Caribbean Basin Initiative Beneficiary Countries and the Apparel Sector: Same Preferences, Different Responses

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Abstract

1.

1 Introduction

What is the impact of preferential trading arrangements on the export performance of the recipients, especially developing countries? How do preference recipients respond to changes in the market environment, especially when their original preference margins erode? The effects of preferential arrangements on the recipient countries have been widely discussed and studied in the empirical literature, mostly in the context of reciprocal agreements. The focus has generally been on the total value of trade, even though prices received, composition and quality of the exports are as important, especially for overall development prospects of the preference recipients.

This article analyzes the impact of the unilateral preferences on the performance of apparel exporting countries in Central America and the Caribbean. We mainly focus on the prices received by the exporters as they are better measures of the quality of the products and competitiveness of the exporting firms in global markets. The countries we analyze are beneficiaries of the Caribbean Basin Initiative (CBI) of the United States, which consists

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of a series of programs first initiated in 1983 that grant duty and quota-free market access. Apparel preferences are the most valuable and heavily used preferences due to high trade barriers imposed by the U.S. against the exports from the rest of the world.

Our analysis and the exporters' performance is complicated by the two dramatic changes experienced by the US trade policy, especially with respect to apparel imports, since the implementation of the first CBI program. First was the implementation of NAFTA which led Mexico to emerge as a main competitor to the CBI countries and to become the largest apparel exporter to the US until 2003. Second was the relaxation and eventual removal of the MFA quotas (at the beginning of 2005) that historically restrained the exports of South and East Asian countries. As a consequence, Chinese apparel exports reached almost $17bn in 2005, almost triple the level of second-ranking Mexican exports and 25% of total US imports.

The performance and reaction of the CBI exporters to the preferences and to these developments are crucial for a variety of reasons. Among the main goals of unilateral preference programs are the integration of developing countries into the world trading system and long-term economic growth through international trade. Many unilateral preference programs fail to deliver the promised gains due to a variety of reasons (see Hoekman et.al. [2003] for a review). However, CBI programs provide significant advantages compared to other programs, such as the inclusion of apparel sector, and are considered a success based on the rapid growth of exports from the beneficiary countries. Nevertheless, if the eligible exporters do not capture the full benefits of preferential access and the benefits can not be maintained in the absence of preferential access, then these policies can not be deemed successful. When the barriers faced by excluded countries are lowered, as in the case of implementation of NAFTA or the removal of MFA quotas, the value of the preferences to the beneficiaries erode considerably. The recipient countries should not rely on preferences to deliver long-term rents but use them as a transition stage to an environment where trade flows are determined by comparative advantage, rather than preferential access.

The trade data reveals that the preference recipients performance were rather different. Costa Rican and the Dominican Republic took advantage of the initial preferences to increase their export volume. However, with the implementation of NAFTA and removal of MFA quotas, they moved to higher priced/quality exports and actually had their total exports decline. El Salvador, Guatemala and Honduras did not seem to implement any structural changes in their apparel industry but simply increased their production and exports at the same quality/price level. Nicaragua and Haiti were new entrants to the apparel markets and their exports increased dramatically. However, under competition from Asian countries, they actually moved down the quality ladder to lower priced/quality exports.

The prices received by the CBI exporters naturally depend on their own tariffs and the tariffs paid by excluded countries, as well as many other product and market characteristics. One of our innovations is that we are able to use country, industry and year fixed effects in a

GLS estimation to isolate the effects of other factors, such as exchange rates, transactions costs and other market characteristics. Our main finding is that the CBI exporters capture around 2/3rd of their preference margin and this translates into around 9% increase in the relative prices they obtain. Eligibility for preferences requires compliance with Rules of Origin Requirements which entail significant administrative and production costs[1]. When these are taken into account, the net benefits are likely to be much lower. We also find that the lower import charges (such as freight and insurance) faced by the CBI exporters due to geographic proximity are another source of price advantage. Lower import charges generate around 1.5% relative price increase. Finally, the quotas faced by the Asian countries also led to price advantages for the CBI countries in the order of around 1.7% which disappeared on January 1, 2005.

Preferential market access, geographic proximity and restrictions on competitors lead to significant price advantages to the firms in CBI countries. However, we still observe significant variation in terms of relative prices across countries and over time (Ozden & Sharma, 2006). In order to identify the determinants, we include country-year dummies in the GSL estimation and then regress the value of these coefficients of several country specific policy relevant variables. We find that policies that create stable macroeconomic environment, better educated labor force and more energy efficient economy positively influence the export prices.

Next section presents a brief history of CBI followed by some stylized facts that motivate the paper. Section 3 is the literature survey. In Section 4, we present an analytical model that forms the basis of the estimation and we explain the data and the methodology. In section 5, the main results are presented. Conclusions follow.

2 History of CBI

The Caribbean Basin Initiative (CBI) is a general term used to refer to the Caribbean Basin Economic Recovery Act of 1983 (CBERA), the Caribbean Basin Economic Recovery Expansion Act of 1990 (CBERA Expansion Act), and the Caribbean Basin Trade Partnership Act of 2000 (CBTPA), collectively. In official documents, the aim of the Initiative is stated as "... to assist in the achievement of a stable political and economic climate by stimulating the development of the export potential of the region"[2]. Quota and tariff free market access granted unilaterally by the U.S. to the exports from the eligible countries is the main feature of the CBI.

CBERA was signed by President Reagan on August 5th, 1983 and covered 24 countries.

[1] For example, the use of yarn and fabric from the U.S. instead of the generally cheaper inputs from third countries.

[2] The U.S.-Caribbean Trade Partnership Act of 2000, Title II- Trade Benefits for Caribbean Basin, Subtitle A, Sec. 202.

Textile and apparel articles subject to textile agreements[3] were initially exempted from preferential treatment by section 231(b). In June 1986, a special access program (called the Super 807) for the "imports of textile apparel assembled in a CBI beneficiary from fabric formed and cut in the US" was implemented. The program granted partial duty free treatment on the domestic value added and inputs from the U.S. Export processing zones rapidly appeared in the region for the production of the eligible products. Initially, a sunset provision was included (Section 218) that terminated duty free treatment on 5th August, 1990. CBERA 1990 ("the expansion act") was signed into law on August 29, 1990 and extended the initial CBERA and reduced tariffs on certain initially excluded items such as handbags and leather apparel.

Once NAFTA was implemented in 1994, Caribbean countries began to worry about the erosion of the preferences they obtained under CBERA and losing their market share to Mexico. In some ways, Caribbean Basin Trade Partnership Act (CBTPA) was a response to these concerns and a significant leap in the scope of the CBI happened in 2000 with its signing. Section 211 specified the new regime for textiles and apparel preferences. As opposed to the previous regime which granted partial duty free treatment, CBTPA allows textile and apparel articles to enter the US without any tariffs or other restrictions as long as certain rules of origin and other requirements are satisfied. As before, these rules of origin favour the use of materials formed either in the US or the CBI countries. In short, with the CBTPA in place, CBI members have received NAFTA-like treatment without the burden of reciprocity prescribed by NAFTA.

The next important event for the CBI beneficiary countries has been the removal of MFA quotas which imposed severe restrictions on the apparel exports of many South and East Asian countries. As part of the Uruguay Round Agreements on textiles and apparel, the US and other developed countries agreed to phase out the MFA quotas over time. The first, second and third quota elimination (referred to as "integration" in official documents) took effect on January 1st 1995, 1998 and 2002 respectively. The most restrictive and important quotas were left for the final integration stage which took place on January 1st, 2005. There has been much public and political uproar as a result of the rapid increase of imports, especially from China, after the final removal of MFA quotas. Some restrictions were imposed on several export categories from China and other countries. The 2005 data does not indicate that there has been an extraordinary impact on the exports from CBI beneficiary countries but they are continuing to cautiously follow the developments. We return to the impact of quota removal and how different countries respond in the sections below.

[3] Such as the Multi-Fibre Agreement. Other excluded items were footwear, handbags, luggage, flat goods, work gloves and leather articles.

2.1 Export Patterns

The CBI preferences in apparel had a large impact on the aggregate volume of exports from the beneficiaries[4] which account for a steadily rising portion of the total U.S. imports during 1989-2005, the span of our data. In 1989, exports from CBI countries totaled $1.7 billion which was close to 8% of the of total U.S. imports. In 2005, their total exports had increased to $10 billion, around 13% of the total US imports. Figure1 presents the volume of total US imports from various regions between 1989-2005, Figure 2 presents the regions' market shares and Figure 3 displays the growth of their exports since 1994. For the rest of the paper, we will use the following groupings. NAFTA countries are Mexico and Canada while developed countries are EU15 and Japan. We separated China region countries (China, Hong Kong and Macao) from other major Asian exporters - Bangladesh, India, Indonesia, Korea, Pakistan, Philippines, Sri Lanka, Taiwan and Thailand.

Several distinct patterns emerge from these three figures. First, CBI and NAFTA countries rapidly increased their exports and market share until 2000 when they peaked. After this date, NAFTA exports started a decline in both value and market share while CBI exports maintained their value with slightly declining market shares. China region and other Asian countries were the main targets of the expansion of CBI and NAFTA exports in the first half of our dataset. Even though their exports increased, the growth rate was below that of the overall US imports. As a result, China region's market share declined to 20% in 2000 but, then, took a dramatic turn to increase to 30% in 2005. The final group in our figures are the Developed countries that mostly export higher quality and higher priced goods. Their exports experienced rather slow but steady growth in value and a slow decline in market share. We return to the differences between Developed and Developing countries' exports below.

The evolution of the export patterns of the CBI beneficiaries as a group hides important differences between countries. Figures 4 presents the values of exports from the main eight beneficiary countries during 1989-2005 while Figure 5 displays the growth paths of their exports starting in 1994. Please note that Figure 5 is drawn on an exponential scale so that the export growth rates of Nicaragua and Haiti would not visually dwarf the rest of the group. Based on these two figures, we can divide these countries into three groups which we will carry out through the rest of the paper. In the first group are Dominican Republic and Costa Rica. They were significant exporters in 1989 and increased until they peaked during 1998-2000. After this date, exports start to decline and the 2005 levels are around the 1994 levels. Based on this initial data, we can state that Costa Rica and Dominican Republic were the main victims of Asian export expansion. The second group is composed of El Salvador, Honduras and Guatemala. They were also significant exporters and they managed to maintain their

[4] Some countries are more successful in taking advantage of the preferences and increasing their exports. 14 of the 24 eligible countries exported apparel products into the US but 8 exporters (Costa Rica, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Nicaragua) account for more than 99% of the total imports.

export growth paths up until 2004. Even though they experienced slight declines in 2005, their exports have quadrupled since 1994. The third group is Nicaragua and Haiti which had minimal exports in 1989 but their exports increased 25 and 15 times, respectively, between 1994 and 2005. It definitely looks like, NAFTA or MFA quota removal had no impact on their emergence as significant exporters. Finally, we include Jamaica which used to be a main exporter but have seen its exports decline by 90% since 1994. This is an example of a country basically exiting the US market and we do not further include it in our sample.

2.2 Prices

As stated earlier, we intend to look beyond the export values in analyzing the responses by different counties to changing market and policy environments. The ideal variables to explore for this purpose are prices. Figure 6 presents the average unit prices of all US imports and the exports from different regions weighted by the quantity in each 10-digit HTS category. This figure reveals different patterns when compared to Figure 1. The first observation is that the average prices of overall US imports have been in a steady decline since 1989. These are nominal prices so the decline in real prices is even steeper. Developed Countries exports are much higher priced and have actually increased since 2000. Exports from China Region were also higher priced until 2000 but followed a different path and started to decline. Other Asian countries' exports' prices closely follow the average US import prices while NAFTA exports' prices have stayed very stable and are currently slightly above the US prices. CBI export prices have always been below average US import prices and declined in tandem until 2005.

Actual prices might hide an important distinction - a country's exports might have higher average prices because they are concentrated in higher priced categories (such as suits instead of t-shirts) or they are of higher quality. In order to identify this important distinction, we construct a relative price index. We calculate the prices in each 10-digit category in each year from each country relative to the average US import prices in that category and year . We, then, calculate the average weighted by export values. Figure 7 reveals that the exports of Developed countries have actually much higher relative prices (implying higher quality) and the gap has increased rapidly since 2000. Exports from China region had average relative prices of around 1.05 which increased to 1.15 in 2000 and declined to 0.93 in 2005 indicating rapid erosion of quality. This is actually to be expected in the presence of quantity constraints which encourage the exports of relatively higher valued items. Once they are removed, the country starts to go down the quality ladder. NAFTA exports follow the opposite path. The average relative price starts at 1.09 in 1989 and declines to 0.98 in 1998 but climbs back to 1.23 in 2005. In other words, the decline in the value of exports from NAFTA is accompanied by quality upgrading. For the CBI countries and other Asian countries, the relative prices stay quite stable during 1989-2005, between 0.85-0.90 for CBI and between 0.94-1.02 for other

Asian countries.

The average CBI numbers for prices again hide important differences between countries in the region. Figure 8 presents the relative average prices for the three groups we identified above and Mexico as comparison. We bundled the countries together since they follow very similar patterns and the figures becomes easier to analyze. Costa Rica and the Dominican Republic steadily increased their relative prices from 0.91 in 1989 to 1.06 in 2005. Group 2 countries, El Salvador, Honduras and Guatemala, maintained the same relative prices of 0,86 during this period. On the other hand, Nicaragua and Haiti, first experienced increasing relative prices which peaked at 0.86 in 2001 but then declined to 0.78 in 2005.

This section, especially this figure, presents the main point in the paper. Each country in the region faces same preferences in terms of legal and technical requirements. However, their exports have evolved along rather different trajectories over the last two decades. The determinants of these paths are crucial in designing future policies that will enhance the firms', especially exporting firms' competitiveness in global markets. Firms from Costa Rican and the Dominican Republic, rapidly increased their exports until 1997 but decided to choose quality over quantity. We should add that this is also the path chosen by Mexican firms starting in 1998-2000. Firms from El Salvador, Honduras and Guatemala followed the same export recipe throughout this period - producing and exporting more of the same quality goods. Nicaragua and Haiti on the other hand, moved down the quality ladder, especially during the last five years, while increasing their exports rapidly.

2.3 Preference Margins and Other Trade Costs

There are many reasons for diverging export strategies. The two crucial ones for the CBI beneficiary countries are the preferences and the geographic proximity they enjoy. In this section, we present some evidence in order to see if these factors can influences the diverging export paths of different countries. Figure 9 presents the average tariffs paid on the exports from different regions, as well as the average tariffs on US exports and the average MFN tariffs which declined slowly over time. The actual tariffs are much lower since a large portion of the imports are entering under preferences. Utilization of preferences requires that the exporting firms satisfy complex rules of origin requirements as well as master the bureaucracy of completing the necessary forms. Firms from NAFTA countries seem to have gotten better at this more quickly than the firms in CBI countries as the vast majority of their exports entered the US duty-free as of 1998. For the CBI exporters, still a large portion of their exports are subject to tariffs which averaged 5% in 2005. Again, there are important country-specific differences which are revealed in Figure 10. Firms from Costa Rica and the Dominican Republic are much better at compliance with rules of origin requirements as they pay only 2% in average tariffs. On the other hand, firms from El Salvador, Honduras and Guatemala pay around 5% in tariffs even though they export much higher volumes. Finally, firms from

Nicaragua and Haiti pay around 8% in tariffs and this level has only marginally improved even with the implementation of CBTPA.

The next important trade barrier faced by exporters are import costs such as freight, insurance etc. geographic proximity is a great advantage for CBI countries, not only because it leads to lower transportation costs, but also enable the firms to respond better to orders from importers and integrate more efficiently with their just-in-time delivery and procurement mechanisms. As a result, firms can charge higher prices and earn higher profits. Figure 11 presents the average import charges (except tariffs) paid by exporters in different regions. NAFTA exporters enjoy a significant advantage as their average costs are around 1% whereas Chinese and other Asian exporters face 6% import charges. CBI exporters' import charges are slightly above 2% but there are again differences between countries. In Figure 12, we see that Costa Rica and the Dominican Republic again enjoy lower import charges which are around 0.50% lower than those of other countries in the region. It is notable that the exporters managed to lower that import charges around 1.5% over time which is indicative of taking advantage of economies of scale and other efficiency gains.

The graphs above show that the relative prices of exports from the beneficiary countries, the preference margins and the declines in import charges moved together from 1989 to 2005, indicating a strong correlation. However, the price increases might be caused by many other factors along with preference margins and import charges - such as quality upgrading by exporting firms, exchange rate fluctuations. Most of these factors are policy related and are indicative of the governments' ability to provide a stable economic environment that encourages innovation and competitive of the exporting firms. We should add that the ability to take advantage of preferences (hence paying lower tariffs) and lower import charges are also policy related. For example, efficient transportation networks and ports, banking and insurance markets will lower import charges. The key question is whether (and what portion of) this export price increase is due to preferential market access, lower import charges and other economic factors. The next sections provide an analytical and empirical framework to investigate the preliminary evidence presented in these graphs.

3 Literature

The empirical literature on the impact of trade policies, especially of preferential arrangements, on prices is not very large, as mentioned above. One of the earliest papers on price effects of trade policies was Kreinin [1961] which showed how the reductions of the MFN tariffs by the United States influenced export prices of its trading partners. With respect to price effects of discriminatory policies, the initial focus has been on voluntary export restraints (VERs). Crandall [1985] and Feenstra [1985] analyze the effect of US VERs on prices of Japanese and domestic automobiles. Feenstra [1985] is especially important since it explicitly

addresses the quality issue through hedonic regressions. Dinopoulos and Kreinin [1988] take a different approach and investigate the effects of the VERs on the non-restricted European exporters' prices.

The price effects of preferential trading blocs began to receive more attention only in recent years. Winters and Chang [2000] is the first paper to analyze the effects on members' and excluded exporters' prices using Spanish entry into the EC as the case study. They find that the EC exporters' prices increased relative to non-EC exporters, as predicted. This paper is followed by Winters and Chang [2002] which focuses on Mercosur and, again, finds that the relative prices of exports from excluded countries decline. More specifically, they estimate how the tariff changes influence the prices, the tariff pass-through effect, and show that it varies considerably across trading partners. For example, Chile and Japan fully, Germany and the USA partially and Korea nominally pass through their own tariffs. The more interesting question is the effect of the declines in the tariffs faced by the member country, Argentina. On average, 1/3rd of Argentine tariff decline is reflected on excluded countries' prices. Finally, Schiff and Chang [2003] ask the very interesting question of the effect of contestability in Mercosur. They show that, not only the presence of Argentine exporters in Brazil, but also their threat of entry, influences the prices received by excluded countries. These papers, especially Winters and Chang [2003], are the most related to ours and we discuss them, especially their empirical methodology, in more detail in the following section on methodology.

Olarreaga and Ozden [2003] is the first paper, we believe, that studies the price effects of unilateral preferences. They analyze the apparel preferences under AGOA and show that the beneficiary countries' prices increased by only 1/3rd of the preference margin, with the rest being captured by the importers. Then, they provide empirical evidence arguing that the market power enjoyed by the importers contributes to this division of the tariff decline. Krishna, Erzan & Tan [1994] and Krishna & Tan [1998] also find wide evidence of rent sharing between exporters and importers in the context of apparel quotas from various East Asian countries.

This paper is also related to the pass-through literature which mostly focuses on the effect of exchange rate fluctuations on the exporter and importer prices. A comprehensive review of this rather vast literature is provided in Goldberg and Knetter [1997]. The most relevant paper for us in this literature is Feenstra [1989]. He estimates the effect of tariffs as well as exchange rates on U.S. prices of Japanese cars and he finds that the long-run pass-through is identical. His estimation equation is also similar to ours and we discuss it in the methodology section .

4 Analytical Framework

The previous section showed that a group of eligible countries increased their exports to the United States considerably and obtained relatively higher prices for their exports after the implementation of the CBERA and the CBTPA provisions on apparel. The key issue is the extent of the export price change due to the preferential access.

We, first, present our estimation equation based on the examples in the literature. Let m_k^i denote the price of product k from country i inclusive of tariffs and transport costs. Similarly, let m_k^{ROW} denote the final average import price if k was imported from the rest of the world. Based on these definitions, a typical estimating equation in the pass-through literature would take the following form (see Goldberg and Knetter [1997]):

$$\ln m_{kt}^i = \alpha_0 + \alpha_1 \tau_{kt}^i + \alpha_2 \ln m_{kt}^{ROW} + \alpha_3 \ln w_t^i + \alpha_4 \ln e_t^i + u_t \tag{1}$$

where t is the time subscript and τ is the tariff rate. This equation implies that m_k^i, the tariff-inclusive price of imports from i, would depend on prices of imports from other countries (or the domestic price index in that category), the tariff rate, the wages w (the proxy for costs which is most of the time excluded) and the exchange rate e of country i. The main coefficients of interest would be α_1 and α_4 which are, respectively, the tariff and exchange rate pass-through coefficients. If there is perfect pass-through, then we would have both coefficients equal to 1 and the prices would perfectly reflect changes in tariffs and exchange rates. Other control variables and fixed effects are included depending on the study.

Winters and Chang [2000] derive a similar equation based on an imperfect competition model to analyze the effect of Spain's accession to the EU on the prices of *excluded* countries' (such as the U.S.) exports to Spain. However, they estimate a relative price equation of the following form:

$$\ln\left(m_t^i / m_t^{ROW}\right) = \alpha_0 + \alpha_1 \tau_t^i + \alpha_2 \tau_t^{ROW} + \alpha_3 \ln z_t^i + \alpha_4 \ln z_t^{ROW} + \alpha_5 \ln Y_t + \alpha_6 P_t + u_t \tag{2}$$

where we suppress the product subscript k for simplicity. m^i and m^{ROW} are prices and τ^i and τ^{ROW} are tariffs as defined above. z^i and z^{ROW} represent the costs of exporters from i and ROW respectively. These are defined as $z^i = w^i \tau^i / e^i$ where w is wages and e is exchange rate of i. Y and P are the income and price level in Spain used to capture demand conditions. Winters and Chang [2000] are interested in the value of the coefficients α_1 through α_4 as well as certain restrictions implied by theory. Their results imply that a 1% decline in the tariffs faced by i (EU countries) causes a 0.56% decline in the relative prices of US exporters to Spain. They estimate a similar equation for Mercosur in Winters and Chang [2002] in which the dependent variable is the ratio of US (excluded country) exports' prices in Brazil and the rest of the world.

As opposed to these studies, our focus is on the prices received by the exporters, net of tariffs and other transactions costs that are included in m_k^i and m_k^{ROW}. Let p_k^i (p_k^{ROW}) denote the *pre-tariff prices received* by exporters of k from i (ROW). t_k^i represent the preferential tariff imposed on i and t_k^{ROW} is the MFN tariff rate imposed by the US on the ROW. Our estimating equation is similar to above equation (2) but the dependent variable is the ratio of pre-tariff prices:

$$\ln\left(p_{kt}^i/p_{kt}^{ROW}\right) = \beta_0+\beta_1\left(t_{kt}^{ROW}-t_{kt}^i\right)+\beta_2\left(c_{kt}^{ROW}-c_{kt}^i\right)+\beta_3 X_{kt}^i+\beta_4 M_{kt}^{ROW}+\sum_i \gamma^i\Omega^i+\sum_k \delta_k\Phi_k+\sum_t \theta_t\Psi_t \tag{3}$$

$\ln\left(p_{kt}^i/p_{kt}^{ROW}\right)$ is the approximate difference (in percentage) of net prices of received by exporters from CBI and the rest of the world. $t_{kt}^{ROW}-t_{kt}^i$ is the average preference margin enjoyed by the exports of the beneficiary country i. Since the tariff imposed by the U.S. on the rest of the world, t_{kt}^{ROW}, did not vary considerably in our sample over time, we use the tariff difference in estimation rather than two separate tariffs. $c_{kt}^{ROW}-c_{kt}^i$ is the average difference in import charges enjoyed by country i.We also include the total export volume of country i in category k, denoted by X_{kt}^i, and total imports of the US in that category, denoted by M_{kt}^{ROW}.

We add country, product and year dummy variables, denoted Ω, Φ and Ψ, respectively[5] to capture variables that are missing from the estimation equation. Among these are exchange rates and wages that are included in the previous equations (1) and (2) as well as other variables such as differences in quality[6] that are unrelated to the effects of preferential market access programs. As we mentioned earlier, using these dummy variables enables us to isolate all of these effects that influence prices and focus on the impact of preferential programs.

The implementation of a preference program is equivalent to a decline in the tariff rate faced by the beneficiaries, t_k^i. If the eligible countries capture all of the benefits of this tariff reduction (i.e. $\beta_1 = 1$) , then the prices they receive on their exports should increase by the amount of the tariff decline. However, if export price increase is less than the tariff decline (i.e. $\beta_1 < 1$), then the importers are capturing a portion of the tariff rents created by the preferential market access. We should point out that the traditional tariff pass-through effect, given by α_1 in (1) and (2), can be found from our estimation. More specifically, given our definitions of the prices, we have $\alpha_1 = 1-\beta_1$. Suppose we were to estimate that $\beta_1 = 0.25$. This implies that the pre-tariff price decreases by 0.25% (or the post-tariff price increases by 0.75%) if there is 1% tariff increase. Thus the tariff pass through rate is 75%.

[5] We also test other specifications with country-product fixed effects etc. We identify these in more detail in the results section.

[6] We can also include quotas imposed on other exporting countries, shocks to demand in the US and supply shocks in the apparel sector.

4.1 Data & Methodology

The United States International Trade Commission (USITC) collects and makes available very disaggregated and detailed customs data. The data include the customs value, unit prices, duties paid in a given 8-digit category from any country for any year between 1989 and 2005[7]. The USITC data is further classified according to whether the imports entered the US under a specific preference program (such as NAFTA, CBTPA, GSP or AGOA) or no program (meaning under MFN)[8].

We use HS 8-digit level disaggregated data on customs value, quantity and duties collected from each country in our sample for the time period 1989-2005. The prices received by the exporters, denoted as p^i_{kt}, are unit prices, calculated as the ratio of customs value to number of units of category k in year t from country i. The average US import price, p^{ROW}_k is the unit prices received by exporters from the rest of the world[9]. Tariffs imposed on the exports of country i in category k in year t, denoted as t^i_{kt}, were calculated as the ratio of collected duties to customs value. In addition, MFN tariffs, t^{ROW}_k, were calculated as the ratio of collected duties to customs values from all exporters to the US excluding beneficiaries of preference programs (such as GSP, NAFTA, CBI, AGOA). Note that both MFN tariffs and US prices vary over products and years but not over the beneficiary countries.

The analysis is conducted for the 7 largest exporters of apparel to the US from the Caribbean and Central American regions, as we mentioned earlier. These are Costa Rica, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, and Nicaragua. Out of 24 eligible countries under the CBI, only 14 actually exported apparel to the US during 1989-2002. Our dataset of the 7 countries covers 96% of the apparel imports into the US from all eligible CBI countries during this period. The data has 211 8-digit categories which are grouped into 32 4-digit categories.

We should note that the product dummies are at the 4-digit level, rather than the 8-digit level[10]. Most 8-digit categories within a 4-digit category are very similar and we believe the

[7] Data was obtained from the USITC website at http://www.dataweb.usitc.gov. The customs value data exclude insurance and freight.

[8] Until 2000, when CBTPA was implemented, the main preference scheme under the CBI was duty-free treatment on the portion of the value-added created in the beneficiary country and the inputs (fabric and yarn) imported from the US. In other words, MFN tariff was paid only on the portion of the imputs imported from third countries. However, all shipments into the US in the same 8-digit category were compiled together and listed under the MFN category. The level of tariff collected in a given 8-digit category is, therefore, an average rate of the tariff paid on individual shipments. Since we do not have shipment level data, we rely on these averages. After 2000, we have separate data for exports entering under CBTPA (where the tariff is zero) and under the old scheme (listed as MFN). The results in Table 5 indicate that the coefficients of the Tariff Difference variable are not statistically different under the two regimes.

[9] We should note the unit prices are product-specific, such as dozens of shirts or pants. They are not measured by weight or amount of fabric used, as this is the way some apparel data is collected and reported.

[10] 8-digit categories are extremely narrow and detailed. For example, 6105 is Men's or boys' knitted shirts while 61052020 is Men's or boys' cotton knitted shirts.

4-digit product dummies capture most of the effects (quality, margin effects, demand/supply shocks) we are targeting while 8-digit dummies unnecessarily reduce our degrees of freedom.

Despite the highly disaggregated data we use, it is possible that fixed effects are not enough to capture systematic differences between products. In particular, heteroskedasticity in residuals is a concern. For example,there may exist heteroskedasticity across panels i.e. the variance of the error may be different for each panel (the product k) This may be due to variation of scale in imports of different products. It could also be because of specific features of a product that systematically affect the error. To correct for heteroskedasticity, we adopt a two-step Feasible Generalized Least Squares estimation procedure. In the first step, we estimate β using OLS and this is used to calculate the residuals. These, in turn, are used to construct a consistent estimator for the variance matrix. We reweigh each of the variables by the inverse of the commodity-specific residual standard deviations from the variance matrix and estimate β_{GLS}.

The Fixed Effects GLS estimator allows the estimation of product, country and year-specific unobserved error terms as parameters while allowing the idiosyncratic component of the error to have a more general structure. Note that we can also use robust standard errors on OLS estimators. The FEGLS estimator is more efficient that the FE estimator obtained by OLS as the number of panels (i.e. the product categories) $K \to \infty, T$ fixed.

5 Estimation Results

The results of our main estimation using the full sample are reported in Table 2. As described above, we estimate equation [3] using Feasible Generalized Least Squares that gives us consistent and efficient estimates. The first column reports results with separate country, year and 4-digit product category dummy variables to capture unobserved variations in quality, transactions costs, exchange rates and other exporter, importer and market characteristics. All of the variables have very significant coefficients with the expected signs. The variable of most concern is $Tariff\ Difference$ which is the difference between the MFN tariff imposed by the US and the preferential tariff enjoyed by the CBI beneficiaries. The coefficient is 0.643 which implies that the CBI beneficiaries capture slightly below 2/3rd of the preference margin (or the tariff rent). Another way to interpret this result is to look at the price increases received by the CBI beneficiaries. Although it varies across years, countries and products, the average preference margin in our sample in 2002 is 13%[11]. This means the exporter price increases due to preferences are around 8.5%. The other 4.5% is captured by the importers who now enjoy lower importer prices[12]. The second variable of interest is the *Import Charge* variable

[11] This is the preference margin after 1992 when the preferences went into effect and weighted by customs value.

[12] There are two additional costs associated with the rules of origin. First is the administrative costs of compliance and the second is the additional cost of having to use American inputs instead of possibly cheaper inputs from third

which has a highly significant coefficient of around -0.55. The average difference between the import charges paid on the exports from CBI countries and other countries is around 2.8%. This implies that the geographic proximity translates into a relative price of around 1.5%.

In perfectly competitive markets with homogenous goods, we would expect the exporters to capture all of this potential rent. In the main estimation equation, we included an additional variable to capture market power effects which might explain why the tariff rent is being shared between the exporters and the importers. The variable is (natural log of) the total exports of country i in category k in year t. The coefficient is significant and indicate important market share effects. For example, 100% increase in the exports of i (with constant US imports so the market share of i is also doubled) is associated with 3.7% increase in the relative export prices received.

The next question we address is the impact of the US apparel quotas (imposed on third countries, mainly Asian countries such as China, India, Korea etc.) on the export prices and tariff rents received by the CBI beneficiaries. Unfortunately, quota data and import data (with unit prices and preference programs) are collected under two different classification schemes. Furthermore, in most cases, a quota category covers multiple HS 8-digit categories and the coverage might vary by exporting country. We first compiled the list of the top 16 apparel exporters to the US who face significant quotas[13]. We collected data on the country-level quota size and the fillrate which we assume is the same for all HS categories within that quota category for that country. We have constructed various measures of quota restriction to analyze the impact of the MFA regime on the CBI beneficiaries. Then we estimated the main equation [3] for the sample 1998-2005 with country, year and 4-digit product group fixed effects. Please note that the 2005 does not include quotas since they were removed on January 1, 2005.

The first variable is $\%\ of\ Exports\ from\ Quota\ Countries$.It has a mean of 52.2% and is the market share of the quota countries in that given year in that given HS-category. As reported in column 2, the market share of quota countries has no significant impact on the prices received by the CBI beneficiaries. The second variable is constructed by using the total value of imports entering under quotas whether they are binding or not. Variable $\%\ of\ Exports\ under\ Quotas$ has a mean value of 22%. As seen in column 2, the coefficient for this variable is 0.077 which implies that CBI countries receive around 1.7% higher relative prices in an average category where there are quotas imposed on other countries. This is an important benefit of preferential access. All of these different results imply that the quotas

countries. If the CBI beneficiary firms can not pass these costs onto the buyers, the real benefits of preferential acces are likely to be lower than the 8.5% price increase mentioned above.

[13] These are China, Turkey, India, Pakistan ,Bangladesh, Srilanka, Thailand, Vietnam, Cambodia, Malaysia, Indonesia, Phillipines, Macao, Korea, Hong Kong, Taiwan. The others in the top 20 exporters of apparel are Mexico, Canada and CBI countries.

and other non-tariff barriers imposed on a group of countries have an important effect on the prices received by other countries and especially the beneficiaries of preferential market access. These results are rather intriguing and need to be further explored

The next set of results are from a regression with joint country-year dummy variables in addition to separate product dummy variables, instead of separate dummy variables for countries, 4-digit categories and years (denoted by Ω^i, Φ_k, Ψ_t respectively). This is a much more general structure since it allows, for example, macroeconomic effects for country i to vary across years. The disadvantage is the need for additional dummy variables and the substantial loss in degrees of freedom. The results are presented in Table 3. However, the results are not much different even though they are slightly lower for each coefficient. For example, the coefficient of the $Tariff\ Difference$ is 0.546 as reported in the first column, down from 0.643. The coefficient of the Import Charges variable is -4.367 as opposed to -5.487. All of these changes imply that certain country-year specific factors are now capturing some of the relative price gains enjoyed by CBI countries which were not captured in the previous regressions with separate year and country dummy variables.

5.1 Variation Across Countries

The next important question is about the country-specific factors that influence exporters from a given country to command a higher price for its products. There are numerous factors that can play a role and a large portion of them are policy related. In Figure 13, we plot the coefficients of the country-year dummy variables from the regression in column 3 of Table 2. These coefficients are impact of country-year factors on the relative prices the exporters receive in each country. For example, the coefficient of Haiti-2005 variable is -0.56 whereas it is -0.30 for Costa Rica. This means if the country-year specific factors in Haiti were brought up to the levels in Costa Rica, the relative prices received by Haitian exports would increase by 26%.

The plots in Figure 13 are somewhat confusing but certain patterns emerge. For example, the plots for many countries, such as Honduras, Costa Rica, El Salvador are rather stable, albeit at different levels. Guatemala and the Dominican Republic experience steady improvements starting in 1996. Especially, Guatemala's performance is noticeable. Nicaragua, starts at a high level, declines until 1999 and then starts to climb back again. It is probably better to ignore the earlier history since the export levels from Nicaragua were very low and several small categories lead to these results. Haiti has the opposite experience; there is steady improvement from 1994 until 2002 but the coefficients decline rapidly in the last two years.

The main question is what country-year specific factors influence the patterns we observe in the relative prices which we take as proxy for quality and firm competitiveness. Some of these are macroeconomic policy related such as monetary and fiscal policies. Others are related to

labor markets - whether there is flexibility in hiring/firing or how educated the workers are. Infrastructure is also important as it determines import performance, especially if forms want to take advantage of geographic proximity. In order to evaluate the relative importance of these variables, we regress the above coefficients on certain variables. It is important to find variables for which there is data for each country-year and are relatively not influenced by export prices. We use $inflation$ as a proxy for macroeconomic stability, $Telephones\ per$ 1000 $people$ as a proxy for infrastructure, $Female\ school\ enrollment(\%)$ as proxy for education policy and $GDP\ per\ unit\ of\ energy$ as a proxy of efficiency of the firms in the economy. The results are presented in Table 4. the first column is a regular OLS with robust standard errors;the second column has country fixed effects and the last columns has both country and year fixed effects. All coefficients have the expected signs and are significant, except the $Telephones$ variable. This might because this is highly correlated with other infrastructure variables and its influence on the relative prices is exerted through the import charge variable.

6 Conclusion

The theoretical literature emphasizes that trade policies should be evaluated by looking at their effect on prices, and other variables, rather than just the value of trade. This is especially important when we are analyzing factors that influence the competitiveness of firms in global markets. The data limitations are the main reasons for this shortcoming. Luckily, the CBI preferences in apparel provide an ideal case. First, due to barriers imposed on excluded countries, these preferences are highly valued and utilized by the beneficiaries. Second, there is more than a decade of detailed and disaggregated unit value and quantity data.

In this paper, we analyze the price effects of unilateral preferences and how they evolve over time. We find that preference margins, lower import charges (such as freight and insurance), quotas imposed on other countries all enable the CBI beneficiary countries to obtain higher relative prices for their exports. The results indicate that CBI beneficiaries capture around 2/3rd of the preference margin which causes their relative prices to increase by around 9%. The net benefits to the exporters are likely to be lower, as they need to allow for the additional costs of compliance with the rules of origin. The rest of the benefits goes to the importers through lower prices. Lower import charges and quotas also add around 1.5% relative price advantage to CBI exporters. However, there is still significant variation across countries and over time in terms of the prices they receive. This variation is based on country-specific variable that are likely to be influenced by government policies. Indeed, we show that female education levels, macroeconomic stability, energy efficiency are all correlated with superior export performance in terms of higher relative prices and quality.

There are several implications for the exporters from the beneficiary countries. First, they need to be aware that preferences do not necessarily have a positive effect on the prices they

receive. Especially, if they specialize in low quality/price categories, they are likely to capture only a small portion of the preference margin. Second, the price effect of preferential access is quite sensitive to the extent of the barriers imposed on the excluded countries. As these barriers are removed, the preferences become less valuable. Thus, the beneficiary countries need to plan their trade policies accordingly and not rely on the preferences for long-term benefits. We see that the firms in Costa Rica and the Dominican Republic choose to focus on higher priced products and decrease their output. On the other hand, firms in Haiti and Nicaragua actually moved down the quality ladder and increase their output.

There are several issues remaining. Our results indicate that the prices received by the excluded Asian countries relative to prices of beneficiaries have declined, especially after the removal of MFA quotas. We need to evaluate if these were actually responses to quality upgrading in Mexico and several other CBI countries. Second, it is important to find out what these responses in different countries imply for the overall economy. If improving quality/price with declining output (as in Costa Rica and the Dominica Republic) implies lower input utilization, this is a positive effect on overall development and economic growth. Similarly, declining prices with increasing volume (as in Haiti and Nicaragua) might indicate more resources being drawn from the rest of the economy and lower overall economic productivity.

7 Figures

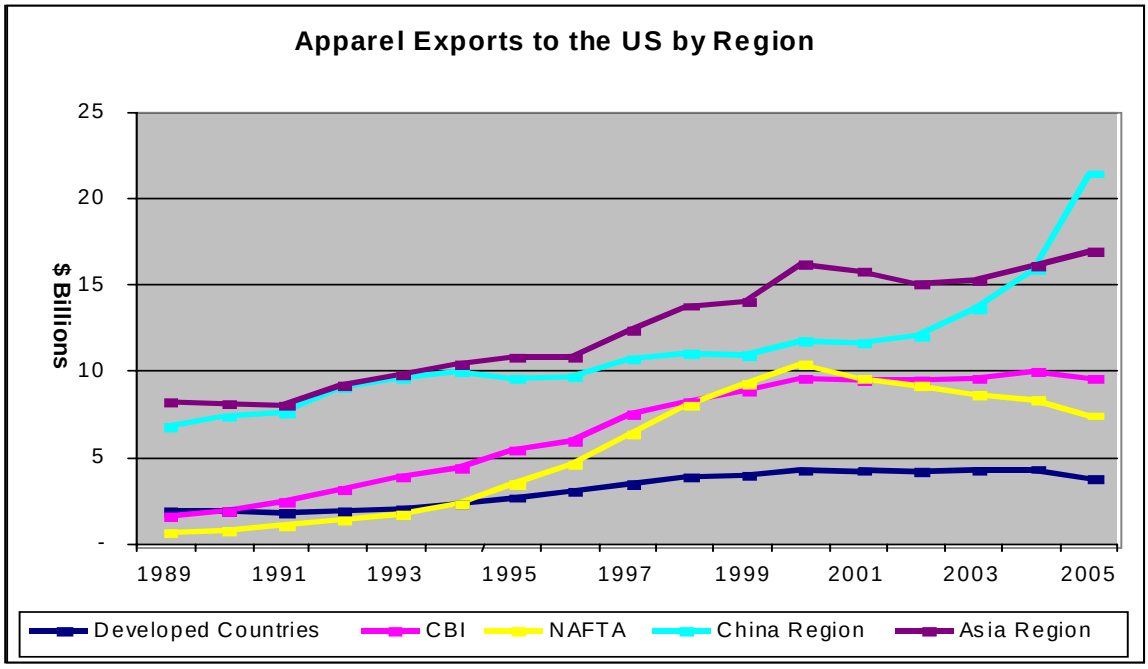

Figure 1:

8 Tables

Table 1. Sample Statistics		
	Mean	St. Dev.
Price Ratio (CBI Price/US Price)	93.28	93.96
Tariff Difference (%) (post 1991)	10.06	7.49
Export Value (mn$)	10.02	32.34
Total US Imports (mn$)	193.91	496.76
Number of countries	7	
Number of Years	17	
Number of 8-digit product categories	211	
Number of 4-digit product categories	32	
Number of Observations	22,155	

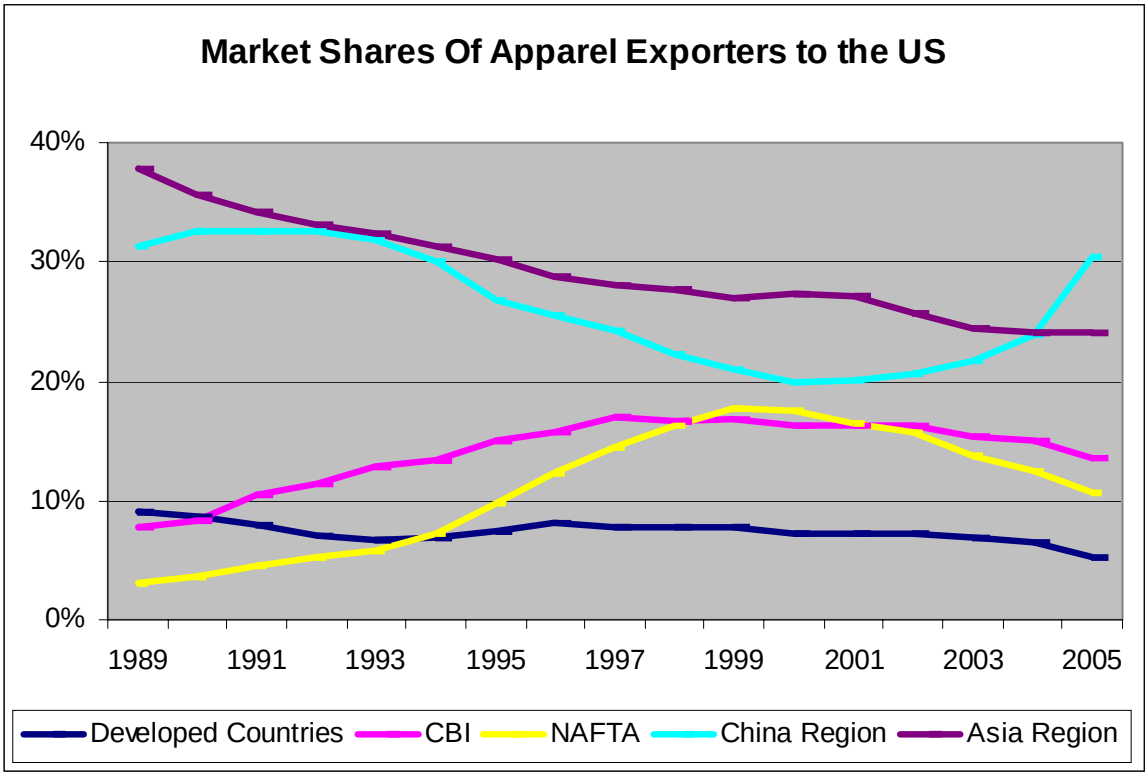
Market Shares Of Apparel Exporters to the US
40%
30%
20%
10%
0%
1989
1991
1993
1995
1997
1999
2001
2003
2005
Developed Countries
CBI
NAFTA
China Region
Asia Region

Figure 2:

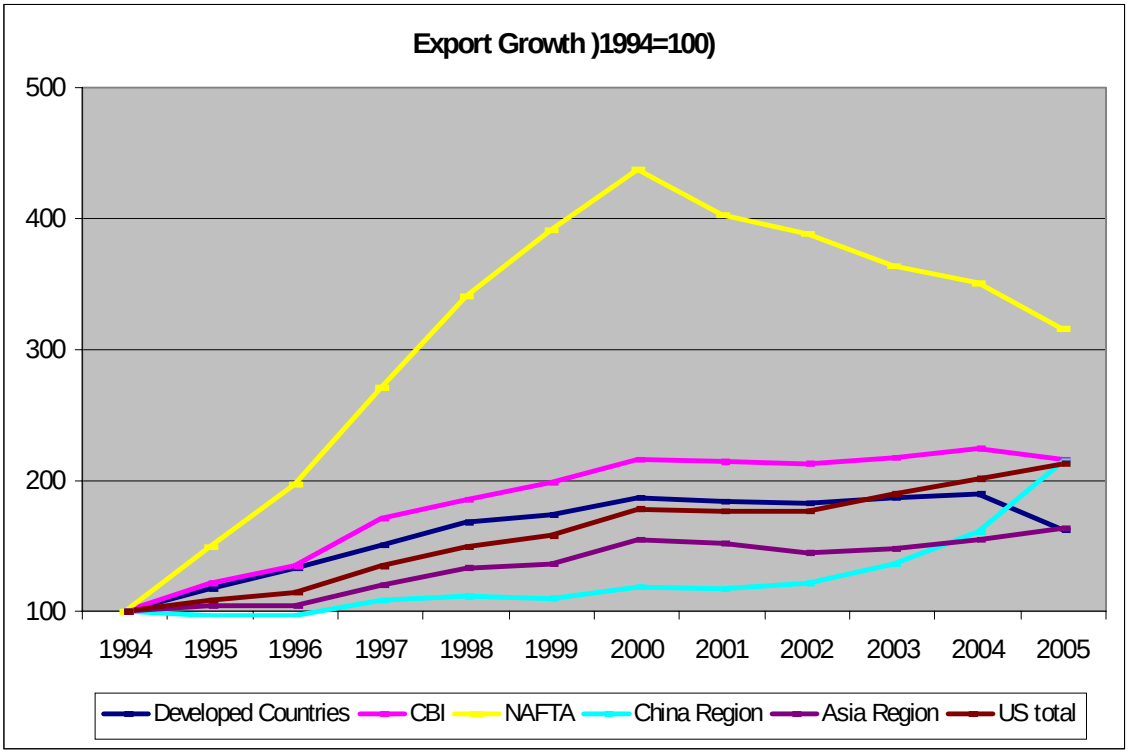
Export Growth)1994=100)
500
400
300
200
100
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
Developed Countries
CBI
NAFTA
China Region
Asia Region
US total

Figure 3:

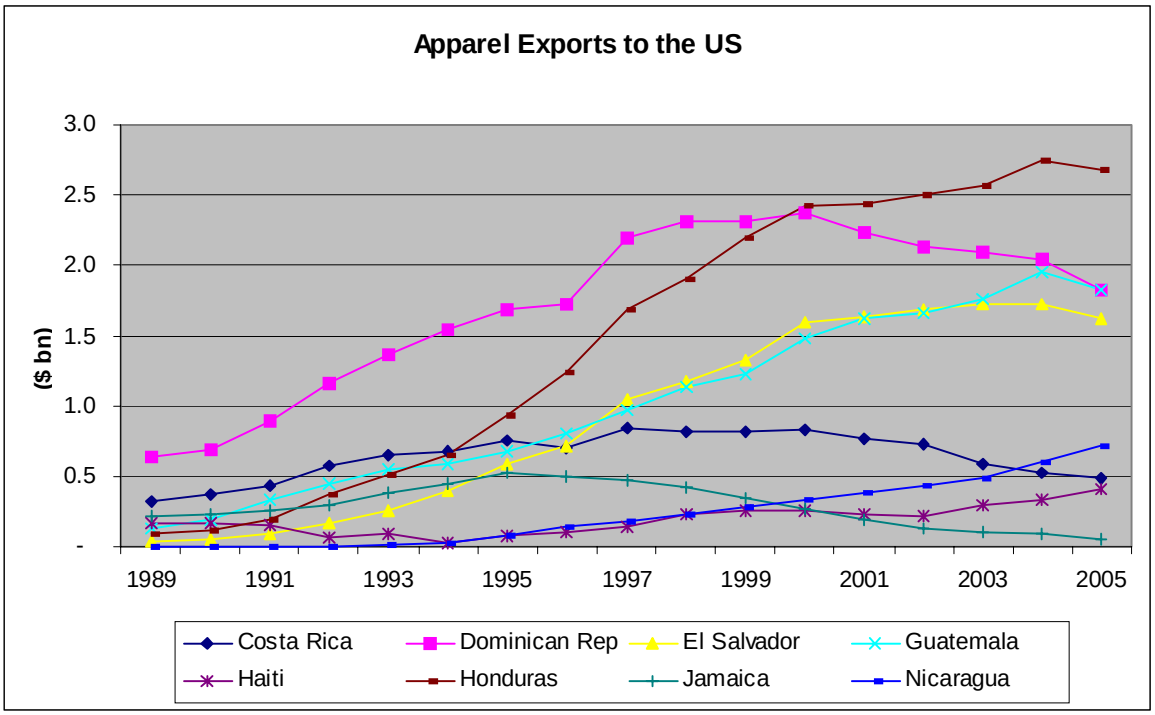
Apparel Exports to the US
($ bn)
3.0
2.5
2.0
1.5
1.0
0.5
-
1989
1991
1993
1995
1997
1999
2001
2003
2005
Costa Rica
Dominican Rep
El Salvador
Guatemala
Haiti
Honduras
Jamaica
Nicaragua

Figure 4:

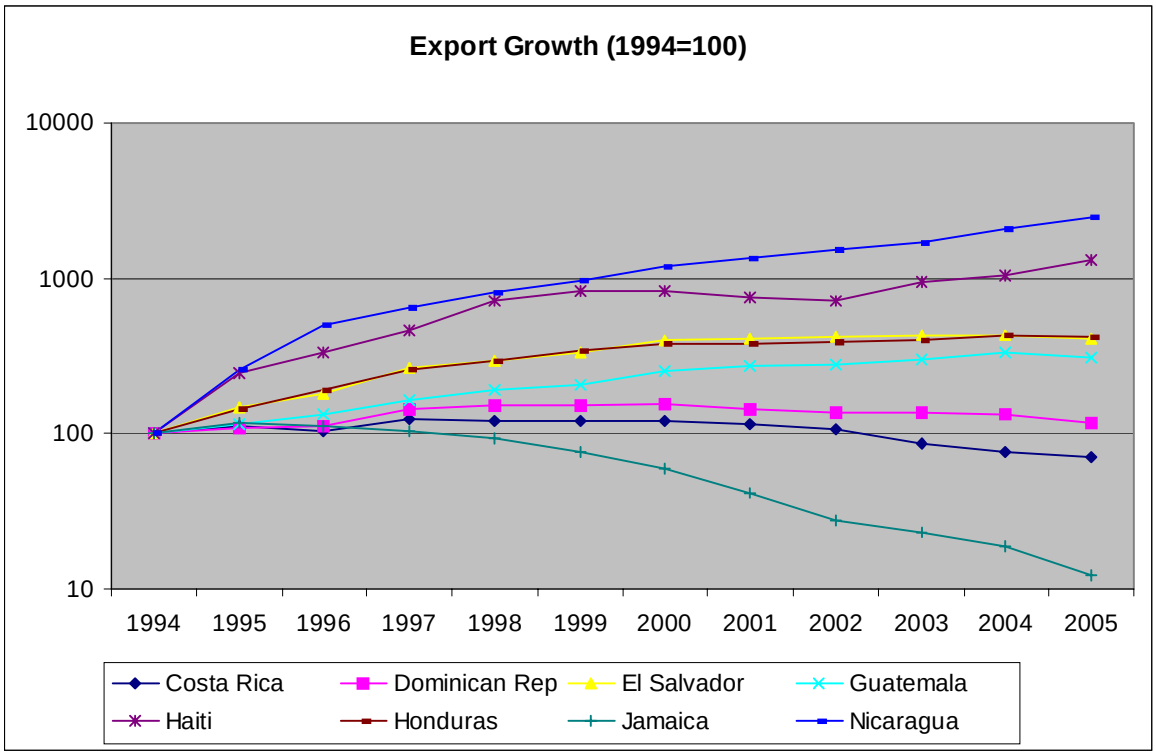
Export Growth (1994=100)
10000
1000
100
10
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
Costa Rica
Dominican Rep
El Salvador
Guatemala
Haiti
Honduras
Jamaica
Nicaragua

Figure 5:

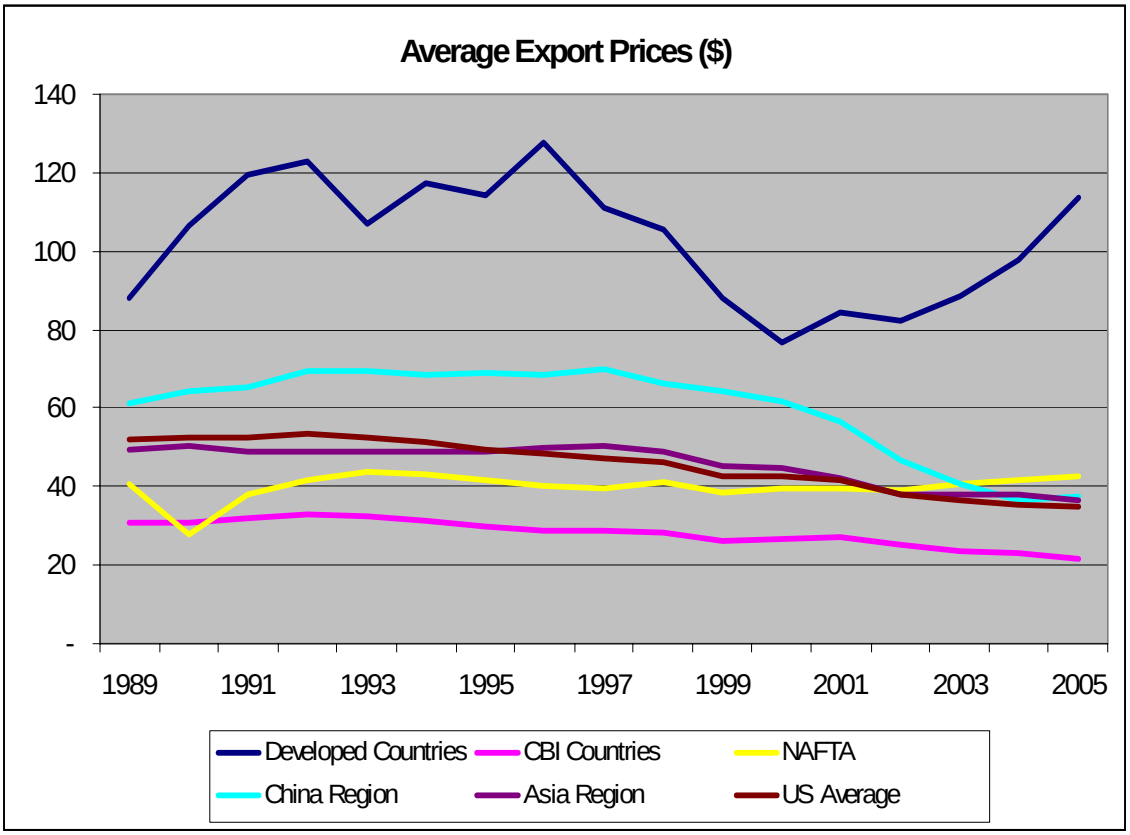
Average Export Prices ($)
140
120
100
80
60
40
20
-
1989
1991
1993
1995
1997
1999
2001
2003
2005
Developed Countries
CBI Countries
NAFTA
China Region
Asia Region
US Average

Figure 6:

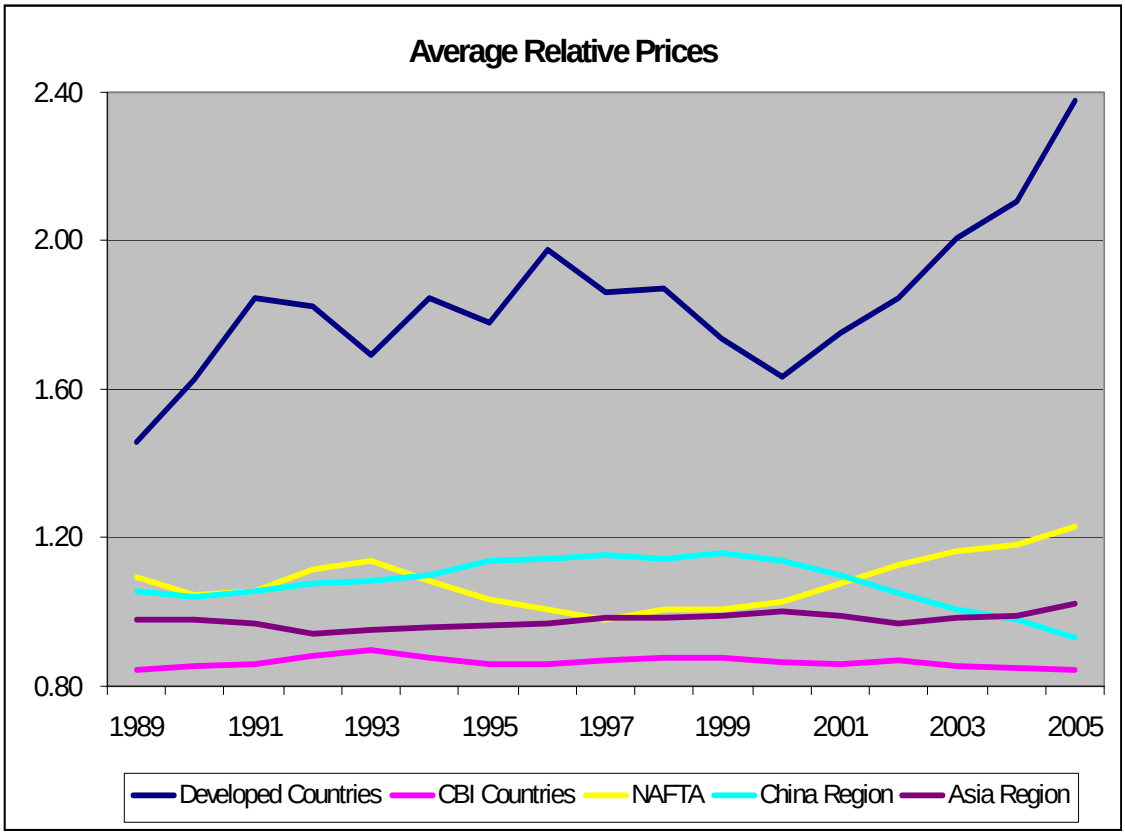
Average Relative Prices
2.40
2.00
1.60
1.20
0.80
1989
1991
1993
1995
1997
1999
2001
2003
2005
Developed Countries
CBI Countries
NAFTA
China Region
Asia Region

Figure 7:

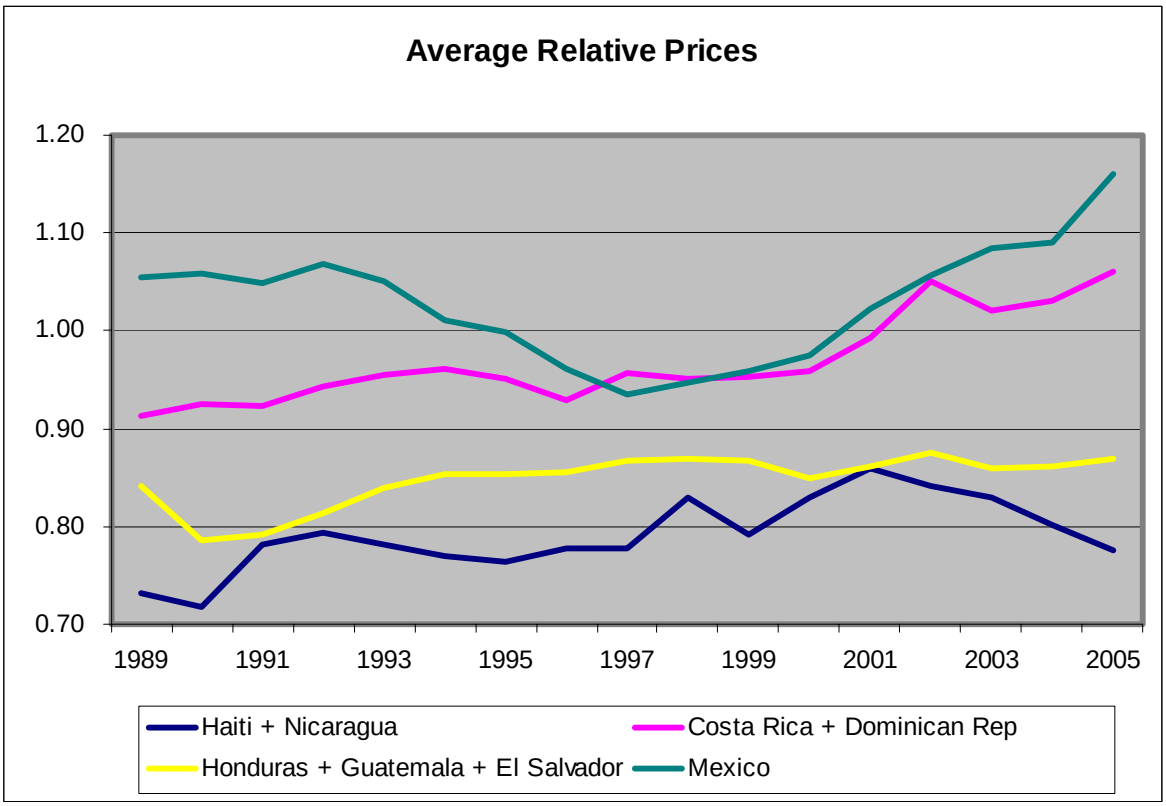
Average Relative Prices
1.20
1.10
1.00
0.90
0.80
0.70
1989
1991
1993
1995
1997
1999
2001
2003
2005
Haiti + Nicaragua
Costa Rica + Dominican Rep
Honduras + Guatemala + El Salvador
Mexico

Figure 8:

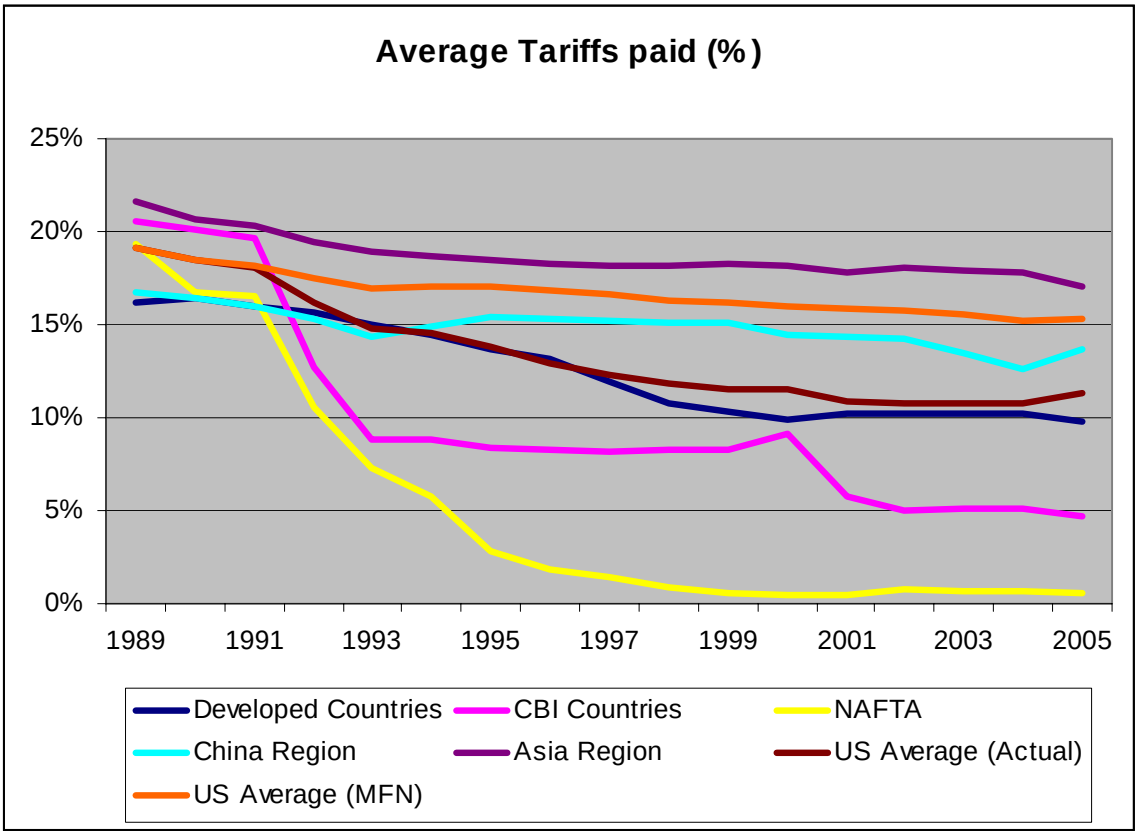
Average Tariffs paid (%)
25%
20%
15%
10%
5%
0%
1989
1991
1993
1995
1997
1999
2001
2003
2005
Developed Countries
CBI Countries
NAFTA
China Region
Asia Region
US Average (Actual)
US Average (MFN)

Figure 9:

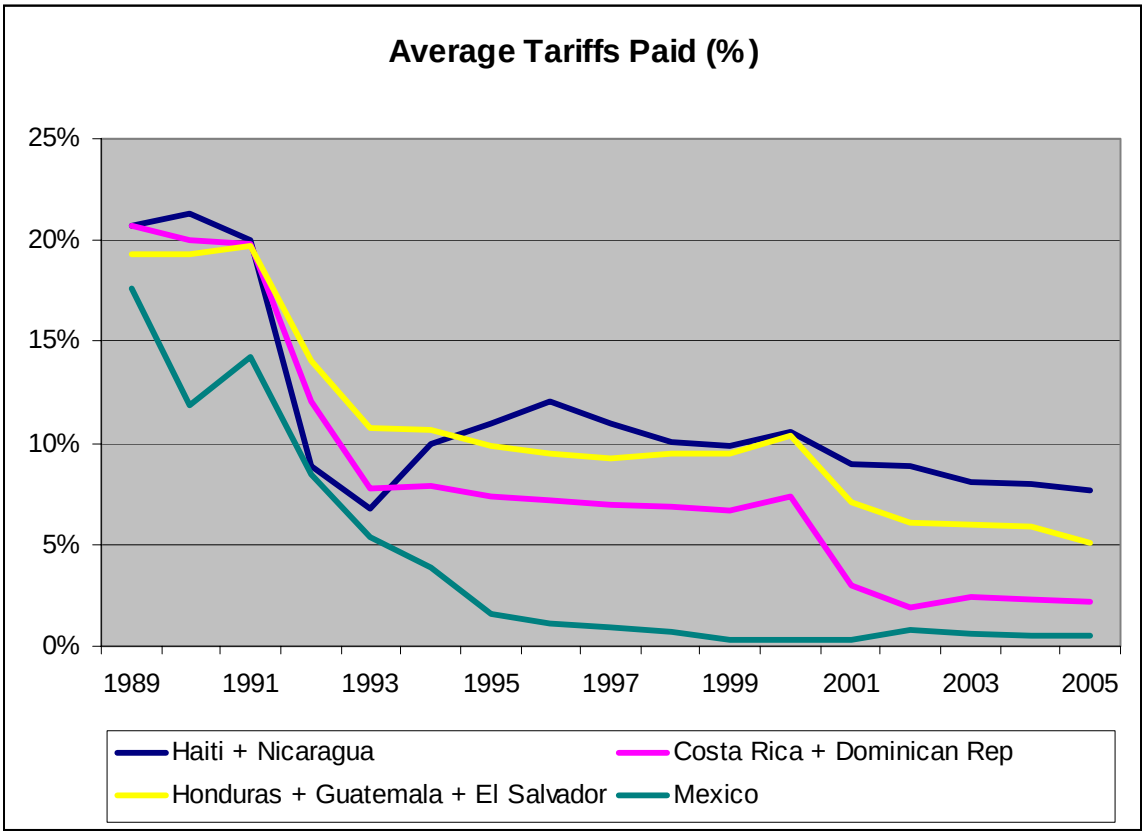
Average Tariffs Paid (%)
25%
20%
15%
10%
5%
0%
1989
1991
1993
1995
1997
1999
2001
2003
2005
Haiti + Nicaragua
Costa Rica + Dominican Rep
Honduras + Guatemala + El Salvador
Mexico

Figure 10:

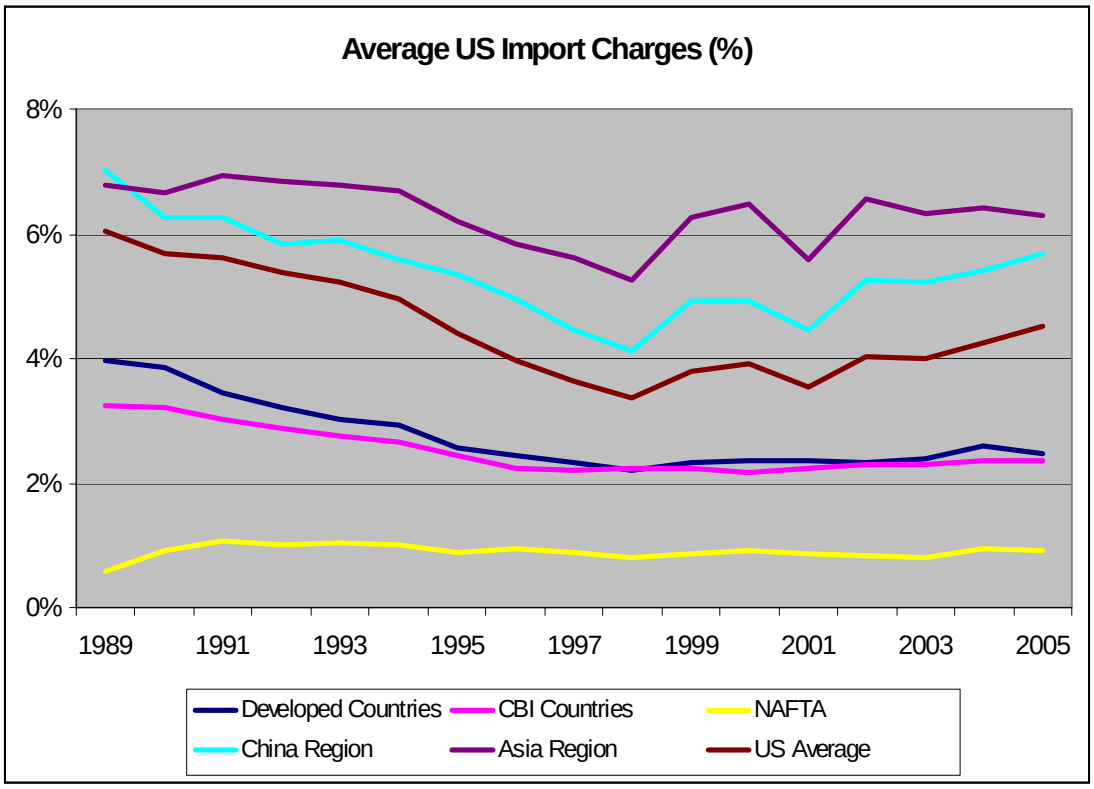
Average US Import Charges (%)
8%
6%
4%
2%
0%
1989
1991
1993
1995
1997
1999
2001
2003
2005
Developed Countries
CBI Countries
NAFTA
China Region
Asia Region
US Average

Figure 11:

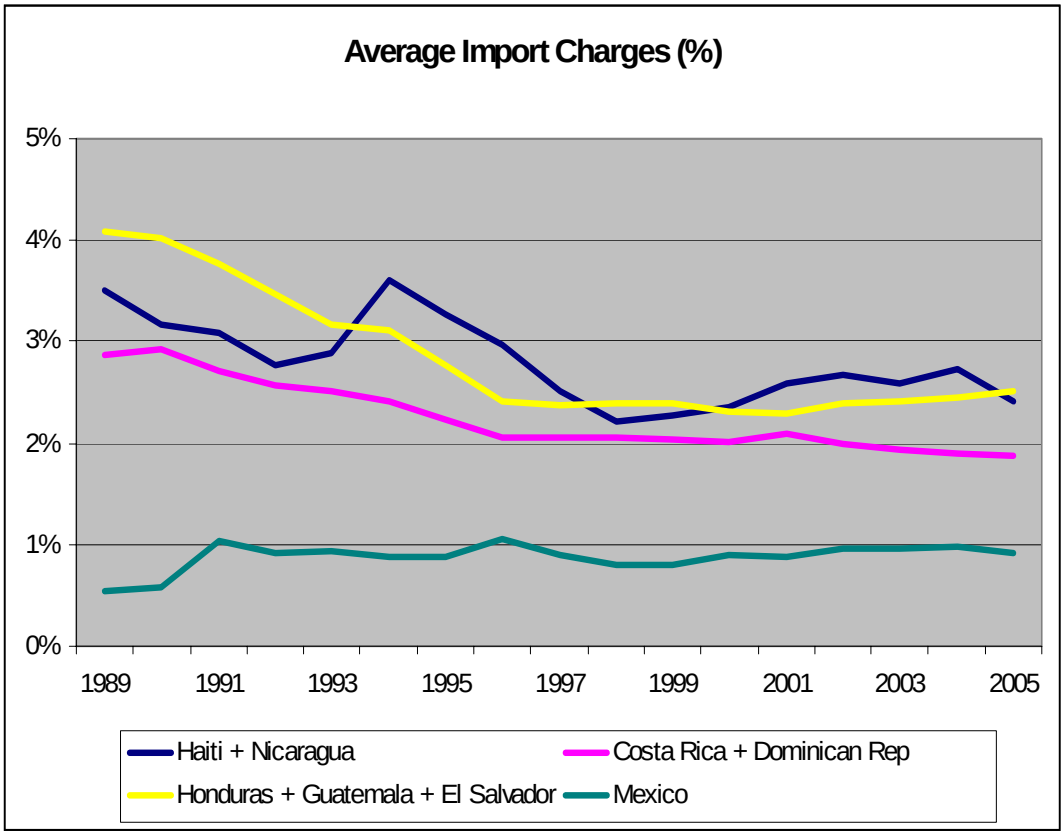
Average Import Charges (%)
5%
4%
3%
2%
1%
0%
1989
1991
1993
1995
1997
1999
2001
2003
2005
Haiti + Nicaragua
Costa Rica + Dominican Rep
Honduras + Guatemala + El Salvador
Mexico

Figure 12:

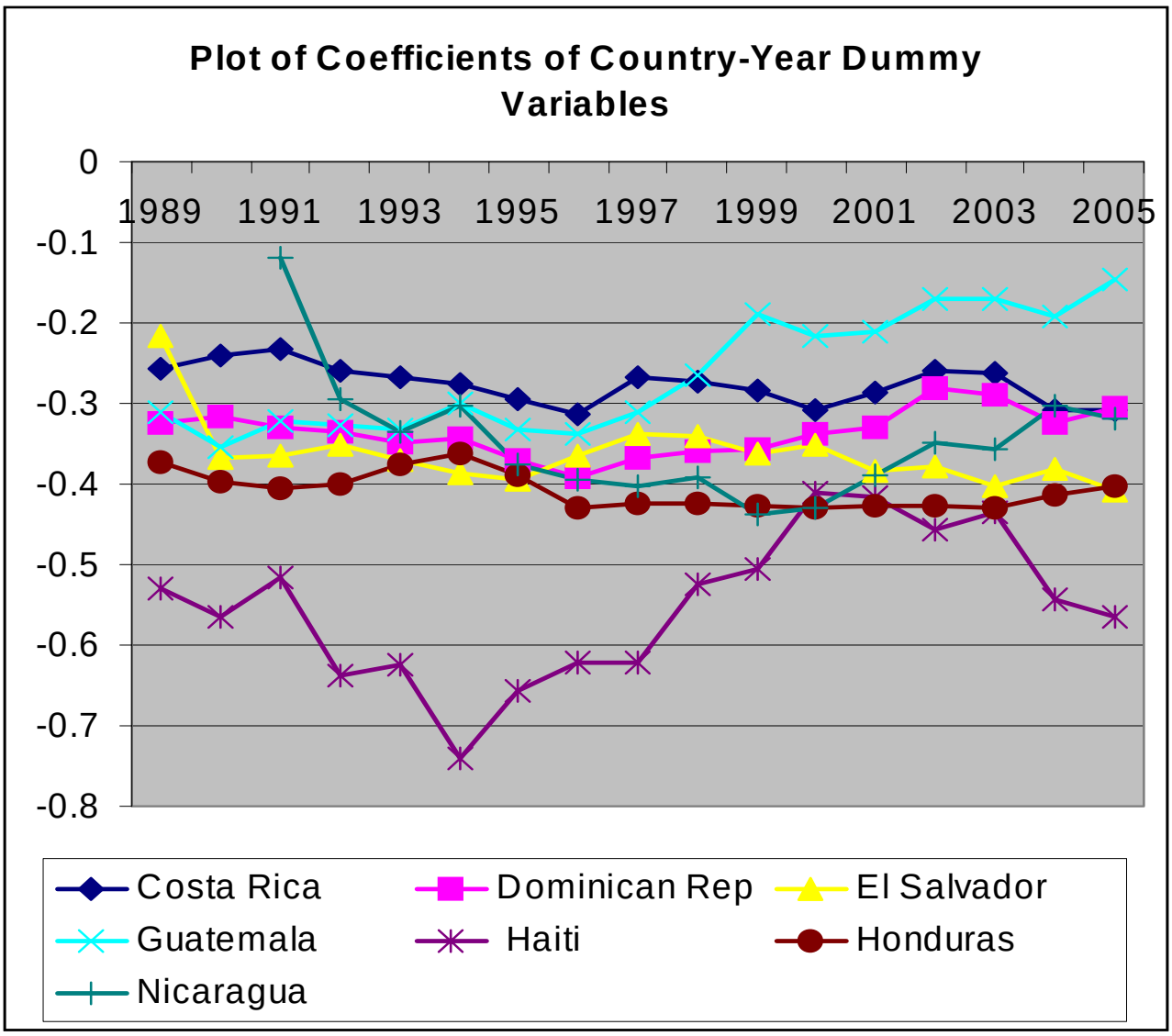
Plot of Coefficients of Country-Year Dummy Variables
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
1989
1991
1993
1995
1997
1999
2001
2003
2005
Costa Rica
Dominican Rep
El Salvador
Guatemala
Haiti
Honduras
Nicaragua

Figure 13:

Table 2: Effect of Preference Margins & import Charges on the Caribbean Prices			
Dependent Variable	Ratio of Car. Price to Average US Price		
	No Quota variable	% of Exports from Quota Countries	% of Exports Under Quotas
Tariff Difference	0.643** (0.097)	0.656** (0.077)	0.561** (0.076)
Import Charges	−0.5487** (0.039)	−0.5672** (0.037)	−0.5894** (0.038)
Log of Export Value	−0.037** (0.004)	−0.038** (0.004)	−0.036** (0.04)
Quota Restriction Variable	-	0.021 (0.019)	0.077** (0.023)
Product Group Fixed Effects	*Yes*	*Yes*	*Yes*
Country Fixed Effects	*Yes*	*Yes*	*Yes*
Year Fixed Effects	*Yes*	*Yes*	*Yes*
Observations	22,155	22,155	22,155
χ^2	2679.96**	2690.31**	2682.96**

* Statistically significant at the 1% level. Standard errors in parentheses. Estimation includes separate product group, country, year fixed effects.

Table 3: Effect of Preference Margins & import Charges on the Caribbean Prices			
Dependent Variable	Ratio of Car. Price to Average US Price		
	No Quota variable	% of Exports from Quota Countries	% of Exports Under Quotas
Tariff Difference	0.546** (0.087)	0.564** (0.084)	0.511** (0.082)
Import Charges	−0.4367** (0.033)	−0.4546** (0.036)	−0.4894** (0.038)
Log of Export Value	−0.027** (0.004)	−0.028** (0.004)	−0.026** (0.04)
Quota Restriction Variable	-	0.014 (0.017)	0.072** (0.024)
Product Group Fixed Effects	*Yes*	*Yes*	*Yes*
Country-Year Fixed Effects	*Yes*	*Yes*	*Yes*
Observations	22,155	22,155	22,155

** Statistically significant at the 1% level. Standard errors in parentheses. Each estimation includes combined country-year fixed effect together with separate product group fixed effects.

Table 4: Country Specific Determinants of Relative Prices			
Dependent Variable	Coefficients of Country-Year Dummy Variables		
	OLS	*FE*	*FE*
Female Enrollment (%)	0.0036** (0.0003)	0.0052** (0.0012)	0.0040** (0.0014)
GDP per unit of Energy	0.0114** (0.0032)	0.0207** (0.0050)	0.0132** (0.0066)
Inflation (%)	−0.0001** (0.0000)	−0.00006** (0.0000)	−0.00007** (0.000)
Telephones per 1000	0.00006 (0.00006)	−0.0003 (0.00005)	−0.0001 (0.00009)
Country Fixed Effects	*No*	*Yes*	*Yes*
Year Fixed Effects	*No*	*No*	*Yes*
Observations	116	116	116

** Statistically significant at the 1% level. Standard errors in parentheses.

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