

Hakobyan, Shushanik

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## Export Competitiveness of Developing Countries and U.S. Trade Policy

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# Export Competitiveness of Developing Countries and U.S. Trade Policy

Shushanik Hakobyan\*

University of Virginia

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## **Abstract**

This paper examines the impact of the revocation of tariff exemptions on exports of developing countries using data from cases of the Competitive Needs Limits (CNL), a feature of the US Generalized System of Preferences (GSP). CNLs are arguably imposed on super competitive GSP beneficiaries and aim to reserve the GSP benefits for other “less competitive” GSP eligible countries. I find that being excluded from the GSP as a result of a CNL induces a large and significant drop in imports from affected countries, both in value and in their share in total US imports. Contrary to the policy objectives of CNLs, the excluded countries do not appear to be “super competitive.” In addition, the findings suggest that much of the benefits of CNLs accrue to non-GSP countries, rather than other GSP beneficiaries.

**JEL Classifications:** F13, F14, O12, O19

**Keywords:** Generalized System of Preferences (GSP), Competitive Needs Limits, export competitiveness, trade policy, developing countries

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\*Department of Economics, University of Virginia, 237 Monroe Hall, Charlottesville, VA 22904-4182. E-mail: sh9db@virginia.edu.

# 1 Introduction

Export-led growth has been perceived as one of the promising paths to promoting economic growth in developing countries. Consequently, developed countries instituted special programs that provide preferential access to their markets. In the case of the US, the Generalized System of Preferences (GSP) offers tariff exemptions to about 130 developing countries. The GSP has been credited with stimulating exports from developing countries (see Hoekman and Özden, 2005, for a survey), but its overall effectiveness has been questioned by several studies (Bureau et al., 2005; Hakobyan, 2010).

While the GSP waives tariffs to stimulate exports from developing countries, such exemptions are removed for the most successful beneficiaries. More specifically, tariff exemptions are revoked when imports of a particular product from a given country or its share in total US imports exceed a specific threshold, known as Competitive Needs Limit (CNL). Exporters of such products are designated as “super competitive” and deemed to be no longer in need of a preferential treatment.

But are the countries subject to CNLs truly “super competitive”? Are they able to maintain their exports to the US (or market share) absent the tariff exemptions under the GSP? The evidence in the existing literature on the impact of CNLs is rather scant and primarily descriptive (MacPhee and Rosenbaum, 1989; DeVault, 1996). Import shares of affected countries seem to decline a year or two after the CNL exclusion, with little change in average imports.

A related question of interest is the potential impact of CNLs on imports from other GSP beneficiary countries. If CNL-affected countries are unable to compete, who replaces them? Would the imports (and market shares) of other GSP beneficiaries rise and fill the void, as policymakers would hope, or would those of non-GSP countries expand?

This paper addresses two questions related to the impact of CNLs. First, it revisits the question of what happens to the imports of products and countries affected by CNLs. And second, it further explores the likely beneficiaries of CNL exclusions. More specifically, it

examines 204 cases of CNL exclusions between 1997 and 2009, tracking import values and shares of affected country-product pairs for at least one year prior to and up to five years following the exclusion. Consistent with earlier findings, imports from excluded beneficiary countries and their share in total US imports of a given product drop abruptly in the first year of exclusion. They also continue to decline several years after the exclusion. These findings are robust to the inclusion of country characteristics that control for the size of the country and its stage of development. By the third year of exclusion, imports from affected countries decrease by more than 70 percent relative to the pre-exclusion average. Similarly, import shares drop from 63 percent prior to the exclusion to 37 percent by the third year of exclusion. These findings imply that CNLs may not be targeting the “super competitive” exporters, rather these country-product pairs may need the preferential treatment to access the US market.

I further show that the market share of other GSP eligible countries in total US imports increases but less than that of non-GSP countries after the CNL is imposed. By the third year of exclusion, the share of other GSP eligible countries increases by 8 percentage points, whereas that of non-GSP countries expands by 22 percentage points. This suggests that non-GSP countries benefit from the CNLs more than other GSP beneficiaries, contrary to the policy intent.

This paper makes three key contributions to the scant literature on the impact of CNLs. First, it controls for exporting country characteristics commonly used in gravity-type models, as well as year fixed effects. This improves on the earlier studies which relied on descriptive statistics. Second, it uses relatively recent episodes of CNL exclusions over the years 1997-2009, whereas the exiting literature employs data through 1993. Third, this paper provides evidence of dynamic adjustment to the shock of rise in tariffs introduced by the CNL exclusion, as imports are tracked up to five years after the exclusion.

The remainder of this paper proceeds as follows. Section 2 provides background information on the statutory provisions of the GSP concerning the implementation of CNLs. Section

3 describes the data and discusses the empirical strategy. Results are reported in Section 4, and concluding remarks are provided in Section 5.

## 2 Background

The US GSP offers tariff exemptions on some 5,000 products, at the Harmonized System (HS) 8-digit level, imported from about 130 developing countries. At the same time, however, GSP revokes these tariff exemptions from the “most competitive” exporters who are deemed to no longer need preferential treatment to access the US market. Two criteria are used in determining whether a country-product pair has reached (or exceeded) the CNL. First, whether the imports in the previous calendar year exceeded a certain value threshold, set at \$80 million in 1997, and increasing by \$5 million every year (Table 1). Second, whether the imports in the previous calendar year made up more than 50 percent of total US imports of a given product (percentage CNL). Every year the US International Trade Commission (USITC) publishes the list of country-product pairs that met these criteria and thus exceeded CNL thresholds in the previous calendar year. These country-product pairs automatically lose their eligibility for tariff exemptions on July 1, unless a waiver is granted.<sup>1</sup>

The GSP statute allows for three types of waivers to avoid revocation of benefits. First, country-product pairs exceeding the percentage CNL are automatically considered for (but not guaranteed) a *de minimis* waiver if total US imports of a given product are relatively small and do not exceed a certain value (\$13.5 million in 1997, and increasing by \$0.5 million every year; see Table 1 for a complete schedule). Second, the percentage CNL may also be waived, *504(d)* waiver, if a directly competitive product was not produced in the US on January 1, 1995. Lastly, country-product pairs exceeding the value or percentage CNL (that do not qualify for a *de minimis* waiver) may apply for a CNL waiver.

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<sup>1</sup>CNL thresholds are not applicable to least developed countries and since 2000 to Sub-Saharan African countries. An interesting episode of exclusion occurred in 2006 when a CNL waiver was revoked on imports of kola nuts from Cote d’Ivoire immediately after it lost its beneficiary Sub-Saharan African country status under AGOA (African Growth and Opportunity Act).

The last option for receiving a waiver is best suited for large exporters who have sufficient resources to petition for a CNL waiver both to the US Trade Representative (USTR) and the USITC.<sup>2</sup> The petitions may also be submitted by other interested parties, such as US importing firms who would begin paying tariffs on their imports unless a CNL waiver is granted. Additionally, the USTR and USITC may receive petitions opposing a CNL waiver from domestic manufacturing firms whose products compete directly with imported products, or domestic firms importing similar products from other low-cost countries. Both the USTR and USITC conduct investigations and hold hearings, but the issues considered are not identical. The USITC concentrates on the economic impact of CNL waivers on US consumers and domestic industries producing a directly competitive product, while the USTR focuses on policy issues and the competitiveness of a beneficiary country with respect to the product in question.<sup>3</sup>

***The goals of CNLs. How CNLs may be ineffective in achieving these goals?***

CNLs aim to accomplish two policy objectives. The first objective is to exclude country-product pairs that are perceived to no longer need the preferential treatment. The underlying assumption is that a country is sufficiently competitive in producing and exporting a given product. This implies that once CNL is imposed, we should not observe significant changes in the value or share of imports, a hypothesis tested in this paper.

The proper identification of truly super competitive country-product pairs can be a difficult undertaking. There may be external factors that affect the level of imports from other countries, thereby pushing a particular country over the CNL threshold. An illustrative example of this is the recent imposition of punitive 35 percent tariffs on passenger car tires from China (a non-GSP country) in September of 2009 for a period of three years (USITC,

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<sup>2</sup>For instance, in 2008 14 country-product pairs were listed by the USITC as potential candidates for CNL exclusions, of which 5 applied for a CNL waiver. The average value of imports from countries that applied for a waiver stood at \$235 million, compared to \$32 million from countries that were also subject to CNL but did not petition for a waiver.

<sup>3</sup>For more information on GSP annual reviews, see Blanchard and Hakobyan (work in progress).

2009). This action prompted a surge in demand for Thai tires and pushed Thai exports of tires over the CNL value threshold. Even though Thailand is only the ninth largest source of imported passenger tires to the US, its eligibility for GSP has been suspended as of July 1, 2010. Additionally, the exclusion decision exclusively based on imports of the previous calendar year runs the danger of eliminating one-time exporters with no history of exporting to the US but who happen to capture a large market share in just one year.

The secondary objective of CNLs is to enhance export opportunities of other “less competitive” GSP beneficiaries after the tariff exemptions are revoked for the “most competitive” exporters.<sup>4</sup> This argument assumes that the exports of other GSP eligible countries to the US may have been crowded out by the exports of the “super competitive” countries, and eliminating tariff exemptions for the latter may stimulate exports from other countries eligible for the preferential treatment. This implies that after the imposition of CNLs the market share of other GSP beneficiaries should rise.

### ***Related literature***

The existing literature on the impact of CNLs is very scant and primarily descriptive. There are only two studies that explore the impact of CNLs on imports from the affected countries. MacPhee and Rosenbaum (1989) examine 816 episodes of CNL exclusions between 1976 and 1983. Using descriptive statistics on trade flows before and after the imposition of CNLs, they conclude that the revocation of tariff exemptions reduced the market shares of affected countries by an unweighted average of 23 percent and an import-weighted average of 6 percent, implying that CNL exclusions primarily target imports of minor products from developing countries, rather than “major” items. They also found that the CNL exclusions did not lead to significant increases in market shares of least developed GSP beneficiaries, rather mostly benefitted advanced countries or major GSP beneficiaries.

DeVault (1996) extends the analysis in MacPhee and Rosenbaum (1989) by examining

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<sup>4</sup>It should be noted, however, that CNLs also serve to protect US domestic producers in import-sensitive industries.

the effect on import values and import shares using 45 cases of CNL exclusions between 1988 and 1993. In line with findings by MacPhee and Rosenbaum (1989), he concludes that import shares of affected countries decline after the CNL is imposed; unweighted import shares decline by 12 percentage points on average, whereas import-weighted shares drop by 7 percentage points after two years of being excluded. He also finds that the average value of imports slightly increases despite the imposition of CNLs, but the median value of imports declines by about 44 percent two years after the CNL exclusion.

This paper expands on the scant literature in gauging the impact of CNLs on import values and shares of affected countries after controlling for country characteristics commonly used in gravity-type models, as well as year fixed effects. It also uses the most recent episodes of CNL exclusions over the years 1997-2009, whereas the exiting literature employs data through 1993. Finally, it tracks imports up to five years after the exclusion to better account for dynamic adjustments to the shock of introduction of tariffs.

## 3 Empirical Analysis

### 3.1 Data

Data on CNLs (at the HS 8-digit level) are obtained from the USITC Tariff Database, as well as various notices and presidential proclamations published in *Federal Register*. These are augmented with imports data from the USITC Trade Dataweb and GSP country eligibility dataset.<sup>5</sup> Given that CNL exclusions typically become effective on July 1, an episode is defined as a case of exclusion when a country-product pair benefitted from the GSP at least one full year prior to the exclusion and was excluded for at least one full year following the exclusion. Thus, cases where a country-product pair is excluded on July 1 of one year and reinstated on July 1 of the following year are excluded from the sample. Furthermore, several cases of exclusions are not considered here because country-product pairs were removed from

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<sup>5</sup>GSP country eligibility dataset is available from the author upon request.



the GSP as a result of petitions submitted by US domestic firms requesting a removal of a given country-product pair; these episodes did not occur as a result of exceeding CNL thresholds.<sup>6</sup> The final sample size is 1,038 observations on 204 episodes of CNL exclusions between 1997 and 2009.<sup>7</sup>

Table 2 breaks down the number of episodes by country. India, Turkey, Brazil and Colombia together account for about half of the episodes in the sample (Column 1). Several countries were subject to CNL exclusions for the same product twice during the sample period; this is reflected in the number of unique products reported in Column 2. Even though India and Turkey were often subjected to CNL exclusions over the sample period, the average value of their exports in the year prior to CNL exclusion is relatively small - about \$30 million (Column 3). The largest values of average pre-CNL imports are observed for Kazakhstan at \$191 million and Thailand at \$168 million. Furthermore, the average fraction of imports of the largest exporters is clearly below 50 percent threshold, confirming that they are likely hit by the value rather than percentage CNL. This is even more clearly seen in Figure 1 which plots pre-CNL import shares against the GDP per capita with the size of the circle indicating pre-CNL import values. Two insights can be gleaned from this figure: first, the majority of cases involve small imports and those exceeding percentage threshold; and second, countries with GDP per capita less than \$4,000 seem to be the primary targets of CNLs.

Table 3 and 4 list the 20 smallest and 20 largest country-product pairs in my sample in terms of import values. A careful observer may notice that the nature of products subject

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<sup>6</sup>An example of such an episode is a revocation of tariff exemptions for PET film imported from Thailand, as petitioned by four domestic producers of PET film (DuPont Teijin Films of Wilmington, DE; Mitsubishi Polyester Film of America of Greer, SC; Toray Plastics of North Kingstown, RI; and SKC America of Covington, GA). They testified in favor of exclusion by stating that the Indian firm Polyplex had built a plant in Thailand to be able to ship products to the US market without paying duties. Tariff exemptions on imports of this product from India were suspended in 1998. Although PET film imports from Thailand accounted for only one percent of US consumption and two percent of total PET film imports into the US in 2003, the removal request was granted and exclusion became effective on July 1, 2004.

<sup>7</sup>One episode of CNL exclusion has been dropped from the analysis due to its outlier nature. India's exports of jewelry (HS 71131950) to the US were three times larger than the next largest country-product pair in the sample. The main findings of the paper hold true even with this episode included in the analysis.

to CNLs is very different across the two tables. At the lower end, CNL exclusions are predominantly imposed on agricultural products or products of food manufacturing (Table 3). At the higher end, the excluded products mainly include metals and chemicals (Table 4). Another interesting observation in the data is the sequential exclusion of different countries exporting the same product. For instance, imports of articles of jewelry from Thailand ceased to qualify for tariff exemptions in 2006, followed by Turkey in 2007. Similarly, tariff exemptions on imports of insulated ignition wiring sets from Philippines were suspended in 2006, followed by Indonesia in 2007 (Table 4).

The impact of CNLs over time is captured by a set of dummy variables which take the value of one for a given country-product pair in the year when CNL is imposed (year 0), in the first full year of exclusion (year 1), in the second year of exclusion (year 2) and in the third through fifth year (year 3+), respectively. As Table 5 shows, the year of exclusion varies considerably across episodes in the sample. There are no exclusion episodes in 2002, because the GSP program had expired (but renewed retroactively) and the CNL decisions were postponed until the following year.

To examine how exports respond to the imposition of CNLs over time, the sample includes up to five years of data following the exclusion whenever possible.<sup>8</sup> Table 6 provides summary statistics for import values and shares before and after the exclusion. The rules used to construct the sample ensure that pre-CNL imports and imports in years 0 and 1 are observed for all 204 episodes, but not necessarily in the subsequent years. In fact, about 60 percent of the sample is lost by the third year of exclusion. With this caveat in mind, the value of imports for a median country-product pair in the year prior to the imposition of CNL is just \$1.5 million, far from the CNL value thresholds in any year over the entire sample period.

As eluded to above, a large number of cases in the sample (176 out of 204, to be exact)

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<sup>8</sup>Harmonized Tariff System that classifies imported products is periodically modified to reflect the changing pattern of the US imports. As a result, multiple codes may be combined into a new one, or one code may be split into multiple new ones. Over the sample period such changes in product codes occurred in 2002 and 2007. Since it is impossible to discern whether the excluded products were exactly reclassified under a different code, the sample period for the products that were subject to a code change ends in either 2001 or 2006.

did not exceed the value threshold, but exceeded the percentage threshold. Moreover, 135 of such cases were eligible for (but did not receive) a *de minimis* waiver. So it seems that CNLs often target small exporters, resulting in zero import flows as seen in the Panel A of Table 6. In the year of exclusion, as exporters become ineligible for the GSP in the second half of the year, imports drop across all percentiles, but the smallest exporters are hit the hardest. Imports of the median country-product pair are almost cut in half (from \$1.5 to \$0.8 million). But even on the higher end of distribution, the average value of imports plummets. This pattern is contrary to the findings by DeVault (1996); both average and median value of imports immediately decline after the imposition of CNLs.

A similar pattern is observed for the shares of excluded country-product pairs in imports from all trading partners, as shown in the Panel B of Table 6. More specifically, after the exclusion, the average import share drops from 63 to 36 percent in year 0, down to 26 percent in year 1, 23 percent in year 2 and so on. A steeper decline is observed for the import share of a median country-product pair. In comparison to earlier estimates, these seem quite large: the drop in average import share is 37 percentage points in my sample after two years of exclusion (27 after one year), 23 percentage points in MacPhee and Rosenbaum (1989), and merely 12 percentage points in DeVault (1996). I surmise that the estimates by MacPhee and Rosenbaum (1989) would have been closer to my estimates if imports less than \$1 million in 1976 were not omitted in their study.

## 3.2 Empirical Strategy

The empirical strategy in estimating the effects of revocation of tariff exemptions is two-fold. First, I want to test whether the changes in imports from affected countries are negligible after the exclusion takes effect, thus evaluating the effectiveness of CNLs as a tool to detect the most competitive exporters. And second, if there is a reduction in imports, the critical question then is whether other GSP eligible countries were able to capture a larger market share after preferential treatment is revoked from the most competitive GSP beneficiaries.

To gauge the impact of quantitative limits such as CNLs on imports from GSP beneficiary countries, I estimate country-product level regressions of the value (in million dollars) and fraction of imports on the set of CNL measures, as defined above. The base specification is the following:

$$m_{cpt} = \alpha_t + \gamma_0 D_{cpt}^{(0)} + \gamma_1 D_{cpt}^{(1)} + \gamma_2 D_{cpt}^{(2)} + \gamma_3 D_{cpt}^{(3+)} + \epsilon_{cpt}, \quad (1)$$

where  $m_{cpt}$  is either the value of imports of product  $p$  from country  $c$  in year  $t$  or the fraction of imports of country  $c$  in total imports of product  $p$  in year  $t$ ;  $\alpha_t$  is the year  $t$  fixed effect; and  $D_{cpt}^{(k)} = 1$  is the  $k$ th year of exclusion, with  $k = 0, 1, 2, 3+$  ( $k = 0$  denotes the year in which the CNL was imposed;  $k = 3+$  denotes the third, fourth or fifth year of exclusion). Standard errors are clustered at the country level to account for possible correlated shocks to country-level imports over time.<sup>9</sup> If CNLs correctly identify and exclude the most competitive exporters, then the  $\gamma$ s should be zero or very small as these exporters do not need the tariff exemptions to compete in the US market. But if these countries do need tariff exemptions to access the US market, and without these exemptions they would likely reduce their exports to the US, then  $\gamma$ s are expected to be negative and large in absolute value.

One concern with the above specification is that there may be some country characteristics that contemporaneously affect the imports from (and market share of) a given country. For instance, GDP, GDP per capita and population have been extremely successful in explaining the pattern of bilateral trade in gravity-type models (Anderson, 2010). Per capita GDP captures the positive relationship between the extent of trade and the stage of development, whereas GDP and population capture the market size. I address this concern by explicitly controlling for beneficiary country characteristics.

The second part of the empirical analysis focuses on the market shares of GSP eligible

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<sup>9</sup>There may also be within a country-product correlation over time. To address this, I used two-way clustering technique developed by Cameron, Gelbach and Miller (2006) and found the results to be robust to this specification.

and non-eligible countries. Once tariff exemptions for “super competitive” exporters are eliminated, other “less competitive” GSP eligible developing countries may capture the market share of CNL-affected countries as they continue exporting duty-free to the US, thus accomplishing the secondary goal of CNLs. If CNLs indeed help other GSP beneficiaries, then their import share should rise to make up for the loss in imports from CNL-affected countries. On the other hand, non-GSP countries, such as advanced economies and China, may expand their market shares as they outcompete the CNL-affected and other GSP eligible countries. This leads to an estimation of two additional equations similar to Equation (1) for import shares for each of these groups of countries. Since the shocks to demand originate from the US, the error terms are likely to be contemporaneously correlated, making SUR (seemingly unrelated regression) the natural estimation technique. Using market shares for other GSP eligible countries and non-GSP countries as dependent variables, the following two-equation SUR model is specified:

$$\begin{aligned} m_{cpt}^{gspoth} &= \alpha_{1t} + \gamma_{10}D_{cpt}^{(0)} + \gamma_{11}D_{cpt}^{(1)} + \gamma_{12}D_{cpt}^{(2)} + \gamma_{13}D_{cpt}^{(3+)} + \epsilon_{cpt} \\ m_{cpt}^{nongsp} &= \alpha_{2t} + \gamma_{20}D_{cpt}^{(0)} + \gamma_{21}D_{cpt}^{(1)} + \gamma_{22}D_{cpt}^{(2)} + \gamma_{23}D_{cpt}^{(3+)} + \varepsilon_{cpt} \end{aligned} \quad (2)$$

where  $m_{cpt}^{gspoth}$  and  $m_{cpt}^{nongsp}$  are the import shares of other GSP eligible and non-GSP countries, respectively, that compete with CNL-affected country  $c$  in the market for product  $p$  in year  $t$ ;  $\alpha_{1t}$  and  $\alpha_{2t}$  are the year  $t$  fixed effects; and  $D_{cpt}^{(k)}$  is defined as in Equation (1). If CNLs aim to benefit other GSP beneficiaries, then the  $\gamma_{1k}$ s should be significantly greater than the  $\gamma_{2k}$ s in each post-CNL year  $k$ , implying a proportionately larger increase in the market share of other GSP eligible countries. But if non-GSP countries benefit from the CNLs the most and capture larger market share, then the  $\gamma_{2k}$ s are expected to be greater than the  $\gamma_{1k}$ s.

## 4 Results

### 4.1 Do CNLs target truly competitive exporters?

Using Equation (1) above, the estimated coefficients on the post-exclusion year dummies  $D_{cpt}^{(k)}$  in Columns 1 and 2 of Table 7 confirm the findings gleaned from the descriptive statistics in Table 6. I find that CNLs are associated with a large and significant drop in the import values and shares of affected countries. The value of imports drops by about \$7 million in the year the CNL exclusion is implemented, by an additional \$10 and \$7 million in the first and second year of exclusion, respectively, and \$4 million over the subsequent three years on average (Column 1). Given that the sample average in the pre-exclusion year is \$34 million, by the third year of exclusion the value of imports drops by more than 70 percent. Qualitatively similar results are obtained for the import shares. I find that the fraction of imports drops by 26 percentage points in the year the CNL is implemented, by additional 9 percentage points in the first year of exclusion, and 2-3 percentage points in each of the subsequent four years (Column 2). Compared to the sample average of 63 percent, the import share is cut in half by the third year of exclusion. These findings are robust to the inclusion of economic and demographic controls typically found in gravity-type models (Columns 3 and 4), further confirming that these effects are driven by the change in the GSP eligibility.<sup>10</sup>

While the above provide evidence on the effects of CNLs, they do not tell us much about the differential impact of applicable tariffs. In particular, the magnitude of the drop in imports after the loss of tariff exemptions may depend on the size of foregone savings from GSP. In other words, the greater the loss of savings from GSP (the higher the MFN tariff rate), the larger is the drop in imports. This hypothesis is tested by interacting the CNL measures with MFN ad valorem tariff rates; the coefficients on the interaction terms are expected to be negative.

The sample contains 57 episodes of products subject to a specific or combination tariff

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<sup>10</sup>GDP and GDP per capita data are not available for Barbados in three years of the sample, hence the number of observations is smaller when these controls are included.

rate. These are dropped from the analysis to avoid potential errors in measuring the ad valorem equivalent tariff rates for these products.<sup>11</sup> For the remaining 147 episodes the average tariff rate prior to the exclusion is 5.5 percent (with a standard deviation of 3.2).

The results reported in Column 5 of Table 7 suggest that the drop in import values is larger for products facing higher MFN tariff rates. The coefficients on the interaction terms are negative and statistically significant, at least for the first few years immediately after the exclusion. Moreover, the impact of CNLs on import values is negative in all post-exclusion years, evaluated at the mean values of tariffs. For an average product facing 5.5 percent tariff, the drop in imports is estimated to be \$9 million in the year of CNL implementation, and additional \$14 and \$11 million in the first and second years of exclusion, respectively. The impact of CNLs on import shares is qualitatively unchanged after controlling for the MFN tariff rates (Column 6). The coefficients on interaction terms point in the right direction but are statistically insignificant.

Unlike the results for import shares, the results on import values must be viewed with some caution, since the US demand for these products is not explicitly controlled for. Additionally, import values are in nominal terms and do not reflect price fluctuations.<sup>12</sup> To test the robustness of the results in real terms, I use quantity information available for 187 episodes of the sample (953 observations). Instead of import values and their shares, import volumes and their shares are used as the dependent variables. Because of the reduced sample size, I first replicate the base estimates reported in Table 7 and present the results in Columns 1 and 2 of Table 8. The results are qualitatively similar for both values and volumes; the shares drop by 25 percentage points in the year of CNL implementation, by another 10 and 3 percentage points in the first and second year after the exclusion. Although the estimates for the amount and quantity of imports are imprecisely measured, they point in the right direc-

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<sup>11</sup>The basic results in Columns 1 through 4 are unchanged when the sample is restricted to these observations.

<sup>12</sup>As a robustness check, I deflated all import values by the price index for imported goods obtained from the Bureau of Economic Analysis. The impact of CNLs on the price-adjusted imports is similar to the base estimates. Naturally, a single price index cannot capture differences in price fluctuations of different products.

tion and demonstrate a similar pattern, implying that imports from CNL-affected countries declined both in real and nominal terms after the exclusion.

The results so far suggest that the excluded exporters need the preferential treatment to access the US market. Without tariff exemptions, they are unable to maintain the same level of exports and lose much of their market share. One may argue that only the least productive firms stop exporting to the US, while the most productive ones prevail and continue exporting. This argument may be valid if the value and share of imports were to drop only in the first year of exclusion, with no significant changes thereafter. But as exporters complete their contractual obligations, they choose not to continue exporting to the US absent tariff exemptions, as evidenced by the continual decline in import values and shares in post-exclusion years.

## 4.2 Who benefits from CNLs?

The evidence thus far on the effects of revocation of tariff exemptions clearly indicates that the import shares, or imports in general, of the affected countries decline. This raises the question of who displaces the latter. Is it other developing country beneficiaries, as intended by policymakers, or is it non-GSP countries? In order to identify the beneficiaries of CNLs, the import share equation in Column 2 of Table 7 is replicated for each of the latter two sets of countries. Following Equation (2), the import shares of each are regressed on the post-exclusion year dummies for the competing CNL-affected countries, with the results reported in Columns 1 and 2 of Table 9.

Given the potential correlation between the residuals of the two equations, SUR estimates are provided. Indeed, the Breusch-Pagan test of whether the residuals from the two equations are independent, reported at the bottom of Table 9, rejects the null of independence of these residuals at the 1% level, suggesting that SUR estimates are more efficient compared to OLS.

I find that import shares rise for both other GSP eligible and non-GSP countries, but considerably more so for the latter; the non-GSP countries seem to benefit the most from



the CNLs. More specifically, the import share of other GSP eligible countries increases by 5 percentage points in the year of CNL implementation, by additional 2 and 1 percentage points in the first and second years of exclusion and it remains unchanged thereafter. In contrast, the import share of non-GSP countries increases in every year after the exclusion: by 12 percentage points in year 0, 6 and 4 percentage points in the first and second years of exclusion and so on. Thus, by the third year of exclusion the share of imports from other GSP eligible countries has increased only by 8 percentage points, whereas the share of imports from non-GSP countries has risen by 22 percentage points.

Are the differences in the increase in market shares statistically different across the two groups of countries? I test the null hypothesis that the impact of CNLs is the same across these two groups of countries in each year after the exclusion. The chi-squared statistic is reported in Column 3, along with the corresponding p-value in parentheses. With the exception of the year of implementation, the impact of CNLs across the two groups of countries is statistically different from one another in all subsequent years.<sup>13</sup>

Consistent with the findings by MacPhee and Rosenbaum (1989), the analysis here concludes that CNLs do not seem to achieve their secondary objective in expanding the market share of less competitive GSP beneficiaries. Instead, CNLs seem to provide a competitive edge to non-GSP countries in capturing the US market.

## 5 Conclusion

This paper provides a systematic analysis of the effect of Competitive Needs Limits on developing country exports to the US. Using data on trade flows at the HS 8-digit level, I find that CNLs induce a large and significant drop in the US imports and market shares of excluded countries following the revocation of tariff exemptions. These findings are robust to

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<sup>13</sup>Aside from other exporters, domestic producers of excluded products may benefit from CNLs. After all, CNLs also pursue a hidden agenda of protecting import sensitive domestic industries. However, the analysis of domestic shipments of excluded products proves problematic since data at such high level of disaggregation are not available.

a number of specifications that control for the attributes of exporting countries. In addition, I also show that the lost market shares of the affected countries are captured by non-GSP countries and not by other less competitive GSP beneficiaries. These findings indicate that the CNLs do not achieve their stated objectives of revoking tariff exemptions from the most competitive GSP beneficiaries and reserving the benefits for less competitive GSP eligible countries.

The findings have clear policy implications. The CNL threshold criteria currently in place may not correctly identify the most competitive country-product pairs. Indeed, they often target small or one-time exporters. An alternative criterion could be based on a longer historical trend in the country-product level imports, instead of the current practice of basing the exclusion decision on imports of the previous calendar year only. Additionally, CNLs seem to be a second-best policy choice for expanding the market share of less competitive GSP beneficiaries. Denying preferential market access to the “most successful” exporters may not necessarily improve the competitiveness of other GSP eligible countries if the latter simply do not have the competitive edge to produce and export a given product. CNLs do not address the core reasons for why these countries have small or non-existent market shares. More targeted policies addressing the production and export facilitation in these countries might better serve the goals of the GSP.

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Figure 1: CNLs and Level of Development of Affected Countries

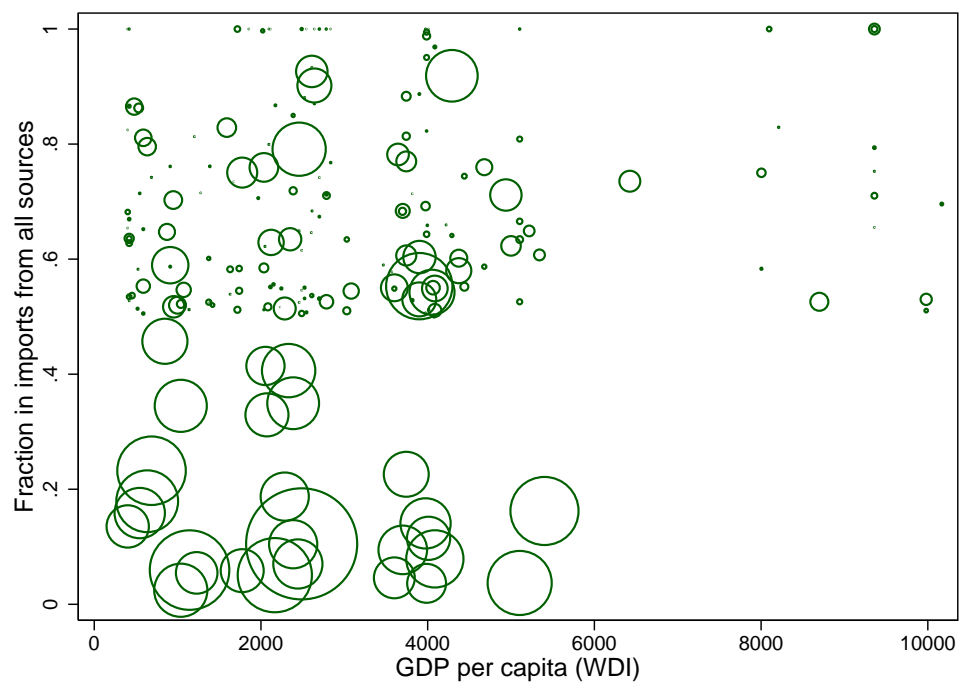


Table 1: CNL Thresholds (in million dollars)

Year	CNL value threshold	<i>De minimis</i> value
1997	80	13.5
1998	85	14
1999	90	14.5
2000	95	15
2001	100	15.5
2002	105	16
2003	110	16.5
2004	115	17
2005	120	17.5
2006	125	18
2007	130	18.5
2008	135	19
2009	140	19.5

Note: Once a country's annual exports exceed CNL value threshold, it becomes ineligible for the GSP in the following year. If a country's annual exports do not exceed the value threshold but exceed the percentage threshold, then the country may receive a *de minimis* waiver if exports are less than the *de minimis* value.

Table 2: Number of CNL Episodes by Country (in descending order)

Country of Exclusion	Number of Episodes	Number of Unique Products	Average Value of pre-CNL Imports	Average fraction of pre-CNL Imports
	(1)	(2)	(3)	(4)
India	26	24	30.8	0.64
Turkey	25	23	29.5	0.65
Brazil	24	24	55.3	0.57
Colombia	22	22	13.6	0.76
Peru	12	12	6.9	0.71
Argentina	12	11	5.0	0.78
Dominican Republic	11	11	1.4	0.73
Russia	8	8	63.6	0.47
Thailand	7	6	168	0.41
Indonesia	7	6	74.8	0.50
Guatemala	7	7	1.4	0.64
Ecuador	6	6	0.5	0.61
Philippines	5	5	82.6	0.49
Kazakhstan	3	2	191	0.17
Venezuela	3	3	97.1	0.48
Panama	3	3	1.7	0.73
El Salvador	3	3	0.2	0.81
Malta	2	2	3.9	0.52
South Africa	2	2	2.0	0.57
Costa Rica	2	2	0.3	0.58
Pakistan	2	2	0.1	0.55
Jamaica	2	2	0.03	0.58
Sri Lanka	1	1	14.6	0.65
Poland	1	1	10.4	0.55
Trinidad & Tobago	1	1	6.7	0.61
Cote d'Ivoire	1	1	4.5	0.86
Bolivia	1	1	3.6	0.52
Barbados	1	1	0.5	0.70
Jordan	1	1	0.3	0.55
Hungary	1	1	0.1	0.66
Honduras	1	1	0.1	0.51
Bosnia-Herzegovina	1	1	0.01	1.00
Total	204	196	33.7	0.63

Table 3: Smallest Country-Product Pairs in the Pre-CNL Year (by value, in ascending order)

Rank	Country	Year	Product	Value of imports (\$)	Share in total imports (%)
1	Guatemala	1998	Floor coverings consisting of a coating applied on a textile backing	1,424	73
2	Colombia	2005	Cocoa powder, o/90% by dry wt of sugar	2,073	100
3	Peru	2004	Citrus fruit nesoi (including bergamots)	2,412	52
4	Colombia	2002	Mixes for bakers wares, o/25% butterfat, not retail	4,464	100
5	El Salvador	1998	Juice of any single fruit or vegetable juices (o/t orange), concentrated	5,775	100
6	Turkey	1998	Chocolate, over 2kg, containing milk solids	6,300	100
7	Peru	1999	Yellow (Solano) potatoes, prepared or preserved	6,322	100
8	Colombia	1997	Food preps, nesoi, n/o 5.5% bf, mixed w/other ingredients	6,793	100
9	India	1997	Cocoa powder, o/90% by dry wt of sugar	7,068	100
10	Turkey	1999	Apricot pulp, otherwise prepared or preserved	7,178	71
11	Turkey	2007	Mixes for bakers wares, o/25% butterfat, not retail	7,265	100
12	Dominican Republic	2002	Reconstituted tobacco suitable for use as wrapper tobacco	7,922	100
13	India	1997	Preparations with a basis of extracts, essences or concentrates	8,400	82
14	India	1997	Railway or tramway self-discharging freight cars, not self-propelled	8,602	65
15	Bosnia-Herzegovina	2005	Beet sugar, raw, in solid form, w/o added flavoring or coloring	8,730	100
16	Dominican Republic	1998	Casein glues	10,366	55
17	India	1998	Cane/beet sugar & pure sucrose, refined, solid, w/ added coloring	11,610	100
18	Ecuador	1999	Tub and tub assemblies for household-type washing machines	11,966	72
19	Dominican Republic	1998	Sweet potatoes, frozen	12,882	62
20	Argentina	2007	Olives, not pitted, green, in saline solution, in containers > 8 kg	14,415	66

Table 4: Largest Country-Product Pairs in the Pre-CNL Year (by value, in descending order)

Rank	Country	Year	Product	Value of imports (mln \$)	Share in total imports (%)
1	Thailand	2006	Precious metal (o/t silver) articles of jewelry and parts thereof	700	11
2	Philippines	2006	Insulated ignition wiring sets used in vehicles, aircraft or ships	359	6
3	Kazakhstan	2006	Refined copper cathodes and sections of cathodes	313	5
4	India	2007	Gold necklaces and neck chains (o/t of rope or mixed links)	266	23
5	Venezuela	2006	Methanol (Methyl alcohol)	263	16
6	Brazil	2004	Plywood of wood sheets, n/o 6 mm thick each	250	55
7	Turkey	2007	Precious metal (o/t silver) articles of jewelry and parts thereof	233	4
8	India	2006	Wind-powered electric generating sets	217	18
9	Brazil	2006	Refined copper, wire	186	8
10	Kazakhstan	2007	Ferrocromium containing by weight more than 4 percent of carbon	162	41
11	Colombia	1999	Pigments, in liquid or paste form, used in making paints	161	79
12	Indonesia	2007	Insulated ignition wiring sets used in vehicles, aircraft or ships	161	2
13	Indonesia	2007	Fatty substances of animal or vegetable origin and mixtures thereof	154	35
14	Thailand	2005	Aluminum cooking and kitchen ware (o/t cast)	152	35
15	Brazil	2007	Ferroniobium	151	92
16	India	2004	Monumental or building stone and articles thereof, of granite	144	16
17	Brazil	2005	Machine parts, nesi	143	14
18	Russia	2005	Aluminum alloy, plates/sheets/strip, w/thick. o/0.2mm	137	7
19	Brazil	2000	Methyl tertiary-butyl ether. (MTBE)	134	9
20	Thailand	2005	Sacks and bags, of polymers of ethylene	132	10



Table 5: Dates of CNL Exclusions across Episodes

Year of exclusion	Number of cases
1998	35
1999	28
2000	16
2001	17
2003	21
2004	11
2005	16
2006	24
2007	14
2008	22
Total	204

Table 6: Summary Statistics for Import Values and Shares before and after the CNL Exclusion

**Panel A: Value of imports before and after exclusion (million dollars)**

	Percentiles					Mean	St. Dev.	N
	10th	25th	50th	75th	90th			
Pre-exclusion year	0.01	0.1	1.5	21.9	131.8	33.7	78.3	204
Year of exclusion	0	0.01	0.8	15.1	108.2	32.4	80.8	204
First year of exclusion	0	0	0.2	7.7	62.1	25.6	77.9	204
Second year of exclusion	0	0	0.1	2.8	64.9	21.3	61.2	157
Third year of exclusion	0	0	0.01	1.7	46.6	17.0	57.7	121
Fourth year of exclusion	0	0	0.002	1.1	91.3	20.3	64.5	85
Fifth year of exclusion	0	0	0	0.3	21.0	17.4	61.3	63

**Panel B: Share in total imports before and after exclusion (percent)**

	Percentiles					Mean	St. Dev.	N
	10th	25th	50th	75th	90th			
Pre-exclusion year	23	53	63	79	100	63	25	204
Year of exclusion	0	3	34	60	85	36	32	204
First year of exclusion	0	0	10	45	78	26	31	204
Second year of exclusion	0	0	6	44	72	23	30	157
Third year of exclusion	0	0	2	31	67	19	28	121
Fourth year of exclusion	0	0	0	27	72	19	29	85
Fifth year of exclusion	0	0	0	35	70	17	28	63

Table 7: Export Competitiveness of CNL-affected Countries

	No Controls		Demographic & GDP		MFN Ad Valorem Tariffs	
	Value (1)	Share (2)	Value (3)	Share (4)	Value (5)	Share (6)
Year of exclusion	-6.95** (2.671)	-0.26*** (0.037)	-6.67** (2.778)	-0.26*** (0.038)	13.54*** (4.133)	-0.22*** (0.056)
First year of exclusion	-17.20** (6.298)	-0.35*** (0.035)	-16.63** (6.507)	-0.34*** (0.035)	-2.91 (10.68)	-0.28*** (0.062)
Second year of exclusion	-23.80*** (8.307)	-0.38*** (0.047)	-24.89*** (8.286)	-0.37*** (0.046)	-20.55** (8.397)	-0.29*** (0.085)
Third year and above	-27.75** (11.44)	-0.43*** (0.045)	-26.75** (12.09)	-0.42*** (0.044)	-31.41 (23.41)	-0.39*** (0.073)
Year 0 * MFN Tariff					-411.8*** (95.07)	-0.26 (1.109)
Year 1 * MFN Tariff					-359.7*** (109.3)	-0.59 (1.144)
Year 2 * MFN Tariff					-235.4** (90.61)	-1.02 (1.211)
Year 3+ * MFN Tariff					-79.18 (251.3)	0.38 (1.185)
Observations	1,038	1,038	1,035	1,035	751	751
R-squared	0.09	0.24	0.12	0.26	0.16	0.25
Year Fixed Effects	Y	Y	Y	Y	Y	Y
Clustering at the country level	Y	Y	Y	Y	Y	Y
Demographic & GDP controls			Y	Y	Y	Y

Standard errors in parentheses, corrected for clustering at the country level. \*, \*\* and \*\*\* indicate significance at 10%, 5% and 1%, respectively.

Table 8: Impact of CNLs on the Value and Volume of Imports

	Value		Volume	
	Amount (mln \$)	Share	Quantity	Share
	(1)	(2)	(3)	(4)
Year of exclusion	-3.53 (2.324)	-0.26*** (0.037)	-5.64 (4.636)	-0.25*** (0.040)
First year of exclusion	-9.64* (5.564)	-0.35*** (0.032)	-12.39 (7.863)	-0.34*** (0.030)
Second year of exclusion	-14.81** (6.982)	-0.38*** (0.043)	-13.65** (6.433)	-0.36*** (0.037)
Third year and above	-13.68 (9.058)	-0.43*** (0.043)	-22.60 (14.35)	-0.42*** (0.042)
Observations	953	953	953	953
R-squared	0.11	0.26	0.02	0.25

Standard errors in parentheses, corrected for clustering at the country level. All regressions include year fixed effects, as well as demographic and GDP controls. \*, \*\* and \*\*\* indicate significance at the 10%, 5% and 1% level, respectively.

Table 9: Impact of CNLs on Import Shares of Other Countries

	Other GSP Eligible Countries	Non-GSP Countries	Wald Test
	(1)	(2)	(3)
Year of exclusion	0.05** (0.014)	0.12*** (0.021)	2.11 (0.15)
First year of exclusion	0.07*** (0.017)	0.18*** (0.029)	5.02 (0.03)
Second year of exclusion	0.08*** (0.022)	0.22*** (0.036)	6.70 (0.01)
Third year and above	0.08*** (0.023)	0.27*** (0.045)	15.42 (0.00)
Observations	1,035	1,035	
R-squared	0.025	0.073	
Correlation between residuals	-0.3155		
Breusch-Pagan test of independence	Chi2(1) = 103.03	P-value = 0.00	

Note: Column 3 reports chi-square statistic of the null hypothesis of equality between estimated coefficients across two groups of countries (p-value in parentheses). Both equations include year fixed effects. \*\*\* and \*\* indicate significance at the 1% and 5% level.