SOME ANALYTICAL ISSUES AFFECTING

INTERNATIONAL COMPETITIVENESS

IN THE CARIBBEAN

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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 countries. There is increasing evidence in the literature to suggest that successful export performance over the long-term is unlikely without price competitiveness. For instance, see McGeeham (1968); Junz and Rhomberg (1973), and Guisinger (1977). Since the mid-1970s, many countries in the Caribbean have seen major changes in their prices, costs and exchange rates. The movements of these important economic variables have influenced relative competitive positions which have tended to manifest themselves in deteriorating current account imbalances.

As small open developing economies (SOEs) with relatively high import/GDP ratios, foreign exchange availability plays a crucial role in the overall economic activities in the countries of the Caribbean compared with other developing countries whose import/GDP ratios are not as high. It is in this context that the concept of international competitiveness has become an important analytic input in the evaluation of macroeconomic performances of these countries. Indeed, adequate knowledge of the state of a country's international competitiveness should become an important planning tool for policy makers in all SOEs.

The exchange rate remains the most prevalent variable underlying all the concepts identified as indicators of competitiveness in the literature. However, price inflation, and 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 export competitiveness.

Thus concepts like the real exchange rate (Helmers 1988), the real effective exchange rate (Maciewjewski 1983) and the relative unit labour costs (Durand and Giorno (1987) have become the commonly used indicators of international cost and/or price competitiveness. Dwyer (1990) has provided a useful application with the concepts of real exchange rate based on relative prices of non-tradables to tradables and the real exchange rate based on deviations from purchasing parity in the context of Australia's competitiveness. The IMF relies on the real effective exchange rates as a guide of countries international competitiveness. Similarly, Rossi et al (1986) and Muellbauer have utilised the relative unit labour cost concept in competitiveness study of the OECD countries.

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 Jamaica and Trinidad and Tobago as a result of these devaluations.

There are various aspects of the concept of competitiveness, including price and non-price issues. Since it is not easy to measure non-price factors such as factor endowments, structural and technical rigidities and marketing inadequacies, the emphasis in most studies, as this one, has been on cost and/or price competitiveness. Thus, in this study, we have utilised the concepts of real exchange rate, the relative unit labour costs, and the real effective exchange rates to give us some indications of the relative gains or losses in price and/or export competitiveness in the three countries.

The next section deals with detailed discussion on the measures of competitiveness utilised for the study, including a discussion of the definitions and measurements of the three 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

(a) The Real Exchange Rate

The ability of the domestic traded goods and services sector to attract resources from the non-traded sector provides a convenient starting point when assessing the country's overall competitiveness. The indicator that is commonly used to make this internal assessment is the relative price of non-traded output of goods and services to that in the traded sector, known also in the literature as the real exchange rate.[1] Used this way the real exchange rate reflects the allocation of resources in the economy and as such, may conceptually be considered as a measure of 'internal' competitiveness. An increase in the domestic price of traded goods relative to non-traded goods should signal increased profitability in the production of such goods, inducing resource flow to the traded sector. On the demand side, as domestic price of traded commodities rise, consumers are more disposed to substitute the relatively less expensive non-traded goods and services for tradables, freeing up more tradables for export.

(b) Relative Unit Labour Cost (RULC)

The RULC provides another measure of a country's relative ability to sell its tradable output of goods and services. The unit labour cost may be defined as the average real earnings of labour per period (including all payroll expenses) adjusted for labour productivity. As a measure of external competitiveness, the unit labour cost is translated into a common currency using the exchange rate and is compared with the weighted unit labour cost of a country's main competitors[2] A rise in the relative unit labour cost would suggest a loss in external competitiveness. The relative unit labour cost has figured prominently as an indicator of competitiveness partly because capital costs are more difficult to assess and are usually assumed to vary less between countries.

(c) The Real Effective Exchange Rate

We may define the real effective exchange rate as the weighted average of the home country's deflated exchange rate in terms of the currencies of the foreign trading partners. It is calculated by adjusting a country's trade weighted average value of the nominal exchange rate to take account of differences in inflation rates at home and with its trading partners abroad.[3]

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 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**.

w_i = the share of exports going to 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

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

where w_i* = the normalised export weight defined as

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

When the exchange rate is defined in units of foreign currency, as in equation (2) above, a rise in the real effective exchange rate index implies an appreciation and reflects a loss in competitiveness and similarly, a fall suggests a gain[4].

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

$$REERa = \sum_{i=1}^{n} 100\ \Sigma w_i* \ (E_{it}*/P_{it}*) \quad (3)$$

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

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 or normal conditions in the underlying balance of payments, where the equilibrium is defined in terms of a sustainable current account deficit.

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, small surpluses on the current account balance were achieved only in 1984 and 1985. The latter was chosen as the base year for the analysis.

Data for Jamaica suggest that in the period 1979-90, the external current account was always in deficit, averaging about 9% of GDP. Between 1983-86 it rose to 10.2% of GDP. The smallest deficits in the current account occurred in 1977 and in 1988. However, the Jamaican currency was more stable in the three years preceding 1978 than in the late 1980s. Hence the year 1977 was chosen as the base year for Jamaica.

Despite substantial export receipts from petroleum sales, the external current account situation in Trinidad and Tobago in the period 1977-90 was no better than for the other two countries by any substantial degree. Over the period the country recorded surpluses on the current account in only 1978, 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.

Although 1981 could have been considered, in our judgement, the effect of the 1979-80 oil price shock on external payments would not have stabilised until around the end of 1982. Between 1982 and 1988, the smallest current account deficit (-1.2% of GDP was recorded in 1985. The relatively modest average rate of inflation (7.5%) also suggests that 1985 was a period of stability. Hence the choice of 1985 as the base year for Trinidad and Tobago.

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 and labour employed in the sector were obtained from Central Bank's Annual Statistical Digest (1991). The series for Trinidad and Tobago were taken from Quarterly Economic Bulletin of the Central Statistical Office. Jamaica's weekly 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 (1989)", published by the Statistical Institute of Jamaica. Employment in the sector was taken from various editions of "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.

Implicit price deflators for both the traded and non-traded sectors for Barbados were calculated from sectoral value added in current and constant units. These were available in various issues of the "Annual Statistical Digest" of the Central Bank of Barbados. All exchange rate information was taken from the "International Financial Statistics" of the International Monetary Fund, while the "Direction of Trade Statistics", also by the Fund, was the source of the data on the export weights.

The trade weights are based on the trade shares of nine trading partners which together account for between 65% to 80% of total trade of each of the three countries under study. Because of the unavailability of wholesale price series for all the countries, we have employed relative consumer prices to deflate the nominal effective exchange rates.

Discussion of Results

Internal Competitiveness

Data constraints made it possible to examine the relative price movements between tradables and non-tradables for only Barbados. Chart 3 (p.17) illustrates the behaviour of relative prices in Barbados between 1975 and 1990. The chart suggests that non-traded prices have generally tended to rise faster than prices in the traded sector, suggesting possible shift in resource allocation towards the more profitable non-traded sector. Between 1981-90, prices in the non-traded sector grew at an annual average of 5.5% compared with about 3.4% for the traded sector. The apparent secular decline in relative profitability in the traded sector is supported by the evidence of declining investment ratios in the sector, especially after 1981. A liberal tax policy that appeared to favour construction activity and an expanding public sector capital works in a macroeconomic framework characterised by large fiscal imbalances, have tended to help this resource shift towards the non-traded sector.

External Competitiveness

Relative Unit Labour Cost

In assessing the three countries' relative cost effectiveness, and hence their relative external competitiveness, we have utilised a modified version of the usual definition of the relative unit labour cost. The index of real weekly earnings could be estimated for only Jamaica. For Barbados and Trinidad and Tobago, indices of real wages in manufacturing were used.

Table 1 provides summary indicators of manufacturing cost effectiveness for the three countries. Over the period 1975-90, real wages grew the fastest (3%) in Trinidad and Tobago followed by Barbados (1.8%). However, Trinidad and Tobago also experienced the fastest productivity growth (8.9%) over the period, and hence its effective cost of manufacturing production was much lower than for Barbados, although somewhat higher than Jamaica whose relative decline in real wages gave it the cost advantage over the other two countries.

The relative unit labour cost indicators clearly map out three distinct phases. Between 1975 to 1980, Barbados manufacturing was relatively the most cost effective while Jamaica was the least cost effective. Between 1980 - 1983, all the three countries enjoyed

Table 1

SUMMARY INDICATORS OF MANUFACTURING COST EFFICIENCY

	1975-80	1981-85	1986-90	1975-90
Barbados				
Real Wage Growth (%)	3.9	1.2	1.2	1.8
Productivity Growth (%)	0.9	2.0	-0.5	1.5
RULC Growth (%)	18.2	12.0	13.4	14.3
Jamaica				
Real Wage Growth (%)	-9.1	-3.8	-4.6	-5.6
Productivity Growth (%)	-6.6	-1.9	-1.1	-3.8
RULC Growth (%)	-13.2	-23.7	-2.3	-8.6
Trinidad and Tobago				
Real Wage Growth (%)	3.9	8.9	-2.8	3.0
Productivity Growth (%)	6.9	12.6	5.4	8.9
RULC Growth (%)	17.3	17.8	-7.8	3.6

Note: RULC = Relative Unit Labour Cost

Source: Central Bank of Barbados: Annual Statistical Digest (1991).
Central Statistical Office of Trinidad and Tobago:QQuarterly Economic Bulletin.
The Statistical Institute of Jamaica: National Income (1987) and Labour Force (1987).
Planning Institute of Jamaica: Economic and Social Survey (1989).
The World Bank: Recent Development and Economic Prospects of Jamaica (1982) and 1984, I.3).

Table 2

DIRECTION OF BARBADOS' TRADE WITH THE CARIBBEAN

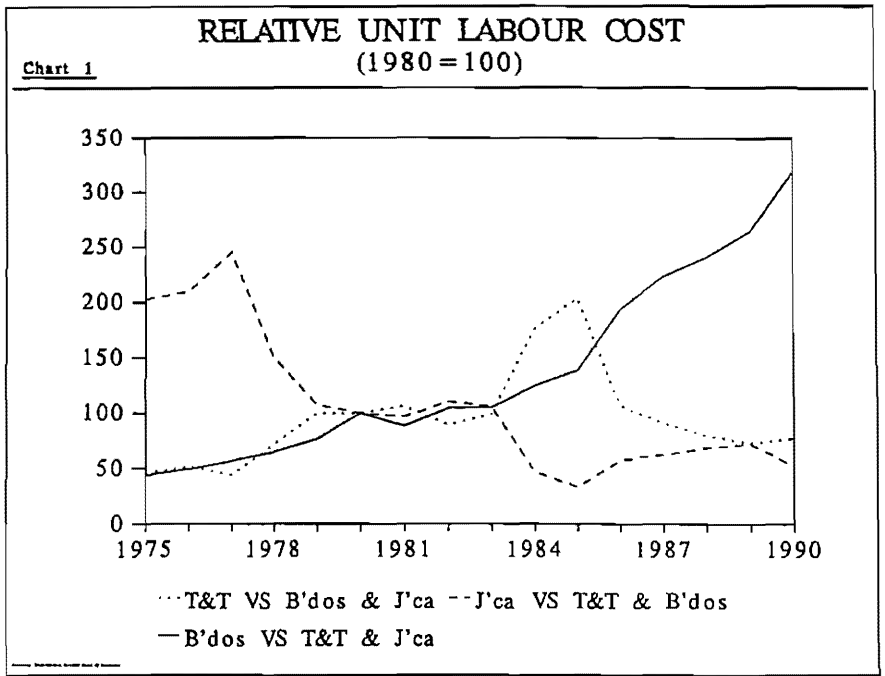
	Jamaica	T & T	Guyana	OECS
	As a Ratio of Barbados' Regional Exports			
1983	0.15	0.66	0.01	0.18
1984	0.08	0.68	0.02	0.22
1985	0.10	0.50	0.02	0.38
1986	0.09	0.37	0.02	0.55
1987	0.13	0.30	0.03	0.56
1988	0.11	0.30	0.03	0.53
1989	0.16	0.35	0.02	0.47
1990	0.21	0.30	0.02	0.47
	As a Ratio of Barbados' Regional 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
1989	0.17	0.68	0.03	0.12
1990	0.16	0.71	0.03	0.10

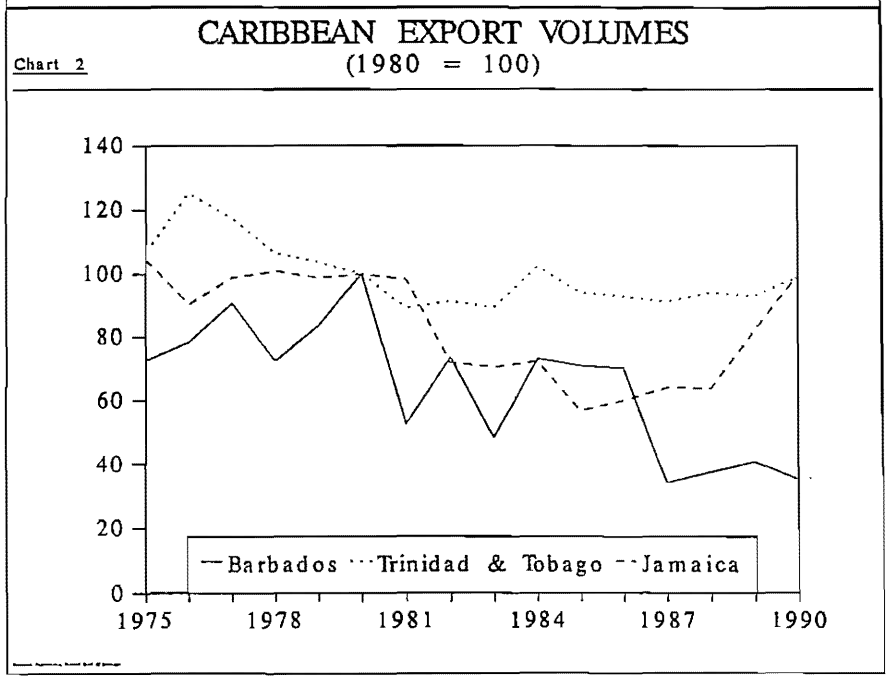
Source: Economic and Financial Statistics, May 1991, Central Bank of Barbados, Tables H7 and H8.

relatively similar cost effectiveness. However, following the 50% devaluation of the Jamaica dollar in 1984 and a further 30% in 1985, Jamaica's manufacturing gained a distinct advantage in cost effectiveness which was maintained to 1990. Although Barbados was comparatively more cost effective than Trinidad and Tobago between 1983 and 1985, the sharp devaluation of the Trinidad and Tobago currency towards the end of 1985 reduced real wages for that country, giving it a clear cost advantage over Barbados. Between 1986-90, Barbados suffered a sharp deterioration in its relative unit labour cost as real wages increased by 1.2% while productivity declined by 0.5% on average.

The pattern of regional trade appears to support the view that those countries with relatively lower relative unit labour costs have been exporting more to the region. On the other hand those like Barbados with increasing relative cost have tended to experience declining export shares. Table 2 provides vivid support for this. Since 1983, Barbados has been exporting relatively less to Jamaica and Trinidad and Tobago while importing more from those countries.

That relative unit labour cost provides some measure of external competitiveness is given further support in chart 2 which maps out the behaviour of export unit volumes for the three countries under review. Prior to 1980 when Barbados held a comparative cost advantage, export unit volumes showed an increasing trend. However





after 1980, Barbados export unit volumes declined consistently. Jamaica's unit export volumes did show a systematic decline from 1975 to 1984; after that time its export volumes started to increase, presumably in response to the sharp decline in the real exchange value of the Jamaican dollar in 1984 and in 1985. Similarly Trinidad and Tobago's export volumes showed a systematic decline from 1975 to 1983 when its relative unit labour cost was increasing steadily. From 1985, its export volumes stabilised and began to show a discernible upward trend between 1987 and 1990.

Real Effective Exchange Rates

Table 3 summarises the results of the trade weighted real effective exchange rates, the other main indicators of external competitiveness. For Trinidad and Tobago, the real effective exchange rate indicators suggest that the real exchange value of the currency increased at an annual average rate of nearly 8% between 1981-85, much faster than the 1.1% growth rate between 1975-80. By 1985, the currency had shown a real appreciation of 42% from its 1980 value. After the late 1985 devaluation, the real value of the Trinidad and Tobago dollar fell by approximately 40% in 1986 but by 1990, the value had gained approximately 8% on its 1986 value.

On the other hand, the Barbados dollar appreciated gradually throughout the period, ending 1985 about 29% higher than the 1975

Table 3

SUMMARY INDICATORS OF REAL EFFECTIVE EXCHANGE RATES

	1975-80	1981-85	1985-90	1975-90
Barbados (1985 = 100)				
Standard Deviation	2.2	5.1	2.6	7.3
Growth Rate (%)	1.5	3.5	-1.2	1.3
Jamaica (1977 = 100)				
Standard Deviation	12.3	18.0	3.4	18.0
Growth Rate (%)	-4.1	-12.8	2.1	-3.8
Trinidad and Tobago (1985 = 100)				
Standard Deviation	2.9	12.1	11.1	11.5
Growth Rate (%)	1.1	7.9	-5.1	0.9

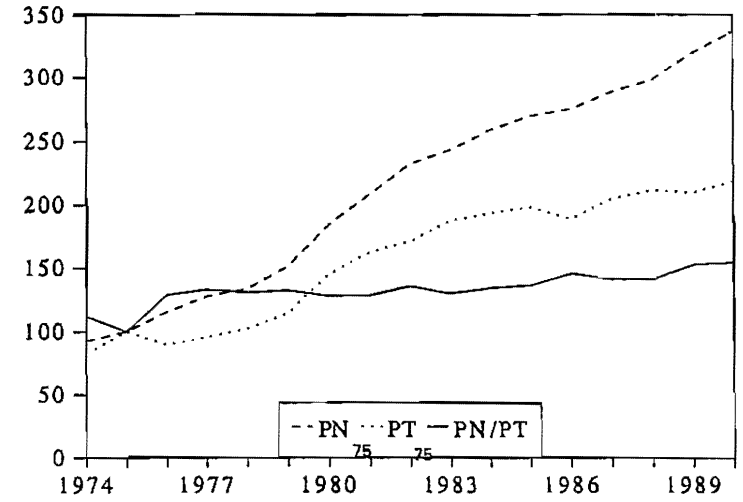
Source: IMF: International Financial Statistics and Direction of Trade

value. The currency appreciated the fastest in the period 1981-85, reflecting mainly the rising US dollar relative to other international currencies. From 1985, the REER of the Barbados dollar depreciated by nearly 6%, mainly on account of the modest rate of inflation relative to her trading partners and a falling US dollar relative to other international currencies. Between 1980 and 1990, the indicator suggests a real appreciation of 12.7%.

The movements in the Jamaican dollar also coincide with the periods of exchange rate adjustments in the country and, in the process, exhibited the widest variations of the three countries. By 1977 the Jamaican dollar had appreciated in real terms by approximately 7.5%. Following the first devaluation in 1978, the REER declined by 21.3% but by 1983 had gained about 7% of the 1978 value. After two large devaluations in 1984 and in 1985, the real value of the Jamaican dollar dropped by 44% of the value in 1983. However, it appreciated by 22.3% between 1985 and

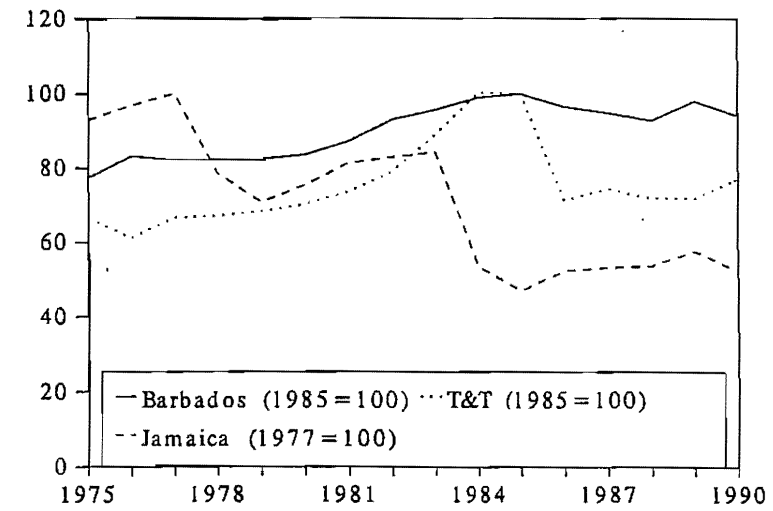
RELATIVE PRICE MOVEMENT (PN/PT)
Barbados (1975 = 100)

Chart 3



INDICES OF REAL EFFECTIVE EXCHANGE RATES
(TRADE WEIGHTED)

Chart 4



1989, mainly as a result of a rapid rise in the rate of inflation induced by the devaluations.

Exchange Rate Effects of External Competitiveness

In order to examine the relative importance of exchange rate effects on the respective country's exports, export supply functions for which the calculated real effective exchange rates and relative prices were the main explanatory variables were fitted. The dependent variable was an index of export volume (XV) and the estimated function was of the form:

$$XV = f(Q, REER, PX/PN) \quad (4)$$

where
- Q = Real Output
- REER = Index of Real Effective Exchange Rate
- PX = Unit value index of exports
- PN = Price index of non-traded output

The preliminary estimates are shown as Table A.1 in the appendix. The results indicate that exchange rate changes did generate discernible export response in Jamaica but not so in Barbados and Trinidad and Tobago. The REER variable, although correctly signed, was not significant in explaining export supplies in both countries. Relative prices appear to be a significant determinant of export supply in Trinidad and Tobago but not so in Barbados.[5]

Although significant, the variable was incorrectly signed in the case of Jamaica. The frequent exchange rate adjustments in Jamaica were, perhaps, an important factor explaining the significance of the REER in Jamaica's export supply function. In Barbados, and to some extent, Trinidad and Tobago, where the exchange rates have remained stable over time, the REER mainly captures the effect of the US dollar movements relative to these countries trading partners. That may account for the relative lack of exchange rate responses in the two countries.

Summary, Policy Implications and Conclusions

The results of our analysis of the three indicators of competitiveness would lead one to conclude that in the period after 1980, 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 Trinidad and Tobago. However, the relative rate of real appreciation of the Barbados dollar in 1990 was much less than the original magnitudes of the devaluations of the Jamaica dollar (1984 and 1985) 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.

Among the three indicators of competitiveness the RULC appears to be the most effective indicator of competitiveness, as evidenced by its relationship with the export volume indicators of the three countries (Charts 1 and 2). Econometric estimates of export supply functions do not support the real effective exchange rate as a significant determinant of export competitiveness in Barbados and Trinidad and Tobago. However, it does give a strong support in Jamaica where there have been frequent exchange rate adjustments. The implications of this for Barbados is that the focus on improving its competitiveness, given the relatively small extent of the currency's over-valuation, should be on improving industrial cost effectiveness and raising profitability in the traded sector and not necessarily on exchange rate changes.

The short-term gain in competitiveness arising from exchange rate adjustments is usually quickly eroded as wages move up in response to rapid price increases, inducing further exchange rate devaluations, as has happened in Jamaica. This tends to destabilise the exchange rate and retards real economic activity; there is ample evidence in the literature showing a direct relationship between economic growth and exchange rate stability.

Firms in the traded sectors must first find it profitable to produce before they can export. This requires measures to raise productivity while restraining cost inflation, especially wages. It also calls for policies to encourage 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. This must be supported by tight fiscal and monetary policies to control inflation and to provide an environment for improved real return on capital invested. In addition macroeconomic policies should aim at expediting shift of resources away from lower growth industries to newer, higher growth and higher value added entities. It may be necessary for the state to provide institutional and export marketing support but the right products must be produced at an acceptable level of quality.

NOTES

1. This is so defined because movements in relative domestic prices do influence the allocation of real resources between the traded and non-traded sectors.

2. One may also compare the relative ratios of the unit labour cost in the production of a commodity to the price received for the commodity on the world market.

3. The real effective exchange rate is sometimes referred to as the real exchange rate based on deviations from purchasing power parity. The absolute purchasing power theory maintains that exchange rates will be at a value that equates the price level between nations.

4. Equation (2) may also be expressed as

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

because by definition $1/R_{it}^{*} = E_{it}^{*}$

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

5. The activity variable, real output was not significant in any of the equations, and was incorrectly signed in Barbados and Trinidad and Tobago equations. In subsequent work a better indicator of capacity, such as capital stock, would be utilised.

Appendix

Table A1

Estimated Export Supply Functions

Barbados

XV = 323.30 -0.22Q -0.63 REER -4.65 PX/CPI
(4.814) (-2.133) (-1.104) (-0.533)

R^2 = 0.607, DW = 2.02, F(3, 17) = 8.25

Jamaica

XV = 285.66 +0.04Q -0.66 REER -162.28 PX/CPI
(1.844) (0.593) (-2.468) (-4.715)

R^2 = 0.684, DW = 1.781, F(3,16) = 7.586
AR(1); rho = 0.78

Trinidad and Tobago

XV = 167.40 -0.03Q -0.01REER +17.83 PX/CPI
(10.155) (-3.939) (-0.038) (2.580)

R^2 = 0.726, DW = 1.894, F(3,16) = 9.29
AR(1); rho = 0.11

CPI = Consumer Price Index
T - Ratios in brackets below estimated coefficients

Table A2

RELATIVE PRICE MOVEMENTS IN BARBADOS (TRADED (P_T) AND NON-TRADED (P_N)

(1975 = 100)

	1974	1975	1976	1977	1978	1979	1980	1981
PN_{75}	92.5	100.0	115.4	127.7	133.7	151.4	184.3	208.4
PT_{75}	82.5	100.0	89.6	95.5	102.4	114.4	144.9	162.5
$PN/_{PT}$	112.1	100.0	128.8	133.2	130.6	132.3	127.9	128.2

(Cont'd)

	1982	1983	1984	1985	1986	1987	1988	1989	1990
PN_{75}	232.1	243.2	258.7	269.2	274.6	288.3	298.1	319.9	337.1
PT_{75}	171.1	187.4	193.2	197.9	188.5	204.6	211.4	209.5	218.6
$PN/_{PT}$	135.6	129.8	133.9	136.0	145.7	140.9	141.0	152.7	154.2

Source: Central Bank of Barbados, Annual Statistical Digest (1991).

Table A3

RELATIVE UNIT LABOUR COSTS

1980 = 100

	B'dos vs T&T and J'ca	T&T vs B'dos and J'ca	J'ca vs B'dos and T&T
1975	43.3	45.1	202.6
1976	49.0	51.4	209.6
1977	56.6	43.7	245.6
1978	64.5	72.0	150.0
1979	76.4	99.6	107.2
1980	100.0	100.0	100.0
1981	88.2	106.1	96.7
1982	104.3	89.0	110.2
1983	105.4	99.0	106.1
1984	124.3	176.4	46.6
1985	138.7	204.1	32.8
1986	194.2	106.5	57.3
1987	224.1	90.6	62.0
1988	241.6	79.2	68.3
1989	265.5	72.7	71.8
1990	320.9	76.9	52.2

Source: Central Bank of Barbados: Annual Statistical Digest (1991).
Central Statistical Office of Trinidad and Tobago: Quarterly Economic Bulletin.
The Statistical Institute of Jamaica: National Income (1987) and Labour Force (1987).
Planning Institute of Jamaica: Economic and Social Survey (1989).
The World Bank: Recent Development and Economic Prospects of Jamaica (1982) and 1984, Table 1.3).

Table A4

CARIBBEAN EXPORT VOLUMES
(1980 = 100)

	BARBADOS	JAMAICA	TRINIDAD AND TOBAGO
1975	72.6	104.5	107.1
1976	78.3	90.3	125.2
1977	90.7	99.0	117.4
1978	72.3	100.9	106.5
1979	83.6	98.8	103.7
1980	100.0	100.0	100.0
1981	52.6	98.3	89.2
1982	73.5	71.8	91.3
1983	48.4	70.4	89.3
1984	73.1	72.2	102.4
1985	70.9	56.8	94.1
1986	70.1	60.0	92.9
1987	34.2	64.1	91.2
1988	37.6	63.8	94.1
1989	40.8	82.3	93.0
1990	35.2	99.7	99.1

Source: World Bank: Caribbean Region, Current Situation, Regional Issues and Capital Flows, April 1992.

Table A5

INDICES OF REAL EFFECTIVE EXCHANGE RATES

	1975	1976	1977	1978	1979	1980	1981	1982
Barbados (1985 = 100) (Trade Weighted)	77.5	83.2	82.1	82.2	82.4	83.5	87.3	93.0
Barbados (1985 = 100) (Tourism Weighted)	--	--	--	--	85.7	83.7	87.2	93.4
Jamaica (1977 = 100) (Trade Weighted)	93.0	96.9	100.0	78.7	70.9	75.4	81.4	82.9
Jamaica (1988 = 100) (Tourism Weighted)	--	--	--	--	140.8	157.0	160.1	160.2
Trinidad & Tobago 1985 = 100 Trade Weighted)	66.4	61.2	66.6	67.1	68.3	70.2	73.7	79.0

(Cont'd)

	1983	1984	1985	1986	1987	1988	1989	1990
Barbados (1985 = 100) (Trade Weighted)	95.6	99.0	100.0	96.5	94.8	92.7	98.0	94.1
Barbados (1985 = 100) (Tourism Weighted)	96.0	98.7	100.0	99.3	96.0	91.7	94.2	90.1
Jamaica (1977 = 100) (Trade Weighted)	84.3	53.5	47.1	52.4	53.2	53.7	57.6	52.3
Jamaica (1988 = 100) (Tourism Weighted)	159.3	87.0	83.0	96.4	98.1	100.0	104.9	95.4
Trinidad & Tobago 1985 = 100 (Trade Weighted)	88.9	100.3	100.0	71.3	74.4	71.8	71.9	77.0

Source: Annual Statistical Digest (Yearbook 1988O.
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