2019

Did DR-CAFTA Affect the Exports of the Dominican Republic to the United States?

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Reyes Peguero, Maria Ivanova, and Asger Hansen. 2019. "Did DR-CAFTA Affect the Exports of the Dominican Republic to the United States?." *The International Journal of Interdisciplinary Global Studies 14(3)*: 19-49.

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Abstract
This article evaluates the impact the Dominican Republic and Central America Free Trade Agreement (DR-CAFTA) had on the exports of the Dominican Republic (DR) to the United States. We estimate a gravity model for the DR exports to the 109 trade partners of the country from 1990 to 2014. This model quantifies the effect of the DR-CAFTA since 2007, when the agreement was ratified, and finds that the DR-CAFTA negatively affected DR exports to the US. We conduct further analysis of factors that could explain the decline in exports, in spite of the ratification of the agreement. We find that the 2008–09 crisis was not the driver of the slowdown of DR exports to the US. The increasing competition with Central American countries and other export oriented economies, like China, in the US market seem to have the leading role in the export contraction that we find in our study.

Keywords
Trade, Exports, Dominican Republic, United States, Central America, Crisis, China

Disciplines
Economic History | Economics | Growth and Development | International Economics

Did the DR-CAFTA Trade Agreement Affect the Exports of the Dominican Republic to the United States?

By

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March 15, 2019

Abstract:

This paper evaluates the impact the DR-CAFTA had on the exports of the Dominican Republic to the United States. We estimate a gravity model for the DR exports to the 109 trade partners of the country during 1990-2014 and measure the marginal effects of the 2007 DR-CAFTA ratification. Our findings indicate that exports of the DR to the US fell after ratification, even after controlling for the detrimental effects of the global financial crisis. This suggests the agreement did not stop the increasing competition with Central American countries and other export oriented economies, like China, in the US market.

Keywords: Trade, exports, Dominican Republic, United States, Central America, crisis, China.

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I. Introduction

The Dominican Republic is the only Caribbean country that is currently part of the Central America Free Trade Agreement with the United States, commonly known as DR-CAFTA. The country joined this agreement in March 1st, 2007. Before signing this treaty the DR had a well-established trade relationship with the United States exporting an average of two thirds of its total exports of goods to the world to this nation. Yet, exports of goods from the DR to the US started to see a declining trend in the mid-2000s, before the agreement was signed. This paper discusses the motivation of the DR to join the DR-CAFTA and addresses the impact the treaty had in exports of the Dominican Republic to the United States and to other members of the agreement. The paper also analyzes the role that competition with Chinese exports to the United States may have on the DR declining export trend towards the US market.

Besides the Dominican Republic, five countries in Central America (Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua) and one country in North America (the United States) are part of the DR-CAFTA. The agreement was signed by the United States, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, and Nicaragua in August 2004 (United States Trade Representative, 2007). However, it started official implementation after each country approved the necessary legal framework. The first country to implement the agreement was the United States on August 2nd, 2005. This country was followed by El Salvador on March 1st, 2006, Honduras and Nicaragua on April 1st, 2006, Guatemala on July 1st, 2006 and then the Dominican Republic, which ratified it on March 1st, 2007. Costa Rica was the last member to ratify the agreement and it did so on January 1st, 2009 (United States Trade Representative, 2007).

To quantify the effects of the treaty on DR exports in this paper we estimate a gravity model of trade for the Dominican Republic. The model includes the 109 trade partners of the Dominican Republic during the period 1990-2014 using bilateral trade data from the UNCOMTRADE database. The focus of the analysis is just on the flow of DR exports to its partners. Our results indicate that, after the ratification

of the DR-CAFTA, exports of goods of the Dominican Republic to the US decreased relative to the rest of the world, while they increased to Guatemala. Although total DR exports to the Central American members of DR-CAFTA have increased, the treaty had no statistically significant impact on exports to Costa Rica, El Salvador, Honduras and Nicaragua, over the period of analysis. This indicates the treaty has not yet changed the trend of DR exports towards these members.

Since the start of the DR-CAFTA agreement almost coincides with the 2008-09 global financial crisis, we also control for the effects of this episode on DR exports. We do not find that the crisis is the driver of the declining export trend. On the contrary, the declining DR export trend to the United States is not the result of the crisis but of a structural change that had begun before signing the agreement. Part of this structural change can be attributed to changes in favorite treatment of DR exports to the US market (the Multi-Fiber agreement ended in 2005) and increasing competition with respect to other export oriented economies, like China and the Central American economies. Given that the economic structure of the Central American countries that are part of CAFTA is very similar to that of the DR, and likewise their export composition, the geographic proximity to the United States makes these countries have a relative advantage in the US market. For the Dominican Republic, joining this agreement therefore becomes a mechanism to slow the already declining export trend to the US driven by tougher global competition.

To test for the effects that global competition has had on DR exports to the US we include a model specification that controls for the growth of exports from China to the US market. Our findings indicate that the growth of Chinese exports of goods to the United States has a strong statistically significant negative effect on DR exports to the US. This finding corroborates the declining trend of DR exports to the US which moves opposite to the increasing trend of Chinese exports to this destination.

The current analysis is of particular relevance given the strong reliance of the Dominican Republic on export demand from the United States. About two thirds of DR exports to the world reach

the US market each year. Any deviation from this pattern will definitely re-shape the structure of the DR economy.

In light of the relevance of US-DR relations, two important aspects are worth discussing as we begin this evaluation: (i) the first is that even though DR exports to Central American countries are low, they have increased considerably after signing the treaty, now more than doubling the share of total exports to the world (from 0.55 in 1992 to 1.70 in 2017); (ii) the Dominican Republic exports more than half of all its goods to the United States, but the share of total exports to the US has been in a persistent decline since the beginning of the 1990s.

The agreement therefore constituted a structural change for DR exports to the Central American members, and possibly a coping mechanism to the declining export trend to the United States. The Dominican Republic joined a treaty that opened the doors to a new market (the Central America region) with relative product similarity. The main advantage of the treaty was not to lose its market share in the United States given the strong competition with Central American nations that export similar manufacturing and primary products to the US. However, as shown in our analysis, this agreement did not help the DR cope with other factors that have been conducive to a reduction of exports towards the US.

In this paper we explore the differential effects of DR exports to each member country after signing the agreement. We do this by analyzing total exports of goods of the Dominican Republic to all its global partners during the period 1990-2014 using the traditional gravity model.

The contribution of this paper is that it provides a quantitative analysis of an important trade agreement for the Dominican Republic seven years after its implementation. In addition, the paper contributes by filling a gap in the knowledge about this treaty and its consequences to DR trade. There are no other studies to date quantifying the effects of this agreement on the exports of the Dominican Republic.

In the case of Guatemala, for example, the Central Bank of Guatemala estimated that the 14.6 percent growth of *Maquila* exports during 2006 was mostly attributed to the DR-CAFTA effects in the second half of that year (Banco de Guatemala, 2006). This estimate is part of the annual economic report prepared by the Central Bank of Guatemala and does not go in-depth on the effects of DR-CAFTA.

An interesting study prior to the implementation of the DR-CAFTA is that of Hernández in 2007 evaluating the impact of the expiration of the Agreement on Textiles and Clothing (ATC) of the World Trade Organization (WTO) in 2005. Hernández (2007) explains how the expiration of the ATC would lead to increased competition of DR and Chinese products in the U.S. market. The reason for this is that under the ATC and the CBI, the DR did not face quota restrictions on textile exports to the US, unlike other nations outside this agreement such as Mexico and China. Hernández (2007) argues that the DR market share of textiles in the U.S. will decrease, despite the implementation of DR-CAFTA, following a tougher competition with Chinese products. This study illustrates an explanation behind the declining trend of DR exports to the United States, while not explicitly included in our study we are aware that the forces of competition with Chinese products are a driving force of the decline.

Furthermore, the findings of Hernandez (2007) are of particular relevance as in 2003, 49 percent of DR exports to the US were textiles. According to Hernandez (2007) in order to keep up with production, the DR and the other Central American members must modernize their way of producing textiles and clothing with better supply chain management and just-in-time supply solutions and not just low wages, which was the primary benefit of production in the DR in the past.

Marcelo Gordillo et al. (2010) estimate a gravity model for Central American countries and find that exports among these nations have increased significantly during the period 2000-08. Moreover, exports among the Central American nations have increased at a faster rate than their exports to the rest of the world over the same period. This is very interesting, since all of the effect cannot be attributed to DR-CAFTA because it took effect as late as 2009 in Costa Rica. Also relying on a gravity model, Marcelo

Gordillo et al. (2010) forecast that if the Central American countries were to reach their full potential of physical infrastructure (roads, bridges, rail, etc.) and thus become fully spatially integrated, their intra-regional trade flows could double. This, however requires, a physical infrastructure similar to the one of European nations.

Conducting a firm level analysis, Molina et al. (2010) conduct a trade analysis for the Dominican Republic during 2002-2009. They find evidence that exports did indeed increase following the DR-CAFTA agreement. Nevertheless, the effect they find is very small and they only evaluate two years after the implementation of the agreement in the Dominican Republic. Their study also differs from ours in that it analyzes firms rather than aggregate trade data. Molina et al. (2010) also find that a decline in tariffs seems to have reduced the probability of firm exit, but the effect is very small. As an explanation for the very small effect, the authors propose that poor infrastructure and credit constraints could be considerable barriers to trade beyond tariffs. This would suggest that the positive effects of signing the agreement could be hindered by other limitations of the DR.

Calderón and Poggio (2010) find evidence that increased trade openness as a consequence of DR-CAFTA has benefitted economic growth in the member nations. They use panel data from 136 countries from 1960-2009 in a 5 year interval and run cross-country regressions. However, Calderón and Poggio (2010) stress that the results may be overstated if factors such as human capital, strong institutions and infrastructure are not appropriately accounted for. Moreover, as the aforementioned factors improve, the DR-CAFTA member nations will increasingly benefit in terms of economic growth from the additional trade that may result from the DR-CAFTA agreement.

According to a study published by Vásquez-Ruíz et al. (2012), the DR-CAFTA agreement contributed positively to the Dominican Republic's production. Using the SMART model devised by the World Bank they estimated the trade creation effects of DR-CAFTA. The model considers revenue loss for the government as a consequence of tariff elimination as well as lower consumer prices. They estimate

that the total consumer surplus as a consequence of the DR-CAFTA increased by approximately 14 million U.S. Dollars in 2011.

In their 2013 working paper Lanuza Díaz & Bone Delgadillo find that the DR-CAFTA has increased Nicaraguan exports between 33-69% since implementation in Nicaragua in 2006. As we do in this paper, the authors rely in a Gravity Model of trade to conduct their estimations for Nicaragua.

Our paper fills a gap in the literature as there is no study explicitly quantifying how much DR exports have increased or decreased to each member country after the implementation of DR CAFTA. Furthermore, we emphasize in our analysis the impact the global financial crisis had on the DR exports to the United States, since this was also a relevant factor in diverting trade post-2007. Finally, as previously indicated, we also quantify the impact of Chinese competition in the US market.

The paper is structured as follows. Section II discusses the recent trends in terms of DR exports to the CAFTA members. Section III presents some important aspects that contributed to the establishment of this agreement. Section IV describes the gravity model used in this paper. Section V presents the data. Section VI discusses the results and Section VII the conclusions of the paper.

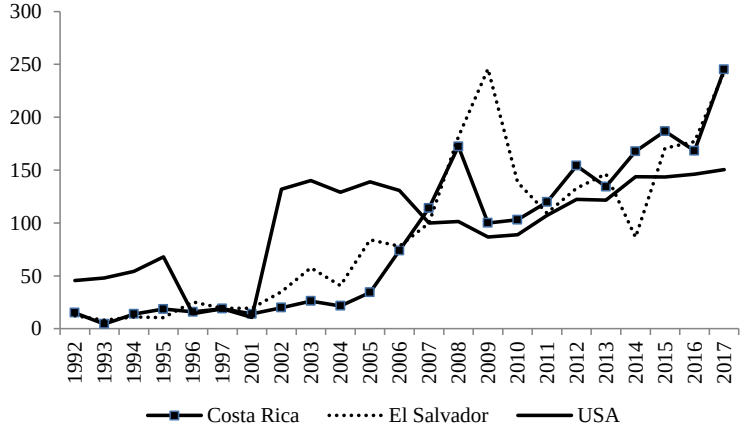
II. Exports of the Dominican Republic to CAFTA Members - Recent Trends

In general, exports of the Dominican Republic to most CAFTA members have increased considerably since the agreement was signed in 2007. The CAFTA country where the DR has expanded exports more is Nicaragua. Exports to this country are almost seven times higher in 2014 than their level in 2007. The next most important expansion was to Guatemala, where exports expanded by 2.6 in the seven years that followed the agreement. Graphs 1(a) and 1(b) below show an index of exports of goods of the Dominican Republic from 1992 until 2017. The graph illustrates the following trends: exports to the US decelerated just before the agreement was signed and regain relevance soon after. CAFTA may have acted as a coping mechanism with the greater competition faced by DR exports in the US market.

There is a clear upward trend in the exports of the DR to the CAFTA member countries after 2007. The increase is stronger to Guatemala, Honduras and Nicaragua after 2010.

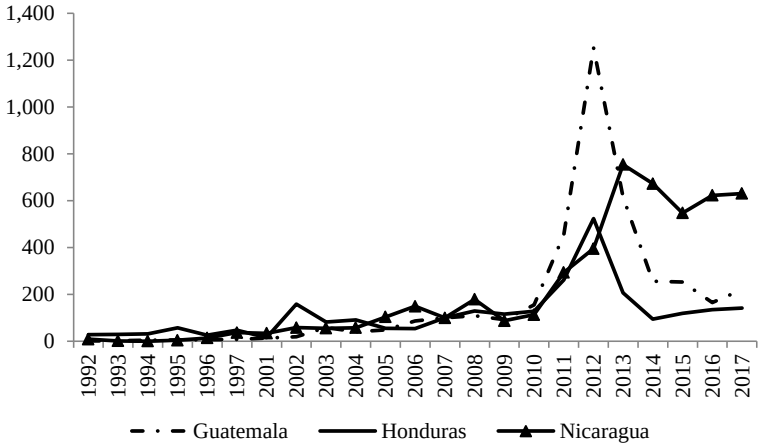
Graph 1(a): Goods Export Index of the DR to Selected CAFTA members, 1992-2017

(2007 = 100)*



*For Costa Rica the index takes values of 100 in 2009 when this nation signed the agreement.
Source: Based on exports of goods data from UNCOMTRADE database.

Graph 1(b): Goods Export Index of the DR to Selected CAFTA members, 1992-2017
(2007 = 100)



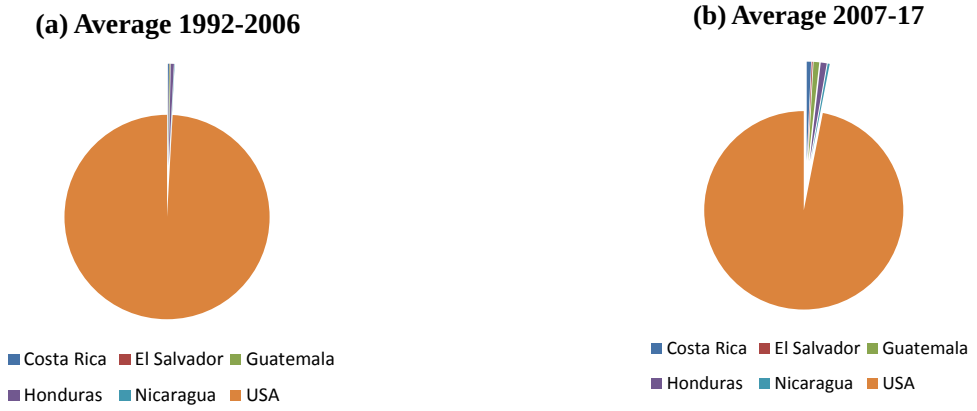
Source: Based on exports of goods data from UNCOMTRADE database.

While these trends clearly indicate a tendency towards higher exports of the DR to most CAFTA members, the absolute value of total exports to the Central American members is still quite low. The DR exported on average 11.6 millions of dollars in exports to the Central American members during 2007, a

very low figure that contrasts with a total of 3,094 million dollars to the United States. Nevertheless, by 2014 total exports of the DR to the Central American members had almost doubled, and more than doubled by 2017.

To further illustrate the small share that Central American countries represent in terms of DR exports Graphs 2(a) and 2(b), show the average exports for 1992-2006 and then for 2007-2017 as a percentage of total exports of the Dominican Republic to the CAFTA members. As illustrated in this chart, the small share of Central American countries has more than tripled. The reason behind this is that the exports of DR to the USA have declined (although not as much as the pre-CAFTA trend), while those to Central American nations have expanded.

Graph 2: Goods Exports of the Dominican Republic to all CAFTA members, 1992-2006 vs 2007-17 (% of Total exports to CAFTA members)

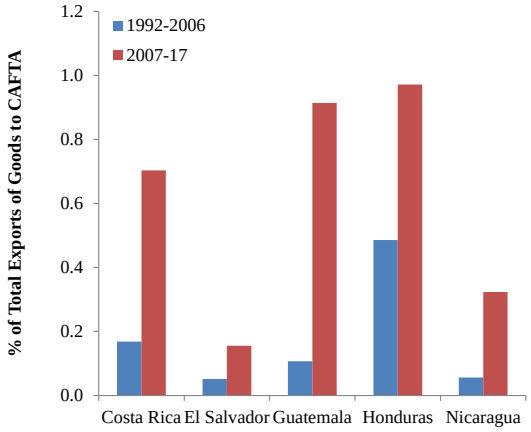


Source: Based on exports of goods data from UNCOMTRADE database.

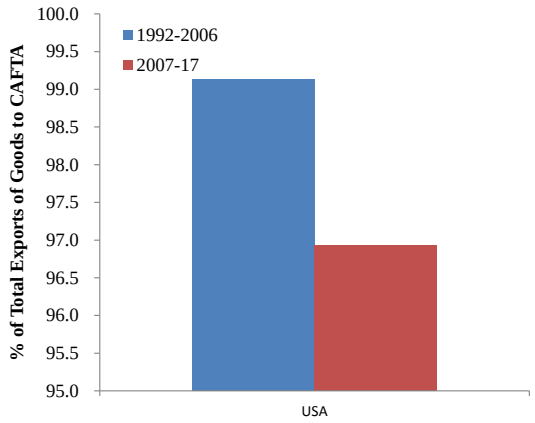
Furthermore, graphs 3(a) and (b) present the shares of total DR exports to CAFTA members separated by the pre and post agreement phase. The main destinations of DR exports in the region, after the United States, are Honduras and Guatemala. In spite of the considerable expansion of exports to Nicaragua, this remains one of the smallest partners of the DR in the agreement.

Graph 3: Goods Exports of the Dominican Republic to all CAFTA members, 1992-2006 vs 2007-17 (% of Total exports to CAFTA members)

(a) Average Pre and Post CAFTA Agreement



(b) Average Pre and Post CAFTA Agreement, only the USA



Source: Based on exports of goods data from UNCOMTRADE database.

III. Towards the Establishment of the DR-CAFTA

The precursor agreement to the DR-CAFTA was the Caribbean Basin Economic Recovery Act (CBERA) initially launched in 1983 by the United States to provide preferential trade treatment to countries in the Central America and Caribbean regions (Huegel and Kostrzewa, 2013). All current DR-CAFTA members were part of the CBERA upon start, with the exception of Nicaragua, which joined in 1990. The CBERA was widely known as the Caribbean Basin Initiative (CBI) and was intended to foster trade relations between the United States and the beneficiary countries, as well as to promote export diversification of its members. Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras and Nicaragua automatically exited the CBI upon the ratification of the DR-CAFTA (Ibid.).

The negotiations of the North American Free Trade Agreement (NAFTA) were a factor behind the creation of the DR-CAFTA. According to Echandi (2006) after Mexico concluded the negotiations with the US and Canada for NAFTA in 1992 the current Central American DR-CAFTA members expressed concerns that this agreement could negatively impact their market access to the US. Consequently, they were interested in also negotiating a trade agreement with the US that extended

beyond CBI (Echandi, 2006). According to Echandi (2006), the DR was not involved at first in these negotiations, but was able to enter the discussions in 2004 after the most important parts of the agreement were already in place. The DR had already negotiated an agreement with the five Central American members in 1998 which had entered into force during 2001 (Echandi, 2006; SICE, 2016).

The motivations of the US to sign the DR-CAFTA were related to the greater market access that US exports will have in the Central American economies and the Dominican Republic. As mentioned above, up until the implementation of DR-CAFTA, the member countries had already enjoyed preferential treatment under the CBI which facilitated the entry of their products to the US market. However, the CBI did not include the elimination of tariffs on imports of US goods to the DR-CAFTA member nations (Office of the United States Trade Representative, 2005). In addition to this the US interest in the signing of the DR-CAFTA also related to the clauses of the agreement related to the protection of intellectual property rights (United States International Trade Commission, 2004). Lastly, significant motivators for the United States were the requirements of transparency and faster customs procedures which would decrease costs related to exporting to the DR-CAFTA nations (Office of the United States Trade Representative, 2005).

In addition to the factors discussed above, according to Campanella (2007) one of the primary motivations for the United States to initiate the negotiations of the DR-CAFTA was the interest to reach satisfactory negotiations on agricultural related issues. Campanella (2007) further emphasizes that since the U.S. monoculture is capable of producing products like corn at a very low cost this may undermine the agricultural production of countries that do not receive subsidies to the same extent U.S. farmers do. In sum, Campanella (2007) explains the interest of the US in signing the DR-CAFTA as one that serves in the commercial interests of U.S. products because the DR-CAFTA members cannot compete with the highly efficient U.S. agricultural sector.

A unique aspect of the DR-CAFTA agreement is that it was originally envisioned to cover only Central American countries and the United States, but later was joined by a Caribbean country. The question arises as to what were the circumstances that led towards the inclusion of the DR in the agreement.

The Dominican Republic's export and production structure is very similar to that of the Central American members of DR-CAFTA. In addition, their relationship to the US before the signing of the agreement was similar. As a result, not signing the agreement would have meant that five nations that competed with the DR in market access to the US would have increased their entry to the US at expense of a substitution of DR products. Therefore the main motivation of the DR to join DR-CAFTA relates to the potential competition its market would have faced otherwise (Granados and Cornejo, 2006). Had the DR not signed the agreement it could have risked the possibility of getting isolated from the US and possibly from the other members of DR-CAFTA (Ibid.). This notion of potential competition is reinforced by noticing the similarity of the Dominican Republic's economic structure and that of the rest of the CAFTA members (Table 1). In almost all cases, the economic structures are identically divided into industrial production (about 60%), agriculture (about 10%) and services (about 30%). The main exception is Nicaragua which has a slightly bigger agricultural sector (18%) at the expense of the service sector (23%).

In addition to guaranteeing a new market for the products of the Dominican Republic in Central America the DR-CAFTA improved the DR perspectives for increased flows of Foreign Direct Investment (FDI) through means of deregulation, which could further enhance the country's growth (López and Shankar, 2011).

Table 1 – Economic Structure of the DR-CAFTA Members in 2006

Share of Each Sector in Gross Domestic Product (%)	Services	Industry	Agriculture
Costa Rica	62%	29%	9%
Dominican Republic	63%	30%	7%
El Salvador	60%	29%	11%
Guatemala	58%	30%	12%
Honduras	58%	29%	11%
Nicaragua	59%	23%	18%
United States	77%	22%	1%

Source: Based on data from the World Bank World Development Indicators Database.

Finally, Abrahamson (2007) argues that the agreement will lead to improvements in social citizenship[2] in the member countries, including the Dominican Republic. This notion originates from other clauses that are usually included in agendas of free trade agreements besides elimination of tariffs, such as intellectual property rights, expropriation laws and local labor rights. Abrahamson (2007) thus argues that the improvement in labor rights as a consequence of DR-CAFTA will be beneficial for the citizens of the member nations because new laws, such as labor rights, otherwise would not have been introduced. In this sense, DR-CAFTA is of higher quality than the previously established CBI.

In opposition to Abrahamson's 2007 predictions, however, Rodas-Martini (2006) argues that the labor rights and provisions that were passed under DR-CAFTA only succeeded in the negotiations because the U.S. threatened with export sanctions against the member nations. Furthermore, Rodas-Martini (2006) points out that the new provisions may not significantly change the labor conditions in Central America. The scope of our paper, however, does not cover the effects of DR-CAFTA in labor markets.

[2] According to Abrahamson (2007), social citizenship refers to the "*rights and duties that the state guarantees and demands of its citizens with respect to their well-being*".

IV. The Model

In order to assess whether the exports of the DR to the US increased after the former joined the DR-CAFTA we rely on the Gravity Model of Trade. This model has been used for many purposes since it was first introduced by Jan Tinbergen in 1962 (Deardorff, 1998). The name stems from Newton's Law of Gravity and the idea is that large objects attract one another (Feenstra, 2007). Along those lines, large economies ought to trade more with each other. In addition, distance ought to be inversely related with the quantity of trade between any two economies as it captures transportation costs (Feenstra, 2007). The original specification is as follows:

$$Trade_{ij} = \frac{\alpha\, GDP_i GDP_j}{Dist_{ij}} \qquad (1)$$

In equation (1) the variable $Trade_{ij}$ is the predicted bilateral trade level between nations *i* and *j*; the variable GDP_i refers to the Gross Domestic Product of country *i* and GDP_j to that of country *j;* $Dist_{ij}$ represents the distance between the two countries. The coefficient α is a scaling factor.

Our empirical model is a log-linearized version of equation (1) that also controls for additional factors that could affect the trade relationship between the two countries. We focus on analyzing only exports of the Dominican Republic for the period 1990-2014 to all its trade partners during this period, as our interest is to evaluate if exports of this nation have been affected by the trade agreement. The model that we estimate in this paper is presented below in equation (2):

$$lnDRExports_{j,t} = \beta_1 + \beta_2 lnGDP_{j,t} + \beta_3 lnDisttoDR_j + \lambda X_{j,t} + \gamma D_{j,t} + \varepsilon_{j,t} \qquad (2)$$

In equation (2) the variable $lnDRExports_{j,t}$ is the natural log of the exports of the Dominican Republic to country *j* in period *t*; β_1 is a constant term representing the natural log of the scaling factor α; $lnGDP_{j,t}$ represents the natural log of the GDP of country *j* in time *t*; $\beta_3 lnDisttoDR_j$ represents the natural log of the distance between the Dominican Republic and each of its trade partners; $X_{j,t}$ represents

a matrix of control variables and $D_{j,t}$ represents a matrix of dummy variables for the DR-CAFTA and other relevant events we control for over this period. Lastly, $\varepsilon_{j,t}$ is the error term, which is assumed to be normally distributed with constant variance. Table 2 provides the definitions and sources of the gravity model variables as well as of the control variables generated to account for the effects of the DR-CAFTA agreement.

Table 2: Baseline Gravity Model variables and DR-CAFTA Controls

Variable	Definition	Source
Baseline Gravity Model:		
Log of DR Real Exports	Natural Log of Real Exports of the Dominican Republic to each partner country (Base prices of 2005, US Dollars)	UNCOMTRADE Exports are converted to Real terms using data from the Central Bank of the Dominican Republic
Log of Partner's Real Gross Domestic Product	Natural Log of Real Gross Domestic Product (Base prices of 2005, US Dollars)	World Bank
Log of distance from partner	Natural Log of weighted distance between nations	Centre d'Etudes Prospectives et d'Informations Internationales (CEPII)
DR-CAFTA Controls:		
Dummy CAFTA Member	1 if a partner is a CAFTA member (does not distinguish if the agreement was signed or not); 0 otherwise	Constructed by authors
DR - CAFTA dummy (1 after 2007)	1 if year ≥ 2007 for all CAFTA members; 0 otherwise	Constructed by authors
DR - CAFTA with US	1 if year ≥ 2007 and partner is the US; 0 otherwise	Constructed by authors
DR - CAFTA with US after crisis	1 if year ≥ 2010 and partner is the US; 0 otherwise	Constructed by authors
DR – CAFTA with Costa Rica	1 if year ≥ 2009 and partner is Costa Rica; 0 otherwise	Constructed by authors
DR – CAFTA with El Salvador	1 if year ≥ 2007 and partner is El Salvador; 0 otherwise	Constructed by authors
DR – CAFTA – with Guatemala	1 if year ≥ 2007 and partner is Guatemala; 0 otherwise	Constructed by authors
DR – CAFTA – with Honduras	1 if year ≥ 2007 and partner is Honduras; 0 otherwise	Constructed by authors
DR – CAFTA – with Nicaragua	1 if year ≥ 2007 and partner is Nicaragua; 0 otherwise	Constructed by authors

Since the 1960s, the Gravity Model has been considerably modified in models analyzing trade agreements. New studies that use the model tend to incorporate other variables to account for unknowns that might affect trade flows. These commonly include factors such as language, colony, common borders, trade agreements and diplomatic relations. Examples of papers that have included this type of controls are Bacaria-Colom et al. (2013), Hansen and Rand (2014), Cuenca Garcia et al. (2013), Marcelo Gordillo et al. (2010), Yeboah et al. (2007) and Lanuza Díaz and Bone Delgadillo (2013). Similarly to these prior studies, we include controls that may affect the trade relationship of the Dominican Republic and its trade partners. Table 3 below provides definitions for the control variables used in this paper to account for these effects. Additionally, we detail the control dummies that were used in this paper to capture the effects of the global financial crisis.

Table 3: Explanatory variables - Economic Crisis Controls and Other Controls

Variable	Definition	Source
Economic Crisis Controls:		
Dummy Crisis 2008-09	1 if years 2008 and 2009; 0 otherwise	Constructed by authors
Dummy Econ Crisis in USA, 2008-09	1 if years 2008 and 2009 and partner is the US; 0 otherwise	Constructed by authors
Dummy Econ Crisis in EU, 2008-09	1 if years 2008 and 2009 and partner is a country part of the EU; 0 otherwise	Constructed by authors
Other Controls:		
Dummy USA	1 if partner is the United States; 0 otherwise	Constructed by authors
Dummy EU	1 if partner is part of the European Union; 0 otherwise	Constructed by authors
Diplomatic	1 if the DR has a diplomatic mission in partner country; 0 otherwise	Foreign Ministry of the DR
Language	1 if partner country's official language is Spanish; 0 otherwise	Centre d'Etudes Prospectives et d'Informations Internationales (CEPII)
Former Colony	1 if DR was a former colony of partner; 0 otherwise Note: Dominican Republic was a colony of Spain.	Constructed by authors
Caribbean Region	1 if partner belongs to the Caribbean region; 0 otherwise. The Caribbean region includes the countries in the Caribbean that traded with the Dominican Republic during this period.	Constructed by authors
Common Border Dummy	1 if partner shares a border; 0 otherwise Note: The only border country is Haiti.	Centre d'Etudes Prospectives et d'Informations Internationales (CEPII)

V. Data

The period of analysis for this paper corresponds to the years 1990-2014. To conduct this analysis we have relied on four different data sources: the United Nations Commodity and Trade Statistics Database (UNCOMTRADE), the World Bank World Development Indicators (WDI) database, the trade database of the *Centre D'Etudes Prospectives et d'Informations Internationales* (CEPII) and the Foreign Ministry of the Dominican Republic.

The export data for this analysis comes from UNCOMTRADE. To collect the export data of the Dominican Republic to its 109 partners we have used "mirrored data", which means that we have collected import data from all the DR partners during the period 1990-2014. This way of obtaining exports tends to be better in some cases as nations are more reliable at reporting imports than exports due to tariff collections being focused on the former. We chose this period because prior to 1990 there is not reliable data available for DR trade flows. The number of trade partners is determined by the number of nations that have reported trade with the DR during this period. The data has been adjusted for inflation using the DR GDP deflator as a proxy for export prices, since those are not available.

The data on Gross Domestic Product (GDP) from all partners has been obtained from the World Bank World Development Indicators (WDI) Database and is reported in real dollars of 2005.

The data on geographic distances between nations, common language and shared borders has been collected from the *Centre d'Etudes Prospectives et d'Informations Internationales* (CEPII), a research center specialized in international data collection. Their publications and data are aimed to be used for private and public decision makers as well as economists and international institutions. The distance data is reported in kilometers and has been prepared specifically for purposes of analyzing trade using the Gravity Model. Usually distances are measured from capital to capital. However, this data is adjusted with weighted distances which account for the proportions of the population that is represented

in each city as well as the inter-city distances, thus allowing transportation costs to be reflected better in the data (Mayer and Zignago, 2011).

There is little variation in the variable specified for diplomatic relations because we have not included the year that each embassy was established in the data set. This data has been obtained from the webpage of the Foreign Ministry of the DR. The low variation in the variable may lead to results that do not provide much information. More details on the data can be observed in table 4 below.

Table 4: Overview of Key Control Variables

Variable	Quantity
Number of DR embassies & consulates	65
Number of common borders	1
Number of nations with common languages	16
Number of former colonizers	1
Number of Caribbean Trade Partners	7

VI. Estimated Results

In the following lines we present the results of our gravity model. Specifically, in this section we discuss the differential effect on DR exports of signing the agreement with each CAFTA member. Since the DR-CAFTA was signed a few years prior to the global financial crisis we also include controls to quantify the differential effects from this episode. Finally, we also control for the impact of global competition by measuring the effect that Chinese export growth to the United States market had on DR exports to this country.

Our analysis begins with a baseline model in which we evaluate the gravity model without controlling for any DR-CAFTA effects (Table 5). In this baseline estimation we corroborate the validity of the gravity equation as we find that larger partner economies receive greater exports from the Dominican Republic and that more distant partners see a reduction of the exports. More specifically, in column (1) of Table 5 the coefficient of the log of GDP variable indicates that a 1 percent increase in the

GDP of a trade partner of the Dominican Republic will on average increase exports of the DR by 1.14 percent. Likewise, a one percent increase in distance will result on an average decrease in total exports of 2.69 percent. The overall R-squared is approximately 0.61 for this first model specification.

To further supplement the baseline gravity model columns (2)-(4) of Table 5 include control dummies for common borders, countries belonging to the Caribbean region and countries that were former colonizers of the DR, as well as a dummy for Spanish language. The coefficients of the gravity model variables, log of the partner's GDP and distance to partner, for columns (2)-(4) change very little with respect to the values in column (1) and are statistically significant in all the specifications at the 1 percent significance level. None of the control dummies are statistically significant in these alternative specifications.

Table 5. Random Effects Regression Models, 1990-2014
Dependent Variable: Log of DR Real Exports

Regressors	**(1)**	**(2)**	**(3)**	**(4)**
Log of Partner's Real Gross Domestic Product	1.140***	1.138***	1.144***	1.149***
	(0.048)	(0.048)	(0.049)	(0.049)
Log of distance from partner	-2.269***	-2.232***	-2.053***	-2.171***
	(0.135)	(0.142)	(0.178)	(0.224)
Other controls:				
Language (1 if partner country's official language is Spanish; 0 otherwise)				-0.341
				(0.391)
Former Colony+ (1 if DR was a former colony of partner; 0 otherwise)			0.982	1.248
			(1.235)	(1.276)
Caribbean Region+++ (1 if partner belongs to the Caribbean region; 0 otherwise)			0.866	0.634
			(0.537)	(0.601)
Common Border Dummy++ (1 if partner shares a border; 0 otherwise)		1.072	0.869	0.665
		(1.318)	(1.321)	(1.345)
Constant	5.897***	5.597***	3.812*	4.794*
	(1.345)	(1.394)	(1.810)	(2.144)
Observations	2098	2098	2098	2098
R^2-Within	0.129	0.129	0.129	0.129
R^2-Between	0.752	0.754	0.757	0.758
R^2-Overall	0.61	0.612	0.618	0.62

Standard errors in parenthesis, ***p<0.01, ** p<0.05, *p<0.10
+The Dominican Republic is a former colony of Spain. Please see definitions for all control dummies in table 3.
++Haiti is the only border country
+++Only 13 Caribbean countries recorded DR exports during the period 1990-2014: Antigua & Barbuda, Bahamas, Barbados, Cayman Islands, Cuba, Dominica, Grenada, Haiti, Jamaica, St. Lucia, St. Vincent and the Grenadines, Trinidad & Tobago.

In Table 6 we extend the baseline models from Table 5 to include controls for the DR-CAFTA agreement in models (5) through (9). When including these controls the size of the GDP effects increases slightly when comparing these model specifications with those of Table 5. The GDP of a partner, as in the previous models, has a statistically significant and positive effect on DR exports. Similarly, the

greater the distance the lower are exports of the DR on average; the effect of distance is also accentuated once we control for the DR-CAFTA agreement. The first relevant control variable in this table is the Dummy CAFTA member which tests if the DR exports to any CAFTA member are higher regardless of whether the agreement was signed or not, relative to non-CAFTA partners. We find a positive and statistically significant effect of this dummy (see column (8) of Table 6).

When testing if signing the DR-CAFTA had any effect on the DR exports to its member countries we do not find any statistically significant effect, this model specification is shown in column (9) of Table 6 using the control variable "DR-CAFTA dummy". This indicates that the ratification of the agreement in 2007 did not affect exports of the DR to all its members combined. We then test if the exports of the Dominican Republic have increased towards any particular CAFTA member after signing the agreement with that particular partner. Columns (6) and (7) of Table 6 show the results of these estimations. The variables "DR-CAFTA with the US" up to "DR CAFTA with Nicaragua" are defined as taking the value of 1 when the trade is with any of the specific partners and the DR-CAFTA has been ratified.

In columns (6) and (7) there is a statistically significant impact of DR-CAFTA on exports of the Dominican Republic to the United States and Guatemala. In the case of the US, the agreement is related with lower exports relative to other global partners and years before signing the treaty. In the case of Guatemala, the effect is positive. The DR-CAFTA, although related to higher absolute exports to the rest of Central American members, has not changed yet the trade structure of the DR to these countries (except to Guatemala). Yet, the agreement has negatively affected DR exports to the United States.

Table 6. Random Effects Regression Models, 1990-2014
Dependent Variable: Log of DR Real Exports

Regressor	(5)	(6)	(7)	(8)	(9)
Log of Partner's Real GDP	1.202***	1.211***	1.200***	1.189***	1.187***
	(0.058)	(0.058)	(0.058)	(0.057)	(0.057)
Log of distance from partner	-2.263***	-2.286***	-2.264***	-2.098***	-2.237***
	(0.230)	(0.229)	(0.229)	(0.232)	(0.226)
DR-CAFTA controls:					
Dummy CAFTA member				1.543**	
				(0.581)	
Assessing impact of ratification:					
DR - CAFTA dummy (1 after 2007)					0.248
					(0.201)
DR – CAFTA with the US		-1.343**	-1.337**		
		(0.467)	(0.467)		
DR – CAFTA with Costa Rica			0.027		
			(0.557)		
DR – CAFTA with El Salvador			0.672		
			(0.482)		
DR – CAFTA – with Guatemala			1.272**		
			(0.476)		
DR – CAFTA – with Honduras			-0.29		
			(0.531)		
DR – CAFTA – with Nicaragua			0.694		
			(0.476)		
Constant	4.496*	4.494*	4.544*	3.303	4.613*
	(2.154)	(2.143)	(2.141)	(2.161)	(2.110)
Other control dummies included:					
Diplomatic	Yes	Yes	Yes	Yes	Yes
Language	Yes	Yes	Yes	Yes	Yes
Former Colony+	Yes	Yes	Yes	Yes	Yes
Caribbean Region+++	Yes	Yes	Yes	Yes	Yes
Common Border Dummy++	Yes	Yes	Yes	Yes	Yes
Observations	2098	2098	2098	2098	2098
R^2-Within	0.129	0.133	0.135	0.129	0.127
R^2-Between	0.751	0.749	0.751	0.763	0.753
R^2-Overall	0.616	0.614	0.617	0.634	0.618

Note: The estimated coefficients and standard errors for the other control dummies can be found in the appendix.
Standard errors in parenthesis, ***p<0.01, ** p<0.05, *p<0.10
+The Dominican Republic is a former colony of Spain.
++Haiti is the only border country.
+++Only 13 Caribbean countries recorded DR exports during the period 1990-2014: Antigua & Barbuda, Bahamas, Barbados, Cayman Islands, Cuba, Dominica, Grenada, Haiti, Jamaica, St. Lucia, St. Vincent and the Grenadines, Trinidad & Tobago.

The negative effect on DR exports of signing the DR-CAFTA with the United States is puzzling as it is expected the agreement should have increased DR exports. There are three potential explanations for this: One is that as a result of the DR-CAFTA agreement the US import demand from other CAFTA members, besides the Dominican Republic, increased due to the geographical advantage of trading with these countries. We do not evaluate those effects in this paper due to the nature of our model. The second explanation is that the recent global financial crisis has impacted in a reduction of US import demand as the DR-CAFTA implementation overlaps with the global economic crisis of 2008-09 and its recovery phase. The third potential explanation is that the reduction of exports captured by the dummy show a declining trend that simply continues to be accentuated after CAFTA is ratified by the DR and the US due to a combination of the competition with other markets and the global financial crisis.

To answer some of these questions in tables 7 through 9 we control for the effects of the global financial crisis to assess if this event is the driver of the structural change. In table 10 we evaluate the effects of global competition by measuring the impact that the increase Chinese exports to the US have on the DR exports.

In Table 7 we present an extended model that captures the effects of the global financial crisis through control variables for the 2008-09 crisis in the US. In this case the "Dummy Econ Crisis in USA" takes values of 1 whenever the years are 2008 and 2009 and the partner country is the United States, and 0 otherwise. Our interest is not to quantify the overall effects of the global financial crisis on DR exports, but just on exports to the US during the year of the crisis. Columns (1) and (2) of Table 7 include this US global financial crisis control variable jointly with the DR-CAFTA control dummy for the ratification of the agreement with the United States. Column (1) shows a statistically significant positive coefficient for the economic crisis dummy. This result, when added to the "DR CAFTA with the US" dummy reduces the negative impact of the agreement on DR exports. The result is not robust to alternative specifications shown in columns (3) through (5). Since the negative effects on DR exports are not accentuated during

2008-09 this suggests that there is something more than the global financial crisis behind the negative effects of the DR-CAFTA agreement ratification.

In model (3) of Table 7 we exclude the individual CAFTA dummies while still including the US economic crisis dummy variable. In addition, this model controls for the differential impact on DR exports for any member country of CAFTA. The crisis dummy is not statistically significant in this specification. A similar result is found in models (4) and (5) of Table 7.

Table 7 Measuring Effects of the Global Economic Crisis
Random Effects Regression Models, 1990-2014
Dependent Variable: Log of DR Real Exports

Regressor	(1)	(2)	(3)	(4)	(5)
Log of Partner's Real GDP	1.211***	1.200***	1.192***	1.189***	1.202***
	(0.127)	(0.058)	(0.057)	(0.057)	(0.057)
Log of distance from partner	-2.286***	-2.264***	-2.102***	-2.240***	-2.265***
	(0.328)	(0.229)	(0.233)	(0.226)	(0.229)
Dummy Econ Crisis in USA, 08-09	0.044***	0.044	-0.997	-1.166	-0.95
	(0.006)	(0.885)	(0.802)	(0.817)	(0.802)
DR-CAFTA controls:					
Dummy CAFTA member			1.559**		
			(0.583)		
Assessing impact of ratification:					
DR - CAFTA dummy (1 after 2007)				0.300	
				(0.205)	
DR – CAFTA with the US	-1.354***	-1.348**			
	(0.067)	(0.517)			
DR – CAFTA with Costa Rica		0.027			
		(0.557)			
DR – CAFTA with El Salvador		0.672			
		(0.482)			
DR – CAFTA – with Guatemala		1.272**			
		(0.476)			
DR – CAFTA – with Honduras		-0.29			
		(0.531)			
DR – CAFTA – with Nicaragua		0.694			
		(0.476)			
Constant	4.495	4.545*	3.276	4.605*	4.521*
	(3.272)	(2.141)	(2.167)	(2.114)	(2.142)
Other controls:					
Diplomatic	Yes	Yes	Yes	Yes	Yes
Language	Yes	Yes	Yes	Yes	Yes
Former Colony+	Yes	Yes	Yes	Yes	Yes
Caribbean Region+++	Yes	Yes	Yes	Yes	Yes
Common Border Dummy++	Yes	Yes	Yes	Yes	Yes
Observations	2098	2098	2098	2098	2098
R^2-Within	0.133	0.135	0.129	0.128	0.129
R^2-Between	0.749	0.751	0.763	0.753	0.751
R^2-Overall	0.614	0.617	0.634	0.618	0.616

Note: The estimated coefficients and standard errors for the other control dummies can be found in the appendix.
Standard errors in parenthesis, ***p<0.01, ** p<0.05, *p<0.10
+The Dominican Republic is a former colony of Spain.
++Haiti is the only border country.
+++Only 13 Caribbean countries recorded DR exports during the period 1990-2014: Antigua & Barbuda, Bahamas, Barbados, Cayman Islands, Cuba, Dominica, Grenada, Haiti, Jamaica, St. Lucia, St. Vincent and the Grenadines, Trinidad & Tobago.

In Table 8 we evaluate if the global financial crisis affected DR exports to all world destinations. We do this as a first test to see if the reduction of DR exports expanded beyond the United States. Column (1) of this table controls only for the years of the global financial crisis with a dummy that takes the value of 1 for every year and every partner of the Dominican Republic in 2008-09. This variable, Dummy Crisis 2008-09, is not statistically significant under the first model specification. In column (2) we add a dummy for the crisis in the United States. The dummy is also not statistically significant. We do not find evidence of a structural change in DR exports to the world, or to the US, due to the global financial crisis.

Table 8. Measuring the global effects of the crisis on DR Exports
Random Effects Regression Models, 1990-2014
Dependent Variable: Log of DR Real Exports

Regressor	**(1)**	**(2)**
Log of Partner's Real Gross Domestic Product	1.191***	1.190***
	(0.058)	(0.057)
Log of distance from partner	-2.250***	-2.251***
	(0.227)	(0.226)
Dummy Crisis 2008-09	0.071	0.081
	(0.078)	(0.079)
Dummy Econ Crisis in USA, 2008-09		-1.026
		(0.807)
Other controls:		
Diplomatic	-0.452	-0.447
(1 if the DR has a diplomatic mission in partner country; 0 otherwise)	(0.277)	(0.275)
Language	-0.146	-0.151
(1 if partner country's official language is Spanish; 0 otherwise)	(0.403)	(0.400)
Former Colony+	1.201	1.206
(1 if DR was a former colony of partner; 0 otherwise)	(1.261)	(1.253)
Caribbean Region+++	0.643	0.637
(1 if partner belongs to the Caribbean region; 0 otherwise)	(0.594)	(0.590)
Common Border Dummy++	0.768	0.764
(1 if partner shares a border; 0 otherwise)	(1.330)	(1.322)
Constant	4.624*	4.659*
	(2.127)	(2.115)
Observations	2098	2098
R^2-Within	0.128	0.128
R^2-Between	0.751	0.751
R^2-Overall	0.616	0.616

Standard errors in parenthesis, ***p<0.01, ** p<0.05, *p<0.10

Since the European Union (EU) was also heavily affected by the global financial crisis we wanted to test if there will be differential effects from the shock to this region to the exports of the Dominican Republic to the EU. The EU is also among the top export destinations for the Dominican Republic. Table 9 explores this hypothesis with the introduction of dummies that account for the effects of the global financial crisis in the EU.

We first test if the differential effects on DR exports to the United States after the ratification of the DR-CAFTA is related to some country specific relations with the United States. In column (1) we include a dummy for trade with the US, irrespective of the year, and we do not find any upward or downward trend. We do the same in column (2) with the European Union and do not find that the coefficient of the control dummy for the EU is statistically significant. There is no differential trend in DR exports to the US or the EU.

In columns (3) and (4) of Table 9 we introduce a CAFTA member dummy, finding that relative to non-CAFTA members exports of the DR are larger. We do not find an statistically significant effect of the global financial crisis for DR exports to all its partners (variable "Dummy Crisis 2008-09"). Additionally, we do not find that exports of the DR to the United States or the European Union fell during the global financial crisis. There is no statistical evidence of a structural change of exports to Europe during 2008-09 due to the recession in this region.

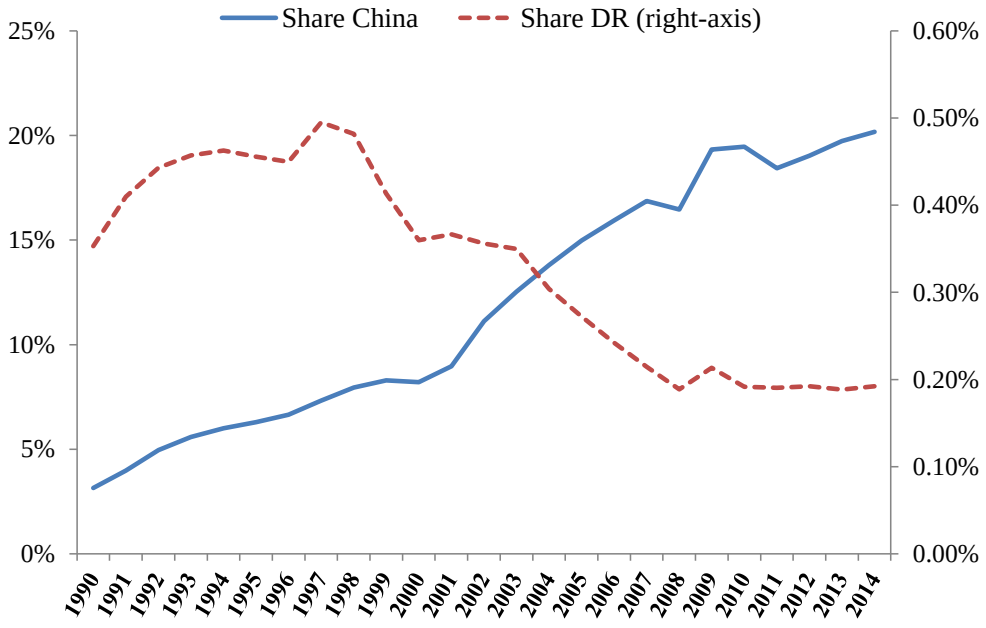
Table 9. Measuring the Effects on DR Exports to Europe
Random Effects Regression Models, 1990-2014
Dependent Variable: Log of DR Real Exports

Regressor	**(1)**	**(2)**	**(3)**	**(4)**
Log of Partner's Real Gross Domestic Product	1.192***	1.188***	1.177***	1.175***
	(0.059)	(0.058)	(0.056)	(0.056)
Log of distance from partner	-2.230***	-2.235***	-2.083***	-2.081***
	(0.235)	(0.230)	(0.227)	(0.227)
Dummy USA	0.733			
	(1.290)			
Dummy EU		0.415		
		(0.431)		
Dummy CAFTA Member			1.566**	1.548**
			(0.568)	(0.567)
Dummy Crisis 2008-09			0.094	0.083
			(0.083)	(0.083)
Dummy Econ Crisis in USA, 2008-09			-1.087	
			(0.808)	
Dummy Econ Crisis in EU, 2008-09			-0.104	-0.092
			(0.257)	(0.257)
Other controls:				
Diplomatic (1 if the DR has a diplomatic mission in partner country; 0 otherwise)	-0.471	-0.515	-0.452	-0.45
	(0.278)	(0.280)	(0.268)	(0.268)
Language (1 if partner country's official language is Spanish; 0 otherwise)	-0.108	-0.058	-0.397	-0.39
	(0.410)	(0.414)	(0.399)	(0.398)
Former Colony+ (1 if DR was a former colony of partner; 0 otherwise)	1.184	0.79	1.564	1.561
	(1.271)	(1.332)	(1.224)	(1.223)
Caribbean Region+++ (1 if partner belongs to the Caribbean region; 0 otherwise)	0.692	0.704	0.991	0.992
	(0.604)	(0.600)	(0.589)	(0.588)
Common Border Dummy++ (1 if partner shares a border; 0 otherwise)	0.814	0.835	0.99	0.995
	(1.344)	(1.339)	(1.289)	(1.287)
Constant	4.433*	4.556*	3.455	3.468
	(2.148)	(2.136)	(2.114)	(2.112)
Observations	2098	2098	2098	2098
R^2-Within	0.129	0.129	0.128	0.128
R^2-Between	0.753	0.755	0.764	0.764
R^2-Overall	0.619	0.619	0.634	0.634

Standard errors in parenthesis, ***p<0.01, ** p<0.05, *p<0.10.
+The Dominican Republic is a former colony of Spain.
++Haiti is the only border country.
+++Only 13 Caribbean countries recorded DR exports during the period 1990-2014: Antigua & Barbuda, Bahamas, Barbados, Cayman Islands, Cuba, Dominica, Grenada, Haiti, Jamaica, St. Lucia, St. Vincent and the Grenadines, Trinidad & Tobago.

Before introducing the econometric model that measures the impact of Chinese export growth to the United States on DR exports, graphs (4) and (5) illustrate a clear pattern in which DR exports to the United States show a declining trend, while Chinese exports follow an increasing trend. In Graph 4 the share of Chinese goods exports to the United States stands at 3.14 percent of total world exports of goods to this country in 1990. By 2014 the share had expanded by a multiple of six, and stood at 20 percent. The goods exports of the Dominican Republic to the United States are a small share of total world exports of goods, which is understandable given the . In 1990 this share was 0.35 percent of total exports of goods by the global economy to the United States. In 2014 the share had gone down to merely 0.19 percent. Clearly, the increasing influence of Chinese exports in the United States is not the only reason behind the fall of DR exports. There are other factors that drive tougher competition for DR products in the US market. However, the Chinese trends are a good instrument to capture the global competition pressures that a country like the Dominican Republic, which is a small open economy, faces.

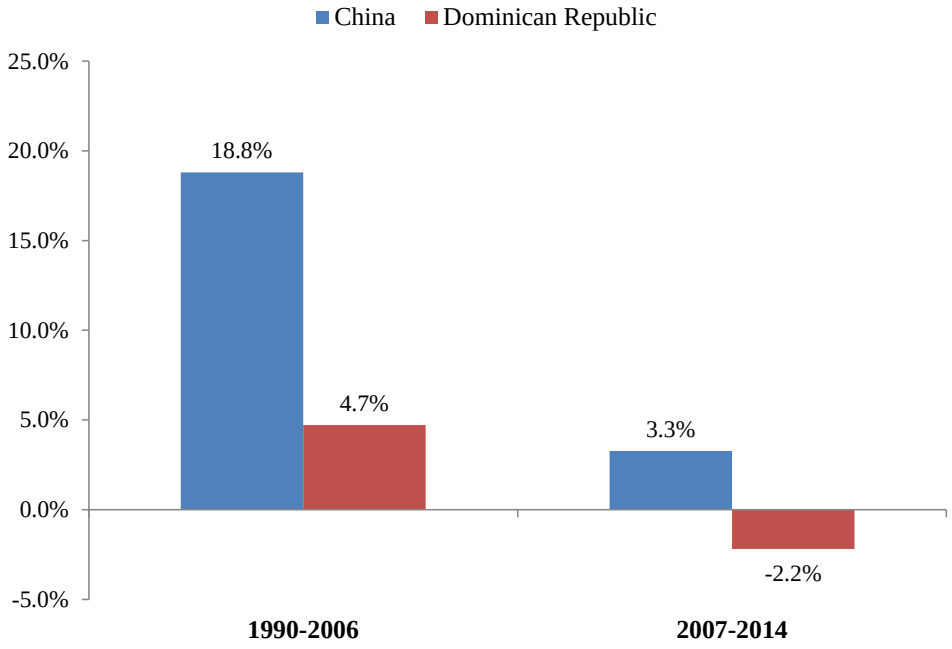
Graph 4: China and DR Exports of Goods to the United States, 1990-2014
(Share of Total World Exports to the US)



Source: Based on data from UNCOMTRADE database.

Graph 5 illustrates the lack of dynamism in the growth of goods exports of the Dominican Republic relative to that of Chinese exports of goods. During 1990-2006, on average, Chinese exports to the United States grew in real terms at a rate of 18.8 percent per year. In Dominican Republic, the annual average rate of growth for good exports was an estimate of 4.7 percent. After 2007, when the DR-CAFTA was ratified by the Dominican Republic, average good exports of the latter contracted at a rate of -2.2 percent per year. In China export growth of goods slowed down to an annual rate of 3.3 percent. These dynamics represent the effects of tougher global competition during an era of economic slowdown for global demand.

Graph 5: China and DR Real Growth of Exports of Goods to the United States 1990-2006 versus 2007-2014



Source: Based on data from UNCOMTRADE database and World Bank Commodity Markets data.

Table 10 shows the results of an econometric model in which we control for the effects that global competition have had on DR exports of goods to the United States. Our control variable, as previously explained, is the real growth of Chinese exports of goods to the United States. The results of our model indicate that DR exports of goods fall as a result of Chinese export growth to the United States. The results are statistically significant at the 95 percent confidence level, except for the specification in column (5), where we do not control for any US specific effects (DR-CAFTA with the US or US dummy). Given the strong export growth of Chinese goods over the 1990-2014 period, the impact on DR exports is quite strong as illustrated by an estimated coefficient for the Chinese export growth variable of approximately 0.5.

Table 10. Measuring the Effects of Chinese Export Growth to the United States on DR exports
Random Effects Regression Models, 1990-2014
Dependent Variable: Log of DR Real Exports

Regressor	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Log of Partner's Real Gross Domestic Product	1.153***	1.155***	1.155***	1.133***	1.149***
	(0.057)	(0.057)	(0.057)	(0.059)	(0.057)
Log of distance from partner	-2.218***	-2.222***	-2.222***	-2.152***	-2.200***
	(0.217)	(0.218)	(0.218)	(0.224)	(0.220)
Dummy USA				1.05	
				(1.224)	
DR – CAFTA with the US	-1.387**	-1.389**	-1.386**		
	(0.469)	(0.519)	(0.469)		
Dummy Crisis 2008-09	0.022				
	(0.082)				
Dummy Econ Crisis in USA, 2008-09		0.011			
		(0.889)			
Chinese Export Growth to the United States	-0.543*	-0.558**	-0.558**	-0.542**	-0.528*
	(0.218)	(0.208)	(0.208)	(0.209)	(0.208)
Other controls:					
Diplomatic (1 if the DR has a diplomatic mission in partner country; 0 otherwise)	-0.334	-0.341	-0.341	-0.318	-0.334
	(0.266)	(0.268)	(0.268)	(0.268)	(0.270)
Language (1 if partner country's official language is Spanish; 0 otherwise)	-0.189	-0.188	-0.188	-0.12	-0.167
	(0.382)	(0.385)	(0.385)	(0.389)	(0.387)
Former Colony+ (1 if DR was a former colony of partner; 0 otherwise)	1.309	1.303	1.303	1.318	1.307
	(1.195)	(1.204)	(1.204)	(1.203)	(1.213)
Caribbean Region+++ (1 if partner belongs to the Caribbean region; 0 otherwise)	0.588	0.59	0.59	0.676	0.615
	(0.564)	(0.568)	(0.568)	(0.572)	(0.572)
Common Border Dummy++ (1 if partner shares a border; 0 otherwise)	0.748	0.746	0.745	0.854	0.78
	(1.262)	(1.271)	(1.271)	(1.273)	(1.280)
Constant	5.306**	5.277**	5.276**	5.160*	5.242*
	(2.032)	(2.046)	(2.046)	(2.049)	(2.060)
Observations	2098	2098	2098	2098	2098
R^2-Within	0.129	0.129	0.129	0.124	0.124
R^2-Between	0.751	0.75	0.75	0.755	0.752
R^2-Overall	0.616	0.616	0.616	0.622	0.618

Standard errors in parenthesis, ***p<0.01, ** p<0.05, *p<0.10
+The Dominican Republic is a former colony of Spain.
++Haiti is the only border country.
+++Only 13 Caribbean countries recorded DR exports during the period 1990-2014: Antigua & Barbuda, Bahamas, Barbados, Cayman Islands, Cuba, Dominica, Grenada, Haiti, Jamaica, St. Lucia, St. Vincent and the Grenadines, Trinidad & Tobago.

VII. Conclusions

In this paper we have conducted an evaluation of the effects of the ratification of the DR-CAFTA in the exports of the Dominican Republic. The main objective was to evaluate if exports to the United States, the main partner of the DR in this agreement, had increased after ratifying the treaty. Our main finding is that the treaty did not increase the exports of the DR to all member countries. In particular, the treaty is associated with a fall in exports to the United States. However, the treaty demarks a starting point of trade relationships with the rest of the DR-CAFTA members and it is possible it was instrumental in avoiding a stronger reduction of exports to the United States, due to the competition that the Central American members of the agreement imply for DR products.

In the paper we also evaluate if the declining exports to the United States were a result of the global financial crisis. Since the ratification of the treaty occurred just one year prior to the onset of the global financial crisis, it could be that the positive aspects of the agreement were jeopardized by this event. We do not find that the global financial crisis could be attributed to the declining export trend towards the US after the ratification of DR-CAFTA.

One possible explanation for the fall of DR exports to the United States is that the competition with other global markets is the reason for this trend. Due to this, it is possible that the negative effect captured by our DR-CAFTA control could have been higher in magnitude had the treaty not been signed.

We proceed in the paper to evaluate the effect of global competition by measuring the impact that Chinese goods export growth to the United States has on the DR exports. We find a statistically significant negative relationship between Chinese export growth and DR exports. This suggests that the channel of global competition over the period of analysis has played an important role in the declining exports of the Dominican Republic to the United States.

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Appendix

Table 6 (Continuation). Random Effects Regression Models, 1990-2014
Dependent Variable: Log of DR Real Exports
Remaining coefficients

Regressor	(5)	(6)	(7)	(8)	(9)
Other controls:					
Diplomatic	-0.481	-0.495	-0.469	-0.488	-0.447
	(0.279)	(0.278)	(0.278)	(0.273)	(0.274)
Language	-0.142	-0.16	-0.204	-0.381	-0.163
	(0.408)	(0.406)	(0.406)	(0.408)	(0.400)
Former Colony+	1.178	1.167	1.232	1.521	1.228
	(1.278)	(1.272)	(1.271)	(1.253)	(1.251)
Caribbean Region+++	0.65	0.627	0.643	1.001	0.658
	(0.602)	(0.599)	(0.598)	(0.603)	(0.589)
Common Border Dummy++	0.762	0.728	0.749	0.987	0.789
	(1.349)	(1.342)	(1.340)	(1.319)	(1.319)
Constant	4.496*	4.494*	4.544*	3.303	4.613*
	(2.154)	(2.143)	(2.141)	(2.161)	(2.110)
Observations	2098	2098	2098	2098	2098
R^2-Within	0.129	0.133	0.135	0.129	0.127
R^2-Between	0.751	0.749	0.751	0.763	0.753
R^2-Overall	0.616	0.614	0.617	0.634	0.618

Note: This table presents the remaining coefficients from Table 6 of the paper.
Standard errors in parenthesis, ***p<0.01, ** p<0.05, *p<0.10
+The Dominican Republic is a former colony of Spain.
++Haiti is the only border country.
+++Only 13 Caribbean countries recorded DR exports during the period 1990-2014: Antigua & Barbuda, Bahamas, Barbados, Cayman Islands, Cuba, Dominica, Grenada, Haiti, Jamaica, St. Lucia, St. Vincent and the Grenadines, Trinidad & Tobago.

Table 7 (continuation). Measuring Effects of the Global Economic Crisis
Random Effects Regression Models, 1990-2014
Dependent Variable: Log of DR Real Exports

Regressor	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Other controls:					
Diplomatic	-0.495	-0.469	-0.494	-0.449	-0.479
	(0.441)	(0.278)	(0.274)	(0.275)	(0.278)
Language	-0.16	-0.204	-0.387	-0.17	-0.146
	(0.514)	(0.406)	(0.409)	(0.401)	(0.406)
Former Colony+	1.167*	1.233	1.521	1.231	1.18
	(0.477)	(1.271)	(1.257)	(1.254)	(1.271)
Caribbean Region+++	0.627	0.643	1.001	0.656	0.644
	(0.702)	(0.598)	(0.605)	(0.591)	(0.599)
Common Border Dummy++	0.728	0.75	0.982	0.784	0.758
	(0.582)	(1.340)	(1.323)	(1.323)	(1.341)
Constant	4.495	4.545*	3.276	4.605*	4.521*
	(3.272)	(2.141)	(2.167)	(2.114)	(2.142)
Observations	2098	2098	2098	2098	2098
R^2-Within	0.133	0.135	0.129	0.128	0.129
R^2-Between	0.749	0.751	0.763	0.753	0.751
R^2-Overall	0.614	0.617	0.634	0.618	0.616

Note: This table presents the remaining coefficients from Table 7 of the paper.
Standard errors in parenthesis, ***p<0.01, ** p<0.05, *p<0.10
+The Dominican Republic is a former colony of Spain.
++Haiti is the only border country.
+++Only 13 Caribbean countries recorded DR exports during the period 1990-2014: Antigua & Barbuda, Bahamas, Barbados, Cayman Islands, Cuba, Dominica, Grenada, Haiti, Jamaica, St. Lucia, St. Vincent and the Grenadines, Trinidad & Tobago.