# GSP Project

## 1. Purpose of the Project:

The aim of this project is to study the impact of withdrawal of GSP benefits to India in March 2019, by the United States and answer the four questions given as part of the assignment. While answering the questions is the goal, there has been immense focus on data preprocessing, considering the large and complex data set.

## 2. Data Available:

1. Total exports per year from India to US for products at HS 10 digit level
2. List of products covered under GSP at HS 8 digit level, along with MFN rates.

## 3. Data Preprocessing

Both the files(given in xlsx format) have been imported as CSV files to avoid formatting errors.

### 3.1. US Import Data

**Key Assumption:** In the given import data set, while the column name mentions 10 digit HTS codes, few data points have only 9 digits. In this case, it has been assumed that one of the last two digits is missing, and the first 8 digits have been considered for determining HTS Global.

The preprocessing steps are as follows :

1. 10 digit HTS Codes have been converted to 8 digit, by omitting the last the numbers. Also, few data points have a 9 digit HTS code only. In that case, only the last digit has been omitted. The 8 digit HTS codes have been saved in a new column HTS Global.
2. Data has been checked for any mis formatting of HTS codes as date and timestamp, during the import process. Errors have been found during importing the data in xlsx format. So, the CSV format has been preferred.
3. Column duplicates have been removed and the '2016' column has been repositioned to get the export data year wise.
4. Rows with ONLY NaN values in ALL years have been removed.
5. NaN values have been replaced with zeros, in rows where there has been no trade in a particular year.
6. Import amount has been reformatted from string to float value (for calculations) and commas have been removed.
7. 8 digit HTS codes have been grouped together, and similar rows with same 8 digit HTS codes have been vertically summed together.
8. Data has been checked again for any duplicates.

Thus, after the above preprocessing steps, the Import data is as follows (from year 2004 to 2019(through Jan)). Only a snapshot of the data has been presented here.

| | HTS Global | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 201 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 10129009 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20,00 |
| 1 | 10130000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2 | 10190109 | 10,000 | 30,000 | 0 | 50,000 | 0 | 65,000 | 4,503 | 20,000 | 0 | 0 | |
| 3 | 10619909 | 0 | 0 | 0 | 1,04,000 | 0 | 0 | 0 | 25,000 | 0 | 0 | |
| 4 | 10619912 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11,000 | 4,300 | |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |

### 3.2. GSP Data

The preprocessing steps are as follows:

1. Column names have been corrected for importing errors.
2. Row duplicates have been dropped
3. HTS code formatting has been adjusted to make it a string of numbers only (without any special characters) and a new column HTS Global (for comparison between both the datasets) has been added with the formatted HTS codes. Eg : 0106.31.00 converted to 01063100.
4. After the above steps, GSP data is as follows :

| | HTS Number | HTS Global | Brief Description | MFN Rate | GSP Status |
|---|---|---|---|---|---|
| 0 | 0106.31.00 | 01063100 | Live birds of prey | 1.80% | A |
| 1 | 0106.32.00 | 01063200 | Live psittaciforme birds (including parrots, p... | 1.80% | A |
| 2 | 0106.33.00 | 01063300 | Ostriches; emus | 1.80% | A |
| 3 | 0106.39.01 | 01063901 | Live birds, other than poultry, birds of prey ... | 1.80% | A |
| 4 | 0202.30.02 | 02023002 | High-qual. beef cuts, boneless, processed, fro... | 4% | A |

### 3.3. Merging of Datasets

The two datasets have been merged, to identify the data points which enjoy GSP status. A total of 2600 points have been obtained.

### 3.4. GSP Status - A vs A*

For commodities with GSP status as A, the benefits are applicable across all nations. However, for commodities with GSP status of A*, the reduced tariff benefits are only applicable as per General Notes - Point 4(d) in pages 14 to 17. (PDF of the pages included with the files)

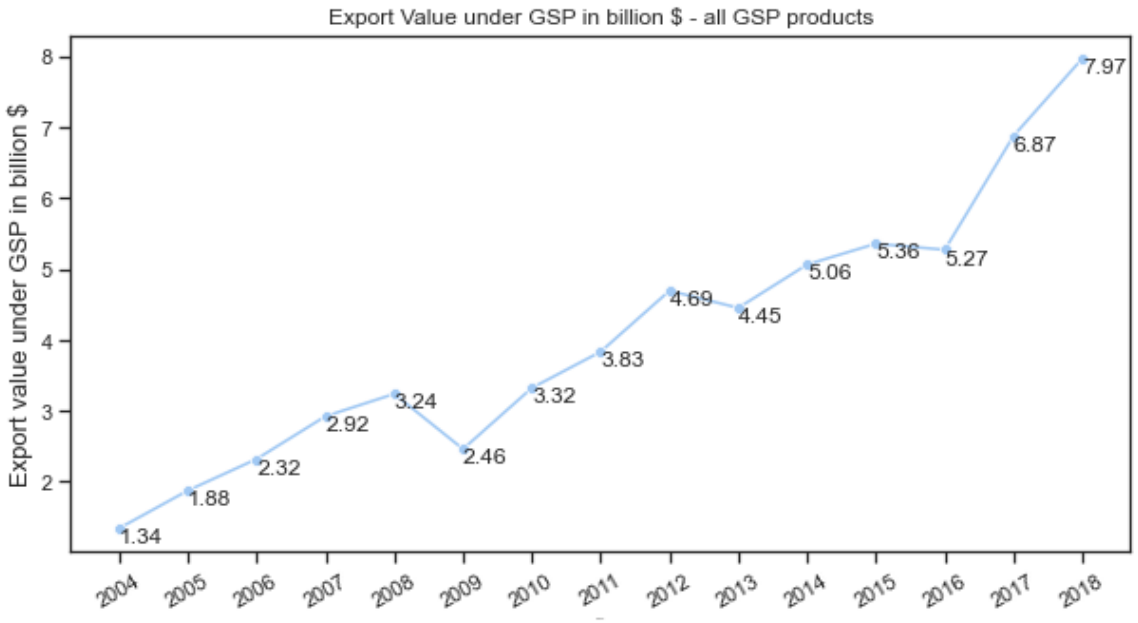
Three HS codes in the precious metals category ( 71131150, 71131929, 71131950 ) have been found where India does not enjoy a GSP status. So, these have been exempted from the dataset for calculation of impact of withdrawal of GSP status.

## 4. Solutions to Questions

*4.1. Calculate the total export value impacted by change in GSP status*

The total export value impacted by change for the year 2018 is found to be **$7.97 bn.**

The export value for various years can be seen below.




*4.2. <u>What will be the tariff footprint for Indian exports according to 2018 value</u>*

The tariff footprint for Indian exports is nearly **$307.45 mn.**

(**Note :** For calculating the above value, 165 data points have been ignored as the tariff data for those points was not available as an absolute percent.)

*4.3. <u>Reason for discrepancy between your calculations and those reported in the media articles</u>*

The reason for **discrepancy is probably due to the interpretation of the GSP status of A*.** If commodities with GSP status of A* are excluded, then we arrive at values close to those reported in the media i.e., If A* HS codes are excluded (only GSP status A considered) from the data under consideration, we see that the export value impacted by change in GSP status for 2018 is $6.23 bn ($6.3 bn as per media reports). The tariff footprint is $247.9 mn($240 mn as per media reports) after ignoring 154 products for which tariff as absolute percentage was not available.

However, this might be a mere coincidence, and more conclusive analysis might be needed in this regard, to conclusively establish the reason.

*4.4. <u>Bonus question: What will be the total impact on Indian exports?</u>*

The total impact on Indian exports will depend on many other qualitative and quantitative factors. It can be understood as follows:

| **Quantitative Viewpoint (Pseudo Code)** | |
|---|---|
| Step 1 | Let India's (GSP Export/Total Export) = x. Calculate x value for all the major countries which provide GSP tariff concessions to India. |
| Step 2 | If x has an increasing trend from the past few years, for example from 2010 to 2018, then it is possible that the loss in GSP exports can be compensated by rise in GSP exports to other countries.<br><br>For this to happen, we have to note that the rise in x from 2018 onwards should |

| | |
|---|---|
| | be higher than the previous average rise, in order to compensate for the GSP benefit loss from the US. |
| Step 3 | Further, the impact on individual products can be understood by looking at the HS code wise export value growth rate to various countries, for each product. |

**Note:**
1. The GSP discounted tariff rates offered by each country might differ, and this has to be taken into account.
2. The pseudo code has been given, as the data for GSP and non GSP trade of India with other countries was not available with me.
2. The suggested method is a predictive method, i.e., it assumes that the data of exports from 2019 is not available, and attempts are being made to assess the total impact on trade based on available information till 2018.

| **Qualitative Viewpoint** | | | |
|---|---|---|---|
| **S.No** | **Assumption** | **Outcome** | **Possibility** |
| 1 | If other countries follow US in withdrawal of GSP status | It might lead to a fall in export competitiveness of Indian exports, especially with respect to Bangladesh, Vietnam and other Southeast Asian countries. | Such a phenomenon has not been witnessed. On the contrary, GSP exports to EU, Russia and Japan have increased post 2018. |
| 2 | If it leads to tariff war | In such a scenario, it might only lead to an overall loss in welfare for both countries. | Such events were seen immediately after the withdrawal. But the trade war seems to have subsided later. |

## 4. Suggestions

Focus needs to be shifted to exporting products which are higher up in the value chain. There is a need to be ahead of other transitioning economies, and capture the non-GSP market, by becoming a dominant player in the mid level exports like electronics. The Production linked incentives scheme by the government is a good step in this direction.

Further, the long pending free trade agreement with the US has to be actively pursued. Considering that India already has a trade surplus with the US, an FTA might serve as a viable alternative to GSP, for exporting products at discounted tariffs.