Impact of Losing Preferential Status: Evidence from the EU's Generalized System of Preferences Reform

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ABSTRACT:

There is a growing disagreement between developing and developed countries over the implementation of multilateral trade rules and at the center of this dispute is special and differential treatment (SDT) claimed by the developing countries. The Generalized System of Preferences (GSP) program falls under SDT and allows developed nations to grant non-reciprocal tariff concessions to developing and least developed countries. In 2014, the European Union (EU) reformed its GSP program, withdrawing preferential tariff concessions from several developing countries and small territories, taking away a potentially important driver of economic development for these nations. In this paper, I analyze the impact of this GSP reform on the excluded countries' exports to the EU. I use a triple difference specification with interactive fixed effects that control for preexisting trade patterns, allowing for causal inference. I find that exports of GSP eligible products of the excluded countries decrease by 1.6 percent post reform as compared to countries that still receive GSP treatment. This decline is equivalent to the average per capita gross national income of these excluded countries. The probability of exporting GSP eligible products decreases by 0.2 percentage points. There is no evidence of product diversification or trade diversion to other countries to compensate for these losses. Overall, my findings suggest that unilateral tariff concessions are necessary for all developing countries and losing them can cause exports to the donor countries to decline. This paper adds to the limited literature on withdrawal of unilateral preferences and to the larger debate on the importance of SDT.

JEL Classification: F13, C01, O19
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1 Introduction

There is a growing disagreement between developing and developed countries over the implementation of multilateral trade rules. While these two groups have never unequivocally agreed over the uniform implementation of the multilateral trade rules, the debate on availing developing country status within the multilateral trade framework and claiming special and differential treatment (SDT) has recently intensified.[1] The Generalized System of Preferences (GSP) program, which is at the core of SDT, allows developed countries to grant non-reciprocal tariff concessions to developing and least developed countries. While there are numerous empirical studies analyzing the success of the GSP program (Baldwin and Murray (1977), Borrmann et al. (1979), Brown (1989)), research on the impact of losing GSP tariff concessions is limited. My paper aims to fill this important gap in the literature by analyzing the impact of the European Union (EU)'s GSP reform in 2014 wherein preferential tariff concessions were taken away from several developing countries and small territories.

Providing equal treatment to all trading partners and gradually lowering and eliminating trade barriers are the fundamental principles of the WTO.[2] Developed countries stand together in agreement that these multilateral trade rules should be implemented uniformly. However, member nations of the WTO are comprised of a diverse mix of countries at varying stages of economic development. Acknowledging this unequal partnership (Mavroidis, 2016), the SDT provisions grant developing countries preferential market access and greater freedom to adopt the multilateral trade rules by giving precedence to their developmental goals (Hoekman, 2005). However, application of SDT has always been a topic of disagreement. Most recently, the WTO's Doha Round negotiations were never concluded because amongst many other things, the developing and developed countries could not agree upon the interpretation and implementation of SDT (Baachus and Manak, 2020). Since then, the backlash from the developed world against SDT in general and GSP in particular has only

[1] See Mavroidis, (2016) for the history and context of SDT and Bacchus and Manak (2020) for the current state of debate on SDT

[2] `https://www.wto.org/english/thewto_e/whatis_e/tif_e/fact2_e.htm`

intensified. The U.S. members of Congress have periodically considered whether or not to include emerging market economies as GSP beneficiaries (Jones, 2019). Developed countries argue that preferential treatment should be provided very selectively on a case-to-case basis (UNCTAD, 2019).

In fact, the EU recently reformed its GSP program and withdrew preferential treatment from several developing countries and small territories starting 2014. This paper contributes to the larger debate on SDT by examining the importance of the GSP program for the beneficiary countries in context of this reform. I estimate the impact of this withdrawal on these countries' exports to the EU and also investigate the pathways that may help to mitigate the adverse impact (if any). Analyzing the impact of a single trade policy reform is confounded by the presence of multiple factors that affect trade between nations, such as global and domestic macroeconomic fluctuations, political situation within the country, geographical distance between trading nations as well as potential unobservable factors. I use a triple difference specification with interactive fixed effects to address this these endogeneity concerns. The triple difference estimate compares exports of GSP eligible products from the excluded countries to the EU post reform, to exports of the same products to the EU post reform from countries still receiving GSP treatment. Using country-product, country-time and product-time fixed effects helps control for time invariant country-product patterns as well as time varying trends common across countries and products and isolate the causal impact of the reform. I estimate the Intent to Treat (ITT) effects of the reform on the volume of exports as well as the probability of exporting GSP eligible products. I also investigate the possible pathways (product diversification and trade diversion) available to the excluded countries to help mitigate the adverse impact (if any).

To measure the main impact of the GSP policy reform, I construct a three-way balanced panel consisting of exports from all GSP beneficiaries (current and former) using mirror import data publicly available on Eurostat's Comext database for international trade in goods. I find that there is approximately 1.6% drop in exports of GSP eligible products

from these excluded countries post reform, as compared to exports of GSP eligible products from countries that still receive GSP tariff concessions. This loss in exports is equivalent to the average per capita gross national income (GNI) of the treatment group countries. The probability of exporting a GSP eligible product post reform also decreases by 0.2 percentage points.

On investigating the possible pathways to mitigate this impact, I find no change in the concentration of the export basket to the EU. This means that the excluded countries don't export any fewer varieties of products, but neither do they diversify to newer varieties to compensate for the loss in export volume. I also find no evidence of trade diversion for a small subset of countries for which data is available and these countries don't drive the main results.

This paper contributes to the broader literature on GSP reforms and trade that starts as early as the 1970's when several papers examined whether the GSP tariff concessions available to developing countries lead to trade creation or trade diversion effects. Baldwin and Murray (1977), Borrmann et al. (1979) and Brown (1989) all find that the EU GSP program has a favorable impact in boosting beneficiary countries' trade margins at the extensive as well as intensive margins. Sapir and Lundberg (1984) perform a similar analysis for the U.S. GSP program for the period 1975 to 1979 and show that the trade creation effect in the U.S. is twice the trade diversion effect, thus contributing to net welfare creation for the donor countries. However, studies analyzing the impact of exclusion, suspension or graduation from GSP are limited. The most recent among these is Hakobyan (2017) which analyzes cases of Competitive Need Limit (CNL) exclusions by the U.S. between 1997 and 2009 and finds for country-product pairs that were graduated from the program, their share in U.S. imports drops significantly in the first year of exclusion and continue to drop in their second and third year of exclusion. Hakobyan (2019) investigates the impact of the expiration of the U.S. GSP in 2011 for a period of ten months and finds that average exports to the U.S.declined by 3% for that period. The decline for specific products namely textiles

and apparel and agricultural products was sharper at 9% and 5% respectively.

Studies analyzing the impact of exclusion/graduation from the EU GSP are even fewer. Studies looking at single country exclusions such as Muhammad et al. (2010) for Columbia and Ecuador and Gnutzmann and Gnutzmann-Mkrtchyana (2017) for Belarus show that post graduation, there is a decline in exports of GSP eligible products from these countries to the EU. While the EU GSP program has been reformed numerous times since it was first offered in 1971, the 2012 reform was unique in terms of the drastic cut back in the number of beneficiary countries. There were a few reports that questioned the rationale behind this reform soon after it was announced. Stevens (2012) in his essay argues that upper middle-income countries are not a good proxy for most competitive countries, but the reform by its rationale and nature of classification considers them to be so. He points out that while this may not be the primary motivation for reform, these countries will now have to negotiate trade agreements with the EU to receive any tariff concessions.

Siles-Brügge (2014) argues that the reform is part of a larger trade agenda that the EU has been pursuing since the financial crisis to strengthen its bargaining position with its trading partners through various economic partnership and other trade agreements in order to obtain reciprocal market access rather than giving unilateral concessions. In my knowledge, this is the first paper to empirically look at the collective impact on the developing countries and small territories that were excluded from GSP treatment in comparison to the still GSP eligible countries, contributing to the limited literature on the effects of losing unilateral preferential treatment. This paper also adds to the intensifying debate on special and differential treatment by signaling the importance of GSP concessions to developing countries.

The rest of the paper is organized as follows. Section 2 provides a brief history of the GSP program and overview of the GSP scheme as offered by the E.U. Section 3 introduces data used for the analysis and Section 4 outlines the empirical strategy. The main results are presented in Section 5. Robustness checks are discussed in Section 6, followed by concluding

remarks in Section 7.

2 Background

The General Agreement on Tariffs and Trade (GATT) was established in 1947 to promote multilateral cooperation in international trade and to gradually bring down and eliminate trade barriers. At the time of its inception, 11 of the original signatory countries would have been considered as developing countries (Michalopoulos, 2000). GATT however, did not distinguish between countries based on their level of development for application of trade rules which were expected to be applied uniformly to all member nations. However, since GATT's inception, the developing member countries believed that it was unfair to expect an equal partnership among unequal partners (Mavroidis, 2016). As a result, it was agreed that the developing countries could be awarded special and differential treatment (SDT) in the form of flexibility in the implementation of multilateral trade rules and non-reciprocal preferential market access from the developed countries (Michalopoulos, 2000). The latter came to be formally known as the Generalized System of Preferences.

The primary objectives of offering non-reciprocal preferential tariffs to the beneficiary countries were: (i) increasing their export earnings, (ii) promoting industrialization and (iii) accelerating their rates of economic growth.[3] The program was first implemented by the European Commission in July 1971 followed by Japan in March 1971 (Baldwin and Murray, 1977). Today, each participating nation has its own version of the program whereby it grants preferential access to a select group of developing nations. As per the UNCTAD website, the following 13 nations currently offer preferential tariffs under the GSP program - Australia, Belarus, Canada, the European Union (EU), Iceland, Japan, Kazakhstan, New Zealand, Norway, the Russian Federation, Switzerland, Turkey and the United States of America.[4]

Preferential treatment was first offered by the EU under GSP in 1971 for a period of

[3]Proceedings of the United Nations Conference on Trade and Development, Second Session, Volume I, Report and Annexes

[4]See`http://unctad.org/en/Pages/DITC/GSP/About-GSP.aspx`

10 years after which it was further renewed periodically until 2005. When the scheme was renewed on June 27, 2005 for a period of three years commencing January 1, 2006 to December 31, 2008 under Council Regulation (EC) No.980/2005, the scheme was streamlined from five different arrangements to three namely – (i) General Arrangements, (ii) GSP+, (iii) Everything But Arms arrangement for the Less Developed Countries (LDCs). The next two rounds of renewals from January 1, 2009 to December 31, 2011 and January 1, 2012 to December 31, 2013 only introduced minor technical changes. Regulation (EU) No 978/2012 passed on October 25, 2012 however, introduced major reforms to the scheme that went into force from January 1, 2014. While the basic structure of the scheme remained unchanged, preferential tariffs concessions were withdrawn for several countries. The countries excluded from the GSP fall into one of the following three categories: (i) countries or territories that are under the administration of the EU or other developed countries, (ii) countries that have alternate preferential trade agreements with the EU, and (iii) countries that have been classified by the World Bank as high-income or upper middle-income countries for three consecutive years based on per capita gross national income.

Special and differential treatment in general and the GSP in particular, was conceptualized to help the developing countries align their development goals with the multilateral trade agenda. It was not intended for high-income countries whose industries are already mature and resilient to external competition. The first two categories however are very much developing countries and thus the intended beneficiaries of GSP right since it was conceptualized. Some of these have alternate trade agreements with the EU, but even if they can avail tariff concessions under an alternate agreement, it can be argued that giving exporters an option to choose the most competitive tariff rate will lead to more efficient utilization of the GSP. Hence I focus on the impacts of this reform for excluded upper middle-income countries, lower middle-income countries and small territories.

3 Data

My goal in this paper is to measure the impact of the EU GSP reform on the excluded countries in terms of trade losses (if any) and the ability and pathways (such as product diversification trade diversion) through which developing countries may overcome these losses. For the main results, I construct a three-way balanced panel consisting of exports from all GSP beneficiaries (current and former) using mirror import data publicly available on Eurostat's COMEXT[5] which is the European Union reference database for international trade. The dataset contains annual values of imports to the EU from 134 countries for the period 2010 to 2017. Of these, 52 developing countries and small territories were excluded from the GSP scheme starting January 1, 2014 and thus form the treatment group for this analysis. The remaining 82 countries continued to receive GSP preferences for the entire period of analysis and thus can be regarded as the control group.[6] Table A1 of the Appendix contains a full list of treatment and control group countries. Countries are classified as GSP eligible or not, based on the country list in Annex I of GSP Regulation (EU) No 978/2012. Products are classified as GSP eligible or not based on the product list in Annex V of GSP Regulation (EU) No 978/2012. Product code updates and revisions have been reconciled by referring to the list of changes in EU's Combined Nomenclature (CN).[7]

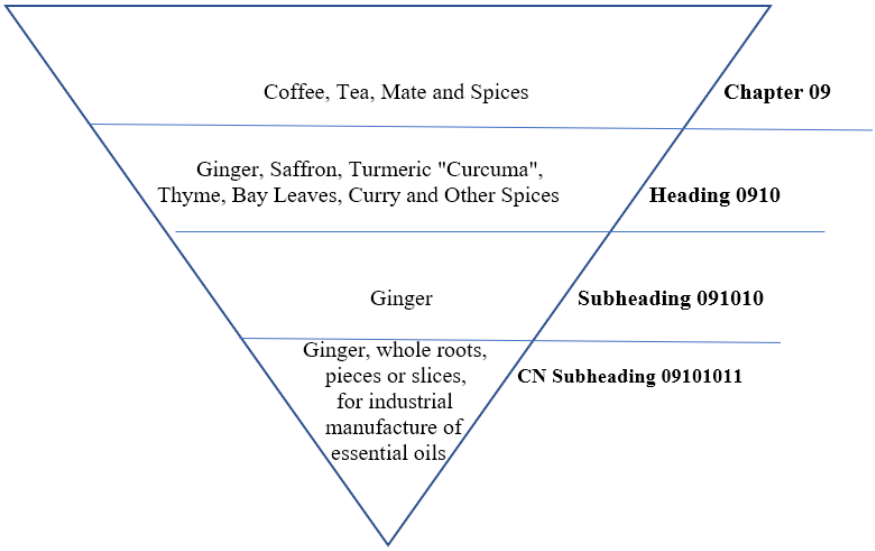
Products are defined at the 8 digit level of disaggregation as per the EU's CN product classification system. This comprises of the 6 digit product codes from the Harmonized System (HS) of product classification that are common across countries and the last two

[5] `http://epp.eurostat.ec.europa.eu/newxtweb/`

[6] China, Ecuador, Maldives, Thailand were excluded from EU GSP scheme from January 1, 2015 as they were classified by World Bank as upper middle-income countries for three consecutive years 2011, 2012 and 2013 and hence are not included in this sample. GSP benefits for Myanmar were reinstated on July 19, 2013 and hence is not included in the sample. GSP tariff preferences were awarded to South Sudan from January 2013 and hence it is not included in this sample. Botswana and Namibia were added back as GSP eligible countries on October 1, 2014 and graduated on December 31, 2015 and hence are not included in the sample. Cameroon, Côte d'Ivoire, Fiji, Ghana, Kenya and Swaziland were added back as GSP eligible countries on October 1, 2014 and hence are not included in the sample.

[7] Excel file containing product code updates to CN can be found at bottom of following webpage:`https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_CLS_DLD&StrNom=CN_2018&StrLanguageCode=EN&StrLayoutCode=HIERARCHIC`

Figure 1: Product Classification



digits which are unique to the EU's sub divisions of goods. This is the level at which GSP tariff rates are applied. Figure 1 explains how GSP products are defined starting from the highest level of aggregation to its most disaggregated form. The 8-digit product code can be broken down into its first two digits called the chapter that describes broad categories, such as Chapter 09 in Figure 1 which represents "Coffee, Tea, Mate and Spices". At the most disaggregated level, the eight digit CN subheading describes a very narrowly defined product subcategory such as in this example, a very specific variety of ginger.

To investigate possible pathways to mitigate any adverse impact of the GSP reform, I estimate the impact on the export basket variety of these excluded countries to the EU and also look for evidence of trade diversion to other geographical markets. To examine the impact on the export basket variety, I calculate the Herfindahl-Hirschmann Index (HHI). The CN-8 level product codes provide a granular view of countries' export basket, and this level of disaggregation helps capture the variation in export volumes that might be lost at a higher level of disaggregation. However, two distinct CN8 level product codes or HS-6 level products codes do not nearly represent two distinct products but rather a minor variation of the same broad product category. Hence to calculate HHI, I use a higher level of aggregation HS-4. The 4 digit HS headings define specific products that, although may

fall under the same broad Chapter, represent distinct products. So Heading 0910 represents "Ginger, Saffron, Turmeric, Thyme, Bay Leaves, Curry and Other Spices" while Heading 0908 represents "Nutmeg, mace and cardamoms". Thus fewer or additional products in the export basket defined at HS-4 level would be a clear indicator of export concentration or diversification respectively. Hence to estimate the impact of GSP reform on changes in the export basket, I again use mirror import data from Eurostat but at HS-4 level of product classification. The HHI is calculated by aggregating squared ratios of export shares of products to the sum of these shares to the EU for that year.

For estimating trade diversion effects, I use world export data at the HS-6 digit level of product classification available from the UN Comtrade database.[8] HS-6 is the highest level of disaggregation up to which the product codes are common across countries. Since information on aggregate world exports is directly reported by the respective countries, data is not available for the full panel of 163 countries considered for the earlier part of the analysis. Being consistent with the period of analysis, I am able to construct a balanced panel of 55 countries' exports to the world for the period 2010 to 2017. Of these, 17 countries form the treatment group and the remaining 38 countries form the control group.

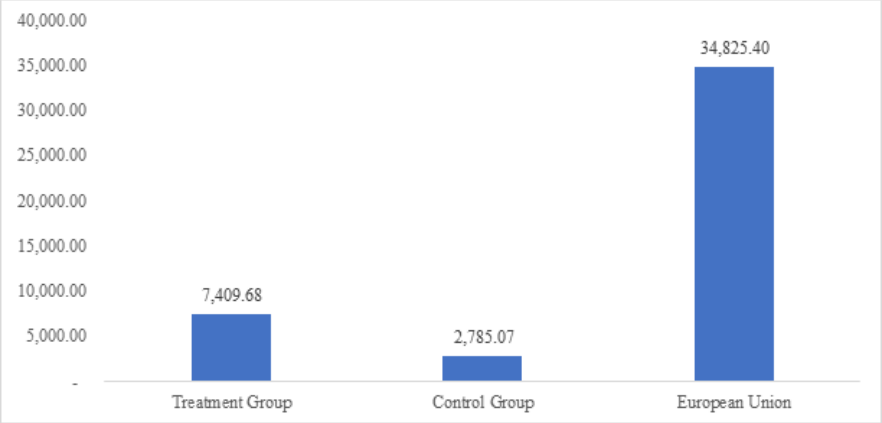
Figure 2 below shows that for the year 2013, average per capita Gross National Income (GNI) (in current US Dollars) for the treatment group is barely one fifth of that of the EU. Since the World Bank income classifications for countries are also based on per capita GNI (calculated using the Atlas method[9]), I use the same metric to demonstrate the countries' income disparity. This highlights the economic divide between these exporting nations and their combined largest geographical market that is the EU. Just like any economic indicator taken in isolation, this measure also does not give a complete picture of a country's development status. But the per capita income gap does indicate that these excluded developing countries while faring better than the lower middle income and least developed countries

[8] https://comtrade.un.org/data/

[9] Explained here - https://datahelpdesk.worldbank.org/knowledgebase/articles/378832-what-is-the-world-bank-atlas-method

in the control group, still are no match as a trading partner to the EU and hence perhaps could still benefit from the GSP concessions that are aimed to promote liberalization and economic growth.

Figure 2: Per capita Gross National Income (GNI) for 2013

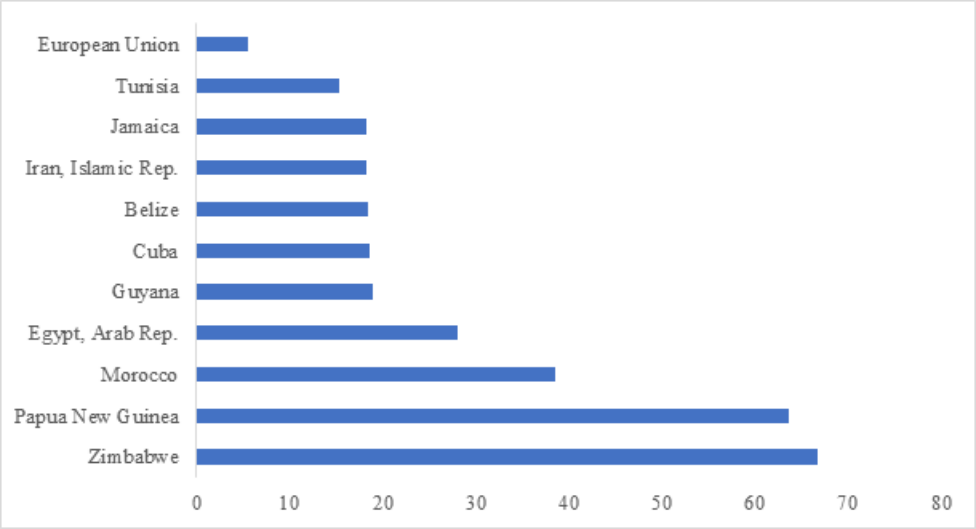


Source: World Development Indicators from World Bank.
Notes: Per capita GNI for treatment group represents average per capita GNI for 31 upper middle income and lower middle income countries and for which data is available. Per capita GNI for control group represents average per capita GNI for 75 countries for which data is available.

Figure 3 shows the share of employment in agriculture as a percentage of the national population for ten countries whose per capita GNI for 2013 was lower than the median. This measure can serve as a good proxy to indicate a country's reliance on the manufacturing of primary products. In comparison to the EU where only 5% of the labor force is employed in agriculture, Zimbabwe with a per capita GNI of $1210 U.S. dollars employs 67% of the labor force in agriculture. For Tunisia with a per capita GNI of $4160 U.S. dollars, the employment share in agriculture is at 15%. The objective of the GSP program is to promote industrialization and manufacturing thereby reducing the developing countries' reliance on primary products. It can be argued that at least for the excluded developing countries exporting below the 2013 median exports, the goal still hasn't been entirely met.

Finally, Figure 4 shows shortfall in income or consumption from the poverty line (at $5.50 a day) as a percentage of the poverty line. For 2013, the poverty gap for all upper middle

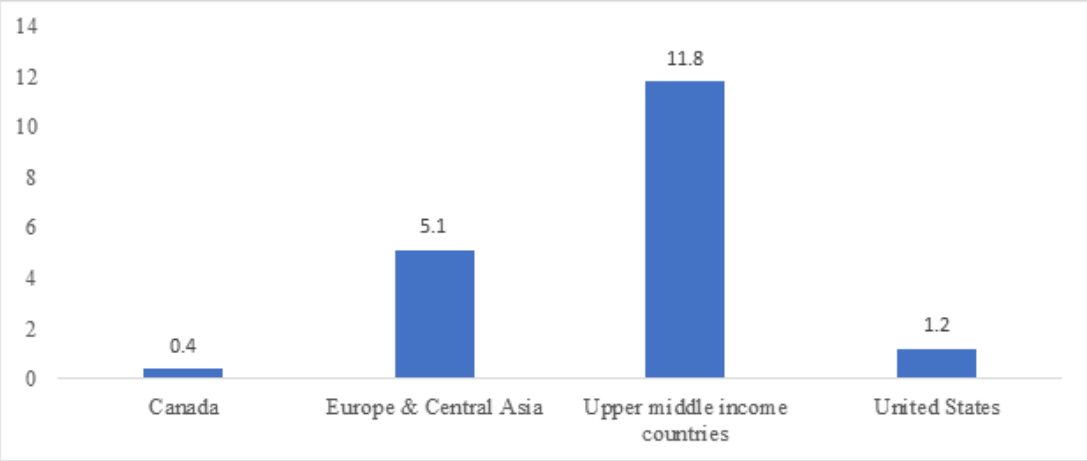
Figure 3: Employment in Agriculture as a percentage of Total Employment



Source: World development Indicators from World Bank.
Notes: Graph shows lowest ten countries below 2013 per capita GNI for 2013 of U.S. $7010

income countries is almost 10 times that of the U.S. and Canada and twice that of Europe and Central Asia combined. This shows that the upper middle income countries are much worse off than the developed countries in terms of the depth and the incidence of poverty and likely still much in need of the special and differential treatment from the EU.

Figure 4: Poverty Gap as a Percentage of Population



Source: World development Indicators from World Bank.
Notes: Poverty gap at $5.50 a day (2011 PPP) is the mean shortfall in income or consumption from the poverty line $5.50 a day (counting the nonpoor as having zero shortfall), expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence.

4 Empirical Specification

The EU GSP reform led to withdrawal of preferential treatment for several countries so that their exports were no longer eligible for the GSP tariff concessions, making these goods costly as compared to their GSP eligible counterparts that still received this preferential treatment. I estimate the impact on these countries excluded from the GSP scheme starting in 2014 as measured by the volume of GSP eligible exports and probability of exporting GSP eligible products. I also investigate two possible pathways to mitigate any adverse impact. In case exports of GSP eligible products from these excluded countries are lower post reform, I estimate whether these countries are able to compensate for the losses by diversifying to other products or by diverting their trade to other geographical markets.

4.1 Intent to Treat (ITT) Effects

Volume of Exports

To estimate the impact on export volumes, similar to Frazer and Van Biesebroeck (2010) and Hakobyan (2019), I use a triple difference specification with interactive fixed effects as follows:

$$lnexports_{cpt} = \alpha_0 + \alpha_1 Country * GSPproduct * Post + \lambda_{cp} + \rho_{ct} + \theta_{pt} + \epsilon_{cpt} \qquad (1)$$

where:

lnexports = represents log of exports to the EU from country c of product p at time t.

Country = dummy variable that takes value 1 for countries excluded from the EU GSP program; 0 otherwise

GSPproduct = dummy variable that takes value 1 if the product is GSP eligible; 0 otherwise

Post = dummy variable that takes value 1 from 2014, 0 for earlier years

λ_{cp} = represents country-product fixed effects

ρ_{ct} = represents country-year fixed effects

θ_{pt} = represents product-year fixed effects

ϵ_{cpt} = represents error term

The interaction term is comprised of three dummy variables – a country dummy to distinguish the treatment group (countries excluded from the EU GSP in 2014) from the control group (countries eligible for GSP treatment for the period of analysis), a product dummy to distinguish products that are GSP eligible from products that are not GSP eligible, and a time dummy to differentiate pre and post reform period. The main identification challenge here is that any decline in exports of countries that ceased to receive the GSP treatment from the EU post reform might be on account of a country specific economic downturn or a product specific decrease in demand. For instance, a country-time double

difference estimate might inaccurately attribute country specific economic downturns to the reform. Similarly, a product-time double difference estimate might erroneously attribute product specific trends to the reform. The triple difference specification addresses these endogeneity concerns by comparing double difference estimates of GSP eligible products post reform from the the treatment group to similar double difference estimates from the control group. Similar to Frazer and Van Biesebroeck (2010) and Hakobyan (2019), I use country-product, product-year, and country-year fixed-effects that control for preexisting trade patterns. These absorb any time invariant heterogeneity across countries for any products, time varying country specific export trends as well as time varying product specific export trends to help isolate the causal impact of the reform. The coefficient on the triple difference interaction term α_1 captures the causal impact of EU's GSP reform on the excluded countries. If the GSP exclusion reduces the excluded countries' exports competitiveness so that they experience a decline in exports of GSP eligible products post reform, then the coefficient on the triple difference interaction term would be negative and statistically significant. On the other hand, if the argument holds substantial merit that countries for whom GSP concessions are withdrawn indeed do not need preferential treatment under GSP, then their exports to EU should not be adversely affected by a GSP exclusion in which case α_1 should be statistically insignificant.

Probability of Exporting

I estimate a linear probability model to measure the change in probability of exporting a GSP eligible product to the EU by the excluded countries post reform, as compared to countries that continue to receive the GSP treatment from the EU. This is done by replacing the dependent variable in equation (1) by a dummy variable that takes value 1 if the value of exports of a product is greater than zero and 0 otherwise. The empirical specification changes slightly as follows:

$$exportdummy_{cpt} = \beta_0 + \beta_1 Country * GSPproduct * Post + \lambda_{cp} + \rho_{ct} + \theta_{pt} + \epsilon_{cpt} \qquad (2)$$

The coefficient on the triple difference term β_1 in equation (2) can be interpreted as a difference in the probability of exporting GSP eligible products by the treatment countries post reform as compared to that of exporting GSP eligible products by the control countries for the same time period. A positive estimate would indicate an increase in the likelihood of exporting GSP eligible products post reform among excluded countries. A negative coefficient estimate would indicate that the treatment countries (that is, the now GSP ineligible countries) are less likely to export a GSP eligible product post reform as compared to control countries that still receive preferential treatment.

4.2 Pathways to Mitigate Export Losses

In this section, I investigate two possible pathways to mitigate any adverse impact of the EU GSP reform.

Export Basket Concentration/Diversification

The GSP was conceptualized with the objective of helping the beneficiary countries attain economic growth and industrialization. While product diversification was not an explicit goal, the objective of industrialization can be interpreted as helping these countries move beyond primary products to a wider range of manufactured goods (Persson and Wilhelmsson, 2016). As these authors argue, unilateral trade preferences might indeed promote product diversification by bringing down trade costs and making it possible to export products previously that were previously unprofitable to export. In fact, they find that unilateral trade preferences granted by the EU under various versions of its GSP scheme led to export diversification for the beneficiary countries. Similarly, Gamberoni (2007) finds that the EU

GSP scheme has a small but positive impact on export diversification of the beneficiary countries. I now investigate whether removal of GSP preferences leads to a concentration of the export basket for the excluded countries or if they are able to diversify to other products and mitigate any losses arising out of losing GSP concessions. The Herfindahl-Hirschmann Index (HHI) is commonly used in the international trade literature to measure the degree of concentration/diversification. This index tells us whether a country's exports are comprised of a few offerings of product varieties or whether the exports are distributed over a wide variety of products (UNCTADstat, 2019). For this analysis, I calculate the annual HHI for each country in the panel as follows:

$$HHI_{ct} = \sum_{p=1}^{N} (\frac{x_{cpt}}{\sum x_{cpt}})^2$$

where x_{cpt} is the export value of product p from country c at time t and N denotes the total number of products in the panel. The HHI for any particular year calculated as above is the sum of squared ratios of the export share of a product to the sum of these shares for all products exported by that country to the EU. I thus calculate HHI for each year from 2010 to 2017 for each of the 134 countries. This helps create a balanced panel of country-year values of HHI that can range from 1/N to 1. HHI equals 1/N if a country's export basket is perfectly diversified for any given year where each product category commands an equal share and it equals 1 if country c exports a single product p during that year so that the total export value for year t represents exports of a single product. Thus, if countries export fewer varieties of products over the years, the value of HHI will increase implying that the export basket represents fewer products. On the other hand, if countries can diversify into exporting newer products over the years, the value of HHI will decrease implying export diversification. I then regress the values of HHI for country c in the year t on a couble

difference specification with country and time fixed effects as follows:

$$HHI_{ct} = \gamma_0 + \gamma_1 Country * Post + \rho_c + \theta_t + \epsilon_{ct} \tag{3}$$

where:

HHI = represents Herfindahl-Hirschmann Index for the EU exports from country c at time t

Country = dummy variable that takes value 1 for countries excluded from the EU GSP program; 0 otherwise

Post = dummy variable that takes value 1 from 2014, 0 for earlier years

ρ_c = represents country fixed effects

θ_t = represents year fixed effects

ϵ_{ct} = represents error term

Here γ_1 measures the change in HHI, that is the change in the export basket of excluded countries as compared to countries that still receive GSP treatment post reform. A positive coefficient estimate would represent an increase in HHI post GSP exclusion implying a concentration of the export basket. On the other hand, a negative γ_1 will mean a decrease in the value of HHI or a diversification of the export basket.

Trade Diversion

So far, our set up only explores adverse consequences of the reform on the trade patterns between EU and the excluded countries. In this section, I investigate whether countries can mitigate the potential trade losses from the EU by diverting trade to other geographical markets. Given that the GSP program is not standardized across donor countries and that its implementation has been left to the discretion of the developed countries granting these preferences, trade diversion would provide critical evidence that the beneficiary exporting countries are at least resilient enough to change their export patterns in response to adverse

trade shocks. To analyze whether these countries can divert trade to other geographical markets, I estimate the following empirical specification:

$$lnexports_{cpt} = \delta_0 + \delta_1 Country * Post + \lambda_{cp} + \theta_{pt} + \epsilon_{cpt} \tag{4}$$

where:

lnexports = represents log of aggregate world exports exports from country c of product p at time t

Country = dummy variable that takes value 1 for countries excluded from the EU program; 0 otherwise

Post = dummy variable that takes value 1 from 2014, 0 for earlier years

γ_{cp} = represents country-product fixed effects

θ_{pt} = represents product-year fixed effects

ϵ_{cpt} = represents error term

This is a standard double difference specification where the coefficient δ_1 measures world exports of the excluded countries post reform as compared to those of countries still eligible for GSP treatment. Since the world exports also include goods exported to the EU, if the countries were able to offset the lower EU exports by diverting trade to rest of the world, the interaction term would be statistically insignificant. If lower exports to the EU were compensated for by an increase in trade to the rest of the world, the δ_1 would be positive and statistically significant. If these countries were unable to divert trade to the rest of the world, then the coefficient will be statistically significant and negative. Once again, the interactive fixed effects absorb any heterogeneity arising from preexisting trade patterns that are time invariant and unique to a country-product pair, or time varying and unique to the exported products.

5 Results

I analyze the impact of the EU's GSP reform on the excluded countries in terms of treatment effects and possible pathways to mitigate any adverse impact.

5.1 Intent to Treat (ITT) Effects

Volume of Exports

I estimate equation (1) using OLS and the associated regression results are presented in Table 1. The coefficient estimate on the triple difference interaction term β_{11} captures the intent-to-treat effect of the EU GSP reform after controlling for country-product, country-year and product-year fixed effects.

Table 1: ITT effect of the EU GSP reform on Exports

Dependent Variable: lnexports	
Marginal Effect	-1.6%
Country x GSP product x Post	-0.016***
	(0.003)
Control Mean	0.0185***
Fixed Effects	country-product, country-year, product-year
Observations	21,385,328
Adjusted R^2	0.76

Notes: Robust standard errors in parentheses, clustered at the product level. Marginal effect computed as exp(β) – 1. *** p<0.01, ** p<0.05, * p<0.1

The coefficient estimate on the interaction term reported in Table 1 is statistically significant and indicates that exclusion from the GSP scheme led to a 1.6% decline in exports of

GSP eligible products from these excluded countries as compared to exports of GSP eligible products from countries that still receive preferential treatment. The control mean presented in Table 1 shows that GSP eligible countries experience a 1.8% increase in their exports to the EU post reform suggesting a sizable decline in exports for the treatment countries. The dollar value of this effect size is equivalent to the average per capita GNI of the treatment group countries. These results are in line with Hakobyan (2019) who finds that finds that GSP eligible exports to the U.S. declined by 3% when the U.S. GSP scheme was unavailable in 2011 and with Gnutzmann and Gnutzmann-Mkrtchyana (2017) who find that post graduation from the EU GSP scheme, exports of GSP eligible products from Belarus to the EU declined by 26% to 29%. This in fact suggests that specific countries could be more adversely affected by the reform and the intent to treat effects reported in Table 1 would underestimate the impact of the reform for these countries.

Probability of Exporting

OLS regression results for equation (2) are reported in Table 2. I find that the reform reduced the probability of exporting a GSP eligible product for the excluded countries by 0.2 percentage points post reform as compared to that for countries still eligible to receive GSP treatment.

Using the CN-8 level of disaggregation means this change in probability can be interpreted as switching between two product lines of the same broader variety. These results are again similar to Hakobyan (2019) who finds that post GSP expiration, the probability of exporting GSP eligible products to the U.S. fell by 0.3 percentage points. Gnutzmann and Gnutzmann-Mkrtchyana (2017) find that for Belarus, the probability of exporting GSP eligible products post graduation from the EU GSP scheme decreased by approximately 2-3 percentage points. They explain that this effect is slightly larger for Belarus because the industries manufacturing GSP products do have have any comparative advantage and hence are probably not viable on losing GSP concessions.

Table 2: ITT Effect of the EU GSP reform on Export Probability

Dependent Variable: export dummy	
Country x GSP product x Post	-0.002***
	(0.0003)
Control Mean	0.002***
Fixed Effects	country-product, country-year, product-year
Observations	21,385,328
Adjusted R^2	0.66

Notes: Robust standard errors in parentheses, clustered at the product level. *** p<0.01, ** p<0.05, * p<0.1

5.2 Pathways to Mitigate Export Losses

Export Basket Concentration/Diversification

Equation (3) measures the impact of reform on the concentration/diversification of the export basket.

Table 3: ITT Effect on Export Basket Concentration

Dependent Variable: HHI	
Country x Post	0.015
	(0.016)
Fixed Effects	country, year
Observations	1,072
Adjusted R^2	0.76

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The results reported in Table 3 show that the estimate on the double difference specifica-

tion is positive but statistically insignificant implying that there is no change in the export basket variety. This means that while their export basket doesn't shrink, the excluded countries are also not able to diversify to selling other products to the EU to make up for their export losses in selling GSP eligible products.

Trade Diversion

Next, I examine trade diversion effects of the EU GSP reform. As discussed in Section 3, Data on world exports is not available for all countries in the panel and hence these results only represent 17 developing countries in the treatment group and 38 countries from the control group for which world exports data is available for the full period of analysis from the COMTRADE database. I examine whether these countries were able to compensate for the loss in export revenue from the EU by diverting trade to the rest of the world by estimating equation (4). This double difference specification estimates percentage of aggregate world exports from the developing countries and territories post reform as compared to the countries that still receive GSP treatment from the EU for the same time period. OLS results of equation 4 are reported in Table 4.

Table 4: Impact on World Exports

Dependent Variable: lnexports	
Country x Post	-0.012
	(0.008)
Control Mean	0.035***
Fixed Effects	country-product, product-year
Observations	953,476
Adjusted R^2	0.83

Notes: Robust standard errors in parentheses, clustered at the product level. *** p<0.01, ** p<0.05, * p<0.1

I find that aggregate world exports from these 17 excluded developing countries declines but this coefficient is not statistically significant. These results do not tell us what happens to the remaining 35 countries in the treatment group for which data on aggregate world exports is not available. Hence to investigate further, I estimate the main results separately for these two subgroups of treatment countries and results are reported in Table 5.

Table 5: ITT Effects (by Subgroups)

	Group 1		Group 2	
	(1)	(2)	(3)	(4)
Dependent Variable:	lnexports	export dummy	lnexports	export dummy
Country x GSP product x Post	-0.012*	-0.0018***	-0.025***	-0.003***
	(0.006)	(0.0006)	(0.003)	(0.0003)
Fixed Effects	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year product-year
Observations	8,777,560	8,777,560	18,672,264	18,672,264
Adjusted R^2	0.79	0.70	0.74	0.63

Notes: Group 1 represents 17 treatment group countries for which world exports data is available and Group 2 represents 35 treatment group countries for which world exports data is not available. Robust standard errors in parentheses clustered at product level. *** p<0.01, ** p<0.05, * p<0.1

Group 1 represents the 17 countries from the treatment group for which data on world exports is available and Group 2 represents the remaining 35 treatment group countries for which we do not have trade diversion estimates. For Group 1, the impact of the policy reform was a decline of 1.2% and only significant at 10% level. On the other hand, for Group 2, the impact of the reform is much stronger. The exports of GSP eligible products from these 35 countries are in fact 2.5% lower post reform as compared to the control group. The probability of exporting GSP eligible products for these countries also marginally reduces to 0.3 percentage points. Thus, I find that these 17 countries in Group 1 don't drive the main results and in fact, their magnitude of decline in exports to the EU is same as their decline in aggregate world exports reported in Table 4. Hence while it cannot be concluded whether the treatment group as a whole is able to divert trade and mitigate the loss from decline in exports to the EU, there is no evidence of trade diversion for Group 1 countries for which world export data is available.

5.3 Heterogeneous Treatment Effects

The analysis presented so far estimates treatment effects for the full panel of developing countries and territories excluded from GSP treatment starting 2014 and for the entire post reform period of analysis. Next, I estimate whether the effects were heterogeneous across countries, products and time. The average annual median exports for 2010 were approximately €200 million. Using this information, I divide the panel into countries exporting below median exports and above median exports using the 2010 annual median exports and then estimate the impact of reform separately for each of these two groups of countries. Results reported in Table 6 show that countries exporting both below and above median exports are adversely affected by the reform. However, while the probability of exporting is equally lower for both subgroups, export volumes are more adversely affected for countries exporting greater than the median exports.

Table 6: Heterogeneous Treatment Effects (by Export Volumes)

	Below median exports		Above median exports	
	(1)	(2)	(3)	(4)
Dependent Variable:	lnexports	export dummy	lnexports	export dummy
Country x GSP product x Post	-0.008***	-0.001***	-0.017***	-0.002***
	(0.002)	(0.0002)	(0.006)	(0.0006)
Fixed Effects	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year product-year
Observations	9,356,081	9,356,081	9,356,081	9,356,081
Adjusted R^2	0.49	0.39	0.79	0.69

Notes: Below median exports represents countries exporting <= 2010 median exports and Above median exports represents countries exporting > 2010 median exports. Robust standard errors in parentheses clustered at the product level. *** p<0.01, ** p<0.05, * p<0.1

Next, treatment effects can also differ by product type. The top five product categories exported to the EU under GSP in 2012 were (i)Mineral Products, (ii)Machinery and Appliances, (iii)Textiles and textile articles (iv)Base metals and articles thereof (v)Products of the chemical or allied industries (European Commission, 2013).

I estimate the main results for each of these categories to examine if the impact of the reform is heterogeneous across products. Results reported in Table 7 show that exports

Table 7: Heterogeneous Treatment Effects (by Products)

Dependent Variable: lnexports	(1) Mineral Products	(2) Machinery and Appliances	(3) Textiles and Textile Articles	(4) Base Metals and Articles thereof	(5) Products of Chemical or Allied Industries
Country x GSP product x Post	0.002	-0.036**	-0.081	-0.033***	-0.003
	(0.02)	(0.018)	(0.053)	(0.009)	(0.008)
Fixed Effects	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year, product-year
Observations	514,560	3,804,528	2,011,072	2,347,680	2,676,784
Adjusted R^2	0.71	0.73	0.83	0.74	0.75

Notes: Robust standard errors in parentheses clustered at the product level. *** p<0.01, ** p<0.05, * p<0.1

of Base metals and articles and Machinery and appliances from the excluded countries is lower post reform as compared to exports of these products from countries that continue to receive the GSP treatment for the same time period. There is no change in the exports of the other three categories. Appendix Table A3 shows that within the Base metals category, the probability of exporting GSP eligible products post reform is lower for the excluded countries.

The results presented so far capture the average treatment effects for all four years post reform combined. Next, I investigate whether the impact is heterogeneous over the post reform time period. Table 8 reports results of equation (1) estimated for varying time periods.

Table 8: Time Varying Treatment Effects

Dependent Variable: lnexports	(1) 4 Years	(2) 3 Years	(3) 2 Years	(4) 1 Year
Marginal Effect	-1.6%	1.6%	1.6%	1.6%
Country x GSP product x Post	-0.016***	-0.016***	-0.016***	-0.016***
	(0.003)	(0.003)	(0.003)	(0.003)
Fixed Effects	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year product-year
Observations	21,385,328	18,712,162	16,038,996	13,365,830
Adjusted R^2	0.76	0.77	0.77	0.77

Notes: Robust standard errors in parentheses clustered at the product level. *** p<0.01, ** p<0.05, * p<0.1

The post reform period is first restricted to 2014-16, then to 2014-15 and then estimated

only for 2014. Estimates are reported in Columns 2, 3 and 4 respectively. Column 1 reports the main results again which are estimated for the full period 2014 to 2017. Results show the impact of the reform was consistent across these time periods. This perhaps means that the countries are not able to recover from the loss in export volumes that they suffer in the very first year post exclusion from the EU GSP program. Another way of interpreting these results is to conclude that the loss suffered in the very first year post reform doesn't exacerbate in the following years. Thus, of a glass half empty or half full outlook, the estimates serve as interesting results. The change in probability of exporting was also uniform across these varying time periods while we find no evidence of export diversification/concentration has measured by change in HHI. These results are reported in Appendix Tables A4 and A5 respectively.

6 Robustness Checks

In this section, I present several robustness checks. First, my identification strategy relies on the assumption of parallel trends between the treatment and control group for the period 2010 to 2012. Following Muralidharan and Prakash (2017), I combine the pre-reform data in triple difference specification with a year trend. If the parallel trends assumption were to hold, the resulting coefficient estimate on the triple difference term would be statistically insignificant. The results are reported in Table 9.

The interaction term is statistically significant, implying that we reject the null of parallel trends in the pre-reform period. This is not surprising since a large number of products, N in my case would make it easy to reject the null. Hence, I follow Imbens and Wooldridge (2009) to calculate the normalized difference between the treatment and control groups to examine the size of the preexisting differences between the two groups The normalized difference between the treatment and control group in this analysis is 0.0006 which is well below the Imbens and Wooldridge recommended cutoff of 0.25 ruling out preexisting selection on

Table 9: Parallel Trends Test

	(1)	(2)
Dependent Variable:	lnexports	export dummy
Country x GSP product x Year Trend	-0.005**	-0.0005**
	(0.002)	(0.0002)
Normalized difference	-0.0006	-
Control Mean	0.005**	0.0008***
Fixed Effects	country-product, country-year, product-year	country-product, country-year, product-year
Observations	8,019,498	8,019,498
Adjusted R^2	0.77	0.67

Notes: Robust standard errors in parentheses, clustered at the product level.
*** p<0.01, ** p<0.05, * p<0.1

observables (and consequently unobservables). I also examine whether the parallel trend assumption holds when the dependent variable is real exports and for the concentration of export basket for the pretreatment period. Results are reported in the Appendix Table A7 and A8 respectively. The parallel trend assumption holds for both these specifications. This implies that after accounting for preexisting trends using interactive fixed effects, the real export levels of the treatment and control countries exhibit similar trends in the pretreatment period. The trends in the concentration of the export basket is also similar across the two groups.

Second, I examine the sensitivity of my results to log transformation. The higher the level of disaggregation, the higher is the frequency of zero values in trade data (Martin and Pham, 2015). Since the log transformation is sensitive to zeros, the log of exports mentioned in Section 5 is calculated by adding 1 to the original export values before taking logs.

To examine the sensitivity of my main results to this adjustment, I compare the estimates (reported in Column 1, Table 10) with those obtained by a few other linear transformations (see Columns 2-4, Table 10). Following Frazer and Van Biesebroeck (2010), in Columns (2)

Table 10: Linear Transformation

Dependent Variable:	(1) lnexports = ln(exports+1)	(2) lnexports = ln(exports+0.1)	(3) lnexports = ln(exports+10)	(4) lnexports = ln(exports) if exports>0 and =0 if exports=0
Marginal Effect	-1.6%	-2.1%	-1.1%	-1.6%
Country x GSP product x Post	-0.016***	-0.021***	-0.011***	-0.016***
	(0.002)	(0.0002)	(0.006)	(0.0006)
Fixed Effects	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year product-year
Observations	21,385,328	21,385,328	21,385,328	21,385,328
Adjusted R^2	0.76	0.75	0.78	0.76

Notes: Robust standard errors in parentheses, clustered at the product level. Marginal effect computed as $\exp(\beta) - 1$.
*** p<0.01, ** p<0.05, * p<0.1

and (3) I add 0.1 and 10 respectively to the export value before taking logs and in Column (4), I use log of exports if export values are positive and assume the log of exports equals 0 if the original export value is 0. I find that the estimates reported in Columns 2, 3 and 4 are quite close to the original estimate reported in Column 1 which suggests that my results are robust to the choice of transformation.

Third, trade patterns between countries rarely follow a normal distribution and hence the main purpose of transforming trade data from levels to log is to make it less skewed. Lastly, following Frazer and Van Biesebroeck (2010), I also examine the robustness of my impacts to another way of transforming the dependent variable – exports, by taking square roots of the exports. I estimate equation 1 using this linear transformation and the results reported in Table 11, Column (1) are very close to the main estimate in logs reported in Table 1. The parallel trends assumption holds at this linear transformation (See Table 11, Column (4)). I also conduct a placebo test to verify whether there was any treatment like effect during the pretreatment period from 2010 to 2012. For the estimates in Column (2), Table 11, 2010 becomes the pretreatment period while 2011 and 2012 are considered post treatment years. Next, in Column (3), Table 11 both 2010 and 2011 are considered as pretreatment years and 2012 is considered as post treatment period. In both instances, estimates are statistically

insignificant alleviating concerns about presence of confounders.

Table 11: Linear Transformation (square roots)

	ITT	Placebo Test		Falsification Test
Dependent Variable: $\sqrt{exports}$	(1)	(2)	(3)	(4)
Country x GSP product x Post	-1.15**	-0.183	0.132	-0.017
	(0.567)	(0.430)	(0.636)	(0.34)
Control Mean	1.567***	0.278	0.542	0.273
Fixed Effects	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year product-year
Observations	21,385,328	8,019,498	8,019,498	8,019,498
Adjusted R^2	0.89	0.91	0.91	0.91

Notes: Robust standard errors in parentheses clustered at the product level. *** p<0.01, ** p<0.05, * p<0.1

Finally, I winsorize the data at the 99th percentile to check the sensitivity of the results to outliers. Results are reported in appendix table A8. I find that my estimates are robust to outliers.

7 Conclusion

While EU's GSP program has undergone several reforms since it was first implemented in 1971, the latest regulation is quite significant as it entails a substantial scaling back of the program in terms of the number of beneficiary countries. The developing countries that ceased to receive preferential tariffs under GSP starting January 2014 are a heterogenous group with significant diversity in per capita incomes and are no match for the EU in development indicators such as per capita GNI and poverty gap at $5.50 per day. In this paper, I focus on the developing countries and small territories excluded from the GSP program and examine the impact of the EU's exclusionary GSP reform on these developing countries' exports and investigate the possible pathways through which they might mitigate any adverse impact. Using a triple difference specification and controlling for country-product, country-year, and product-year fixed effects, I find that there is an estimated 1.6% decline in exports of GSP eligible products from these excluded countries as compared to GSP beneficiaries

that continue to receive the preferential treatment in the post-reform period. This loss is equivalent to the average per capita GNI of the treatment group countries. The probability of exporting a GSP eligible product for these countries also reduces by 0.2 percentage points in the post reform period as compared to their counterparts who did not lose the beneficiary status. There is no evidence of a change in the concentration of the export basket which means that the basket doesn't shrink, but neither are these excluded countries able to diversify to other products to make up for the export losses. I also find no evidence of trade diversion for a small subset of the treatment group countries for which data is available. Overall, I find that excluded developing countries and small territories are indeed adversely affected by losing unilateral tariff preferences. The impact of loss is stronger for countries that export more to the EU prior to the reform. There is no evidence that these countries are able to mitigate these losses either by diversifying into new product varieties or by diverting trade to other geographical markets.

Unilateral concessions received under the GSP program provide vital market access to one of the largest geographical markets that is the EU and losing these concessions means that the products from these excluded countries lose their competitive edge as compared to their GSP eligible counterparts. While there is no argument that GSP privileges are vital for the current beneficiaries that are low income or least developed countries, upper middle income countries which are also developing countries also depend on these tariff concessions. It is possible that preferential market access is in fact what makes these countries successful exporters. Hence revoking these preferences may have the opposite effect which trickles to specific industries in terms of the size and scale of their operations, wages and number of hours worked and other such micro indicators that are beyond the scope of this analysis. It should also be noted that I am only able to examine the impact of the reform in the short run, four years post reform, and that the long run impacts of such reforms remain unknown.

The EU GSP program as it stands today is set to expire on December 31, 2023 and efforts are already underway to determine the next phase of the scheme. There are multiple policy

options under consideration, one of them being to allow the current scheme to expire at end of 2023 without renewal (European Commission, 2019). The Everything But Arms (EBA) for the least developed countries would still continue but the developing countries would essentially be ineligible for unilateral tariff concessions from the EU. Any such decision should be guided by impact estimates and in concluding that loss of tariff concessions under the previous GSP reform hurt the developing countries, this paper has crucial policy implications for the upcoming GSP reform.

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Appendix

Table A1: List of Countries in the Treatment and Control group

Treatment Group			
Anguilla,	Netherlands Antilles,	Antarctica,	Argentina,
American Samoa,	Azerbaijan,	Brazil,	Bouvet Island,
Belarus,	Belize,	Cocos,	Cuba,
Christmas Island,	Dominica,	Dominican Republic,	Algeria,
Egypt,	Falkland Islands,	Gabon,	Grenada,
South Georgia And South Sandwich Islands ,		Guyana,	
Heard Island And Mcdonald Islands ,		British Indian Ocean Territory ,	
Iran,	Jamaica,	Jordan,	Kazakhstan,
Lebanon,	St Lucia,	Libya,	Morocco,
Montserrat,	Mexico,	Malaysia,	Norfolk Island,
Papua New Guinea,	Saint Pierre And Miquelon,	Pitcairn,	Russian Federation,
Saint Helena,	Suriname,	French Southern Territories ,	
Tokelau,	Tunisia,	United States Minor Outlying Islands ,	
St Vincent And The Grenadines ,		Venezuela,	Wallis And Futuna,
Mayotte,	South Africa,	Zimbabwe.	

Control Group			
Afghanistan,	Armenia,	Angola,	Bangladesh,
Burkina Faso,	Burundi,	Benin,	Bolivia,
Bhutan,	Congo, Democratic Republic Of ,		Central African Republic,
Congo,	Cook Islands,	Colombia,	Costa Rica,
Cape Verde,	Djibouti,	Eritrea,	Ethiopia,
Micronesia,	Georgia,	Gambia,	Guinea,
Equatorial Guinea,	Guatemala,	Guinea-Bissau,	Honduras,
Haiti,	Indonesia,	India,	Iraq,
Kyrgyz,	Cambodia,	Kiribati,	Comoros,
Laos,	Sri Lanka,	Liberia,	Lesotho,
Madagascar,	Marshall Islands,	Mali,	Mongolia,
Mauritania,	Malawi,	Mozambique,	Niger
Nigeria,	Nicaragua,	Nepal,	Nauru,
Niue,	Panama,	Peru,	Philippines,
Pakistan,	Paraguay,	Rwanda,	Solomon Islands,
Sudan,	Sierra Leone,	Senegal,	Somalia,
Sao Tome And Principe,	El Salvador,	Syrian Arab Republic,	Chad,
Togo,	Tajikistan,	Timor-Leste,	Turkmenistan,
Tonga,	Tuvalu,	Tanzania,	Ukraine,
Uganda,	Uzbekistan,	Vietnam,	Vanuatu,
Samoa,	Yemen,	Zambia.	

Table A2: Announcement Effect on HHI

Dependent Variable: HHI	
Country x Post	0.013
	(0.022)
Fixed Effects	country, year
Observations	651
Adjusted R^2	0.80

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A3: Heterogeneous Treatment Effects (by Products)

Dependent Variable: export dummy	(1) Mineral Products	(2) Machinery and Appliances	(3) Textiles and Textile Articles	(4) Base Metals and Articles thereof	(5) Products of Chemical or Allied Industries
Country x GSP product x Post	0.0007	-0.003	-0.005	-0.005***	-0.0003
	(0.002)	(0.002)	(0.004)	(0.0008)	(0.0008)
Fixed Effects	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year, product-year
Observations	514,560	3,804,528	2,011,072	2,347,680	2,676,784
Adjusted R^2	0.60	0.63	0.71	0.64	0.63

Notes: Robust standard errors in parentheses clustered at the product level. *** p<0.01, ** p<0.05, * p<0.1

Table A4: Time Varying Treatment Effects on Export Probability

Dependent Variable: lnexports	(1) 4 Years	(2) 3 Years	(3) 2 Years	(4) 1 Year
Country x GSP product x Post	-0.001***	-0.001***	-0.001***	-0.001***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Fixed Effects	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year, product-year	country-product, country-year product-year
Observations	26,013,496	22,761,809	19,510,122	16,258,435
Adjusted R^2	0.64	0.65	0.65	0.72

Notes: Robust standard errors in parentheses clustered at the product level. *** p<0.01, ** p<0.05, * p<0.1

Table A5: Time Varying Treatment Effects on HHI

Dependent Variable: HHI	(1) 4 Years	(2) 3 Years	(3) 2 Years	(4) 1 Year
Country x GSP product x Post	-0.014	0.008	0.001	0.007
	(0.01)	(0.015)	(0.017)	(0.024)
Fixed Effects	country, year	country, year	country, year	country, year
Observations	1294	1134	973	812
Adjusted R^2	0.75	0.765	0.77	0.78

Notes: Robust standard errors in parentheses clustered at the product level. *** p<0.01, ** p<0.05, * p<0.1

Table A6: Placebo Test (levels)

Dependent Variable: real exports in Million Euros	(1) Post=2011-12	(2) Post=2012
Country x GSP product x Year	0.024	0.025
	(0.024)	(0.026)
Fixed Effects	country-product, country-year, product-year	country-product, country-year, product-year
Observations	9,755,061	9,755,061
Adjusted R^2	0.95	0.95

Notes: Robust standard errors in parentheses, clustered at the product level.
*** p<0.01, ** p<0.05, * p<0.1

Table A7: Placebo Test (HHI)

Dependent Variable: HHI	(1) Post=2011-12	(2) Post=2012
Country x Post	0.032	0.028
	(0.024)	(0.023)
Fixed Effects	country, year country-year,	country, year country-year,
Observations	488	488
Adjusted R^2	0.81	0.81

Notes: Robust standard errors in parentheses, clustered at the product level.
*** p<0.01, ** p<0.05, * p<0.1

Table A8: Winsorization

Dependent Variable: lnexports	
Country x GSP product x Post	-0.015***
	(0.003)
Fixed Effects	country-product, country-year, product-year
Observations	21,385,328
Adjusted R^2	0.74

Notes: Robust standard errors in parentheses, clustered at the product level. Marginal effect computed as exp(β) – 1. *** p<0.01, ** p<0.05, * p<0.1