MONETARY IMPLICATIONS FOR CARICOM OF INTERNATIONAL AND INTRA-REGIONAL TRADE FLOWS HAVING REGARDS TO DIFFERENT THEORIES OF INTEGRATION BETWEEN VERY SMALL OPEN ECONOMIES

by

KEITH WORRELL

Institute of Social and Economic Research
University of the West Indies,
Mona, Kingston 7,
JAMAICA.

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INTRODUCTION

In this study I attempt to outline the monetary implications of two different approaches to regional integration between very small open economies. I use the experience of CARICOM to illustrate the need for the pursuit of what I call supply-side external trade creation over that of ordinary trade diversion. I argue that when the traditional theory of integration is amended to stress the need for supply-side external trade creation, it is in fact a very dynamic approach. In the first section of this paper, this view is contrasted with that of the structuralist thinkers whose ideas have dominated the discussion about integration up to now. I call their view the current conventional wisdom, and claim that it should be rejected. Section II is an attempt to operationalise via an econometric analysis some of the ideas outlined in Section I. The conclusion outlines the monetary implications of the empirical findings.

SECTION I: CURRENT CONVENTIONAL WISDOM

The locus classicus on economic integration is of course Viner's (18) famous work. But it has been extended and clarified by Meade (17). The orthodox theory is due mainly to these two. From this we get a statement of the salient feature of economic integration.

It combines elements of free trade with elements of protection. As Johnson (8) has shown, this makes it a problem in second best.

But that is as far as the orthodox theory is concerned. When economists in the Caribbean were seeking for a theoretical under-pinning for the economic union of the former British colonies that now make up the Caribbean "Common Market",[2] or as it is generally called CARICOM, they turned away from the orthodox theory and evolved a set of ideas which they felt were more relevant. This set of ideas I am here calling the current conventional wisdom.

The disenchantment with the orthodox theory is neatly illustrated by McIntyre (13). Detailing a number of reasons why the ill-fated Caribbean political federation collapsed, he said inter alia:

"The second reason lies in the theory of economic integration itself. The present theory has been developed out of a neo-classical conception of international trade which as several writers have shown, is notoriously inapplicable to schemes of economic integration involving not only develop-ing countries at different stages of development, but developed countries as well. For the theory does not take into account the need for structural changes in the economies concerned. It concerns itself solely with the effects of integration on a region as a whole, and ignores the effects on individual countries. Hence it is unrealistic to expect any country to embrace a policy of integration based solely on this orthodox theory."

It is often difficult to identify exactly what are the main features of the "more applicable" theory of integration Caribbean thinkers have in mind, but a clue may be found in Girvan and Jefferson (4). For them it appears that economic "development ... is the use of domestic resources for the satisfaction of domestic needs".[3] (Ricardo must turn in his grave). The purpose of integration in developing countries is to help achieve this goal. What appears to be perceived as its major benefit are the economies of scale it makes possible, which in turn makes feasible the regional utilisation of resources that was previously stymied by the existence of markets that were too small. In terms of Viner's paradigm then, trade diversion seems to be the major plank in the structure of Caribbean thought about integration.

Another crucial plank in that structure appears to take the form of a "vent for surplus" argument. This is put fairly clearly by Brewster and Thomas (2). Again rejecting the orthodox theory and attributing to it the shortcomings that characterised earlier discussions about Caribbean integration, they go on to say:

These shortcomings arise because the liberalist approach, based as it is on micro-economic theory, is essentially concerned with the gains from increased efficiency which are secured by removing economic discrimination. It thereby relegates to a subsidiary position, the purely macro-economic gains of bringing idle resources into use. Even a cursory examination of the productive structures of the various territories indicates that our concentration can

legitimately be on expanding the production frontier

of the region and less with the attainment of the top

level optima of welfare economies.

The first thing to notice is that the latter two authors
misapprehend the methodological issue. For as Johnson has shown
above, economic integration is essentially a second-best problem.
However, of much more interest is the way they go on to discuss
the views of a Trinidad and Tobago government document. They
continue:

"The extent to which the traditional liberalist thinking
had pervaded some influential circles is shown by the
following quotation from an official publication: 'The
case for economic integration of the West Indies rests
less on the enlargement of the market which it makes
possible, than on the opportunity which it will provide
for the more efficient use of resources'." (p.8)

Later on they state clearly their own view of what the major
benefits to flow from Caribbean integration really are. According
to them " ... our major concerns are with issues related to economies
of scale. But, ... it does not mean that we have eschewed all con-
cern for matters related to allocative efficiency. These we believe
to be of very great importance, but at this time, and at this level
of development, it seems to us to be a second order problem of ranking,
which would follow on identification of potentialities.(p.28).

The work from which these quotations are drawn has an admirable aim. But it clearly does not succeed. And it is not difficult to state where its major failure lies. This is in the too uncritical acceptance of the Latin American structuralist view of economic development with its over-emphasis on import substitution as a way out of "dependency". When it is recalled that the major intellectual spur to that strategy was flawed in one critical respect, its concentration on the movement in the barter terms of trade between developing countries and their industrialised trading partners for whom Britain was the proxy rather than on the income terms of trade, the wisdom of accepting that paradigm becomes even more questionable.[4] It is yet to be shown that the functional relationship between the price of coffee and the welfare of the masses in coffee-producing countries is monotonic. What is more, the argument does not appear too irrelevant for the case of oil.

However valid the Latin American structuralist view is for the larger South American states, it is my belief that it is completely harmful for the CARICOM region with a population of 4 - 6 million. The grudging admission by Brewster and Thomas that "it is apparent that the direct and indirect impact of import substitution of manufactured goods may not be able to provide a complete answer to the West Indian problem of large-scale unemployment", (p.63) is an understatement of the danger of an inward-looking development strategy for this region. With such a small market, the limits to industrialization would be reached very quickly.

But there is another problem, and this is best considered by

noting the view of another prominent Caribbean thinker, Demas (3).
Also deriding the prescriptions of orthodox economic theory he
continues:

> "From one point of view, commonsense provide a better
>
> clue than much of the orthodox theory as to the source
>
> of benefits of economic integration among developing
>
> countries; for it is intuitively obvious (Is it really?)
>
> even to the practical man that the creation of a wider
>
> market among small developing countries as a result of
>
> the removal of tariff and other trade barriers can stimulate
>
> the development of the industrial sector. This is the prin-
>
> cipal source of gain from economic integration. Let us
>
> elaborate on this point. It concerns economies of large-
>
> scale production ... Modern technology is such that costs
>
> of production per unit of output are reduced as a consequence
>
> of the expansion of the capacity of existing plant or the
>
> construction of a larger one (p. 23).

What that argument fails to take into consideration, is the
importance of the initial scale of production. Silberston (15) has
a good discussion of the complexities of the economies of scale thesis.
But I wish to concentrate on an aspect that appears to me to be of
critical importance for the markets of regions of very small economies.
The point is that for these in some cases regionalising the firm may
result in diseconomies rather than economies of scale. Consider
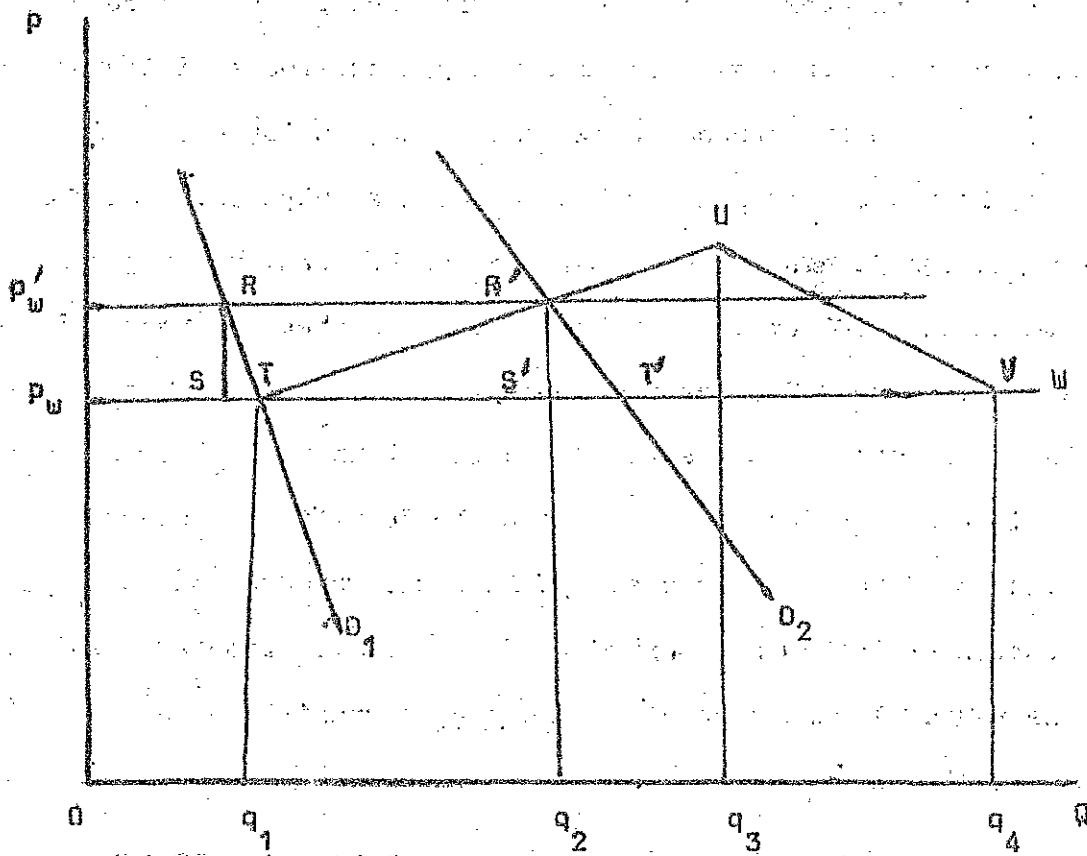Figure 1.

FIGURE 1

On the horizontal axis we measure the quantity per unit of time of a commodity that can be purchased on the world market or produced domestically on a small scale, perhaps in a craft industry at price p_w. D_1 is the domestic demand curve for the single economy. The market is therefore $O\ q_1$. It is decided to produce for the regional market whose demand curve is D_2. But to do so requires changing to a new technology that requires a minimum size market $O\ q_3$ before economies of scale are experienced, or is indivisible up to that point. The long-run supply curve therefore passes through points $T\ U\ V\ W$. As can be seen, the regional market size is smaller than the size at which these economies begin to be experienced. Characteristically, this point is concealed by the fact that the typical size of the market in which the technology is already used is larger than $O\ q_3$. In fact, it is assumed here that the world market is served by firms that produce on the horizontal section of the supply curve $T\ U\ V\ W$. To produce domestically for the regional market requires a permanent tariff $S'\ R'$ and the product sells for p_w'.

Because the whole region could have purchased the commodity at p_w, it suffers a loss of consumers' surplus equal to $R'\ S'\ T$, of which $R\ S\ T$ is borne by the domestic consumers.[5] Of course, it is already known that import substitution normally entails the imposition of a tariff and some reduction in consumers' surplus. However, this is generally defended on the grounds of protecting an infant industry or on those of unabashed nationalism. But neither of these is implied above. Rather we are asked to believe that the enlarged market must

in time lead to lower cost production. However, it is my contention
that this needs not be the case when as in the case of CARICOM the
regional market is still relatively very small. Previous theorising
appears to have failed to grasp this point sufficiently.

However, that this might be a very pertinent problem for
CARICOM is ironically intimated in Brewster and Thomas. In attempt-
ing to demonstrate that the industrialization policies that were being
pursued by the individual countries in the region were inherently
defective and should give way to regional policies which permitted
"functional and sectoral integration", they presented some evidence
on cost/sales ratios for different size plants in Jamaica. They had
this to say about that evidence. "Nonetheless, on the premise that
a lower cost/sales ratio may be indicative for some economies, the
data suggest that the small operator is not at all out-competed by
the larger operator". (p. 67). Thus their evidence lends support to
the validity of Figure 1. For it is highly unlikely that the size
of plant necessary to supply the CARICOM market would differ signifi-
cantly from that of "larger operators" in Jamaica.

It may be tempting to argue that the foregoing does not vitiate
the theory outlines in Brewster and Thomas since what they clearly
mean by the cumbersome concept functional and sectoral integration
is economic integration accompanied by central planning. But for
that argument to succeed, it will have to show that central planning
by itself can break the size constraint and that is very doubtful.

The above has concentrated on the views of a number of econo-
mists whose work has greatly influenced thinking about integration

matters in the Caribbean. These views are the current conventional wisdom. I believe that some of this wisdom needs to be questioned.

Nonetheless, nothing I have argued above should be interpreted either as disparaging integration between small states or discouraging industrialization. The main point I wish to make is that for such economies the over-emphasis on import substitution is harmful, and that once this is realised, the analysis of the so-called orthodox theory is much more relevant for the study of these economies than its critics would have us believe.

There are nonetheless two aspects of this theory that appear to me to be in need of modification, before it is fully useful to our problem. The first is the temporal ranking of stages of integration. It appears that we should begin with a free trade area like CARIFTA, then later advance to a customs union; after that to a common market and only then to a monetary union and above. I believe that for many regional groupings the integration of monetary policy can profitably anticipate other stages of integration.[6] One benefit of this that deserves to be explored is the possibility of using regional monetary policy to stabilise the export receipts of commodity producers in the Third World. After all, the potability of money makes it an easier good to store than material commodities.

For instance, right now, there is an unexpected rise in the world price of sugar. Some Third World countries are therefore getting receipts in excess of their projections, assuming that realistic estimates of their oil bill were made. It ought to be possible to syphon off this excess of earnings over their expected

value for use at some future time when the price of sugar falls
below its expected value. This kind of macro economic policy could
kindly be undertaken by an individual government; but it hardly
could be undertaken by a regional central bank. The existence of
regional development banks would probably make the transition to
the state of affairs I am suggesting easier than it might have been
a decade or so ago. We might even dare to hope that an astute
political leader might welcome such an institutional check on the
politician's proclivity to squander.

The second modification of the orthodox theory of integration
I want to suggest is an explicit recognition of the role of what we
may call supply-side trade creation. This is the replacement of
goods produced relatively inefficiently for the domestic market by
goods, in whose production the country has a comparative advantage,
for export. Notice that supply-side trade creation is complementary
to the more orthodox Vinerian concept of trade creation. This is
because it is assumed that regional imports will clear the excess
demand for domestically consumed goods previously produced by domes-
firms. The net result of all this for the consumer is a reduction
of tariff or relaxation of import quotas, and therefore an increase
in consumer surplus. That is, the opposite to the situation portrayed
in Figure 1.

Here then is the real case for economic integration of very
small open economies. That is economies that are so small that even
the market of the region is unlikely to support by itself a modest
industrialization programme. Casual empiricism suggests that this

argument is relevant for any region with a population of less than

10 million, which at the same time has a narrow physical resource

base. The Caribbean with less than 5 million and no appreciable

deposits of iron ore falls into this category.

I would like to suggest a connection between the integration

strategy that is implicit in my argument and Leibenstein's (11)

notion of "X-efficiency". Recall that he demonstrated that although

the gains to an economy which resultedfrom the elimination of alloca-

tive inefficiency - as for instance the removal of tariffs - might

be quite insignificant, those that flowed from things like improved

managerial practices which accompanied the previous changes were

probably huge. The difference between these two kinds of gains were

shown to be of the magnitude of the difference between 25 per cent

and 1/10 of 1 per cent. These larger gains which Leibenstein believed

stemmed from "the degree of competitive pressure, as well as from

other motivational factors", could be attributed to an improvement

in what he called X-efficiency. This analysis clearly has implica-

tions for the case we discussed with the aid of Figure 1.

It is my conjecture that an important contributor to the kind

of competitive pressure Leibenstein had in mind is the ordinary trade

creation effects of economic integration which then set in motion

supply-side trade creation. This introduces a truly dynamic element

into what appears at first blush to be static integration theory.

Recall that Leibenstein offered his hypothesis to explain the residual

in economic growth theory. We might therefore expect that in a region,

the economy enjoying the most supply-side trade creation, other thing

being equal will be the one that is growing the fastest. In the
next section, this hypothesis is tested.

SECTION II: EMPIRICAL ANALYSIS

What this empirical section seeks to do is use the information
that comes from the estimation of a set of import and export func-
tions to throw some light on the process of trade diversion, trade
creation and supply-side trade creation in the CARICOM region.

THE IMPORT FUNCTION

The basic import function in this paper follows those speci-
fied in similar studies.[7] Most of these regard imports as a func-
tion of national income, relative prices and a variable that
captures the effect of the elimination of intra-regional tariffs
following the establishment of a customs union. There is of course
a further tariff effect which follows from the equalization of the
region's tariff rate on external trade. This additional effect is
important for evaluating external trade creation. That is a rise
in regional imports from the rest of the world induced by the
establishment of a customs union.

A scan of the previous literature reveals that it has not
been very easy to capture satisfactorily, the integration effect.
Summarising the difficulties various authors encountered in trying
to capture this effect, Kreinin (10) had the following to say:

"Unfortunately there is no satisfactory way to overcome these diffi-

culties. Each approach, including the ones (employed in his paper),

is fraught with dangers arising from its own "heroic assumptions".

That is equally true of the method I am employing in this

paper. An import function is estimated by the technique of ordinary

least squares (OLS) and in each function, one or more dummy varia-

bles are employed to shift the intercept of the function.

Specifically we write:

$$M = \alpha_1 \, \alpha_2^D \, y^\beta \, p^\gamma \epsilon \qquad\qquad 1$$

Where M is the value of imports denominated in domestic currency,

Y is a national income variable, P is the foreign country's

export price, , is the ordinary intercept of the logarithmic

function of which and are the usual kind of exponents,

is the shift in the intercept that is intended to capture the

integration effect and is a multiplicative error term.

The reason why I chose a multiplicative import function is

empirical. Harris (7), in fairly thorough examination of the

Jamaican economy in the period 1950-65 experimented with a number

of specifications of the import function. He tells us that "Linear

semi-log and double-log forms of equations were used to specify the

demand functions and the double-log form tended to give the best

results". This finding of his is consistent with the view that the

Jamaican economy is characterised by a constant elastic demand for

imports. In general, it is assumed that the same basic structure

dominates economies of the Caribbean, and we might expect to find

fairly similar import functions throughout the region. Equation 1

which is a constant elasticity function, is applied to the aggregate of imports for the region as well as to the estimations we have carried out at a lower level of aggregation.

Incidentally Williamson and Bottrill (19) show that a constant elasticity import function might help to solve a problem posed by some analysts of the E.E.C. integration effects on trade flows. These assume that in the absence of integration, the share of imports in consumption would be constant. They are then able to attribute a change in that share to the effect of the formation of the E.E.C. The problems with this assumption is that it is generally believed that the income-elasticity of demand for imports exceeds unity. A constant elasticity function solves this irony. In any case it will be noticed below that such a function yields a remarkably good fit for CARICOM data.

The two arguments in the import function are slightly different from the ones that are generally used. Most researchers prefer GNP as their aggregate income variable. I was unable to find enough observations on this series for the CARICOM countries. In its place I am using GDP. This should not be regarded as a serious defect. The other deviation from the norm is the use of the foreign export price which is the price that faces the domestic economy, instead of relative price variable. Economic theory seems to suggest that the latter is the more appropriate theory. However, there is some difficulty in forming an index of CARICOM prices. In any case, this is perhaps not a serious flaw since there is much evidence that prices in the Caribbean follow those in the U.S. almost mechanically.

When equation 1 is transformed it yields the following
estimating function:

$$\ln M = \ln \alpha_1 + D \ln \alpha_2 + \beta \ln Y + \gamma \ln P + \ln \epsilon \ldots \ldots 2$$

The expected signs of β and γ are well understood. The
former should be positive and close to unity. The latter should be
negative, but little is known a priori about its magnitude. Much
of the interest in this study centres on the sign and size of
$\ln \alpha_2$ which in effect is the parameter of our integration dummy.
From this we hope to get estimates of the degree of trade creation
and trade diversion in different applications of the basic estimating
equation.

However, a difficulty must be admitted here. CARICOM came
into existence in 1974, but the common tariff did not become fully
operational until 1976. The latter year might be a better point for
assessing the effects of the existence of CARICOM on trade flows.
However most of the series we have end in that year. I have there-
fore specified that the impact of CARICOM commences in 1974. As
everybody knows that was a year of considerable change in inter-
national trade relations. Most of these arose in connection with
the dramatic rise in the price of oil and to a lesser extent other
commodities. This means that we must be cautious in attributing
to the coming into existence of CARICOM alone, any changes in trade
flows that are reflected in the estimated value of α_2. With that
caveat in mind here is a list of the applications of equation 2 to
specific sets of data and the results I obtained.

First I estimated the import function for the whole of CARICOM's imports from the rest of the world for the period 1970-76 using a step-wise regression. This was done on The University of the West Indies (Mona) computer with the aid of the SPSS package I obtained:[8]

$$\ln M = \ln 9.7 + .68 \ln Y - .06 \ln P$$
$$(.37) \qquad (.89)$$

$$- \ln .32 D \qquad\qquad 3$$
$$(.14)$$

$$\bar{R}^2 = .985 ; \qquad d = 2.65$$

Equation 3 tells a fairly interesting story. We discover that the region's income elasticity of demand for imports from the rest of the world is less than unity. This is not surprising, but it is good to know. The zenophobic reaction of some people in the region to the consumption of foreign goods appears not to be warranted.[9] The price variable has the right sign but the coefficient is not significantly different from zero. But the important finding appears to be that the intention to change the Caribbean community from a free trade area to a common market induced a measure of trade diversion. This finding may be compared with the early findings on the impact of the E.E.C. on trade flows in that common market surveyed in Williamson and Bottrill. The finding there was that the establishment of the E.E.C. induced some external trade creation.

However, it should be noted that the trade diversion effect does appear to be very small. When the antilogs of intercept terms are calculated and the coefficient of α_2 is correctly interpreted,[10] it appears that post 1974 events are responsible for shift in α_1, of about EC\$1,377. But when we consider that the value of imports to the region rose considerably after the 1974 rise in world oil prices, such a small shift is not at all surprising. In fact it might be interpreted as pointing to a very definite tendency.

I next estimated the import function without the price variable for the four MDCs in the region, Barbados, Guyana, Jamaica and Trinidad and Tobago as a group. The population of these four relatively larger countries accounts for four million out of the 4.6 million in the region. The share of these four in the region's GDP is in excess of 90 percent. It is therefore interesting to compare the import function of this group with that of the total region. I obtained the following results from that regression :

$$\ln M = \ln 5.8 + 1.04 \ln Y \qquad\qquad 4$$
$$(0.07)$$

$$\bar{R}^2 = .97 ; \qquad d = 3.2$$

In this regression the stepwise process deleted the integration dummy suggesting that the existence of CARICOM had neither a trade diversion external trade creation effect on the larger countries in in the region. The coefficient on the income variable is not significantly different from unity which is consistent with the finding

on the integration effect. This means that for the MDCs alone the income elasticity of demand for imports was unitary. The citizens of these countries imported neither more nor less as they got richer. But proportionately more of their income than that of the region as a whole was spent on foreign goods.

It is now time to look at the impact of the formation of CARICOM on intra-regional trade and to do that I estimated the demand of the MDCs for imports from the rest of the region. In this regression, I dropped the price variable. I obtained the following results:

$$\ln M = -\ln 0.4 + 1.43 \ln Y + 0.05 \ln D$$
$$(0.36) \qquad (0.31)$$

$$\bar{R}^2 = .95 ; \qquad d = 0.93$$

5

To the extent that this study has any immediate political significance for the region, this regression is a very encouraging finding. This is because although the coefficient for the integration dummy is not significantly different from zero — nonetheless with the sign that would indicate trade creation if it was significant — we notice that the income elasticity of demand for imports is well above unity. As the better off countries in the region grow richer, they import proportionately more from the worse off. This is a bold contrast with the behaviour of the region as a whole with respect to the rest of the world.

So much for import functions. I want to go on now to the

empirical part of this study that has some bearing on the ideas

about supply-side trade creation that were discussed in the

previous section. This leads us to a consideration of export

functions.

Exports are generally regarded to be a positive function

of productive capacity and a negative function of the terms of

trade and of finance. There appears to be no concensus about the

correct functional form of the exports - output relationship. But

Winters (20), whose analysis of U.K. exports is one of the most

rigorous investigation of export functions recently undertaken,

appears to favour the specification of a double logarithmic rela-

tionship.

This has led me to specify an exports function that is

similar to my imports function. Accordingly we have —

$$X = \partial_1 + \partial_2^D Z^\lambda P^\sigma W^\omega \varepsilon$$

Where X is some measure of exports,   is an index or production

or just simply GDP as the case might be, P is a U.S. import

price index, W is world demand, and the parameters have the same

meaning as their counterpart in equation 1.

A question that immediately arises about the specification

of equation 6 in the context of a single-equation model is about

the direction of causation between exports and output. Particularly

in a developing country and in view of the thrust of the argument in

the previous section, it might be that output is the dependent

variable and exports the independent variable. This would suggest

that equation 6 is really an inverse least squares problem.

As we shall see below the study examines the export perform-

ance mainly of the economies of Barbados and Jamaica. I therefore

applied the Granger (5) causality test to data from these two coun-

tries.[11] First for Z , I tried the index of industrial output

supplied by Barbados. The Granger test reveals that in this case

production is the dependent variable and exports are the independent

one. However, when GDP was used in place of the index of industrial

output, in both the case of Barbados and that of Jamaica, I found

that there was a feed-back relationship between exports and output.

The two results taken together suggest that we should pay

more attention to this issue. In particular, the finding that

industrial output in Barbados functionally depends on the volume

of exports may have considerable policy implications. The finding

on the feed-back relationship between exports and output suggests

that when the existence of enough data permits it, the exports

function should be embedded in a simultaneous equation model. The

single-equation results below may therefore suffer from simultaneous-

equation bias, though my own conjecture is that this will be negli-

gible. However, this fact must be kept in mind when reading the

results. GDP was chosen as the explanatory variable.

What I have done is compared the export performance, 1970-78,

of Barbados with that of Jamaica.[12] I plan later on to compare

Guyana and Trinidad and then extend the analysis to cover other sets

of comparison.

In the Barbados equation, the price variable was rejected by the step-wise process and I ended up with -

$$\ln X = -\ln 2.5 + 1.1 \ln \bar{Z} + 0.9 \ln W + \ln 0.5D \qquad 7$$
$$\qquad\qquad (0.38) \qquad (0.42) \qquad (0.2)$$

$$\bar{R}^2 = 0.98 ; \qquad d = 2.7$$

Just for fun I decided to throw in an "Adams dummy". This was to capture the effect of the post 1976 circumstances in Barbados. For the record the adjusted $\bar{R}^2$ went down. But the sign on the coefficient was positive. We cannot accuse the current government of leaving a negative impact on the performance of the Barbados export sector. But neither can we give it much credit for inducing a positive shift in the export function. Maybe, Barbados has arrived at that fortunate stage where a change in government is neutral with respect to the economy.

However, what equation 7 shows is that as output grows, the export and therefore presumably the production of those goods categorised as manufactures, machinery and transport equipment and miscellaneous manufactures also grow, but at a proportionately faster rate. The world demand for Barbadian manufactures is almost unitary elastic. The economy is therefore clearly undergoing an industrial transformation. It is whether or not we like it an economy "in transition".

The sign and value of the CARICOM dummy is of interest. When

the antilog is calculated it seems to imply that the effect of post 1974 conditions, was to add EC$1,622 to the ordinary intercept of the export function. Even if this is a relatively small number, it must be remembered that the full impact of the common market had not yet come into effect.

What all this means is that the performance of Barbados is consistent with the existence of what I have called supply-side trade creation.

I turn now to the case of Jamaica. The best regression contained the arguments: GDP; U.S. import prices; world demand and again for the fun of it, a Manley dummy. When the CARICOM dummy was added, it reduced the value of the adjusted $\bar{R}^2$ and was negative in sign. So Jamaica does not appear to have experienced any supply-side trade creation. The results excluding the CARICOM dummy but including the Manley dummy (MAN) are :

$$\ln X = \ln 3.9 + 0.60 \ln Z - 0.60 \ln P$$
$$(0.398) \qquad (0.599)$$

$$+ 0.72 \ln W - \ln 0.29 \text{ MAN} \qquad 8$$
$$(0.66) \qquad (0.21)$$

$$\bar{R}^2 = .95 ; \qquad d = 3.0$$

The striking difference between this equation and the Barbados one, is that Jamaican exports seem to be world price elastic. This is certainly the case if one accepts the Haitovsky (6) criterion. It

might not be safe to assume that relative prices have no effect on the performance of the Jamaican export sector.

The variables that are common in the Barbadian and Jamaican export functions have the same signs. The impact of world demand on the two economies appears to be quite similar, although the Jamaican elasticity is marginally smaller. However, the Jamaican export elasticity with respect to output is unlike Barbados less than unity. This might be explained by the fact that the bulk of Jamaica's export earnings come from a primary commodity which is at the same time its most dynamic sector. The pressure for increasing the exports of manufactures is therefore much lesser than it is in Barbados. Recall that according to Leibenstein, this kind of pressure is critical for the existence of X-efficiency.

Finally we take note of the Manley dummy. Whatever happens in the forthcoming election in Jamaica, the Prime Minister of that country can take pleasure in the fact that whereas his counterpart in Barbados appears to be insignificant for the performance of his country's exports of manufactures, he is significant for his. But I doubt that the sign of the coefficient on the Manley dummy is the one he would prefer.

Our analysis of the export of manufactures in two CARICOM countries has revealed that one is alert to supply-side trade creation, whereas the other is not. In my opinion, if integration is going to be meaningful for the economies that belong to CARICOM, they will all have to pursue the expansion of supply-side trade creation. This will involve a shift in emphasis from the theoretical

orientation of the early days of the integration movement which was

rather inward-looking to an aggressively outward looking strategy.

One could not possibly finish an essay like this without

making reference to the NICs in South East Asia and of all places

Latin America. But in particular, after the success of the ASEAN

common market, it is difficult to deny that supply-side trade

creation is a viable integration strategy for developing countries.

My own personal regrets lie in the fact that CARICOM is not the

leader of this trend. It was after all to the people who have

become the members of this community that Nobel lauriet,

Sir Arthur Lewis (12) said: "Britain (has) developed an enormous

importation of textiles from India and Hong Kong, revealing a market

which if the West Indies had gone into it would have provided a very

substantial level of employment here for us". Have we since dis-

covered the initiative, imagination and willingness to take the

risk that Lewis counselled?

Finally I wish to look at the monetary implications of the

preceding analysis. Two of these follow from Section I, the others

from Section II. The first is straightforward and concerns the

price-level implication of the analysis conducted with the aid of

Figure I. It is clear that the inward-looking strategy has an

inflationary bias. It is therefore not a coincidence that in general

the post-war Latin American economies have been the most inflation-

proned we have known.

The second was mentioned briefly in the discussion of my

proposed modification of the orthodox theory of integration. For

our kind of region, there is a compelling case for a higher degree of monetary integration than we have at present. There is among developing countries what I like to call a power illusion. The way this operates in the Caribbean is to forestall the move to regional monetary management. But in a number of cases we have seen this end up in the management of our affairs by complete outsiders.

The other monetary implications come out of my empirical analysis. It appears to me that we are no longer justified in blaming our balance of payments difficulties on high propensity to import goods from outside of the region. Even in the case of the MDCs, the revealed preference is for a growing share of the products of the LDCs at the expense of those from the rest of the world. And this is even prior to the CARICOM impact.

However, when it comes to supply-side external trade creation we notice an important difference between the performance of Barbados and that of Jamaica. The fact that there is also a difference between these two countries' approach to monetary management might be a coincidence. But I rather doubt it. It is this difference that deserves much further thought by all of us.

F O O T N O T E S

[1] The Monetary Studies Programme at U.W.I., Mona, defrayed the cost of collecting the data used in the study. The librarians and members of the statistics branch at the CARICOM Secretariat assisted me in finding them. In formulating equations 1 and 6, I benefitted greatly from a discussion with Professor Al Francis and Danny Branch respectively of the Economics and Mathematics Departments of the U.W.I., Mona.

[2] Strictly speaking CARICOM is not a common market since factors are not completely mobile.

[3] Similar sentiments are to be found in Beckford's (1) "Persistent Poverty".

[4] This ignores other well-knows defects in Prebisch's analysis for example, ignoring the way the British trade statistics are reported and the effect of declining transport cost on those data.

[5] An estimate of the revenue-loss in welfare suffered by domestic consumers is easy to make. It should be half the product of the tariff and change in demand induced by the tariff. But we shall see below that for the economy this is not the most important loss in welfare.

[6] Vaubel (17) has recently given a guide for evaluating the cost in terms of price-level stability of monetary unification.

[7] Two good surveys of these studies are those given by Williamson and Bottrill (19) and Kreinin (10).

[8] In all results, the numbers in brackets are standard errors. The estimate of R^2 is adjusted for degrees of freedom. The reported Durbin Watson statistic (d) shows us evidence of serious autocorrelation given the number of observations and of independent variables. But a couple are in the indeterminate range.

[9] For instance the population handbook "The Caribbean Community: A Guide", put out by the Caribbean Community Secretariat, says on page 9: A "problem which has beset the economies of the region in recent years has been a growing taste for foreign goods and excessive consumption expenditure, particularly of imported goods". (emphasis mine). Clearly there is no evidence for this claim.

[10] A rigorous treatment is to be found in Suits (16). A more intuitive account is given by Kennedy (9) pp. 142-3.

[11] Basically what the Granger test says is that $(Y_t \, X_t)$ represent a bivariate process. Y_{t-i}, X_{t-i} are past values. β is a vector of coefficients with $\beta_o = 1$, and σ^2 is the error variance of the process. We can say that Y causes X if —

$$\sigma^2 (X_t \mid X_{t-i}, Y_{t-i}) < \sigma^2 (X_t \mid X_{t-i})$$

[12] The exports variable used in the study are the sum of those exports classified as numbers 6 through 8 by S.I.T.C.

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