EXTERNAL COMPETITIVENESS IN DEVELOPING COUNTRIES: A COMPARATIVE ANALYSIS FOR THE CARIBBEAN

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This study examines the relative external competitiveness of Barbados, Guyana, Jamaica and Trinidad and Tobago. On the basis of productivity-adjusted manufacturing wages (in US dollars) and real effective exchange rate calculations, Barbados was found to be less internationally competitive at end-1987 than her three regional trading partners. The evidence suggests that recent exchange rate adjustments by the other countries have been the main contributing factors for this scenario. Suggested policy options include: increases in the productivity of labour, restraining the rate at which productivity-adjusted costs are allowed to rise and a devaluation of the Barbados dollar.

INTRODUCTION

Relative prices, changes in exchange rates, domestic productive capacity, technological progress and external economic activity are critical determinants of exports from both developed and developing

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countries. Studies by McGeeham [1968], Junz and Rhomberg [1973] and Guisinger [1977] suggest that successful export performance over the long-term is unlikely without price competitiveness. While factors such as real wages and productivity may be good indicators of domestic price competitiveness, the exchange rate is considered an important indicator of external competitiveness. Exchange rate adjustment has, as a result, become an important tool in many structural adjustment programmes.

The myriad of incentives and other tax measures that countries apply to international trade create distortions which make the official exchange rate a poor guide to a country's price competitiveness of its exports. Moreover, movements in the nominal exchange rate tell us nothing about the purchasing power of a currency, neither do they indicate the degree to which the profitability of a country's tradable goods may have changed over time. The concepts of the real exchange rate [Helmers, 1988] and the real effective exchange rate [Maciewjewski, 1983] have been cited in the literature as providing useful signals about underlying price competitiveness of a country's exports.

Among the four more developed countries in the Caribbean - Barbados, Guyana, Jamaica and Trinidad and Tobago - Barbados is the only country whose official currency value relative to the US dollar has remained unchanged for nearly a decade and a half. The others have undergone various degrees of currency devaluations, especially since 1983. This study attempts to examine the extent to which the price competitiveness of Barbados' exports may have suffered vis-a-vis the other three countries as a result of these devaluations.

We have basically used three related indicators to judge the relative shift of competitiveness in the four countries. Firstly, we have examined the real wage-productivity indicators in the manufacturing sectors of the countries to get some indication of domestic cost effectiveness. Then we have looked at the movement of the international value of the manufacturing wage rate, using this as an indicator of the real exchange rate and finally we have calculated a series of export-weighted real effective exchange rates for the period 1980-87. We have then made inferences of the relative export competitiveness of the four countries based on all three criteria.

The next section deals with some of the known measures of competitiveness, including a discussion of the definitions and measurements of the two main criteria adopted for the analysis. The problems associated with the calculations of the real effective exchange rate, including the choice of the base year and the averaging technique used are then discussed. Data definitions and sources, discussion of the results and concluding comments form the last three sections.

Measures of Competitiveness

There exists a direct relationship between internal cost effectiveness and external competitiveness to the extent that a firm that is able to keep down costs is more likely to be better able to compete externally. Therefore, we begin our investigation of competitiveness with an analysis of internal cost factors.

A firm may be able to maximise its profits and/or sales if it can minimise its costs relative to productivity of capital and labour. In most cases the firm may have little or no control on cost of materials but it may be able to control its wage cost by way of the number of men employed. The latter, in turn, depends on the productivity of labour. We define a manufacturing firm's internal cost effectiveness as the ratio of real wages to productivity. The lower this ratio, the more cost effective is the firm.

Profits and sales prospects of export or import - competing industry depend on the real wage and the real exchange rate that firms expect over the life of their projects. A real exchange rate over-valuation makes imports artificially cheaper for consumers and exports relatively dearer for producers because it reflects an increase in the domestic cost of producing exportable goods. As a result, the country's external competitiveness is reduced, leading to an increase in imports and a reduction in exports, and putting pressure on the external current account balance.

The movement over time of the real exchange rate provides a reasonable indication of the relative over or under-valuation of an exchange rate provided the base year chosen for the analysis reasonably reflects conditions of external equilibrium. Different definitions of the real exchange rate provide us with a variety of measures of external competitiveness.

(a) The Relative Price of Non-Traded and Traded Goods

This definition compares the composite price of non-traded (home) goods against that of traded goods.

$$\text{i.e. Real Exchange Rate} = \frac{\text{Price of Non-traded Goods}}{\text{Price of Traded Goods}}$$

Used this way the real exchange rate reflects the allocation of resources in the economy. An increase in this rate, by making home goods more expensive, will encourage the substitution of less expensive traded goods for non-traded goods. However, the absence of satisfactory statistics for all the countries under study hinders the use of this definition.

(b) Real Exchange Rate in Manufacturing

This measure seeks to compare the dollar (foreign) prices of manufactures in the domestic markets with the dollar price of

manufacturers in the international export market. To the extent that the latter prices generally reflect those of the industrial countries the manufacturing exchange rate does measure a country's competitiveness vis-a-vis industrial countries, not with other developing countries. A developing country's competitive position among other developing countries may be important in as much as products of these countries compete against each other in industrial country markets.

(c) Cost of Manufacturing Exports as an Indicator of Competitiveness

The examination of the competitiveness of most traditional exports from developing countries focuses on the relationship between prices and costs[1]. The price at which traditional exports such as agricultural products is sold internationally is fixed for producers in the Caribbean. Therefore, the ability of an individual country to compete effectively depends on whether prices are higher than costs. For instance, the sugar industry in Barbados will find it difficult to survive on the international market simply because the domestic cost of production tends to be higher than the price it receives for sugar on the world market. The same situation is applicable to manufactured exports from the Caribbean because the region as a whole is a price taker for most of these products on the extra-regional market.

Following Dornbusch [1988] we define the real exchange rate of manufactured exports as the ratio of domestic costs to the world price.

$$\text{i.e. Real Exchange Rate } (RER_m) = \frac{\text{Domestic Cost}}{\text{World Price}}$$

As a measure of the external competitiveness, this definition of the real exchange rate seeks to compare the domestic cost (in international units) of the manufactured exports with the price received on the world market. Firms whose cost rises faster than the price received for their products are likely to cut production to avoid losses or even go out of production altogether. The international equivalent of production costs is obtained through the medium of the nominal exchange rate.

In examining the relationship between domestic cost and the world market price of exports, we have taken note that the domestic wage is, perhaps, the most important element of cost in the production process. Moreover information on wages is more readily available than cost of materials. We have therefore used the manufacturing wage rate measured in real US dollars as our indicator of domestic cost in the sector.

$$\text{i.e. } RERm = \frac{Wm/Rn\ (1 - tx)}{Pw} \qquad (1)$$

where RERm = real exchange rate in manufacturing

Rn = nominal exchange rate defined as the price in domestic currency for a unit of foreign currency

W_m = nominal wage rate in manufacturing

Pw = an index of world market price for developing countries' manufactured exports

tx = export tax rate

Our approach in calculating the real exchange rate index differs slightly from what is proposed by Dornbusch to the extent that we have used productivity-adjusted nominal wages in the manufacturing sector.

(d) <u>The Real Effective Exchange Rate</u>

We may define the real effective exchange rate as the weighted average of the home country's deflated exchange rates in terms of the currencies of the foreign trading partners, using both the arithmetic and geometric averaging techniques.

Let R_{it} = the price of one unit of the currency of the foreign trading partner in terms of the home currency in period t

E_{it} = the price of the home currency in terms of the currency of the ith trading partner

P_{it} = the price index of the ith foreign trading partner in period t

P_{ht} = the price index of the home country in period t.

wi = the share of exports going go the ith foreign trading partner.

R^*_{it} = R_{it}/R_{io} = an index of the price of one unit of foreign currency of the ith foreign trading partner in terms of the home currency, relative to a base period.

E^*_{it} = (E_{it}/E_{io}) = the index of the price of the home currency in terms of the ith trading partner's currency relative to a base year.

P^*_{it} = $(P_{it}/P_{ht}$ = the ratio of the price index of the ith trading partner in period t relative to the price index of the home country in period t, with the base year equal to the base year of the Ei*.

Then define a geometric average real effective exchange rate as

$$REERg = 100 \prod_{i=1}^{n} (Eit^*/Pit^*)^{wi^*} \qquad (2)$$

where w_i^* = the normalised export weight defined as

$$wi^* = wi/\Sigma wi \quad \text{and} \quad \sum_{i=1}^{n} wi^* = 1$$

we have defined equation (2) above such that a higher index value will be an appreciation and vice versa[2].

The arithmetic average, REERa is, in turn, defined as

$$REERa = 100 \sum_{i=1}^{n} wi^* (Eit^*/Pit^*) \qquad (3)$$

In general the two indices are likely to differ. The arithmetic

indexing treats depreciating and appreciating currencies asymmetrically in contrast to the geometric technique which treats them symmetrically. The symmetry of the geometric index makes it a preferred index for policy purposes.

Choosing the Base Period

The base period for the calculations is 1980-82. It is generally agreed that the proper choice of the base period for real exchange rate analysis has to reflect a systematic analysis of the underlying balance of payments developments. Ideally the base period should reflect as much as possible equilibrium in the underlying balance of payments. We define the balance of payments equilibrium in terms of a sustainable current account deficit. What follows is brief review of the current account positions of the four countries under study.

Table 1 summarises the external current account positions of the four countries for the period 1979-87. In Barbados, the external current account balance averaged about -6.6% of GDP between 1979 to 1982 before dropping to just over -1.1% between 1983 to 1987. In the eight years between 1979 and 1987, the current account balance was in surplus only in 1984 and 1985. Financing of the deficits was achieved through a mix of foreign capital inflows, running down foreign exchange reserves and through government foreign borrowing, mainly from the international capital markets.

TABLE 1

EXTERNAL CURRENT ACCOUNT BALANCE (1979-87)

	1979	1980	1981	1982	1983	1984	1985	1986	1987
BARBADOS[1] (BDS$ MILLION)									
Current Account Balance (CA)	-69.9	-54.3	-250.7	-84.3	-101.3	22.4	81.0	-31.8	-107.0
Gross Domestic Product (GDP)	1,348.4	1,730.6	1,904.7	1,990.1	2,112.7	2,302.8	2,409.9	2,646.0	2,913.7
CA/GDP	-5.2	-3.1	-13.2	-4.2	-4.8	0.9	3.4	-1.2	-3.6
GUYANA[2] (G$ MILLION)									
Current Account Balance (CA)	-211.4	-327.7	-518.9	-426.9	-472.5	-369.4	-410.7	-451.1	1,032.0
Gross Domestic Product (GDP)	1,326.0	1,508.0	1,597.0	1,446.0	1,468.0	1,700.0	1,964.0	2,219.0	3,357.0
CA/GDP (%)	-15.9	-21.7	-32.5	-29.5	-32.2	-21.7	-20.9	-20.3	-30.7

Sources: 1. Central Bank of Barbados: Annual Statistical Digest and Balance of Payments of Barbados.
2. IMF: International Financial Statistics (IFS), May 1989 and Guyana Ministry of Finance: Estimates of the Public Sector, 1988-89.

TABLE 1 (Cont'd.)

EXTERNAL CURRENT ACCOUNT BALANCE (1979-87)

	1979	1980	1981	1982	1983	1984	1985	1986	1987
				JAMAICA[3] (J$ MILLION)					
Current Account Balance (CA)	-245.1	-295.7	-600.0	-727.9	-693.1	-1,332.0	-1,694.3	-219.7	-532.8
Gross Domestic Product (GDP)	4,274.6	4,750.1	5,267.2	5,841.9	6,897.0	9,381.0	11,263.1	13,328.1	15,717.4
CA/GDP (%)	-5.7	-6.2	-11.4	-12.5	-10.0	-14.1	-15.0	-1.6	-3.4
				TRINIDAD AND TOBAGO[4] (TT$ MILLION)					
Current Account Balance (CA)	-81.4	803.2	898.8	-1,547.8	-2,407.0	-1,254.0	-221.2	-1,590.1	-889.6
Gross Domestic Product (GDP)	11,046.0	14,966.0	16,438.0	19,176.0	18,719.0	18,829.0	18,077.0	17,242.0	18,265.0
CA/GDP (%)	-0.7	5.4	5.5	-8.1	-13.0	-6.7	-1.2	-9.2	-4.9

Sources: 3. IMF: International Finance Statistics (1988).
4. IMF: IFS, May 1989 and Central Bank of Trinidad and Tobago: Annual Reports, 1987 and 1988.

Data for Jamaica suggest that in the period 1979-87, the external current account was always in deficit, averaging about 9.8% of GDP. Between 1983-86 it rose to 10.2% of GDP. For the period 1979-86, the current account deficits were financed through a combination of running down foreign reserves and government foreign borrowing as private capital inflows became negative from about 1978 [Jefferson, 1988: 5].

Like Jamaica, the external current account balance for Guyana was in deficit for the entire period of 1979-87. However, the ratio of the current deficit to GDP for Guyana was consistently higher, averaging 25.0% of GDP for the nine year period. For the period 1979-82, the current account deficits were financed through significant inflows of concessionary loans from bilateral and multilateral sources [Danns, 1988: 90] as private capital inflows appeared quite limited. From 1983-87, the bulk of the financing came from loans from multilateral agencies and the running down of foreign exchange reserves.

Despite substantial export receipts from petroleum sales, the external current account situation in Trinidad and Tobago in the period 1979-87 was no better than for the other countries by any substantial degree (except Guyana). Over the period the country recorded surpluses on the current account in only 1980 and 1981; the account was in deficit for the remaining years. The ratio of current account balance to GDP averaged - 2.9% in the five years from 1979 but deteriorated to -7% in the last five years to 1987.

The deficits were financed mainly from inflows for foreign direct investment and from long term public sector foreign borrowing. In our judgement, the effect of the 1979-80 oil price shock on external payments would have stabilised by the end of 1982. Therefore, we have restricted the choice of the base year for the study between the five years 1979 to 1983. To minimise possible problems of instability in the current account/GDP variable we have examined its behaviour under three 3-year averages beginning in 1979, i.e. 1979-81, 1980-82, and 1981-83. Of these set of periods the ratio of the external current balance to GDP was smallest for all the countries as a group in 1980-82. In addition the average rate of inflation for these countries suggest that 1980-82 was a period of relative price stability. During this period, the external current account balance averaged - 10.2% for Jamaica, - 6.9% for Barbados, -28% for Guyana and 0.3% for Trinidad and Tobago[3].

Data: Definitions and Sources

Data for the wage-productivity indicators were obtained from a number of sources. For Barbados the series on manufacturing wage index, output, labour employed in the sector were obtained from Central Bank's Annual Statistical Digest [1988]. No series on manufacturing wage index was available for either Trinidad and Tobago or Jamaica. For the former a series on average weekly wage index was calculated from average weekly earnings and employment in the manufacturing sector. The two indices plus an index on average productivity were taken from various issues of the Quarterly Economic Bulletin of the Central Statistical Office. Jamaica's monthly wage index in manufacturing was derived from the average yearly compensation of workers in the sector. This was obtained from 'The National income and Product [1987]' published by the Statistical Institute of Jamaica. Employment in the sector was taken from various editions of the 'Labour Force' also published by the Statistical Institute. 'The Economic Survey of Jamaica [1987]', published by the Planning Institute of Jamaica and the World Bank's Recent Developments and Economic prospects for Jamaica [1984] were the sources for the indicators of real output in the manufacturing sector.

The export unit value of manufacturing exports of developing countries was used as a proxy for the world market price of manufacturing exports and was taken from the World Economic Outlook [1988] published by the International Monetary Fund (IMF). All exchange rate information was taken from the International and Financial Statistics of the IMF, while the Direction of Trade Statistics, also by the IMF, was the source of the data on the export weights.

The export weights are based on the export shares of eight trading partners which together account for between 65% to 80% of the exports of each of the four countries under study. Because of the unavailability of a series on normalised unit labour costs or

wholesale prices for all the countries, we have employed relative consumer prices to deflate the nominal effective exchange rates.

Discussion of Results

Domestic Cost Effectiveness

Table 2 provides a summary of the indicators of internal cost effectiveness in manufacturing of three of the four territories under study[4]. In general the productivity index was higher than real wages for all the three countries. However, the indicators for Trinidad and Tobago appear to make manufacturing in that country relatively more cost effective than in Barbados and Jamaica.

Between 1980 and 1981 Barbados and Jamaica held a slightly superior cost advantage over Trinidad and Tobago. Despite a faster rate of increase in real wages, enhanced productivity gains enabled Trinidad and Tobago to maintain superior cost effectiveness from 1982 to 1984. Between 1984 and 1985, Trinidad and Tobago's cost effectiveness had dropped to the level of the other two countries, and by the end of 1985, Jamaica held a slight edge (Chart 4). However, the fall in real wages resulting from the 33.3% devaluation of the Trinidad and Tobago dollar at the end of 1985 helped Trinidad and Tobago to regain a superior cost advantage in 1986 and 1987. Jamaica's devaluation in 1983 induced a 12.5% fall in manufacturing real wages in 1984 but the country's internal

TABLE 2

REAL WAGE - PRODUCTIVITY INDICATORS IN THE MANUFACTURING SECTOR

	1980	1981	1982	1983	1984	1985	1986	1987
BARBADOS[1] (1980=82=100) (BDS$ MILLION)								
Number Employed ('000)	15.0	14.1	13.8	12.7	12.5	12.0	11.4	12.1
Index of Employment	105.0	98.7	96.6	88.8	87.2	83.9	79.5	84.9
Nominal Wage Index	88.5	100.6	114.2	124.2	127.9	133.6	133.2	135.4
Consumer Price Index	88.9	101.4	112.4	118.3	123.8	128.7	130.4	134.8
Real Wage Index	99.6	99.2	101.6	105.0	103.0	103.8	102.1	100.4
Real Output Index	104.4	100.7	95.3	97.8	98.3	92.6	98.5	92.6
Productivity Index	99.4	102.0	98.7	110.1	112.7	110.4	123.9	109.1
Real Wage Adjusted for Productivity	100.2	93.7	102.9	95.4	91.7	94.0	82.4	92.0
TRINIDAD AND TOBAGO[2] (1980=82=100), Unless Otherwise Indicated (TT$ MILLION)								
Index of Employment (1977=100)	104.2	105.5	105.3	103.2	97.4	85.4	83.1	78.9
Index of Average Weekly Earnings (1977=100)	175.0	211.8	249.8	301.5	351.5	377.8	385.5	395.3
Average Weekly Wage Index	84.8	101.4	119.8	147.5	182.1	223.4	234.3	253.0
Consumer Price Index	88.6	101.3	113.0	130.1	147.4	158.7	170.9	189.3
Real Weekly Wage Index	95.7	100.1	106.1	113.4	123.5	140.1	137.1	133.7
Productivity Index	93.3	93.4	116.6	136.5	135.4	151.0	196.8	211.3
Real Wage Adjusted for Productivity	102.6	107.2	91.0	83.0	91.2	92.8	69.7	63.3

Sources: 1. Central Bank of Barbados: Annual Statistical Digest (1988)
2. Central Statistical Office of Trinidad and Tobago: Quarterly Economic Bulletin (Various Issues).

TABLE 2 (Cont'd.)

REAL WAGE - PRODUCTIVITY INDICATORS IN THE MANUFACTURING SECTOR
JAMAICA (1980-82=100), Unless Otherwise Indicated

	1980	1981	1982	1983	1984	1985	1986	1987
Number Employed* ('000)	76.8	82.2	86.9	91.2	97.1	98.6	110.0	131.4
Annual Compensation (J$ Million)	359.6	403.4	455.7	526.3	627.7	790.6	964.5	1,183.6
Average Monthly Wage (J$)	390.7	409.0	437.0	480.9	538.7	668.2	730.7	750.6
Monthly Wage Index	95.0	99.4	106.2	116.9	131.0	162.4	177.6	182.5
Consumer Price Index	90.6	102.2	108.9	121.5	155.3	195.2	224.7	239.6
Real Wage Index	104.8	97.3	97.6	96.3	84.3	83.2	79.1	76.2
Employment Index	93.9	100.6	106.3	111.6	118.8	120.7	134.6	160.8
Real Output Index	99.4	98.9	101.7	108.2	106.8	109.8	117.2	127.5
Productivity Index	105.9	98.3	95.6	96.9	89.9	91.0	87.1	79.3
Real Wage Adjusted for Productivity	103.8	99.0	102.1	99.4	93.8	91.4	90.8	96.1

*Average of April and October Surveys

Sources: Statistical Institute of Jamaica: Labour Force (1987) and National Income (1987).
Planning Institute of Jamaica: Economic and Social Survey (1987).
The World Bank: Recent Development and Economic Prospects of Jamaica (1984, Table I.3)

cost effectiveness improved by only 6% because of a concomitant fall in productivity.

External Competitiveness

Table 3 summarises the changes in domestic wages in manufacturing measured in US dollars. It gives an indication of the relative movement of international competitiveness in manufacturing in each country. It generally confirms the notion of a direct correlation between internal cost effectiveness and external competitiveness, all other factors remaining unchanged. Trinidad and Tobago generally translates its internal cost effectiveness into external competitivéness when productivity-adjusted wages are converted into international units using the exchange rate. Thanks to the devaluation in late 1985 the real exchange rate in 1987 was relatively lower than what obtained in 1981 and 1982. Moreover an international wage-earning ratio of 34.1% in 1987 made Trinidad & Tobago relatively more competitive than either Jamaica with a ratio of 43% or Barbados with 63.7%.

Consider the case of Barbados in 1981 when the calculated real exchange rate was closest to the official rate. At the international unit wage cost of US$48.8, suppose an average worker produced a basket of goods which fetched about $101.00 on the international market. That translates into an international wage-earning ratio of 48.3%. In 1985, the same basket of goods was

TABLE 3

INDICIES OF REAL EXCHANGE RATE IN MANUFACTURING
(1980-82=100 For all Indicies)

	1980	1981	1982	1983	1984	1985	1986	1987
				BARBADOS[1] (BDS$ MILLION)				
Nominal Exchange Rate (BDS$/US$)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Nominal Wage Index	88.5	100.6	114.2	124.2	127.9	133.6	133.2	135.4
Nominal Wage Index (Prod. Adjusted)	89.0	98.6	115.7	112.8	113.5	121.0	107.5	124.1
Manuf. Export Price Index*	100.7	101.0	98.3	93.6	92.9	91.0	91.2	98.7
Real Manuf. Exchange Rate (RER_m) Prod. Adjusted; US Currency)	44.2	48.8	58.9	60.3	61.1	66.3	58.9	62.9
Real Manuf. Exchange Rate Index (Prod. Adjusted)	88.5	97.8	118.0	120.8	122.4	132.8	118.0	126.0
				TRINIDAD AND TOBAGO[2] (TT$ MILLION)				
Nominal Exchange Rate (TT$/US$)	2.40	2.40	2.40	2.40	2.40	2.43	3.60	3.60
Nominal Wage Index	84.8	101.4	119.8	147.5	182.1	223.4	234.3	253.0
Nominal Wage Index (Prod. Adjusted)	90.9	108.6	102.8	108.1	134.5	148.0	119.0	119.7
Manuf. Export Price Index*	100.7	101.0	98.3	93.6	92.9	91.0	91.2	98.7
Real Manuf. Exchange Rate (RER_m) (Prod. Adjusted; US Currency)	37.6	44.8	43.6	48.1	60.3	66.8	36.2	33.7
Real Manuf. Exchange Rate Index (Prod. Adjusted)	90.0	107.3	104.4	115.2	144.4	160.0	87.5	80.7

Sources: 1. Central Bank of Barbados, Annual Statistical Digest (1988)
2. Central Statistical Office of Trinidad & Tobago, Quarterly Economic Bulletin
*IMF: World Economic Outlook, 1988, table A26
IMF: International Financial Statistics

TABLE 3 (Cont'd.)

INDICES OF REAL EXCHANGE RATE IN MANUFACTURING
(1980-82=100 For All Indicies

	1980	1981	1982	1983	1984	1985	1986	1987
				JAMAICA (J$ MILLION)				
Nominal Exchange Rate (J$/US$)	1.78	1.78	1.78	1.92	3.87	5.54	5.48	5.49
Nominal Wage Index	95.0	99.4	106.2	116.9	131.0	162.4	117.6	182.5
Nominal Wage Index (Prod. Adjusted)	89.7	101.1	111.1	120.7	145.7	178.5	203.9	230.1
Manuf. Export Price Index*	100.7	101.0	98.3	93.6	92.9	91.0	91.2	98.7
Real Manuf. Exchange Rate (RER_m) (Prod. Adjusted; US Currency)	50.1	56.2	63.4	67.1	40.5	35.4	40.8	42.5
Real Manuf. Exchange Rate (Index) (Prod. Adjusted)	89.4	100.3	113.1	119.7	72.3	63.2	72.8	75.8

Sources: Statistical Institute of Jamaica: National Income (1987)
*IMF: World Economic Outlook (1988), table A26
IMF: International Financial Statistics

valued at US$91.00 on the international market but the manufacturer than paid an average worker US$66.3, implying a wage-earning ratio of 72.8%. The manufacturer's cost would have increased by 35.8% while his earnings would have declined by nearly 10%. This suggests that in 1985, the manufacturer had little chance of competing on the export market. He could also hardly compete with importers who brought in similar goods to be sold at home. A modest rise in productivity improved the situation slightly in 1986 but by 1987, the real exchange rate in manufacturing was nearly 29% higher than in 1981.

The situation in Trinidad and Tobago was similar to that in Barbados up to 1985. By 1985, the real exchange rate in the Trinidad manufacturing sector had appreciated by 49.1% from 1981. The international wage cost-earning ratio was 73.4% compared with 44.4% in 1981. However, following the 1985 devaluation, the wage-earning ratio fell to 39.7% and 34.1% in 1986 and 1987, respectively. the real exchange rate at end-1987 was 75.2% the value in 1981.

The data for Jamaica also suggest that by 1983, the real exchange rate in manufacturing had appreciated by 19.4% from its 1981 value. However, following the downward exchange rate adjustment in 1984 (50%) and in 1985 (30%) which depressed real wages, by 1987 the wage-earning ratio in manufacturing had fallen to a level lower than in 1981, and the real exchange rate had declined to 75.6% the value in 1981.

Table 4 gives a summary of the calculations of the export weighted real effective exchange rates, the other main indicators of external competitiveness. Although the actual magnitudes of movements in the effective exchange rates differ, the trend generally mirrors that of the real exchange rates in manufacturing [See charts 5 and 6.]. For Trinidad and Tobago, the export weighted real effective exchange rate calculations suggest a real appreciation of approximately 34% to 35% in 1985 from the 1980-82 level. Then after the late 1985 devaluation the value of the Trinidad & Tobago dollar fell by approximately 29% in 1986 before climbing up again to the 1980-82 base level in 1987.

On the other hand, the Barbados dollar appreciated gradually throughout the period, ending 1987 about 11.5% to 12.4% higher than the base (1980-82) value. The movements in the Jamaican dollar also coincide with the periods of exchange rate adjustments in the country. By 1983, the Jamaica dollar had appreciated in real terms by approximately 5.5% to 6.4%. After the 50% devaluation at the end of 1983, the real effective exchange fell by 38.6% at the end of 1984. In response to a further 30% devaluation in 1985, the real effective exchange rate fell another 12% in 1985 before rising slightly in 1986. By end-1987, the real value of the Jamaican dollar was approximately 62.0% its value in 1981.

TABLE 4

INDICIES OF REAL EFFECTIVE EXCHANGE RATES (EXPORT WEIGHTED)
(1980-82=100)

	1980	1981	1982	1983	1984	1985	1986	1987
Barbados								
Arithmetic Average	96.6	99.6	104.8	105.3	108.8	109.5	110.8	112.4
Geometric Average	96.5	99.6	104.6	104.9	107.5	108.1	110.1	111.5
Guyana								
Arithmetic Average	93.4	100.1	111.2	123.8	127.6	131.2	127.8	66.4
Geometric Average	93.1	100.1	111.0	122.5	124.9	128.2	126.4	65.9
Jamaica								
Arithmetic Average	95.1	100.5	103.6	106.4	65.5	58.0	64.0	62.4
Geometric Average	95.0	100.5	103.4	105.5	64.7	57.2	63.7	62.2
Trinidad & Tobago								
Arithmetic Average	100.2	99.6	104.8	117.5	134.2	135.5	95.6	101.3
Geometric Average	94.8	99.6	104.7	117.3	132.9	134.2	95.2	100.6

Sources: IMF: International Financial Statistics
Direction of Trade (Yearbook 1988)

The real effective exchange rate for Guyana did not react markedly to the minor downward adjustments of the official exchange rate in 1984 and 1985. By the beginning of 1987 it has risen by about 26.4% from 1981 but the major devaluation (56%) that year led to nearly 48% fall of its 1986 value. Between 1981 and 1987 the real effective exchange rate of the Guyana dollar fell by approximately 34.2%, much lower than the combined sum of the nominal devaluations because rising price inflation in the country tended to offset part of the decline in the nominal value of the currency.

To what extent does actual evidence support the inference from the paper that in 1987 Barbados' export manufactures were at a competitive disadvantage, vis-a-vis her regional trading partners? Table 5 analyses the direction of Barbados trade with the rest of the region.

By 1987, Barbados' exports to the region was only 44.3% the peak value in 1983 while its imports from the region was 94.7% of the 1983 level. The proportion of its exports to Jamaica and Trinidad and Tobago had fallen from 15% and 66%, respectively, in 1983 to 13% and 30% in 1987. OECS countries then account for the bulk of Barbados' exports. On the imports side Jamaica certainly was selling Barbados more of their products, with its share increasing from 14% in 1983 to 19% in 1987. Imports from Trinidad and Tobago continued to be high, despite the moderate drop in its share of Barbados' imports. In sum, the two countries, Trinidad and Tobago

TABLE 5

DIRECTION OF BARBADOS' TRADE WITH CARICOM

	J'ca	T & T	Guyana	OECS
	As a Ratio of Barbados' Regional Exports			
1983	0.15	0.66	0.01	0.18
1984	0.08	0.68	0.02	0.22
1985	0.10	0.50	0.02	0.38
1986	0.09	0.37	0.02	0.55
1987	0.13	0.30	0.03	0.56
1988	0.11	0.30	0.03	0.53
	As a Ratio of Barbados' Regional Imports			
1983	0.14	0.74	0.03	0.09
1984	0.15	0.73	0.04	0.08
1985	0.21	0.69	0.03	0.07
1986	0.21	0.67	0.04	0.08
1987	0.19	0.66	0.03	0.12
1988	0.19	0.64	0.04	0.13

Source: Economic and Financial Statistics, July 1989, Central Bank of Barbados, Tables H7 and H8

and Jamaica which enjoyed a competitive advantage over Barbados were selling proportionately more of their products in Barbados while buying less of Barbadian products.

Even if one were to discount regional trade as being only a small proportion of total trade, one is still looking at a situation where all four regional countries in the study have the United States as the main market for their products. Whichever country is more competitive, is likely to sell more on the US market, as Jamaica has demonstrated with its garment exports to the US.

Implications and Conclusions

The results of our analysis of the three criterion of international competitiveness would lead one to conclude that in 1987, Barbados' exports were less internationally competitive than her three regional partners under study. The evidence indicates that the recent exchange rate adjustments by the other countries have been a contributing factor to this scenario. Jamaica appears to have the competitive edge followed by Guyana and then Trinidad and Tobago. However, the relative rate of real appreciation of the Barbados dollar in 1987 was much less than the original magnitudes of the devaluations of the Guyana dollar (1984 and 1986), the

Jamaica dollar (1983 and 1984) and the Trinidad and Tobago dollar (1985) would have implied. This may be attributed to the fact that

domestic prices in these territories rose at a much faster rate relative to the trading partner's prices than was the case for Barbados. In other words lower relative price movements in Barbados offset some of the initial gains in competitiveness arising from the currency devaluations in the other regional trading partners.

A number of policy implications suggest themselves. It is important that Barbados holds strain on the rate at which productivity adjusted wage costs are allowed to rise. While the productivity index in Trinidad and Tobago more than doubled between 1981 and 1987, in Barbados it rose by less than 10% over the same period. It is necessary that measures are put in place to increase productivity that, in turn, should support increased wages. This calls for measures to encourage a higher rate of savings and investment, including the refurbishing of existing plants with new technology and investment in human resources within companies that manufacture for exports. It is equally important for the country's industrial policy-makers to recognise that some industries have more growth potential than others and thus present above average opportunities. The policy should aim at expediting shift of resources away from lower growth industries to newer, higher growth and higher value-added sectors.

Another strategy to cut prices and raise the islands international competitiveness is through the exchange rate. A downward adjustment of the Barbados currency would obviously lower real wages in the short term but such a policy would boost competitiveness only if real wage increases are kept lower than productivity gains, for a period at least long enough to give adequate time to raise production and exports[5].

Moreover, competitiveness is also a function of several variables not all of which have been discussed in the study. Even where a country may hold an international cost advantage, in order to push its exports the necessary investment must be in place, the right products must be produced at an acceptable level of quality and there must be a market for the products being offered. Also other factors such as attractive fiscal incentives and even special marketing arrangements may be important. Therefore, price-cutting measures alone may not be the appropriate long run strategy to correct for relative lack of international competitiveness and raise exports. Some of the institutional measures, as outlined above, which help to raise export supply elasticities, must be in place to increase the chances of success of price-cutting policies such as exchange rate adjustments.

Finally, the calculated values of the real effective exchange rates should be interpreted with caution in view of the possible problems associated with the data, and the shortcomings inherent in the choice of the base year and the averaging technique used. The results are only indicative of the broad trends of the countries' international competitiveness and are not meant to give firm norms that give exact measurements of the extent to which a particular

currency should be adjusted to correct for possible over-valuation. Therefore, any definitive recommendation should await the results of more comprehensive studies on the subject.

NOTES

1. We define costs to include wages, materials and export taxes.

2. Equation (2) may also be expressed as

$$REERg = 100/ \prod_{i=1}^{n} R_{it}^{*} . P_{it}^{*} \quad (2a)$$

because by definition $1/Rit^{*} = Eit^{*}$

It may easily be proved that relationships (2a) is equivalent to (2) in the text. The geometric effective exchange rate index is thus independent of the definition of the exchange rate.

3. The ratios of the current account to GDP for 1979-81, 1980-82 and 1981-83 were as follows:

	1979-81	1980-82	1981-83
	%	%	%
Barbados	-7.2	-6.8	-7.4
Guyana	-28.6	-28.0	-31.4
Jamaica	-7.4	-10.0	-11.3
Trinidad & Tobago	3.4	0.9	-5.2

Considering the countries as a group, the current account performed the best in 1980-82. On an individual basis, perhaps 1979-81 would have been more appropriate for Trinidad and Tobago. However, choosing different base periods for each country would make it difficult to make realistic comparisons among the countries being studies. If done were to choose individual base periods, one would still have to reduce the results to a common base before realistic comparisons could be made.

4. Unfortunately we were unable to analyse the real-wage productivity variables for Guyana because of lack of data.

5. There is little likelihood that in a union environment, real wages could be kept low for any length of time, especially during a period of rapid inflation.

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