EFFECTIVENESS OF CENTRAL AMERICAN FREE TRADE AGREEMENT ON AGRICULTURAL EXPORTS

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Abstract

The Central American Free Trade Agreement (CAFTA) was signed on August 5, 2004 after nine rounds of negotiations that were initiated in 2003. Seven countries are members of the treaty, including Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, The United States and The Dominican Republic, who subsequently joined the treaty, leading to CAFTA-DR as it is known today. Around 90% of agricultural products received preferential access to the US leading to the expectation of positive changes in regional agricultural exports to the US, particularly in non-traditional products which were granted a substantial reduction in their applied tariffs.

To measure the effect of CAFTA in Central American agricultural exports three indicators were used: the first one is the growth of non-traditional exports, calculated using an ex-post forecasting model of export growth. The second one is a macro indicator of structural performance trough assessment of market shares in the top 10 non-traditional agricultural products exported to US. The third one is a sectorial statistical indicator, the Herfindahl-Hirschmann Index (HHI), which measures the degree of portfolio diversification of exports.

Central American agricultural exports increased for all countries, both traditional and non-traditional, but in all cases traditional exports grew faster than non-traditional ones in monetary terms, a clear indication that the reduction of import tariffs by the US was not sufficient to achieve a large impact on CA economies. Market share changes appeared to be positive only for Guatemala, which shows more than 3% gain in 4 of its top exported products. Costa Rica revealed loss of market share in 7 of its top 10 exports, while the other three countries showed some growth in isolated cases. Guatemala, Honduras and El Salvador diversified their portfolio of non-traditional exports, showing a reduction of 0.3, 3.8 and 1.2% of their HHI index, while Costa Rica and Nicaragua showed an increase in the value of HHI which represents a concentration of efforts in exporting the same kind of products.

Despite important reduction on US tariff applied to Central American agricultural products the CAFTA's performance in countries' exports after the agreement doesn't appear to be very effective, suggesting that other non-tariff competitive factors may be more relevant in promoting export expansion (USAID, 2009).

Methods

To measure the CAFTA's effect in Central American agricultural exports three indicators were used:

- Ex-post forecasting model of export growth; uses monetary and percentage indicators. the calculation of growth is given by: $\textbf{Growth (\$)} = \textbf{actual exports} - \textbf{projected growth}$

  Where projections are the result of simple linear regressions using historical data until the year in which the treaty was ratified. The above equation provides the monetary expression, which is divided by the projections to calculate the percentage expression.

- Macro indicator of structural performance through assessment Market shares of the top 10 non-traditional agricultural products exported to the United States. The calculation of market shares is given by: $\textbf{Market Shares}_{xy} = \textbf{Export of country x of product y/Total US imports of product y}$

- Sectorial statistical indicator Herfindahl-Hirschmann Index (HHI), which measures the degree of portfolio diversification of exports of non-traditional products. The HHI equation corresponding to country j is defined as follows: $\textbf{Herfindahl Hirschmann Index j} = \sum_{i}^{n}(\textbf{xij}/\textbf{xj})^2$

  Where: xij is the value of exports of the product "i" from the country j, xj represent the total value of exports from country j (total of non-traditional exports from Central America to US), and "n" represent the agricultural non-traditional categories of exports

Results

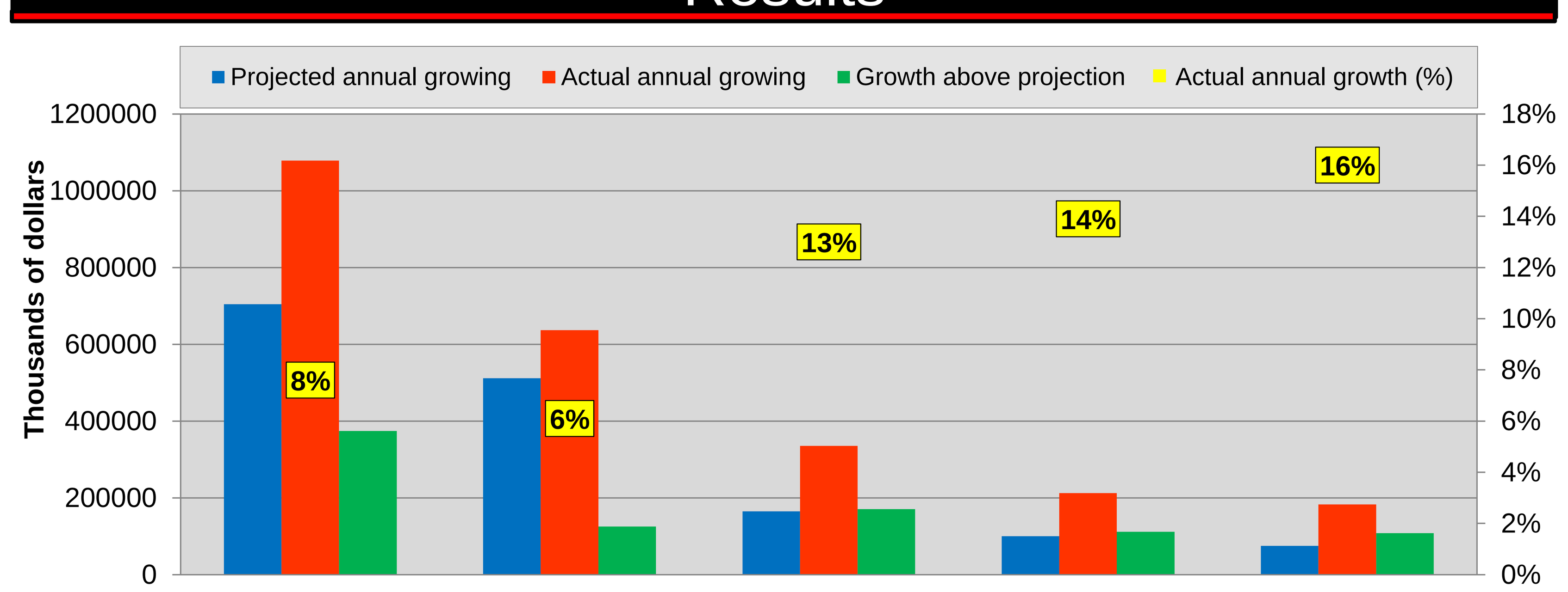

Figure 1. Growing of traditional agricultural exports from CA to US after CAFTA's ratification

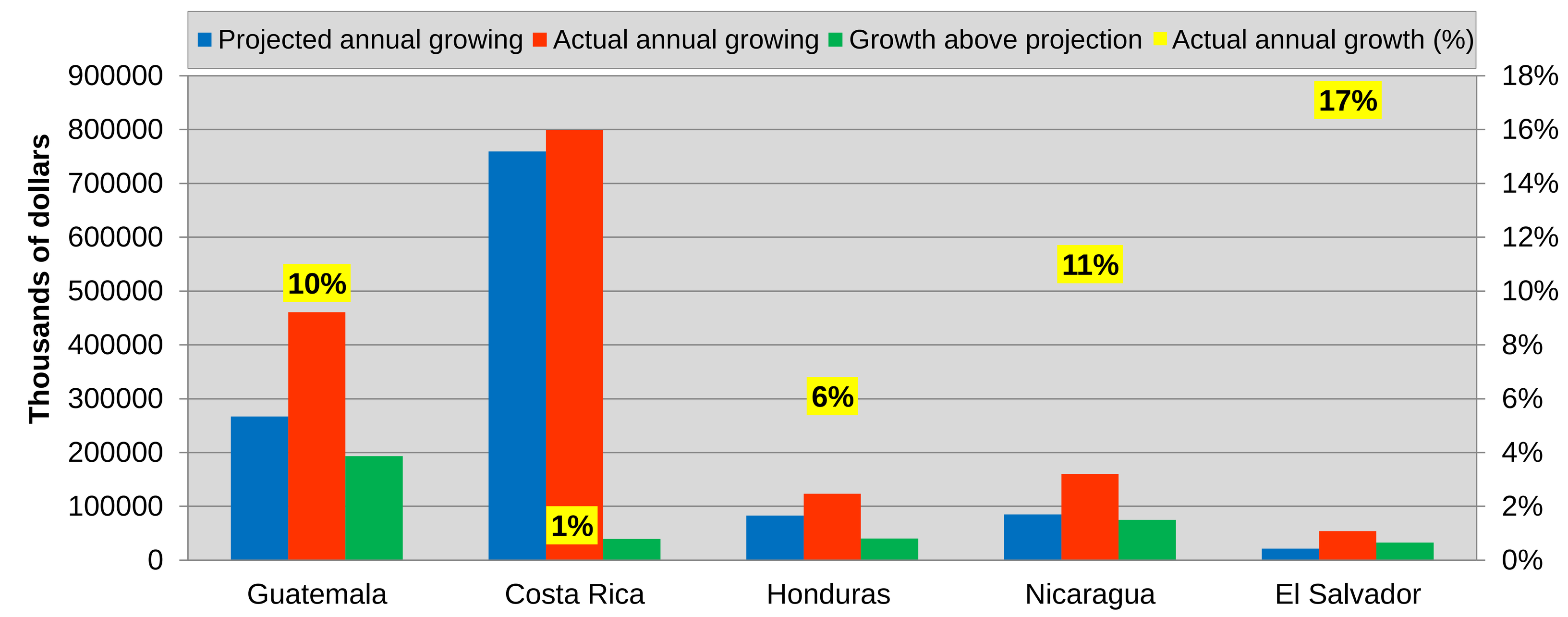

Figure 2. Growing of non-traditional agricultural exports from CA to US after CAFTA's ratification

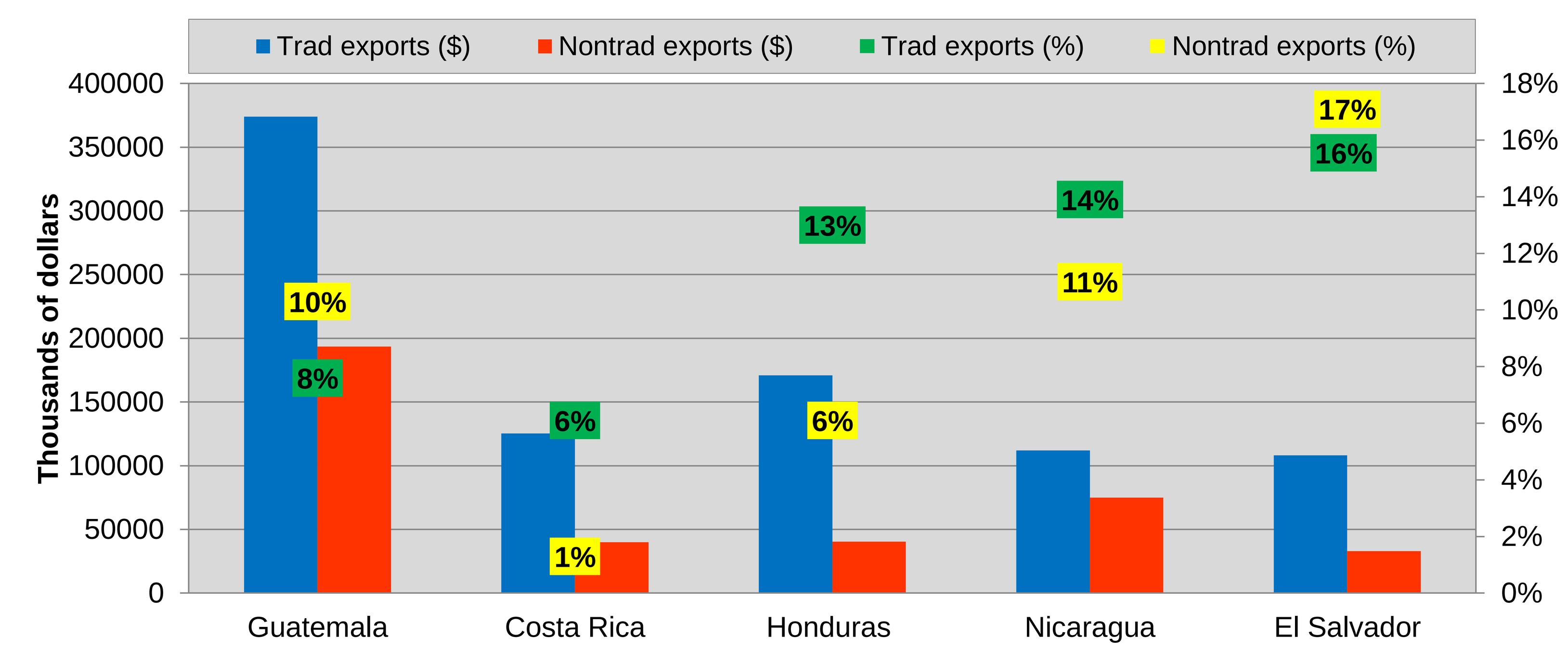

Figure 3. Comparison of growth of traditional and non-traditional agricultural exports after CAFTA

Country	Product	% of Gain	Product	% of Gain
Guatemala	Beans, fresh	21.17%	Tobacco, filler	0.87%
Guatemala	Tech sp rub gr10	14.88%	Tomatoes, fresh	0.47%
Guatemala	Peas, fresh	8.34%	Pineapples, fresh or frozen	0.39%
Guatemala	Beans, frozen	5.77%	Cauliflower and broccoli, frozen	-2.16%
Guatemala	Melons	2.26%	1207400000 - sesame seed	-7.43%
Costa Rica	Melons	7.65%	Pineapples, fresh or frozen	-2.43%
Costa Rica	Other vegetable,prep/pres	0.16%	Pineapple juice	-2.45%
Costa Rica	Other fruits, prep/pres	0.09%	0602100000 - unr cut/slps	-4.54%
Costa Rica	Red meat and products	-0.13%	Orange juice	-5.39%
Costa Rica	Other vegetables	-1.39%	Banana/plantain processed	-10.51%
Honduras	Pineapples, fresh or frozen	5.79%	Other vegetable,prep/pres	0.24%
Honduras	Eggplant, fresh	2.53%	Cucumbers, fresh	0.23%
Honduras	Banana/plantain processed	0.80%	Red meat and products	0.16%
Honduras	Other vegetables	0.74%	Melons	-2.41%
Honduras	Peppers, fresh	0.40%	Okra, fresh	-2.91%
Nicaragua	Okra, fresh	4.29%	Peppers, fresh	0.21%
Nicaragua	Dried beans	2.88%	Oils and waxes-vegetable	0.11%
Nicaragua	Oilseeds and oilnuts	1.29%	Dairy products	0.06%
Nicaragua	Red meat and products	1.11%	Mangoes	-0.38%
Nicaragua	Pepper	0.30%	Other vegetables	-0.82%
El Salvador	Pulses	4.43%	Biscuits and wafers	0.15%
El Salvador	Other beverages	1.38%	Malt beverages	0.09%
El Salvador	Dairy products	0.29%	Peppers, fresh	0.01%
El Salvador	Beverages nonalcoholic	0.18%	Dried beans	-0.83%
El Salvador	Other grains and preps	0.17%	0602100000 - unr cut/slps	-1.73%

Figure 4. Change in market share in top ten non-traditional exports from CA after CAFTA

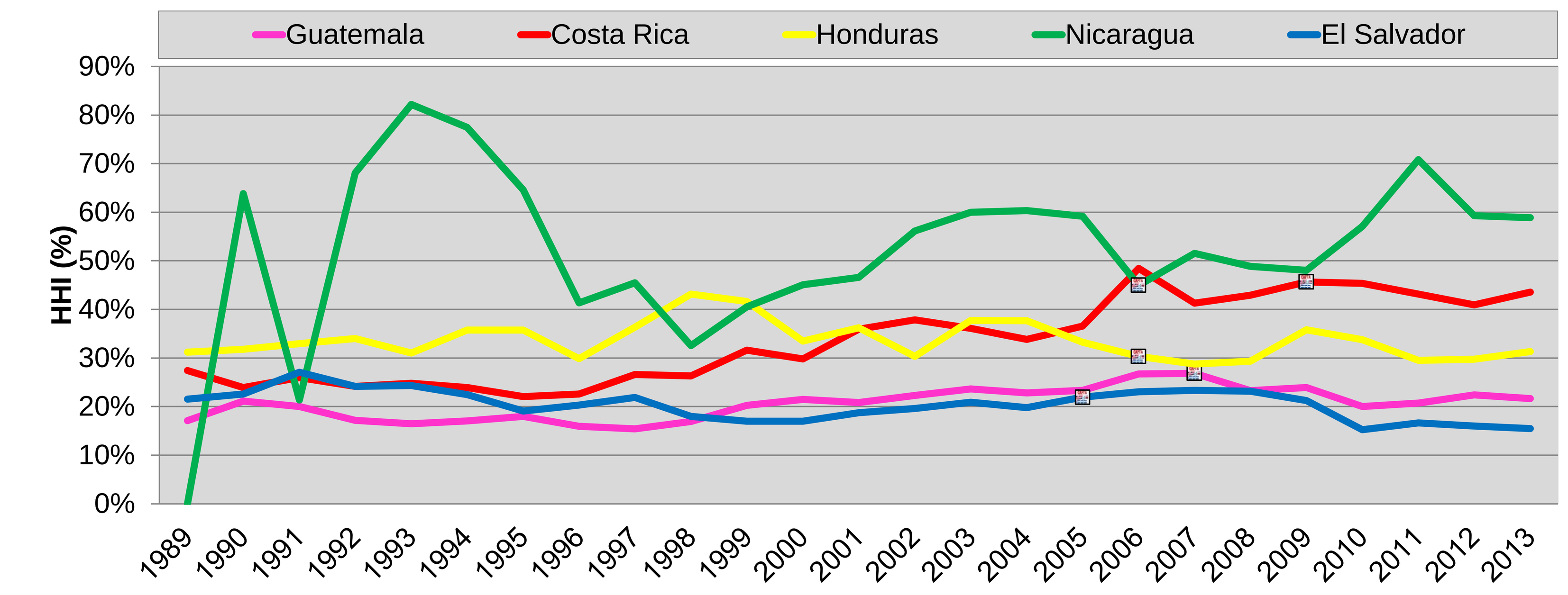

Figure 5. Hirschmann-Herfindahl Index of non-traditional products exported by CA countries

Conclusions

- The potential impact of CAFTA on Central American exports, measured as the increase in exports of non-traditional products, seems positive. The Most notable relative impact it had El Salvador and Nicaragua, which presented 17% and 11% or increase above their expectation. While Costa Rica with only 1% of relative growth, it presented the least impact. However, CAFTA's effect measured in monetary terms is greater for Guatemala, who presented an annual increase of 373,933 thousands of dollars more than expected. Despite El Salvador had shown the highest relative growth, in monetary value of non-traditional exports is the lowest with 32,916 thousands of dollars above its projection, even lower than Costa Rica one who had shown only 1% relative growth.
- All countries show an increase in exports of traditional and non-traditional products to the US, but in relative terms only Guatemala and El Salvador had a faster growth in exports of nontraditional products (in relative terms). In monetary terms all countries achieved larger exports of traditional products than non-traditional one. An indication that the reduction of import tariffs by the United States may not be sufficient to attain a great impact on Central American agriculture sector.
- The impact of CAFTA measured in Market Share gains appear positive only for Guatemala, who showed more than 3 % gain in 4 of the top 10 exported products. Costa Rica showed loss of market share in 7 of the top 10 exports, two of them beyond 5 %. Costa Rica only showed significant growth on its market share of melons (7.65 % growth). The other countries presented loss of market share in only two of the top 10 exported products and the loss is not noticeable with the exception of Guatemala who lost 7.43% on its sesame seeds market shares. Honduras Nicaragua and El Salvador showed growth in their market shares but not very significantly. Isolated cases of market share growth are found in Honduras with 5.79% on its pineapples, Nicaragua with a growth of 4.29 % in fresh okra and El Salvador with a growth of 4.43 % in pulses.
- The most diverse export portfolio with respect to non-traditional products corresponds to El Salvador and Guatemala with Herfindahl Hirschmann Index (HHI) of 19.6% and 22.7% respectively; the lowest values of this indicator. Honduras follows with 31.1%, Costa Rica with 43.3 and finally Nicaragua with 54.9%, which means that the less diverse portfolio of exports corresponds to Nicaragua .HHI was reduced by 3.8%, 1.2% and 0.3% for Honduras, El Salvador and Guatemala respectively, while increased 5.4 and 1.8%, for Nicaragua and Costa Rica.
- Overall CAFTA seems to have had a clear positive impact only for Guatemala, where traditional agricultural exports are still larger than the non-traditional ones. This may suggest that in fact the reduction of agricultural tariff rates not the only factor that affect the region's trade. An analysis of perspectives and realities suggests that other factors of production such as labor, capital, entrepreneurship, and technology might be more important.

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