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AN EVALUATION OF THE IMPACT OF FREE TRADE AGREEMENTS ON THE COMPETITIVENESS OF THE CARICOM REGION

Nkosi Felix, Govind Seepersad, Randel Esnard, and Ranjit H. Singh, The University of the West Indies

ABSTRACT: Following the creation of the World Trade Organization agreement in 1994, CARICOM entered into a number of other Trade Agreements in order to increase the access of CARICOM's member states into foreign markets. These agreements encouraged the sharing of knowledge, removal of tariffs and non tariff barriers towards the improvement of each partner's trade position. This study examined whether there were gains or losses in CARICOM's trade competitiveness following the entry into effect of two of these free trade agreements: (i) CARICOM-Costa Rica, (ii) CARICOM-Dominican Republic. The study utilized the Relative Comparative Advantage, Regional Orientation, Trade Intensity and Trade Complementarity to examine the performance of major agricultural production segments, such as Sugar, Edible Oils and Textile products. These models were used to assess the changes of trade between partners relative to the world, and also to determine which trade agreement provided the greatest gains. The study examined the changes in performance over a nine (9)-year period (2001-2010), and trends for each of indices were created. According to the study:
  (i) CARICOM did not benefit from the agreements signed with Dominican Republic and Costa Rica.
  (ii) CARICOM maintained its Comparative Advantage within the exported product groups selected in the study whereas no bias in trade was observed to Dominican Republic and Costa Rica markets.
  (iii) Trade Intensity from CARICOM to Costa Rica was shown to be highest in the group of HS 0303 Crustaceans, while it decreased in the other selected groups.
  (iv) Trade potential remained high throughout the period 2001/2010, thus showing that CARICOM's exports in the selected groups did not capture any significant market shares in either the Dominican Republic or Costa Rica.

Keywords: Revealed Comparative Advantage, Free Trade Agreement, Trade Negotiation, Export Specialization, Trade Intensity

INTRODUCTION

A Free Trade Agreement is a legally binding arrangement signed between two or more countries to establish a free trade area where commerce in goods and services can be conducted across their common borders, without tariffs or hindrances but capital or labor may not move freely (Business dictionary 2012). The agreements between Costa Rica (CR) and CARICOM and the Dominican Republic (DR) and CARICOM focused on areas such as agricultural commodities, processed agricultural products, and textiles. Given the structure of FTA's, certain benefits, namely an increase in trade between partners, was expected.

It has been more than a decade since the signing of the CARICOM-Dominican Republic agreement and eight years since CARICOM entered into a trade agreement with Costa Rica. This study seeks to access the benefits of the CR and DR agreements.

BACKGROUND

The exports of agricultural products from CARICOM to the world increased from US$600 million in 1985 to US$1.3 billion by 2009 (Figure 1). Alternatively, agricultural imports in 1985 were valu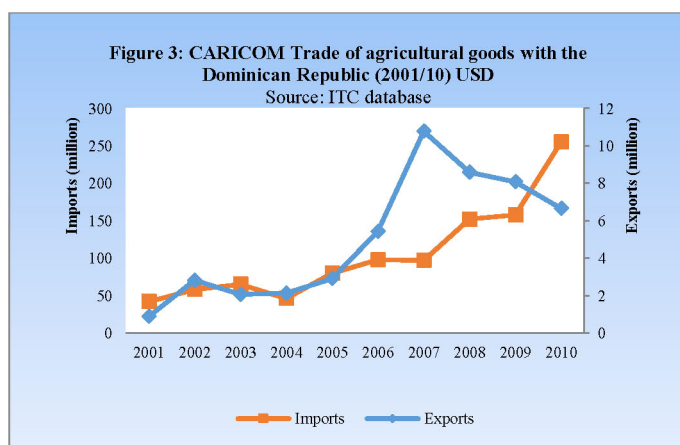ed at US$1.1 billion (bn) which remained fairly constant until 1994, after which time it experienced a rapid rise to US$1.7 bn (Figure 2). In addition, another substantial increase was noted from 2004 to the end of the period of approximately US$2 bn, ending at US$3.7 bn in 2009. This amount revealed increasing import dependence which was directly related to the WTO agreement of 1994. The CARICOM-Dominican Republic Agreement provisionally entered into effect in December 2001. The Agreement exists between CARICOM and the Dominican Republic and is based on reciprocity and asymmetric trade with the Most Developed Countries (MDCs) and Less Developed Countries (LDCs) of CARICOM, respectively. The MDCs of the region engaged in reciprocal treatment immediately with the DR, whereas the LDCs operated under non-reciprocal trade until 2005.

Figure 1: CARICOM exports of agricultural products to the world (1985-2009)
Source: ITC database

Figure 2: CARICOM imports of agricultural products from the world (1985-2009)
Source: ITC database
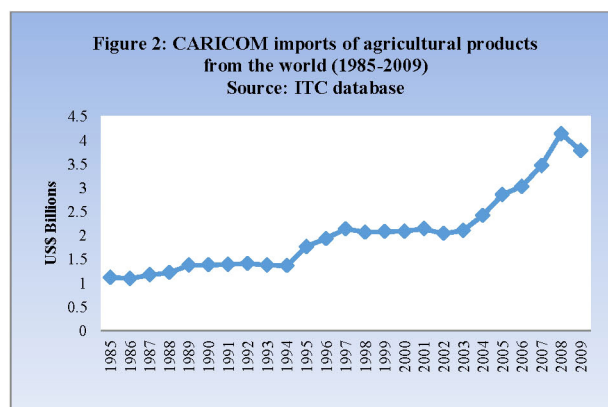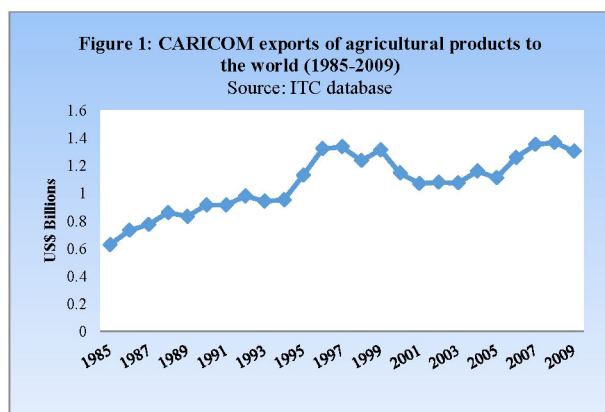
The fundamental objective of the CARICOM-DR FTA Agreement was to strengthen the commercial and economic relations of CARICOM and the Dominican Republic covering several topics such as the classification of goods for Market Access, Rules of Origin (RoO) and Sanitary and Phytosanitary (SPS) measures. This agreement resulted in trade data showing an increase in imports from DR throughout the period, but exports to DR from CARICOM experiencing a reduction from 2007 to 2010 (USD 4 million) after displaying a similar trend (Figure 3).

Figure 3: CARICOM Trade of agricultural goods with the Dominican Republic (2001/10) USD
Source: ITC database

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The CARICOM-Costa Rica agreement was initiated in 2003 seeking to regulate bilateral trade between the Caribbean Community and Costa Rica, providing liberalized trade and also preferential market access for a wide range of products. It also aimed to create opportunities to build new markets for CARICOM products, promote investment, create jobs, and bring about opportunities for growth and development to the people of the Region.

Under the agreement, most developed countries (MDCs) of CARICOM - Barbados, Guyana, Jamaica, Suriname and Trinidad and Tobago will provide duty-free access to most products from Costa Rica. CARICOM less developed countries (LDCs) - OECS (Organization of Eastern Caribbean States) and Belize, while enjoying duty-free access to Costa Rican markets were not required to grant similar access to Costa Rican products. Once again, Rules of Origin, SPS and Market access classification were covered, but market entry was also restricted by months of the year for specified agricultural commodities. This restriction was done to prevent negative impact on selected segments of the agricultural production base.

Figure 4: CARICOM Trade of agricultural goods with the Costa Rica (2001/10) USD
Source: ITC database

Imports from CR did exceed CARICOM exports but both showed increasing trends. There was a significant difference in trade volume and also trade revenue. This finding was evident from CR exports moving from approximately USD 5 mn to USD 50 mn (2001/10) whereas CARICOM export was at its maximum in 2008 at USD 6 mn.
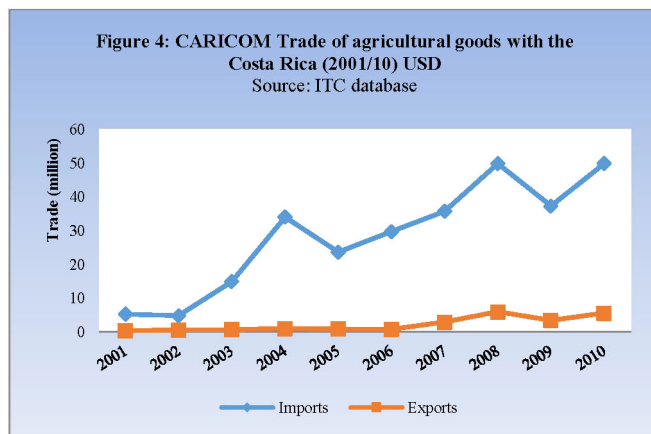
METHODOLOGY

Trade data was obtained from the International Trade Commission (ITC) database for the period 2001-2010 for major products traded. By using four trade indices, the data was analyzed to access the impact of the agreements with CARICOM and its trade partners: DR and CR.

Selection of focus groups
The harmonization system (HS) groups were disaggregated to the 4-digit level, and the main products exported over the 2001-2010 period between the Dominican Republic and Costa Rica were identified. This level of disaggregation would reduce the possibility of smoothing and therefore allow for an increase in the accuracy of the results. This accuracy was achieved by ranking the value of goods exported since this represented the economic return to trade and thus possibly the benefit of FTAs. Following this selection method, four trade indices used for the analysis are as follows:

Revealed Comparative Advantage (RCA)
The *Revealed Comparative Advantage (RCA)* provides the analysis of one country's exports share in relation to that of the world, and therefore can be used to identify positive or negative changes in export profile. Countries with high RCA are considered to be competitive and export to countries

with lower RCAs. Further, countries which experience similar RCA are unlikely to have high bilateral trade intensities unless intra industry trade is involved (Chandran, 2012).

The RCA would provide an indication of how CARICOM's competitiveness in the respective markets changed over time as the result of the FTA. Did the FTA improve comparative advantage given the measures which were agreed on in the aim to improve trade? This index would also allow policy makers to identify which agreement wouldyield the highest benefit, and which would guide future trade negotiations.

It is denoted by the formula:

$RCA_{ij} = (x_{ij}/X_{it})/(x_{wj}/X_w)$
Where: x_{ij} = values of country i's exports of product j; x_{wj} = world exports of product j ; X_{it} = the country's total exports; X_{wt} = world total exports

A value greater than unity will suggest a Revealed Comparative Advantage whereas a value less than unity shows a Revealed Comparative Disadvantage.

Regional Orientation Index (ROI)
To identify the concentration of the CARICOM's exports to the markets of DR and CR the ***Regional Orientation Index (ROI)*** was used. It is used to identify whether any bias exists between countries which would indicate greater benefits if those countries were to enter into a FTA. This index tells us whether a country's exports of a product are more oriented toward a particular region than to other destinations (Plummer et al., 2012). Denoted by the formula below, it represents the ration of one country's exports to a country of interest to that of that country's exports to the world.

If regional bias increased, this would support the creation of future FTA since imports would be redirected to economies where CARICOM producers would benefit given the cost of entry into those markets. This index would also allow the comparison with the RCA, in such a way to identify whether exports to a region did indicate some bias. This would be concluded if RCA increases for a commodity/group and its ROI increases within trade with an FTA partner, trade diversion would be the result. This would be due to the increase in trade competitiveness with an increase presence in one particular market, illustrating gains in trade due to FTA measures.

The formula for the regional orientation index is:

$ROI_{ij} = (x_{cgr}/X_{cr})/(x_{cg-r}/X_{c-r})$

Where: x_{cgr}= exports of good g by country c to region r; X_{cr}= total exports of country c to region r; x_{cg-r}= exports of good g by country c to countries outside region; X_{c-r}= total exports of good g to countries outside region r

If the index has a value greater than 1, this implies that the country has a regional bias in exports of the product. Conversely, if the index is less than 1, then the country has no regional bias.

Trade Intensity Index (TI)
The *Trade Intensity Index (TI)* was used to measure the level of trade between CARICOM and the respective FTA partners. It is used to determine whether the value of trade between two countries is larger or smaller than expected based on their importance in world trade. It simply measures the share of trade between a region and a trade partner as a ratio of the region's total trade share in world trade.

The installments of FTAs are primarily designed to increase trade through the reduction of trade restricting measures with the partner markets. In most cases one partner tends to benefit more and therefore this indicator would show whether exports increased as opposed to non FTA partners, but would also allow further research to be conducted into the reasons for any reduction in trade. Identified areas of the export structure would then be addressed in the aim to increase TI, given the presence of such FTAs.

The index is found using the following formula:

$$T_{ij} = (x_{ij}/X_{it})/(x_{wj}/X_{wt})$$

Where: x_{ij} = the values of country i's exports; x_{wj} = world exports to country j; X_{it} = a country i's total exports; X_{wt} = total world exports.

A value greater than unity indicates larger trade flows than might be expected, which is trade intensity. It has also been found that higher values are more favorable to an FTA.

Trade Complementarity Index
Used to identify what occurred with the potential for trade, i.e. if potential increased or decreased during the study period. The *Trade Complementarity Index* is designed to measure compatibility of trade profiles. It summarizes certain aspects of the sector's trade pattern. This index measures the degree to which the export pattern of one country matches the import pattern of a region.

This index is initially used in identifying potential FTA partners but would also assist in assessing whether the formation of FTAs increases the potential for trade or vice versa. In addition, using this index compared with the TI would provide an indication whether the FTA created would provide net trade. If there is low trade intensity but high complementarity net trade would be possible since there is potential to trade. This analysis would allow the investigation of such trade arrangements to address the reasons why CARICOM is not maximizing the utility of the FTA.

The formula for the complementarity index is:

$$C_{cgr} = 1 - ((|(M_{rg}/M_r)-(X_{cg}/X_c)|)/2) \times 100$$

Where: M_{rg} = imports of good g by region r; M_r = total imports of region r; X_{cg} = exports of good g by country c; X_c = total exports by country c

The index takes a value between 0 and 100, with 0 indicating no overlap and 100 indicating a perfect match in the import–export pattern, i.e. potential for trade.
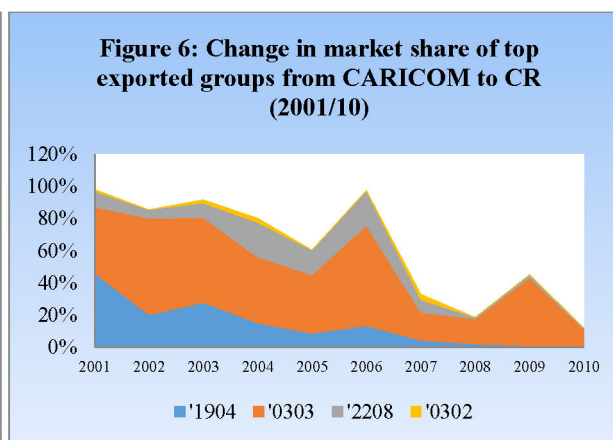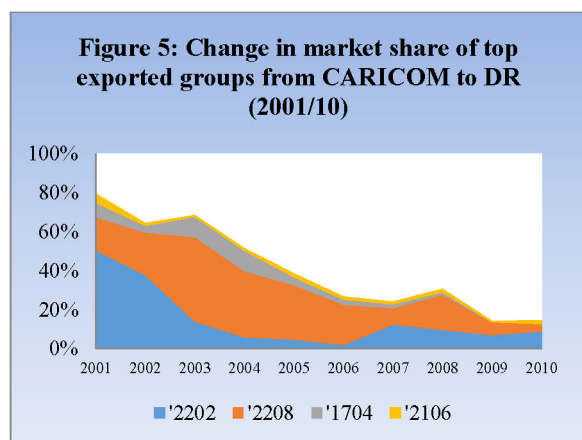
RESULTS AND ANALYSIS

Harmonization System (HS) Groups for analysis

The major agricultural products being traded with the DR and CR were used to determine how the CARICOM market benefited from FTA's. The study found that HS 2202 (Non-alcoholic) and HS 2208 (Alcoholic beverages) dominated exports to DR, as shown in their market shares in total agricultural exports (Table 1). In the case of CARICOM exports to Costa Rica, HS 1904 (Cereal preparations) and HS 0303 (Crustaceans) were the main items with approximately 87% of agricultural exports.

Table 1: Export shares of major agricultural products in 2001 from CARICOM to DR & CR

CARICOM exports to the Dominican Republic	2001	CARICOM exports to Costa Rica	2001
HS 2202	50%	HS 1904	46%
HS 2208	17%	HS 0303	41%
HS 1704	7%	HS 2208	10%
HS 2106	5%	HS 0302	1%

For these commodities, the study found major changes in the value of trade between 2001 and 2010. In the case of exports to DR, the market shares of HS 2202 and HS 2208 were reduced to less than 10% of the 2001 levels (Figure 5). A similar trend was observed for exports from CARICOM to Costa Rica.

Figure 5: Change in market share of top exported groups from CARICOM to DR (2001/10)

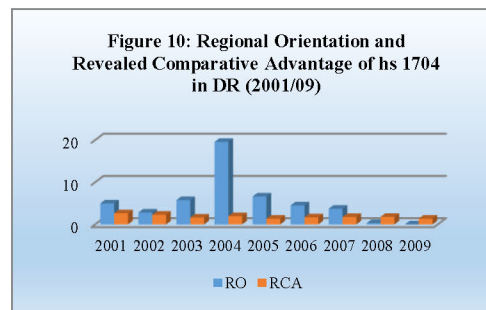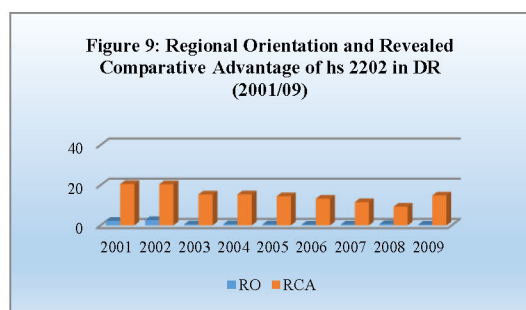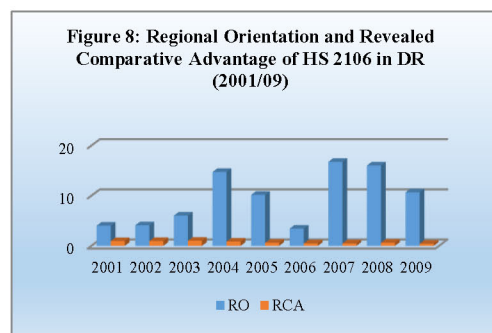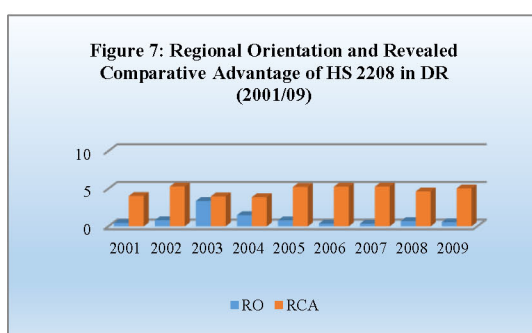Figure 6: Change in market share of top exported groups from CARICOM to CR (2001/10)

In this regard, the RCA, RO, TI and TC were computed in order to identify the gains or losses during the 2001 to 2010 period, given the ongoing existence of the PTAs.

Further examination was done to help explain whether there exist any other driving forces for the low trade volumes at the end of the period and the reduced performance in the markets of DR and CR. In this regard, the study examined the top four commodities exported from CARICOM to DR and CR, through the use of the trade indices: RCA, RO, TI, and TC.

CARICOM- Dominican Republic Trade

i. **Revealed Comparative Advantage (RCA):** CARICOM maintained a comparative advantage among all the selected groups.
- RCAs of HS 2106 (**Food preparations nes**), and HS1704 (**Sugar confection**) remained constant during the period 2001/10 (Figures 8 & 10).
- Fluctuations were shown in HS 2202 (**Non-alcoholic beverages**) and HS 2208 (**Alcoholic beverages**) throughout the years 2001/10 (Figures 7 & 9).

ii. **Regional Orientation Index (ROI):** Regional Orientation decreased among all the selected HS groups, following 2003 indicating a shift in CARICOM exports from DR to other countries.
- Exports of HS 2106 (**Food preparations nes)** were shown to be biased to DR since RCA and RO >1 (Figures 7 - 10).
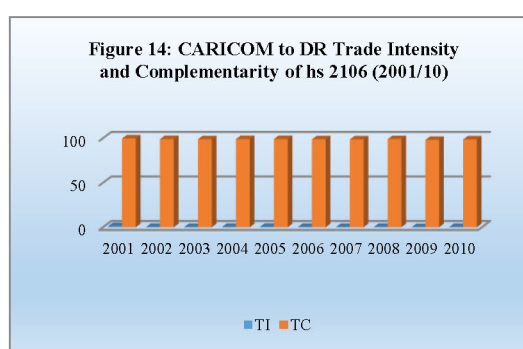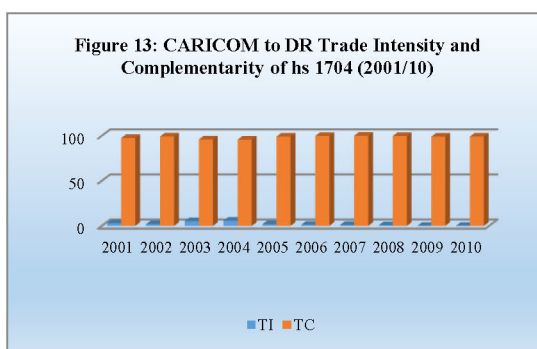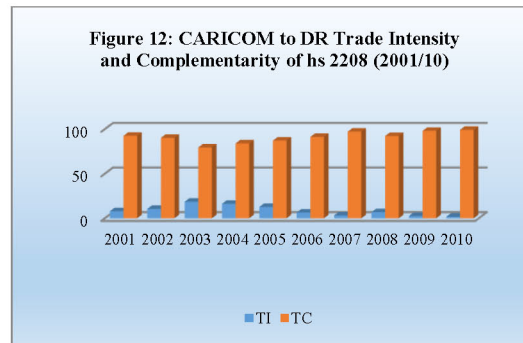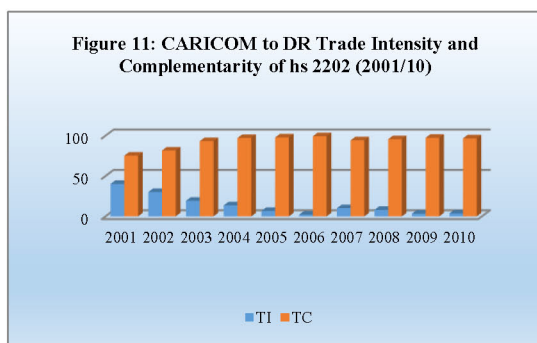
Revealed Comparative Advantage and Regional Orientation

Figure 7: Regional Orientation and Revealed Comparative Advantage of HS 2208 in DR (2001/09)

Figure 8: Regional Orientation and Revealed Comparative Advantage of HS 2106 in DR (2001/09)

Figure 9: Regional Orientation and Revealed Comparative Advantage of hs 2202 in DR (2001/09)

Figure 10: Regional Orientation and Revealed Comparative Advantage of hs 1704 in DR (2001/09)

iii. **Trade Intensity Index**: The Trade Intensity index was low for all commodities and declined as the years progressed, thus indicating reduced performance of CARICOM exporters relative to market developments.
- This finding was most evident in the trade of HS 2202 (**Non-alcoholic beverages**), which experienced a reduction from 40% (2001) to approximately 10% in 2010 (Figure 11).

iv. **Trade Complementarity Index**: The commensurate high Complementarity Index suggests that there is potential for trade creation and high inter-industry trade among all of the selected products.

- Trade potential increased in HS 2202 (**Non-alcoholic beverages**) and HS 2208 (**Alcoholic beverages**) during the period 2001/10 (Figures 11 & 12).
- There were no changes in the potential of trade between CARICOM and DR for the exports of HS 1704 (**Sugar confection**) and HS 2106 (**Food preparations nes**) (Figures 13 & 14).

Trade Intensity and Trade Complementarity Indices

Figure 11: CARICOM to DR Trade Intensity and Complementarity of hs 2202 (2001/10)

Figure 12: CARICOM to DR Trade Intensity and Complementarity of hs 2208 (2001/10)

Figure 13: CARICOM to DR Trade Intensity and Complementarity of hs 1704 (2001/10)

Figure 14: CARICOM to DR Trade Intensity and Complementarity of hs 2106 (2001/10)

Assessing the possible reasons for change in Trade Performance:

In 2004, DR signed the CAFTA agreement which may have led to increased competition due to shifts in trade to the lower cost producers in Central America. The high values of trade in 2001 indicated that CARICOM did not benefit from trade with DR, which was shown by the reduction in trade intensity of all the selected groups. There were clearly no natural blocs created as a result of the FTAs formed.

CARICOM- Costa Rica Trade
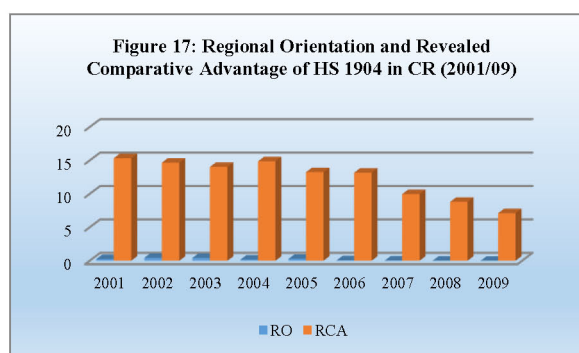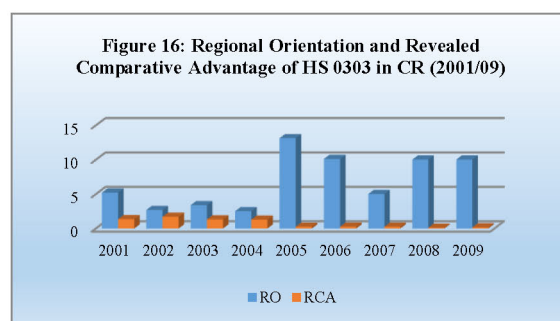
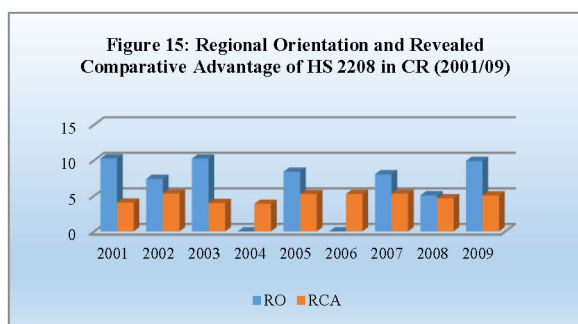i. **Revealed Comparative Advantage (RCA):**
- RCA remained constant for HS 2208 (**Alcoholic beverages**) (Figure 15).
- A reduction in RCA was observed in HS 0303 (**Crustaceans**) following the year 2004 (Figure 16).

- CARICOM lost its advantage in the trade of HS 1904 (**Cereal preparations**) from the year 2003 (Figure 17).

ii. **Regional Orientation Index (ROI):**
   - Regional Orientation in HS 0303 (**Crustaceans**) decreased during the period with a fluctuation from 2004 to 2005 (Figure 16).
   - There was no orientation within the group of HS 1904 (**Cereal preparations**) (Figure 17).
   - Export bias was shown only in HS 2208 (**Alcoholic beverages**) and HS 0303 (**Crustaceans**) which increased following the year 2005 (Figures 15 & 16).

Revealed Comparative Advantage and Regional Orientation

Figure 15: Regional Orientation and Revealed Comparative Advantage of HS 2208 in CR (2001/09)

Figure 16: Regional Orientation and Revealed Comparative Advantage of HS 0303 in CR (2001/09)

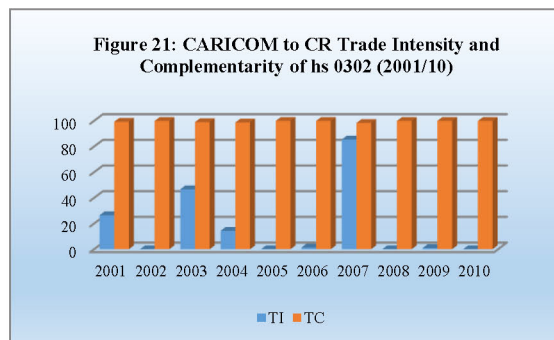Figure 17: Regional Orientation and Revealed Comparative Advantage of HS 1904 in CR (2001/09)
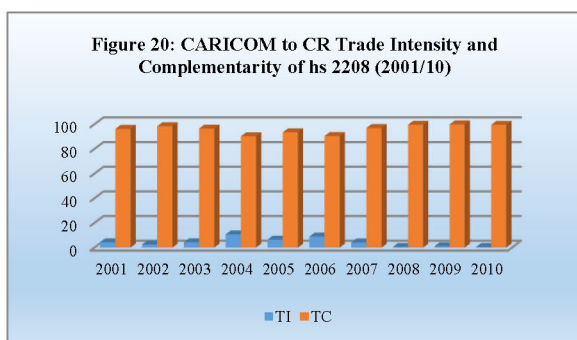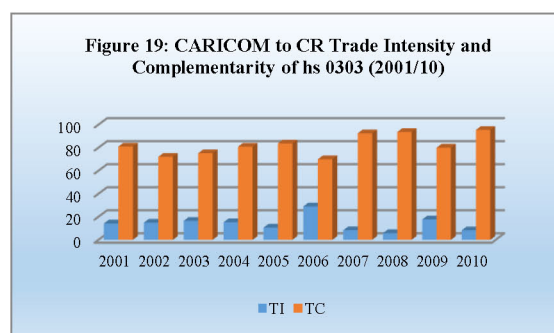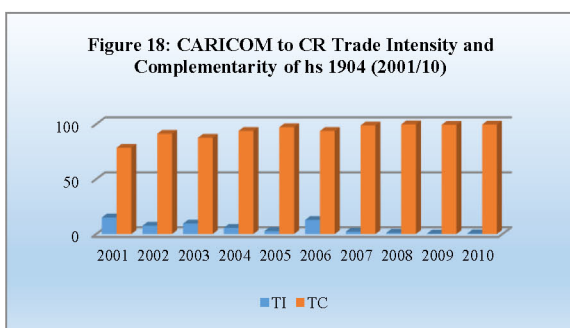
iii. **Trade Intensity Index:**
   - There was an increase in the intensity of HS 2208 (**Alcoholic beverages**), which decreased from 2005 onwards (Figure 20).
   - Fluctuations were experienced in the groups of HS 1904, and HS 0303 (**Crustaceans**) (Figures 18 &19).
   - HS 0303 (**Crustaceans**) displayed the highest intensity during the period 2001/10 (Figure 19).
   - Trade Intensity increased during the years of 2001, 2003 and 2007 for the group HS 0302 (**Fish, fresh or chilled**) (Figure 21).

iv. **Trade Complementarity Index**: high levels were shown within all the selected groups, which indicated potential for trade.

- Complementarity increased during the years 2001/10 in the group of HS 1904 (**Cereal preparations**) (Figure 18).
- There were reductions in HS 0303 (**Crustaceans**) complementarity, indicating increased exports from CARICOM to CR during those years of 2001/06 and 2009 (Figure 19).
- Complementarity fluctuated in the group of HS 2208 (**Alcoholic beverages**), whereas remained constant in HS 0302 (**Fish, fresh or chilled**) from 2001 to 2010 (Figures 20 & 21).

CARICOM and Costa Rica: Trade Intensity and Trade Complementarity Indices

Figure 18: CARICOM to CR Trade Intensity and Complementarity of hs 1904 (2001/10)

Figure 19: CARICOM to CR Trade Intensity and Complementarity of hs 0303 (2001/10)

Figure 20: CARICOM to CR Trade Intensity and Complementarity of hs 2208 (2001/10)

Figure 21: CARICOM to CR Trade Intensity and Complementarity of hs 0302 (2001/10)

Assessing the possible reasons for change in Trade Performance:
In 2004, CR also signed the CAFTA agreement, which may have directly increased competition and shifted trade to lower cost producers in Central America. The results indicated that CARICOM did not benefit from the FTA since intensity decreased while complementarity remained high. This was supported by the reduction in RCA in addition to lack of regional bias within the period.

CONCLUSION

The results of this study indicate that CARICOM producers were not in a position to benefit from FTAs created. These FTAs would only benefit the consumers by providing a wider range of products which would increase competition in the domestic markets. This would result in an increased dependence on foreign exchange for trade without increasing the regions' foreign exchange revenue. This type of strategy has the potential to erode the agricultural industries within CARICOM, especially in the case of the Lesser Developed Countries.

In order for FTAs to provide benefit to CARICOM producers, there must be a drive to increase their competitiveness which will decrease the sensitive nature of FTAs. Sensitivity relates to the ease of entry or erosion of market share gained by CARICOM as the result of FTAs formed. Policy makers would have to ensure the protection of sensitive industries but at the same time provide initiative to increase levels of resilience from external producers. The use of the indices would provide the identification of potential FTA partners but must also be used to monitor progress in the aim of addressing issues as they appear. This type of analysis would allow for increased attention to the terms and conditions of FTAs to clearly provide strategies for CARICOM producers to access these markets competitively and maintain market position.

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