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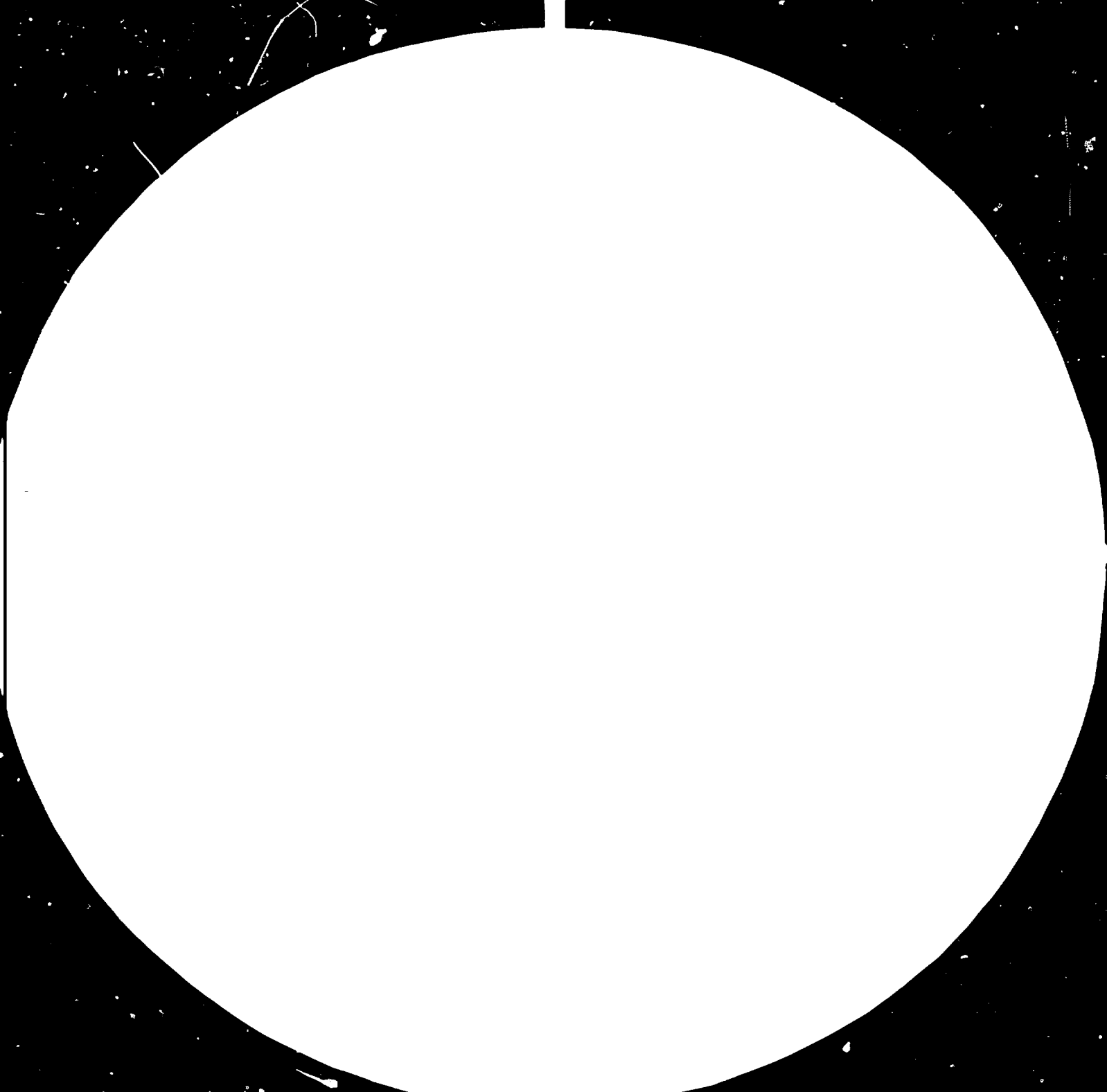
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INDUSTRIAL DEVELOPMENT IN  
BARBADOS

COUNTRY BRIEF \*

Prepared by the  
Division for Industrial Studies  
Regional and Country Studies Branch

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PREFACE

The Division for Industrial Studies, Regional and Country Studies Branch of the United Nations Industrial Development Organization (UNIDO), undertakes within its work programme, the preparation of Country Industrial Development Briefs. These briefs are desk studies, providing statistical and economic analyses of the industry sector, its growth, present status and future prospects. It is hoped that the briefs will provide analyses of use in activities relating to technical assistance, industrial redeployment and industrial corporation.

The views or comments contained in this document do not reflect those of the Government of Barbados nor do they officially commit UNIDO to any particular course of action.

EXPLANATORY NOTE

Totals in tables may not add precisely because of rounding. In tables, three dots (...) indicate that data are not available, a dash (-), that they are not applicable, and a dot (.) indicates magnitude less than half of the unit of measurement employed.

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## INTRODUCTION

Barbados is a small island country in the south-eastern Caribbean Sea with an area of 431 km<sup>2</sup> and a population of 255,000 persons. About 40 per cent of the total population live in the capital city, Bridgetown. The population density, 592 persons/km<sup>2</sup>, is the highest in Latin America but the growth rate is low. The literacy rate is 97 per cent, one of the highest in the world.

Since independence in 1966, the main economic base of the country has been shifting rapidly from sugar production to tourism and light manufacturing industry. The relatively favourable topographical and geographical conditions, the high literacy rate and good investment climate have contributed greatly to favourable manufacturing and tourism growth during the last decade. With large contributions of these two sectors, per capita GDP reached 1,800 US dollars (current price) in 1978, the third highest in the Caribbean region<sup>1/</sup> and the fourth highest in Latin America.<sup>2/</sup>

Barbados has been a member of the Caribbean Community (CARICOM), a successor to the Caribbean Free Trade Area (CARIFTA)<sup>3/</sup>, since its birth. Among the 12 member states of CARICOM, Barbados, together with Guyana, Jamaica, and Trinidad and Tobago, is considered as a "More Developed Country (MDC)".

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- 1/ The Caribbean countries whose per capita GDP exceeds the Barbados' figure are Puerto Rico, and Trinidad and Tobago (as in 1977).
  - 2/ Argentina is the only South American country whose per capita GDP exceeds that of Barbados (as in 1977).
  - 3/ CARIFTA was established in 1968 by Barbados, Guyana, Jamaica and Trinidad and Tobago. On August 1, 1973, CARIFTA was expanded into CARICOM, 8 other developing countries joining it. Main objectives of CARICOM are: establishment of common market, co-operation in foreign policies and provision of several common services and activities. Several CARICOM organizations have been set up. Among these, major ones are the Caribbean Development Bank (CDB) which was established under CARIFTA in 1970, and the Caribbean Investment Corporation (CIC) which commenced operation in February 1975. Caribbean Common Market was established as an integral part of CARICOM. The treaty aims at a common external tariff, harmonization of tax incentives and taxation systems, a common monetary policy, joint action on industrial development programmes, extensive consultation on national development planning, and provisions of several incentives to member countries. However, CARICOM has been facing difficulties in attaining many of its objectives partly because of ideological differences between the member countries.

Chapter I

ECONOMIC BACKGROUND

Barbados' economy depended heavily on the monocultural production of sugar until 1967 when dynamic structural changes began. In the late 1960s, tourism became a leading growth sector, and started increasing in importance in the country's economy. Following tourism, the manufacturing sector particularly non-sugar manufacturing emerged as another dynamic sector in the early 1970s supported by several government promotional efforts.

As a result of large contributions in the early 1960s by agriculture, particularly sugar cane production, and by tourism and export-oriented manufacturing in the following period, Barbados achieved favourable economic growth until the early 1970s (see Table 1). In the mid 1970s, however, the country's economy which depended heavily on international market conditions revealed its vulnerability against swings in international prices and demands. A sharp fall in sugar income and tourist income in the mid-1970s stagnated the country's economic growth. At the same time, worldwide inflation together with the depreciation of the sterling pound to which BDS dollar was linked<sup>1/</sup> caused serious inflation in the country<sup>2/</sup>. Along with the gradual recovery in world economy, the country's economy started expanding again, led by manufacturing and tourism growth.

As the result of the rapid growth in the manufacturing and the service sectors, the shares of the two sectors in total GDP increased from 7 per cent in 1967 to over 11 per cent in 1973 and from 43 per cent to 60 per cent, respectively, while that of agriculture decreased from 58 per cent to 19 per cent. However, compared to other major CARICOM countries as well as Latin American countries, agriculture still plays an important role in Barbados' economy while the importance of manufacturing and mining is relatively small (see Table 2).

In 1977, the manufacturing sector accounted for 16 per cent of the country's total employment (90,200 persons) while the agricultural sector and the service sector accounted for 10 per cent and 65 per cent, respectively.<sup>3/</sup>

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<sup>1/</sup> The Barbados dollar (BDS\$) had been linked to the sterling pound until July 5, 1975, when the BDS\$ started being linked to the US dollars at a rate of BDS \$2 = US \$1.

<sup>2/</sup> Overall retail price index increased by 29 per cent in 1974 over 1973, and 20 per cent in 1975 over 1974. Barbados Statistical Services.

<sup>3/</sup> Labour Survey, Barbados.

**Table 1 Selected economic indicators in constant 1975 US dollars (1960, 1970, 1977), and their growth (1960-1977), for Barbados, CARICOM and Latin America, and Barbados' shares in the regions**

Country/Region	Year	(N)	(L)	(Y)	(I)	(X)	(M)	Per capita	Investment/	Per capita	Per capita
		Population (million)	Labour force	Gross product	Gross capital formation	Exports <sup>a/</sup>	Imports <sup>a/</sup>	GNP (Y/N)	Labour force (I/L)	exports (X/N)	imports (M/N)
		(constant 1975 US \$ million)						(constant 1975 US \$)			
Barbados	1960	0.23	0.09	174	47	120	177	752	508	521	761
	1970	0.24	0.09	334	81	256	311	1397	900	1071	1302
	1977	0.25	0.10	396	87	235	273	1595	853	746	1102
CARICOM <sup>b/</sup>	1977	4.19	1.43	6613	1274	2969	2957	1577	890	708	705
Latin America	1977	329.89	104.00	411124	111637	63345	62381	1246	1073	192	139
<b>Annual growth rate (%)</b>											
Barbados	1970-1	0.42	1.11	4.45	-7.71	5.90	-3.90	4.01	-8.72	5.46	-4.30
	1971-2	0.42	2.20	5.45	0.07	-1.89	0.18	5.02	-2.09	-2.29	-0.23
	1972-3	0.41	1.08	2.56	5.91	-4.16	-3.87	2.13	4.79	-4.55	-4.27
	1973-4	0.83	2.13	-3.33	7.63	-5.10	3.82	-4.12	5.39	-5.88	2.97
	1974-5	0.41	2.08	1.18	-11.24	-8.56	-15.65	0.77	-13.05	-8.94	-16.00
	1975-6	0.82	2.04	3.53	8.38	2.24	7.91	2.69	6.21	1.41	7.03
	1976-7	0.40	2.00	3.62	6.65	4.00	0.45	3.21	4.56	3.98	0.05
	1960-77 <sup>c/</sup>	0.39	0.63	5.31	5.29	3.92	3.47	4.89	4.63	3.52	3.06
	1970-77 <sup>c/</sup>	0.55	1.83	1.95	1.33	-2.47	-2.19	1.39	-0.49	-3.01	-2.72
CARICOM <sup>b/</sup>	1960-77 <sup>c/</sup>	1.47	1.24	3.55	0.77	3.20	3.45	2.05	-0.46	1.71	1.96
	1970-77 <sup>c/</sup>	1.47	2.00	0.07	-3.64	-1.33	0.68	-1.39	-5.56	-2.76	0.78
Latin America	1960-77 <sup>c/</sup>	2.78	2.54	5.88	7.89	4.22	6.39	3.02	5.22	1.40	3.51
	1970-77 <sup>c/</sup>	2.78	2.78	5.68	9.22	2.12	5.99	2.82	6.26	-0.64	3.12
<b>Ratio of Barbados' figure to region's figure (%)</b>											
Ratio to total for CARICOM	1960	0.07	0.08	0.05	0.03	0.07	0.10	0.63	0.42	0.94	1.37
	1970	0.06	0.07	0.05	0.05	0.08	0.11	0.83	0.69	1.29	1.80
	1977	0.06	0.07	0.06	0.07	0.08	0.09	1.01	0.96	1.34	1.56
Ratio to total for Latin America	1960	.	.	.	.	.	0.01	0.97	1.02	3.67	6.26
	1970	.	.	.	.	0.01	0.01	1.36	1.25	5.67	8.40
	1977	.	.	.	.	.	.	1.28	0.80	4.94	5.33

a/ For goods and non-factor services.

b/ Barbados, Guyana, Jamaica, and Trinidad and Tobago.

c/ Trend average annual growth rate.

Source: UNIDO data base; Information supplied by the United Nations Office of Development Research and Policy Analysis.

A comparison of these figures with the corresponding shares of these sectors in GDP reveals the relatively low per worker value added in the manufacturing sector. This reflects land intensive agricultural production and labour intensive manufacturing production in the country.

In 1977, Barbados accounted for about 6 per cent of total gross product produced in the four major CARICOM member states - Barbados, Guyana, Jamaica, and Trinidad and Tobago - which together accounted for less than 2 per cent of total gross product of the entire Latin America.

The relatively slow growth of population which has resulted from large population migration to North America and the United Kingdom together with a declining birth rate has contributed to the relatively high growth rates of per capita GDP as well as other per capita indicators such as per capita manufacturing value added (MVA) during the period 1960-1977 (see Table 1 and 4).

The slow growth of the labour force together with increasing job opportunities particularly in the manufacturing and service sectors in the 1960s, resulted in a substantial decrease in unemployment rate to 8.4 per cent in 1970. However, the economic stagnation together with a decrease in net population outflow resulted in a rapid rise in the rate, reaching the level of 20 per cent in the mid 1970s. Despite the quick economic recovery, the rate is estimated to have been still as high as over 15 per cent in 1978.<sup>1/</sup>

While the ratio of gross capital formation to GDP showed a declining tendency in the group of four CARICOM EDCs and an increasing tendency in Latin America as a whole, in Barbados it remained relatively constant at over 20 per cent with small annual fluctuations. In 1977, investment accounted for 22.5 per cent of GDP in Barbados, higher than the CARICOM figure of 19.3 per cent and lower than the Latin American figure of 25.5 per cent. In 1978, the ratio for Barbados is estimated to have increased significantly to around 25 per cent as a result of a substantial increase in private investment (see Table 3).

As can be seen from the large trade deficit and also from the large consumption expenditure as a percentage of GDP, the saving propensity in Barbados was small, fluctuating in the range between 0 and 10 per cent during the period 1960-1977, except for 1975.<sup>2/</sup> Thus, more than half of the domestic investment

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<sup>1/</sup> Barbados Statistical Services

<sup>2/</sup> Calculated from the ratios of investment to GDP, trade balance to GDP, and net factor income to GDP shown in Table 2.

Table 2 GDP by major industrial origin, growth and shares in total GDP for Barbados (1960-1978), CARICOM and Latin America (1960-1977), based on constant 1975 US dollars

Country/region	Year/period	Agriculture	Mining & Quarrying	Manufacturing	Electricity and gas	Construction	Services	Total GDP	
Barbados				Annual growth rate (%)					
	1960-70 <sup>a/</sup>	2.5	7.4	7.1	12.8	5.4	9.4	6.5	
	1970-71	-7.4	10.8	11.3	13.5	-6.0	10.5	4.5	
	1971-72	-7.3	0.6	11.5	16.3	-4.3	10.8	5.5	
	1972-73	2.3	-17.6	3.9	7.2	0.8	2.7	2.6	
	1973-74	-9.8	-17.1	-6.3	-8.2	-4.6	-0.2	-3.3	
	1974-75	-0.2	-20.5	11.0	8.5	-14.6	1.7	1.2	
	1975-76	4.8	68.4	15.9	4.0	11.2	0.0	3.5	
	1976-77	4.5	-14.8	-0.8	14.6	8.1	3.6	3.6	
	1977-78 <sup>b/</sup>	4.5	0.0	4.9	15.2	1.5	5.7	5.4	
	1960-77 <sup>a/</sup>	-0.3	2.6	6.3	11.9	2.9	8.7	5.3	
	1970-77 <sup>a/</sup>	-2.3	-4.0	6.0	6.2	-2.5	3.4	2.0	
					Share in total GDP (%)				
	1960	40.57	0.60	8.21	0.95	8.43	41.24	100.0	
	1970	26.71	0.61	8.71	1.66	8.41	53.90	100.0	
1977	19.51	0.45	11.33	2.35	6.30	60.05	100.0		
1978 <sup>b/</sup>	19.37	0.43	11.28	2.57	6.07	60.27	100.0		
CARICOM <sup>c/</sup>				Annual growth rate (%)					
	1960-70 <sup>a/</sup>	2.1	4.1	8.0	5.6	3.6	5.7	5.1	
	1970-77 <sup>a/</sup>	-2.2	2.7	-0.6	3.8	-4.6	0.3	0.1	
	1960-77 <sup>a/</sup>	0.7	3.0	4.9	5.9	2.3	4.2	3.6	
					Share in total GDP (%)				
	1960	12.36	22.33	12.30	0.79	9.60	42.62	100.0	
1970	9.32	19.55	15.61	0.88	9.50	45.14	100.0		
1977	8.29	22.38	14.93	1.14	6.97	46.28	100.0		
Latin America				Annual growth rate (%)					
	1960-70 <sup>a/</sup>	3.3	4.9	6.8	9.7	4.8	5.6	5.5	
	1970-77 <sup>a/</sup>	3.6	-0.8	6.7	8.9	7.0	6.3	5.7	
	1960-77 <sup>a/</sup>	3.3	2.6	7.4	9.7	6.4	6.2	5.9	
					Share in total GDP (%)				
	1960	16.86	7.89	21.87	0.96	5.21	47.21	100.0	
1970	13.42	7.45	24.76	1.41	5.00	47.96	100.0		
1977	11.71	4.86	26.60	1.77	5.40	49.66	100.0		

<sup>a/</sup> Trend average annual growth rate.

<sup>b/</sup> Estimates.

<sup>c/</sup> Barbados, Guyana, Jamaica, and Trinidad and Tobago.

Source: UNIDO data base; Information supplied by the UN Office of Development Research and Policy Analysis.

was financed every year by foreign resources. In 1978, however, domestic savings increased remarkably and reached 20 per cent of GDP.<sup>1/</sup> Consequently, the country's resource gap was reduced to around 5 per cent of GDP in that year.

Exports of goods and non-factor services<sup>2/</sup> accounted every year for more than half of GDP during the period 1966-78, while imports exceeded two-thirds of GDP every year during the same period.<sup>3/</sup>

Thus, the trade deficit as a percentage of GDP was continuously large from 1960 until 1977, with annual fluctuations resulting mainly from the movements in export prices of sugar, domestic sugar production, and, in recent years, tourist income. In 1978, however, despite a considerable increase in imports due mainly to an increase in capital goods imports, the quick recovery in tourism and a substantial increase in manufactured exports resulted in a remarkable improvement in the country's trade balance reducing its deficit to 4.7 per cent of GDP from 17.6 per cent in 1977.

In spite of the economy's dependency on foreign capital, the country's net outflow of factor income is relatively small. This may be explained by the fact that many of the foreign investors carrying out their business in Barbados are more or less settled in Barbados as local residents. This, together with the substantial amount of workers' remittance from abroad, results in relatively small net outflow of factor income compared to the other major CARICOM countries as well as to Latin America as a whole (see Table 2). For other comparable economic indicators for Barbados, CARICOM and Latin America, see also Table 3.

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1/ Public savings and private savings accounted for about 7 per cent and 13 per cent of GDP, respectively, in 1978, compared to the corresponding figures for 1977, 2 per cent and 3 per cent, respectively (IBRD, Economic Memorandum on Barbados, Report No. 2967-BAR, May 30, 1980).

2/ Hereafter, exports, imports and trade of goods and non-factor services are referred simply to as exports, imports and trade, respectively, unless otherwise noted.

3/ The country's trade includes a considerable amount of re-exports most of which are to neighbouring small countries. In 1978, re-exports accounted for 28.6 per cent of total commodity exports, or 10.7 per cent of total exports of goods and non-factor services (calculations based on Annual Overseas Trade Reports, Barbados Statistical Services).

Table 3 Derived economic indicators for Barbados (1960-1978), CARICOM<sup>a/</sup> and Latin America (1960-1977) Unit: %

Country/Region	Year	Labour force as a percentage of population	Gross capital formation	Government current expenditure	Private consumption expenditure	Exports	Imports	Trade balance	Net factor income	Exports as a % of total trade
		(as a percentage of GDP)								
Barbados	1960	39.83	26.71	10.84	90.83	41.63	70.01	-28.38	0.66	37.29
	1965	37.87	18.42	14.25	84.81	55.82	73.29	-17.47	1.84	43.23
	1970	37.66	27.12	19.73	80.27	56.67	83.78	-27.12	-0.42	40.35
	1971	37.92	23.97	20.23	76.22	58.40	78.82	-20.42	-0.22	42.56
	1972	38.59	22.38	19.94	74.94	62.56	79.81	-17.26	-0.94	43.94
	1973	38.84	19.46	22.74	77.89	60.23	80.33	-20.10	-0.68	42.85
	1974	39.34	23.75	17.98	74.44	59.87	76.03	-16.16	0.00	44.05
	1975	40.00	20.52	16.24	71.65	59.97	68.38	-8.41	-0.35	46.72
	1976	40.49	22.00	18.67	78.70	53.65	73.02	-19.37	-0.87	42.35
	1977	41.13	22.49	18.23	76.87	51.84	69.43	-17.59	0.18	42.75
	1978 <sup>a/</sup>	42.4	24.7	13.4	71.3	67.5	72.2	-4.7	...	48.3
	1966-64 <sup>b/</sup>	38.72	22.16	11.21	85.44	47.23	66.05	-18.82	0.60	41.64
	1965-69 <sup>b/</sup>	37.70	22.21	17.82	79.63	58.51	78.16	-19.66	0.82	42.82
	1970-74 <sup>b/</sup>	38.47	23.34	20.12	76.75	59.55	79.75	-20.21	-0.45	42.75
1975-77 <sup>b/</sup>	40.54	21.67	17.71	75.74	55.15	70.28	-15.12	-0.35	43.94	
CARICOM <sup>c/</sup>	1960	35.37	35.63	7.02	57.73	46.59	46.96	-0.37	-5.22	49.80
	1965	33.74	29.57	7.89	57.13	51.19	45.78	5.41	-4.04	52.79
	1970	32.87	25.33	10.09	58.30	49.27	42.99	6.28	-5.74	53.40
	1975	33.55	23.25	15.29	60.78	49.26	48.58	0.68	-4.91	50.35
	1977	34.16	19.27	17.27	63.28	44.83	44.72	0.18	-5.79	50.10
	1960-64 <sup>b/</sup>	34.57	30.81	7.59	57.99	49.01	45.40	3.61	-5.42	51.91
	1965-69 <sup>b/</sup>	33.32	27.02	8.28	56.02	51.64	42.95	8.69	-5.94	54.61
	1970-74 <sup>b/</sup>	33.04	24.13	11.21	58.63	49.32	43.30	6.02	-4.47	53.27
	1975-77 <sup>b/</sup>	33.85	21.32	16.49	62.46	46.07	46.33	-0.26	-5.36	49.84
	Latin America	1960	32.80	20.78	10.06	69.45	13.73	14.02	-0.29	-1.67
1965		32.03	20.47	9.52	69.23	13.54	12.76	0.79	-1.79	51.94
1970		31.55	21.87	10.26	68.89	12.64	13.66	-1.02	-3.25	48.06
1975		31.54	27.23	10.81	64.42	13.92	16.38	-2.46	-2.27	45.93
1977		31.53	25.54	10.82	64.62	14.90	15.94	-1.05	-2.07	48.30
1960-64 <sup>b/</sup>		32.47	20.59	10.03	69.13	13.91	13.66	0.25	-1.78	50.43
1965-69 <sup>b/</sup>		31.82	20.54	9.84	69.57	13.24	13.20	0.05	-2.01	50.10
1970-74 <sup>b/</sup>		31.51	22.66	10.37	67.71	13.69	14.43	-2.58	-2.41	48.60
1975-77 <sup>b/</sup>		31.53	26.20	10.96	64.48	14.44	16.08	-1.64	-2.12	47.30

a/ Estimates.

b/ Annual average.

c/ Barbados, Guyana, Jamaica, and Trinidad and Tobago.

d/ Total trade = exports + imports.

Source: UNCTAD data base; Information supplied by the UN Office of Development Research and Policy Analysis.

Chapter II

THE MANUFACTURING SECTOR: OVERVIEW

Resource endowments: Barbados has scarcely any natural resource endowments for manufacturing production, an exception being sugar cane for sugar processing. As a consequence, except for sugar production, the country's manufacturing activities are concentrated in secondary and final processing of imported intermediates. Besides sugar cane, a few other materials are locally available for manufacturing use but only in limited quantities. Examples are fishery products for preservation and preparation, by-products of sugar processing such as molasses for distillation (e.g., rum), animal feed production, etc.<sup>1/</sup>, crude oil for petroleum refining, and a few non-metallic mineral resources for construction materials for domestic use.

Barbados is endowed with oil and natural gas. Domestic crude oil production increased from 13,000 barrels in 1973 to over 272,000 barrels in 1978, and currently satisfies about 20 per cent of the country's petroleum consumption. Total natural gas production in 1978 was 12.6 million m<sup>2</sup>, a 63 per cent increase over 1977. In order to reduce the large import bill for petroleum, the government attaches importance to an additional increase in domestic oil production, and is currently carrying out exploration of additional off-shore oil and natural gas under foreign technical assistance. Through this effort, one-third of domestic consumption of petroleum is envisaged to be satisfied in the near future by domestic sources. Barbados is also exploring the possibilities for alternative energy sources such as solar heat, bagasse steam, wind and wave powers, etc.<sup>2/</sup>

Infrastructure and location of industry: Transport infrastructure is relatively well developed in Barbados due mainly to the country's favourable topographical conditions for its development together with the government's past efforts to improve the transport network to support the development of tourism and export promotion. The country's road network covers, at present, over 1,400 km, and provides easy connections between industrial sites, main ports and domestic markets. The international airport (Gr. Adams Airport) and the deep water seaport

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1/ Currently, bagasse is used as domestic energy source.

2/ See "Alternative Sources of Energy Available to Barbados" Central Bank of Barbados, 1979.



in the capital city (Bridgetown) are relatively well developed for international connections. However, assuming a future increase in cargo handlings as well as tourists arrivals the government has been making efforts for further improvement in transport facilities. These include the expansion of handling capacity of the seaport, the construction of a new terminal at the airport and improvement and extension of the road network.

Electric power generation capacity in Barbados currently meets domestic demands with fairly reliable supplies. However, the government is planning to expand the country's generating capacity and distribution (the Light and Power Company) in order to avoid future possible interruption of the expected rapid growth of manufacturing and tourism.

Industrial estates have played an indispensable role in the country's industrial development and promotion. During the last two decades, the government has constructed over 93,000 m<sup>2</sup> of factory space in nine industrial estates scattered over the island.<sup>1/</sup> As of September 1979, more than 50 establishments were under operation in the nine industrial estates employing more than 5,000 workers, or about half of total manufacturing employment. All foreign owned export processing firms, most of the other foreign owned firms and many locally owned firms with various sizes are also located in the estates. Thus, almost all major manufacturing establishments in Barbados are operated within the estates. Many of the other establishments most of which are locally owned small establishments are located in and around the capital city because of the closeness to the main market and the seaport, and better availability of various industrial services.

Ownership and type of industry: The manufacturing sector in Barbados has been dominated by foreign capital. According to the 1977 industrial survey conducted by the Barbados Statistical Services, 42 out of 184 establishments were fully foreign owned, and 53 had major foreign participation. Thus, about half of the existing establishments can be considered as foreign owned or controlled. Foreign owned and controlled establishments employ about 70 per cent of total manufacturing employment. Their exports account for around 80 per cent of total domestic manufactured exports.

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<sup>1/</sup> Their locations and number of factory buildings already completed are; Harbour (11), Grazettes (12), Pelican (5), Willey (9), Newton (11), St. Luc (1), Grantley Adams (2), St. Barnabas (3), and Six Roads (4).

More than half of the fully foreign owned establishments are enclave industries (i.e., industries which export 100 per cent of their output outside of CARICOM), and export most of their products to their home countries. The fields in which enclave industries are concentrated are electronic components and wearing apparel. On the other hand, foreign owned non-enclave industries are engaged in more diverse fields such as food processing, beverages, textiles and wearing apparel, for sales in the local, CARICOM and outside CARICOM markets.

The majority of locally owned establishments are small-scale industries. Their employment averages around 35 persons compared to 70 persons for foreign owned and/or controlled establishments. They produce mainly light manufactures mostly for local and regional supplies. Many of the local firms established recently are operated by entrepreneurs who have received basic training or have had business experiences in North America or the United Kingdom.

Market composition: In 1977, 55 per cent of total sales of the products which were manufactured in the country were sold in the domestic market, 13 per cent were exported to other CARICOM countries, and 32 per cent were exported outside CARICOM such as North America and the United Kingdom.<sup>1/</sup> Because of the limited markets in the country as well as to a lesser extent in CARICOM, the importance of markets outside of CARICOM has been increasing in recent years.

Development measures: The rapid industrial development in Barbados has been largely due to the government's promotional efforts, which include import restrictions, several taxation measures in favour of investors and producers, provision of industrial sites, institutional development, particularly for promotion of investment from abroad and export promotion. The government, in line with other CARICOM member states, has attached increasing emphasis to local production, restricting imports of goods already being produced within CARICOM through an import licencing system. On the promotional side, the Fiscal Incentives Act which was passed in 1974 provides tax incentives to manufacturing firms in the country. This Act allows foreign investors duty-free and non-restricted importation of capital goods and raw materials and provides tax holiday treatment

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<sup>1/</sup> Trinidad and Tobago accounts for about half of Barbados' exports to CARICOM. The United States, the United Kingdom and Canada account respectively for around 50 per cent, 20 per cent and 10 per cent of Barbados' exports outside of CARICOM.

for certain periods. The provision of industrial estates has also been a strong and effective incentive to industrialists, particularly small industries and foreign investors. Barbados Industrial Development Corporation (BIDC) provides factory space at nine industrial estates with low rents and purchase prices. As for export promotion, the newly established Export Promotion Corporation (EPC) promotes foreign investment from abroad for development of labour intensive export industries and assists in market development and penetration.

Current development plan: The 1979-83 Development Plan, aims at maintaining high economic growth at a minimum real annual growth rate of GDP of 4 per cent with particular emphasis on reduction of the unemployment rate from a current level of 15 per cent to the 1970 level of 3 per cent, improvement of the balance of payments and on saving foreign exchange through the expansion and diversification of exports and the development of import substitution.

In the achievement of these objectives, the manufacturing sector is expected to play a central role under the private sector's initiative. The Plan envisages 3 per cent real growth of MVA per annum during the 5 year period with the generation of some 900 new job opportunities in the sector. To realize this, the government has been making expanded promotional efforts in various fields through BIDC, EPC, etc. These include: efforts for diversification of export markets through the development of new markets in Latin America, Europe and Japan, construction of additional two industrial estates under Caribbean Development Bank (CDB) assistance, additional measures to promote local investment and joint ventures between local and foreign investors, and provision of technical assistance to small industries including widespread training programmes to increase their labour productivity. The government also attaches great importance to accelerated promotion of labour intensive export oriented industries. For this, EPC is to promote foreign investment initially from the United States and Japan. In connection with agricultural diversification which is also emphasized in the Plan, importance is attached to the development of agro-industry including food processing in order to reduce the country's large import bill of food products.

Main constraints: Due to the scarcity of natural resources, and the smallness of the local and regional markets, the manufacturing sector consists of only a few sub-sectors, the relatively abundant cheap unskilled labour and the geographical location of the country result in the predominant establishment of unskilled labour-intensive export-oriented industries which produce light and small items using imported raw materials or intermediates, for exports to developed countries.

Examples of these are electronic components and wearing apparel. This creates several constraints and vulnerabilities for the country's further industrialization. First, because only a limited number of import substitutive industries are economically suitable to be established, the further development of the manufacturing sector will require further dependency on export processing. However, the achievement of this depends heavily on uncertain world market conditions particularly in industrialized countries which constitute Barbados' major markets for manufactured products and also major sources of manufacturing investment.

Second, the limited availabilities of domestic investment funds and human resources such as well experienced industrialists, engineers, technicians, etc., and difficulties in market penetration may result in a further dependency on foreign capitals and participation. So far, the relatively favourable investment climate has encouraged foreign investment into the country. However, considering the recent rapid rise in the wage level and if domestic inflation continues in the future, investment from abroad may be decelerated. Moreover, the country's limited flexibility for structural change coupled with increasing price competitiveness in the export market as a consequence of the emergence of less industrialized countries in the market may become a bottleneck for the further rapid development of the manufacturing sector in the long run. Also high domestic inflation may prevent an increase in the current low level of saving propensity, which may result in a continued shortage of domestic resources for investment, thus limiting allocation of resources to the manufacturing sector.

Finally, further expansion of the manufacturing sector requires increasing imports of capital goods, intermediates, raw materials and other industrial inputs. However, the weakness of the country's balance of payments<sup>1/</sup> may restrict the importation of these goods for some time to come.

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<sup>1/</sup> The current account balance has been in deficit and fluctuating widely in the 1970s depending heavily upon the performance of sugar exports and tourist income. For several years, the capital account surplus could not finance fully the current account deficit. Consequently, since the mid-1970s, foreign exchange reserves have been as small as 1-2 months of imports.

Chapter III

RECENT DEVELOPMENT AND CHARACTERISTICS OF THE MANUFACTURING SECTOR

Despite the sharp fall in the mid-1970s, Barbados' annual MVA growth rate averaged a moderate 6.0 per cent during the period 1970-77. This growth pace was relatively fast in comparison to the CARICOM figure but slower than the corresponding figure for the entire Latin America of 6.7 per cent. As a consequence, the country increased its MVA share in the major CARICOM countries from 3.2 per cent in 1970 to 4.5 per cent in 1977, while the country's share remained negligible at 0.04 per cent in Latin America.

However, if population growth is taken into account, the picture is somewhat different. Due to the slow population growth, the country achieved relatively fast growth of per-capita MVA. The real annual average growth rate of per-capita MVA for the country of 5.4 per cent, during the seven year period, was much higher than the corresponding figures for CARICOM and Latin America. Despite its rapid growth, however, per-capita MVA of US \$181 (1975 prices) in 1977 was still substantially lower than the aggregated figure of US \$215 for CARICOM, and US \$332 for Latin America. Thus, relative to the population size, the manufacturing sector in Barbados is lagging relatively behind major CARICOM and Latin American countries.

The relative importance of the manufacturing sector in Barbados has remained small in the last two decades, due to the faster growth of the service sector. In 1978, the share of the manufacturing sector in total GDP was 11.3 per cent, only 1.1 per cent higher than the level in the year of the country's independence (1966), which was smaller than the corresponding 1960 figure for the group of major CARICOM countries and about half of the 1960 figure for Latin America as a whole (see Table 4).

In 1979, MVA is estimated to have marked a 5 per cent real growth over 1978. This moderate growth was slower than the pace of GDP growth (6.5 per cent growth) in that year. Consequently, the share of MVA in GDP decreased slightly to 11.1 per cent.

As a result of the development of labour intensive industries, however, the manufacturing sector has become the second most important sector in terms of employment following the service sector. In 1977, the sector employed 16.4 per cent of the country's total employment of 90,200 persons.<sup>1/</sup>

Compared to the unweighted averages for the rest of the major CARICOM countries and for the Latin American countries, the ratio of wage bill to value added for the manufacturing sector in Barbados is remarkably high (more than twice as much as the corresponding figures for the two country groups). This reflects the dominance of labour intensive production in the country's manufacturing sector. Labour intensive production is accompanied by low labour productivity in the manufacturing sector. In 1975, per-worker value added in Barbados' manufacturing sector was US \$3,612 (1975 prices), far below the corresponding figure for the entire Latin America of US \$9,160 (1975 prices).<sup>2/</sup>

Available data regarding employment and number of establishments are not comparable between countries. However, the average size of manufacturing establishments in Barbados is relatively small in terms of employment and value added, compared to the rest of the major CARICOM countries and to the rest of the Latin American countries.

The ratio of value added to gross output for Barbados is considerably smaller than that for both the CARICOM countries as a whole and for the entire Latin America.<sup>3/</sup> This gives a general impression of relatively simply processing and high costs of input materials in Barbados.

The favourable growth of MVA in Barbados in the early 1970s, was the consequence of the high level of investment in the sector. Reflecting the world economic recession, however, the ratio of investment to value added declined in the mid-1970s, and, at the same time, MVA growth was stagnant. The rapid MVA growth during the following recovery period was achieved mainly by utilizing existing excess production capacity which was created in the early 1970s by over-investment.

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<sup>1/</sup> 1977 Labour Survey.

<sup>2/</sup> Unweighted average for 16 Latin American countries for which relevant data are available.

<sup>3/</sup> The ratio of value added to gross output ratio as well as the ratio of wage bill to value added fluctuate annually depending on changes in the rate of capacity utilization, the wage level, sales prices, prices of production materials, etc.

Table 4 Per-capita MVA and share of MVA in GDP and their growth for Barbados (1960-1978), CARICOM and Latin America (1960-1977), and Barbados' shares of CARICOM and Latin America (1960-1977), based on constant 1975 US dollars

Year	Barbados		% shares of MVA in:		Major CARICOM countries <sup>a/</sup>		Latin America	
	Per capita MVA 1975 US\$	MVA/GDP %	CARICOM <sup>a/</sup>	Latin America	Per capita MVA 1975 US\$	MVA/GDP %	Per capita MVA 1975 US\$	MVA/GDP %
1960	62	8.21	2.99	0.04	146	12.30	169	21.87
1961	76	9.43	3.41	0.05	156	12.51	180	22.33
1962	89	9.99	3.77	0.05	163	12.65	183	22.26
1963	75	8.92	3.04	0.04	168	13.17	182	22.03
1964	88	10.04	3.13	0.05	189	14.18	197	22.88
1965	101	10.18	3.28	0.05	203	14.45	202	22.93
1966	104	10.19	3.18	0.05	215	14.87	211	23.60
1967	106	9.47	3.15	0.05	220	14.65	212	23.37
1968	116	9.62	2.98	0.05	249	15.61	226	23.93
1969	129	10.04	3.21	0.05	256	15.83	240	24.39
1970	122	8.71	2.93	0.04	262	15.61	254	24.76
1971	135	9.28	3.12	0.04	270	15.62	270	25.46
1972	150	9.82	3.24	0.04	286	16.03	289	26.17
1973	155	9.95	3.62	0.04	261	15.03	310	26.62
1974	144	9.64	3.29	0.04	265	15.54	319	26.68
1975	159	10.58	4.12	0.04	232	14.81	316	26.48
1976	183	11.84	4.37	0.04	250	15.46	327	26.79
1977 <sup>b/</sup>	181	11.33	4.54	0.04	235	14.93	332	26.60
1978 <sup>b/</sup>	187	11.28	...	...	...	...	...	...
<u>Trend average annual growth rates (%)</u>								
1960-77	5.9	1.0		-0.9	3.3	1.25	4.4	1.4
1970-77	5.4	3.9		-0.7	-2.1	-0.7	3.8	0.9
1977-78	3.3	-0.4	...	...	...	...	...	...

a/ Barbados, Guyana, Jamaica and Trinidad and Tobago.

b/ Estimates.

Source: UNIDO data base: Information supplied by the UN Office of Development Research and Policy Analysis.

In the early 1970s, the ratio of investment to value added in the manufacturing sector exceeded the corresponding ratio for the entire economy. In 1973, and thereafter, the relationship was reversed, showing a quick response of manufacturing investment to world and domestic economic conditions. In 1975, the investment ratio in the manufacturing sector of 16.3 per cent, was considerably lower than the ratio for the entire economy, 20.5 per cent. Nevertheless, the country's investment ratio for the manufacturing sector in that year was still higher than the average figure for Latin America of 14.1 per cent (see Table 5). The real average annual growth rate of MVA, 5.1 per cent, and the average annual investment/value added ratio, 23.9 per cent, during the period 1970-1975, give a high average annual incremental capital-output ratio (ICOR) of 4.7 for the period.



Table 5 Selected indicators for the manufacturing sector in Barbados (1970-75), CARICOM (1974), and Latin America (1975), based on current national currencies

Country/region	Year	Value added as a percentage of gross output (%)	Wage bill as a percentage of value added (%)	Gross fixed capital formation as a percentage of value added (%)	Number of persons per establishment (persons)
Barbados	1970	28.1	56.7	30.3	54
	1971	29.8	55.8	32.6	57
	1972	31.7	54.0	25.0	52
	1973	30.8	53.0	16.5	59
	1974	25.7	51.3	23.1	50
	1975	20.8	64.1	16.3	52
Major CARICOM countries excluding Barbados <sup>a/</sup> (unweighted average)	1974	51.4	28.4	...	...
Selected Latin American countries (unweighted average)	1975	41.3 <sup>b/</sup>	25.5 <sup>c/</sup>	14.1 <sup>d/</sup>	...

<sup>a/</sup> Jamaica and Trinidad and Tobago.

<sup>b/</sup> Among 17 countries.

<sup>c/</sup> Among 17 countries.

<sup>d/</sup> Among 10 countries.

Source: UNIDO data base: Information supplied by the United Nations Statistical Office with estimates by the UNIDO Secretariat.

Chapter IV

STRUCTURE OF THE MANUFACTURING SECTOR BY BRANCH

The country's MVA structure appears to have basically remained unchanged during the 1970s, although several indicators<sup>1/</sup> suggest an increase in the shares of food products, wearing apparel and electrical machinery, and a decrease in the shares of beverages and tobacco, chemicals, petroleum products and non-metallic mineral products.

Consumer goods industries dominate the manufacturing sector in Barbados. Foods, beverages, tobacco, wearing apparel and wooden furniture together account for almost half of total MVA, half of total manufacturing employment and three quarters of total manufactured exports. Machinery and equipment industry has also become an important dynamic sub-sector in terms of value added, employment and exports (see Tables 6, 7 and 12).

A comparison between Barbados' MVA structure and the aggregated MVA structure for major CARICOM countries as well as for the entire Latin America is shown in Table 6. The production concentration in Barbados relative to the two country groups is calculated as the relative shares<sup>2/</sup> of the country in total branch MVA of the respective country groups.

Compared to the rest of major CARICOM countries, beverages and tobacco, wearing apparel, printing, other chemicals, non-electrical machinery, electrical machinery, transport and scientific equipment, and other manufactures are well represented in Barbados. On the other hand, chemicals except other chemicals, and pottery, china and earthenware are under-represented or non-existent in Barbados.

The country's production concentration on a few branches is more conspicuous in a comparison with the entire Latin America where the manufacturing sector is relatively diverse.<sup>3/</sup> Compared to Latin America as a whole, the shares of

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1/ For example, industrial production indices for selected industries provided by Barbados Statistical Services, and data presented in Table 7.

2/ The 'relative share' refers to the ratio of Barbados' share in the region's MVA for branch (i) to the country's share in the region's total MVA, or in other words, the ratio of the relative importance of branch (i) in the country to the relative importance of branch (i) in the region. The branch for which the relative share index exceeds unity is the branch for which the country's share in the region is larger than the country's share of total MVA in the region, and, thus, the branch is relatively well represented in the country.

3/ Standard deviations of Barbados' relative share index in CARICOM is 1.22 while that in Latin America is 1.97.

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**Table 6** MVA structure: MVA total and shares of branch in total MVA for Barbados, CARICOM and Latin America; Barbados' relative shares of branch MVA in CARICOM and Latin America (1975)

<u>Branch</u>	<u>ISIC</u>	<u>Shares in total MVA in 1975 (%)</u>			<u>Barbados' relative shares (index)<sup>b/</sup></u>	
		<u>Barbados</u>	<u>CARICOM<sup>a/</sup></u>	<u>Latin America</u>	<u>in CARICOM</u>	<u>in Latin America</u>
Food products	311	13.46	19.03	13.98	0.707	0.963
Beverages, tobacco	313,314	14.23	8.71	4.84	1.634	2.940
Textiles, footwear	321,323,324	1.54	2.48	9.71	0.621	0.159
Wearing apparel	322	15.77	8.64	2.32	1.825	6.797
Wood products, furniture	331,332	3.85	3.93	3.22	0.980	1.196
Paper products, printing	341,342	5.85	5.89	5.01	1.503	1.766
Chemicals, oil refining	351,353,355,356	6.54	29.37	12.78	0.223	0.512
Other chemicals	352	2.69	1.67	6.09	1.611	0.442
Petroleum products	354	0.00	1.16	0.47	0.000	0.000
Ceramics, earthenware	361	0.00	2.26	0.84	0.000	0.000
Other non-metallic mineral prod.	362,369	3.07	2.14	4.61	1.435	0.666
Iron and steel	371	0.00	0.00	5.63	-	0.000
Non-ferrous metals	372	0.00	0.00	2.25	-	0.000
Metal products except machinery	381	3.46	4.19	5.22	0.826	0.663
Non-electric machinery	382	8.08	3.02	6.67	2.675	1.211
Electrical machinery	383	5.00	0.94	5.39	5.319	0.928
Transport and scientific equip.	384,385	11.15	5.35	9.90	2.084	1.126
Other manufactures	390	2.31	1.23	1.06	1.878	2.179
Total manufacturing	3	100.0	100.0	100.0	1.000	1.000
Total MVA (1975 US \$ million)		26.0	699.4	82,059.6		

a/ Barbados, Jamaica, and Trinidad and Tobago.

b/ Branch shares of Barbados in the region relative to Barbados' share of total MVA in the region. The absolute share of a branch in the region may be obtained from multiplying the relative share index by the country's share in the region's total MVA for entire manufacturing.

Source: UNIDO data base: Information supplied by the UN Statistical Office with estimates by the UNIDO Secretariat.

**Table 7 Selected manufacturing indicators for Barbados by branch: Totals and branch shares in total, based on current US dollars (1972 and latest year)**

Branch	ISIC	Gross output <sup>b/</sup> (total: US \$'000)		Gross fixed capital formation <sup>a/</sup> (total: US \$'000)		Wages and salaries (total: US \$'000)		Number of persons engaged <sup>a/</sup> (total: number)		Number of establishments (total: number)	
		1972	1977	1972	1977	1972	1977	1972	1977	1972	1977
Food products	311	22.5	23.2	10.0	23.6	18.9	20.6	14.8	15.4	12.3	12.5
Beverages, tobacco	313, 314	21.2	15.6	33.5	21.4	16.0	12.1	9.8	8.2	6.7	6.3
Textiles, footwear	321, 323, 324	0.9	1.6	7.3	1.3	2.1	5.7	3.0	9.1	3.7	6.9
Wearing apparel	322	11.0	12.4	9.8	15.1	16.8	15.5	23.9	24.7	16.6	12.5
Wood products, furniture	331, 332	4.0	2.7	1.9	3.2	5.3	4.6	5.4	4.6	10.4	8.8
Paper products, printing	341, 342	4.8	4.5	9.0	4.2	8.5	8.6	6.4	6.6	10.0	9.4
Chemicals, oil refining	351, 353, 355, 356	14.2	23.3 <sup>f/</sup>	5.3	8.6	4.5	5.7	2.6	3.3	4.3	7.5
Other chemicals	352	3.0		4.7	1.3	2.4	2.1	2.0	1.4	5.5	3.8
Petroleum products	354	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ceramics, earthenware	361	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other non-metallic min.prod.	362, 369	4.2	4.6	1.8	4.6	5.5	3.3	5.2	2.8	9.8	9.4
Iron and steel	371	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-ferrous metals	372	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Metal products except machinery	381	3.4	3.0 <sup>d/</sup>	2.6	8.0	3.6	8.4	4.3	7.7	8.6	10.6
Non-electric machinery	382	3.7	6.2	2.7	2.4	7.4	7.2	9.6	8.5	3.7	2.5
Electrical machinery	383	2.0		4.3	5.2	2.0	1.8	2.3	1.5	2.5	2.5
Transport and scientific equip.	384, 385	1.3		4.3	0.2	1.7	1.3	2.1	0.9	2.4	3.1
Other manufactures	390	3.7	2.7	2.9	0.9	5.3	4.2	8.6	5.5	3.7	4.4
<b>Total manufacturing</b>		<b>63713</b>	<b>142750</b>	<b>5044</b>	<b>3814</b>	<b>10912</b>	<b>22002</b>	<b>8416</b>	<b>9358</b>	<b>163</b>	<b>160</b>

a/ Producers' value.

b/ Net of non-industrial costs.

c/ The value of sales is not deducted.

d/ ISIC 384 and 385 are included in 381.

e/ At the end of year.

f/ Of which about 77 per cent is for petroleum refining.

Source: UNIDO data base; Information supplied by the UN Statistical Office with estimates by the UNIDO Secretariat, and Barbados Statistical Services.

beverages and tobacco, wearing apparel and other manufactures are remarkably large in Barbados, while the shares of textiles and footwear, chemicals, pottery, china and earthenware, and basic metals are extremely small.

In 1972, about 11 per cent of total domestic investment was allocated to the manufacturing sector, compared to the sector's share in total GDP of 9.8 per cent in that year. However, reflecting the stagnant growth in 1974, manufacturing investment was reduced largely in 1975, accounting for only 5 per cent of total domestic investment, compared to the sector's share in total GDP of 10.8 per cent. This indicates not only a decrease in the ratio of investment to value added in the manufacturing sector but also, more importantly, the sector's sensitive reaction of investment behaviour against domestic, regional, and international economic conditions, compared to other sectors.<sup>1/</sup> The decrease in manufacturing investment was due largely to a decrease in the investment in beverages and tobacco, textiles, printing, other chemicals, and transport and scientific equipment (see Table 7). The ratio of investment to value added in these branches also declined substantially in 1975.

The ratio of investment to value added fluctuates, in general, widely from year to year particularly in a small economy. Therefore, a change in the ratio between two single years with a small interval may not give any strong suggestions about the direction of the country's structural change. Therefore, instead of a two-year comparison, annual averages of the investment ratio are taken into account. The annual average of the investment ratio for the entire manufacturing sector during the period 1972-75, was approximately 20 per cent. Compared to this figure, food products, beverages and tobacco, paper products and printing, non-electrical machinery, and transport and scientific equipment marked, on average, a significantly higher ratio. On the other hand, the ratio for wearing apparel, wooden products including furniture, non-metallic mineral products, and other manufactures was considerably lower. No investments were recorded for petroleum and coal products, pottery, china and earthenware, and basic metals.

As the proportion of the wage bill in value added suggests, Barbados manufacturing sector is dominated by labour intensive industries compared to other

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<sup>1/</sup> In 1972, the sector's investment/value added ratio was 12 per cent higher than the country's overall ratio. In 1975, the sector's ratio was 53 per cent lower than the country's overall ratio.

major CARICOM countries and also to other Latin American countries. With a few exceptions (e.g., beverages and tobacco, and transport and scientific equipment), most industries in the country are labour intensive. In particular, the production of food products, wearing apparel, wood products including furniture, other non-metallic mineral products, non-electrical machinery and other manufactures appears to be highly labour intensive. As one might expect, there is a strong negative correlation between the degree of labour intensity and labour productivity (MVA per employee), that is, the highly labour intensive industries showed relatively low labour productivity, while relatively less labour intensive industries such as beverages and tobacco, chemicals, electrical machinery, and transport and scientific equipment, marked relatively high labour productivity (see Table 3).

The average size of manufacturing establishments in Barbados is much smaller, in terms of both employment and value added, than those in larger Latin American countries. A within-country comparison suggests that small-scale operation is dominant particularly in the branches in which most establishments are locally owned, such as wood products including furniture, other chemicals, other non-metallic mineral products, and metal products except machinery. As their ratio of wage bill to value added, per worker value added and the ratio of value added to gross output suggest, these industries carry out relatively labour intensive production with smaller value added. Although the average number of persons engaged in chemicals and oil refining, and transport and scientific equipment are small, their average value added is less small than the above four branches, because of their relatively capital intensive production. The branches in which foreign owned enclave industries are dominant show larger average sizes of establishments and higher ratios of value added to gross output.

Table 8 Key production relationships in the manufacturing sector in Barbados by branch (1972, 1975), based on current BDS dollars

Industry	ISIC	Per-employee MVA relative to that for entire manufacturing (index)		Per-establishment MVA relative to that for entire manufacturing (index)		No. of persons per establishment (No. of persons)		MVA/gross output (%)		Wage bill/MVA (%)		GDP/MVA (%)	
		1972	1975	1972	1975	1972	1975	1972	1975	1972	1975	1972	1975
Food products	311	1.075	0.829	1.300	1.094	62.4	68.7	22.5	12.7	64.1	102.0	15.7	24.6
Beverages, tobacco	313, 314	2.437	2.543	3.544	3.627	75.1	74.4	35.7	32.2	36.1	39.1	34.9	13.7
Textiles, footwear	321, 323, 324	0.300		0.248		42.7	80.7	32.3		124.5		200.5	
Wearing apparel	322	0.480	0.548	0.691	0.895	74.4	85.2	33.1	26.4	79.0	71.8	21.4	18.1
Wood products, furniture	331, 332	0.948	0.824	0.488	0.452	26.6	28.6	40.4	21.0	56.2	77.3	9.2	12.2
Paper products, printing	341, 342	1.288	1.393	0.785	0.982	31.5	36.8	54.2	46.6	56.1	55.1	27.5	7.0
Chemicals, oil refining	351, 353, 355, 356	3.087	2.326	1.896	1.271	31.7	28.5	18.1	6.5	29.7	43.1	16.2	19.0
Other chemicals	352	1.480	1.581	0.542	0.687	18.9	22.7						
Petroleum products	354							31.4	21.1	42.6	56.2	39.4	7.1
Ceramics, earthenware	361							...	...	...	...	...	...
Other non-metallic mineral prod.	362, 369	0.973	0.842	0.516	0.302	27.4	18.7	...	...	...	...	...	...
Iron and steel	371							38.2	25.7	58.8	75.6	8.7	26.2
Non-ferrous metals	372							...	...	...	...	...	...
Metal products except machinery	381	0.753	1.078	0.407	0.492	27.9	23.8	...	...	...	...	...	...
Non-electric machinery	382	0.699	0.385	1.815	0.752	134.0	101.8	30.5	28.4	59.8	51.6	19.7	33.2
Electrical machinery	383	1.244	1.806	1.150	1.991	47.8	57.5	57.0	28.7	59.9	92.8	10.0	18.2
Transport and scientific equip.	384, 385	0.674	2.100	0.574	0.996	44.0	24.8	45.3	50.8	39.1	41.8	38.0	14.6
Other manufactures	390	0.586	0.616	1.368	0.895	120.7	75.8	34.6	62.2	66.6	35.2	75.6	1.2
Total manufacturing		1.000	1.000	1.000	1.000	51.6	52.2	42.9	41.7	56.4	84.4	14.2	5.4
(Absolute value in US \$)		(2421)	(3252)	(125129)	(169610)			31.7	20.8	54.0	64.1	25.0	16.3

Source: UNIDO data base: Information supplied by the UN Statistical Office with estimates by the UNIDO Secretariat

Chapter V

TRADE IN MANUFACTURES

As seen in Table 10, manufactured exports play a dominant role in Barbados' commodity exports. The share of manufactured exports<sup>1/</sup> in total commodity exports exceeded 90 per cent every year in the 1970s, much higher than in the other major CARICOM countries. However, the share of manufactured exports in total exports of goods and non-factor services fluctuated in the range between 25 and 45 per cent depending on tourist income and sugar exports.

Manufactured exports, particularly those of non-sugar manufactures, increased favourably in the 1970s in spite of the strong curtailment of consumer expenditure and import restrictions imposed by two CARICOM members, Guyana and Jamaica, and consequently gained in importance in the country's commodity exports. Manufactured exports increased nominally by more than three-fold during the period 1970-1977, with large contribution of wearing apparel and electrical components. This growth pace was, however, slower than the growth achieved by the remaining major CARICOM countries. Consequently, the share of Barbados in total manufactured exports from the four major CARICOM countries declined from 4.9 per cent in 1972 to 4.0 per cent in 1977 (see Table 9). According to data provided by Barbados Statistical Services, manufactured exports marked a further substantial increase resulting mainly from a rapid increase in exports of electronic components in the following two years.

The country's performance of manufactured exports has been influenced strongly by fluctuations in sugar exports. For instance, the sharp drop in manufactured exports in 1976, was the consequence of a drastic decrease in the value of sugar exports.

Manufactured imports grew continuously in the 1970s reflecting the expanding domestic investment and tourism requirements together with the rise in import prices. Consequently, trade in manufactures marked a large deficit every year in the last two decades, but from 1970 until 1975, the ratio of trade deficit in manufactures to GDP decreased every year from 47 per cent in

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<sup>1/</sup> Including re-exports. In 1977, the share of domestic manufactured exports in total domestic commodity exports is estimated to have been about 95 per cent.



**Table 9 Barbados' manufactured exports and imports: values (1967, 1970, 1975, 1977), growth (1967-1977), and shares in CARICOM (1972, 1975, 1977), based on current US dollars**

Year/Period	Exports	Imports
<u>Values (US \$'000)</u>		
1967	23,185	67,102
1970	28,079	105,516
1977	93,205	249,767
<u>Annual growth rate (%)</u>		
1967-68	-8.33	3.96
1968-69	-4.34	18.19
1969-70	13.62	22.11
1970-71	-1.07	3.42
1971-72	58.95	16.17
1972-73	16.89	16.09
1973-74	58.52	26.08
1974-75	26.77	5.34
1975-76	-2.27	9.17
1976-77	-8.05	16.50
<u>Share in total for major CARICOM countries<sup>a/</sup> (%)</u>		
1972	4.9	10.9
1975	4.3	9.4
1977	4.0	11.9

a/ Barbados, Guyana, Jamaica, and Trinidad and Tobago.

Source: UN Yearbook of International Trade Statistics 1977, 1978, Vol. I, and UNIDO data base for information supplied by the UN Statistical Office.

**Table 10 Key trade relationships for the manufacturing sector in Barbados (1967, 1970-1977), and CARICOM (1972, 1975, 1977), based on current US dollars**

Year	Share of manu- factured exports in total commodity exports (%)	Share of manu- factured imports in total commodity imports (%)	Share of manu- factured exports in total manuf. trade <sup>a/</sup> (%)	Ratio of net manufactured exports to GDP (%)
<u>Barbados</u>				
1967	30.6	87.2	29.5	-31.1
1970	32.0	90.0	21.0	-46.5
1971	98.6	91.2	20.3	-43.5
1972	98.3	39.9	25.3	-39.1
1973	96.7	87.8	26.0	-38.4
1974	96.5	91.1	30.6	-33.3
1975	96.7	90.7	34.6	-25.1
1976	97.9	90.5	32.1	-29.8
1977	97.7	91.4	27.2	-36.2
<u>CARICOM<sup>b/</sup></u>				
1972	30.3	69.3	43.6	-7.7
1975	72.0	65.0	50.3	1.1
1977	68.2	64.5	52.4	2.7

a/ Total trade = exports + imports.

b/ Barbados, Guyana, Jamaica, and Trinidad and Tobago.

Source: UN Yearbook of International Trade Statistics 1977, 1978, Vol. I; and UNIDO data base for information supplied by the UN Statistical Office and the UN Office of Development, Research and Policy Analysis.

1970, to 25 per cent in 1975. However, resulting from the sharp drop in sugar exports, it increased to 30 per cent in 1976 and 36 per cent in 1977. As can be seen also from the large trade deficit in manufactures, the trade ratio in manufactures continued to show an import dominant trade without significant improvement. Except for 1975, manufactured imports amounted to about three-fold that of manufactured exports, or, in other words, manufactured exports accounted for only 20 - 35 per cent of total manufactured trade (imports + exports). In 1977, manufactured exports accounted for 27 per cent of total manufactured trade, compared to the corresponding figure for the major CARICOM countries of 52 per cent (see Table 10).

A remarkable change can be observed in the structure of the country's manufactured exports in the 1970s. The share of sugar (including honey and molasses) in total manufactured exports (including re-exports) declined from 60 per cent in 1970 to a mere 30 per cent in 1977, while non-sugar goods, particularly wearing apparel and electronic components, increased their share considerably from 40 per cent to 70 per cent. In 1977, wearing apparel and electronic components accounted for 20 per cent and 9 per cent, respectively, of total manufactured exports.<sup>1/</sup> The change in the structure of manufactured exports in broader categories is shown in Table 11. Exports of foods, beverages and tobacco decreased as a result of the drastic fall in sugar exports. Consequently, the shares of textiles and metal products in total manufactured exports increased during the period 1971-1977, from 9 per cent to 27 per cent, and from 10 per cent to 17 per cent, respectively, while the share of food products including beverages and tobacco decreased from 73 per cent to 49 per cent. This indicates that the growth of the country's manufactured exports was led by exports of goods produced mainly by foreign owned firms, and that the growth of exports of goods produced mainly by local firms was stagnant or modest.

Manufactured imports were more than doubled in nominal terms during the period 1970-1977, boosted partly by the sharp rise in import prices of fuels. Due to the increasing share of fuels, the shares of other product categories decreased slightly. In 1977, food and beverages, and other consumer goods together accounted for 35 per cent of total manufactured imports, while inter-

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<sup>1/</sup> UN Yearbook of International Trade Statistics 1974 and 1978, Vol. I, and Barbados Statistical Services.

mediates, fuels, and machinery and equipment accounted for 23 per cent, 14 per cent and 20 per cent, respectively.

The trade dependency of the country's manufacturing sector is high and increasing as is common in small countries. In 1977, 13 per cent and 32 per cent of total manufacturing output was exported to other CARICOM countries and outside of CARICOM, respectively, while domestic sales accounted for 55 per cent. Food products (mostly sugar), wearing apparel, machinery (electronic components, etc.), and other manufactures were highly export-oriented, and major export markets were North America and the United Kingdom. The textile industry (including footwear) exported more than 60 per cent of its output to other CARICOM countries. The metal products industry except machinery (including transport and scientific equipment) supplied also a substantial part of its products to the regional market. Compared to these export-oriented industries, beverages and tobacco, paper products and printing, wood products and furniture, chemicals and oil refining, and non-metallic mineral products supplied most of their products to the domestic market (see Table 12).

Manufactured imports (including imports for re-exports) accounted for 34 per cent of total apparent consumption of manufactured goods in 1977, 4 per cent higher than the corresponding figure for 1972.

Table 11 Manufactured exports and imports for Barbados<sup>a/</sup> shares of commodity groups in total (1971, 1972, 1975-77) based on current US dollars Unit: %

<u>Commodity group</u>	<u>1971</u>	<u>1972</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
<u>Exports</u>					
Food, beverages and tobacco	73.4	63.5	69.0	51.2	48.5
Textiles	8.8	15.6	16.9	24.9	27.3
Wood and wood products	0.0	0.0	0.0	0.0	0.0
Paper and paper products	1.1	1.3	0.7	0.7	0.3
Chemicals	5.0	6.3	4.9	6.3	5.3
Non-metallic mineral products	0.4	0.4	0.1	0.1	0.0
Basic metals	0.3	0.0	0.0	0.0	0.0
Metal products	10.0	11.2	7.9	16.0	17.2
Other manufactures	0.9	1.1	0.6	0.7	0.7
Total manufactures	100	100	100	100	100
Intermediates, total	60.4	50.7	63.3	43.9	...
Final goods, total	39.6	49.3	36.2	56.1	...
<u>Imports</u>					
Food and beverages for final use	13.7	14.3	12.3	11.7	11.2
Intermediates	33.1	34.4	29.1	32.9	31.4
Fuels	5.9	4.7	17.6	13.5	13.7
Machinery	14.1	11.8	14.3	11.9	12.4
Transport equipment	9.2	9.0	5.1	6.6	7.4
Consumer goods	20.7	22.1	17.2	19.4	20.2
Other manufactures	3.1	3.2	3.9	3.9	3.7
Total manufactures	100	100	100	100	100

a/ General trade (i.e., trade for re-exports is included).

Source: UN, Yearbook of International Trade Statistics, 1977, 1978, Vol. I, and UNIDO data base for information supplied by the UN Statistical Office.

Table 12 Market compositions for Barbados' manufacturing industry in 1977, by branch

Branch	ISIC	Total sales (current US \$ million)	Share in total sales (%)			
			Domestic Sales	CARICOM exports	Other exports	Total exports
Food products	311	33.1	4.6	14.3 <sup>d/</sup>	81.1 <sup>d/</sup>	95.4
Beverages, tobacco	313, 314	22.3	84.1	8.1	7.8	15.9
Textiles, footwear	321, 323, 324	2.3	35.6	64.4	0.0	64.4
Wearing apparel	322	17.8	30.4	22.5	47.0	69.5
Wood products, furniture	331, 332	3.8	98.7	1.3	0.0	1.3
Paper products, printing	341, 342	6.6	93.2	6.1	0.8	6.8
Chemicals, oil refining	351, 353, 355, 356 <sup>a/</sup>	33.3	89.6	9.9	0.5	10.4
Other chemicals	352 <sup>a/</sup>	...	...	...	...	...
Petroleum products	354	0.0	-	-	-	-
Ceramics, earthenware	361	0.0	-	-	-	-
Other non-metallic mineral products	362, 369	6.6	98.5	1.5	0.0	1.5
Iron and steel	371	0.0	-	-	-	-
Non-ferrous metals	372 <sup>b/</sup>	0.0	-	-	-	-
Metal products except machinery	381 <sup>c/</sup>	4.4	57.5	41.4	1.1	42.5
Non-electric machinery	382 <sup>c/</sup>	8.8	38.1	10.8	51.1	61.9
Electric machinery	383 <sup>c/</sup>	...	...	...	...	...
Transport and scientific equip.	384, 385 <sup>b/</sup>	...	...	...	...	...
Other manufactures	390	3.9	3.8	3.8	92.3	96.2
Total manufacturing		142.8	55.1	13.1 <sup>d/</sup>	31.7 <sup>d/</sup>	44.9

a/ ISIC 352 is included in the group of ISIC 351, 353, 355 and 356.  
Oil refining (ISIC 353) accounted for 77 per cent of total sales of chemicals, and was sold only in domestic market.

b/ ISIC 384 and 385 are included in ISIC 381.

d/ Estimates.

c/ ISIC 383 is included in ISIC 382.

Source: Barbados Statistical Services, Survey of Manufacturing Establishments 1977, UN Yearbook of International Trade Statistics 1978, Vol. I, UNIDO

