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

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Abstract

International trade policy is currently at crossroads, owing to the growing chasm between developing and developed countries over the implementation of multilateral trade rules. While the former still argue for special and differential treatment (SDT), the latter group wants to rethink the same. 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. 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 withdrawal on these countries' exports to the EU using 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 decreased by 1.6% post reform as compared to those countries still receiving GSP treatment. The probability of exporting GSP eligible products decreases by 0.2%. 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 SDT.

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1. Introduction

International trade policy is currently at crossroads, owing to the growing chasm between developing and developed countries over the implementation of multilateral trade rules. While these two groups have never quite agreed over the implementation of the multilateral framework of international trade, the debate on developing country status within the multilateral trade framework and availing 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. My goal in this paper is to examine the impact of this reform on developing countries' overall trade – both in terms of creation and diversion.

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, members nations of the WTO comprise 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 was never concluded because amongst many other things, the developing and developed countries could not agree upon the interpretation and implementation of SDT (Baachus and

[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

Manak, 2020). Since then, the backlash from the developed world against SDT in general and GSP in particular has only 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. In this paper, I estimate the impact of this reform on exports of countries excluded from the scheme in terms of the volume of exports as well as the probability of exporting GSP eligible products using a triple difference specification with a full set of interactive fixed effects that control for preexisting differences between the treatment (those excluded due to the GSP reform) and control countries (that continue to receive GSP concessions). Further I also investigate if the affected countries can diversify their export basket. And lastly, I estimate whether these excluded countries are able to divert trade to rest of the world to mitigate some of the negative the impacts associated with this reform. If the countries excluded by the EU experience an adverse impact on their exports to the EU and are unable to diversify trade fully, then that suggests that these non-reciprocal tariff concessions are important for these beneficiary countries to maintain their export volumes and in turn economic growth and development. This paper contributes to the larger debate on SDT by examining the importance of the GSP program for the beneficiary countries.

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. These impacts are heterogenous across countries and I find that of these excluded countries, those exporting more than the median exports of the pretreatment year 2013 were more severely impacted with a 1.7% drop in exports of GSP eligible products as compared to the countries exporting less than the median exports for 2013.

The probability of exporting a GSP eligible product post reform by the excluded countries decreases by 0.2%. I find that there is no change in treatment countries' export basket. Finally, for a subset of countries, the estimate for aggregate world exports is negative but statistically insignificant. However, these countries don't drive the main results and hence its hard to conclude whether countries excluded from GSP tariff preferences are able to divert trade to other geographical markets to make up for their export losses to the EU.

This paper contributes to the broader literature on GSP reforms and trade that started as early as the 1970's when several papers examined the impact of the GSP tariff concessions available to developing countries on these countries' trade creation and trade diversion effects. Baldwin and Murray (1977), Borrmann et al. (1979) and Brown (1989) all find that the EU GSP program had 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 trade creation effect in U.S. is twice the trade diversion effect thus contributing to a 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 U.S. between 1997 and 2009 and finds for country-product pairs that were graduated from the program, their share in the U.S. imports drop 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 expiration of U.S. GSP in 2011 for a period of ten months and finds that exports to the U.S. for declined for that period.

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 Gnutzmanna 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 the upper middle-income countries are not a 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 EU to receive any tariff concessions.

Siles-Brügge (2014) argues that the reform is part of a larger trade agenda that 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. Section 4 outlines the empirical strategy used in the analysis. 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). But GATT 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 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 European Union under GSP in 1971 for a period of 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). Barring a few minor technical changes, the next two rounds of renewals from January 1, 2009 to December 31, 2011 and January 1, 2012 to December 31, 2013 were mostly not noteworthy. 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 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 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

[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

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 the high-income countries whose industries are already mature and resilient to external competition. Thus, there is no need to argue for GSP status for them regardless of whether or not they have alternate trade agreements with the EU. Hence of all the countries that the EU withdrew GSP treatment from under the reform, I focus only on the impacts of this reform on upper middle-income countries, lower middle-income countries and small territories. The first two categories 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 leave to more efficient utilization of the GSP. The territories included in the analysis are typically under the political administration of a developed country and hence do not warrant an income classification by the World Bank. Precisely hence, it is likely that these small territories export very few goods for which they rely on concessional tariff rates under the GSP.

Estimating 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 and other unobservables. By using interactive fixed effects, I can control for all time invariant country-product patterns as well as country or product specific patterns that vary over time to isolate the impact of the reform from preexisting differences between the treatment and control countries (see Section 4 for more details).

3. Data

My goal in this paper is to measure the impact of the EU GSP reform on the excluded countries' export volumes of GSP eligible products, probability of exporting GSP eligible products, export concentration, and lastly, trade diversion. I examine both the immediate impact in terms of trade losses (if any) and the ability and pathways (such as 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] 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.[7]

Products are defined at Combined Nomenclature (CN) 8 digits level of disaggregation. CN 8 is the EU's most disaggregated level of classifying products that contains Harmonized System (HS) codes at 6 digit level along and the last two digits unique to the EU's sub divisions of goods. This is the level at which GSP tariff rates are applied. Figure 1 below explains how GSP products are

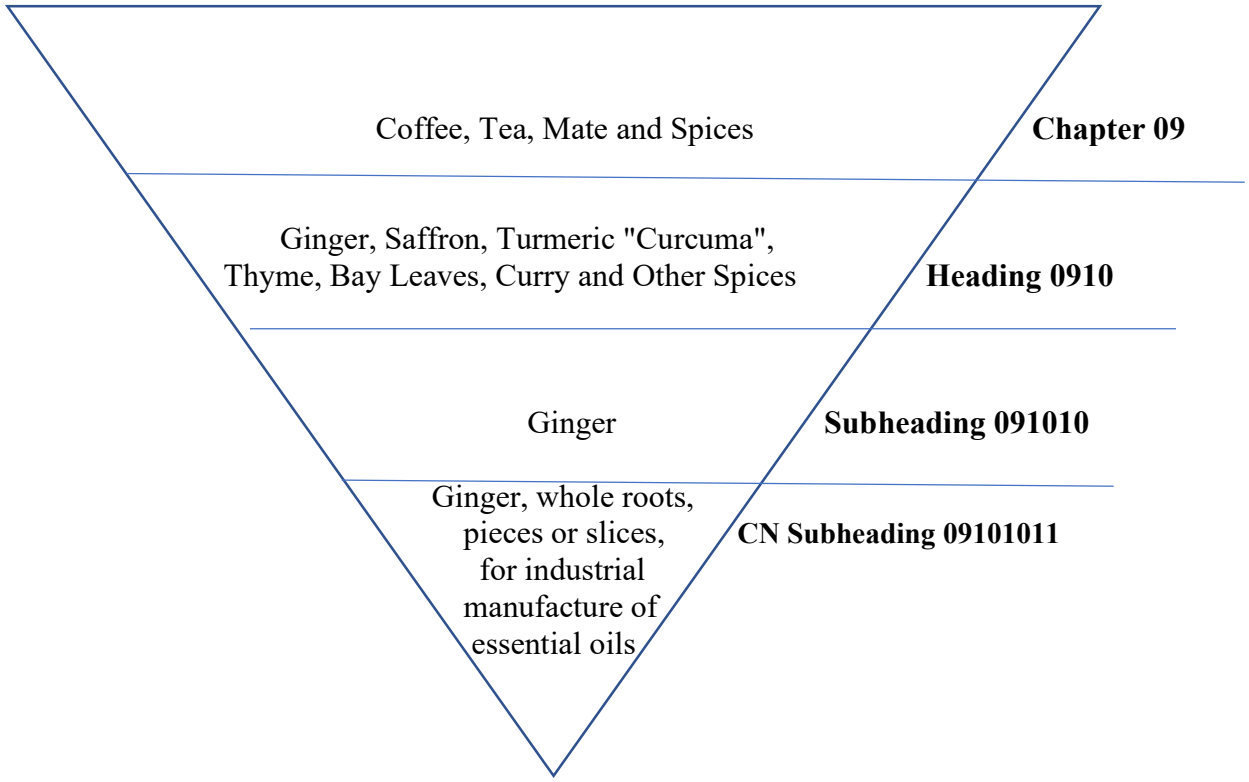
[5] http://epp.eurostat.ec.europa.eu/newxtweb/

[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

defined starting from the highest level of aggregation to its most disaggregated form for Beverages. The system contains 21 sections representing broad categories of goods. Under these sections, each 8-digit product code can be broken down into its first two digits called the chapter that describes specific product categories, such that each is distinct from the other. On the other hand, at the most disaggregated level, the eight digit CN subheading describes a very narrowly defined product subcategory.

Figure 1: Product Classification



My goal is to examine the impact of EU's exclusion on these developing countries' probability of exporting a GSP eligible product (at the extensive margin) as well as the total volume of exports of GPS eligible products (at the intensive margin). My interest is also to examine the impacts of this policy on export concentration, for which, 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, as can be verified from Table 1, two distinct CN8 level product codes or for that matter, HS-6 level products codes do not nearly represent two distinct products but rather 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 fall under the same broad Chapter, represent distinct products. For example, product code 1806 mentioned in Table 1 represents "chocolate and other food preparations containing cocoa" while 1801 represents "cocoa beans, whole or broken, raw or roasted". As switching from exporting cocoa beans to chocolate would require a remarkable change in the production processes, 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 export concentration 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 products codes are common across countries. Since information on exports is self-reported by countries, data is not available for the full panel of 163 countries considered for 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.

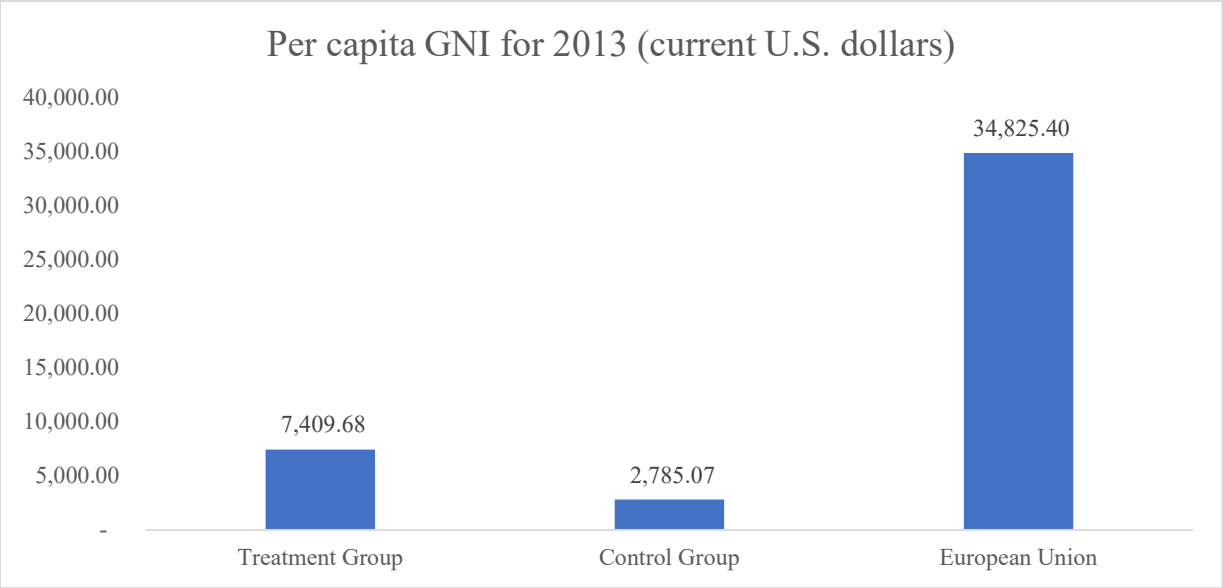
Table A1 of the Appendix contains a full list of treatment and control group countries. Figure 2 below shows that for the year 2013, average per capita Gross National Income (GNI) for the treatment group is barely one fifth of that of the EU. Since the World Bank income classifications for countries 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

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

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

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 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

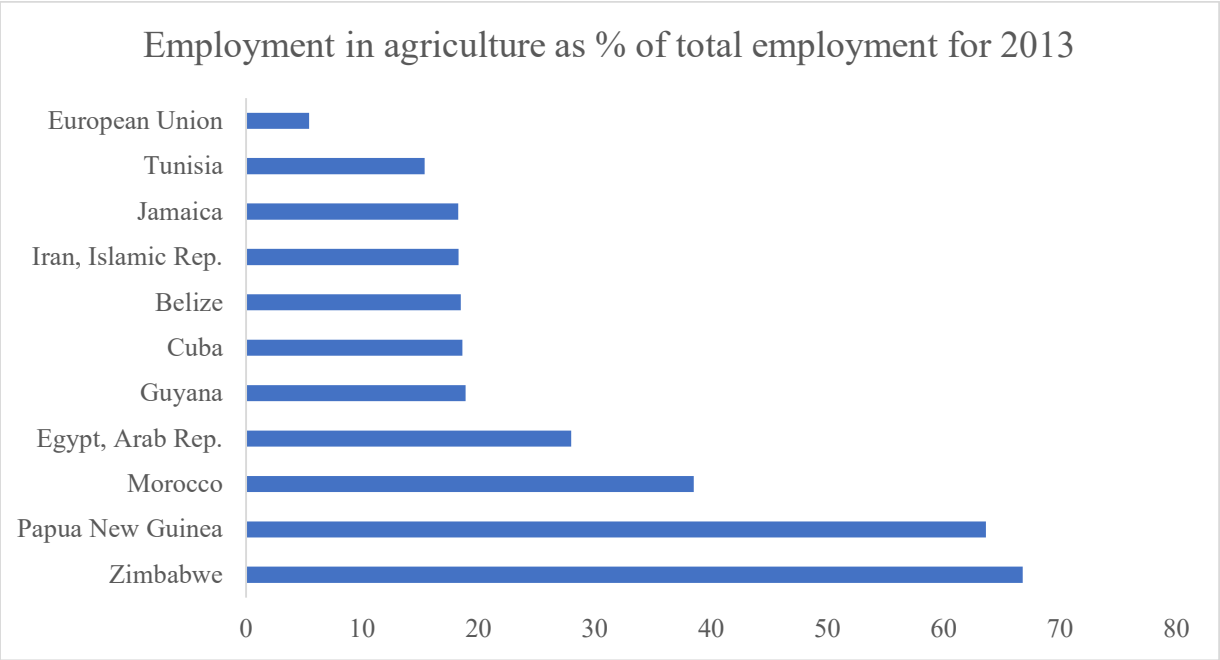


Source: World Development Indicators from World Bank.
Notes: Per capita GNI for treatment group represents average per capita GNI for 31 upper middle income and lower middle income countries and for which data is available. Per capita GNI for control group represents average per capita GNI for 75 countries 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 capital 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, in Zimbabwe with a per capita GNI of $1210 U.S. dollars, 67% of labor force is employed 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

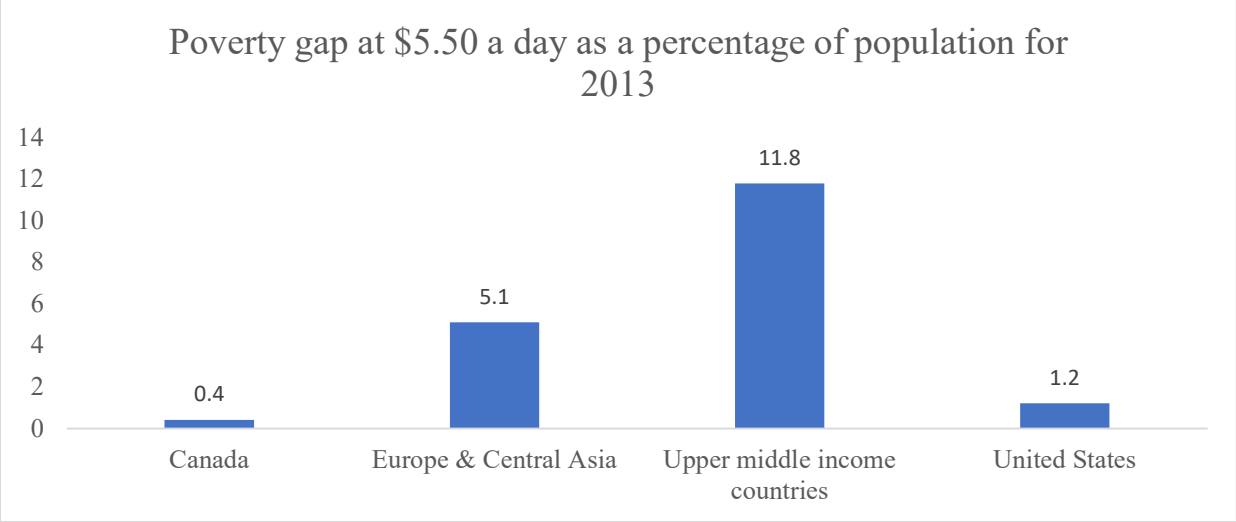
the excluded developing countries exporting below the 2013 median exports, the goal still hasn't been entirely met.

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.

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.

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 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.

4. Empirical Strategy

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 2014 as measured by the volume of GSP eligible exports, probability of exporting GSP eligible products, concentration/diversification of countries' export basket and trade diversion effects.

4.1 Intent to Treat Effects (ITT) on 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:

$$\text{lnexports} = \beta_{10} + \beta_{11}\ \text{Country*GSPproduct*Post} + \Upsilon_{cp} + \delta_{ct} + \phi_{pt} + \epsilon_{cpt} \quad (1)$$

where:

lnexports	= represents log of exports from country c of product p at time t.
Country	= dummy variable that takes value 1 for countries excluded w.e.f. 2014; 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
Υ_{cp}	= represents country-product fixed effects
δ_{ct}	= represents country-year fixed effects

ϕ_{pt} = represents product-year fixed effects

ϵ_{cpt} = represents error term

The interaction term, comprises of three dummy variables – a country dummy to distinguish countries excluded from the EU GSP in 2014 from 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 temporal 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 really 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 as compared to GSP ineligible products post reform from the excluded countries which form the treatment group to similar double difference estimates from the still GSP eligible countries that form 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 in 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 β_{11} 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 β_1 should be statistically insignificant.

4.2 Probability of Exporting GSP Eligible Products

I estimate a linear probability model to measure the change in probability of exporting a GSP eligible product to the EU post reform. 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:

$$\text{exportsdummy}_{cpt} = \beta_{20} + \beta_{21}\ \text{Country*GSPproduct*Post} + \Upsilon_{cp} + \delta_{ct} + \phi_{pt} + \epsilon_{cpt} \quad (2)$$

The triple difference interaction term on the right-hand side remains unchanged. The coefficient of the triple difference term β_{21} in equation (2) can now 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. 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.

4.3 Export 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 loosely 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 led to a concentration of the export basket for the excluded countries. The

Herfindahl-Hirschmann Index (HHI) is commonly used in international trade literature to measure the degree of concentration/diversification. This index tells us whether a country's exports comprise of a few offerings of product varieties or whether the exports are distributed over a variety of products (UNCTADstat, 2019). For this analysis, I calculate the annual HHI for each country in the panel as follows:

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

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 export share of a product to 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 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. If GSP preferences allow for industrialization and export diversification, I hypothesize that taking away these preferences might lead the affected countries to shrink their export basket to fewer product offerings as their exports become less competitive as compared to countries selling similar products that receive GSP treatment. To estimate the impact of the reform on export concentration using HHI, I use the following empirical specification:

$$HHI_{ct} = \beta_{30} + \beta_{31}\ \text{Country*Post} + \Upsilon_c + \delta_t + \epsilon_{ct} \qquad (3)$$

where:

HHI	= represents Herfindahl-Hirschmann Index for country c at time t .
Country	= dummy variable that takes value 1 for countries excluded from EU GSP w.e.f. 2014; 0 otherwise
Post	= dummy variable that takes value 1 from 2014, 0 for earlier years
Υ_c	= represents country fixed effects

δ_t = represents year fixed effects

ϵ_{ct} = represents error term

Equation (3) captures the impact of GSP reform on the affected countries' export concentration post reform as compared to countries still receiving GSP preferences for the same time period. The coefficient estimate β_{31} measures the magnitude of this change. A positive estimate indicates an increase in HHI post reform, implying that the countries are now able to export a narrower range of products. A negative estimate on the other hand will decrease the value of HHI implying export diversification.

4.4 Trade Diversion

So far, our set up only explores adverse consequences of the reform on the trade patterns between EU and the excluded countries. It is equally interesting to 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 grating 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 use the following empirical specification:

$$lnexports_{cpt} = \beta_{40} + \beta_{41}\ Country*Post + \Upsilon_{cp} + \phi_{pt} + \epsilon_{cpt} \quad (4)$$

where:

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

Country = dummy variable that takes value 1 for countries excluded from EU GSP w.e.f. 2014; 0 otherwise

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

Υ_{cp} = represents country-product fixed effects

ϕ_{pt} = represents product-year fixed effects

ϵ_{cpt} = represents error term

This is a standard double difference specification where the coefficient β_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 β_{41} 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

The impact of the EU's GSP reform on excluded countries is measured in terms of trade creation (volume of exports, probability of exporting GSP eligible products and export concentration) and trade diversion effects.

5.1 Intent to Treat (ITT) Effects on 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. The coefficient estimate on the interaction term reported in Table 2 is statistically significant and indicates that exclusion from the GSP scheme led to a 1.6% drop 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 2 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. We find that losing GSP preferences adversely hurts export margins. 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 Gnutzmanna 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 average treatment effects reported in Table 1 would underestimate the impact of the reform for these countries.

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 $\exp(\beta) - 1$. *** p<0.01, ** p<0.05, * p<0.1

5.2 Probability of Exporting GSP Eligible Products

The benefit of using trade data at CN-8 level is that products are described in their most disaggregated form. This is the level of disaggregation at which products are classified as GSP eligible or not and tariffs are applied. Hence while a change in probability of exporting GSP eligible products may imply some change in the product offerings, the change can be interpreted as switching between different varieties of similar product lines.

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% post reform as compared to that for countries still eligible to receive GSP treatment. 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%. Gnutzmanna 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 26%, once again that these average treatment effects might be underestimating the impact for specific countries that might be more severely affected.

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

5.3 Export Concentration/Diversification

To calculate the extent of product diversity in the export basket as measured by HHI, I use a higher level of aggregation HS-4 to define products. At this level, two different four-digit codes represent a distinct variety of products and not just different varieties of a similar product category. Equation (3) measures the impact of reform on the concentration/diversification of the export basket. The results reported in Table 3 show no statistically significant impact of the reform on the diversification/concentration of the export basket. Thus, it can be concluded that while the probability of exporting GSP eligible products post reform was lower for the excluded countries, there was no marked change in their product offerings. Lack of evidence of export concentration implies that countries do not export fewer varieties of products post reform at least for the first four years of the post reform period.

Table 3
ITT effect of the EU GSP reform on Export 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

5.4 Announcement Effect of the EU GSP Reform

The GSP Regulation (EU) No 978/2012 was passed in October 2012 and went into force on January 1, 2014. Hence to investigate whether the countries that were proposed to be excluded starting 2014 began adjusting their export patterns preemptively in anticipation of the withdrawal of preferential treatment, I estimate equation (1) for the period 2010 to 2013 by assuming 2013 to be the post reform period. Results reported in Table 4 below show that there was in fact a 0.7% decline in exports of GSP eligible products from these developing countries and territories in 2013 as compared to those still receiving GSP treatment. Their probability of exporting GSP eligible products was 0.07% lower. This implies that these countries perhaps began adjusting their export patterns in anticipation of high tariff rates as soon as the regulation was announced. This can perhaps also explain the evidence of trade diversion discussed later in this section.

Table 4
Announcement Effect of the EU GSP Reform on Trade Creation

Dependent Variable:	(1) lnexports	(2) expor dummy
Country x GSP product x Post	-0.007**	-0.0007*
	(0.003)	(0.0004)
Fixed Effects	country-product, country-year, product-year	country-product, country-year, product-year
Observations	10,692,664	10,692,664
Adjusted R^2	0.77	0.66

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

I also show that there was no preemptive impact of the reform on the concentration/diversification of export basket as estimated by change in HHI in equation (3). These results are reported in Appendix Table A2.

5.5 Heterogonous Treatment Effects

The analysis presented so far estimates average treatment effects for the full panel of developing countries and territories excluded from GSP treatment starting 2014 and uniformly for the entire post reform period of analysis. Next, I estimate whether the effects were heterogenous across countries 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 above and below median exporting countries.

Table 5
Heterogeneous Treatment Effects

	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

Results reported in Table 5 show that countries exporting both below and above median exports were adversely affected by the reform. However, while the probability of exporting was about equally lower for both subgroups, export volumes were more adversely affected for countries exporting greater than the median exports.

The results presented so far capture the average treatment effects for all four years post reform combined. Next, I investigate whether the impact is heterogenous over the post reform time period. Table 6 reports results of equation (1) estimated for varying time periods. 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. 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 A3 and A4 respectively.

Table 6
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

5.6 Trade Diversion Effects

Next, I examine trade diversion effects of the policy reform for 17 developing countries for which world exports data is available for the full period of analysis at 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 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 7.

I find that overall volume of exports made by these excluded developing countries is reduced but not significantly different from zero. Also, 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 it is hard to conclude from these results whether the treatment group as a whole is able to divert trade to mitigate the loss from decline in exports to the EU.

Table 7
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

Notes: Robust standard errors in parentheses clustered at product level.
* p < .10, ** p < .05, *** p < .01

To investigate further, I estimate the main results separately for these two subgroups of treatment countries and results are reported in column 8. Group 1 represents the 17 countries from the treatment group and Group 2 represents the remaining 35 treatment group countries. For Group 1, the impact of the policy reform was a decline of 1.2% and only significant at 10%. 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%.. Thus, I find that these 17 countries in Group 1 don't drive the main results and hence its cannot be concluded whether or not affected developing countries are able to divert trade elsewhere on the basis of this much smaller subset.

Table 8
ITT Effects

	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

6. Robustness Checks

In this section, I present several robustness checks. First, I examine the sensitivity of my results to log transformation. The higher the level of disaggregation, 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. However, to examine the sensitivity of my main estimates to this adjustment, I compare the estimates (reported in Column 1, Table 9) with those obtained by a few other linear transformations (see Columns 2-4, Table 9). Following Frazer and Van Biesebroeck (2010), in Columns (2) and (3), I, 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 log of exports equal to 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.

Table 9
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: 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

Second, 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 10. 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 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 the control to examine the size of the preexisting differences between the two groups The normalized difference between the treatment and the control group in this analysis is 0.0005 which is well below the Imbens and Wooldridge recommended cutoff of 0.25 ruling out preexisting selection on observables (and consequently unobservables).

Table 10
Parallel Trends Test

Dependent Variable:	(1) lnexports	(2) expor 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

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 A5 and A6 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.

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 12, 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 12, 2010 becomes the pretreatment period while 2011 and 2012 are considered post treatment years. Next, in Column (3), Table 12 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)

Dependent Variable: $\sqrt{exports}$	ITT (1)	Placebo Test (2)	(3)	Falsification Test (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

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 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 economic impact of the EU's exclusionary GSP reform on these developing countries' trade creation and trade diversion effects. For the main results, I use a triple difference specification with interactive fixed effects that account for any preexisting trade patterns and isolates the impact of the reform if any on exports. I find that after controlling for country-product, country-year, and product-year fixed effects, there is an estimated 1.6% drop 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. The probability of exporting a GSP eligible product for these countries reduces by 0.2% in the post reform period as compared to their counterparts who did not lose the beneficiary status. There is no evidence of shrinking of the export basket as measured by changes in HHI. The

trade diversion results are inconclusive because they only represent a small subset of the treatment group and these countries don't drive the main results.

Overall, we find that excluded developing countries and small territories are indeed adversely affected by losing unilateral tariff preferences. 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 start work on the next phase of the scheme.[10] The initiative considers multiple policy options, one of them being to not propose a new regulation and allow the current scheme to expire at end of 2023 (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.

[10] See details here - https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/2136-Towards-the-future-Generalised-Scheme-of-Preferences-legal-framework-granting-trade-advantages-to-developing-countries

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Appendix

Table A1: List of countries in treatment and group

Treatment Group	Control Group
Anguilla	Afghanistan
Netherlands Antilles	Armenia
Antarctica	Angola
Argentina	Bangladesh
American Samoa	Burkina Faso
Azerbaijan	Burundi
Brazil	Benin
Bouvet Island	Bolivia
Belarus	Bhutan
Belize	Congo, Democratic Republic Of
Cocos	Central African Republic
Cuba	Congo
Christmas Island	Cook Islands
Dominica	Colombia
Dominican Republic	Costa Rica
Algeria	Cape Verde
Egypt	Djibouti
Falkland Islands	Eritrea
Gabon	Ethiopia
Grenada	Micronesia, Fede..
South Georgia And South Sandwich Islands	Georgia
Guyana	Gambia
Heard Island And Mcdonald Islands	Guinea
British Indian Ocean Territory	Equatorial Guinea
Iran, Islamic Republic Of	Guatemala
Jamaica	Guinea-Bissau
Jordan	Honduras
Kazakhstan	Haiti
Lebanon	Indonesia
St Lucia	India
Libya	Iraq
Morocco	Kyrgyz, Republic..
Montserrat	Cambodia
Mexico	Kiribati
Malaysia	Comoros
Norfolk Island	Laos

Papua New Guinea	Sri Lanka
Saint Pierre And Miquelon	Liberia
Pitcairn	Lesotho
Russian Federation	Madagascar
Saint Helena	Marshall Islands
Suriname	Mali
French Southern Territories	Mongolia
Tokelau	Mauritania
Tunisia	Malawi
United States Minor Outlying Islands	Mozambique
St Vincent And The Grenadines	Niger
Venezuela	Nigeria
Wallis And Futuna	Nicaragua
Mayotte	Nepal
South Africa	Nauru
Zimbabwe	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: Hirschman–Herfindahl Index (HHI)	
Country x Post	0.013
	(0.022)
Constant	0.362***
	(0.005)
Country fixed effects	Yes
Year fixed effects	Yes
Observations	651
Adjusted R^2	0.798

Notes: Robust standard errors in parentheses
* $p < .10$, ** $p < .05$, *** $p < .01$

Table A3: Varying Post time periods (LPM)

Dependent Variable: exports dummy	(1) Post = 2014	(1) Post = 2014 - 15	(1) Post = 2014 – 16	(1) Post = 2014 – 17
Country x GSP product x Post	-0.001***	-0.001***	-0.001***	-0.001***
	(0.0003)	(0.0003)	(0.0002)	(0.002)
Constant	0.0422***	0.0427***	0.043***	0.0434***
	(0.00002)	(0.00003)	(0.00004)	(0.00005)
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	16,258,435	19,510,122	22,761,809	26,013,496
Adjusted R^2	0.721	0.651	0.651	0.644

Notes: Robust standard errors in parentheses clustered at product level.
* p < .10, ** p < .05, *** p < .01

Table A4: Varying Post time periods for HHI

Dependent Variable: Hirschman–Herfindahl Index (HHI)				
	(1)	(2)	(3)	(4)
	1 Year	2 Years	3 Years	4 Years
Country x Post	0.007	0.001	0.008	0.014
	(0.024)	(0.017)	(0.015)	(0.01)
Constant	0.361***	0.356***	0.349***	0.347***
	(0.005)	(0.005)	(0.005)	(0.005)
Country fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	812	973	1134	1294
Adjusted. R^2	0.782	0.771	0.765	0.752

Notes: Robust standard errors in parentheses
* $p < .10$, ** $p < .05$, *** $p < .01$

Table A5: Placebo Test (levels)

Dependent Variable: real exports in Million Euros	(1) Post=2011-12	(2) Post=2012
Country x GSP product x Post	0.024	0.025
	(0.024)	(0.026)
Constant	0.204***	0.207***
	(0.006)	(0.003)
Fixed effects	Country-product, country-year, product-year	Country-product, country-year, product-year
Observations	9,755,061	9,755,061
Adjusted R^2	0.949	0.949

Notes: Robust standard errors in parentheses clustered at product level.
* p < .10, ** p < .05, *** p < .01

Table A6: Falsification Test HHI

Dependent Variable: Hirschman–Herfindahl Index (HHI)		
	(1) Post = 2011-12	(2) Post = 2012
Country x Post	0.032	0.028
	(0.024)	(0.023)
Constant	0.359***	0.365***
	(0.010)	(0.007)
Country fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Observations	488	488
Adjusted. R^2	0.813	0.812

Notes: Robust Standard errors in parentheses
* p < .10, ** p < .05, *** p < .01