WP/23/01

SAWTEE WORKING PAPER SERIES

The 66/77 products inside out:

The long and short of the United States' Nepal Trade Preference Programme

Paras Kharel

Working Paper/23/01

December 2023

SOUTH ASIA WATCH ON TRADE, ECONOMICS AND ENVIRONMENT

The study for this paper was financially supported by The Asia Foundation. The findings and any views/opinions expressed in this publication are the views of the author(s) and do not necessarily reflect those of The Asia Foundation.

Comments on Working Papers are welcome and may be sent to sawtee@sawtee.org or SAWTEE, P.O. Box: 19366, Baluwatar, Kathmandu, Nepal.

Suggested citation:

Kharel, Paras. 2023. The 66/77 products inside out: The long and short of the United States' Nepal Trade Preference Programme. SAWTEE Working Paper Series 23/01. Kathmandu: SAWTEE.

The 66/77 products inside out:

The long and short of the United States' Nepal Trade Preference Programme

Abstract

This paper contributes to the limited literature on the effects of unilateral trade preferences on exports by assessing the effect of a unilateral duty-free market access scheme offered by the United States to Nepal, a landlocked least developed country, for a 10-year period. Launched in 2016 to support Nepal in the wake of the devastating earthquake of the previous year and having obtained a waiver from a non-discrimination requirement at the World Trade Organization, the Nepal Trade Preference Programme (NTPP) provides duty-free access on 66 products (later converted into 77 products after a change in the tariff classification system) from Nepal. We find that there are overlaps in the product coverage of the NTPP and the Generalized System of Preferences (GSP), the latter applicable to a broader group of developing countries. In 2021, some 21 percent of Nepal's exports to the US (in value terms) were potentially eligible for GSP only, 5 percent for NTPP only and 3 percent for both. Preference utilization was lower among NTPP products than GSP products. Employing difference-in-differences and triple-difference estimations on detailed product-level data, we do not find conclusive evidence that the introduction of the NTPP led to an increase in Nepal's exports of the products the scheme granted duty-free market access to.

Keywords: Tariff, trade preferences, GSP, triple-difference estimation, exports

JEL classification: F13, F14, F15, O19

---

*Executive Director, South Asia Watch on Trade, Economics and Environment (SAWTEE). Email: paras.kharel@sawtee.org; paraskharelpk@gmail.com.

The author thanks Manab Prakash for his able assistance in computing product-proximity values and comments, Ranjan Sapkota for his assistance in data compilation and cleaning, Rishi Raj Sharma for his insightful comments, and participants of a roundtable discussion on Nepal-US trade organized by SAWTEE on 20 July 2023 in Kathmandu for their comments. The study was financially supported by The Asia Foundation.

Contents

List of Figures

List of Tables

Executive Summary

Nepal's merchandise exports to the US in 2021, at US$108.3 million, were lower than what they were at their peak in the late 1990s. This is not a result of the adverse shocks in the wake of the Covid-19 pandemic, but driven by a plunge in exports of clothing since the early 2000s in the wake of the phase-out of global quotas in the textiles and clothing sector. Imports, on the other hand, have risen steadily, and the trade balance, consistently positive during the export boom phase, has worsened over the past two decades to turn negative in the four of the five years during 2015-2019. The importance of the US market for Nepali exports has declined, with the US share in Nepali exports plunging from 27 percent in 1999-2000 to 11 percent in 2018-2019. US' share of Nepal's imports has also declined, from 4 percent in 1994-1995 to 1 percent in 2018-2019.

The United States' Nepal Trade Preference Programme (NTPP) entered into force on 30 December 2016, providing duty-free market access to a set of 66 products (at the HS 8-digit level, or tariff line level) exported from Nepal until 31 December 2025. This preferential market access was aimed at promoting Nepal's trade and economic development in the wake of the devastating earthquake of April 2015 and its aftershocks. Due to changes in the tariff classification system beginning in 2017, the number of products increased to 77. While the Trade Facilitation and Trade Enforcement Act of 2015 (Sec. 915) that was the legal basis for the scheme included products that were otherwise ineligible for duty-free access under the Generalized System of Preferences (GSP) programme, duty-free treatment for 31 of the 77 products was extended to other developing countries under the GSP programme before the NTPP came into force at the end of 2016.

The 77 NTPP products (also referred to as NP products in this paper) encompass a limited range of product categories, spanning six HS chapters: 40 tariff lines in Chapter 42 (Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut)); 13 tariff lines in Chapter 57 (Carpets and other textile floor coverings); 2 tariff lines in Chapter 61 (Apparel and clothing accessories; knitted or crocheted); 7 tariff lines in Chapter 62 (Apparel and clothing accessories; not knitted or crocheted); 2 tariff lines in Chapter 63 (Textiles, made up articles; sets; worn clothing and worn textile articles; rags); and 13 tariff lines in Chapter 65 (Headgear and parts thereof).

While total goods exports to the US have been on an upward trend since 2012, exports of NP products have been on a downward trend. Nepal's aggregate exports of products under NTPP to the US averaged over 2017-2021 were 26.5 percent lower than during 2012-2015, compared to a positive growth of 18

percent recorded by total exports of other products. Exports of NP products in 2021 were U$8.47 million and had a share of 7.8 percent in total exports to the US (compared to 14 percent in 2012).

The NP products are close to Nepal's current export capabilities. They represented an import market of US$13 billion in the US in 2021.

During 2017-2021, Nepal's exported 1,082 products to the US. Of these, a total of 297 products were potentially eligible for duty-free access under GSP (both generic and LDC-specific) and 75 were potentially eligible for duty-free access under NTPP. A total of 75 of the 77 NP products were exported at least once during 2017-2021. Thirty of them were also on the GSP list. The US' GSP programme expired on 1 January 2021, but imports into the US from Nepal continue to also claim GSP, on the assumption that it will be retroactively reinstated as in the previous instances of expiry.

The eligibility for preferential schemes—a product is considered potentially eligible if it is on the list of preferential schemes—has increased, from 18 percent in 2017 to about 29 percent in 2021. In the final year, 21 percent of exports were eligible for GSP-only preferences, 5 percent for NP-only preferences and about 3 percent for both preferences. The rest were subject to MFN tariffs. Nepal's GSP-eligible exports to the US were almost entirely of products on which preferential access is available to a wider set of developing countries rather than to just least developed countries. About 35 percent of exports of NP products were of products that were also on the GSP list.

The percentage of exports claiming GSP or NP preferences increased from 12 percent in 2017 to 20 percent in 2021. The share of exports claiming GSP increased from 9.4 percent to 16.6 percent, while the share of exports claiming NP preferences increased from 2.6 percent to 3.6 percent. The share of exports that were preference-eligible but for which no preferences were claimed increased, from 6 percent to 8.4 percent.

The top 10 of the 75 NP products that were exported at least once during 2017-2021 accounted for 78 percent of exports generated by NP products. Six of them were also on the GSP list. The mean and median exports of these 75 products were, respectively, about U$87,000 and US$14,000.

Preference utilization (defined as exports entering the US claiming preferences as a percentage of total exports), in the aggregate, is much higher for GSP-eligible products than for NP-eligible products, averaging 67 percent and 47 percent, respectively, during 2017-2021.

The aggregate utilization rate for exports of NP products during 2017-2021 was 59 percent when considering utilization of both available preferences (NP and GSP), as some NP products are also on the GSP list.

In the aggregate, averaging over 2017-2021, preference utilization is higher among products that are common to NP and GSP lists (85.7 percent) than among NP-only products (46.2 percent) and even GSP-only products (71.6 percent). Preference utilization among products common to NP and GSP lists has been falling. Preference utilization among NP-only products has seen an increase over its 2017 level but declined sharply in 2021. Among products common to both lists, the share of exports that claimed duty-free preferential access attributable to GSP preferences witnessed a sharp decline, from 61 percent to 11 percent. A sharp fall in the share of NP exports claiming GSP in 2021 might be due to the suspension of the GSP programme, prompting traders to claim NP instead of GSP when a product is on both lists.

Computing preference utilization rate (combining available NP and GSP preferences) at the product level and taking their average, the utilization rate has a mean of 59 percent and a median of 61 percent for NP products. The mean and median utilization rates for products also covered by GSP were 71 percent and 74 percent, respectively, much higher than 51 and 46 percent for products not covered by GSP.

The mean and median utilization rates fall to 43 percent and 38.5 percent, respectively, when considering just utilization of NP preferences. Among the top 10 export products on the NP list, the total utilization rate ranged from 28 percent (for a type of carpet, ranked fourth in NP exports and not covered by GSP) to 97 percent (sports bags, ranked second in NP exports and covered by GSP).

Nepali products exported to the US that were not eligible for any preferential scheme faced a median tariff of 5.6 percent and a maximum tariff of 55 percent in 2020. Readymade garments and footwear are among products of export interest to Nepal that face high tariffs and do not get any tariff preferences. NP products faced a median MFN tariff of 7.5 percent, implying that they enjoyed a median potential preferential margin of 7.5 percentage points. NP products not on the GSP list faced a median MFN tariff of 7 percent while NP products also on the GSP list faced a slightly higher median MFN tariff of 8.8 percent. Products on the GSP list but not on the NP list faced a lower median MFN tariff of 4.2 percent. Therefore, on average, the preference margin under NP is higher than that under GSP. The higher preference margin for products common to NP and GSP lists is a possible explanation for the higher preference utilization among these products.

About two thirds of total exports to the US during 2018-2021, on average, faced zero MFN tariffs. About 84 percent of exports ineligible for preferences faced zero MFN tariffs.

From difference-in-differences and triple-difference estimations, we do not find conclusive evidence that the introduction of the NTPP led to an increase in Nepal's exports of the products it granted duty-free market access to. Leaving aside causal interpretation, a takeaway is that preferences granted under the NTPP were not able to increase exports of NP products relative to exports of non-NP products net of other effects on the two sets of products.

In a roundtable discussion on Nepal-US trade relations, focusing on the NTPP, organized on 20 July 2023 in Kathmandu, private sector representatives pointed out that information on the opportunities available under the NTPP had not been effectively disseminated, the exclusion of key products of export interest to Nepal from the scheme had reduced the value of the scheme to the nation's overall export sector, and the capacity building components under the NTPP and the Nepal-US Trade and Investment Framework Agreement had not been operationalized in a manner that responded to the export sector's and exporting firms' needs.

Implications and way forward

- There is considerable room to increase the utilization of existing preferences (whether GSP or NP, but especially products that are only on the NP list).
- The reasons behind the relatively low utilization rates for products only on the NP list should be investigated and addressed, as should be the decline in utilization rates for products common to the NP list and the GSP list.
- The reasons behind exports of NP products growing much slower than exports of other products need to be ascertained.
- Scaling up exports of preference-granted products by addressing productive capacity and supply-side constraints is also needed, as even a cent percent utilization of the available preferences is unlikely to translate into a substantial increase in the exports of these products without addressing those constraints.
- Reinstatement of GSP is important for Nepal as GSP accounts for 80 percent of Nepal's preference-claimed exports.
- Restoration of GSP will also preserve preferences on over a third of exports of NP products even if the NTPP is not extended after expiration.
- NTPP was introduced through an Act and had received WTO waiver. A strong justification will be need for extending the Programme, and the process will be time consuming.

- Extending the NTPP beyond 2025 is likely necessary to build the capacity to export. Effectively operationalizing the capacity building and technical assistance window under the Nepal-US Trade and Investment Framework Agreement would be crucial. However, lessons must be drawn from the implementation of the window so far.
- Extending the NTPP beyond 2025 would provide an opportunity to include other items of export interest to Nepal. Any list of products to be proposed by Nepal should be backed up by thorough research and extensive stakeholder consultations.
- About 84 percent of the value of Nepal's exports to the US that are ineligible for preferences in the US facing zero MFN tariffs implies an opportunity to exploit the export potential in these products further.

1. Introduction

Developed countries have been offering lower tariffs on a non-reciprocal basis to products originating in developing countries for decades with the aim of helping the latter increase and diversify their exports and set themselves on the path of industrialization. There are now 16 economies, including the United States (US) and the European Union (EU), providing tariff preferences to developing countries under the Generalized System of Preferences (GSP), instituted in 1971 (UNCTAD 2023). Within the GSP there is a special trade preference scheme for a subset of developing countries, the least developed countries (LDCs), which face especially severe productive capacity and supply-side constraints. The US also provides region-focused unilateral tariff preferences on products that go beyond GSP, such as to sub-Sahara African countries under the African Growth and Opportunity Act (AGOA), to Caribbean countries under the Caribbean Basin Initiative, and to Nepal under the Nepal Trade Preference Programme. Following the decision at the 2005 Hong Kong Ministerial of the World Trade Organization in which members agreed that developed countries and developing countries in a position to do so would provide duty-free and quota-free market access to products originating in LDCs, improvements were made to various GSP schemes and/or new schemes for LDCs were introduced.[1] Since the 2000s, a few developing countries, including China and India, have started to offer non-reciprocal tariff preferences to LDCs.

What is the impact of these trade preferences on the exports of the preference-receiving countries? The literature on the aggregate trade effect of GSP and other non-reciprocal preferences is not conclusive.[2] There is a paucity of evidence using detailed product-level data and thereby exploiting "within variation" despite the proliferation of preferential schemes. The results from this small body of literature are more consistent, showing that non-reciprocal preferences can have a positive impact on developing countries' exports (Ornelas 2016). Using a triple difference estimator to mitigate endogeneity concerns, Frazer and Van Biesebroeck (2010) study the effects of the AGOA on exports to the US, and find strongly positive effects, with the highest effects observed in apparel. Biesebroeck and Zaurino (2019) extend the results of Frazer and Van Biesebroeck (2010) to a more recent period and also study the effects of the EU's trade preferences, and find strongly positive export effects, which are especially large for textile, apparel and leather products. Thelle et al. (2015) study the effect of the EU's preferential schemes, distinguishing between the Everything-but-Arms (EBA) scheme meant for LDCs and the regular GSP or GSP+ schemes. They find that while the preferences boost exports of covered products by almost 5 percent on average,

[1] https://unctad.org/topic/trade-agreements/generalized-system-of-preferences
[2] See Ornelas (2016) for a survey of the literature.

the impact is almost twice as large for LDCs. Ito and Aoyagi (2018) find exports from LDCs to Japan increased due to duty-free and quota-free market access.

The current paper contributes to the limited literature on the effects of unilateral trade preferences on exports by assessing the effect of a unilateral duty-free market access scheme offered by the US to Nepal, a landlocked LDC, for a 10-year period. Launched in 2016 to support Nepal in the wake of the devastating earthquake of the previous year and having obtained a waiver from a non-discrimination requirement at the WTO, the Nepal Trade Preference Programme (NTPP) provides duty-free access on 66 products (later converted into 77 products after a change in the tariff classification system) from Nepal.

Nepali products get duty-free access to the US under GSP, too, and there is an overlap between GSP products and NTPP products. Within this interesting setting, this paper attempts to tease out the effect of the NTPP on Nepal's exports to the US. We call NTPP-listed products NP (Nepal Preference) or NTP (Nepal Trade Preference) products. To our knowledge, this is one of only two studies that quantitatively assess the effect of the NTPP on Nepal's exports to the US. Dahal (2021) is perhaps the first study to use the difference-in-differences (DID) estimation approach to estimate the trade effect of the NTPP. The current paper first describes various facets of exports of NP products vis-à-vis exports of other products in greater detail. It then employs a DID framework, but uses nominal exports (with year fixed effects controlling for general inflation in the absence of industry-specific price deflators) rather than quantity exported as the outcome variable; tests the parallel trend assumption econometrically; and performs estimations on two different product-level datasets, at different levels of product classification (8-digit level and 6-digit level). It also performs variants of a triple-difference estimation technique as in Biesebroeck and Zaurino (2010, 2019), using a rich set of fixed effects, to control for (separately) demand- and supply-side shocks that may hit treated and comparison products differentially.

The paper finds that about 29 percent of Nepal's exports to the US (in 2021) are potentially eligible for zero-duty access either under the GSP or NTPP. Some 21 percent of exports are potentially eligible for GSP only, 5 percent for NP only and 3 percent for both due to overlaps between the two schemes. This highlights the need for reinstating GSP, which expired in 2020, although imports from Nepal in relevant categories into the US continue to claim GSP on the assumption that the programme will be retroactively reinstated as in the past.

Preference utilization, averaged over 2017-2021, is higher for GSP products (67 percent) than for NP products (47 percent). Preference utilization among products common to both schemes is highest (86 percent). On average, the preference margin under NP is higher than that under GSP. In 2020, NP products

not on the GSP list faced a median MFN tariff of 7 percent while NP products also on the GSP list faced a slightly higher median MFN tariff of 8.8 percent. Products on the GSP list but not on the NP list faced a lower median MFN tariff of 4.2 percent. As for products exported to the US that are not on the list of any preference scheme, they faced a median tariff of 5.6 percent and a maximum tariff of 55 percent. Readymade garments and footwear are among products of key export interest to Nepal that attract high tariffs and do not get any preferences. However, 84 percent of exports from Nepal not eligible for any trade preferences are subject to zero MFN tariff, underscoring that for the bulk of exports to the US, tariff is not a barrier.

Nepal's merchandise exports to the US in 2021, at US$108.3 million, were lower than what they were at their peak in the late 1990s. While exports have been on an upward trend since 2012, exports of NP products have been on a downward trend. Nepal's aggregate exports of products under NTPP to the US averaged over 2017-2021 were 26.5 percent lower than during 2012-2015, compared to a positive growth of 18 percent recorded by total exports of other products. Exports of NP products in 2021 were U$8.47 million and had a share of 7.8 percent in total exports to the US (compared to 14 percent in 2012). They represented an import market of US$13 billion in the US in 2021. From difference-in-differences and triple-difference estimations, we do not find conclusive evidence that the introduction of the NTPP led to an increase in Nepal's exports of the products it granted duty-free market access to. Leaving aside causal interpretation, a takeaway is that preferences granted under the NTPP were not able to increase exports of NP products relative to exports of non-NP products net of other effects on the two sets of products.

In a roundtable discussion, the Nepali private sector pointed out that the opportunities available under the NTPP had not been effectively disseminated, the exclusion of key products of export interest to Nepal from the scheme had reduced the value of the scheme to the nation's overall export sector, and the capacity building components under the NTPP and the Nepal-US Trade and Investment Framework Agreement had not been operationalized in a manner that responded to the export sector's and exporting firms' needs.

The rest of the paper is organized as follows. Section 2 presents a brief overview of the NTPP, including its history. Section 3 provides an overview of Nepal-US trade over time. Section 4 summarizes in broad terms the coverage of the NTPP, also highlighting the overlaps between it and the GSP. Section 5 analyses eligibility for and utilization of preferences under NTPP in comparison with those under GSP. Section 6 discusses preference margins under NTPP and GSP. Section 7 presents trends in exports of NP products. Section 8 presents difference-in-differences estimation analysis. Section 9 analyses the proximity of the

products under NTPP to Nepal's current export capabilities. Section 10 concludes with a summary of findings and implications.

2. Overview of Nepal Trade Preference Programme

The United States (US) is Nepal's second-largest export market. The US' Nepal Trade Preference Programme (NTPP) entered into force on 30 December 2016, providing duty-free market access to a set of products exported from Nepal until 31 December 2025. This preferential market access was aimed at promoting Nepal's trade and economic development in the wake of the devastating earthquake of April 2015 and its aftershocks. The legal basis for the NTPP is the Trade Facilitation and Trade Enforcement Act of 2015 (Sec. 915). The NTPP came into force following a waiver decision taken by the World Trade Organization's General Council on 7 December 2016 and the US Proclamation 9555. [3]

There were 66 products at the HS 8-digit national tariff line level originally listed in the Act, but due to changes in the tariff classification system beginning in 2017, the number of products increased to 77.[4] Although the 66 tariff lines, when the Act came into force on 24 February 2016, were products otherwise ineligible for duty-free treatment under the Generalized System of Preferences (GSP) programme[5], the US government extended duty-free access to other developing countries on about 40 percent of these tariff lines: 31 of the 77 tariff lines became GSP-eligible in July 2016.[6] The legal authorization of duty-free treatment under the GSP programme of the US expired on 1 January 2021.[7]

A lesser known and discussed[8] aspect of the Act is its provision for a trade facilitation and capacity building programme for Nepal, to be established within 180 days of its enactment. The programme aimed:

- to enhance the central export promotion agency of Nepal to support successful exporters and to build awareness among potential exporters in Nepal about opportunities abroad and ways to manage trade documentation and regulations in the US and other countries;
- to provide export finance training for financial institutions in Nepal and the Government of Nepal;

[3] See United States Trade Preference for Nepal, Report by the Secretariat, Committee on Trade and Development Dedicated Session on Preferential Trade Arrangements, World Trade Organization, WT/COMTD/PTA/3/1, 13 November 2017.
[4] *ibid*.
[5] https://ustr.gov/sites/default/files/assets/reports/2022/ntpp/2022-nepal-tpp-report-to-congress-final.pdf
[6] *ibid*.
[7] See https://crsreports.congress.gov/product/pdf/IF/IF11232 ; https://ustr.gov/sites/default/files/gsp/GSPexpiration2021.pdf
[8] Based on consultations with the private sector.

- to assist the Government of Nepal in maintaining publication on the Internet of all trade regulations, forms for exporters and importers, tax and tariff rates, and other documentation relating to exporting goods and developing a robust public-private dialogue, through its National Trade Facilitation Committee, for Nepal to identify timelines for implementation of key reforms and solutions, as provided for under the Agreement on Trade Facilitation of the World Trade Organization; and
- to increase access to guides for importers and exporters, through publication of such guides on the Internet, including rules and documentation for US tariff preference programmes.

Nepal and the US signed the Trade and Investment Framework Agreement (TIFA) in 2011. TIFA aims to promote investment and expand and diversity trade in goods and services between the two countries.[9] A TIFA Council, chaired by Nepal's Ministry of Industry, Commerce and Supplies and the Office of the United States Trade Representative, was established. Among its tasks are to "consider capacity building and technical assistance on matters of interest to the Parties, including with respect to promoting trade in services", "consider trade facilitation measures for the enhancement of bilateral trade", and "identify and work to remove impediments to trade and investment between the Parties" (Article 3). The Council was to attempt to meet at least once a year (Article 2), but until 2023 only five meetings took place, apart from the maiden meeting when TIFA was inked—in 2016, 2017, 2018, 2020 and 2023.[10]

Technical assistance and capacity building support for Nepal have featured prominently in the Council meetings. Nepal has requested technical assistance and support for capacity building to be able to maximize the utilization of US trade preferences. It has also requested the US to expand the list of products eligible to receive tariff-free treatment. In the 2023 Council meeting, Nepal emphasized its need for additional support for productivity enhancement and capacity building to ensure a sustainable and

[9] TIFA is available at https://ustr.gov/trade-agreements/trade-investment-framework-agreements (accessed 23 June 2023).

[10] The joint statements of the meetings are available at (accessed 23 June 2023): https://ustr.gov/about-us/policy-offices/press-office/press-releases/2016/june/joint-statement-2nd-joint-us-nepal ; https://ustr.gov/about-us/policy-offices/press-office/press-releases/2017/april/us-nepal-joint-statement-3rd-trade ; https://ustr.gov/about-us/policy-offices/press-office/press-releases/2018/november/joint-statement-4th-us-nepal-trade ; https://np.usembassy.gov/joint-statement-on-the-5th-u-s-nepal-trade-and-investment-framework-agreement-council-meeting/ ; https://np.usembassy.gov/joint-statement-on-the-6th-nepal-u-s-trade-and-investment-framework-agreement-council-meeting/

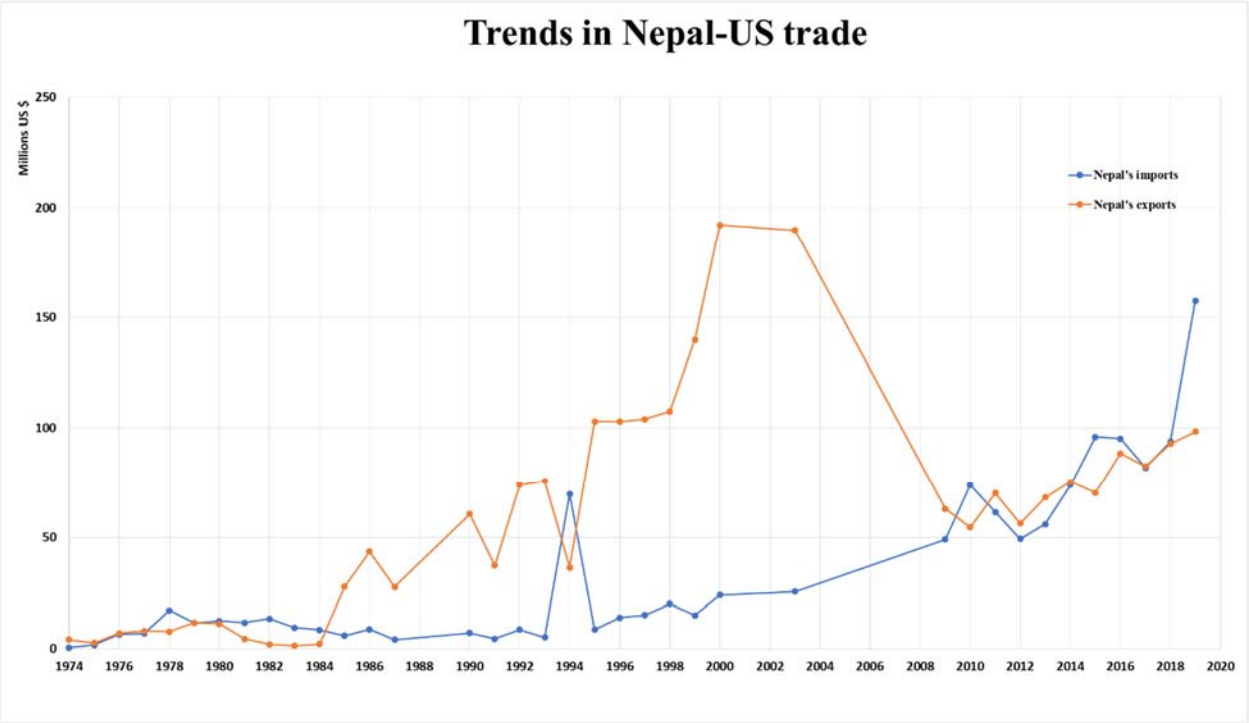
smooth graduation from the least developed country (LDC) status, which it is set to exit in 2026. Nepal also requested duty-free and quota-free market access beyond 2026 to sustain the graduation.

3. Overview of Nepal-US trade

Nepal's exports to the US rose significantly beginning in the mid-1980s and reached a peak in 2000 (Figure 1). They tumbled thereafter as an intensification of an armed conflict in Nepal vitiated the business climate and the phase-out of global quotas in the textiles and clothing sector exposed Nepal's readymade garment (RMG) industry to the full force of global competitive pressures. Exports to the US in 2019, even in nominal terms, were still less than what they were in the mid-1990s.

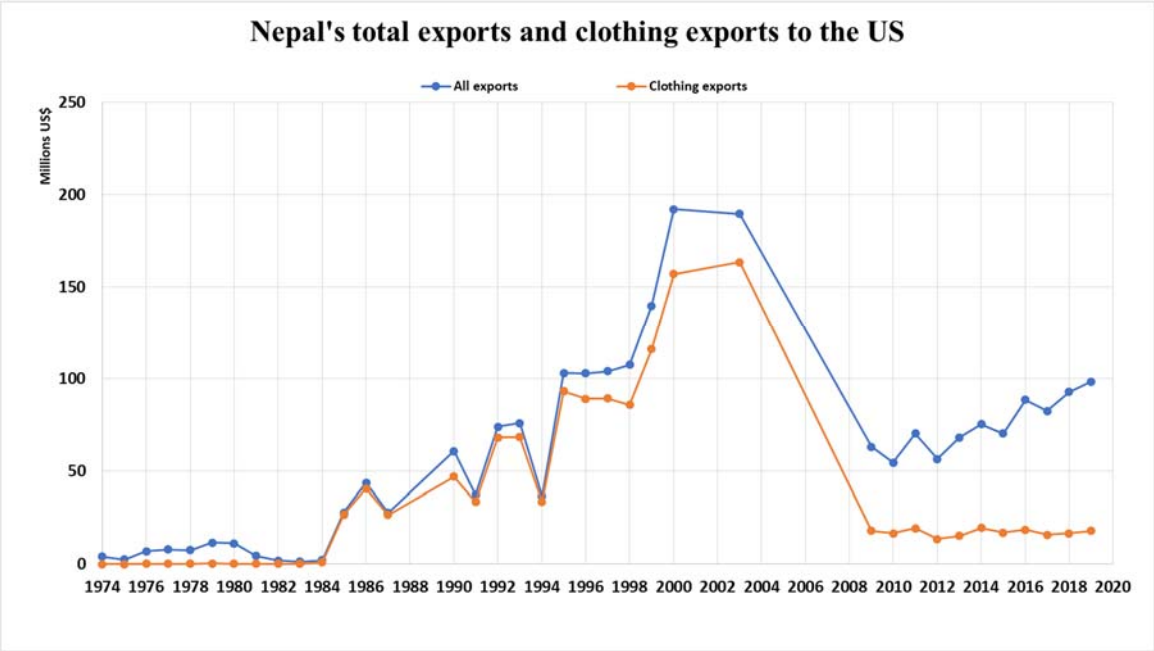
The rise and fall of Nepal's total exports to the US mirrors the rise and fall of its clothing exports to the US (Figure 2). Since 2009, clothing exports have remained flat while total exports have been increasing, which implies that other products' exports have increased. The share of clothing, once the top item in Nepal's US-bound export basket, fell from an average of 82 percent in 1999-2000 to 18 percent in 2018-2019. Imports, on the other hand, have risen steadily, and the trade balance, consistently positive during the export boom phase, has worsened over the past two decades to turn negative in the four of the five years during 2015-2019 (Figure 1). The importance of the US market for Nepali exports has declined, with the US share in Nepali exports plunging from 27 percent in 1999-2000 to 11 percent in 2018-2019 (Figure 3). Import share has also declined, from 4 percent in 1994-1995 to 1 percent in 2018-2019.

Figure 1: Trends in Nepal-US goods trade



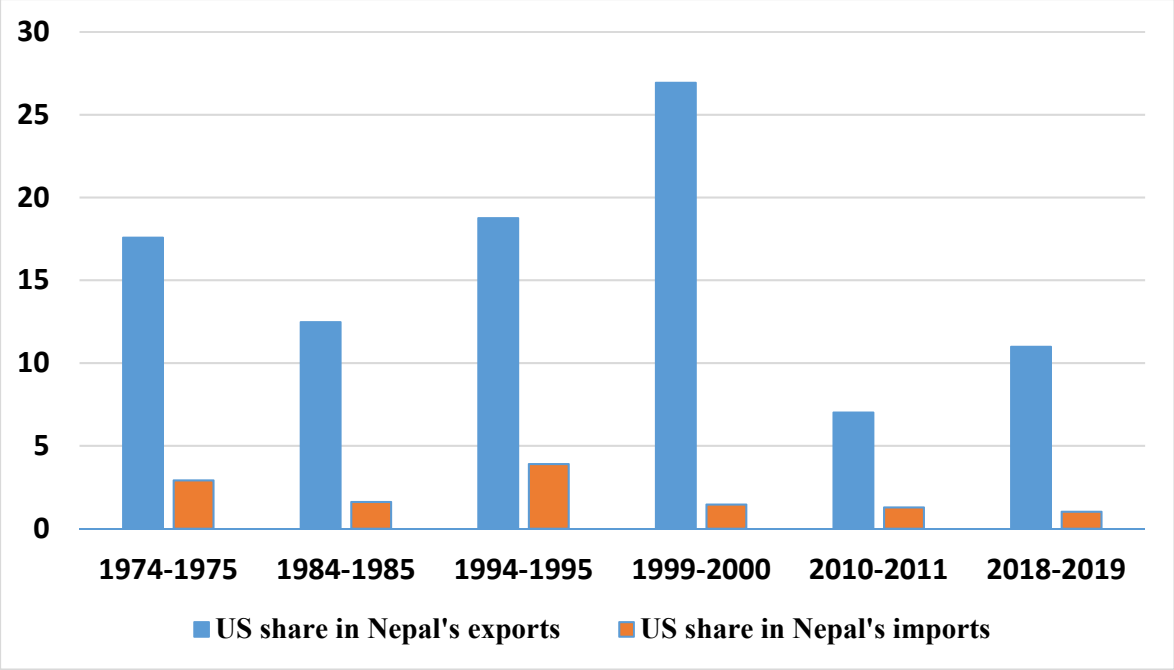
Source: Author's calculation from data from UNCOMTRADE accessed through WITS

Figure 2: Nepal's total goods exports and clothing exports to the US



Source: Author's calculation from data from UNCOMTRADE accessed through WITS

Figure 3: US share in Nepal's goods exports and imports



Note: 1974-1975 denotes average of the years 1974 and 1975, and so on.

Source: Author's calculation from data from UNCOMTRADE accessed through WITS

4. Coverage of Nepal Trade Preference Programme

During 2017-2021, Nepal's exported 1,082 products to the US. Of these, a total of 297 products were potentially eligible for duty-free access under GSP (both generic and LDC-specific) and 75 were potentially eligible for duty-free access under NP (Table 1). Of the 75 products eligible for NP, 30 were also eligible for duty-free access under GSP (generic GSP only; there was no overlap with LDC-specific preferences).

Table 1: Products on GSP list and NP list

	NP		
GSP	No	Yes	Total
No	740	45	785
Yes	267	30	297
Total	1,007	75	1,082

Source: Author's calculation based on data from the United States International Trade Commission

The 77 NP products encompass a limited range of product categories—six HS chapters (Table 2). During 2017-2021, 75 of these products were exported at least once to the US. NP products are very important for total exports to the US in Chapters 42 and 65, with most of the exports in these chapters representing those products in the NP list. However, these two chapters generate collectively less than 4 percent of the total exports to the US. Within total exports of NP products, Chapters 42, 57, 62 and 65 generate most of the value, each generating at least one fifth of exports.

Table 2: NP products by HS Chapter: number of products and export value/share

HS Chapter	Description	No. of all products exported	No. of NP products	No. of NP products exported	Exports (2017-2021), US$ mn	Share in total exports	Exports of NP, US$ mn	Share in total exports of NP	Share of NP in total chapter exports

42	Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut)	59	40	38	9.610	2.02	9.24	28.26	96.16
57	Carpets and other textile floor coverings	40	13	13	183.023	38.53	7.42	22.69	4.05
61	Apparel and clothing accessories; knitted or crocheted	141	2	2	19.636	4.13	0.51	1.57	2.61
62	Apparel and clothing accessories; not knitted or crocheted	178	7	7	27.206	5.73	8.93	27.31	32.83
63	Textiles, made up articles; sets; worn clothing and worn textile articles; rags	63	2	2	49.348	10.39	0.17	0.51	0.34
65	Headgear and parts thereof	64	13	13	6.623	1.39	6.44	19.71	97.29

Source: Author's calculation based on data from the United States International Trade Commission

In terms of product categories broader than HS chapters, NP products' exports to the US, in value terms, are concentrated in textiles (70 percent) and clothing (30 percent) categories (Table 3). NP exports of textiles as a share of total exports to the US in that category are just 8 percent as handknotted carpet, a major export item, gets duty-free access through the GSP scheme. In clothing, NP products' share of exports in that category is 20 percent, with major RMG items being subject to MFN positive tariffs.

Table 3: NP products by broad product categories: number of products and export value/share

	Exports (2017-2021), US$ mn	Share in total exports	Exports of NP, US$ mn	Share in total exports of NP	Share of NP in total exports
Textiles	297.521	62.6361	22.99	70.31	7.73
Other agricultural products	58.025	12.2159	0	0	0
Manufactures, nes	57.150	12.0316	0.07	0.21	0.12
Clothing	46.842	9.8615	9.44	28.88	20.16

Cereals and Preparations	4.557	0.9595	0	0	0
Chemicals	2.886	0.6075	0	0	0
Fruits, Vegetables, Plants	2.812	0.5920	0	0	0
Coffee, Tea	1.276	0.2685	0	0	0
Non-electrical Machinery	1.238	0.2606	0	0	0
Electrical Machinery	1.217	0.2562	0	0	0
Leather, footwear, etc.	1.077	0.2266	0.21	0.65	19.88

Source: Author's calculation based on data from the United States International Trade Commission

5. Preference coverage and utilization

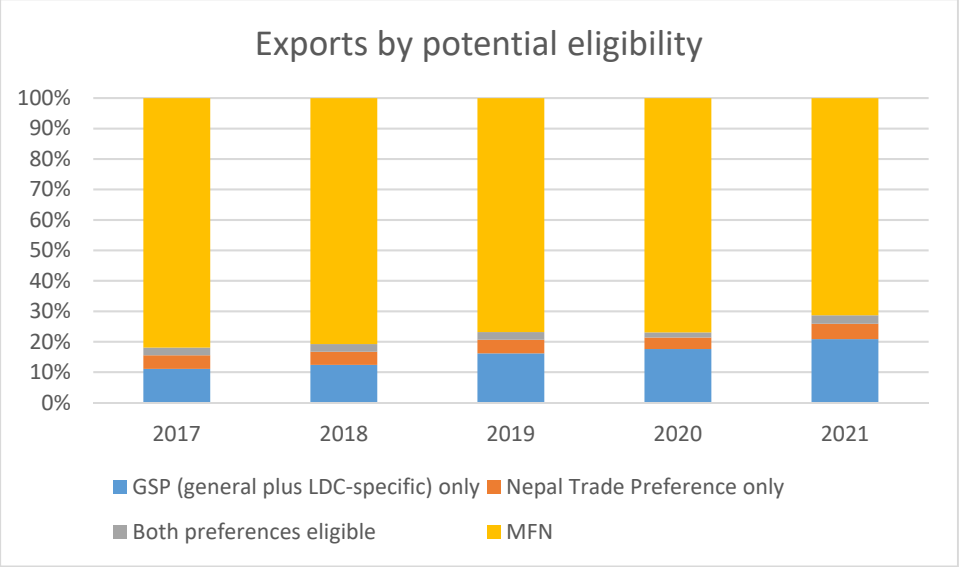
In this section, we analyse the coverage of Nepal's exports to the US by preferential schemes—GSP and the NTPP—and their preference utilization. We also take into account the overlap between the two schemes. United States International Trade Commission (USITC) data classify imports from Nepal into categories of "special import programmes" based on claims, the major ones being GSP (excluding GSP for LDBC[11] only), GSP for LDBC countries only, Nepal Preference, and No programme claimed. The dataset shows positive exports under the GSP schemes for the year 2021, too. The GSP programme expired on 1 January 2021. On the ten occasions GSP authorization expired in the past, once the programme was extended, duty-free treatment was applied retroactively to "GSP-eligible products that were imported during the lapse period, allowing importers to seek refunds of duties paid. However, it is not known whether any future action on GSP will be made retroactive." [12] Imports from Nepal in relevant categories into the US continued to claim GSP on the assumption that the programme will be retroactively reinstated as in the past.[13]

Breaking exports to the US in terms of potential eligibility for market access arrangements, we find that eligibility for preferential schemes—a product is considered potentially eligible if it is on the list of preferential schemes—has increased, from 18 percent in 2017 to 29 percent in 2021 (Figure 4). This was driven by the increase in exports eligible for GSP-only preferences. In 2021, 21 percent of exports were eligible for GSP-only preferences, 5 percent for NP-only preferences and about 3 percent for both preferences. The rest were subject to MFN tariffs. Note that during 2018-2021 exports eligible for LDC-specific preferences were on average just 1 percent of total exports eligible for GSP preferences (LDC-

[11] Least Developed Beneficiary Country.
[12] https://ustr.gov/sites/default/files/gsp/GSPexpiration2021.pdf
[13] https://ustr.gov/sites/default/files/assets/reports/2022/ntpp/2022-nepal-tpp-report-to-congress-final.pdf

specific preferences plus more general preferences available to developing countries). About 35 percent of exports of NP products were of products that were also on the GSP list.

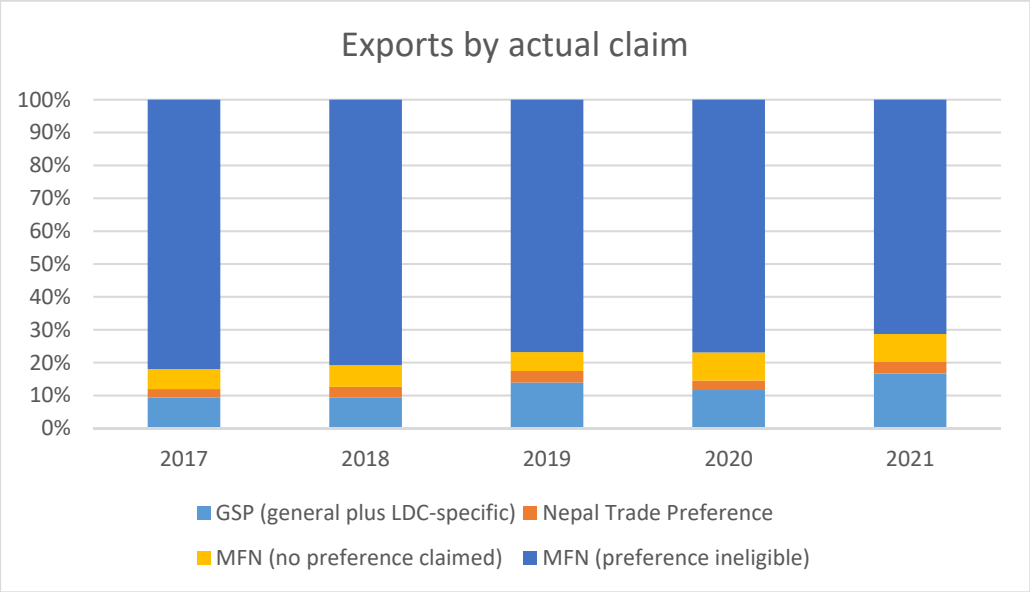
Figure 4: Exports by potential eligibility



Source: Author's calculation based on data from the United States International Trade Commission

The percentage of exports claiming GSP or NP preferences increased from 12 percent in 2017 to 20 percent in 2021 (Figure 5). The share of exports claiming GSP increased from 9.4 percent to 16.6 percent, while the share of exports claiming NP preferences increased from 2.5 percent to 3.6 percent. Exports of products eligible for preferences increased faster than exports of other products, as reflected in the decline in the share of exports that were preference-ineligible (from 82 percent in 2017 to 71 percent in 2021). However, the share of exports that were preference-eligible but for which no preferences were claimed increased, from 6 percent to 8.4 percent.

Figure 5: Exports by claim



Source: Author's calculation based on data from the United States International Trade Commission

Sixty-seven (that is, 90%) of the 75 products that were exported in at least one year during 2017-2021 claimed NP preferences at least once. Of these 67 products, 23 also claimed GSP preferences, while 44 claimed only NP preferences. An additional 5 products claimed only GSP preferences. Out of the 23 products that claimed both NP and GSP preferences, 13 exported more claiming GSP preferences than NP preferences, on average during 2017-2021.[14] Of the 75 products that were exported at least once, 10 had exports that averaged at least US$100,000 during 2017-2021. They accounted for 78 percent of the average exports of NP products from Nepal to the US during the same period (Table 4). Six of these 10 products were also on the GSP list in 2020. The mean and median export values per year of the 75 NP products were US$87,244 and US$13,850, respectively. By comparison, the mean and median export values per year of the entire set of 1,082 products (NP and non-NP) that were exported at least once during 2017-2021 were, respectively, US$87,875 and U$2,349.

[14] This average value of exports claiming GSP is calculated, for each product, by averaging GSP exports over the period 2017-2021. Ditto for average value of exports claiming NP.

Table 4: Top 10 export products in NP list

HS Code	Product description	Share in exports of NP products (Mean for 2017-2021)	MFN tariffs (AVE)	GSP eligible	Mean utilization: NTP	Mean utilization: GSP	Mean utilization: All preferences
62142000	Shawls, scarves, mufflers, mantillas, veils and the like, not knitted or crocheted, of wool or fine animal hair	21.7	6.7	No	30.41	0.00	30.41
42029215	Travel, sports and similar bags with outer surface of cotton, not of pile or tufted construction	13.7	6.3	Yes	60.62	36.33	96.96
65050030	Hats and headgear, of wool, knitted or crocheted or made up from knitted or crocheted fabric	13.67	8.6	No	75.66	0.00	75.66
57011090	Carpets and other textile floor coverings, of wool or fine animal hair, not hand-hooked, not hand knotted during weaving	12.58	4.5	No	27.73	0.00	27.73
42022245	Handbags with or without shoulder strap or without	4.84	6.3	Yes	50.45	37.20	87.65

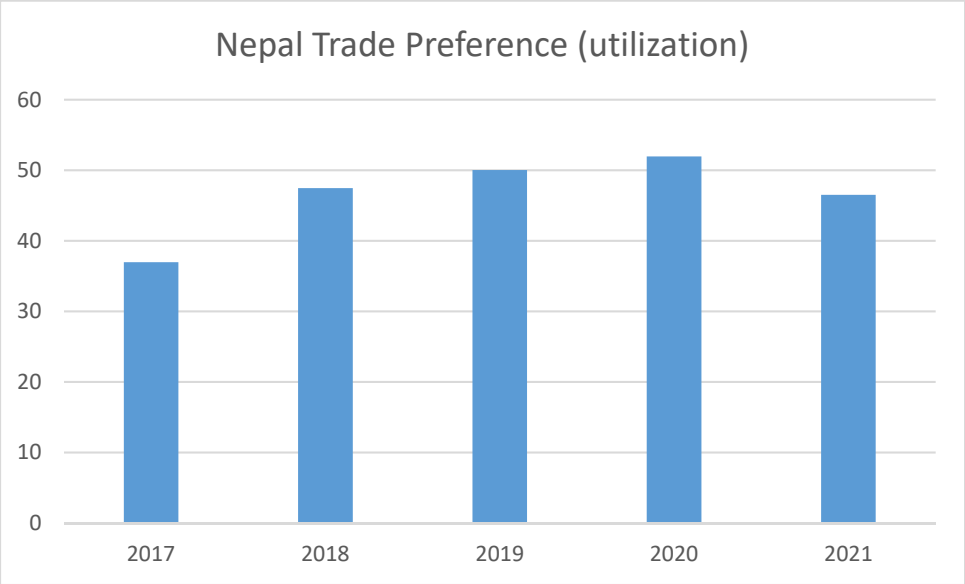
	handle, with outer surface of cotton, not of pile or tufted construction or braid						
57031020	Hand-hooked carpets and other textile floor coverings, tufted, whether or not made up, of wool or fine animal hair	3.39	6	Yes	20.34	51.34	71.68
65050040	Hats and headgear, of wool, made up from felt or of textile material, not knitted or crocheted or made up from knitted or crocheted fabric	2.69	8.99	No	76.17	0.00	76.17
57029130	Floor coverings,not of pile construction,woven not on power-driven loom, made up, of wool or fine animal hair, nesoi	1.96	4.3	Yes	8.70	72.68	81.38
62141010	Shawls, scarves, mufflers, mantillas, veils and the like, not knitted or crocheted, containing 70% or more silk or silk waste	1.78	1.2	Yes	23.43	14.42	37.85
42029220	Travel, sports and similar bags with outer surface of vegetable fibers, excl. cotton, not of pile construction	1.56	5.7	Yes	60.81	32.01	92.82

Note: Export data are for the years 2017-2021. AVE is ad valorem equivalent.

Source: Author's calculation based on trade data from the United States International Trade Commission, and tariff data and GSP eligibility from Market Access Map.

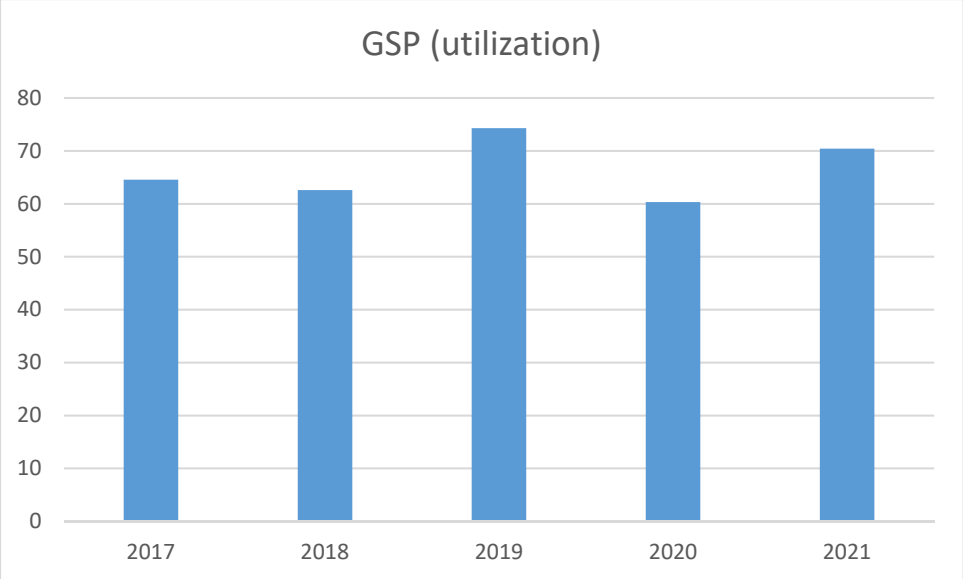
Preference utilization among NP products increased during 2017-2020, from 37 percent in 2017 to 52 percent in 2020 before declining to 46.5 percent in 2021 (Figure 6). Preference utilization, in the aggregate, is much higher for GSP-eligible products than for NP-eligible products, averaging 67 percent and 47 percent, respectively, during 2017-2021 (Figure 7). The utilization rate for GSP-eligible products fell in 2020 before increasing in 2021. The utilization rate among exports of GSP-LDC-specific preference-eligible products was even higher, averaging 83 percent. But note that exports of products on GSP-LDC list were less than 0.2 percent of total exports to the US.

Figure 6: Nepal Trade Preference Programme utilization



Source: Author's calculation based on data from the United States International Trade Commission

Figure 7: GSP utilization

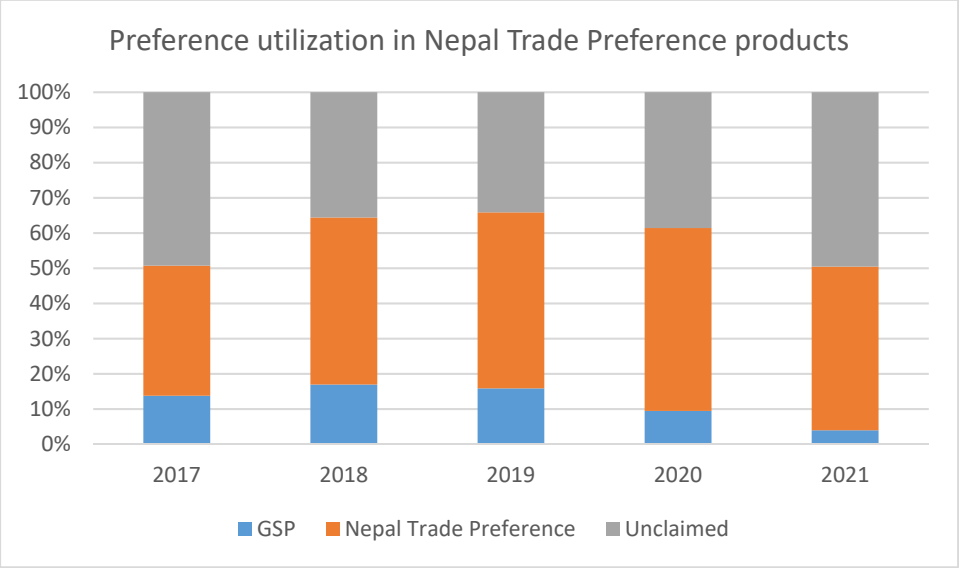


Note: Excluding LDC-specific GSP.

Source: Author's calculation based on data from the United States International Trade Commission

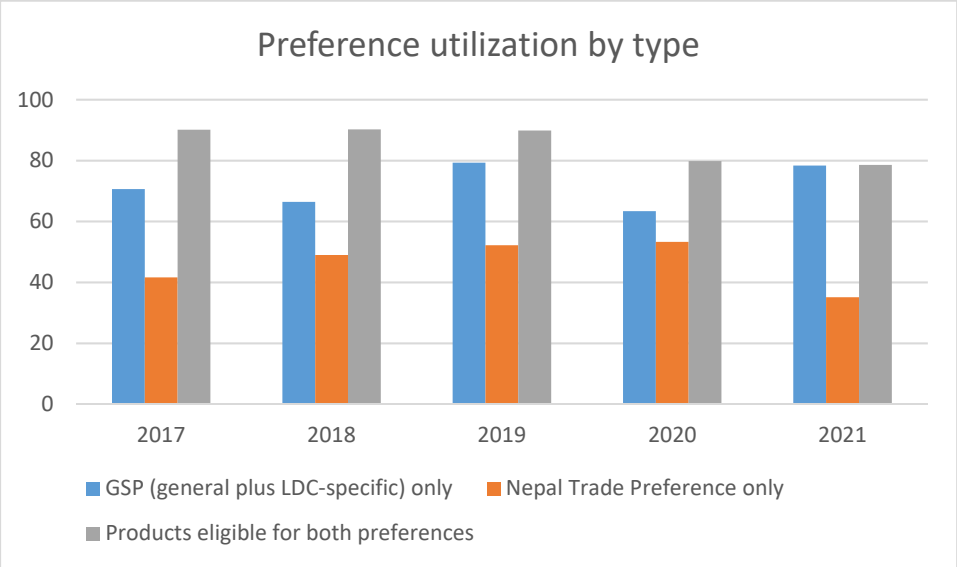
Because there are products common to NP list and GSP list—their exports amounting to 3 percent of total exports to the US and 35 percent of NP exports to the US in 2021—a question arises as to whether NP products also utilized GSP. Taking into account GSP utilization, we find that 50 percent of NP exports entered the US market claiming a duty-free scheme in 2021, compared to 46.5 percent when considering just utilization of NP preferences (Figure 8). Averaging over the period 2017-2021, we find that the utilization rate for exports of NP products was 59 percent when considering utilization of both available preferences, as opposed to 47 percent when considering only NP preferences. We find that while a quarter of exports of NP products in 2018 that claimed duty-free preferential access used GSP preferences, the share declined to 8 percent in 2021. In the aggregate, averaging over 2017-2021, preference utilization is higher among products that are common to NP and GSP lists (85.7 percent) than among NP-only products (46.2 percent) and even GSP-only products (71.6 percent) (Figure 9a). Preference utilization among products common to NP and GSP lists has been falling. Preference utilization among NP-only products has seen an increase over its 2017 level but declined sharply in 2021. Among products common to both lists, the share of exports that claimed duty-free preferential access attributable to GSP preferences witnessed a sharp decline, from 61 percent to 11 percent (Figure 9b). A sharp fall in the share of NP exports claiming GSP in 2021 might be due to the suspension of the GSP programme, prompting traders to claim NP instead of GSP when a product is on both lists

Figure 8: Preference utilization of NP products, by scheme



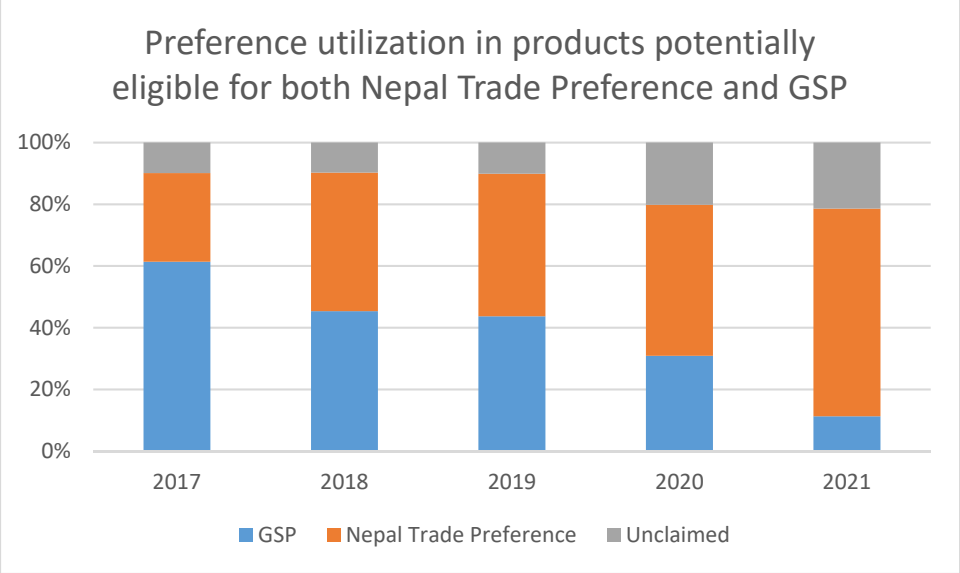
Source: Author's calculation based on data from the United States International Trade Commission

Figure 9a: Preference utilization by type



Source: Author's calculation based on data from the United States International Trade Commission

Figure 9b: Preference utilization of products on both NP list and GSP list, by scheme



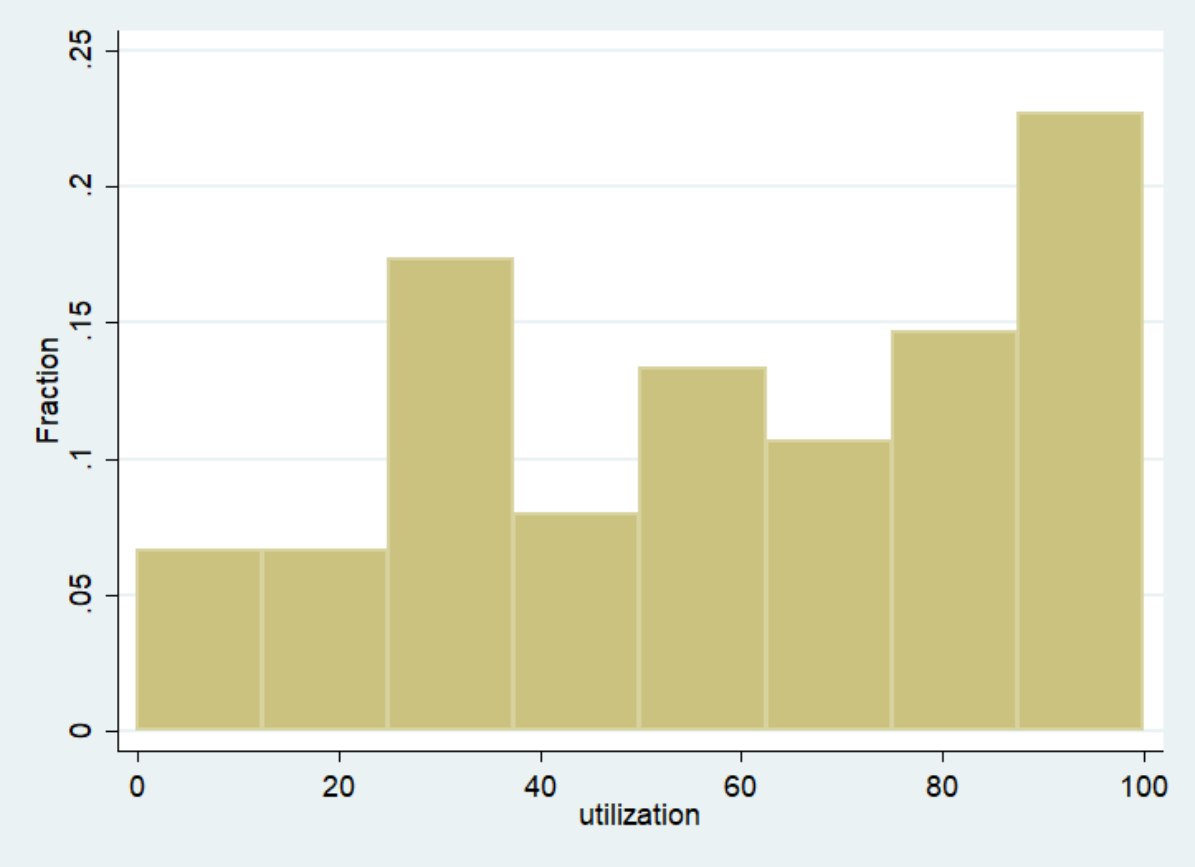
Source: Author's calculation based on data from the United States International Trade Commission

Computing preference utilization rate (combining available NP and GSP preferences) at the product level and taking their average, we observe that the utilization rate has a mean of 59 percent and a median of 61 percent for NP products. Figure 10 presents the distribution of the utilization rate among the 75 NP products that recorded positive exports in at least one year during 2017-2021. The mean and median

utilization rates for products also covered by GSP were 71 percent and 74 percent, respectively, much higher than 51 and 46 percent for products not covered by GSP.

The mean and median utilization rates fall to 43 percent and 38.5 percent, respectively, when considering just utilization of NP preferences. Among the top 10 export products on the NP list, the total utilization rate ranged from 28 percent (for a type carpets, ranked fourth in NP exports and not covered by GSP) to 97 percent (sports bags, ranked second in NP exports and covered by GSP).

Figure 10: Distribution of utilization rates (GSP+NP) among NP products



Note: 75 NP products with positive exports in at least one year during 2017-2021 considered.

Source: Author's calculation based on data from the United States International Trade Commission

6. Tariffs and preference margins

Nepali products exported to the US that were not eligible for any preferential scheme faced a median tariff of 5.6 percent and a maximum tariff of 55 percent (Table 5). Readymade garments and footwear are among products of export interest to Nepal that face high tariffs and do not get any tariff preferences. NP

products faced a median MFN tariff of 7.5 percent, implying that they enjoyed a median potential preferential margin of 7.5 percentage. NP products not on the GSP list faced a median MFN tariff of 7 percent while NP products also on the GSP list faced a slightly higher median MFN tariff of 8.8 percent. Products on the GSP list but not on the NP list faced a lower median MFN tariff of 4.2 percent. Therefore, on average, the preference margin under NP is higher than that under GSP. For the top 10 NP products, the MFN tariff ranges from 1.2 percent to 9 percent (Table 4). The higher preference margin for products common to NP and GSP lists is a possible explanation for the higher preference utilization among these products.

Table 5: Summary statistics of MFN tariffs (in fractions) in the US in year 2020 for products grouped by preference eligibility

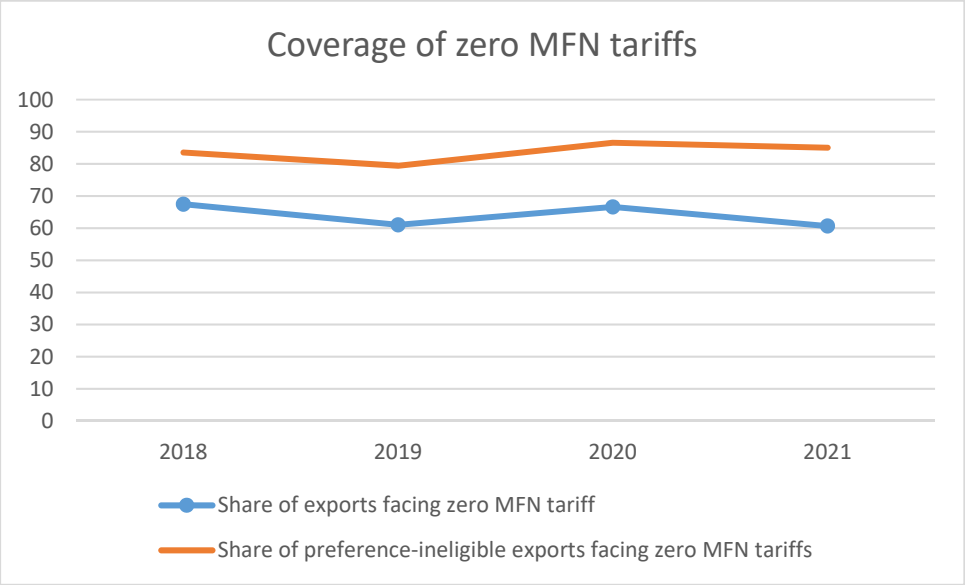
	mean	sd	min	p25	p50	p75	max	N
All exports	0.069	0.075	0.000	0.000	0.053	0.100	0.551	1065
NP	0.095	0.055	0.012	0.057	0.075	0.146	0.200	75
GSP only, not NP	0.051	0.042	<0.001	0.028	0.042	0.061	0.380	267
NP only, not GSP	0.084	0.048	0.027	0.057	0.070	0.090	0.200	45
Both NP & GSP	0.111	0.062	0.012	0.060	0.088	0.176	0.200	30
No preferences	0.074	0.085	0.000	0.000	0.056	0.120	0.551	723

Note: Products that were exported by Nepal to the US at least once during 2017-2021. GSP includes both general GSP and LDC-specific GSP. MFN tariffs include specific duties converted into ad valorem equivalent.

Source: Author's calculations based on trade data from the United States International Trade Commission and tariff data from Market Access Map

Table 5 masks the fact that the bulk of Nepal's exports to the US face zero MFN tariffs (that is, non-preferential zero tariffs). About two thirds of total exports to the US during 2018-2021, on average, faced zero MFN tariffs (Figure 11). Importantly, about 84 percent of exports ineligible for preferences faced zero MFN tariffs.

Figure 11: Coverage of zero MFN tariff



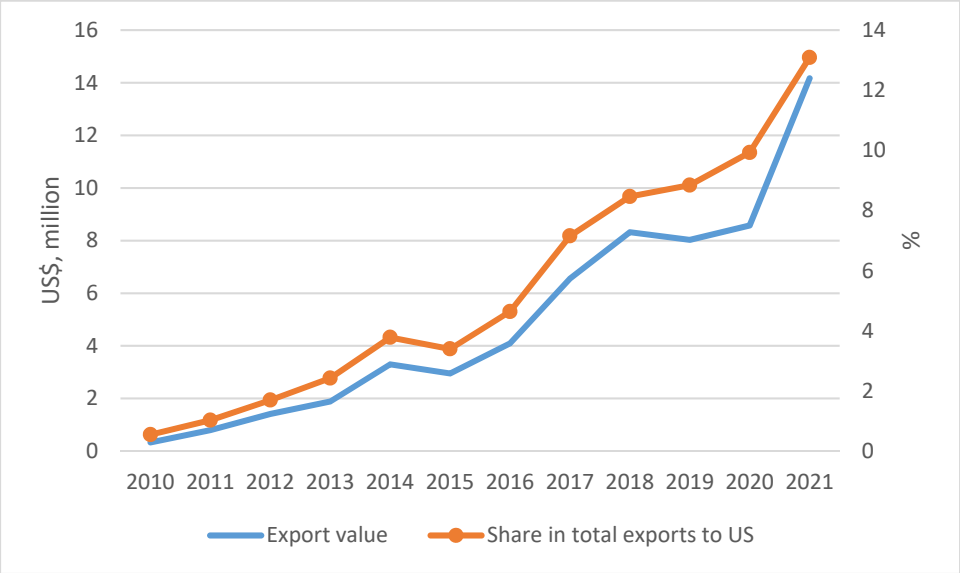
Note: Tariffs are for year 2020.

Source: Author's calculations based on trade data from the United States International Trade Commission and tariff data from Market Access Map

A product facing zero MFN tariff (in 2020) whose exports to the US have grown at a compound annual rate of 40 percent during 2010-2021 is "Dog or cat food, put up for retail sale" (Figure 12). This product was among the top items exported from Nepal to the US during 2017-2021, accounting for 13 percent of Nepal's total goods exports to the US. The US absorbed 86 percent of Nepal's total exports of this product.[15]

[15] Average for the fiscal years 2018/19-2021/22 (data sourced from Department of Customs, Nepal).

Figure 12: Export of "Dog or cat food, put up for retail sale"



Source: Author's calculations based on data from the United States International Trade Commission

7. Trends in exports of NP products

The 77 NP products under HS2017 classification are reduced to 66 products when expressed in terms of HS2012 classification, both as per the US' product classification system at the 8-digit level. Expressing the products in HS2012 classification allows us to do a before-after analysis and a difference-in-differences estimation covering export data for the years 2012-2021. Due to problems in concordance for the year 2016, the pre-NP (or pre-treatment) period is 2012-2015 and the post-NP (or post-treatment) period is 2017-2021.

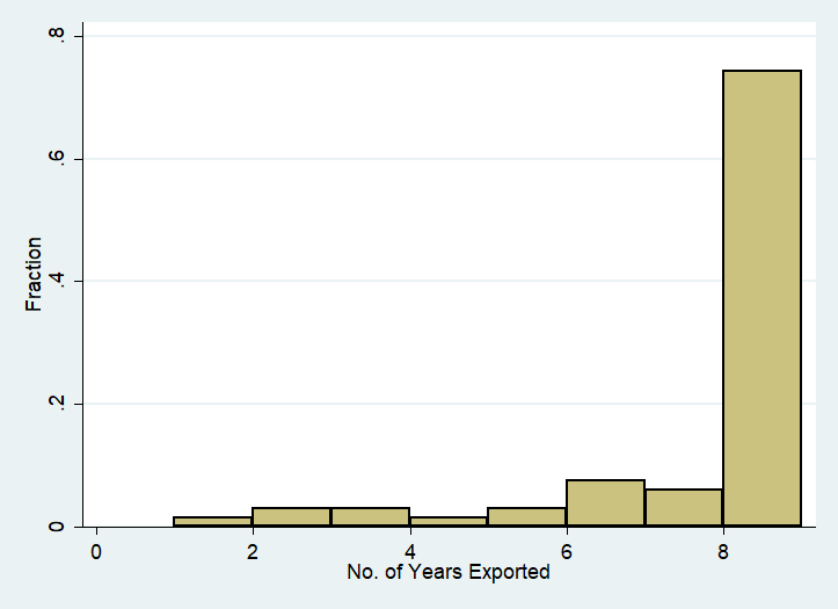
Of the 66 products, 65 were exported at least once in both periods, while one was exported at least once in the first period and not exported in the second period (Table 6). Figure 13 shows the distribution of products in terms of the number of years exported during the nine-year period (2012-2021, excluding 2016). The mean and median number of years exported were 7.86 and 9, respectively. A total of 44 products were exported in all the years in both periods, and they accounted for 97-98 percent of total NP exports in both periods.

Table 6: Years exported—NP products

Years exported	No. of products (2012-2021)	No. of products (2012-2015)	No. of products (2017-2021)
0	0	0	1
1	1	3	5
2	2	4	3
3	2	8	5
4	1	51	6
5	2		46
6	5		
7	4		
8	5		
9	44		

Source: Author's calculation based on data from the United States International Trade Commission

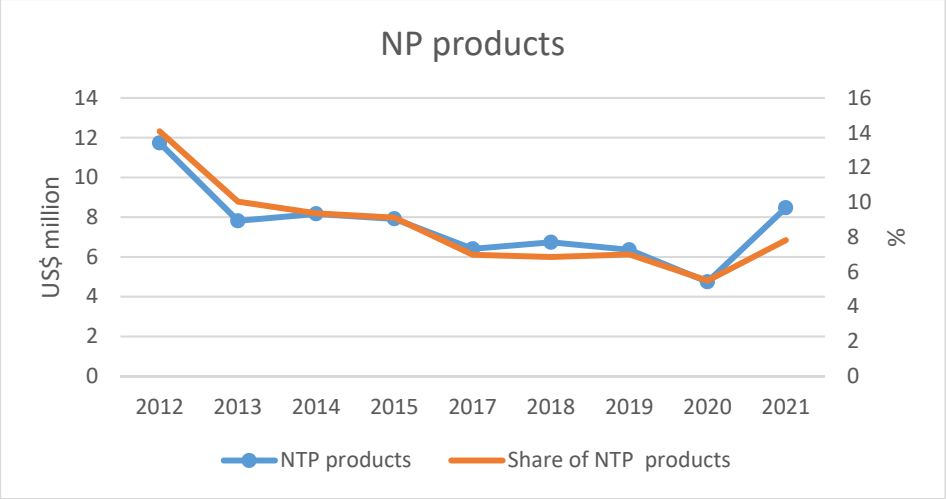
Figure 13: Distribution of NP products by number of year's exported



Source: Author's calculation based on data from the United States International Trade Commission

Exports of NP products have been on a declining trend in the period 2012-2021, even as total exports have increased slightly. Overall merchandise exports to the US from Nepal increased from U$83.3 million in 2012 to US$108.3 million in 2021. Exports of NP products were US$11.7 million in 2012 and fell to an average of US$6.5 million in 2017-2019, before falling further to US$4.7 million in 2020 and rebounding to US$8.5 million in 2021 (Figure 14). NP export share in total exports to the US fell from 14 percent in 2012 to 5.5 percent in 2020 before rising to 7.8 percent in 2021.

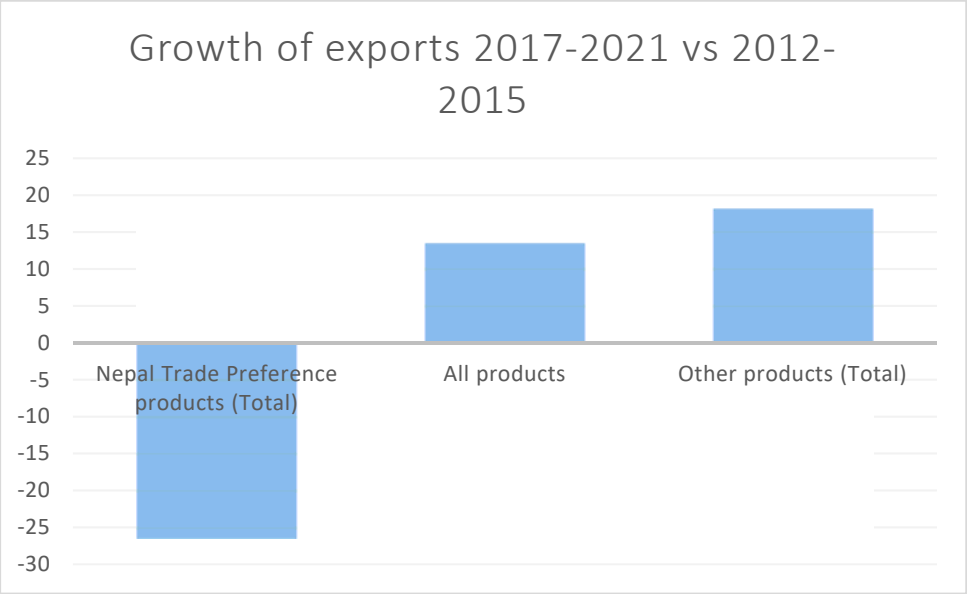
Figure 14: Trend of exports of NP products



Source: Author's calculation based on data from the United States International Trade Commission

Nepal's aggregate exports of NP products to the US averaged over 2017-2021 were 26.5 percent lower than during 2012-2015, compared to a positive growth of 18 percent recorded by other products (Figure 15).

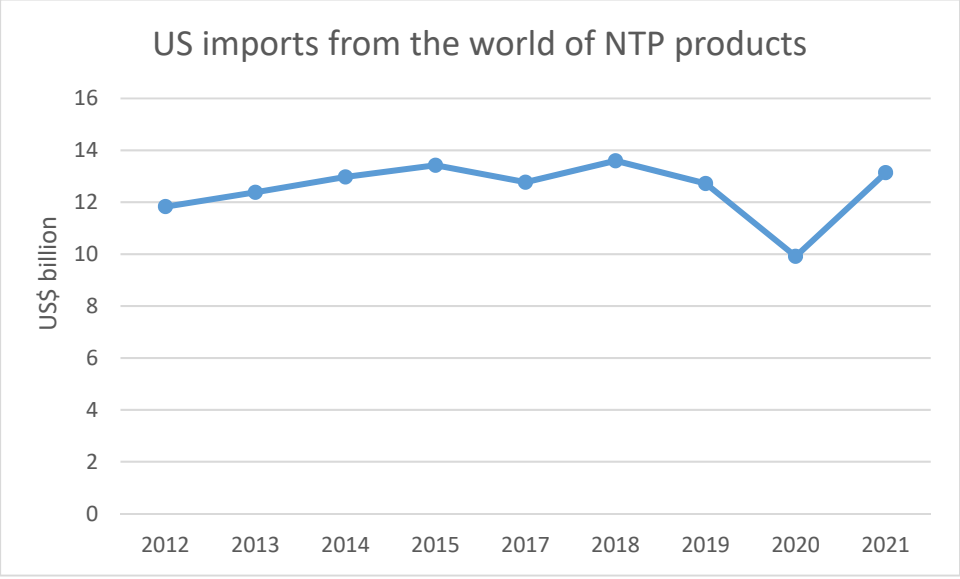
Figure 15: Aggregate growth of exports of NP products and other products



Source: Author's calculation based on data from United States International Trade Commission

The US's imports of NP products from the whole world have stagnated or been on a declining trend, but they still represent a huge market amounting to US$13 billion in 2021 (Figure 16).

Figure 16: US imports from the world of NP products



Source: Author's calculation based on data from the United States International Trade Commission

8. Difference-in-differences estimation

Data

We employ several variants of a difference-in-differences (DID) approach to estimate the effect of the introduction of the US Trade Preferences for Nepal on exports of the covered products from Nepal to the US. We perform the estimations on two different datasets, each with its own advantages and disadvantages. The first dataset is the United States International Trade Commission (USITC) dataset[16], which records trade flows at the 8-digit level (US tariff line), the very level at which trade preferences are accorded. However, while the 66 NP products – treated products – can be traced over time in this dataset, the remaining products – untreated products or comparison products – that Nepal exported to the US during 2012-2021 cannot be tracked over time as we are unable to concord their product codes over the entire period. With this dataset, we are, therefore, unable to use a DID regression that features fixed effects at the level of the unit of observation, which in our case would be product fixed effects.

The second dataset is the BACI dataset (*202301* version) on global trade flows prepared by Centre d'Etudes Prospectives et d'Informations Internationales (CEPII) after cleaning UN COMTRADE data.[17] This dataset has the advantage of allowing us to track products over time and hence use full DID specifications, including a rich set of fixed effects. In addition, because it records exports from Nepal to other countries (besides the US), an additional variant of DID (to be discussed later) can be employed with this dataset. A drawback is that trade flows are recorded at the 6-digit level: mapping the 8-digit Nepal Trade Preference products to the 6-digit level entails a substantial loss of granular information. However, studies have used trade data at the 6-digit level when estimating the trade effects of unilateral trade preferences. For example, Biesebroeck and Zaurino (2019) use the BACI dataset to estimate the effects of preferential market access schemes offered by the European Union (GSP, GSP+, EBA) and the United States (African Growth and Opportunity Act) on exports of developing countries, including those of Sub-Saharan Africa.

Empirical strategy using USITC data

In the USITC dataset, taken together, the NP products and the non-NP products constitute repeated cross-sectional data, on which we employ DID. A potential source of concern about our dataset is that non-NP

[16] https://dataweb.usitc.gov/

[17] http://www.cepii.fr/. The cleaning method is documented in Gaulier, G. and Zignago, S. (2010) BACI: International Trade Database at the Product-Level. The 1994-2007 Version. CEPII Working Paper, N°2010-23. BibTex.

products with zero exports throughout the period 2017-2021, as obtained from USITC, may be recorded as having zero exports in the dataset simply because they underwent a change in product code. One way to partly address this concern is to check if these products had recorded positive exports at least once during 2012-2015, and to drop such products. The same argument and remedy are applicable to non-NP products that record zero exports throughout 2012-2015 but positive exports at least once during 2017-2021. We perform the DID estimation on the data resulting from this cleansing process.[18]

The equation to be estimated is:

$$\ln(y_{pgt}) = \delta D_{gt} + \alpha_g + \alpha_t + \alpha_{chapter,p} + e_{pt} \quad (1)$$

where the subscript p denotes product at HS8-digit level, g denotes product group (NP products or non-NP products), and t denotes year. y_{pgt} represents exports (or 1 + exports) in US$ from Nepal to the US of product p in product group g in year t. D_{gt} is a dummy variable that takes the value of 1 for export flows of products that are on the NP list in the years 2017-2021, and 0 otherwise. α_g is a product group fixed effect, captured by a dummy variable to distinguish between NP products (treated products) and non-NP products (untreated products). α_t is a set of year fixed effects, captured by year dummies. $\alpha_{chapter,p}$ is Chapter (HS2-digit) fixed effects. e_{pt} is the mean-zero standard idiosyncratic error term. δ is the parameter of interest.

It is plausible that the errors in the regression are correlated at the level of some broad product categories. For one thing, the unobservables affecting exports of products within an HS Chapter are likely to be correlated, regardless of treatment. For another, the treatment (the introduction of duty-free preferences to select products from Nepal) covers specific HS Chapters (although not all products within a Chapter get preferential treatment). We, therefore, cluster the standard errors at the HS Chapter level.

The identifying assumption is that exports of NP products would have followed the same trend as that of non-NP products in the absence of the introduction of the US Trade Preferences for Nepal.

As there are a lot of zero export values (56 percent of total observations)[19], we use the logarithm of 1 plus export value as the dependent variable in one specification. In an alternative specification, we use exports in levels as the dependent variable and perform a Poisson regression with the same set of explanatory

[18] The results remain qualitatively the same when we use the original dataset.

[19] About 13 percent of observations of NP products have zero export value, and 58 percent of observation of non-NP products have zero export value.

variables as in specification (1). It has become common in the empirical trade literature to use Poisson regression in settings where are considerable zero trade flows.

In the style of an event study framework, in alternative specifications we include the leads and lags of the treatment dummy, D_{gt}, with the coefficients of these leads and lags capturing how the treatment effect changes over time. We set 2015 as the reference year.

To guard against the possibility that differential trends across Nepal's exports of NP and non-NP products to the US are biasing the treatment effect estimates, we also estimate a triple-differences (TD) regression in which we essentially difference out from the DID the difference in the trends in exports of the two groups of products from the rest of the world to the US. The identifying assumption in TD estimation is that, in the absence of the introduction of the US Trade Preferences for Nepal, the difference between the change in exports of NP products to the US from Nepal and the change in exports of non-NP products to the US from Nepal would have followed the same trend as the difference between the change in imports of NP products into the US from the rest of the world and the change in imports of non-NP products into the US from the rest of the world. Differential demand-side shocks to the two sets of products in the US are thus controlled, under the assumption that they are the same for Nepal and the rest of the world.

The TD specification is:

$$\ln(y_{p,g,i,t}) = \delta_{TD} D_g * D_{Nepal} * D_t + \beta_1 D_g * D_{Nepal} + \beta_2 D_g * D_t + \beta_3 D_{Nepal} * D_t + \beta_4 D_g + \beta_5 D_{Nepal} + \alpha_t + \alpha_{chapter,p} + e_{p,g,i,t} \quad (2)$$

where i denotes exporting country, D_g is a dummy variable that turns on if product p belongs to the group of NP products, D_{Nepal} is a dummy variable that turns on if the export flow is from Nepal to the US and 0 if it is from the rest of the world to the US, and D_t is a dummy variable that turns on if the year is 2017-2021. δ_{TD} is the parameter of interest, capturing the treatment effect.

Results using USITC data

Summary statistics

Panel (a) of Table 7 presents the summary statistics of exports, log (1+) exports and log exports of Nepal to the US. Before doing a DID analysis, we compare mean exports across the pre-treatment and post-treatment periods of each of the two groups of products, and mean exports between the two groups in the pre-treatment and post-treatment periods (panel b, Table 7). NP products have on average higher (log

1+) exports than non-NP products, during the entire 2012-2021 period, during the pre-treatment period of 2012-2015 and the post-treatment period of 2017-2021. The difference is statistically significant. Looking at changes in exports within a group over time, we find that within NP products, mean exports were lower in the post-treatment period and the difference was statistically significant at the 10 percent level, and within non-NP products, mean exports were higher in the post-treatment period and the difference was statistically significant at the 10 percent level. Within group differences are not as pronounced as between group differences. When the mean tests are performed on the logarithm of exports (panel c, Table 7), excluding zero export flows, the between-group differences are much smaller in magnitude, but have the same sign and are statistically significant, whereas the within group differences are not statistically significant. When the tests are performed on exports in levels, none of the differences are statistically significant (panel b, Table 7).

Table 7 : Summary statistics of USITC dataset used in DID estimation, and mean tests: Full sample

Panel (a)

	mean	sd	min	p25	p50	p75	max	N
Exports (US$)	69,513.085	780,340.586	0.000	0.000	0.000	6,032.000	27,377,584.000	11,661
Ln (1+exports)	4.060	4.791	0.000	0.000	0.000	8.705	17.125	11,661
Ln (exports)	9.244	2.082	5.525	7.783	9.064	10.573	17.125	5122

Panel (b)

Mean difference in Exports between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)
Between groups	67068.543	115058.116	-47989.574	0.144	11067	594

(NP products and non-NP products), both periods						
Between groups, pre-treatment period	61486.025	134953.466	-73467.440	0.123	4872	264
Between groups, post-treatment period	71458.861	99141.836	-27682.975	0.541	6195	330

	Mean (pre-treatment period)	Mean (post-treatment period)	Difference in means	p-value	N (pre-treatment)	N (post-treatment)
Within group of NP products	134953.466	99141.836	35811.630	0.167	264	330
Within group of non-NP products	61486.025	71458.861	-9972.836	0.514	4872	6195

Panel (c)

Mean difference in Ln (1+exports) between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)
Between groups (NP products and non-NP products), both periods	3.807	8.773	-4.966	0.000	11,067	594
Between groups, pre-treatment period	3.717	9.082	-5.365	0.000	4872	264
Between groups,	3.879	8.526	-4.647	0.000	6195	330

post-treatment period

	Mean (pre-treatment period)	Mean (post-treatment period)	Difference in means	p-value	N (pre-treatment)	N (post-treatment)
Within group of NP products	9.082	8.526	0.555	0.078	264	330
Within group of non-NP products	3.717	3.879	-0.162	0.072	4,872	6,195

Panel (d)

Mean difference in Ln (exports) between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)
Between groups (NP products and non-NP products), both periods	9.154	10.041	-0.887	0.000	4603	519
Between groups, pre-treatment period	9.117	10.031	-0.914	0.000	1986	239
Between groups, post-treatment period	9.182	10.049	-0.867	0.000	2617	280

	Mean	Mean	Difference	p-	N	N

	(pre-treatment period)	(post-treatment period)	in means	value	(pre-treatment)	(post-treatment)
Within group of NP products	10.031	10.049	-0.017	0.921	239	280
Within group of non-NP products	9.117	9.182	-0.065	0.293	1986	2617

Note: Total observations = 11,661. There are 75 observations of NP products with zero export value, and 6,464 observations of non-NP products with zero export value.

We run regressions on the full sample as well on two subsamples. Their summary statistics are presented in Annex Tables A1 and A2. The first subsample excludes NP products that are on the GSP list in 2020 as well as non-NP products in which exports from Nepal used a GSP scheme (generic or LDC-specific) at least once during 2012-2021. We rely on GSP utilization to set this restricted sample because we do not have the US' GSP list of products whose codes concord across years. This subsample is constructed in view of two facts, which could affect our baseline results: (i) about 40 percent of the NP products were also included in the US' GSP the very year the Nepal Trade Preferences programme was announced; and (ii) the comparison products include GSP products. The second subsample removes from the first subsample all products for which the ad-valorem equivalent MFN tariff is zero, in order to compare exports of NP products with exports of products that face positive tariffs.

Econometric results: Basic difference-in-differences estimation

Table 8 shows the baseline results using the full sample. The same format is followed in most other tables of regression results. Column 1 has the logarithm of positive exports as a dependent variable. Column 2 has the logarithm of 1 plus exports as a dependent variable. Both Columns 1 and 2 are estimated by OLS. In Column 3 exports are in levels (including zeros) and a Poisson model is estimated. The coefficient of interest is negative, but statistically significant only when zero flows are included (Columns 2 and 3).

Table 8: Difference-in-differences estimation: Full sample

	(1) Ln (exports)	(2) Ln (1+exports)	(3) Exports (Poisson)
Effect	-0.044	-0.702**	-0.481**
	(0.100)	(0.317)	(0.240)
Observations	5122	11661	11661
Adjusted R^2	0.185	0.140	

Note: All regressions include HS Chapter fixed effects. Standard errors, in parenthesis, are clustered at the HS Chapter level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

When using the two subsamples, the coefficient of interest is not statistically significant in any model. The sign is still negative in all cases except for the Poisson model run on the subsample that also excludes products with zero MFN tariffs (Tables 9 and 10).

Table 9: Difference-in-differences estimation: Subsample I

	(1)	(2)	(3)
	Ln exports	Ln (1+exports)	Exports (Poisson)
Effect	-0.032	-0.398	-0.297
	(0.177)	(0.294)	(0.224)
Observations	3936	9097	9097
Adjusted R^2	0.192	0.149	

Note: All regressions include HS Chapter fixed effects. Standard errors, in parenthesis, are clustered at the HS Chapter level.

The following observations are excluded from the full sample: NP products eligible for GSP in 2020 and non-NP products that used any GSP scheme at least once during 2012-2021.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 10: Difference-in-differences estimation: Subsample II

	(1)	(2)	(3)
	Ln exports	Ln (1+exports)	Exports (Poisson)
Effect	-0.018	-0.249	0.132
	(0.181)	(0.325)	(0.194)
Observations	2816	5968	5968
Adjusted R^2	0.119	0.166	

Note: All regressions include HS Chapter fixed effects. Standard errors, in parenthesis, are clustered at the HS Chapter level.

The following observations are excluded from the full sample: Products with MFN ad-valorem equivalent tariff zero, NP products eligible for GSP in 2020 and non-NP products that used any GSP scheme at least once during 2012-2021.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

We test whether there were differential trends in the pre-treatment period and whether the treatment effect varied over time by including leads and lags of the treatment effect dummy. The three specifications, on the three samples, do not yield mutually consistent results (Tables 11-13).

Table 11: Difference-in-differences estimation with leads and lags: Full sample

	(1)	(2)	(3)
	Ln exports	Ln (1+exports)	Exports (Poisson)
Effect_2012	-0.136	1.231***	0.491**
	(0.183)	(0.352)	(0.216)
Effect_2013	-0.200	0.744*	0.107
	(0.143)	(0.378)	(0.154)
Effect_2014	-0.270**	1.411***	0.030
	(0.126)	(0.503)	(0.097)
Effect_2017	-0.135	-0.376	-0.294*
	(0.102)	(0.250)	(0.177)
Effect_2018	-0.452***	0.767	-0.315
	(0.137)	(0.544)	(0.216)
Effect_2019	-0.033	-0.297	-0.292*
	(0.129)	(0.455)	(0.160)
Effect_2020	-0.290	0.336	-0.550
	(0.198)	(0.378)	(0.373)
Effect_2021	-0.059	0.295	-0.172
	(0.277)	(0.443)	(0.415)
Observations	5122	11661	11661
Adjusted R^2	0.184	0.140	

Note: All regressions include HS Chapter fixed effects. Standard errors in parentheses. Standard errors are clustered at the HS Chapter level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 12: Difference-in-differences estimation with leads and lags: Subsample I

	(1)	(2)	(3)
	Ln exports	Ln (1+exports)	Exports (Poisson)
Effect_2012	-0.206	1.707***	0.285
	(0.193)	(0.492)	(0.183)
Effect_2013	-0.369**	1.240**	-0.072
	(0.152)	(0.610)	(0.090)
Effect_2014	-0.464***	2.059**	0.009
	(0.136)	(0.855)	(0.106)
Effect_2017	-0.379***	0.038	-0.306**
	(0.115)	(0.236)	(0.132)
Effect_2018	-0.723***	1.747***	-0.308*
	(0.212)	(0.639)	(0.167)
Effect_2019	0.030	0.267	-0.199
	(0.231)	(0.384)	(0.136)
Effect_2020	-0.323	1.195**	-0.373
	(0.302)	(0.561)	(0.380)
Effect_2021	-0.057	1.019***	-0.035
	(0.367)	(0.320)	(0.482)
Observations	3936	9097	9097
Adjusted R^2	0.192	0.149	

Note: All regressions include HS Chapter fixed effects. Standard errors in parentheses. Standard errors are clustered at the HS Chapter level.

The following observations are excluded from the full sample: NP products eligible for GSP in 2020 and non-NP products that used any GSP scheme at least once during 2012-2021.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 13: Difference-in-differences estimation with leads and lags: Subsample II

	(1)	(2)	(3)
	Ln exports	Ln (1+exports)	Exports (Poisson)
Effect_2012	0.005	1.692***	0.561*
	(0.156)	(0.487)	(0.324)
Effect_2013	-0.221	1.266**	0.065
	(0.162)	(0.601)	(0.194)
Effect_2014	-0.203	1.946**	0.043
	(0.144)	(0.847)	(0.162)
Effect_2017	-0.293***	0.182	0.145
	(0.104)	(0.210)	(0.111)
Effect_2018	-0.489**	1.958***	0.236
	(0.217)	(0.662)	(0.160)
Effect_2019	0.226	0.251	0.131
	(0.233)	(0.434)	(0.133)
Effect_2020	-0.083	1.313**	0.377
	(0.325)	(0.572)	(0.313)
Effect_2021	0.060	1.182***	0.599
	(0.350)	(0.332)	(0.409)
Observations	2816	5968	5968
Adjusted R^2	0.118	0.167	

Note: All regressions include HS Chapter fixed effects. Standard errors in parentheses. Standard errors are clustered at the HS Chapter level.

The following observations are excluded from the full sample: Products with MFN ad-valorem equivalent tariff zero, NP products eligible for GSP in 2020 and non-NP products that used any GSP scheme at least once during 2012-2021.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Econometric results: Triple-difference estimation

Almost all triple-difference estimations yield statistically insignificant treatment effects, and the sign of the coefficient varies across specifications (Tables 14-16).

Table 14: Triple-difference estimation: Full sample

	(1)	(2)	(3)
	Ln exports	Ln (1+exports)	Exports (Poisson)
Effect	0.152	-0.579**	-0.221
	(0.104)	(0.261)	(0.223)
Observations	16769	23322	23322
Adjusted R^2	0.768	0.772	

Note: All regressions include HS Chapter fixed effects. Standard errors in parentheses. Standard errors are clustered at the HS Chapter level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 15: Triple-difference estimation: Subsample I

	(1)	(2)	(3)
	Ln exports	Ln (1+exports)	Exports (Poisson)
Effect	0.035	-0.407	-0.102
	(0.145)	(0.297)	(0.249)
Observations	13025	18194	18194
Adjusted R^2	0.766	0.773	

Note: All regressions include HS Chapter fixed effects. Standard errors in parentheses. Standard errors are clustered at the HS Chapter level.

The following observations are excluded from the full sample: NP products eligible for GSP in 2020 and non-NP products that used any GSP scheme at least once during 2012-2021.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 16: Triple-difference estimation: Subsample II

	(1) Ln exports	(2) Ln (1+exports)	(3) Exports (Poisson)
Effect	-0.013	-0.308	0.232
	(0.130)	(0.332)	(0.219)
Observations	8776	11936	11936
Adjusted R^2	0.757	0.769	

Note: All regressions include HS Chapter fixed effects. Standard errors in parentheses. Standard errors are clustered at the HS Chapter level.

The following observations are excluded from the full sample: Products with MFN ad-valorem equivalent tariff zero, NP products eligible for GSP in 2020 and non-NP products that used any GSP scheme at least once during 2012-2021.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The results from specifications with leads and lags of the treatment effect do not yield a consistent story, but there are indications of a positive differential trend in the pre-treatment period, especially when including zero export flows and using subsamples I and II (Annex Tables A3-A5).

Empirical strategy using BACI data

Using BACI dataset, the difference-in-differences equation estimated on a sample of export flows from Nepal to the US is:

$$\ln(y_{pgt}) = \delta D_{gt} + \alpha_p + \alpha_t + + e_{pt} \quad (3)$$

which is similar to Eq. (1) except that we now use product fixed effects, α_p, which absorbs the dummy variable marking treated products. We cluster standard errors at the HS Chapter level, for the same reason as in Eq. (1). Alternatively, we also cluster standard errors at the product level, as errors at the product level may be correlated over time.

A triple-difference specification, estimated on a sample of export flows from Nepal and other countries to the US, is:

$$\ln(y_{p,g,i,t}) = \delta_{TD} D_g * D_{Nepal} * D_t + \beta_1 D_g * D_{Nepal} + \beta_2 D_g * D_t + \beta_3 D_{Nepal} * D_t + \alpha_i + \alpha_p + \alpha_t + e_{p,g,i,t} \quad (4)$$

which is similar to Eq. (2) except that we now use product fixed effects, α_p, which absorb the dummy variable marking treated products, and exporter fixed effects α_i, which absorb the dummy variable marking export flow from Nepal. We cluster the standard errors at, alternatively, three levels: (i) Chapter, (ii) product, and (iii) product and exporter. We also run a specification with exporter-product fixed effects, which absorb the exporter and product fixed effects. In that specification, we use cluster the standard errors at the exporter-product level.

The BACI dataset allows us to estimate another version of a triple-difference specification, on a sample of export flows from Nepal to the US and other destinations. Here, we difference out from the DID the difference in the trends in exports of the two groups of products from Nepal to the US and to the rest of the world. The specification is:

$$\ln(y_{p,g,j,t}) = \delta_{TD} D_g * D_{US} * D_t + \beta_1 D_g * D_{US} + \beta_2 D_g * D_t + \beta_3 D_{US} * D_t + \alpha_j + \alpha_p + \alpha_t + e_{p,g,j,t} \quad (5)$$

where j is importer, D_{US} is a dummy variable denoting export flow to the US, and α_j denotes importer fixed effects. While in Eq. (4), differential demand-side shocks to the two sets of products in the US are controlled, under the assumption that they are the same for Nepal and the rest of the world, in Eq. (5), differential supply-side shocks to the two sets of products exported from Nepal are controlled, under the assumption that they are the same for exports from Nepal to the US and the rest of the world. We cluster the standard errors at, alternatively, three levels: (i) Chapter, (ii) product, and (iii) product and importer. We also run a specification with importer-product fixed effects, which absorb the importer and product fixed effects. In that specification, we use cluster the standard errors at the importer-product level.

In view of the computational challenges of using a huge number of fixed effects, we estimate the linear regressions with *reghdfe* procedure (Correia, 2017) and the Poisson regressions with the *ppmlhdfe* procedure in Stata (Poisson-pseudo maximum likelihood (PPML) estimation with a large number of fixed effects) (Correia et al., 2019, 2020).

Results using BACI data

The summary statistics of the BACI dataset used in the difference-in-differences estimation is in Annex Table A6. Regressions are run on a full sample and a subsample. The subsample excludes products for which the average MFN tariff (average of ad valorem tariffs on tariff lines within a 6-digit product) in the US are zero or which are on the US' GSP list in 2020.

DID results for the full sample (Table 17) indicate a statistically significant negative effect in all specifications. However, the effect is statistically insignificant in most specifications when the subsample is used (Table 18).[20]

Table 17: Difference-in-differences estimation using BACI dataset: Full sample

	(1)	(2)	(3)	(4)	(5)	(6)
	Ln exports	Ln exports	Ln (1+exports)	Ln (1+exports)	Exports (PPML)	Exports (PPML)
Effect	-0.352**	-0.352***	-0.334**	-0.334***	-0.515***	-0.515***
	(0.174)	(0.129)	(0.147)	(0.109)	(0.159)	(0.136)
Observations	4542	4542	11400	11400	11400	11400
Adjusted R^2	0.711	0.711	0.744	0.744		

Note: Standard errors in parentheses. All regressions include product and year fixed effects. Standard errors are clustered at the HS Chapter level in Columns 1, 3 and 5, and at the product (HS 6-digit) level in Columns 2, 4 and 6.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 18: Difference-in-differences estimation using BACI dataset: Subsample

	(1)	(2)	(3)	(4)
	Ln exports	Ln exports	Ln (1+exports)	Ln (1+exports)
Effect	-0.375	-0.352***	-0.205	-0.205
	(0.289)	(0.129)	(0.238)	(0.186)
Observations	1904	4542	8387	8387
Adjusted R^2	0.723	0.711	0.850	0.850

Note: Standard errors in parentheses. All regressions include product and year fixed effects. Standard errors are clustered at the HS Chapter level in Columns 1, 3 and 5, and at the product (HS 6-digit) level in Columns 2, 4 and 6.

The following observations are excluded from the full sample: products that are on GSP list and products that have average ad valorem MFN tariff of zero.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

[20] As a lot of observations were dropped when using the *ppmlhdfe* procedure on the subsample, relative to when using a linear regression on the same subsample with ln(1+export) as the dependent variable, we do not report results from the PPML regression on the subsample. The coefficients in the PPML estimation are not statistically significant.

Under the triple-difference estimation based on Eq. (4), the coefficient is negative and statistically significant in most specifications when the full sample is used and negative but statistically insignificant in most specifications when the subsample is used (Tables 19-23).[21]

Table 19: Triple-difference estimation with BACI dataset (Eq. 4): Full sample. Dependent variable: Ln (exports)

	(1)	(2)	(3)	(4)
Effect	-0.350*	-0.350**	-0.350***	-0.423***
	(0.186)	(0.153)	(0.043)	(0.130)
Observations	1936755	1936755	1936755	1860211
Adjusted R^2	0.406	0.406	0.406	0.819
Product FE	Yes	Yes	Yes	No
Year FE	Yes	Yes	Yes	Yes
Exporter FE	No	No	Yes	No
Exporter-Product FE	No	No	No	Yes

Note: Standard errors in parentheses. Standard errors are clustered at the HS Chapter level in Column 1, at the product (HS 6-digit) level in Column 2, at the product level and exporter level in Column 3, and at the product-exporter level in Column 4.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 20: Triple-difference estimation (Eq. 4) using BACI dataset: Full sample. Dependent variable: Ln (1+exports)

	(1)	(2)	(3)	(4)
Effect	-0.364**	-0.364***	-0.364***	-0.364***
	(0.158)	(0.109)	(0.028)	(0.110)
Observations	3448430	3448430	3448430	3448430
Adjusted R^2	0.449	0.449	0.449	0.843
Product FE	Yes	Yes	Yes	No
Year FE	Yes	Yes	Yes	Yes
Exporter FE	No	No	Yes	No

[21] We do not report results for PPML estimation on the subsample here for the same reason as in DID (see previous footnote). The coefficients in the PPML estimation are statistically insignificant.

Exporter-Product FE	No	No	No	Yes

Note: Standard errors in parentheses. Standard errors are clustered at the HS Chapter level in Column 1, at the product (HS 6-digit) level in Column 2, at the product level and exporter level in Column 3, and at the product-exporter level in Column 4.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 21: Triple-difference estimation (Eq. 4) using BACI dataset: Full sample. Dependent variable: Exports. PPML estimation.

	(1)	(2)	(3)	(4)
Effect	-0.476***	-0.476***	-0.476***	-0.476***
	(0.170)	(0.147)	(0.171)	(0.158)
Observations	3448430	3448430	3448430	3448430
Product FE	Yes	Yes	Yes	No
Year FE	Yes	Yes	Yes	Yes
Exporter FE	No	No	Yes	No
Exporter-Product FE	No	No	No	Yes

Note: Standard errors in parentheses. Standard errors are clustered at the HS Chapter level in Column 1, at the product (HS 6-digit) level in Column 2, at the product level and exporter level in Column 3, and at the product-exporter level in Column 4.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 22: Triple-difference estimation (Eq. 4) using BACI dataset: Subsample. Dependent variable: Ln (exports)

	(1)	(2)	(3)	(4)
Effect	-0.395	-0.395**	-0.395***	-0.320*
	(0.303)	(0.195)	(0.115)	(0.174)
Observations	332664	332664	332664	320968
Adjusted R^2	0.456	0.456	0.456	0.813
Product FE	Yes	Yes	Yes	No
Year FE	Yes	Yes	Yes	Yes
Exporter FE	No	No	Yes	No
Exporter-Product FE	No	No	No	Yes

Note: Standard errors in parentheses. Standard errors are clustered at the HS Chapter level in Column 1, at the product (HS 6-digit) level in Column 2, at the product level and exporter level in Column 3, and at the product-exporter level in Column 4.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 23: Triple-difference estimation (Eq. 4) using BACI dataset: Subsample. Dependent variable: Ln (1+exports)

	(1)	(2)	(3)	(4)
Effect	-0.348	-0.348	-0.348***	-0.203
	(0.224)	(0.218)	(0.097)	(0.186)
Observations	1844338	1844338	1844338	1829795
Adjusted R^2	0.483	0.483	0.483	0.885
Product FE	Yes	Yes	Yes	No
Year FE	Yes	Yes	Yes	Yes
Exporter FE	No	No	Yes	No
Exporter-Product FE	No	No	No	Yes

Note: Standard errors in parentheses. Standard errors are clustered at the HS Chapter level in Column 1, at the product (HS 6-digit) level in Column 2, at the product level and exporter level in Column 3, and at the product-exporter level in Column 4.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Under the triple-difference estimation based on Eq. (5), the coefficient is negative but statistically insignificant in most specifications (Tables 24-28).[22]

Table 24: Triple-difference estimation (Eq. 5) using BACI dataset: Full sample. Dependent variable is Ln (exports).

	(1)	(2)	(3)	(4)
Effect	-0.151	-0.151	-0.132	-0.206
	(0.143)	(0.150)	(0.143)	(0.135)
Observations	103359	103359	103350	87691
Adjusted R^2	0.279	0.279	0.444	0.685
Product FE	Yes	Yes	Yes	No
Year FE	Yes	Yes	Yes	Yes
Importer FE	No	No	Yes	No
Importer-Product FE	No	No	No	Yes

Note: Standard errors in parentheses. Standard errors are clustered at the HS Chapter level in Column 1, at the product (HS 6-digit) level in Column 2, at the product level and importer level in Column 3, and at the product-importer level in Column 4.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 25: Triple-difference estimation (Eq. 5) using BACI dataset: Full sample. Dependent variable is Ln (1+exports).

	(1)	(2)	(3)	(4)
Effect	-0.277**	-0.277***	-0.277***	-0.277**
	(0.125)	(0.106)	(0.106)	(0.110)
Observations	345240	345240	345240	345240
Adjusted R^2	0.170	0.170	0.275	0.630
Product FE	Yes	Yes	Yes	No

[22] We do not report results for PPML estimation on the subsample here for the same reason as in DID (see previous footnote). The coefficients in the PPML estimation on the subsample are statistically insignificant.

Year FE	Yes	Yes	Yes	Yes
Importer FE	No	No	Yes	No
Importer-Product FE	No	No	No	Yes

Note: Standard errors in parentheses. Standard errors are clustered at the HS Chapter level in Column 1, at the product (HS 6-digit) level in Column 2, at the product level and importer level in Column 3, and at the product-importer level in Column 4.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 26: Triple-difference estimation (Eq. 5) using BACI dataset: Full sample. Dependent variable is Exports. PPML estimation.

	(1)	(2)	(3)	(4)
Effect	0.050	0.050	0.050	0.050
	(0.326)	(0.263)	(0.263)	(0.268)
Observations	345240	345240	345240	345240
Adjusted R^2				
Product FE	Yes	Yes	Yes	No
Year FE	Yes	Yes	Yes	Yes
Importer FE	No	No	Yes	No
Importer-Product FE	No	No	No	Yes

Note: Standard errors in parentheses. Standard errors are clustered at the HS Chapter level in Column 1, at the product (HS 6-digit) level in Column 2, at the product level and importer level in Column 3, and at the product-importer level in Column 4.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 27: Triple-difference estimation (Eq. 5) using BACI dataset: Subsample. Dependent variable is Ln (exports).

	(1)	(2)	(3)	(4)
Effect	-0.251	-0.251	-0.247	-0.226
	(0.281)	(0.212)	(0.197)	(0.181)
Observations	38677	38677	38659	34355

Adjusted R^2	0.259	0.259	0.479	0.680
Product FE	Yes	Yes	Yes	No
Year FE	Yes	Yes	Yes	Yes
Importer FE	No	No	Yes	No
Importer-Product FE	No	No	No	Yes

Note: Standard errors in parentheses. Standard errors are clustered at the HS Chapter level in Column 1, at the product (HS 6-digit) level in Column 2, at the product level and importer level in Column 3, and at the product-importer level in Column 4.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 28: Triple-difference estimation (Eq. 5) using BACI dataset: Subsample. Dependent variable is Ln (1+exports).

	(1)	(2)	(3)	(4)
Effect	-0.366*	-0.366*	-0.359*	-0.185
	(0.211)	(0.217)	(0.214)	(0.186)
Observations	279852	279852	279852	279152
Adjusted R^2	0.254	0.254	0.328	0.734
Product FE	Yes	Yes	Yes	No
Year FE	Yes	Yes	Yes	Yes
Importer FE	No	No	Yes	No
Importer-Product FE	No	No	No	Yes

Note: Standard errors in parentheses. Standard errors are clustered at the HS Chapter level in Column 1, at the product (HS 6-digit) level in Column 2, at the product level and importer level in Column 3, and at the product-importer level in Column 4.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Summary of econometric results

Employing difference-in-differences and triple-difference estimations, we do not find conclusive evidence that the introduction of the US Trade Preferences for Nepal led to an increase in Nepal's exports of the products ("NP products") it granted duty-free market access to. Leaving aside causal interpretation, a takeaway is that preferences granted under the NTPP were not able to increase exports of NP products relative to exports of non-NP products net of other effects on the two sets of products. It is to be noted

that in our triple-difference estimations, we have attempted to control for the "other effects": in one type of specification, demand-side shocks that may affect the two sets of products differentially, and in another type of specification, supply-side shocks that may affect the two sets of products differentially.

9. Preference-granted products' relation to Nepal's export capabilities

A section of the private sector has argued[23] that the products included in the NP list are not the top products exported by Nepal to the US, and that the NP scheme would have been far more beneficial if it had covered, for example, the major readymade garment products being exported to the US. A counterargument would be that private businesses are expected to exploit whatever opportunities are available. We ask whether the opportunities available under the NP scheme are far off Nepal's current capabilities. One way to answer this is to determine how many of these products are being exported from Nepal with comparative advantage, as measured by the revealed comparative advantage (RCA) index.

The RCA index (Balassa 1965) is defined as:

$RCA_{k,i} = \left(\frac{x_i^k}{\sum_{k'} x_i^{k'}}\right) \Big/ \left(\frac{\sum_{i'} x_{i'}^k}{\sum_{i'}\sum_{k'} x_{i'}^{k'}}\right)$, where x_i^k is exports from country *i* of product *k*.

Products with RCA>1 are deemed to have comparative advantage. RCA is not destination-specific. A working assumption is that if a product is being exported from Nepal with comparative advantage, it denotes that production and export capabilities exist for that product.

Our measure of proximity is drawn from the concept of relatedness between products used in Hausmann and Klinger (2007) and Hidalgo et al. (2007), where the proximity between any two products is calculated as the probability of the products being co-exported, based on observed exports across products and countries. Intuitively, a high degree of proximity implies a greater ease of adapting the skills and capital, among other factors, used in the production of one product to the production of another. Kharel (2019) finds that the impact of proximity on export propensity also holds at the product-destination level.

Following Hausmann and Klinger (2007) and Hidalgo et al. (2007), proximity ϕ between products *k* and *k′* is the minimum of the pairwise conditional probabilities of a country exporting a good given that it exports another:

[23] In various forums attended by the author and in media reports as observed by the author since the Nepal Trade Preferences programme was introduced in 2016.

$$\phi_{k,k'=min\{P(x_k|x_{k'}),P(x_{k'}|x_k)\}} \in [0,1]$$

where for any country *i*

$$x_{k,i} = \begin{cases} 1, \text{if } RCA_{k,i} > 1 \\ 0, \text{otherwise} \end{cases}$$

and where RCA is as defined as above, and the conditional probability is calculated using all countries in a given year.

We compute $\phi_{k,k'}$ at the HS6-digit level for a BACI dataset (*202301* version) on global trade flows prepared by Centre d'Etudes Prospectives et d'Informations Internationales (CEPII).[24] Computation is done separately for each of the years 2017-2019 and then the value for each pair, $\phi_{k,k'}$, is averaged across the years.

Since with available data RCA and the proximity measure can be computed only at the HS6-digit level, we convert the 77 NP products from the 8-digit US tariff classification to the HS6-digit level. The number of NP products falls to 34.

For each product k not exported by Nepal with comparative advantage (that is, RCA<1), we determine how close they are to the country's existing export capabilities, proxied by the country's basket of products exported with RCA>1, using two metrics, both based on the ϕ calculated above.

The first measure is $d_k = \frac{\sum_{k'} \phi_{k,k'}}{|k'|}$, where k' denotes products with RCA>1 for Nepal and $|k'|$ is the number of such products.[25] Its value ranges from 0 to 1.

The second measure is $\omega_k^i = \frac{\sum_{k'} x_i^{k'} \phi_{k',k}}{\sum_{k'} \phi_{k',k}}$, where $x_i^k = 1$ if $RCA_{k,i} > 1$ and 0 otherwise. This is the "density" measure introduced in Hausmann and Klinger (2007) and Hidalgo et al. (2007). Its value ranges from 0 to 1.

Of the 34 NP products, 28 have a mean RCA>1 (averaged over the years 2017-2021). This means Nepal is already exporting these products with comparative advantage. The 8-digit products (at the US tariff line

[24] http://www.cepii.fr/. The BACI dataset is a cleaned version of UN COMTRADE data, and the cleaning method is documented in Gaulier, G. and Zignago, S. (2010) BACI: International Trade Database at the Product-Level. The 1994-2007 Version. CEPII Working Paper, N°2010-23. BibTex.

[25] This measure is adapted from a similar measure in Coniglio et al. (2021).

level) within each of these 28 products (at the 6-digit level) can reasonably be expected to be highly related to each other in terms of capability requirements. Nepal's total exports of these 28 products account for almost all of its exports in the set of 34 products.

The mean and median shares of the US in Nepal's exports of the 34 products are 23.5 percent and 15.8 percent, respectively. For the 28 products with RCA>1, the US' mean and median shares are 23.5 percent and 17 percent, respectively.

Now, consider the six products where RCA<1. All belong to Chapter 42: five are various types of trunks and cases with some leather content, and the sixth covers leather gloves, mittens and suchlike articles. We calculate their proximity to the set of all products (not necessarily in the NP list) that Nepal exports with RCA>1 using the measures defined above, d_k and ω_k, and see where they lie in the distribution of proximities of all products with RCA<1 to all products that Nepal exports with RCA>1. As Table 29 shows, five of these products have a relatively high proximity to Nepal's existing export capabilities. In particular, four products have a proximity value, using both measures, that is greater than the mean plus standard deviation of the entire distribution, as well as falls in the uppermost decile.

Table 29: Proximity to existing export capabilities

		Measure 1 (d_k)			Measure 2 (ω_k)		
HS Code	Description_ short	Proximity> mean	Proximity>mean+sd	Proximity decile	Proximity> mean	Proximity>mean+sd	Proximity decile
420211	Trunks, suitcases, …	Yes	Yes	10	Yes	Yes	10
420212	Trunks, suitcases, …	No	No	4	Yes	No	8
420221	Trunks, suitcases, …	Yes	Yes	10	Yes	Yes	10
420231	Trunks, suitcases, …	Yes	Yes	10	Yes	Yes	10

4202 91	Trunks, suitcases, …	Yes	Yes	10	Yes	Yes	10
4203 29	Gloves, mittens, etc. of leather…	Yes	No	8	Yes	Yes	10

Nepal's total exports of these six products averaged US$325,000 per year to the world and U$63,000 per year to the US during 2017-2021. US imports of these products from the whole world averaged US$4.7 billion per year. [26]

10. Summary of findings, implications and way forward

The United States' Nepal Trade Preference Programme (NTPP) entered into force on 30 December 2016, providing duty-free market access to a set of 66 products (at the HS 8-digit level, or tariff line level) exported from Nepal until 31 December 2025. This preferential market access was aimed at promoting Nepal's trade and economic development in the wake of the devastating earthquake of April 2015 and its aftershocks. Due to changes in the tariff classification system beginning in 2017, the number of products increased to 77. While the Trade Facilitation and Trade Enforcement Act of 2015 (Sec. 915) that was the legal basis for the scheme included products that were otherwise ineligible for duty-free access under the Generalized System of Preferences (GSP) programme, duty-free treatment for 31 of the 77 products was extended to other developing countries under the GSP programme before the NTPP came into force at the end of 2016.

About 29 percent of Nepal's exports to the US (in 2017) are potentially eligible for zero-duty access either under the GSP or NP preference programme. Some 21 percent of exports are potentially eligible for GSP only, 5 percent for NP only and 3 percent for both due to overlaps between the two schemes. This highlights the need for reinstating GSP, which expired in 2020, although imports from Nepal in relevant categories into the US continue to claim GSP on the assumption that the programme will be retroactively reinstated as in the past.

[26] Data from UN COMTRADE sourced via World Integrated Trade Solution (https://wits.worldbank.org/).

Preference utilization, averaged over 2017-2021, is higher for GSP products (67 percent) than for NP products (47 percent). Preference utilization among products common to both schemes is highest (86 percent). On average, the preference margin under NP is higher than that under GSP. In 2020, NP products not on the GSP list faced a median MFN tariff of 7 percent while NP products also on the GSP list faced a slightly higher median MFN tariff of 8.8 percent. Products on the GSP list but not on the NP list faced a lower median MFN tariff of 4.2 percent. As for products exported to the US that are not on the list of any preference scheme, they faced a median tariff of 5.6 percent and a maximum tariff of 55 percent. Readymade garments and footwear are among products of key export interest to Nepal that attract high tariffs and do not get any preferences. However, 84 percent of exports from Nepal not eligible for any trade preferences are subject to zero MFN tariff, underscoring that for the bulk of exports to the US, tariff is not a barrier.

Nepal's merchandise exports to the US in 2021, at US$108.3 million, were lower than what they were at their peak in the late 1990s. While exports have been on an upward trend since 2012, exports of NP products have been on a downward trend. Nepal's aggregate exports of products under NTPP to the US averaged over 2017-2021 were 26.5 percent lower than during 2012-2015, compared to a positive growth of 18 percent recorded by total exports of other products. Exports of NP products in 2021 were U$8.47 million and had a share of 7.8 percent in total exports to the US (compared to 14 percent in 2012). They represented an import market of US$13 billion in the US in 2021. From difference-in-differences and triple-difference estimations, we do not find conclusive evidence that the introduction of the NTPP led to an increase in Nepal's exports of the products it granted duty-free market access to. Leaving aside causal interpretation, a takeaway is that preferences granted under the NTPP were not able to increase exports of NP products relative to exports of non-NP products net of other effects on the two sets of products.

In a roundtable discussion on Nepal-US trade relations, focusing on the NTPP, organized on 20 July 2023 in Kathmandu, the Nepali private sector pointed out that the opportunities available under the NTPP had not been effectively disseminated, the exclusion of key products of export interest to Nepal from the scheme had reduced the value of the scheme to the nation's overall export sector, and the capacity building components under the NTPP and the Nepal-US Trade and Investment Framework Agreement had not been operationalized in a manner that responded to the export sector's and exporting firms' needs.

The implications and way forward emerging from the findings of the paper are:

- There is considerable room to increase the utilization of existing preferences (whether GSP or NP, but especially products that are only on the NP list).

- The reasons behind the relatively low utilization rates for products only on the NP list should be investigated and addressed, as should be the decline in utilization rates for products common to the NP list and the GSP list.
- The reasons behind exports of NP products growing much slower than exports of other products need to be ascertained.
- Scaling up exports of preference-granted products by addressing productive capacity and supply-side constraints is also needed, as even a cent percent utilization of the available preferences is unlikely to translate into a substantial increase in the exports of these products without addressing those constraints.
- Reinstatement of GSP is important for Nepal as GSP accounts for 80 percent of Nepal's preference-claimed exports.
- Restoration of GSP will also preserve preferences on over a third of exports of NP products even if the NTPP is not extended after expiration.
- NTPP was introduced through an Act and had received WTO waiver. A strong justification will be need for extending the Programme, and the process will be time consuming.
- Extending the NTPP beyond 2025 is likely necessary to build the capacity to export. Effectively operationalizing the capacity building and technical assistance window under the Nepal-US Trade and Investment Framework Agreement would be crucial. However, lessons must be drawn from the implementation of the window so far.
- Extending the NTPP beyond 2025 would provide an opportunity to include other items of export interest to Nepal. Any list of products to be proposed by Nepal should be backed up by thorough research and extensive stakeholder consultations.
- About 84 percent of the value of Nepal's exports to the US that are ineligible for preferences in the US facing zero MFN tariffs implies an opportunity to exploit the export potential in these products further.

References

Coniglio, N. D., Vurchio, D., Cantore, N., and Clara, M. 2021. On the evolution of comparative advantage: path-dependent versus path-defying changes. *Journal of International Economics*, *133*, 103522.

Correia, S. 2017. *reghdfe: Stata module for linear and instrumental-variable/GMM regression absorbing multiple levels of fixed effects.* Statistical Software Components S457874, Boston College Department of Economics. https://ideas.repec.org/c/boc/bocode/s457874.html

Correia, S., Guimarães, P., and Zylkin, T. 2019. Verifying the existence of maximum likelihood estimates for generalized linear models. arXiv:1903.01633.

Correia, S., Guimarães, P., and Zylkin, T. 2020. Fast Poisson estimation with high-dimensional fixed effects. *The Stata Journal* 20(1), 95-115. doi:10.1177/1536867X20909691

Dahal, A. 2021. An analysis of "Nepal trade preference program" on Nepal's export to the United States. MA thesis submitted to the Department of Economics, Patan Multiple Campus, Tribhuvan University, Lalitpur, Nepal.

Frazer, G., and Van Biesebroeck, J. 2010. Trade growth under the African growth and opportunity act. *The Review of Economics and Statistics* 92(1), 128-144.

Hausmann, R., and Klinger, B., 2007. Structural transformation and patterns of comparative advantage in the product space, CID Working Paper 146. Center for International Development at Harvard University. https://dx.doi.org/10.2139/ssrn.939646.

Hidalgo, C., Klinger, B., Barabasi, A.-L., and Hausmann, R., 2007. Product space conditions the development of nations. *Science* 317 (5837), 482–487. https://doi.org/10.1126/science.1144581.

Ito, T., and Aoyagi, T. 2019. Did the least developed countries benefit from duty-free quota-free access to the Japanese market? *Japan and the World Economy*, 49, 32-39.

Thelle, M.H., Jeppesen, T., Gjodesen-Lund, C., and Van Biesebroeck, J. 2015. Assessment of economic benefits generated by the EU Trade Regimes towards developing countries. European Commission, https://op.europa.eu/en/publication-detail/-/publication/7ca3c347-bdef-11e7-a7f8-01aa75ed71a1/language-en

UNCTAD. 2023. The Generalized System of Preferences: How much does it matter for developing countries? New York: United Nations.

Van Biesebroeck, J., and Zaurino, E. 2019. Effects of trade liberalization on textile and apparel exports from sub-Sahara Africa. World Bank Policy Research Working Paper, 8936.

Annex

Table A1: Summary statistics of USITC dataset used in DID estimation, and mean tests: Subsample 1, excluding NP products eligible for GSP in 2020 and non-NP products that used any GSP scheme at least once during 2012-2021

	mean	sd	min	p25	p50	p75	max	N
Exports (US$)	76086.275	858809.302	0.000	0.000	0.000	5330.000	27377584.000	9097
Ln (1+exports)	3.982	4.772	0.000	0.000	0.000	8.581	17.125	9097
Ln (exports)	9.203	2.137	5.525	7.692	9.006	10.571	17.125	3936

Mean difference in Exports between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)
Between groups (NP products and non-NP products), both periods	74320.001	118952.756	-44632.754	0.334	8737	360
Between groups, pre-treatment period	73210.239	136226.225	-63015.986	0.359	3832	160
Between groups, post-treatment period	75186.996	105133.980	-29946.984	0.631	4905	200

	Mean (pre-treatment	Mean (post-treatment	Difference in means	p-value	N (pre-	N (post-

	period)	period)			treatment)	treatment)
Within group of NP products	136226.225	105133.980	31092.245	0.405	160	200
Within group of non-NP products	73210.239	75186.996	-1976.756	0.916	3832	4905

Mean difference in Ln (1+exports) between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)
Between groups (NP products and non-NP products), both periods	3.790	8.654	-4.864	0.000	8737	360
Between groups, pre-treatment period	3.803	8.898	-5.095	0.000	3832	160
Between groups, post-treatment period	3.779	8.458	-4.679	0.000	4905	200

	Mean (pre-treatment period)	Mean (post-treatment period)	Difference in means	p-value	N (pre-treatment)	N (post-treatment)
Within group of NP products	8.898	8.458	0.440	0.283	160	200
Within group of non-NP products	3.803	3.779	0.025	0.808	3832	4905

Mean difference in Ln (exports) between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)

Between groups (NP products and non-NP products), both periods	9.136	9.985	-0.849	0.000	3624	312
Between groups, pre-treatment period	9.149	10.026	-0.877	0.000	1593	142
Between groups, post-treatment period	9.125	9.950	-0.825	0.000	2031	170

	Mean (pre-treatment period)	Mean (post-treatment period)	Difference in means	p-value	N (pre-treatment)	N (post-treatment)
Within group of NP products	10.026	9.950	0.075	0.736	142	170
Within group of non-NP products	9.149	9.125	0.023	0.744	1593	2031

Note: Total observations = 9097. About 13 percent of observations of NP products have zero export value, and 58 percent of observation of non-NP products have zero export value. There are 48 observations of NP products with zero export value, and 5,113 observations of non-NP products with zero export value.

Table A2: Summary statistics of USITC dataset used in DID estimation, and mean tests: Subsample II, excluding products with MFN ad-valorem equivalent tariff zero, NP products eligible for GSP in 2020 and non-NP products that used any GSP scheme at least once during 2012-2021

	mean	sd	min	p25	p50	p75	max	N
Exports (US$)	29745.663	151151.362	0.000	0.000	0.000	5391.500	2433507.000	5968
Ln (1+exports)	4.205	4.662	0.000	0.000	0.000	8.593	14.705	5968
Ln (exports)	8.910	2.028	5.525	7.335	8.752	10.317	14.705	2816

Mean difference in Exports between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)
Between groups (NP products and non-NP products), both periods	24019.102	118952.756	-94933.654	0.000	5608	360
Between groups, pre-treatment period	29353.891	136226.225	-106872.334	0.000	2468	160
Between groups, post-treatment period	19826.026	105133.980	-85307.954	0.000	3140	200

	Mean (pre-treatment period)	Mean (post-treatment period)	Difference in means	p-value	N (pre-treatment)	N (post-treatment)
Within group of NP products	136226.225	105133.980	31092.245	0.405	160	200
Within group of non-NP products	29353.891	19826.026	9527.864	0.005	2468	3140

Mean difference in Ln (1+exports) between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)
Between groups (NP products and non-NP products),	3.919	8.654	-4.735	0.000	5608	360

both periods						
Between groups, pre-treatment period	4.020	8.898	-4.878	0.000	2468	160
Between groups, post-treatment period	3.840	8.458	-4.619	0.000	3140	200

	Mean (pre-treatment period)	Mean (post-treatment period)	Difference in means	p-value	N (pre-treatment)	N (post-treatment)
Within group of NP products	8.898	8.458	0.440	0.283	160	200
Within group of non-NP products	4.020	3.840	0.180	0.142	2468	3140

Mean difference in Ln (exports) between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)
Between groups (NP products and non-NP products), both periods	8.776	9.985	-1.208	0.000	2504	312
Between groups, pre-treatment period	8.826	10.026	-1.199	0.000	1124	142
Between groups, post-treatment period	8.736	9.950	-1.215	0.000	1380	170

	Mean (pre-treatment	Mean (post-treatment	Difference in means	p-value	N (pre-	N (post-

	period)	period)			treatment)	treatment)
Within group of NP products	10.026	9.950	0.075	0.736	142	170
Within group of non-NP products	8.826	8.736	0.090	0.260	1124	1380

Note: Total observations = 5,968. About 13 percent of observations of NP products have zero export value, and 55 percent of observation of non-NP products have zero export value. There are 48 observations of NP products with zero export value, and 3,104 observations of non-NP products with zero export value.

Table A3: Triple-difference estimation with leads and lags: Full sample

	(1) Ln exports	(2) Ln (1+exports)	(3) Exports (Poisson)
Effect_2012	-0.073	1.203***	0.559***
	(0.153)	(0.328)	(0.200)
Effect_2013	-0.126	0.650*	0.108
	(0.134)	(0.372)	(0.142)
Effect_2014	-0.237***	1.441***	0.084
	(0.083)	(0.465)	(0.089)
Effect_2017	0.125	-0.282	0.047
	(0.134)	(0.188)	(0.205)
Effect_2018	-0.170	0.910*	0.017
	(0.143)	(0.471)	(0.249)
Effect_2019	0.181	-0.146	-0.044
	(0.183)	(0.383)	(0.190)
Effect_2020	-0.076	0.304	-0.314
	(0.180)	(0.296)	(0.323)
Effect_2021	0.166	0.437	0.122

	(0.291)	(0.333)	(0.382)
Observations	16769	23322	23322
Adjusted R^2	0.768	0.772	

Note: All regressions include HS Chapter fixed effects. Standard errors in parentheses. Standard errors are clustered at the HS Chapter level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A4: Triple-difference estimation with leads and lags: Subsample I

	(1) Ln exports	(2) Ln (1+exports)	(3) Exports (Poisson)
Effect_2012	-0.149	1.688***	0.371**
	(0.127)	(0.476)	(0.162)
Effect_2013	-0.321**	1.135*	-0.053
	(0.129)	(0.603)	(0.082)
Effect_2014	-0.408***	2.111**	0.082
	(0.072)	(0.815)	(0.094)
Effect_2017	-0.235**	0.032	0.034
	(0.113)	(0.240)	(0.172)
Effect_2018	-0.532***	1.723***	0.007
	(0.198)	(0.581)	(0.197)
Effect_2019	0.117	0.297	-0.018
	(0.254)	(0.330)	(0.188)
Effect_2020	-0.269	1.095**	-0.196
	(0.254)	(0.526)	(0.348)
Effect_2021	0.004	0.986***	0.144
	(0.308)	(0.265)	(0.479)

Observations	13025	18194	18194
Adjusted R^2	0.766	0.773	

Note: All regressions include HS Chapter fixed effects. Standard errors in parentheses. Standard errors are clustered at the HS Chapter level.

The following observations are excluded from the full sample: NP products eligible for GSP in 2020 and non-NP products that used any GSP scheme at least once during 2012-2021.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A5: Triple-difference estimation with leads and lags: Subsample II

	(1)	(2)	(3)
	Ln exports	Ln (1+exports)	Exports (Poisson)
Effect_2012	-0.094	1.676***	0.366**
	(0.114)	(0.470)	(0.171)
Effect_2013	-0.289**	1.140*	-0.060
	(0.137)	(0.595)	(0.085)
Effect_2014	-0.352***	2.049**	0.080
	(0.089)	(0.811)	(0.096)
Effect_2017	-0.293***	0.123	0.354**
	(0.106)	(0.253)	(0.165)
Effect_2018	-0.528***	1.840***	0.332**
	(0.192)	(0.577)	(0.168)
Effect_2019	0.117	0.304	0.263*
	(0.240)	(0.361)	(0.157)
Effect_2020	-0.253	1.185**	0.194
	(0.255)	(0.514)	(0.300)
Effect_2021	-0.011	1.091***	0.487

	(0.294)	(0.234)	(0.433)
Observations	8776	11936	11936
Adjusted R^2	0.757	0.769	

Note: All regressions include HS Chapter fixed effects. Standard errors in parentheses. Standard errors are clustered at the HS Chapter level.

The following observations are excluded from the full sample: Products with MFN ad-valorem equivalent tariff zero, NP products eligible for GSP in 2020 and non-NP products that used any GSP scheme at least once during 2012-2021.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A6: Summary statistics of BACI dataset used in DID estimation, and mean tests: Full sample

	mean	sd	min	p25	p50	p75	max	N
Exports (US$, '000)	92.398	983.233	0.000	0.000	0.000	7.497	34434.961	11400
Ln (1+exports)	1.221	1.882	0.000	0.000	0.000	2.140	10.447	11400
Ln (exports)	2.506	2.299	-6.908	0.989	2.426	4.007	10.447	4950

Mean difference in Exports between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)
Between groups (NP products and non-NP products), both periods	57.282	1234.722	-1177.440	0.000	11060	340
Between groups, pre-treatment period	46.233	1311.548	-1265.315	0.000	5530	170

Between groups, post-treatment period	68.330	1157.895	-1089.565	0.000	5530	170

	Mean (pre-treatment period)	Mean (post-treatment period)	Difference in means	p-value	N (pre-treatment)	N (post-treatment)
Within group of NP products	1311.548	1157.895	153.653	0.777	170	170
Within group of non-NP products	46.233	68.330	-22.097	0.008	5530	5530

Mean difference in Ln (1+Exports) between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)
Between groups (NP products and non-NP products), both periods	1.136	4.005	-2.870	0.000	11060	340
Between groups, pre-treatment period	1.092	4.129	-3.037	0.000	5530	170
Between groups, post-treatment period	1.179	3.882	-2.703	0.000	5530	170

	Mean (pre-treatment period)	Mean (post-treatment period)	Difference in means	p-value	N (pre-treatment)	N (post-treatment)
Within group of NP products	4.129	3.882	0.247	0.353	170	170

Within group of non-NP products	1.092	1.179	-0.087	0.011	5530	5530

Mean difference in Ln (Exports) between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)
Between groups (NP products and non-NP products), both periods	2.392	4.170	-1.778	0.000	4631	319
Between groups, pre-treatment period	2.379	4.287	-1.908	0.000	2245	160
Between groups, post-treatment period	2.404	4.052	-1.648	0.000	2386	159

	Mean (pre-treatment period)	Mean (post-treatment period)	Difference in means	p-value	N (pre-treatment)	N (post-treatment)
Within group of NP products	4.287	4.052	0.235	0.388	160	159
Within group of non-NP products	2.379	2.404	-0.024	0.712	2245	2386

Note: Total observations =11060. About 6 percent of observations of NP products have zero export value, and 58 percent of observation of non-NP products have zero export value. There are observations of 21 NP products with zero export value, and observations of 6429 non-NP products with zero export value.

Table A7: Summary statistics of BACI dataset used in DID estimation, and mean tests: Subsample, excluding products that are on GSP list and products that have average ad valorem MFN tariff of zero

	mean	sd	min	p25	p50	p75	max	N
Exports (US$, '000)	64.666	1039.393	0.000	0.000	0.000	0.000	34434.961	8430
Ln (1+exports)	0.663	1.525	0.000	0.000	0.000	0.000	10.447	8430
Ln (exports)	2.536	2.280	-6.908	0.876	2.445	4.105	10.447	1980

Mean difference in Exports between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)
Between groups (NP products and non-NP products), both periods	27.532	2847.710	-2820.178	0.000	8319	111
Between groups, pre-treatment period	25.243	3024.557	-2999.313	0.000	4237	54
Between groups, post-treatment period	29.909	2680.171	-2650.263	0.000	4082	57

	Mean (pre-treatment period)	Mean (post-treatment period)	Difference in means	p-value	N (pre-treatment)	N (post-treatment)
Within group of NP products	3024.557	2680.171	344.385	0.830	54	57
Within group of non-NP products	25.243	29.909	-4.666	0.384	4237	4082

Mean difference in Ln (1+Exports) between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)
Between groups (NP products and non-NP products), both periods	0.621	3.835	-3.215	0.000	8319	111
Between groups, pre-treatment period	0.623	4.060	-3.437	0.000	4237	54
Between groups, post-treatment period	0.618	3.622	-3.004	0.000	4082	57

	Mean (pre-treatment period)	Mean (post-treatment period)	Difference in means	p-value	N (pre-treatment)	N (post-treatment)
Within group of NP products	4.060	3.622	0.438	0.444	54	57
Within group of non-NP products	0.623	0.618	0.005	0.863	4237	4082

Mean difference in Ln (Exports) between and within groups

	Mean (non-NP)	Mean (NP)	Difference in means	p-value	N (non-NP)	N (NP)
Between groups (NP products and non-NP products),	2.436	4.644	-2.208	0.000	1890	90

both periods

Between groups, pre-treatment period	2.491	4.920	-2.430	0.000	952	44
Between groups, post-treatment period	2.380	4.379	-1.999	0.000	938	46

	Mean (pre-treatment period)	Mean (post-treatment period)	Difference in means	p-value	N (pre-treatment)	N (post-treatment)
Within group of NP products	4.920	4.379	0.541	0.351	44	46
Within group of non-NP products	2.491	2.380	0.111	0.275	952	938

Note: Total observations =8319. About 19 percent of observations of NP products have zero export value, and 77 percent of observation of non-NP products have zero export value. There are observations of 21 NP products with zero export value, and observations of 6429 non-NP products with zero export value.