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Abstract

The European Union (EU) suspended the Generalized System of Preferences (GSP) for Myanmar in 1997 for a systematic violation of human rights, but re-instated it in 2013 following domestic reforms in Myanmar. By examining a political background of the EU's re-instatement, we highlights a key role of President Thein Sein in the newly established "democratic" government for 2011 and Myanmar's international relations with the U.S. and the EU. This paper also estimates the impact of duty-free access on Myanmar's exports by exploiting a unique feature of the GSP re-instatement in which tariff cuts correspond to the MFN tariff rates in EU markets. The results show that the GSP re-instatement has a significantly large positive effect on Myanmar's exports, with a pronounced impact on garment exports. Thus, democratic reforms in Myanmar improved political relations with the EU to promote industrial development.

*Keywords***:** Democracy, human rights, GSP, trade, Myanmar
*JEL Classification***:** F14, F63

1. Introduction

A growth of export industries can contribute to poverty reduction and sustainable development in the developing world. The Generalized System of Preferences (GSP) is a leading policy instrument for high-income countries to promote export industries in developing countries through preferential trade access. While preference-granting countries unilaterally grant preferential access for special economic needs, they can in return require preference-receiving countries to follow certain conditions, such as human rights, labor rights, and good governance (Brandtner and Rosas, 1999; Zhou and Cuyvers, 2011). If preference-receiving countries systematically violate these rights, preference-granting countries may withdraw trade preferences temporarily and re-instate later. While a number of studies assess the impact of granting GSP programs (Gil-Pareja et al., 2014; Ornelas, 2016; Ito and Aoyagi, 2019), there remains an unexplored question as to a political background of re-instating GSP programs and its consequent impacts on trade in beneficiary economies.

In this paper, we seek to evaluate the re-instatement of the European Union (EU)'s GSP for Myanmar in July 2013. The EU granted beneficiary developing countries preferential import tariffs on some or all of their exports to the EU market under the GSP program since 1971. The EU suspended trade preferences for Myanmar in 1997 for a systematic violation of core international conventions on forced labor. In 2013, the EU determined to re-instate preferential access for Myanmar under the Everything But Arms (EBA) regime after the country's efforts to improve political, social and labor environments. Subsequently, Myanmar has benefited from duty-free and quota-free access to the EU market for all products except for arms and ammunitions. Figure 1 shows that imports in 28 EU member countries from Myanmar started to enter under duty-free access after 2012 (Eurostat).[1] The value of duty-free imports increased sharply after 2012, as the total value of imports increased from 0.13 billion euros in 2012 to 2.02 billion euros in 2018. A casual observation indicates a remarkable trade growth in Myanmar after the GSP re-instatement, and thus it is crucial to evaluate the impact of the GSP re-instatement.

---Figure 1 here---

We assess the EU's GSP re-instatement in three steps. First, we analyze a political background of the EU's GSP withdrawal and re-instatement for Myanmar. EU's withdrawal process started with a joint complaint to the European Commission (EC) by the International Confederation of Free Trade Unions and the European Trade Union Confederation on June 7, 1995. The EC obtained evidence for the serious and systematic violation of the conditionality in the EU's GSP in terms of the International Labor Organization (ILO)'s Convention concerning

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[1] Prior to the GSP re-instatement, exporters in Myanmar did not have duty-free access to the EU market, thereby exporting under MFN tariff rates. While the EU applied duty-free access retroactively as of 13 June 2012, there is a record only after 2013 on the value of duty-free imports in the EU from Myanmar.

Forced or Compulsory Labor, No. 29. The EU temporarily withdrew preferential tariffs for industrial and agricultural products originating from Myanmar on March 24, 1997. After twenty-three-year-long military rule, President Thein Sein established the "democratic" government on March 30, 2011, and implemented a series of domestic reforms in Myanmar. He expressed a willingness to cooperate with the National League for Democracy (NLD), the largest opposition party, and made an effort to restore the strained relations with the Western countries. President Obama visited Myanmar in November 2012 and officially restored the normal diplomatic and economic relations with Myanmar. Acknowledging the progress made by the Myanmar government, the EC concluded that the European Parliament and the Council of the EU decided to repeal the temporary withdrawal of Myanmar's access to preferential tariffs on July 19, 2013.

Second, we estimate the impact of duty-free access on exports in Myanmar by exploiting a unique feature of the EU's GSP re-instatement. Specifically, Myanmar's exports to EU were subject to Most-Favored Nation (MFN) tariff rates before 2013, implying that tariff cuts due to the GSP re-instatement correspond to the MFN tariff rates in the EU market. Because the MFN tariffs are previously determined in multilateral trade negotiations, these tariff cuts are arguably exogenous to export industries in Myanmar during the study period. For this reason, Myanmar experienced plausibly exogenous tariff cuts in the EU market from the year 2013, which are equivalent to the MFN tariffs in the EU. This unique feature of the GSP re-instatement allows us to estimate the causal effect of the GSP re-instatement on Myanmar's exports. The results show that larger tariff cuts are significantly and positively associated with Myanmar's exports to the EU. For instance, a five percentage-point decline in tariff rates would increase Myanmar's exports to the EU by 73.3%. The tariff cuts significantly increase the probability of observing a new variety of exports to the EU market. These impacts tend to become larger in magnitude over time. Garment products exhibit a prominent growth of exports to the EU. Thus, our study provides formal evidence that the GSP re-instatement has a significant trade impact on Myanmar.

Finally, we provide qualitative explanations for a historical background of the export growth in Myanmar. First, garment firms in Myanmar started to export to Asian markets such as Japan and South Korea since 2003, when the U.S. imposed an import ban of made-in-Myanmar products. These garment firms learned high sewing skills and quality control methods to serve the Japanese market. We argue that they could improve productivity and production capability through learning from exporting (Atkin et al., 2017). Second, when Myanmar lost market access to the U.S. market, EU buyers also became reluctant to import garment products from Myanmar in fear of possible consumers' boycott and loss of their reputation. The EU's GSP reinstatement signaled a green light to the EU buyers to resume sourcing from Myanmar. Additionally, the Myanmar government improved a business environment for garment production, including the unification of multiple exchange rates, trade liberalization, and infrastructure development. Taken together, all these

factors help to explain a remarkable export response in Myanmar's garment industry to the EU's GSP re-instatement.

Prior studies provide mixed evidence on the aggregate trade effects of GSP programs. Herz and Wagner (2011) find that GSP promotes exports in developing economies only in the short run, but produces a negative impact in the long run. By contrast, Gil-Pareja et al. (2014) provide robust evidence that GSP has a significantly positive impact on exports in developing economies. Sharma et al. (2019) shows a positive effect of GSP only on agricultural exports in low-income countries. These results imply that GSP effects on aggregate trade flows tend to be heterogeneous across GSP programs and beneficiary countries. Meanwhile, prior work on specific GSP programs tends to find a positive effect on exports, but the estimated impacts are also heterogeneous across beneficiaries and sectors (Frazer and Van Biesebroeck, 2010; Cipollina et al., 2017; Ito and Aoyagi, 2019). While these studies examine the impact of granting trade preferences, other works such as Zhou and Cuyvers (2011) and Gnutzmann and Gnutzmann-Mkrtchyan (2017) examine the effect of EU's GSP withdrawal on trade. They find little evidence of trade impacts in the case of Belarus and Myanmar.

We contribute to the related literature in several ways. First, to the best of our knowledge, this paper is the first to assess the trade effects of re-instating trade preferences. Specifically, we provide a formal evaluation of the EU's GSP re-instatement for Myanmar. Second, we present a unique approach to identify the causal impact of the GSP re-instatement by using variations in MFN tariff rates in the EU market, which are largely exogenous for export industries in Myanmar. Finally, this paper provides a detailed account of a political background in the GSP re-instatement and qualitative explanations for the export growth in Myanmar.

In the literature on Myanmar, this paper sheds light on alternative arguments for the root cause of stagnation in Myanmar's garment industry under the military government rule.[2] Kudo (2014, p. 178) argues that limited access to international markets due to international sanctions had been a major factor for economic stagnation. Meanwhile, other arguments suggest that other constraints played a key role to deter a growth of manufacture exports in Myanmar, including "import bias" arising from the highly distorted foreign exchange market and regulatory restrictions on private firms (Fujita et al., 2009, pp. 12-13). Although Kudo (2014) provides only historical and descriptive discussions, this paper offers a quantitative analysis to support his assertion.

The rest of this paper is organized as follows. Section 2 provide a background for the EU's decision to re-instate GSP for Myanmar. Section 3 presents an empirical framework to estimate the impact of the GSP re-instatement on exports in Myanmar, followed by data sources. Section 4 shows the estimation results for aggregate export flows and examines a quantitative source of

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[2] Kudo (2014) estimates Myanmar's export potential after the easing of economic sanctions by Western countries, but does not examine the EU's GSP re-instatement.

EU-bound garment exports. Section 5 discusses a qualitative background of export growth in Myanmar's garment industries.

2. Background

This section provides a background for the EU's decision to re-instate GSP for Myanmar in 2013. After describing the withdrawal of EU's GSP from Myanmar in 1997, we discuss domestic political reforms in Myanmar to shed light on underlying reasons for the EU's GSP re-instatement.

2.1. Temporary Withdrawal of EU's GSP from Myanmar

A withdrawal process started with a joint complaint to the European Commission (EC) by the International Confederation of Free Trade Unions and the European Trade Union Confederation on June 7, 1995, which calls for a temporary withdrawal of the GSP from Myanmar for its use of forced labor.[3] The complaint is based on the condition in which trade preferences may be temporarily withdrawn if a beneficiary country practices any form of forced labor. Having examined the complaint, the EC decided to start an investigation on January 16, 1996, and formally notified Myanmar authorities of the investigation. While they denied the practice of forced labor, they refused to accept an on-site inspection by the EC.

The investigation corroborated the allegations that Myanmar authorities routinely used forced labor for military operations and infrastructure projects with coercion and violent reprisals. The findings provide evidence for the serious and systematic violation of the conditionality in the EU's GSP in terms of the International Labor Organization (ILO)'s Convention concerning Forced or Compulsory Labor, No. 29. Consequently, the EU temporarily withdrew preferential tariffs for industrial and agricultural products originating from Myanmar on March 24, 1997.[4]

The EU regulation on withdrawal indicates that the EU may re-instate GSP benefits for Myanmar thereafter if a practice of forced labor ceases in the country. While the temporary withdrawal continued until 2013, a key reason for the withdrawal changed from the forced labor to the political situation in Myanmar in the EU regulation for 2005 and 2012 (Portela and Orbie, 2014).

2.2. Domestic Reforms in Myanmar

A series of domestic reforms in Myanmar are a key reason for the EU's GSP re-instatement. President Thein Sein established the "democratic" government on March 30, 2011, after the twenty-three-year-long military rule. Myanmar held a national election to establish the civilian

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[3] For details, see Council Regulation (EC) No 552/97 of 24 March 1997 temporarily withdrawing access to generalized tariff preferences from the Union of Myanmar (Official Journal of the European Communities No L 85/8).

[4] Howse and Genser (2008) discuss the sanction regimes of the EU in comparison with the US.

government in November 2010, but there was strong criticism for the flawed election because the National League for Democracy (NLD), the largest opposition party, boycotted the election and Aung San Suu Kyi, Nobel Peace Prize laureate and NLD's leader, was still under house arrest.[5] Nevertheless, President Thein Sein launched a series of political and economic reforms, which were contrary to most people's expectations at the time.

In August, 2011, President Thein Sein invited Aung San Suu Kyi to Naypyitaw, the new capital of Maynmar, for the first time, and met her at the Presidential Residence. Following their meeting, The New Light of Myanmar, the state-run newspaper, published a photo to display a portrait of General Aung San, father of Aung San Suu Kyi, between the standing two figures. During the military rule, the government had removed all the portraits of General Aung San from the government offices in fear that they might enhance the popularity of Aung San Suu Kyi. In this context, Myanmar and foreign observers were surprised to see a clear message that President Thein Sein is willing to cooperate with Aung San Suu Kyi, for which the international community including the EU had long demanded. In November 2011, the government modified the political parties' registration law to accept the re-registration of the NLD as a political party. Thereafter, the NLD joined the by-election in April 2012 and they won forty-three seats out of forty-four. Aung San Suu Kyi was elected as a legislator.

In addition to a political dialogue with Aung San Suu Kyi, President Thein Sein implemented a series of democratic reforms such as the relaxation of censorship on media, free internet access to the public, the enactment of new laws to allow for labor unions, labor strikes, and peaceful assemblies and processions. The Myanmar National Human Rights Commission was established, and its advice led to the release of most political prisoners. The president also implemented economic reforms including the unification of multi-exchange rates, import liberalization, a reduction of export taxes, and the modification of foreign investment law.

Regarding Myanmar's international relations, President Thein Sein made an effort to restore the strained relations with the Western countries, the U.S. in particular. For instance, President Thein Sein declared the suspension of the construction of Myitsone Dam, a large-scale hydropower project financed by China as a gesture to distance Myanmar from China. Additionally, he started a dialogue with the U.S. to improve their diplomatic relation. The Obama administration appointed Derek Mitchell as a special representative and policy coordinator for Myanmar in August 2011, who made a series of visits to Myanmar.[6] After their negotiations and following actions of the Myanmar government to improve human rights and democracy, Hillary Clinton, the 67th U.S. Secretary of State, visited Myanmar in November and December 2011. Her visit drastically improved the international sentiment toward Myanmar. An international community

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[5] She was released from the seven-and-half-year-long house arrest only six days after the election.
[6] He was appointed as an ambassador to Myanmar in June 2012.

no longer regarded Myanmar as a pariah state, and an international image toward Myanmar transformed into the last economic and investment frontier in Asia. The U.S. partially relaxed trade and financial sanctions, and lifted a ban on U.S. companies and citizens to invest in Myanmar. In November 2012, President Obama visited Myanmar and officially lifted its all sanctions to restore a normal diplomatic and economic relation with Myanmar after the two-decade interval. Following the U.S., President Thein Sein made two visits to the EU in February/March and July 2012, and the EU lifted its sanctions on Myanmar.

2.3. Re-instatement of EU's GSP for Myanmar

Following domestic reforms in Myanmar since 2011, a resolution on Myanmar in the International Labor Conference (ILC) in June 2012 led to the re-instatement of EU's GSP for Myanmar in June 2013.[7] The ILC previously adopted a resolution on the use of forced labor in Myanmar in June 1999 and took a measure to secure the compliance of Myanmar with the conventions in 2000.[8] In 2012, the ILO monitoring bodies reported that the Myanmar government made important efforts to address an issue on forced labor. To assist the Myanmar government, the ILC decided to lift the restrictions on Myanmar, including technical cooperation to Myanmar and a participation of Myanmar in ILO meetings.

While there remained unresolved issues on the use of forced labor, the Myanmar government made forced labor illegal under its labor laws, and made a commitment to eliminate all forms of forced labor by 2015 under the ILO guidance. Acknowledging the progress made by the Myanmar government, the EC concluded that violations of the principles in the ILO Convention No. 29 are no longer serious and systematic in Myanmar. Consequently, the European Parliament and the Council of the EU decided on July 19, 2013 to repeal the temporary withdrawal of Myanmar's access to preferential tariffs retroactively as of June 13, 2012, the date of the adoption of the ILC resolution. Subsequently, the EU granted Myanmar duty-free quota-free access to the EU market under the EBA scheme for all products except for arms and ammunitions.

3. Empirical Framework and Data

3.1. Empirical Model

An evaluation of the EU's GSP re-instatement draws on the fact that the EU imposed MFN tariff rates on imports from Myanmar before 2013. The GSP re-instatement implies that tariff cuts correspond to the MFN tariff rates in the EU market. To examine the impact of EU's tariff cuts on exports in Myanmar, we specify an empirical model for product i, country j, and year t:

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[7] See Regulation (EU) No 607/2013 of the European Parliament and of the Council of 12 June 2013 repealing Council Regulation (EC) No 552/97 temporarily withdrawing access to generalized tariff preferences from Myanmar/Burma.
[8] See *Provisional Record Nos 2-1, 2-2, and 2-4* in the ILC (ILO, 2013a, 2013b, 2013c).

$$\ln E_{ijt} = \beta_0 + \beta_1 MFN_i \cdot EU_j \cdot Post_t + f_{it} + f_{jt} + \varepsilon_{ijt} \tag{1}$$

where E_{ijt} is the value of exports from Myanmar for product i to country j in year t. MFN_i is the MFN tariff rates on imports of product i in the EU as of 2013. EU_j is a dummy variable that takes on unity for country j with EU membership, and zero otherwise. $Post_t$ is a dummy variable that takes on unity in years from 2013 on, and zero otherwise. f_{it} and f_{jt} are time-varying product and country fixed effects, respectively. Finally, ε_{ijt} is an error term.

β_1 is a coefficient of interest. Since Myanmar's exports to the EU were previously subject to MFN tariff rates, tariff cuts induced by the GSP re-instatement correspond to the MFN tariff rates in the EU market. This feature allows us to measure the impact of the GSP re-instatement by estimating a response of EU-bound exports to the MFN tariffs as of 2013. For instance, the average MFN tariff rate is 12% for garment imports in the EU market. The GSP re-instatement indicates a 12 percentage-point decline in import tariff rates for Myanmar's garment exports to the EU after 2012. The impact is measured by a change in garment exports in response to this tariff cut. As a larger MFN tariff rate implies a large decline in import tariffs, β_1 should be positive in sign.

Since we aim to estimate the causal effect of EU's tariff cuts on Myanmar's exports, it is crucial to discuss the identification assumption implicitly assumed in equation (1). Specifically, a threat to identification is a possible endogeneity of the variable, $MFN_i \cdot EU_j \cdot Post_t$. First, a measurement error should not be serious because EU's tariff cuts correspond to MFN tariff schedules. A possible issue is an aggregation bias in trade data at the 6-digit level because MFN tariff rates are defined at a finer level. For a robustness check, we use the average, minimum, and maximum rates of MFN tariff rates within 6-digit level product category. Second, we address an omitted-variables bias by including a large number of fixed effects at the country- and product-level across years. These fixed effects control not only for standard determinants of trade in trading partners and trading products, but for country-specific demand shocks for Myanmar's goods and a pre-existing structure/growth of domestic industries in Myanmar. A possible bias may arise from unobserved factors that correlate with $MFN_i \cdot EU_j \cdot Post_t$ and independently influence product-level exports from Myanmar to EU after 2012. While we cannot rule out such unobserved factors, the fine classification of MFN tariff rates should mitigate the bias.

Third, the EU's determination on the GSP re-instatement may cause a reverse causality bias for endogenous protection and market access through political lobbying by domestic industries in the EU. We generally predict that industries in the EU would lobby against the GSP re-instatement to protect their industry. However, this concern is unlikely because Myanmar accounted for only 0.009% of the total imports in the EU market for 2012 (UN COMTRADE).[9] Finally, industries

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[9] Although multinational apparel retailers in EU may lobby for the GSP re-instatement to increase their imports from Myanmar, we do not find evidence that these firms had an effective influence on

in Myanmar might lobby for larger tariff cuts in the EU market, but this concern is unlikely. The EU granted duty-free access to Myanmar under the EBA scheme because the United Nations classifies Myanmar as a LDC. EU's tariff cuts correspond to MFN tariff rates in the EU market, which had been previously determined in multilateral trade negotiations. In this respect, industries in Myanmar should have little real influence on the tariff cuts faced by their industry.

Discussions up to this point have focused on the intensive margin of exports. The main specification in equation (1) captures a response in export products in which Myanmar have positive export values for comparative advantage reasons. Granting duty-free access may provide a new opportunity for Myanmar to export a wider variety of new products. To assess the response of exports at the extensive margin, we estimate a linear probability model for product i, country j, and year t:

$$\mathrm{P}\big(D_{ijt} = 1\big) = \delta_0 + \delta_1 MFN_i \cdot EU_j \cdot Post_t + f_{it} + f_{jt} + e_{ijt} \tag{2}$$

where D_{ijt} is a dummy variable that takes on unity if Myanmar has positive exports in product i to country j for year t, and zero otherwise.[10] $\mathrm{P}\big(D_{ijt}\big)$ shows the probability that Myanmar exports product i to country j for year t. The coefficient of interest is δ_1, which measures the impact of duty-free access on export variety. Since a larger MFN tariff rate can increase an opportunity to export a new product, δ_1 should be positive in sign. Additionally, the advantage of the linear probability model is that we can control for a large number of fixed effects in several dimensions of panel data. The disadvantage is that predicted values may not be between zero and one. However, this concern is not serious because the causal effect of duty-free access is central to our analysis.

3.2. Data Sources

Data on exports come from the UN COMTRADE Database. We use trade statistics reported by Myanmar for the period 2010-2018.[11] Export products are defined at the 6-digit level in the Harmonized Commodity Description and Coding Systems (HS) for 2012. Data on MFN applied tariff rates are from the UNCTAD TRAINS database. The MFN tariff is a normal non-discriminatory tariff rate on imports, which excludes preferential tariffs under other schemes. Tariff rates are measured as the ad valorem tariff in percentage and set at the 8-digit or higher level for each tariff line. To match export products at the HS 6-digit level, we use a simple average of MFN tariff rates for tariff lines in the 6-digit subheading products. For a robustness check, we also use the lowest and highest tariff rates in the 6-digit subheading products.

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the re-instatement process.
[10] We exclude countries and products with no export from Myanmar during the study period.
[11] Trade data reported by Myanmar are largely missing in the database during the 2000s.

4. Results

4.1. Main Results

We start to discuss the results of equations (1) and (2) estimated by an Ordinary Least Squares (OLS) method. Table 1 shows the summary statistics of the sample for export values in Panel A and for export dummy in Panel B. The baseline sample includes 28 EU countries and 130 non-EU countries, which are shown in Appendix Table 1. There are 1,445 products with positive export values. We report standard errors corrected for two-way clustering in products and export markets.

---Tables 1 and 2 here---

In Table 2, column (1) shows that the coefficient of the variable, $MFN_i \cdot EU_j \cdot Post_t$, is significant and positive. The coefficient suggests that a 5 percentage point decline in tariff rates is predicted to increase Myanmar's export to the EU market by 73.3%[12]. In column (2) for the minimum MFN tariffs, the coefficient of the variable remains significant and positive, with the similar coefficient size as in column (1). In column (3) for the maximum MFN tariffs, the coefficient also remains significant and positive. The slightly smaller coefficient size is consistent with our prediction that the maximum MFN tariffs may overestimate the impacts of actual tariff cuts for some products.

A concern in these specifications is an econometric problem of heteroscedasticity and the presence of zero export flows (Santos Silva and Tenreyro, 2006). Since the standard OLS estimator may be biased in the presence of heteroscedasticity in exports, a solution is to use Poisson pseudo-maximum likelihood (PPML) estimation. To address this issue, Appendix Table 2 presents the PPML results for the sample with zero exports.[13] The key coefficients remain significant and positive for alternative specifications, suggesting that the benchmark results are robust to the issue of zero exports. As compared with the benchmark estimates, the PPML estimates tend to be large in magnitude, suggesting that the trade effects of tariff cuts are larger when we take into account zero exports. Thus, we can interpret the OLS estimates of tariff effects as a conservative estimate of the EU's GSP re-instatement on Myanmar's exports.

Column (4) shows the result for export responses at the extensive margin. The coefficient of $MFN_i \cdot EU_j \cdot Post_t$, is significant and positive, suggesting that EU's tariff cuts significantly increase the probability of observing a new variety of exports to the EU market. To gauge the economic magnitude, we suppose that the tariff rates decline by 5 percentage points. This change increases the likelihood of export variety by 0.9 percentage points. As the mean of export dummy is 0.9%, the marginal effect of tariff cuts on exports is economically large. Additionally, columns

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[12] The marginal effect is obtained from $100 \cdot [\exp(0.11 \times 5) - 1]$.

[13] To implement PPML estimation with high dimensional fixed effects, we adopt estimation approach by Correia et al. (2019), i.e., ppmlhdfe in STATA command.

(5) and (6) show that the key coefficient remains positive and significant for the minimum and maximum MFN tariffs, respectively.

While the results in Table 2 measure the average effect in the years following the GSP re-instatement, the impact of tariff cuts on exports may increase over time, as indicated in Figure 1. To measure the timing effects, we further interact the variable $MFN_i \cdot EU_j$ with year dummies. In Table 3, column (1) for export values shows that the coefficient of $MFN_i \cdot EU_j \cdot Year2013$ is not significant. Meanwhile, the coefficients for following year dummies are significant and positive. As these coefficients are larger for later years, the trade impacts of tariff cuts increase significantly over time. Additionally, column (2) shows the result for export dummy. Consistent with the result in column (1), the key coefficients are larger for later years. The tariff cuts increase the probability to export a product to the EU over time.

<div align="center">---Table 3 here---</div>

While we have measured the average impact of the GSP re-instatement across EU importers, trade effects may be heterogeneous across these importers. To relax this assumption, we estimate equation (1) by further interacting $MFN_i \cdot Post_t$ with individual EU importers, with the result reported in Appendix Table 2. The result shows that the impact of the GSP re-instatement is substantially heterogeneous across EU importers. Figure 2 presents a relationship between importer-specific coefficients and the importer market size in 2012. The export response to tariff cuts tends to be positive for larger EU importers, but negative for smaller EU importers. Since export values correlate positively with the market size, the initial export levels should play a crucial role in the export growth due to the tariff cuts.

<div align="center">---Figure 2 here---</div>

4.2. Knitted and Woven Garments

The analysis demonstrates that the GSP re-instatement contributed to a remarkable growth of Myanmar's exports to the EU. As garment exports accounted for 80.6% of Myanmar's exports to the EU market in 2018, we proceed to shed light on garment export growth.

We examine the impact of tariff cuts on total values, unit values and variety in Myanmar's garment exports to the EU. While we focus on garment products, there is little variation in MFN tariff rates among these products. For this reason, we re-specify an empirical model for product i, country j, and year t:

$$Y_{ijt} = \pi_0 + \pi_1 EU_j \cdot Post_t + \mathbf{Z}'_{jt}\boldsymbol{\pi}_2 + f_{it} + f_j + u_{ijt} \qquad (3)$$

where Y_{ijt} is an alternative measure of garment exports: that is, the log of total export values, unit values, and an export dummy. We define the unit values as a natural logarithm of the ratio of export values and the quantity of shipments in weight. We use a sample of garment products at the 6-digit level. Since a time-varying country fixed effect is perfectly collinear with $EU_j \cdot Post_t$,

we include log GDP and log GDP per capita for control variables, $\boldsymbol{Z}_{jt}$. Data on real GDP and real GDP per capita come from the World Development Indicator by the World Bank. f_i is a country fixed effect, and u_{ijt} is an error term.

Table 4 presents the results of equation (3) for knitted garments in HS chapter 61 and woven garments in HS chapter 62. Column (1) shows that the coefficient of $EU_j \cdot Post_t$ is significant and positive, suggesting that knitted garment exports to the EU increased by 677 % ($= 100 \cdot [\exp(2.05) - 1]$). A marginal effect of duty-free access is remarkably large for knitted garments, as the value of EU-bound exports increased from 0.17 million USD in 2010 to 472 million USD in 2018. Column (2) for unit values shows that the coefficient is not significant, implying that unit price remains similar after tariff cuts. Additionally, column (3) shows that the coefficient is not significant, suggesting that there was little change in the export variety for knitted garment products. Thus, the GSP re-instatement promoted predominantly a quantity increase in knitted garment exports.

<center>---Table 4 here---</center>

Column (4) for woven garments shows that the coefficient of $EU_j \cdot Post_t$ is significant and positive, implying that woven garment exports to EU increased by 153% ($= 100 \cdot [\exp(0.93) - 1]$). As the value of woven garment exports to EU increased from 69 million USD in 2010 to 1,690 million USD in 2018, a marginal effect of tariff cuts is also substantial for woven garments. Columns (5) and (6) show that the coefficient is not significant for unit values and export dummy, respectively. Thus, the GSP re-instatement led to a substantial increase in the quantity of woven garment exports, but little change in unit price and export variety.

4.3. Quantitative Sources of EU-bound Garment Exports

From a quantitative point of view, we examine alternative sources of the export growth due to tariff cuts in the EU market. First, export growth should coincide with an expansion of production capacity by existing firms and/or newly established garment factories after 2012. Table 5 presents the number of garment factories in Myanmar since 1990s. After the Multi Fibre Agreement ended in January 2005, garment factories increased only gradually from 151 in 2005 to 205 in 2012. The number of garment factories sharply increased after the EU's GSP re-instatement; 300 factories in 2013 and 348 factories in 2014.[14] These newly established garment factories should contribute largely to the expansion of garment production after 2012.

<center>---Table 5 here---</center>

Second, an increased supply of textile inputs should support garment production growth. As

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[14] According to the article "Myanmar garment factories report 75% fall in orders amid COVID-19" in The Irrawaddy on September 1, 2020, there were 420 member factories in 2020, including 236 Chinese, 67 South Korean, 20 Japanese factories, 92 domestic factories.

described in Kudo (2014), garment factories in Myanmar tend to specialize in cutting, making, and packing while importing intermediate inputs such as fabric, and ancillary materials. When the EU granted Myanmar the EBA status, origin requirements for garment products from LDCs were one-stage processing, suggesting that garment exporters in Myanmar can use imported fabric from anywhere and still maintain preferential treatment.[15] As a result, liberal ROO in the EU's GSP can increase imported textiles from competitive textile industries after the GSP re-instatement. Consistent with this prediction, Figure 3 shows a sharp increase in fabric imports into Myanmar from 2013.[16] There was a pronounced increase in textile imports from China, as its textile industries are highly competitive. Thus, these findings suggest that newly established garment factories use a growing share of imported textiles and contribute to garment export growth.

---Figure 3 here---

Third, a redirection of garment exports may also account partly for an expansion of EU-bound garment exports. One type of trade redirection is a substitution of exporting between EU and non-EU markets, implying that an increase in EU-bound exports originates from a redirection of products that had been previously exported to non-EU markets. If the GSP re-instatement merely produced this substitution effect, we should find a *decrease* in the exports to non-EU markets from 2013. Another type of trade redirection is a deflection of exports from third markets into Myanmar, suggesting that trans-shipped products may enter the EU market for duty-free access via Myanmar. If the GSP re-instatement merely caused trade deflection, we should find an *increase* in garment imports into Myanmar from 2013.

To examine trade redirection effects, we estimate a model for country j and year t:

$$y_{jt} = \lambda_0 + \lambda_1 Post_t + \lambda_2 Trend_t + \mathbf{Z}'_{jt}\lambda_3 + f_j + u_{jt} \qquad (4)$$

where y_{jt} is a measure of garment exports from Myanmar to non-EU markets, or garment imports into Myanmar from non-EU markets. We use aggregate trade values on knitted (HS 61) and woven (HS 62) garments separately. $\mathbf{Z}_{jt}$ includes GDP and GDP per capita. u_{jt} is an error term. To test a change in trends after 2012, we use trade statistics reported by partners in the UN COMTRADE during the period 2000-2018. The sample excludes the EU and U.S. markets.[17]

The coefficient of interest is λ_1, which measures a differential trend of trade patterns after 2012. In Table 6, column (1) shows that the coefficient of $Post_t$ is significant, but positive, implying that knitted garment exports to non-EU markets increased after 2012. Column (2)

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[15] On November 18, 2010, the EC adopted a new regulation on the ROO for the EU GSP. This regulation came into effective on January 1, 2011. For a summary of the major changes, see Inama (2011).

[16] We use the export statistics reported by Myanmar's partners in the UN COMTRADE for a long-term trend.

[17] The U.S. imposed trade sanctions on Myanmar under the Burmese Freedom and Democracy Act of 2003, and renewed it annually until 2011.

indicates that the coefficient is not significant, indicating no differential trend in woven garment exports to non-EU markets. These findings imply that a substitution effect of exports by destination market should not explain importantly the growth of EU-bound exports. Additionally, columns (3) and (4) show that the coefficient of $Post_t$ is significant and positive, implying that garment imports into Myanmar increased significantly after 2012. The results may indicate the presence of trade deflection. However, the sample shows that the average import values during the years 2013-2018 were 5.1 million USD for knitted garments and 3.9 million USD for woven garments. Because these import values are substantially smaller than the total values of EU-bound garment exports after 2012 (Figure 1), trans-shipped exports should have a quantitatively small impact on EU-bound export growth.

<div align="center">---Table 6 here---</div>

5. Discussions

We have demonstrated that the GSP re-instatement played a major role in Myanmar's export growth after 2013, and the tariff cuts have a pronounced impact on garment exports. However, the tariff cuts may not be a single source of the export growth. To shed light on other sources of the export success, we provide alternative explanations from a qualitative point of view.

First, supply-side factors help to understand why Myanmar's garment industries quickly seized export opportunities. Export-oriented garment industry started to develop in the early 1990s, when the military government abandoned the so-called "Burmese Way to Socialism" of the previous socialist government led by Ne Win and opened its economy to foreign investment. At the early stage, Hong Kong and South Korean companies formed joint ventures with the state-owned and military-related companies to establish foreign-owned factories in the mid-1990s. Domestic firms also entered the industry as subcontractors.[18] As garments became the largest export product, garment firms in Myanmar accumulated export experiences.

When the U.S. imposed an import ban on made-in-Myanmar products, garment firms had many idle workers and sewing machines. Consequently, garment firms in Myanmar started to export to Asian markets such as Japan and South Korea after 2003, and learned high sewing skills and quality control methods to serve the Japanese market with a strict demand for product quality. For instance, Japanese buyers and customers required a high standard of stitching and quality, and security controls, so that garment firms need to collect all the broken needles and inspect all the products by metal detectors. Small orders from Japanese buyers encourage sewing operators to improve their skills because a few defective products may reduce their profits substantially. These experiences should suggest that garment firms improved productivity and production capability through learning from exporting (Atkin et al., 2017). Taken together, previous export experiences

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[18] See Kudo (2014) for the brief history of export-oriented garment industry in Myanmar.

should help Myanmar to seize export opportunities in the EU markets due to the GSP re-instatement.

Second, demand-side factors also help to understand the export success. Myanmar lost market access to the U.S. market in 2003 for its import ban, making the EU buyers reluctant to import garment products from Myanmar in fear of possible consumers' boycotting and reputation degradation. Generally, apparel brands in developed countries have sourced from global apparel suppliers who have located garment manufacture processes in a low-wage country (Gereffi, 1999; Gereffi and Memedovic, 2003). These apparel brands are sensitive to customers' preferences and feelings on sourcing countries because customers would be reluctant to purchase garments from countries about which they are concerned for human right abuses and child labor practices. In this sense, the EU's GSP reinstatement not only offered Myanmar's garment industry a favorable condition in terms of price competition, but signaled a green light to the EU buyers to resume sourcing from Myanmar.

Finally, institutional and infrastructure development helps to understand the export growth. The Thein Sein government implemented a series of economic reforms to improve a business environment for garment production, including the unification of multiple exchange rates, trade liberalization, export tax reductions, de-monopolization of state-owned banks in foreign currency transactions, and the new regulation of foreign investment. The government made efforts to improve a shortage of electricity supplies, which was a major obstacle for garment production during the military rule. [19] The government resumed official development assistance by international donors to build power stations and encourage an entry of domestic and foreign companies into this sector. The volume of electricity generation increased by 13% annually for FY2010-2017 (CSO, 2018, p.390). Taken together, all these factors help to explain that Myanmar's garment industry can quickly increase exports after the EU's GSP re-instatement.

6. Conclusion

GSP programs aim to support developing countries through preferential trade access to high-income markets. Because preference-granting countries may require preference-receiving countries to follow certain conditions on human rights and good governance, a systematic violation of these rights may lead to the temporary withdrawal of GSP programs, which may be re-instated later. While a growing number of prior studies examine the impact of GSP programs on beneficiary economies, there is little evidence on the GSP re-instatement. This paper seeks to evaluate the impact of re-instating the EU's GSP for Myanmar in July 2013. The EU suspended trade preferences for Myanmar in 1997 for a systematic violation of core international

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[19] The survey of Myanmar's garment firms in 2005 shows that nearly 80% of firms answered that electricity shortage was "very serious" or "major" obstacles for their businesses (Kudo, 2010, p.139).

conventions on forced labor. Because domestic reforms by President Thein Sein improved political, social, and labor environments in Myanmar, the EU re-instated the GSP program to provide Myanmar duty-free and quota-free access to EU markets.

We estimate the impact of duty-free access on exports in Myanmar by exploiting a unique feature of the GSP re-instatement. Since Myanmar's exports to the EU were subject to MFN tariff rates in the EU market before 2013, tariff cuts after the GSP re-instatement correspond to the MFN tariff rates, which had been previously determined in multilateral trade negotiations. For this reason, the tariff cuts are arguably exogenous to export industries in Myanmar during the study period. We find that larger tariff cuts are significantly and positively associated with Myanmar's exports to the EU. The tariff cuts also significantly increase the probability of observing a new variety of exports to the EU market. Thus, we find robust evidence that the GSP re-instatement has a significant trade effect for Myanmar.

Garment exports accounted for a major share of Myanmar's exports to the EU market, and we shed light on an important role of garment industries in the export growth. We find that the EU's GSP re-instatement promoted predominantly the volume of garment exports, with little impacts on the variety and unit price of garment products. This result suggests that the garment industry specializes in low-quality garment products and benefits from little product upgrading. Nevertheless, the expanded volume of exports can provide an opportunity for the garment industry to extend its value chains not only to midstream tasks such as weaving, dying, and printing, but to upstream tasks such as spinning. To support sustainable industrial development, our analysis highlights that the Myanmar government must keep a good relation with the West including the EU and the U.S. by improving its democratic governance. Additionally, the Myanmar Garment Manufacturers Association must make its continued efforts to maintain good industrial relations with workers and be accountable for labor environments.

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Figure 1. EU's Imports from Myanmar
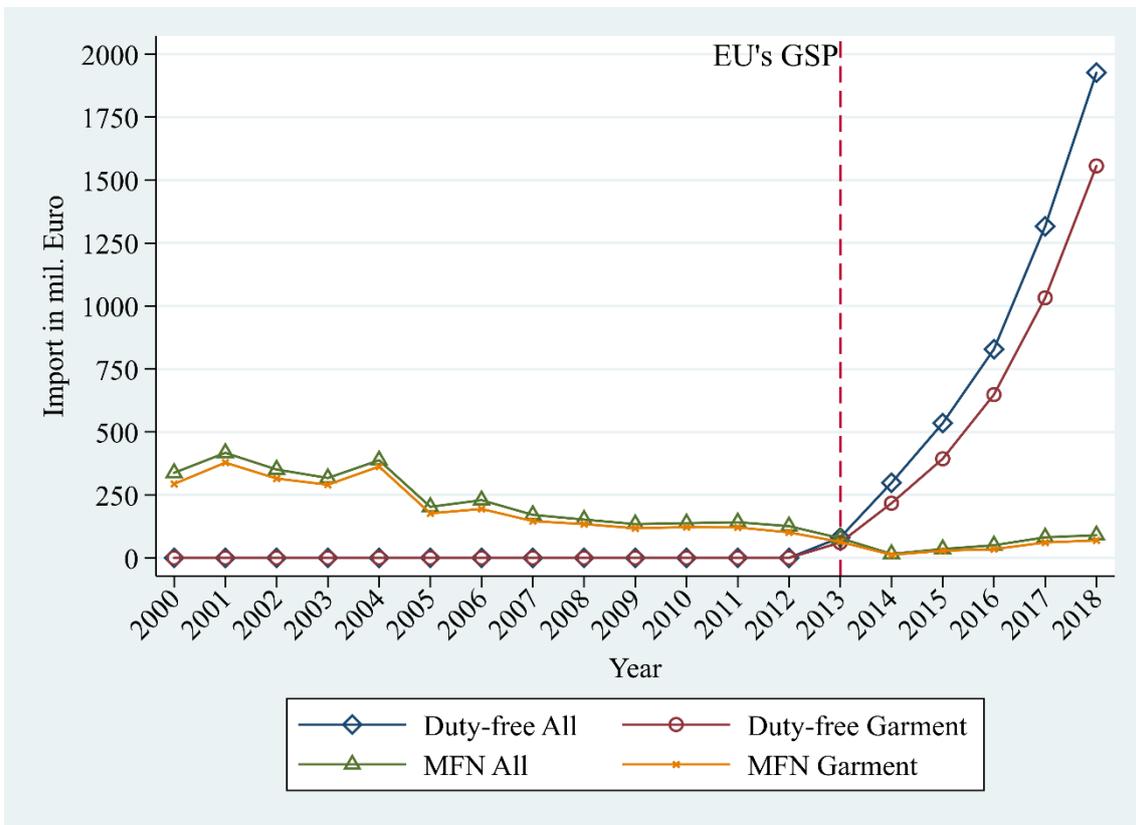
Notes: Duty-free All and MFN All indicate the nominal value of total imports that entered the EU market under duty-free and MFN rates, respectively; Duty-free Garment and MFN Garment indicate the nominal value of imports in HS Chapters 61 and 62 that entered the EU market under duty-free and MFN rates, respectively.

Source: Authors' calculation using Eurostat.

Figure 2. Importer-specific Effects of the EU's GSP
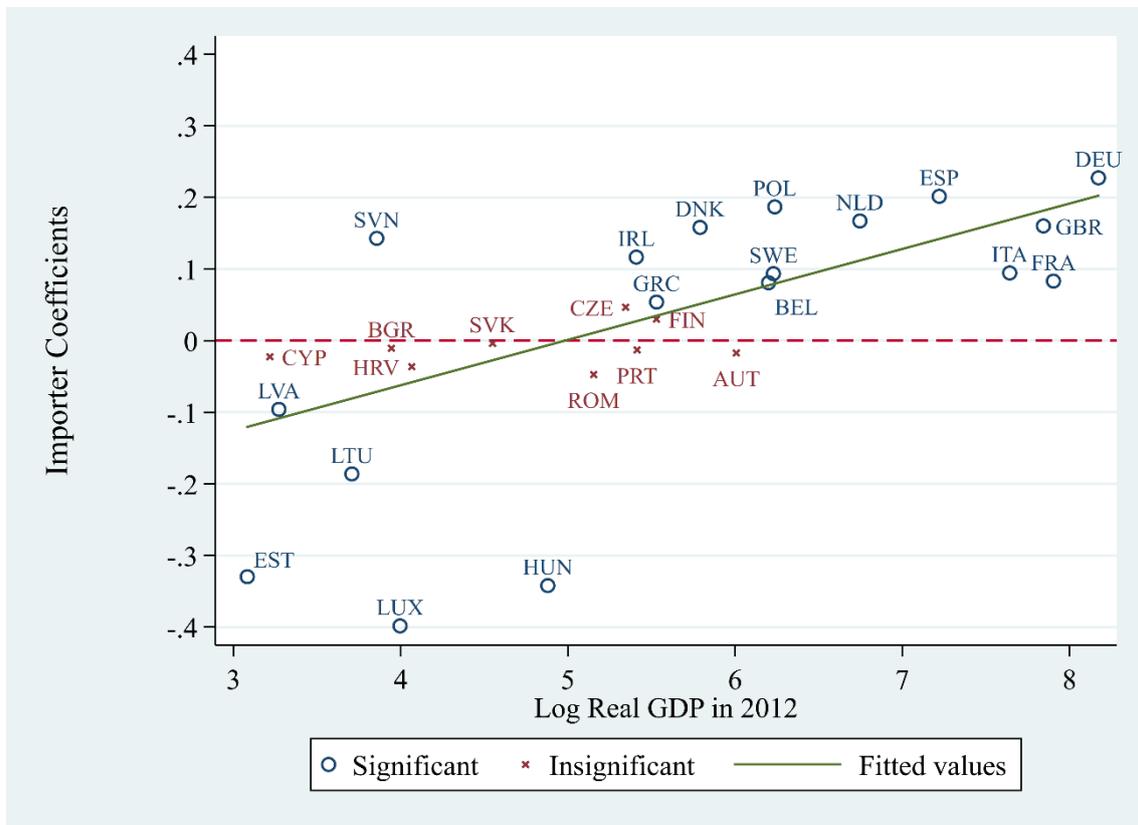
Notes: Importer Coefficients indicate the estimated coefficients of the interaction terms for individual EU importers in Appendix Table 2; Significant and Insignificant indicate that the corresponding coefficients are significant and insignificant at the 10% significance level, respectively; Fitted values line represents the predicted values from a linear regression of the importer coefficients on the log real GDP in 2012, using the inverse of the standard deviation of each coefficient estimate as weight.

Figure 3. Fabric Imports in Myanmar
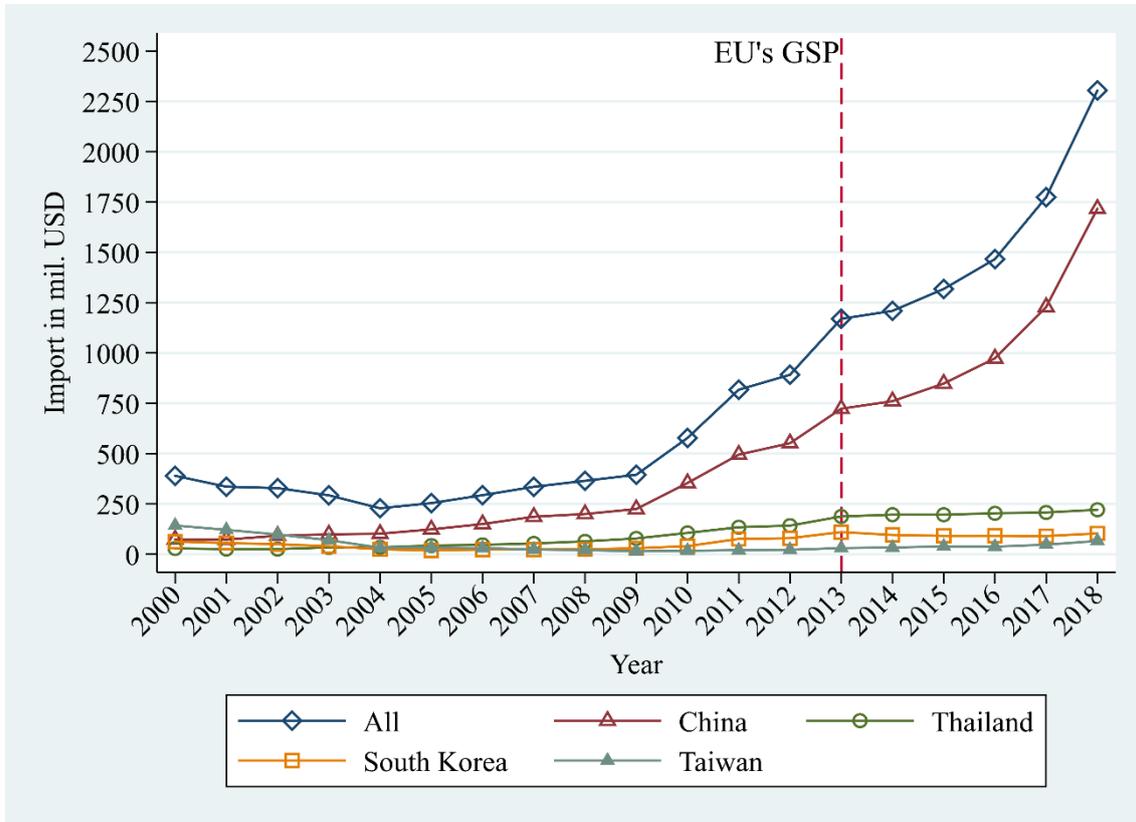
Notes: Data on imports in Myanmar are taken from trade statistics reported by partner countries in the UN COMTRADE database; fabric indicates the commodities in HS codes 5208-12, 5309-11, 5407-08, 5512-16, 56, 57, 58, 59, and 60.

Source: UN COMTRADE database.

Table 1. Summary Statistics of the Main Sample

Variable	No. of Obs.	Mean	Std. Dev.	Min	Max
Panel A: Value of exports					
Log export	34,886	10.53	2.794	0	21.8
EU × Average MFN × Post	34,886	1.946	4.344	0	74.9
EU × Min MFN × Post	34,886	1.874	4.282	0	74.9
EU × Max MFN × Post	34,886	2.026	4.509	0	74.9
Panel B: Export dummy					
Export dummy	4,330,080	0.009	0.094	0	1
EU × Average MFN × Post	4,330,080	0.455	2.161	0	74.9
EU × Min MFN × Post	4,330,080	0.397	2.010	0	74.9
EU × Max MFN × Post	4,330,080	0.511	2.434	0	74.9

Table 2. Benchmark Results

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Log export values			Export dummy		
EU × Average MFN × Post	0.11**			0.0018**		
	(0.032)			(0.00062)		
EU × Min MFN × Post		0.12**			0.0021**	
		(0.032)			(0.00070)	
EU × Max MFN × Post			0.081**			0.0013**
			(0.029)			(0.00046)
Importer-year fixed effects	Y	Y	Y	Y	Y	Y
Product-year fixed effects	Y	Y	Y	Y	Y	Y
No. of observations	34,886	34,886	34,886	4,330,080	4,330,080	4,330,080
R-squared	0.53	0.53	0.53	0.17	0.17	0.17

Notes: Parentheses report standard errors corrected for two-way clustering in products and export markets; constant is not reported; **, *, and + denote significance at the 1%, 5%, and 10% level, respectively.

Table 3. Timing Effects of EU's GSP

	(1)	(2)
Dependent variable	Log export value	Export dummy
EU × Average MFN × Year 2013	0.028	0.00034
	(0.059)	(0.00025)
EU × Average MFN × Year 2014	0.082+	0.00070+
	(0.045)	(0.00040)
EU × Average MFN × Year 2015	0.091*	0.00060+
	(0.035)	(0.00033)
EU × Average MFN × Year 2016	0.073+	0.0016**
	(0.037)	(0.00062)
EU × Average MFN × Year 2017	0.12**	0.0032**
	(0.034)	(0.0011)
EU × Average MFN × Year 2018	0.15**	0.0040**
	(0.037)	(0.0012)
Importer-year fixed effects	Y	Y
Product-year fixed effects	Y	Y
No. of observations	34,886	4,330,080
R-squared	0.53	0.17

Notes: Parentheses report standard errors corrected for two-way clustering in products and export markets; constant is not reported; **, *, and + denote significance at the 1%, 5%, and 10% level, respectively.

Table 4. Results for Knitted and Woven Garment Exports

	(1)	(2)	(3)	(4)	(5)	(6)
Product	Knitted Garment			Woven Garment		
Dependent variable	Log value	Log price	Export dummy	Log value	Log price	Export dummy
EU × Post	2.05**	0.029	0.025	0.93**	0.026	0.037
	(0.55)	(0.034)	(0.021)	(0.30)	(0.022)	(0.025)
Log GDP	-5.08	0.51	-0.38**	-9.82**	-0.34	-0.42**
	(4.09)	(0.50)	(0.12)	(2.66)	(0.25)	(0.13)
Log GDP per capita	6.11	-0.37	0.41**	9.40**	0.23	0.48**
	(4.66)	(0.44)	(0.11)	(3.09)	(0.22)	(0.13)
Importer fixed effects	Y	Y	Y	Y	Y	Y
Product-year fixed effects	Y	Y	Y	Y	Y	Y
No. of observations	4,748	4,266	138,112	10,339	8,756	144,752
R-squared	0.63	0.76	0.27	0.58	0.80	0.34

Notes: Parentheses report standard errors corrected for two-way clustering in products and export markets; constant is not reported; **, *, and + denote significance at the 1%, 5%, and 10% level, respectively.

Table 5. Number of Garment Factories in Myanmar

Year	Number	Year	Number
1994	24	2007	175
1999	291	2008	179
2000	280	2009	174
2001	238	2010	179
2002	226	2011	189
2003	211	2012	205
2004	151	2013	300
2005	151	2014	348
2006	162		

Note: Garment factories include state-owned enterprises, local private firms, and foreign owned firms.

Source: Myanmar Textile and Garment Directory 2013-2014 and 2015-2016.

Table 6. Results for Trade Redirection

	(1)	(2)	(3)	(4)
Product	Knit	Woven	Knit	Woven
Dependent	Log exports to non-EU markets		Log imports into Myanmar	
Post	1.50**	0.043	0.88**	0.80*
	(0.42)	(0.34)	(0.29)	(0.35)
Trend	0.059	0.15*	0.042	0.035
	(0.066)	(0.060)	(0.079)	(0.059)
Control variables	Y	Y	Y	Y
No. of observations	881	970	277	296
No. of countries	78	82	26	30
R-squared	0.67	0.76	0.86	0.82

Notes: Knit and Woven indicate products in HS chapters 61 and 62, respectively; Control variables include log GDP, log GDP per capita, and country fixed effects; the sample excludes EU and U.S. markets; parentheses report standard errors corrected for clustering in countries; constant is not reported; **, *, and + denote significance at the 1%, 5%, and 10% level, respectively.

Appendix

Appendix Table 1. List of Sample Economies

Afghanistan	Czechia	Lao People's Dem. Rep.	Samoa
Algeria	Côte d'Ivoire	Latvia	Saudi Arabia
Andorra	Dem. People's Rep. of Korea	Lebanon	Senegal
Anguilla	Dem. Rep. of the Congo	Liberia	Serbia
Antigua and Barbuda	Denmark	Lithuania	Seychelles
Argentina	Djibouti	Luxembourg	Sierra Leone
Aruba	Dominica	Madagascar	Singapore
Australia	Dominican Rep.	Malaysia	Slovakia
Austria	Ecuador	Maldives	Slovenia
Azerbaijan	Egypt	Mauritius	Solomon Isds
Bahrain	Eritrea	Mexico	Somalia
Bangladesh	Estonia	Mongolia	South Africa
Belarus	Eswatini	Montenegro	Spain
Belgium	Fiji	Morocco	Sri Lanka
Belize	Finland	Mozambique	Sudan
Bermuda	France	Myanmar	Suriname
Bolivia	Gambia	Namibia	Swaziland
Bosnia Herzegovina	Georgia	Nepal	Sweden
Botswana	Germany	Netherlands	Switzerland
Br. Indian Ocean Terr.	Ghana	New Caledonia	Syria
Br. Virgin Isds	Greece	New Zealand	Taiwan
Brazil	Greenland	Nigeria	Thailand
Brunei Darussalam	Guatemala	Norfolk Isds	Tokelau
Bulgaria	Guinea	North Macedonia	Trinidad and Tobago
Cambodia	Honduras	Norway	Tunisia
Cameroon	Hungary	Oman	Turkey
Canada	Iceland	Pakistan	USA
Central African Rep.	India	Palau	Uganda
Chad	Indonesia	Panama	Ukraine
Chile	Iran	Papua New Guinea	United Arab Emirates
China	Iraq	Paraguay	United Kingdom
Hong Kong	Ireland	Peru	United Rep. of Tanzania
Macao	Israel	Philippines	Uruguay
Cocos Isds	Italy	Poland	Vanuatu
Colombia	Jamaica	Portugal	Venezuela
Costa Rica	Japan	Qatar	Viet Nam
Croatia	Jordan	Rep. of Korea	Yemen
Cuba	Kazakhstan	Rep. of Moldova	Zimbabwe
Curaçao	Kenya	Romania	
Cyprus	Kuwait	Russian Federation	

Appendix Table 2. PPML Estimation Results

Dependent variable: value of exports

	(1)	(2)	(3)
EU × Average MFN × Post	0.25**		
	(0.056)		
EU × Min MFN × Post		0.27**	
		(0.055)	
EU × Max MFN × Post			0.18**
			(0.049)
Importer-year fixed effects	Y	Y	Y
Product-year fixed effects	Y	Y	Y
No. of observations	875,570	875,570	875,570
Pseudo R-squared	0.84	0.84	0.84

Notes: Parentheses report standard errors corrected for two-way clustering in products and export markets; constant is not reported; **, *, and + denote significance at the 1%, 5%, and 10% level, respectively.

Appendix Table 3. Heterogeneous Impacts across EU Importers
Dependent variable: log of exports

Importer in interactions	Coefficient	Standard Error
Germany	0.23**	(0.036)
Spain	0.20**	(0.032)
Poland	0.19**	(0.035)
Netherlands	0.17**	(0.030)
Denmark	0.16**	(0.028)
United Kingdom	0.16**	(0.028)
Slovenia	0.14**	(0.042)
Ireland	0.12**	(0.037)
Italy	0.094**	(0.029)
Sweden	0.093**	(0.025)
France	0.083**	(0.030)
Belgium	0.081**	(0.029)
Greece	0.054**	(0.018)
Czechia	0.047	(0.032)
Finland	0.030	(0.031)
Slovakia	-0.0038	(0.039)
Bulgaria	-0.011	(0.013)
Portugal	-0.013	(0.042)
Austria	-0.017	(0.038)
Cyprus	-0.022	(0.035)
Croatia	-0.036	(0.024)
Romania	-0.047	(0.042)
Latvia	-0.096*	(0.038)
Lithuania	-0.19**	(0.051)
Estonia	-0.33**	(0.031)
Hungary	-0.34**	(0.049)
Luxembourg	-0.40**	(0.11)
Importer-year fixed effects	Y	
Product-year fixed effects	Y	
No. of observations	34,886	
R-squared	0.53	

Notes: Malta is dropped from the sample in column (1) for excluding singleton observations; parentheses report standard errors corrected for two-way clustering in products and export markets; constant is not reported; **, *, and + denote significance at the 1%, 5%, and 10% level, respectively.