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ABSTRACT

Beginning in the mid-1980s the primary development paradigm pursued by Latin American and Caribbean countries undertook a major shift from the concept of import-substitution-industrialization (ISI) to that of export-led growth and openness to international markets. Despite these efforts, virtually no research has been undertaken to assess the degree to which the export structures of Latin American and Caribbean countries have in fact diversified. This is unfortunate as the trade policy environment facing these countries is poised to undergo significant changes**.** The purpose of this paper is to examine the structure of exports to the U.S. from 19 selected Latin American and Caribbean countries over the 1989 to 2000 period in order to assess the degree to which export diversification has occurred. The analysis is conducted at a reasonably disaggregate level using 2-digit HTS data. The countries included in the analysis provide a mix of commonalities and differences. The results suggest wide differences in the degree of diversification exhibited and suggest that these differences are related to economic size and social capability.

Keywords: Export diversification, Balassa Revealed Comparative Advantage

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INTRODUCTION

Beginning in the mid-1980s the primary development paradigm pursued by Latin American and Caribbean countries undertook a major shift from the concept of import-substitution-industrialization (ISI) to that of export-led growth and openness to international markets (Bruton, 1998). This shift was spurred in part by research suggesting the importance of exports as a major factor in stimulating economic growth. This thinking was further enhanced by the so-called Washington consensus that supported this approach and the associated development funds that emerged. As a result, many countries assisted by these funds began undertaking initiatives to expand and diversify exports.

Export expansion and diversification efforts were further enhanced by numerous unilateral policy initiatives directed towards Latin America and the Caribbean. The U.S. enacted the Caribbean Basin Economic Recovery Act in 1983 granting unilateral duty- free access to beneficiary countries for most commodities. In 2001, the passage of the Caribbean Basin Trade Partnership Act (CBTPA) extended these preferences to virtually all products thereby essentially providing NAFTA parity. Similarly, Canada enacted CARIBCAN in 1986, which also provided duty-free access to Commonwealth Caribbean countries. There have been numerous other regional trade agreements amongst Latin American and Caribbean countries as well (Taylor, 2001).

Despite these efforts, virtually no research has been undertaken to assess the degree to which the export structures of Latin American and Caribbean countries have in fact diversified.[i] This is unfortunate as the trade policy environment facing these countries is poised to undergo significant changes. Within the hemisphere, negotiation of the Free Trade Agreement of the Americas is proceeding, and reaching a final accord by the 2005 target date appears feasible. The granting of Promotion Authority to the President by U.S. Congress in August 2002 should provide significant impetus to this process. Agreement was also reached at the WTO ministerial in Doha, Qatar to initiate a new round of agricultural negotiations. While it is too soon to predict the final outcome of the WTO negotiations, it is clear that events in this forum will influence the negotiations of the FTAA.

CARICOM countries face additional major changes in the trade policy environment. The Contonou Agreement recently concluded by the EU has signaled that the traditional preferences granted to ACP countries under the Lomè conventions have a finite life. The trade policy that emerges will be determined through negotiation of Regional Economic Partnership Agreements between the EU and blocks of ACP countries. CARIFORM (CARICOM plus Haiti and the

Dominican Republic) is expected to constitute one such block. It also seems clear that while the special nature of small island developing states (SIDS) has been acknowledged in all trade policy forums, a continuation of historical preferences appears unlikely and some degree of reciprocity on the part of small developing economies will be required.

The purpose of this paper is to examine the structure of exports to the U.S. from 19 Latin American and Caribbean countries over the 1989 to 2000 period in order to assess the degree to which export diversification has occurred. The analysis is conducted at a reasonably disaggregate level using 2-digit HTS data. The countries included in the analysis provide a mix of commonalities and differences. All share a common geographic proximity to the U.S. market, and all have been the beneficiary of the same unilateral policy initiatives. However, there are considerable differences in terms of size, historical relationships with Europe and related trade policies such as Lomè.

The plan of the paper is as follows. The next section provides a brief discussion of some of the theoretical notions that have been put forth to explain factors that may enhance or inhibit a country's ability to diversify its export structure. The third section presents the statistical methodology employed and the fourth section presents the empirical results. Concluding comments are presented in the final section.

THEORETICAL CONSIDERATIONS

The primary motive behind export diversification efforts has been the desire to foster economic growth and enhance export earnings stability (Stanley and Bunnagi, 2001; Gutierrez de Pineres and Ferrantino, 1997). In simple terms, the process by which this occurs is argued to begin with technological innovation that improves efficiencies in production. These efficiencies in turn impact the competitive structure of production and the competitive advantage of various industries. By pursuing policies of openness, market forces provide incentives for efficiency and enable technology transfers and export opportunities. In essence, market driven structural changes are fostered, and export structures evolve accordingly.

The theoretical underpinnings of these ideas are found in the vast literature on economic growth and convergence. Of relevance to the present analysis are some of the recent strands of growth theory that have arisen in response to the failure of neoclassical models to explain the lack of convergence that has been observed between developed and less developed countries. The two most relevant strands of models are those that fall in the class of "new growth theory" (e.g., Romer, 1986, 1990) and those that have been termed technology gap models. Both classes of models, as well as others are reviewed in Fagerberg (1994).[ii]

New growth theory, took a major step by endogenizing technological change. In early endogenous growth models, technological change occurred through learning-by-doing stimulated through investments in human and physical capital (Romer, 1986; Lucas, 1988; Thompson, 1993). So-called second-generation models allowed for technological change to endogenously occur through stylized technology sectors. In essence, firms "competed" in technology competitions (i.e., patent races, technology tournaments) with the "winner" receiving a temporary monopoly in the use of the technology. The probability of winning is proportional to expenditure on research and development. Well known examples of these types of model include Romer (1990) and Grossman and Helpman (1993).

In contrast to the highly stylized and mathematical nature of new growth theory, models based on technology gaps are less formal and are based on what Fagerberg (1994) calls "empirically-based appreciative" investigations. A critical aspect of these models is captured by Abramovitz (1956), who argued that the potential of countries to close technology gaps is dependent on two major factors: 1) technological congruence; and 2) social capability. Technological congruence relates the ability of countries to adopt technological innovations arising in those countries that are the clear leaders in technological innovation (e.g., developed countries). This directly impacts the degree to which technology transfers may occur. Social capability refers to the array of factors including levels of human capital, economic infrastructure, and institutional capacities that affect the country's ability to adopt available technology as well as promote economic efficiency.

Though the models discussed above differ in their mathematical rigor and complexity in attempting to address the so-called convergence-divergence debate, they share similarities that are germane to the study of export diversification. Specifically, all point to two major sets of factors that influence the ability of developing countries to innovate and catch-up to developed countries. The first set of factors relates to the basic characteristics of technology available for transfer (e.g., by foreign direct investment) or imitation. If technological developments by developed countries are biased toward large scales of operation or are extremely complex, then smaller countries may be unable to adopt or imitate. The second set of factors relates to the internal ability of countries to realize technological innovations or adopt (imitate). These factors include human resource factors such as education and managerial acumen as well as economic, political and physical infrastructure characteristics that define the commercial environment.

The influence of these factors on realized technological innovation in turn impacts the production and export structure of countries by altering the

competitive position of various industries in domestic and international markets. Given that many of the factors noted, especially those relating to social capability are slow to change, one might expect the export structure of developing countries to be characterized by some degree of stability. In other words, one may anticipate that export diversification initiatives may inherently be faced with significant social and economic barriers that are not easily overcome. This may be especially true for many CARICOM countries that receive preferences for agricultural products such as sugar and bananas. The existence of these preferences may create strong economic and institutional disincentives to export diversification in general and diversification of exports to the U.S. in particular.

It is also important to note that many countries pursuing export diversification initiatives place considerable emphasis on "picking winners" and identifying appropriate technologies. The preceding suggests that unless the "winners" picked are technologically congruent, and factors affecting social capabilities are adequately addressed, change in export structures is likely to be modest.

METHODOLOGY

The methodology used follows that set out in a set of papers produced at the Danish Research Unit for Industrial Dynamics (Dalum and Villumsen, 1996; Dalum, Laursen and Villumsen, 1996; Laursen, 1996). Although these papers investigate what is termed export specialization, the methodology employed is well suited to investigating export diversification. Export structures are defined using a variant of the Balassa (1965) revealed comparative advantage (RCA) measure. This measure is calculated for the exports to the U.S of each industry and country included in the analysis. Let X_{ij} denote the exports to the U.S. of industry i from country j. The Balassa Revealed Comparative Advantage (RCA) index for industry i and country j is given by:

$$RCA_{ij} = \frac{X_{ij} / \sum_j X_{ij}}{\sum_j X_{ij} / \sum_i \sum_j X_{ij}} \quad (1)$$

This index compares the proportion of exports attributable to a given industry in country j to the proportion of exports attributable to the same industry in some larger group of countries (in this case 19 Latin American and Caribbean countries). Although the index was developed as a measure of revealed competitiveness, as used in this context it provides a measure of the structure of export specialization. A country is said to specialize in the export of a given product when the proportion of national exports of this product exceeds those of the reference group. Thus a value exceeding one indicates that a country is specialized in the export of a given product.[iii] A country is considered to be non-specialized in the export of a product if its value is less than 1.

Changes in export structure are measured by changes in the observed pattern of export specialization exhibited by each country.

As defined, the value of the RCA for any industry is constrained to lie between 0 and positive infinity. The inherent skewness of this measure casts doubt on the normality of its distribution. Larsen (1996) suggests a simple adjustment to the index to yield:

(2) $RSCA_{ij} = (RCA_{ij} - 1)/(RCA_{ij} + 1)$.

The so-called revealed symmetric comparative advantage (RSCA) measure varies between –1 and +1. An RSCA > 1 implies specialization while an RSCA < 1 implies non-specialization.

Using this definition two elements of diversification can be assessed. The first relates to the degree of structural change in a country's entire export portfolio. Simply stated if the range of products exported increases or there are substantial changes in the rankings of exports, some degree of diversification has occurred. However, a more narrow, and perhaps more critical element of diversification relates to changes in the structure of exports revealed to be specialized. Of interest is investigating the extent to which the portfolio of exports revealed to be specialized broadens and changes in terms of product rankings. The use of the RSCA measure permits the assessment of both aspects of diversification.

To assess these changes, a Galtonian regression is used to compare the distribution of the RSCA for each country at two points in time. The methodology, which is generally attributed to Hart and Prais (1956), has been used extensively in the examination of structural change in exports (Dalum and Villumsen,1996; Dalum, Laursen and Villumsen, 1996), technology (Cantwell, 1989; Archibugi and Pianta, 1994 Archibugi, 1994) and intergenerational incomes (Naga, 2000).

The basic tool of analysis is a linear regression of the form

(3) $RSCA_{ij,t1} = a_j + ß_j RSCA_{ij,t0} + e_i$

Where t_1, and t_0 refer to terminal and base time periods of analysis respectively, and e_i is assumed to be a normally distributed disturbance term with mean 0, constant variance independent of $RSCA_{ij,t0}$. It should be emphasized that period t_1 and t_0 refer to reference periods and not necessarily successive time periods. In essence equation (3) measures changes in export structure by comparing the distribution of the RCSA for country j at two points in time.

The concept underlying this regression is graphically illustrated in Figure 1, which is reproduced from Cantwell (1989, p. 28). The figure is constructed so that expected value of $RSCA_1$ equals that of $RSCA_0$. Note that in the case of line (a), the implied value of ß is one. This implies that there have been no changes in the rankings or

equivalently, the relative pattern of export specialization.

In the case depicted by line (c), the value of ß is greater than one. In this situation, exports in which the country is specialized become more so and exports in which the country is non-specialized become more non-specialized. Line (b) illustrates the case where $0 < ß < 1$. Under this scenario, the pattern of export specialization demonstrated by a given country moves toward the group average. Exports in which the country is specialized become less so, and those in which the country has low levels of specialization increase their values (i.e. they become less non-specialized). This is what is termed regression towards the mean. Although not depicted in Figure 1, it is also possible for $ß < 0$ to occur. In this situation there is a reversal in the pattern of specialization. Industries demonstrating export specialization switch to being non-specialized and those initially demonstrating export non-specialization become specialized.

In assessing the degree and nature of export diversification, these measures must be interpreted with care. Estimated values of $ß < 1$ may suggest that there are changes in the pattern of export specialization demonstrated. However, diversification also entails changes in the rankings of industries demonstrating export specialization or non-specialization. As equation (3) compares the distribution of the structure of export specialization in the base and terminal periods of analysis, the coefficient of determination (R^2) provides insight into this issue. If $R^2 =1$, then there is no change in the ranking of export specialization revealed by a country's industries. In contrast low values of R^2 suggest that considerable change has occurred in the ranking of industries that exhibit specialization.

Cantwell and others (Hart, 1994; Soete, 1987) addressed this issue by decomposing the variance of equation (3). More specifically, let

$$(4) \qquad s^2_1 = ß^2 s^2_0 + s^2_e$$

Where s^2_k denotes the variance of the RSCA in period k= 0,1. Using the well known result that the coefficient of determination for the regression in equation (3) can be written as:

$$(5) \qquad R^2 = 1 - (s^2_e / s^2_1),$$

which after appropriate substitution may be written as

$$(6) \qquad s^2_1 / s^2_0 = ß^2 / R^2.$$

This may be equivalently stated as

$$(7) \qquad s_1 / s_0 = |ß| / |R|.$$

The expression in (7) provides a measure of the degree to which diversification (specialization) has occurred between time period 1 and 0. This expression must be interpreted with care. As R^2 and hence R must be less than one, an estimated value of $ß>1$, necessarily yields $|ß|/|R|>1$ suggesting

that there has been an increase in specialization in terms of both the magnitude of the estimated RSCA and the narrowing of the range of products in which specialization occurs. However, when $0<ß<1$, this expression $|ß| / |R|$ must be interpreted more carefully. Cantwell (1989) coined the expressions (1- ß) and (1-R) as *regression* and *mobility* effects, respectively. The closer ß is to one, the smaller the regression effect. Thus, a small regression effect suggests significant stability in the pattern of export specialization. In contrast, large values of R (R^2) suggest a low degree in mobility among export industries in that their rankings are relatively constant.

Inferences based on the magnitude of $|ß| / |R|$ must account for both the regression and mobility effects. Specifically, countries can exhibit large regression effects and high mobility effects resulting in $|ß| / |R| >1$. In such circumstances, the results suggest that there has been considerable change in export specialization and, by consequence, an increase in the degree of export diversification.

EMPIRICAL RESULTS

The empirical analysis was conducted for 19 countries in Latin America and the Caribbean (See Table 1). The data used to construct the RSCA measures for each country were obtained from the U.S. International Trade Commission Trade DataWeb (http://dataweb.usitc.gov/). Exports were measured by the U.S. imports for consumption from each country at the 2-digit HTS level over the 1989 to 2000 period (see Table A.1). Many countries had a large number of industries for which no exports to the U.S. over the entire sample period were recorded. In such cases, these industries were deleted from the analysis. The number of industries included ranged from 15 in Grenada to 98 for Mexico.[iv] The initial export structure for the analysis was measured as the average RSCA over the 1989-1991 period[v] and the terminal period was measured by the average RSCA over the 1998-2000 period.

The results of estimating equation (3) for each country are presented in Table 1. Countries are placed into the following groupings: the so-called moderately developed Caribbean countries (MDCs), OECS countries, the non-commonwealth island countries of Haiti and the Dominican Republic, Central American countries and Mexico. It should be noted the MDCs and the Organization of Eastern Caribbean States (OECS) countries are both members of CARICOM. These ten countries combined with Haiti and the Dominican Republic form the regional grouping known as CARIFORUM. With the exception of Panama, the Central American countries are all members of the Central American Common Market (CACM). Discussion of the results is presented for these respective groupings.

The empirical results for the MDCs show that for all countries the 95%

confidence intervals for estimated values of ß do not contain either 0 or 1. Based on these confidence intervals, the export structures for all five countries exhibited incremental change. The degree to which this occurred varied across countries and is captured by the regression effect (1- ß). It can be seen that the export structure of Barbados had the smallest regression effect (0.2574) implying a fair degree of stability, while Guyana had a regression effect of 0.5055 implying a reasonable degree of change in the level of specialization. Belize, Jamaica and Trinidad have estimated regression effects of 0.4345, 0.3535 and 0.4525, respectively.

Examination of the estimated values of |ß|/|R| reveals that all the MDC countries have values exceeding 1. However, the estimated values of R are generally low suggesting that the values of |ß|/|R| > 1 are indicative of significant mobility effects. This suggests that there has been considerable change in the product ranking of MDC exports to the U.S. This is confirmed in Table 2 where it can be seen that the number of industries in which each country demonstrated specialization increased as did the proportion of total exports to the U.S. attributable to these products. The change was especially notable for Guyana where specialized product exports more than doubled and the proportion of total exports to the U.S. of these products increased from 63% to over 96%.

The empirical results for the OECS countries vary considerably across countries. For Dominica, Grenada and St. Vincent the hypothesis that ß = 0 cannot be rejected. This, in combination with the extremely low values of R (a high mobility effect), suggests that the structure of exports from these three countries to the U.S. over the period of analysis has been largely random. Examination of Table 2 indicates that the base of exports to the U.S. in which these three countries exhibit specialization is extremely narrow and volatile.

In contrast, the empirical results for St. Kitts indicate the hypothesis of ß = 1 cannot be rejected. St. Kitts also exhibited a narrow base of exports in which it is specialized. However, the high value of R reveals a low level of mobility indicating that the structure of exports to the U.S. from St. Kitts has been very stable. Indeed in both base (1989-91) and terminal (1998-2000) periods of analysis, electrical machinery and equipment (HTS 85) accounted for over 90% of total exports to the U.S.

In the case of St. Lucia, the 95% confidence interval for the estimated value of ß does not contain 0 or 1. This suggests that structure of exports to the U.S. has exhibited some incremental change. This is further supported by the fact that the estimated value of R suggests reasonably significant mobility effects. As with other OECS countries, the base of exports to the U.S. revealed to be specialized in both countries was narrow.

For both the Dominican Republic and Haiti, the 95 % confidence intervals

for the estimated values of ß did not contain 0 or 1 suggesting that the export structures for both countries demonstrated incremental change in specialization of their export structures. However, the magnitude of change varied across countries. The Dominican Republic had a regression effect of 0.707 and a mobility effect of 0.704 while these effects for Haiti were 0.414 and 0.525, respectively. Thus the Dominican Republic exhibited considerably more change in specialization. This is verified in Table 2, which shows that exports in which the Dominican Republic is specialized declined from 83.7% of total exports to the U.S. to 67% despite the fact that the number of industries exhibiting export specialization increased from 17 to 20. Haiti also exhibited a decline in the proportion of exports to the U.S. revealed to be specialized. However, the magnitude of this decline was much smaller than that exhibited by the Dominican Republic. It may also be noted that unlike the Dominican Republic, the number of Haitian industries revealed to be specialized increased.

The empirical results for the Central American countries indicate that with the exception of Nicaragua, the structure of exports to the U.S. have exhibited incremental change in the degree of specialization. In the case of Nicaragua, the hypothesis of ß = 0 cannot be rejected. This in combination with the low value of R suggests that the structure of exports to the U.S. from Nicaragua have exhibited considerable, but non-systematic change. This is underscored in Table 2, which shows that the number of exports in which Nicaragua is specialized increased almost four-fold. Additionally, the proportion of export to the U.S. attributable to these products increased from 58% to almost 98%.

There are significant differences in the degree of structural change exhibited by the other Central American Countries. El Salvador, Guatemala and Panama have high regression and mobility effects, suggesting considerable structural change. In all three countries, the number of industries demonstrating export specialization increased significantly. The proportion of total exports to the U.S. attributable to these products decreased for El Salvador and Guatemala and increased for Panama.

Costa Rica and Honduras had relatively low regression and mobility effects suggesting some degree of stability in their export structures. Given the economic and political stability of these two counties in relation to other Central American countries over the period of analysis, this is not surprising. In both countries the number of industries exporting to the U.S. revealed to be specialized increased modestly. However, whereas the share of total exports attributable to these products increased in Costa Rica, it decreased in Honduras.

The empirical results for Mexico indicate that the structure of its exports

to the U.S. has been very stable over the period of analysis. The hypothesis of ß = 1 cannot be rejected. Additionally, the implied mobility effect of 0.069 is extremely low. Note that while the number of export industries revealed to be specialized declined from 38 to 29, the percentage of total exports attributable to these products remained constant at 81%. These results are interesting because the initial data period (1989-91) and terminal data period (1998-2000) used in this analysis span the pre- and post-NAFTA period It is clear that NAFTA has stimulated exports from Mexico to the U.S., however the provisions of the agreement have apparently had little effect on the general structure of these exports.

CONCLUDING COMMENTS

The results of this analysis suggest that there has been some degree of export diversification in exports to the U.S. exhibited by the 19 Latin American and Caribbean countries investigated in this study. Virtually all of the countries investigated demonstrated increases in the number of products in which they specialized and the share of exports attributable to these products generally increased. Further, with the exception of the OECS, the 95% confidence intervals for the estimated values of ß did not contain 0 or 1.

However, there are considerable differences in the nature and degree of change exhibited. The results also reveal that there are significant differences in both the structure of exports and nature of changes observed in these structures. While the nature of this analysis does not permit definitive statements concerning causal factors behind these differences, they do enable some speculation as to the causes of these differences that may provide the basis for further research.

These factors correspond to the two major sets of factors noted by Abramovitz (1956) and discussed earlier. Specifically, the two causal factors that seem to square most clearly with the empirical results are economic size and social capability. It can further be argued that social capability has been strongly influenced by the historical relationship between Europe and the Caribbean countries and the EU trade policy towards these countries that resulted.

The economic size of the countries included in this analysis as measured by gross domestic product varies considerably across regional groupings. Based on data in the CIA World Fact Book (http://www.cia.gov/cia/publications/factbook/), the average estimated 2000 GDP at purchasing power parity for the regional groupings were as follows: MDCs - $6.3 billion, OECS - $396 million, Dominican Republic and Haiti - $30.5 billion, Central America - $23.7 billion and Mexico - $915 billion. Based on these data, the impact of economic size on the empirical results stands out clearly.

Within the CARICOM grouping, the MDCs are significantly larger than their OECS counterparts. As evidenced by the data in Table 2, although all CARICOM countries have narrow bases of exports to the U.S., the MDC export structures are considerably broader than those exhibited by the OECS countries. Further, the MDCs generally had lower regression and mobility effects than those demonstrated by the OECS countries. The one notable exception was St. Kitts for which the hypothesis of no change in export structure could not be rejected. This suggests the degree of change in the export structure of the MDC was composed of some degree of systematic or path dependent export diversification. Within the OECS, the high mobility effects for most of the countries suggest that much of the apparent diversification observed was non-systematic.

The argument supporting the importance of economic size is strengthened when these results are compared with the remainder of the countries in the study. It can be clearly seen that with few exceptions, larger countries have broader bases in both total export and those revealed to be specialized. Additionally, the 95% confidence intervals for the estimated ßs did not contain 0 or 1 suggesting these countries exhibited statistically significant de-specialization of their export structures. In this regard, one may speculate that there may exist some threshold size to export diversification of which the microstates that typify the OECS fall below.

These inferences must, however, be tempered by consideration of historical ties and EU trade policy. It is well known that the CARICOM countries have long colonial histories with Europe. Indeed, most of the CARICOM countries gained independence in only the last 30 to 40 years. As such, much of the commercial infrastructure in these countries has retained strong ties with the EU. These relationships have been preserved to some extent by the significant trade preferences granted CARICOM (actually all ACP countries), especially for primary agricultural commodities such as sugar and bananas. While it is also true that the Dominican Republic, Haiti and the remaining Central American countries also have colonial ties to Europe, these ties were broken over 150 years ago and that there were no ensuing trade preferences similar to the Lomè Conventions provided.

Examination of the empirical results is consistent with the hypothesis that both historical relationships and EU trade policy have served as a disincentive to the diversification of exports from CARICOM countries to the U.S. This is consistent with some of the notions concerning the relationship between social capability, innovations and by consequence export diversification suggested by Abramovitz.

While these inferences are only speculative and require additional

empirical analysis, they do suggest that CARICOM countries in general, and the OECS countries in particular, may well face difficulties in realizing the economic benefits promised by liberalized trade that will be embodied in the FTAA. Whether the issue is size, or social capability remains to be determined. However, it is clear that these countries have demonstrated less diversification in the structure of their exports to the U.S. than observed for Central American countries.

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Grouping/Country	**N**	*a*	*ß*	R^2	*1-R*	*|ß| / |R|*		*L95 %8***	*U95 %***
MDCs									
Barbados	50	-0.0440	0.7424	0.4147	0.3561	1.1529		0.4929	0.9919
		(0.1153)*	(0.1273)						
Belize	30	-0.2723	0.5655	0.2619	0.4882	1.1049		0.1986	0.9323
		(0.1590)	(0.1794)						
Guyana	33	-0.2326	0.4945	0.1715	0.5859	1.1942		0.1119	0.8772
		(0.1698)	(0.1952)						
Jamaica	67	-0.2058	0.6465	0.3794	0.3840	1.0495		0.4455	0.8474
		(0.0841)	(0.1025)						
Trinidad	55	-0.1751	0.5475	0.2466	0.5034	1.1025		0.2898	0.8051
		(0.1078)	(0.1314)						
OECS									
Dominica	3	-0.808	-	0.00	0.96	1.0530		-0.380	0.31

		7	8	0.0320	09	96			7	67
			(0.15 00)	(0.177 9)						
Grenada		1 5	0.060 0	- 0.0865 8	0.00 66	0.91 88	1.0658		- 0.718 5	0.63 85
			(0.09 79)	(0.294 6)						
St. Kitts		2 7	0.009 8	0.9507	0.79 63	0.10 76	1.0654		0.753 0	1.14 85
			(0.09 05)	0.0962						
St. Lucia		3 0	- 0.321 4	0.4222	0.14 35	0.62 12	1.1145		0.023 6	0.82 08
			(0.16 97)	(0.194 9)						
St. Vincent		2 5	- 0.513 5	0.3237	0.06 97	0.73 59	1.2256		- 0.180 4	0.82 77
			(0.21 52)	(0.246 5)						
Other Caribbean										
Dominican Rep.		8 7	- 0.321 8	0.2934	0.08 77	0.70 38	0.9908		0.092 2	0.49 46
			(0.08 60)	(0.102 6)						
Haiti		6 2	- 0.053	0.5860	0.22 59	0.52 47	1.2327		0.311 5	0.86 04

		0							
Mexico	9	(0.012	(0.1340	0.86	0.06	1.0028		0.858	1.00
	8	58)	0)	64	92			6	83
CACM		(0.01	(0.037						
		58)	4)						
Costa Rica	8	0.008	0.7740	0.55	0.25	1.0406		0.619	0.92
*Standard errors in parentheses	9	0		32	62			6	83
**L95% and U95% denote the lower and upper 95% confidence bounds for the estimated ß		(0.05	(0.078						
		31)	8)						
El Salvador	6	0.029	0.4728	0.14	0.61	1.2304		0.190	0.75
	4	6		77	57			1	56
		(0.11	(0.144						
		44)	3)						
Guatemala	7	0.060	0.6706	0.30	0.44	1.2057		0.442	0.89
	6	0		94	38			3	89
		(0.09	(0.116						
		79)	5)						
Honduras	6	0.053	0.8176	0.56	0.24	1.0842		0.645	0.98
	8	0		87	59			8	94
		(0.07	(0.087						
		59)	6)						
Nicaragua	5	-	0.3531	0.05	0.75	1.4465		-	0.74
	0	0.134		96	59			0.043	99
		0						7	
		(0.35	(0.202						
		31)	5)						
Panama	6	-	0.4062	0.15	0.61	1.0472		0.157	0.65
	0	0.171		04	21			8	46
		0							
		(0.10	(0.126						
		76)	7)						

Table 1. Regression Estimates for Selected Latin American and Caribbean Countries

Table 2. Summary Measures of Latin American and Caribbean Trade Structures

	1989-91			1998-00		
Country	Number of Specialized Industries	Specialized Share	Share Top-10	Number of Specialized Industries	Specialized Share	Share Top-10
MDCs						
Barbados	6	92.35	99.14	8	97.81	98.39
Belize	4	97.32	99.76	6	98.70	99.82
Guyana	4	63.41	95.64	9	96.29	99.30
Jamaica	11	91.42	89.92	12	97.30	96.36
Trinidad	10	94.55	94.55	13	95.57	93.72
OECS						
Dominica	2	74.22	91.39	3	35.77	99.90
Grenada	2	72.50	93.53	2	96.68	100.00
St. Kitts	1	90.76	100.00	2	97.44	99.96
St. Lucia	3	93.25	99.40	5	97.21	99.58
St. Vincent	2	72.18	100.00	1	79.87	99.91
Other Caribbean						
Dominican Rep.	17	83.71	74.69	20	67.26	53.11
Haiti	15	93.02	45.40	21	86.09	58.85
CACM						
Costa Rica	21	84.00	65.10	26	95.86	55.24
El Salvador	15	96.16	58.88	22	85.16	68.26
Guatemala	12	94.48	92.14	24	91.92	78.76
Honduras	12	95.62	94.20	17	83.23	75.20
Nicaragua	4	57.99	99.75	15	97.72	91.13
Panama	10	90.69	90.69	17	95.86	95.86
Mexico	38	80.87	55.23	29	80.69	41.78

Table A.1 HTS-2 Commodity Descriptions

HTS Number	Commodity Description
01	**Live Animals**
02	**Meat And Edible Meat Offal**
03	**Fish And Crustaceans, Molluscs And Other Aquatic Invertebrates**
04	**Dairy Produce; Birds' Eggs; Natural Honey; Edible Products Of Animal Origin, Nesoi**
05	**Products Of Animal Origin, Nesoi**
06	**Live Trees And Other Plants; Bulbs, Roots And The Like; Cut Flowers And Ornamental Foliage**
07	**Edible Vegetables And Certain Roots And Tubers**
08	**Edible Fruit And Nuts; Peel Of Citrus Fruit Or Melons**
09	**Coffee, Tea, Mate And Spices**
10	**Cereals**
11	**Milling Industry Products; Malt; Starches; Inulin; Wheat Gluten**
12	**Oil Seeds And Oleaginous Fruits; Miscellaneous Grains, Seeds And Fruits; Industrial Or Medicinal Plants; Straw And Fodder**
13	**Lac; Gums; Resins And Other Vegetable Saps And Extracts**
14	**Vegetable Plaiting Materials And Vegetable Products, Nesoi**
15	**Animal Or Vegetable Fats And Oils And Their Cleavage Products; Prepared Edible Fats; Animal Or Vegetable Waxes**
16	**Edible Preparations Of Meat, Fish, Crustaceans, Molluscs Or Other Aquatic Invertebrates**
17	**Sugars And Sugar Confectionery**
18	**Cocoa And Cocoa Preparations**

19	**Preparations Of Cereals, Flour, Starch Or Milk; Bakers' Wares**
20	**Preparations Of Vegetables, Fruit, Nuts, Or Other Parts Of Plants**
21	**Miscellaneous Edible Preparations**
22	**Beverages, Spirits And Vinegar**
23	**Residues And Waste From The Food Industries; Prepared Animal Feed**
24	**Tobacco And Manufactured Tobacco Substitutes**
25	**Salt; Sulfur; Earths And Stone; Plastering Materials, Lime And Cement**
26	**Ores, Slag And Ash**
27	**Mineral Fuels, Mineral Oils And Products Of Their Distillation; Bituminous Substances; Mineral Waxes**
28	**Inorganic Chemicals; Organic Or Inorganic Compounds Of Precious Metals, Of Rare-Earth Metals, Of Radioactive Elements Or Of Isotopes**
29	**Organic Chemicals**
30	**Pharmaceutical Products**
31	**Fertilizers**
32	**Tanning Or Dyeing Extracts; Tannins And Derivatives; Dyes, Pigments And Other Coloring Matter; Paints And Varnishes; Putty And Other Mastics; Inks**
33	**Essential Oils And Resinoids; Perfumery, Cosmetic Or Toilet Preparations**
34	**Soap Etc.; Lubricating Products; Waxes, Polishing Or Scouring Products; Candles Etc., Modeling Pastes; Dental Waxes And Dental Plaster Preparations**
35	**Albuminoidal Substances; Modified Starches; Glues; Enzymes**
36	**Explosives; Pyrotechnic Products; Matches; Pyrophoric Alloys; Certain Combustible Preparations**
37	**Photographic Or Cinematographic Goods**
38	**Miscellaneous Chemical Products**

Table A.1 HTS-2 Commodity Descriptions (continued)

HTS Number	Commodity Description
39	**Plastics And Articles Thereof**
40	**Rubber And Articles Thereof**
41	**Raw Hides And Skins (Other Than Furskins) And Leather**
42	**Articles Of Leather; Saddlery And Harness; Travel Goods, Handbags And Similar Containers; Articles Of Gut (Other Than Silkworm Gut)**
43	**Furskins And Artificial Fur; Manufactures Thereof**
44	**Wood And Articles Of Wood; Wood Charcoal**
45	**Cork And Articles Of Cork**
46	**Manufactures Of Straw, Esparto Or Other Plaiting Materials; Basketware And Wickerwork**
47	**Pulp Of Wood Or Other Fibrous Cellulosic Material; Recovered (Waste And Scrap) Paper And Paperboard**
48	**Paper And Paperboard; Articles Of Paper Pulp, Paper Or Paperboard**
49	**Printed Books, Newspapers, Pictures And Other Printed Products; Manuscripts, Typescripts And Plans**
50	**Silk, Including Yarns And Woven Fabrics Thereof**
51	**Wool And Fine Or Coarse Animal Hair, Including Yarns And Woven Fabrics Thereof; Horsehair Yarn And Woven Fabric**
52	**Cotton, Including Yarns And Woven Fabrics Thereof**
53	**Vegetable Textile Fibers Nesoi; Yarns And Woven Fabrics Of Vegetable Textile Fibers Nesoi And Paper**
54	**Manmade Filaments, Including Yarns And Woven Fabrics Thereof**
55	**Manmade Staple Fibers, Including Yarns And Woven Fabrics Thereof**
56	**Wadding, Felt And Nonwovens; Special Yarns; Twine, Cordage, Ropes And Cables And Articles Thereof**
57	**Carpets And Other Textile Floor Coverings**
58	**Special Woven Fabrics; Tufted Textile Fabrics; Lace; Tapestries; Trimmings; Embroidery**
59	**Impregnated, Coated, Covered Or Laminated Textile Fabrics; Textile Articles Suitable For Industrial Use**
60	**Knitted Or Crocheted Fabrics**
61	**Articles Of Apparel And Clothing Accessories, Knitted Or Crocheted**
62	**Articles Of Apparel And Clothing Accessories, Not Knitted Or Crocheted**
63	**Made-Up Textile Articles Nesoi; Needlecraft Sets; Worn Clothing And Worn Textile Articles; Rags**
64	**Footwear, Gaiters And The Like; Parts Of Such Articles**
65	**Headgear And Parts Thereof**
66	**Umbrellas, Sun Umbrellas, Walking-Sticks, Seat-Sticks, Whips, Riding-Crops And Parts Thereof**
67	**Prepared Feathers And Down And Articles Thereof; Artificial Flowers; Articles Of Human Hair**
68	**Articles Of Stone, Plaster, Cement, Asbestos, Mica Or Similar Materials**
69	**Ceramic Products**
70	**Glass And Glassware**
71	**Natural Or Cultured Pearls, Precious Or Semiprecious Stones, Precious Metals; Precious Metal Clad Metals, Articles Thereof; Imitation Jewelry; Coin**
72	**Iron And Steel**
73	**Articles Of Iron Or Steel**
74	**Copper And Articles Thereof**
75	**Nickel And Articles Thereof**
76	**Aluminum And Articles Thereof**
78	**Lead And Articles Thereof**
79	**Zinc And Articles Thereof**

Table A.1 HTS-2 Commodity Descriptions (continued)

HTS Number	Commodity Description
80	**Tin And Articles Thereof**
81	**Base Metals Nesoi; Cermets; Articles Thereof**
82	**Tools, Implements, Cutlery, Spoons And Forks, Of Base Metal; Parts Thereof Of Base Metal**
83	**Miscellaneous Articles Of Base Metal**
84	**Nuclear Reactors, Boilers, Machinery And Mechanical Appliances; Parts Thereof**
85	**Electrical Machinery And Equipment And Parts Thereof; Sound Recorders And Reproducers, Television Recorders And Reproducers, Parts And Accessories**
86	**Railway Or Tramway Locomotives, Rolling Stock, Track Fixtures And Fittings, And Parts Thereof; Mechanical Etc. Traffic Signal Equipment Of All Kinds**
87	**Vehicles, Other Than Railway Or Tramway Rolling Stock, And Parts And Accessories Thereof**
88	**Aircraft, Spacecraft, And Parts Thereof**
89	**Ships, Boats And Floating Structures**
90	**Optical, Photographic, Cinematographic, Measuring, Checking, Precision, Medical Or Surgical Instruments And Apparatus; Parts And Accessories Thereof**
91	**Clocks And Watches And Parts Thereof**
92	**Musical Instruments; Parts And Accessories Thereof**
93	**Arms And Ammunition; Parts And Accessories Thereof**
94	**Furniture; Bedding, Cushions Etc.; Lamps And Lighting Fittings Nesoi; Illuminated Signs, Nameplates And The Like; Prefabricated Buildings**
95	**Toys, Games And Sports Equipment; Parts And Accessories Thereof**
96	**Miscellaneous Manufactured Articles**
97	**Works Of Art, Collectors' Pieces And Antiques**
98	**Special Classification Provisions, Nesoi**
99	**Special Import Reporting Provisions, Nesoi**

[i] An extensive literature search uncovered only one article (Lewis and Webster, 2001) that examined export structures in the Caribbean.

[ii] Dalum and Villumsen (1996) note that there are other emerging models seeking to explain economic growth that have been termed evolutionary models. Such models are in large part based on case studies of innovation. Freeman provides an extensive review of evolutionary models.

[iii] In the ensuing discussion, the terms product and industry are used interchangeably and refer to each 2-digit grouping.

[iv] Estimates using the complete data set with 98 observations for each country yielded similar empirical results.

[v] For Nicaragua and Panama, the initial period was defined by the average RSCA over the 1990-1991 period.