% of total	24	23	23	22	22	22	19	na
French & Netherlands W.I.								
No.	2714	2309	1941	2016	2100	2814	2214	na
% of total	4	3	3	3	4	4	3	na
Commonwealth countries								
No.	1425	1537	1184	1513	1319	1783	2205	na
% of total	2	2	2	2	2	3	3	na
South America								
No.	1124	998	869	743	672	568	904	na
% of total	2	2	1	1	1	1	1	na
Other								
No.	1602	1263	380	817	2387	2943	1804	22703
% of total	2	2	0.6	1	4	4	2	26
Total air arrivals	70140	71065	68897	62114	56398	67412	75562	86459
Sea arrivals	2503	2076	2225	2474	793	885	1333	13077 <sup>b</sup>
Total air plus sea	72643	73141	71122	64588	57191	68297	76895	99536
% change	—	+1	-3	-9	-11	+19	+13	— <sup>b</sup>
Sea cruise passengers	63784	52174	27062	23237	32365	35795	51942	70266

<sup>a</sup> Source: Antigua tourist board.

<sup>b</sup> New series, change of method for sea arrivals 1979.

Tourist arrivals by air showed only a modest increase in 1972-1978 (70 140-75 562) but rose rapidly to 86 459 in 1979 (Table 3). This increased marginally to 86 571 in 1980. Arrivals by sea, excluding cruise passengers, have fluctuated considerably (from 2503 in 1972 to 793 in 1976 to 13 077 in 1979) probably reflecting more the varying efficiency of data collection procedures than real changes in that market.

Over the same period, cruiseship passenger arrivals have also fluctuated, from 63 784 in 1972, to 23 237 in 1975 and up to 70 266 in 1979.

Overall the pattern of tourist arrivals shows a plateau period (1972-1974) at around 70 000 per year, followed by a dip to the 60 000-per-year level (1975-1976)

and a rising trend from 1977 to 1979. The dip in 1975-1976 is normally explained as part of the recession in the tourist arrivals that took place in the Caribbean in those years. The downturn in the tourist industry in 1975-1976 resulted in financial pressures on a number of hotels; two were taken over by the Government to prevent closure.

Preliminary indications for 1980 are that little growth was experienced; early returns for 1981 suggest a downturn of about 5% against 1980.

Of arrivals by air, 45% in 1979 were from the U.S., 11% from Canada, and 18% from the U.K. and Europe. About 20% may have been from other Caribbean countries, leaving a balance of 6% from elsewhere. Broadly speaking, those from North America and Europe are mostly vacation tourists and those from elsewhere business tourists.

### *Visitor expenditure and receipts*

The summer 1977 and winter 1978 CTRC survey of visitor motivations and expenditure, covering 1526 and 3677 responses respectively, provided details on average daily expenditure per party and per tourist and a breakdown of expenditure as follows:

- Hotel and meals in hotel;
- Other meals and beverages;
- Local transport;
- Entertainment;
- Shopping;
- Gambling; and
- Miscellaneous expenditure.

In undertaking the current research, the procedure used was to build up expenditure estimates by looking in detail at the revenues and costs of the main sectors involved with tourism — hotels, restaurants, ground transport, and shopping and entertainment. These sector estimates are detailed below. Supplemented by results from the CTRC survey, this enabled new estimates of visitor expenditure to be made, covering expenditure by tourists and by cruise passengers.

#### *Expenditure in hotels*

Hotel revenues were estimated by developing detailed sets of revenue and operating cost statements for hotels in each of the three size categories. This was done separately for 1978 and 1979 by department. Revenues (excluding service charges of 10%) are shown in Table 4.

Hotels in the 25-49 room category did not keep their accounts in a common framework, so allocations were made to various departments consistent with standard

Table 4. Hotel departmental revenues by hotel size (number of rooms).

Department	More than 49		25-49		Fewer than 25
	1978	1979	1978	1979	1978
Rooms	14790	20150	4380	5570	2910
Food	9610	12980	1950	2340	1280
Beverages	3110	4040	880	1110	580
Other	1000	1500	100	130	0
Total	28500	38670	7300	9150	4770

Table 5. Spending (E.C. \$ 000) by all visitors, 1978-1979.

Category	1978	1979
Hotels <sup>a</sup>		
More than 49 rooms	31300	42600
25-49 rooms	8000	10100
Fewer than 25 rooms	5200	6000
Total	44600	58700
Restaurants	8000	9660
Ground transport	6620	9000
Duty-free shopping	5060	7500
Gambling & miscellaneous	5060	6500
Entertainment	2340	3000
Total	71680	94360

<sup>a</sup> Including 10% service charge.

accounting for hotels, which in the Caribbean follows the standard U.S. departmental contribution format.

Reliable data for occupancy and room rates are not available for most of the rooms in the hotels with fewer than 25 rooms. Revenue was estimated on the basis of the relationship established for a sample of these hotels between total salaries and wages and total revenue. Revenues were estimated for 1978 by assuming that salaries and wages represented about 15% of total revenue. In 1979, revenue is estimated to have been 15% greater, due primarily to higher traffic.

When the 10% service charge is included, overall gross revenue of hotels is estimated to have been as shown in Table 5.

#### *Expenditure in restaurants*

Wages and salaries in the restaurant sector were examined, and a relationship between wages and revenue was established after examination of accounts of a selection of establishments. Only those restaurants patronized by tourists were considered, and for each establishment a subjective assessment was made of the tourist-resident ratio. In this way, the proportion of revenue created from direct expenditure by tourists was estimated.

This approach led to an estimate of expenditure in restaurants outside hotels of E.C. \$8.00 million in 1978 and E.C. \$9.66 million in 1979.

#### *Expenditure on ground transport*

Overall spending on ground transport is estimated to have been E.C. \$6.62 million in 1978 and E.C. \$9.00 million in 1979. This was derived from car and moped rentals and taxi hire.

#### *Car rental*

There were 308 cars registered for rentals in 1978, and this increased to 403 in 1979. For the larger establishments, data on use could be obtained without difficulty, but in smaller establishments (where 50% of the cars are to be found) records were not satisfactory; most of those engaged in the business in a small way do so part-time. Utilization rates for the larger agencies have been adjusted downward in estimating revenue of these smaller establishments. Overall, gross revenue is estimated to have been E.C. \$2.93 million in 1978, after allowing for rentals to residents.

### ***Taxis***

The results of the CTRC expenditure survey, coupled with the expenditure estimates above for the car rental sector, formed the basis of expenditure estimates in the taxi sector, after allowing for fare increases since the CTRC survey and for estimated expenditure on moped rentals in 1978 of E.C. \$0.22 million. Spending on taxis is estimated at E.C. \$3.47 million in 1978.

### ***Duty-free shopping, gambling, miscellaneous entertainment***

Spending by tourists on these items was estimated from the CTRC survey, along with subjective evaluation of likely levels of expenditure. The estimates are shown in Table 5.

### ***Total visitor expenditure***

Estimated expenditures for visitors are summarized in Table 5. The overall estimate was E.C. \$71.7 million. These receipts increased by 1979 by 31.5% to E.C. \$94.4 million. The reason for the increase was higher prices for accommodation plus the rise in numbers of tourists from 76 896 in 1978 to 99 353 the following year. In addition to these tourists, cruiseship passengers spent an estimated E.C. \$5.4 million in 1979, which figure is included in the Table 5 visitor-spending estimates. Thus expenditures by tourists who stayed longer than 24 hours would have been about E.C. \$89 million in 1979.

The expenditure patterns of passengers were estimated from a sample of 1137 landed cruise passengers in early 1980 (Table 6). This showed, not surprisingly, that 57.5% of spending was on souvenirs and handicrafts and a further 21.8% on taxis.

Table 6. Expenditures by cruise passengers, 1980.

Category	Average expenditure (E.C. \$)	% of total
Taxi	16.79	21.8
Car rentals	0.10	0.1
Food & beverage	6.86	8.9
Package liquor	2.50	3.2
Crystal glassware	0.83	1.1
Souvenirs & handicrafts	44.40	57.5
Agency commission	3.19	4.1
Gratuities & fees	0.60	0.8
Entertainment	1.94	2.5
Total per passenger	77.21	100.0

### ***Contribution of tourism to gross domestic product***

The contribution of tourism to the GDP of Antigua is the aggregate of value added in the main tourism sectors — hotels, restaurants, duty-free shopping, entertainment, gambling, and car rentals; value-added components are interest, rent, profits, wages, and depreciation. If depreciation is excluded, the contribution will be net.

Table 7. Direct value added in main tourism sectors, 1978.

Sector	Total output (E.C. \$ 000)	Value added (E.C. \$ 000)	
		Gross	Net
Hotels			
More than 49 rooms	31400	14612	13472
25-49 rooms	8000	3344	3052
Fewer than 25 rooms	5200	2004	1909
Restaurants	8000	1122	992
Duty-free shopping & boutiques	5060	1417	1346
Entertainment	2340	1051	1010
Gambling & miscellaneous	5060	2277	2186
Car rentals	2930	1801	815
Taxis	3470	1777	1427
Moped rentals	220	85	64
Total	71720	29500	26300

Table 8. Indirect value added (E.C. \$ 000) by tourism, 1978.

Agriculture	1880	Communication	950
Manufacturing	600	Trade	9900
Construction	6600	Banking & insurance	2650
Electricity & water	720	Total indirect valued added	23300

Table 7 summarizes direct value added in the main subsectors. The estimates were made by taking detailed revenues and costs for each subsector and aggregating interest, rent, profits, wages, and depreciation.

An additional impact is created through air transport catering, estimated at E.C. \$7.0 million value added, making a total gross value added of about E.C. \$36.5 million in 1978.

The estimates of indirect value added (Table 8) were made sector by sector, using a combination of personal observation and discussion with private-sector and other parties. Although the estimates, on the whole, indicate the direct impact of tourism expenditures, they remain very much order-of-magnitude guesstimates and should be viewed as such. More-precise estimates would require extensive further study; really accurate calculations can never be made in the poorly documented environment of a country such as Antigua.

In summary, total, gross, direct value added by tourism in 1978 is estimated to have been E.C. \$36.5 million, 22.2% of GDP, while the contribution at the indirect level is estimated at around E.C. \$23.3 million. Taken together (direct and indirect) the total contribution of tourism to GDP was about E.C. \$60 million, 36% of Antigua's GDP.

### *Employment generated by tourism*

The estimation of direct employment and wages attributable to tourist spending, and the analysis of its distribution in the tourism sector, concentrated on the accommodation and restaurant sectors, taxi drivers, and car rental agencies.

The source of the data was records from the social security office, which received information on actual wages paid out, and personnel-time for the various categories employed. Data pertained to 1978 only, as the social security returns for 1979 for the major part of the sector had not yet been collected.

### *Employment and wages in hotel sector*

The analysis of employment, wages, and wage distribution in the accommodation sector is based on the stratification of the sector into hotels with more than 49 rooms, hotels with 25-49 rooms, and hotels with fewer than 25 rooms.

#### *Hotels with more than 49 rooms*

The average annual number employed in hotels with more than 49 rooms in 1978 was 831. Employment fluctuated from a high of 1036 persons in February to a low of 596 persons in September, because of seasonal demand and closure of some hotels during the low season.

The number of employees per room therefore fluctuated from a high of 1.51 in February to 0.87 in August. Such fluctuations are related to the monthly room-night occupancy of hotels. This is illustrated in Table 9.

Although hotels reduce their employment levels in relation to room-nights occupied, there is not total flexibility due to fixed and semivariable labour inputs. Some hotels therefore resort to total closure during the low season in an effort to solve the problem of inefficient labour use in summer. In October 1978, 55% of the rooms in this category of hotels were closed. The average annual number of employees per room is 1.2.

Wages paid out by this category of hotels in 1978 totaled E.C. \$6 449 403. Wage fluctuation was similar to employment fluctuation. The highest average monthly wage per worker was E.C. \$880. The lowest was in June when the average wage was E.C. \$445. The average wage per worker per month was E.C. \$628. In the 5 months December-April, E.C. \$3 787 969 was paid out -- 59% of the total wages paid out for the year.

The fluctuations in wages are related to the sales fluctuations of hotels, which collect a 10% surcharge on behalf of employees. This 10% service charge is about 50% of the total cash wage of employees.

Table 9. Employment pattern in hotels with more than 49 rooms.

Month	Room-nights occupied	No employed	No. of room-nights per employee	Employees per room
January	17062	1025	16.6	1.5
February	18397	1036	17.8	1.5
March	18705	1030	18.2	1.5
April	10918	1004	10.9	1.5
May	6281	896	7.0	1.3
June	4689	669	7.0	1.0
July	5965	646	9.2	0.9
August	7831	629	12.4	0.9
September	5352	596	9.0	1.1
October	4107	724	5.7	1.2
November	9321	829	11.2	1.2
December	na	na	na	na

### ***Hotels with 25-49 rooms***

There are 276 rooms in hotels of this category. Average annual employment is 163, giving 0.6 employees per room. The highest employment was in March, when 205 persons were employed in such hotels (0.74 employees per room). The lowest volume of employment was in October when 109 persons were employed and the employees per room ratio was 0.39 (see Table 10).

Total wages paid out in 1978 in this category of hotels was E.C. \$850 709, an average of E.C. \$419 per worker per month. The highest monthly wage per worker was in March (E.C. \$656). Between December and April, E.C. \$516 566 was paid out — 61% of the total wages paid out for the year.

The 25-49 room category pays two-thirds the average monthly wage per worker and employs half as many employees per room as hotels with more than 49 rooms. The number of occupied room nights required to generate an additional employee is also twice as great in hotels in the 25-49 room category as in the hotels with more than 49 rooms. This is because the larger hotels are of higher standard and employ more staff per room.

Table 10. Employment pattern in hotels with 25-49 rooms.

Month	Room-nights occupied	No. employed	No. of room-nights per employee
January	5877	187	31.4
February	6924	199	34.8
March	7298	205	35.6
April	5837	185	31.6
May	3615	176	20.5
June	2606	140	18.6
July	2611	117	22.3
August	3359	159	21.1
September	1227	111	11.0
October	1790	109	16.4
November	3686	175	21.1
December	3958	190	21.0

### ***Hotels with fewer than 25 rooms***

In this category of establishment, because of the lack of data for the total worker-population of hotels, the employment figure is based on an estimate from a sample of 55% of the total rooms available in the group.

The average annual ratio of employees to rooms is estimated at 0.5:1. As there are 317 rooms in this category, the average annual employment would be 159. There seems to be greater stability of employment in this category of hotels. The highest employee-per-room value was in April, 0.62, and the lowest in October, 0.44, a variation of 29% in volume of employment between the peak level and the lowest level of employment. Probably this stability is because they cater more to a local or regional clientele, which exhibits a less seasonal pattern of demand than tourists from outside the region, who are concentrated in the winter season.

### ***Summary of employment in hotels in 1978***

Average employment over the year is summarized in Table 11. The average number of employees per room for the accommodation sector is 0.9. Hotels in the

Table 11. Hotel employment by size of hotel, 1978.

Hotel size	Employment		No. of rooms	Employees per room	Average monthly wage (E.C. \$)
	%	No.			
More than 49 rooms	72	831	688	1.2	628
25 to 49 rooms	14	163	276	0.6	419
Fewer than 25 rooms	14	159	317	0.5	na
Total	100	1153	1281	0.9	na

more-than-49-room category, although comprising only 53% of room capacity, generated 72% of employment. The importance of the large hotels in employment generation is, as stated earlier, because these are relatively luxurious, compared with most (but not all) smaller hotels, and offer a higher standard of service, employing more people.

### *Employment in the restaurant sector*

There is great difference in wage level between the restaurants catering to local and tourist demand in Antigua and the restaurants catering for food and beverage on aircraft. This distinction is made because the latter account for 30% of the total E.C. \$651 616 paid out in wages and salaries in the restaurant sector in 1978.

The restaurant sector as a whole employed 380 persons, for a total of 9812 person-weeks, an average of half a year per employee (25.8 weeks). The average rate per employee per week for the total restaurant sector was E.C. \$66. In the restaurants estimated to be affected by tourist expenditures, such expenditures generated some 84 jobs per year, including 16 in aircraft catering or 68 excluding the catering trade. In the restaurant sector influenced by tourism, excluding the catering trade, the average weekly wage was E.C. \$53.

### *Employment in ground transport*

The number of people finding employment in ground transport as a result of tourism-generated expenditure has been calculated at 614. There were 600 taxi drivers (150 at the airport, 50 at hotels, 100 in the city, and 300 part-time), 10 workers in regular car-rental agencies, and 4 in part-time, small car-rentals.

### *Total direct employment created by visitor expenditure*

Employment in hotels, restaurants, and ground transport has been examined above in detail. Areas that were not examined — shopping (including duty-free),

Table 12. Direct employment created by visitor expenditure, 1978.

Sector	No. of jobs	% of total
Hotels	1153	53
Restaurants	84	4
Taxis	600	28
Car rental	14	1
Miscellaneous <sup>a</sup>	300	14
Total	2151	100

<sup>a</sup> Includes duty-free shopping, entertainment, and gambling.

entertainment, gambling, and miscellaneous — are estimated to account for some 16% of gross value added by the tourism sector and are estimated (on the basis only of casual observation) to be responsible for about 300 jobs. Thus, total direct employment created by visitor expenditure may be estimated as shown in Table 12.

Assuming employment varies seasonally in other sectors as it does in hotels, peak employment is about 2600 and minimum employment 1600.

### *Tourism and government revenues*

Government revenues generated by tourism come from a variety of sources — head tax, guest tax, property tax, profit tax, customs duty, social security payments of employees in the sector, entertainment tax, taxi drivers' licence fees, licence fees for car rentals, and parking and landing fees.

In addition, other revenues are generated through taxes on workers who receive wages and salaries from working in the sector; these in turn spend some income on items on which an indirect tax has been imposed. This study does not include an estimate of the government revenue generated by the re-expenditure of wage earnings in the tourism sector, because of inadequate data relating to household expenditure in Antigua. Revenues are detailed below and in Table 13, all figures being based on official sources, including inland revenue records.

Table 13. Contributions to social security programs by tourism-related enterprises, 1978.

Sector	Contributions (E.C. \$) by —	
	Employees	Employers
Hotels		
More than 49 rooms	162192.16	280520.27
25-49 rooms	24512.12	32889.91
Fewer than 25 rooms	44480.72	85859.82
Total	231185.00	399270.00
Restaurants	11762.00	20093.00
Boutiques & duty-free shops	9887.00	17201.00
Car rentals	1439.00	2648.00
Nightclubs	169.00	282.00
Local travel agents	2850.00	5244.00
Total	257292.00	444738.00

### *Hotel taxes*

Among the main sources of revenue earned by the government of Antigua are the hotel and guest taxes. The hotel tax varies according to the rates charged for room occupation, whereas the guest tax is a 5% levy on total sales. Hotel tax generated was E.C. \$1.0 million in 1978 and E.C. \$1.3 million in 1979; guest tax was E.C. \$1.6 million and E.C. \$1.9 million respectively.

### *Social security payments*

Revenues are also generated through the social security payments of employees and employers. The breakdown of revenues collected by government through these sources is given in Table 13. Not all this revenue, however, is attributable to tourism.

### *Airport parking and landing fees*

Revenues from parking and landing fees attributable to tourism are estimated at 60% of the total monthly revenue generated from such activities, i.e., E.C. \$918 from parking and E.C. \$278 000 for landing fees (1978 figures).

### *Airport departure tax*

Tourists leaving Antigua are required to pay E.C. \$8 if they are returning to countries outside the West Indies associated states (WISA).<sup>2</sup> If they are returning to countries that are members of WISA, the rate charged on leaving Antigua is E.C. \$5. Total revenue generated from departure tax is estimated at E.C. \$588 000 in 1978 and E.C. \$761 000 in 1979.

### *Miscellaneous*

Other revenues include hotels profit tax (E.C. \$198 093 in 1978, E.C. \$231 012 in 1979), boutiques profit tax (E.C. \$15 708 in 1978, E.C. \$14 900 in 1979), casino licences (E.C. \$66 000 in 1978, and the same in 1979), and liquor licences (E.C. \$45 000 in both 1978 and 1979).

Customs duties directly and indirectly<sup>3</sup> generated by tourism in 1978 totaled about E.C. \$1.5 million.

### *Summary*

In summary, 1978 revenues accruing to the government as a result of tourism are: hotel tax: E.C. \$1.0 million; guest tax: E.C. \$1.6 million; social security: E.C. \$0.3 million and E.C. \$0.4 million from employees and employers respectively; parking and landing fees at the airport: E.C. \$0.3 million; departure tax: E.C. \$0.6 million; profit tax on hotels and boutiques: E.C. \$0.2 million; casino and liquor licences: E.C. \$0.1 million; and customs duties, direct and indirect: E.C. \$1.5 million. This gives a total of E.C. \$6.0 million.

### *Foreign exchange and leakage*

The gross foreign-exchange estimate for 1978 generated by tourism was E.C. \$71.7 million. These receipts grew to an estimated E.C. \$94.4 million in 1979 — an increase of 31.5%.

Antigua is a small island with weak linkages between tourism and the rest of the economy. Much of the capacity, at least in the larger hotels, is foreign-owned. The agricultural and industrial base of Antigua is insufficiently developed to meet the needs of the tourist industry and most materials, including food, are imported. Most hotel profits are exported. Tax holidays protect many from taxation. Consequently, there is high leakage of the tourist dollar. Some of the main areas of leakage are examined in detail below.

### *Leakage through repatriation of profits*

One of the most crucial areas relating to the leakage of foreign exchange generated by tourist expenditure is repatriated profits.

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<sup>2</sup> The West Indies associated states include Grenada, St. Lucia, St. Kitts-Nevis-Anguilla, St. Vincent, Montserrat, Dominica, and Antigua.

<sup>3</sup> Indirect customs revenues are those paid on goods purchased by hotels and restaurants for the consumption of tourists.

Table 14. Hotel ownership, profits, and leakage by size of hotel, 1978-1979.

	Hotel size			Total
	More than 49 rooms	25-49 rooms	Fewer than 25 rooms	
No. of rooms	688	276	317	1281
Ownership (%)				
Government	30	—	—	—
Private				
Local	0	41	81	—
Foreign	70	59	19	—
Profit (E.C. \$ 000)				
1978	728	2032	859	8619
1979	8426	2646	1086	12158
Leakage (E.C. \$ 000)				
1978	5200	1199	163	6562 (76) <sup>a</sup>
1979	7800	1561	206	9567 (79)
Distribution of 1979 leakage (%)	81	16	3	100

<sup>a</sup> Values in parentheses are leakages as % of profit.

The monitoring of profits generated by the industry and the amount repatriated is made difficult by the lack of sufficient official scrutiny of hotel accounts in some countries. This seems to be the result of tax holidays that hoteliers receive, which exempt them from tax for up to 10 years. In addition, the high capital write-offs they are allowed effectively keep hotels out of the tax net.

Because of the inability to collect any data from banks or the Eastern Caribbean Currency Authority on the volume of foreign exchange repatriated, the assumption has been made that profits generated by a foreign-owned room<sup>4</sup> will be repatriated, at least in the first instance. This does not preclude the possibility of subsequent reinvestment.

The profit figure used to estimate leakages includes the depreciation allowance. Depreciation is a book entry and not a cash flow. The bank balance kept by many hotels suggests that this allowance also leaks.

Foreign ownership of hotels in Antigua embraces 70% of hotels in the more-than-49-room category, 59% of those in the 25-49-room range, and 19% of those with fewer than 25 rooms (Table 14).

However, the government-owned large hotels are less profitable than privately owned ones. In consequence, the proportion of all profits repatriated was estimated at 76% in 1978 and 79% in 1979, at the level of E.C. \$6.6 million and E.C. \$9.6 million respectively. Total profit tax in 1978-1979 was E.C. \$213 000 (most hotels benefit from tax holidays).

In hotels with more than 49 rooms, 91% of the profits are estimated to have been repatriated in 1978 and 93% in 1979.

<sup>4</sup> Foreign ownership is here defined as any hotel business enterprise that is not registered as government or local.

## *Leakages from hotels*

### *Hotels with more than 49 rooms*

Leakages by department (food, beverages, and room) have been estimated (Table 15) from operational expenses.

The largest single item of leakage in room operations is the commissions paid to travel agents. They have been conservatively estimated at E.C. \$1.8 million. The first-round leakage at the room operation level was estimated to be E.C. \$2.0 million. This represented 50.5% of room expenses and 13.5% of total gross revenue generated by the room department.

Most food items are purchased from local importers. They are therefore not first-round leakages. Most of the food comes from the U.S., Canada, Puerto Rico, and a few European countries — less than 5% of the value of imports for the sector comes from the Caribbean community region.

Total imports of food (first and second round) for this subsector were valued at E.C. \$3.0 million after brokerage, duty, handling fees, insurance, bank charges and commissions, storage, and freight have been deducted. First-round leakage, however, totaled only E.C. \$0.5 million, about 7.2% of departmental expenses and 5.4% of total revenue.

The main source of leakage in the beverage department is the expenditure on imported beers, wines, rums, whiskies, and soft drinks. After exclusion of markup, freight, and the other items mentioned earlier that accrue to wholesalers, banks, labourers, etc., the estimated value of imports (all second round) of beverages was E.C. \$543 000. First-round leakage was E.C. \$22 000 in this department.

Interest payments to foreign banks are a major first-round leakage. Another first-round leakage is the repatriated earnings of foreign employees at the managerial

Table 15. Leakages in hotels with more than 49 rooms.<sup>a</sup>

Department	Leakage round <sup>b</sup> (E.C. \$)		As % of total revenue		
	First	Second	First	Second	Total
Rooms	2002979	828837	6.4	2.6	9.0
Food	522040	4005472 <sup>c</sup>	1.7	12.8	14.5
Beverage	22181	768659 <sup>c</sup>	0.1	2.5	2.6
Administration & general	552133	1512799	1.8	4.8	6.6
Advertising & promotion	893901	—	2.9	—	2.9
Repairs & maintenance	125215	619396	0.4	2.0	2.4
Electrical current	—	715081	—	2.3	2.3
Fuel & heating	—	331453	—	1.0	1.0
Water	—	60282	—	0.2	0.2
Miscellaneous overhead	—	142522	—	0.6	0.6
Management fees	312555	14500	1.0	—	1.0
Profit	5200000	264065	16.6	0.8	17.4
Wage adjustment	—	1425522	—	4.5	4.5
Total leakage <sup>d</sup>	9631004	10688588	30.7	34.1	64.8

<sup>a</sup> Total revenue of hotels in category more than 49 rooms includes 10% service charge.

<sup>b</sup> Second-round leakage includes an estimated 50% of expenditure of recipients of wages in the tourist sector.

<sup>c</sup> Purchases of imported goods made from local wholesalers are treated as second round leakages.

<sup>d</sup> Columns 3 and 5 do not sum because of rounding.

level. First-round leakage represents 12.8% of total administration and general expenses, totaling some E.C. \$550 000.

Other second-round leakages were estimated out of social security payments, property taxes, and work permit revenues that accrue to government. It is estimated that 25% of the money leaks through the expenditure of government on imported hardware and other general items. Further leakages are payments to foreign auditors, insurance companies, and other service companies.

#### *Hotels with 25-49 rooms*

First-round leakage on rooms was equal to 17.5% of total departmental revenue and 65.4% of operating costs.

The largest single item of leakage of foreign exchange in the food department consisted of imported food stuffs bought from local wholesalers. First-round leakages were estimated at 1.7% of total revenue or 2.5% of operating cost of food department. The combined first- and second-round leakages were estimated at 38.6% of total revenue of food department or 58.6% of the departmental operating expenses.

The combined first- and second-round leakage in the beverage department was equal to 30.0% of the total revenue of the department or 63.6% of departmental operating expenses.

Table 16 shows leakages from administration and general expenses for hotels with 25-49 rooms. As was the case with hotels of more than 49 rooms, it is assumed that foreign top-management personnel repatriate one-third of their earnings. The E.C. \$35 000 first-round leakage refers to cost of auditing done on behalf of hotels by foreign-owned companies. First-round leakage is estimated at 6.8% of departmental expenses and combined first- and second-round at about 45.5%.

Table 16. Leakages from administration and general expenses of hotels with 25-49 rooms.

Department	Department expenses (E.C. \$)	Leakage round (E.C. \$)	
		First	Second
Wages & salaries	328470	33000	177282
Employees' meals & benefits	58394	—	39103
Bank charges	21894	—	—
Telephone	43796	—	5473
Office & general expenses	109490	35000	—
Miscellaneous overhead	—	—	37245
Insurance	72993	—	36497
Interest expense	364966	—	91241
Total	1000003	68000	386841
Leakages as % of expenses		6.8	38.7

#### *Hotels with fewer than 25 rooms*

Foreign ownership and management in the small hotel group are not significant, and the leakages through profits therefore are not as pronounced. There is also a tendency for small hoteliers to use more local products in their menu. One reason for this is that their requirements are sufficiently modest for the local market to be able to satisfy them.

### **Summary**

In summary, of the total revenues of E.C. \$31 354 942 enjoyed by hotels with more than 49 rooms, E.C. \$9 631 004 was calculated as first-round leakages and E.C. \$10 688 588 as second-round leakages. Hotels with 25-49 rooms had revenues of E.C. \$8 029 267, with first-round leakages of E.C. \$2 794 278 and second-round leakages of E.C. \$2 636 177. Hotels with fewer than 25 rooms had revenues of E.C. \$5 247 000, with first-round leakages of E.C. \$215 127 and second-round leakages of E.C. \$1 802 709.

All hotels combined had revenues of E.C. \$44 631 209. First-round leakages were E.C. \$12 640 409 (28.3% of revenue) and second-round leakages were E.C. \$15 127 474 (33.9% of revenue). Total leakages therefore were 62.2% of revenues.

### **Overall leakage from tourism sector**

Overall first and second round leakage is estimated to have been E.C. \$43 million on total receipts of E.C. \$72 million (rounded 1978 estimates) (Table 17).

The interrelation between tourism and other sectors of the economy is, as has already been described, very weak. The supply of foods to hotels is a crucial item; the most significant linkage between hotels and the domestic agricultural and fishing sectors is represented by the purchase of lobsters by hoteliers.

It is estimated that purchase of local foods (mainly lobsters) by hotels in the more-than-49-room range totaled some E.C. \$850 000 in 1978. A further E.C. \$250 000 worth of local food (again lobsters, seafood, and vegetables) is estimated to have been purchased by hotels in the 25-49-room range.

On the operating side of hotels, the present situation in summary is that there are weak linkages aside from wages and salaries.

Table 17. First- and second-round leakages from tourism sector, 1978.

Sector	Leakage round (E.C. \$)	
	First	Second
Hotels		
More than 49 rooms	9631004	10688588
25-49 rooms	2794278	2636177
Fewer than 25 rooms	215127	1802709
Restaurants	4000	3040000
Ground transport	—	3284045
Gambling & miscellaneous	—	—
Entertainment	3500000	2467842
Boutiques & duty-free shopping	929637	1407726
Tourist board expenditure overseas	985500	—
Total	18059546	25237087
Total foreign-exchange receipts	71721413	
Leakage (as % of total receipts)	25.2	35.3

### **Policy and research implications**

#### **Need for a local managerial class**

Hotels, which constitute the main subsector of tourism, are dominated by foreign ownership and management. The leakage that results because of these

conditions affects reinvestment in this and other sectors in that the tourism sector, as the most productive sector in the economy in Antigua, has escaped the responsibility of financing reinvestment and expansion in the economy. The burden of financing investment and expansion falls therefore on the government through revenue generated by taxation or foreign borrowings, supported by the less productive sectors of the economy.

The most crucial link that can be developed between the tourism sector and the domestic economy would be through the emergence of a local, hotel-managerial class, financed by local capital, in the more-luxurious establishments.

#### *Need to strengthen linkages in industry and construction*

There is also the need to test the viability of links in industry and construction. In most instances, it appears that this would involve a regional program to increase the market to a size consistent with a viable scale of operation. Such a program, however, carries the risk of developing a range of fragmented industries.

Inescapably, a small country like Antigua must, however, expect to import many goods and services, especially manufactured goods and specialized services, since local demand is often insufficient to justify the establishment of local operations.

#### *Need to strengthen linkages in agriculture and fisheries*

The agriculture sector, or parts of it, could *a priori* better serve the needs of the tourist industry. However, it may be that the resident population should take priority in consuming local produce — for instance, the government may opt for self-sufficiency in food. Therefore, research on the development of this sector, in Antigua and neighbouring islands, is needed to enable appropriate policies to be chosen.

#### *Employment creation*

Direct employment created by tourism is estimated to average 2151 jobs, ranging from around 1600 to about 2600, depending on the season. Government policy must be to continue efforts to reduce the seasonal factor. Not only can this produce more regular employment, with all that implies in improved training and advancement possibilities, but also it will improve both the private sector's and the government's return on existing tourism capacity and infrastructure through greater use.

#### *Cost of job creation*

The present research has shown that the hotels with more than 49 rooms (generally, the deluxe hotels) employ more workers per room than smaller hotels. Indeed, the difference is such that although the construction cost per room is greater for the deluxe hotel, the capital investment cost per job is arguably smaller. Therefore, in job creation, deluxe hotels appear to be preferable.

This is an area that could usefully be further researched. If, on examination, job-creation cost is indeed lower for deluxe hotels (and the expenditure pattern of wealthy tourists could also create more jobs outside hotels) then government policy in this direction must be considered.

#### *Foreign ownership*

Repatriation of profits is a major source of leakage from the tourism sector. It would be somewhat compensated for by retention of profits by government-owned

hotels, were it not that the latter make no such profits. An area for further investigation and for policy decisions is how to encourage a profitable, locally owned tourism sector. Local ownership is more feasible for small hotels and apartments, but these tend to employ fewer people per room. There is a possible conflict therefore between job creation and local ownership that needs to be investigated.

## *Summary and conclusions*

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The general objective of this research project was to measure selected aspects of the economic impact of tourism in four Caribbean microeconomies — the tourist destinations of Antigua, Aruba, St. Lucia, and the U.S. Virgin Islands. The specific objectives were twofold: first, to develop methodologies for collecting and analyzing tourism data; second, to assess the contribution of tourism to gross domestic product (GDP), employment, government revenues, foreign exchange, and the development of other sectors of the economy.

The task of summarizing and concluding on the results of the four studies is not easy. As described in the introduction of this volume, the four destinations exhibit substantial similarities in size and population. However, they vary considerably in colonial and cultural heritage, resource base, and level of economic development. Moreover, three of them fall into the category of small tourism industries (with variation within this range), and one (U.S. Virgin Islands) in the intermediate category. These differences are further compounded by the fact that data availability, definitions, and methodology vary from one island to another, sometimes substantially, making strict comparisons difficult. Thus, subtle differences in definitions or methods have been extensively explained in the footnotes of Table I. Yet despite these differences and a lack of a common base year for the results both within and between destinations, the information presented in Table I is the most complete and up-to-date collection of indicators concerning tourism-related economic impacts. These indicators are also considered the most useful for planning and policymaking.

The researchers faced a considerable challenge in developing methodologies for collecting and analyzing data on tourism. The four islands had a dearth of information on tourism, with the exception of data on tourist arrivals and hotel occupancy rates. The situation was especially difficult in the U.S. Virgin Islands, where even tourist-arrival statistics were based on estimates. Information on tourism expenditure was based on approximations at the national level and was not disaggregated by type of expenditure. Thus, on the basis of existing information, it was not possible to assess the impact of tourism expenditures on the local economies of the countries to be studied.

In some cases, the lack of comprehensive tourism data was further complicated by gaps in the availability of basic macroeconomic information. For example, in Aruba, part of the larger political entity of the Netherlands Antilles, national accounts statistics were not available at the time of the research. Similarly, in Antigua, there were no national data on employment and unemployment.

These data deficiencies called for imaginative efforts by the researchers. In the case of the U.S. Virgin Islands, for example, important methodological approaches were developed for estimating tourist arrivals and stayovers and the level of tourist investment and associated employment. In St. Lucia, techniques were developed for

Table 1. Selected statistics for four Caribbean tourist destinations.<sup>a</sup>

Parameter	Antigua	Aruba	St. Lucia	U.S. Virgin Islands
No. of tourist rooms	1348 *	2081 <sup>h*</sup>	1100 <sup>h§</sup>	4989 §
Arrivals				
Stayover tourist	76895 <sup>††</sup>	188917 *	75033 †	542744 §
Cruiseship passengers	51942 †	73432 *	65000 †¶	727663 <sup>d§</sup>
Total gross tourist receipts (U.S. \$ million) <sup>c</sup>	27.1 †	125.1 *	25.2 †	343.3 §
Daily per-capita receipts (U.S. \$ rounded)				
From stayovers	47 <sup>†‡</sup>	102 *	42 †	74 §
From cruiseships	25 <sup>§†</sup>	57 *	15 †	84 §
Gross tourist receipts (as % of GDP)	44 †	46 <sup>h*</sup>	34 †	61 §
Value added by tourism (as % of GDP)				
Direct <sup>1</sup>	16.0 <sup>†‡</sup>	18.4 <sup>h*</sup>	6.5 †	—
Indirect	14.2 †	—	12.2 †	—
Total	30.2 †	—	18.7 †	35.0 §
Tourism employment				
Direct	2151 <sup>†‡</sup>	4962 <sup>l§</sup>	2195 <sup>m†</sup>	12482 <sup>n</sup>
Indirect	—	—	2995 <sup>o†</sup>	4000 <sup>p¶</sup>
Total	—	—	5190 †	16482 <sup>¶</sup>
Direct (as % of island total)	— <sup>d</sup>	21.6 §	6.1 †	31.8
Government tourism revenues				
Total (U.S. \$ million)	2.3 <sup>†‡</sup>	9.5 <sup>v§</sup>	3.4 <sup>†‡</sup>	46.3 <sup>l§</sup>
As % of total government revenues	14.7 <sup>†‡</sup>	13.6 <sup>v§</sup>	15.3 <sup>†‡</sup>	36.4 <sup>l§</sup>
First-round tourism leakages				
Total (U.S. \$ million)	6.8 <sup>u†</sup>	51.8 <sup>w*</sup>	11.3 <sup>x†</sup>	123.2 <sup>y§</sup>
As % of total gross tourism receipts	25.2 <sup>u†</sup>	41.4 <sup>w*</sup>	44.8 <sup>x†</sup>	35.9 <sup>y§</sup>
Net tourism foreign-exchange earnings				
Total (U.S. \$ million)	20.3 †	73.3 *	13.9 †	220.1 §
As % of imports less tourism imports	—	—	19.4 †	71.3 §

<sup>1</sup> Source: Individual country chapters. Years shown by: †, 1978; §, 1979; \*, 1980; and ‡, estimate. Exchange rates (to U.S. \$) — N.A. Fl 1.80, E.C. \$2.65.

<sup>2</sup> Includes hotels and guesthouses of international quality only.

<sup>3</sup> Includes a very small number of excursionists. Because 1979 data were the beginning of a new statistical series, 1978 data were used in this table.

<sup>4</sup> Includes 99,534 other waterborne tourists and 25,185 excursionists arriving by air. These categories are aggregated with cruiseship passengers because of similar expenditure patterns.

<sup>5</sup> May slightly exceed the sum of stayover and cruiseship expenditures due to inclusion of miscellaneous revenues (e.g., landing fees, fuel charges, etc.). These expenditures exclude the portion of prepaid items not received by the island.

<sup>6</sup> The 1979 ratio of cruiseship visitor expenditure to total visitor expenditure was applied to 1978 data.

<sup>7</sup> Based on 1980 estimate of average daily expenditure of U.S. \$29, deflated by 15% to U.S. \$25 for 1978.

<sup>8</sup> Based on estimated GDP of U.S. \$272 million, in absence of national accounts data.

Direct value added (wages and salaries, rent, interest, and profit) applies to all tourist receipts (hotels, restaurants, local transport, shops, casinos, etc.) in all islands except St. Lucia where direct value added is calculated for hotels and restaurants only.

<sup>9</sup> For comparative purposes, direct value added is calculated on the basis of *net* value added (excluding depreciation) and does not include additional value added created by air-transport catering sector.

<sup>10</sup> Includes hotels, restaurants, taxis, car rentals, duty-free shopping, entertainment, gambling, and miscellaneous.

<sup>11</sup> Includes hotels and casinos, restaurants, bars, and nightclubs, tourist shops, transport, watersports, and miscellaneous.

<sup>12</sup> Includes hotels, restaurants, bars, and nightclubs.

<sup>13</sup> Broad definition including hotels, gift shops, restaurants, transport, construction, charterboat, wholesale, government, and financial-real estate sectors. Of this total, approximately 95% derived from tourism expenditure and 5% from tourism investment.

<sup>14</sup> Includes indirect, defined as other tourism-related activities (taxis, shops, watersports, food wholesale, and local travel agencies), and induced, defined as peripherally related to tourism, though still somewhat influenced by it (construction, trade, professionals, merchants, and gasoline attendants).

<sup>15</sup> Includes roughly 3000 government jobs supported by tourism tax revenues plus another 1000 jobs induced by secondary consumption and business spending activity stimulated by the original gross and net tourist expenditures.

<sup>16</sup> Cannot be calculated due to absence of total island employment figures.

<sup>17</sup> Includes all direct tourism government revenues, as well as indirect revenues from custom duties.

<sup>18</sup> Includes direct tourism government revenues only, but also includes income tax of those employed directly in tourism subsectors.

<sup>19</sup> Includes direct and indirect tourism government revenues.

<sup>20</sup> Excludes goods imported by hotels through local intermediaries.

<sup>21</sup> Includes goods imported through local intermediaries.

<sup>22</sup> Includes goods imported by hotels through local intermediaries.

<sup>23</sup> Includes all import purchases directly to support visitor activity such as hotel-restaurant, food-beverage, gift merchandise, packaged liquor, fuel for travel, and so on, with or without local intermediaries (wholesalers).

measuring the indirect contributions of tourism to gross domestic product. In all four study areas, surveys of tourists and tourism subsectors, including hotels, restaurants, and other enterprises, yielded valuable primary data not available before the studies.

The innovative collection and analysis of tourism data enabled the researchers to assess the economic impact of tourism in the four study areas. This chapter summarizes the results of the individual studies, draws comparisons among the islands, suggests policy implications of the research findings, and points to critical areas for further research.

### *Size and composition of tourism industry*

Tourist accommodation capacity can be defined in many ways. Most definitions include a combination of the major types of tourist accommodations: hotels (catering to both domestic and international clientele), guesthouses, apartment houses, condominiums, and villas. In most of the Caribbean, however, hotels and guesthouses of international quality account for the vast majority of total tourist accommodation.

Antigua, Aruba, and St. Lucia are characterized by their relatively small tourist accommodation capacity (1348, 2081 and 1100 rooms respectively) whereas the U.S. Virgin Islands capacity (4989 rooms) is intermediate in relation to other Caribbean islands. The size and cost structure of establishments varies from island to island. In St. Lucia and Antigua, small and medium-size hotels and guesthouses predominate; Aruba has, in addition, several relatively large hotels. The U.S. Virgin Islands have a structure that differs considerably among St. Croix, St. Thomas, and St. John; furthermore, the Virgin Islands offer a broad spectrum of accommodations that, in addition to the more traditional hotels and guesthouses, includes apartments and condominiums as well as campgrounds and boating quarters. In general, Aruba and the U.S. Virgin Islands are characterized by a higher average cost per tourist room than St. Lucia and Antigua.

In general, there are two major components in the flow of tourist arrivals: those visitors staying at least one night in the destination, designated as stayover or overnight tourists, and those who come for less than 24 hours, designated as day trippers or excursionists, primarily cruiseship passengers. These two groups have very distinct characteristics, especially in facilities demanded and expenditure patterns. In the four destinations under study, and indeed throughout the whole Caribbean, stayover tourists tend to have an average length of stay of about 7 days; nearly all require commercial accommodation and spend considerable amounts of money on food, entertainment, tours, watersports, shopping, and various other goods and services. Cruiseship passengers, on the other hand, do not require commercial accommodation, and their expenditure pattern is heavily tilted toward shopping. Thus, considerable care must be exercised when comparing total tourist-arrival figures.

In numbers of stayover arrivals, the four destinations under study differ greatly. The U.S. Virgin Islands received in 1979 more than 0.5 million stayover visitors, close to three times the number registered by Aruba and seven times the levels of St. Lucia and Antigua. Differences in the number of cruiseship passenger arrivals were equally high. The U.S. Virgin Islands received nearly 0.75 million excursionists (mostly cruiseship passengers) — 10 times the level of Aruba, 11 times that of St. Lucia and 14 times that of Antigua. Of all four destinations, only in the U.S. Virgin Islands does the ratio of cruiseship passengers to stayover arrivals exceed 1.0; the ratio is 1.3 as compared to 0.9 for St. Lucia, 0.7 for Antigua, and 0.4 for Aruba.

The types of facilities, amenities, and services within each destination bear a close relationship to the types of visitors received or expected. For instance, shops are more prominent in destinations where the cruiseship trade is important, such as in the U.S. Virgin Islands and Aruba. Conversely, hotels, airports, and other public and private facilities are more prominent in the other two destinations, where the volume of stayover tourists is much higher than that of cruiseship passengers.

Certain implications follow. For example, a campaign to increase stayover tourists is likely to require that the emphasis of public and private sector investment and management be on the construction of accommodation and other amenities directed at increasing the time and money spent by visitors. On the other hand, a campaign to attract cruiseships should be accompanied by a program to build, upgrade, and beautify pier facilities, main touring roads, and transport facilities and improve duty-free and local arts-and-crafts shopping. The costs and benefits of these investment options may be different within and among the various destinations, and they should be weighed to reach rational decisions on tourism development.

It also follows that facilities and amenities for tourists must be gauged to expected flows of visitors. Hotels and other commercial facilities must operate at sufficiently high levels of occupancy and sales to cover costs and yield satisfactory returns on investment. For the public sector, government-built facilities such as airports, roads, and utilities must be able to accommodate comfortably existing, as well as projected, flows of visitors. Private and public investments require a close balance between tourism demand and supply, present as well as projected. For instance, planning an increase in hotel facilities must coincide with programs to increase tourists to allow satisfactory occupancy rates not only for the new facility, but also for the existing hotel plant, which must remain solvent. More visitors may require expanded air service or new air routes to link markets and destination. Once within the destination, visitors must have a variety of amenities and activities to keep them involved during their stay. Failure to keep all these factors in proper perspective throughout the planning process may lead to serious structural imbalances within the industry. The present study, concerned primarily with the economic impact of tourism at one point in time, touched only briefly on these important considerations related to alternative forms of tourism development. Current literature also fails to deal adequately with these issues. We suggest that this is a rich topic for future research.

An approximation of the use of accommodation can be derived by dividing overall capacity (i.e., number of rooms) into the number of stayover tourists (see Table 1). Assuming that the proportion of visitors in commercial accommodations and average length of stay do not vary substantially, it is possible to compare utilization levels in the four destinations studied. The U.S. Virgin Islands and Aruba had utilization rates of 108.8 and 90.8 visitors per room per year respectively, levels much higher than the 57.0 and 68.2 experienced by Antigua and St. Lucia respectively. It should be pointed out, however, that there is some variation in the base-year figures both within and among destinations. Also, the figures apply only to 1978-1980. Such rates will fluctuate as a result of changes in demand and supply of accommodations.

Seasonal cycles in tourism demand are closely related to tourist accommodation use and supply-demand factors. Strong winter peaks and summer troughs in volume of stayover and cruiseship visitors have come to be expected in the region. Seasonality, largely due to the high tourism demand in the U.S. during the winter, has generated a response from hotels and other tourists facilities; they operate with higher prices and occupancy rates during the winter and near break-even during the summer.

Several major structural characteristics can be traced to this problem, including large seasonal price variations, poor year-round plant use, and periodic layoffs of personnel. Fortunately, the picture has improved somewhat in the last few years, largely as a result of efforts to diversify into new markets, such as Venezuela and Europe, that are capable of generating tourists all year. This has resulted in noticeable increases in year-round occupancy rates, a leveling off of seasonal price differentials, steadier year-round employment, and in general a more efficient use of resources. We suggest that future research efforts be applied to ways to further resolve seasonal cyclical problems in Caribbean tourism.

The size of tourist flows should not be seen in absolute perspective. By relating the size of tourist flows to the size of the local population, a rough index of the presence of tourism in the islands can be derived. To measure the exact number of tourist days spent on the islands, the number of stayover tourists should be multiplied by their average length of stay and this value added to the number of days spent by cruiseship passengers and other excursionists. The total should then be compared to the number of days spent on the island by the resident population each year. For a more simple calculation, however, the number of stayover tourists can be compared to the resident population. The U.S. Virgin Islands stand out with a ratio of five stayover tourists per local resident, followed by Aruba with a ratio of three to one, Antigua with a ratio of one to one, and St. Lucia with a ratio of 0.6 to one.

If economic activities other than tourism were equal, then this ratio of stayover tourists to resident population would be a reasonable indicator of the share of tourism in the island economy and of the presence of tourism in the residents' day-to-day life. However, because the natural and manpower resources of the islands vary considerably, because of dispersion and seasonality, as well as inherent differences in tourist characteristics from island to island, this ratio only serves as an approximate indicator and must be qualified. Nevertheless, it is reasonable to assume that the higher the ratio of stayover tourists to resident population, the stronger is the profile of tourism within the local economy. Also, however, the possibilities of negative social consequences, such as congestion and friction between tourists and the resident population, are higher. Further discussion on this topic clearly exceeds the boundaries of this volume. However, it is suggested that the social impact of tourism is an area worth further research.

### *Tourist expenditures-receipts*

The economic justification of tourism as a tool for development springs from the basic fact that tourists are expected to spend money for goods and services during their vacation. This money, injected into the local economy, ultimately creates income, capital investment, foreign exchange, employment, and government revenues.

Money spent by tourists within the destination translates into money received by the subsectors of tourism and ultimately by the whole destination as a national economic entity. The principle of equating expenditures to receipts has been used throughout this volume (see *Definitions*). Receipts from tourism can be calculated and presented in a number of different ways. In Table 1, we use three useful measurements: total gross tourist receipts, daily per-capita receipts for stayover tourists, and daily per-capita receipts for cruiseship passengers.

The U.S. Virgin Islands annually derive three times the volume of gross tourists receipts as Aruba, which in turn receives five times the volume that accrues to Antigua and to St. Lucia. This wide variation can be attributed to the interaction of

complex factors including the volume of visitors and market composition (stayover *versus* cruiseship visitors, their socioeconomic characteristics and origin, and the tourist base). A foremost factor is the volume of stayover and cruiseship visitors. Obviously, those destinations that capture a larger volume of visitors will capture larger receipts, assuming all other conditions remain constant.

Regarding market composition, it should be noted that the vast majority of tourist receipts are derived from stayover rather than cruiseship visitors. This is due to the stayovers' longer average length of stay and, with the exception of the U.S. Virgin Islands, their higher daily per-capita spending. Visitors with higher disposable incomes tend to spend more for vacation purposes than those of limited means. They tend to travel more on an individual basis rather than as participants in low-price package tours. Also, there are significant differences in the types of accommodations demanded; wealthier visitors generally stay in more expensive, deluxe hotels and less-affluent tourists patronize less-exclusive accommodations, including guest-houses and various types of self-catering units. Visitors from some countries tend to spend more on a broader variety of goods and services within the destination. For example, Aruba, due to its proximity to the northern portion of South America, receives a large and growing proportion of its tourists from oil-rich Venezuela. Venezuelan stayover tourists spent on the average in Aruba U.S. \$154 per person daily, 72% more than the average visitor from the U.S. and 124% more than the average visitor from Canada.

Wide variations in total receipts can also be attributed to the structure of the tourist base — the product offered by the destination. This base includes the whole range of available facilities, amenities, goods, and services. The more there is for visitors to do within the destination, the longer they tend to stay and the more they tend to spend. There is no doubt that the tourist base is narrower in smaller islands, such as St. Lucia and Antigua, than it is in the U.S. Virgin Islands, which provide extensive duty-free shopping, a variety of water-oriented activities and excellent restaurants, or Aruba, which has a similar tourist base but also offers gambling casinos.

Seasonality affects the distribution of gross tourist receipts over the year. In destinations more dependent on the North American market, a higher proportion of winter tourists, subjected to higher prices, will lead to greater receipts during the peak season and relatively modest receipts during the low season. Conversely, lower seasonal cyclic variations usually result in a steadier, better-balanced flow of receipts throughout the year.

The volume of gross tourist receipts can be further analyzed by considering per-capita daily expenditures. Controlling for the number and average length of stay of stayover tourists, estimates of daily per-capita receipts for this type of visitor can be obtained. Again, large variations were observed among the four destinations. Aruba has the higher per-capita spending figure, over U.S. \$100 per day in 1980; moreover, this figure reflects average year-round expenditures, which suggests higher spending average in the winter. As indicated earlier, this higher expenditure in Aruba is related to the Venezuelan origin of the tourists, as well as to the availability of a broad tourist base including gambling. The U.S. Virgin Islands, with average per-capita daily expenditures of U.S. \$74 for stayover visitors in 1979, occupy a position between Aruba and St. Lucia (U.S. \$42) and Antigua (U.S. \$47).

Daily per-capita expenditures for cruiseship passengers is considerably different. On the average, cruiseship passengers tended to spend considerably more in the U.S. Virgin Islands (U.S. \$84) than in Aruba (U.S. \$57). The level of cruiseship passenger spending in Aruba, however, was over twice that of Antigua (U.S. \$25)

and almost four times that of St. Lucia (U.S. \$15) (differences in base year for the estimates must be considered, however). The U.S. Virgin Islands are a well known shopping destination, aided by special U.S. legislation to favour duty-free shopping by visitors from the mainland: liquors, perfumes, and other imported and expensive goods can be purchased in the numerous duty-free tourist shops. In addition, there are many well organized guided tours and other sightseeing and recreational activities for cruiseship passengers. The same, though to a lesser extent, is also true of Aruba. On the other hand, the variety of shopping and nonshopping activities is considerably less in Antigua and St. Lucia. This is clearly reflected in the overall level of receipts captured from the cruiseship visitors. It is interesting to note that daily per-capita receipts from cruiseship passengers were higher than daily receipts from stayover tourists only in the U.S. Virgin Islands (U.S. \$84 compared to U.S. \$74). In Aruba and Antigua, the ratio of stayover tourist spending to that of cruiseship passenger was approximately two to one, while in St. Lucia the ratio was three to one. These data highlight the significant differences in the tourism base previously discussed.

A number of policy implications follow from this. If the objective of a tourist destination is to increase the level of tourist receipts, consideration must be given not only to increasing the number of stayover and cruiseship tourists, but also to diversifying the markets from which these tourists originate. Such diversification could eliminate the dependence on single markets, thereby alleviating problems of seasonality and vulnerability to economic cycles within sending countries. Also, market diversification could have as one of its aims an increase in the number of high-spending tourists. In addition to increasing the volume of tourists and diversifying the market, destinations can increase receipts by expanding the tourist base. This requires public and private investment, and involves decisions about overall allocation of resources. Further research related to the policies that might be implemented in this regard is needed.

### *Tourism, gross domestic product, and linkages*

To measure the impact of gross tourist receipts on GDP of the four territories under study, two different indicators were used. The first indicator shows the size of gross tourist receipts as a percentage of GDP. This is not a measure of the true contribution of tourism to GDP but only a relative comparison of intrinsically different monetary flows. The reason that it is highlighted in Table 1, in spite of its limitations, is that it is easily understood and commonly used in the literature for comparison purposes. Expressed as a percentage of GDP, gross tourist receipts were highest in the U.S. Virgin Islands (61%), followed by Aruba and Antigua (46 and 44% respectively) and St. Lucia (34%).

The second measure in Table 1 is that of value added by tourism to GDP, expressed as a percentage of total GDP. This measure is a more accurate indicator of tourism's contribution to GDP, as well as the extent to which tourism is linked with other sectors of the economy. Comparisons between study areas are made difficult by differences in methodology and data availability. In Aruba, for example, only the direct value added of tourism was calculated, whereas in the U.S. Virgin Islands total value added was estimated without disaggregating direct and indirect components. Moreover, there was some variation in operational definitions of direct and indirect value added among countries. In St. Lucia, for example, direct value added is limited to hotels and restaurants only, with other subsectors (such as transport and retail trade), which are normally considered in the direct category, included instead in the indirect category. Thus, it is likely that the figure for direct value added in St. Lucia is lower than it should be, and that the figure for indirect value added is overestimated.

In view of these methodological differences, the most reliable indicator for comparison purposes is the total value added of tourism. Thus tourism, directly and indirectly, accounted for 35% of value added to GDP in the U.S. Virgin Islands, compared to 30.2% in Antigua and 18.7% in St. Lucia.

An examination of the two measures of tourism's contribution to GDP suggests differences among the islands in relative size of tourism within the respective economies and the degrees of dependency on tourism, or conversely the degree of diversification. Based on both gross tourist receipts and total value added as a percentage of GDP, it appears that the U.S. Virgin Islands are much more dependent on tourism than the other three islands. In Aruba, for example, although tourism is a key economic activity, gross tourism receipts represent a smaller proportion of GDP than in the U.S. Virgin Islands because of the presence in Aruba of other relatively strong economic activities, i.e., oil refining and related endeavours. This dependence, however, should not be viewed negatively, as is often the case. While it is true that the U.S. Virgin Islands are dependent on tourism and Aruba on tourism and oil refining, these happen to be very productive sectors in the two economies. Thus the populations of the U.S. Virgin Islands and Aruba enjoy high per-capita incomes by Caribbean standards.

Perhaps even more interesting is a comparison among countries of the difference between the two measures. In all countries, the value added of tourism receipts is significantly less than the absolute percentage of gross tourism receipts to GDP. This suggests that tourism exhibits weak linkages in the less diversified countries. This was most marked in the U.S. Virgin Islands, where gross tourist receipts equaled 61% of GDP but only 35% of value added to GDP. By contrast, the corresponding figures for Antigua were 44% and 30.2%. This suggests that the U.S. Virgin Islands have a less diversified economy, and tourism has proportionally weaker linkages with other sectors than in Antigua. Predictably, as Table 1 indicates, tourism imports (i.e., leakages), as a percentage of gross tourist receipts, were higher in the U.S. Virgin Islands (35.9%) than in Antigua (25.2%).

The most critical policy issue relates to mechanisms for increasing tourism's contribution to GDP in terms of value added; in other words, mechanisms for increasing linkages between tourism and other sectors of the economy. Considering the open nature of the economic structure of small Caribbean islands and their limited natural and human resource base, this is not an easy task. Although some islands (for example, St. Lucia) have potential for expanding agricultural production to serve tourist demand, others, such as Aruba and the U.S. Virgin Islands, have very limited possibilities. Even where potential for expanding agricultural output exists, such an expansion would have to be accompanied by improvements in quality control, storage, and distribution.

Even more serious constraints apply to strengthening linkages with the manufacturing sector. Limitations such as small market, lack of raw materials and capital, and technological requirements make it extremely difficult for small islands to compete in supplying the goods required by the tourism industry. Hoteliers and operators of other subsectors of the tourism industry often find it more advantageous to import their requirements.

In this context, it does not seem reasonable to expect major changes that will increase linkages between tourism and other sectors of the economy rapidly. This does not suggest, however, that there could not be opportunities for local production in very specific items. For example, it may be possible to stimulate production of certain vegetables and fruits and to foster seafood production; or it may be possible to establish or encourage small and medium furniture and textile enterprises, using to

some extent locally available materials.

In spite of the importance of these issues, there is little empirical information on the possibility of establishment or expansion of local enterprise, either at the national or regional level. Information is needed on capital and technological requirements, quality and quantity standards, and distribution channels. This area is a particularly important one for further research.

### *Tourism employment*

Employment is one of the most important indicators of the economic impact of tourism. To measure the contribution of tourism to employment, three absolute measures plus one relative measure are presented in Table 1. The absolute measures are direct, indirect, and total tourism-generated employment; the relative measure is the percentage of direct tourism employment in total island employment.

Although direct employment generated by tourism was generally relatively easy to measure as it concerned readily identifiable tourist subsectors (e.g., hotels, restaurants, and shops), indirect employment, a much more difficult field, was only comprehensively measured in St. Lucia and estimated in the U.S. Virgin Islands. As a result, total tourism employment, consisting of direct and indirect components, could only be measured in those two destinations. Moreover, the definitions of direct and indirect employment vary somewhat from one island to another, making strict comparisons difficult.

Tourism generated direct employment of 12 482 jobs in the U.S. Virgin Islands, more than twice the value for Aruba (4962) and several times more than those for St. Lucia (2195) and Antigua (2151). In the U.S. Virgin Islands, direct tourism employment accounted for 31.8% of total employment, whereas in St. Lucia the corresponding percentage was only 6.1. These figures correspond closely to the contribution of tourism to GDP in these two destinations and underline the fact that tourism plays a more predominant role in the U.S. Virgin Islands than in St. Lucia. Aruba lies in an intermediate position, with direct tourism employment accounting for 21.6% of total employment.

In general, the number of direct jobs generated by tourism is roughly proportional to the number of accommodation rooms available to tourists. The ratio varies but averages about two jobs per tourist room or, alternatively, one job per tourist bed, if it is assumed that each room averages two beds. The ratio is somewhat higher in Aruba and the U.S. Virgin Islands because of the wide range of services available in hotels and because of the wide base of other tourist-related activities in the two islands. The ratio of employment to accommodation capacity is lowest in Antigua, where the number of activities appears to be more limited than in the other islands.

Perhaps the most promising area for increasing tourism's contribution to GDP is that of local employment. An increase in the number of people employed can result in greater value added. In particular, a higher proportion of technically skilled positions would result in higher total wages and salaries. The potential for expansion of employment both in quantity and skill level is related to two major factors: expansion of the tourist base by creating or strengthening activities such as restaurants, shops, watersports, and other amenities, and providing training for local employees at all skill levels.

Although it is clear that training is necessary to increase tourism's contribution to employment, expansion of the tourist base requires some discussion. To expand the tourist base enough to create additional sources of employment, investment

capital is needed. In small Caribbean islands such as those studied, capital resources and entrepreneurial skills are limited. Thus foreign investment is required, particularly for construction of international-class hotel accommodation. Nevertheless, many of the smaller hotels and ancillary services have been financed and operated by local entrepreneurs. This suggests that further expansion of this portion of the tourist base could be achieved locally. In some of the islands studied, government policies and incentives to stimulate investment, and thereby increase employment, do exist. Research is required on the range of specific government policies in this area and the extent to which they have been successful in stimulating investment and employment.

### *Tourism government revenues*

Caribbean governments derive direct and indirect revenues from tourist spending: direct revenues are received from accommodation and airport departure taxes, custom duties, ground transport licences, etc., and indirect revenues are usually concerned with taxation on the spending or income of those who were the primary beneficiaries of tourist spending. A good indicator of the government revenues accrued from spending by tourists (although not reported in Table 1) is the proportion of total tourism government revenues expressed as a percentage of total gross tourist receipts. The U.S. Virgin Islands and St. Lucia governments received revenues from tourism equal to 13.5% of their respective total gross tourist receipts. The equivalent values were considerably lower in Antigua (8.5) and Aruba (7.6). These differences reflect large variations in the fiscal and taxation structure of the different economies. For example, Aruba taxes only marginally, if at all, duty-free merchandise and casino receipts, two important components of tourist expenditure in the island.

A more useful measure of the importance of tourist revenues to local Caribbean governments is the ratio of tourism government revenues to total island government revenues. In this respect, Aruba, Antigua, and St. Lucia were remarkably similar (13.6, 14.7, and 15.3%, respectively). On the other hand, the U.S. Virgin Islands government received 36.4% of its local revenues from tourism; if federal subsidies are included, tourism still contributed 26% of the total 1979 government revenues for the U.S. Virgin Islands. We suggest that the principal reason for the large difference between the contribution of tourism to government revenue in the U.S. Virgin Islands on the one hand and in the other three islands on the other is the highly progressive income-tax structure prevalent in the former, modeled on that of the U.S. mainland to redistribute income.

In view of the variation in the fiscal structures of the territories studied, it is impractical to suggest generalized policy implications. Government revenues from tourism and corresponding government expenditures for tourism and other purposes are areas in which further research would be useful.

### *Tourism leakages and net foreign exchange*

Tourism brings into the local economies considerable amounts of foreign exchange. Part of this foreign exchange, however, leaks out of the local economy because of the import content of tourist consumption. Leakages are usually classified as first- and second-round. First-round leakage of foreign-exchange earnings flows out of the local economy upon the first round of tourist expenditure. Many goods, such as food and beverages, construction materials, linen, and glassware, are im-

ported for the tourism industry and account for most of the first-round leakages. Second-round leakages are leakages that occur after tourism receipts have circulated at least once through the local economy. Since net foreign exchange is defined as gross tourist receipts less first-round leakages, this discussion is restricted to first-round leakages only.

First-round leakages as a percentage of total gross tourist receipts were highest in St. Lucia (44.8), followed by Aruba (41.4) and the U.S. Virgin Islands (35.9). The import component of tourist consumption is, therefore, highest in St. Lucia and lowest in the U.S. Virgin Islands. Conversely, linkages between the tourism industry and other sectors of the local economy are relatively stronger in the U.S. Virgin Islands than in Aruba or St. Lucia. It is difficult to compare Antigua to the other countries. Although it appears to exhibit the lowest first-round leakages (25.2%), this figure is probably significantly underestimated due to the use of a much narrower definition of first-round leakages than that employed in the other studies.

It should be pointed out that the average amount of foreign exchange that stays in the local economies for each tourist-day spent is not only a function of the percentage of total gross tourist receipts that leak in the first round of tourism expenditure, but is also related to the absolute level of daily per-capita receipts from tourists. For example, although 41.4% of all gross tourist receipts flowed out of Aruba after the first round of tourist leakages, approximately U.S. \$60 of the \$102 spent daily by the average stayover tourist in 1980 was spent on locally produced goods and services. This \$60 was substantially more than the entire daily per-capita receipts from stayover tourists in St. Lucia in 1978 (U.S. \$42), from which 44.8% should be deducted as first-round leakages. Although the 1980 per-capita daily expenditure of U.S. \$102 in Aruba should be deflated to correspond to 1978 figures used in St. Lucia, the difference in locally retained receipts in the two islands is still significant.

The point is often made that developing countries need scarce foreign exchange to help speed their economic development and that tourism can play a major role in providing such foreign exchange. A useful measure of tourism's contribution to foreign-exchange requirements is therefore the net amount of foreign-exchange tourism earnings expressed as a percentage of the territories' imports of goods minus tourism imports. (Tourism imports are deducted from total imports of goods because without tourism such imports would not be necessary.) In absolute amounts, the U.S. Virgin Islands generated \$220.1 million of net foreign exchange, compared to \$73.3 million in Aruba, \$20.3 million in Antigua, and \$13.9 million in St. Lucia. In the U.S. Virgin Islands, net tourism foreign exchange represented 71.3% of the cost of all imports, excluding tourism imports. The corresponding figure for St. Lucia was much lower, but still a sizable 19.4%. Thus, in spite of substantial leakages through first-round imports, tourism does create net foreign exchange that, at least in these two cases, helps to pay for other imports required by the local economies.

### *Concluding remarks*

A major contribution of the studies in this volume is that they have broadened the scope of the issues that are usually covered in analyses of the tourism sector. For the first time in the countries studied, empirical data have been collected and analyzed on the economic impact of tourism, in terms of its contribution to GDP, employment, government revenues, and foreign-exchange earnings.

The studies point to the need for ongoing collection and analysis of data, particularly in the areas noted, which are critical in the planning of tourism and

overall national development. Considerable progress has been made in the development and testing of methodologies, which should make ongoing study a much easier task.

Perhaps equally important, the studies have identified critical areas for further research on a broad range of economic and social issues. There is an urgent need, for example, for research on alternative types of tourism development, policies and programs for strengthening linkages between tourism and other sectors such as agriculture and light industry, and mechanisms for expanding the tourist base through the stimulation of local investment.

It is hoped that the studies in this volume will stimulate further intellectual activity in the area of tourism, a sector so critical to the economic welfare of the Caribbean region.