# WITS Global Tariff Cuts and Trade Simulator User Manual

**WITS Global Tariff Cuts and Trade Simulator** includes three modules, two of which are inter-related. Namely, they are Tariff Cuts, Global Simulation and SMART with Users' Own Data. With Tariff Cuts, users can cut tariff rates according to selected formulas. The results of the Tariff Cuts are used to run a Global Simulation to simulate the effects of the tariff cuts on trade and related indicators. In addition, the application provides a platform to operate SMART module using users' own data. The on-line version of SMART is available in WITS.

**How to install WITS Global Tariff Cuts and Trade Simulator:**

Follow the below steps to install **WITS Global Tariff Cuts and Trade Simulator**
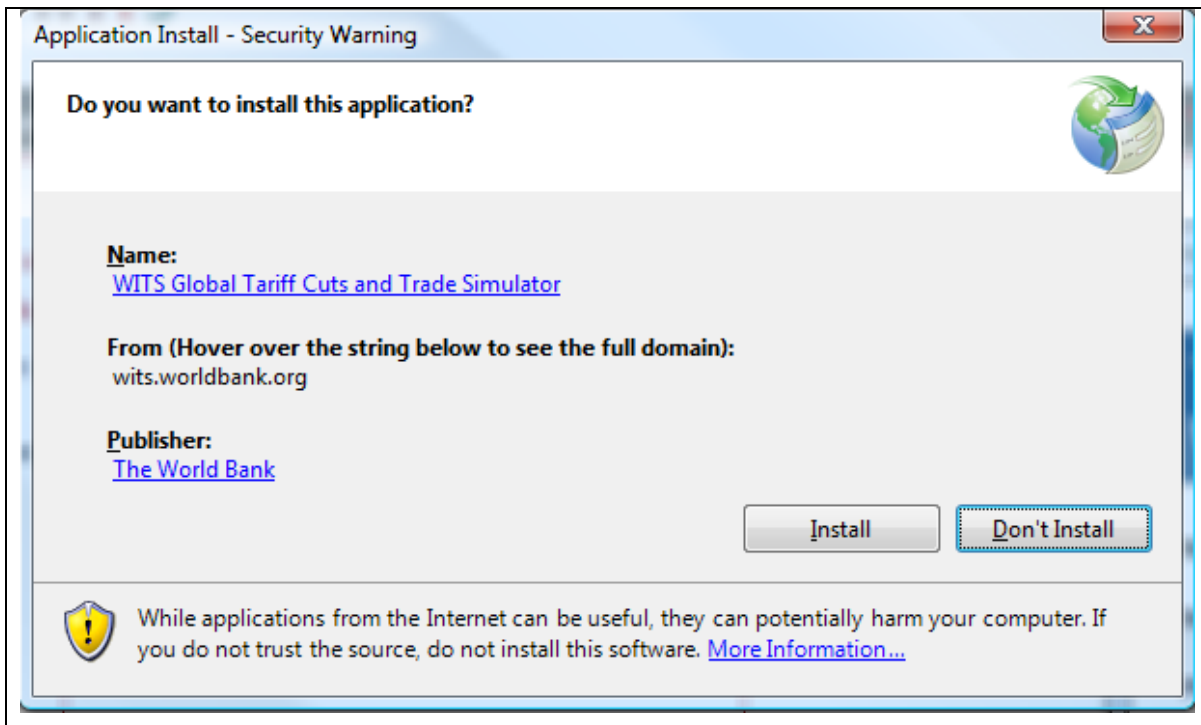
Step 1: Open your Internet explorer and type
**http://wits.worldbank.org/WITS/WITS_analyticaltool.html**
Step 2: Accept the terms and conditions and click the ***Download*** button
Step 2: Once the page loaded click on Install button.
Step 3: Once the following screen appears click on Install.

First time when you launched WITS Global Tariff Cuts and Trade Simulator you need to provide your WITS registered email address and you're WITS Password.



**Tariff Cuts:**

In Tariff Cuts module, users can cut the applied tariff rates using prescribed formulas. The below Tariff Change formulas are available

- **New Rate:** Tariffs are replaced with the entered value. For example, value of 10 stands for 10%

- **Maximum Rate:** Tariffs are replaced with the entered value in case the original rate was above the maximum rate. There will not be any change in case the original rate was below the maximum rate (e.g. Value of 15 stands for maximum rate of 15%)

- **Linear Cut:** Tariffs are reduced by the entered cut coefficient. For example an 80% Linear cut will modify existing tariffs with $r1=0.2*r0$ (with $r0$ as the existing tariff and $r1$ as the new tariff).

- **Swiss Formula:** The formula is used in order to achieve a higher cut the higher the tariff is since this is a preferred option in tariff agreements.

  The new rate is calculated as: $r1= (a*r0)/(a+r0)$

Where *r1* is the new rate, *r0* stands for the old rate and *a* is a fixed coefficient. The coefficient is subject to WTO negotiations and expresses the deepness of the tariff extent cut for a given rate. In applying the formula, you can either specify the Swiss Formula Coefficient (*a*) (in %) or the Goal for Cut in Average Tariff (*r1*) (in %).

Any number of different formulas (or same formula with different parameters) may be applied for different products and countries.  Both pre- and post-tariff cut rates are reported for every importer-exporter combination and for each product at HS 6-digit level.

Select the ***Tariff Cuts*** on the menu bar to submit the Advanced Tariff Change Simulation query. Please refer to the WITS documentation to know how to select reporters, partners, products, tariff scenario and submit.  You can check the status of the query by clicking View Report button. Once the status is changed to completed, you can click on the view icon to view the tariff change result.

The results of the Tariff Cuts are used to run a Global Simulation to simulate the effects of the tariff cuts on trade and related indicators. Once the job is completed, it will appear in the Global Simulation module.

**Global Simulation:**

Select the *Global simulation* on the menu bar to perform Global simulation.

**Screen Shot: 1**



**Screen Shots: 2**



For each query, the system shows a set of information.

- **Query Id**: Unique ID of Query.
- **Query Name**: Name of the Query Name.

- **Date**: Advanced Tariff Change Simulation Query submitted date.
- **Data Request**: By clicking on **Download** button you can submit your query to the server. Please note that you can submit only one query at a time.
- **Data Process**: Once the data available on the server **Process** button gets enable. If you click on the process button GSIM starts process locally. Please note that you can process only one query at a time.
- **Report View and Save**: Once the GSIM local process completed Report View button gets enable.  You can ready to view report.
- **Status**: Indicates the status of the Query whether the data is downloading or processing or ready to view report etc.
- **Delete**: By clicking on Delete button you can permanently delete query from GSIM. You cannot delete query middle of process.

### *Step 1*

You can request for the data for a particular query by clicking the **Download** button in **Data Request** column.

Once you click that icon, you will be shown a message box showing that

**"Your download request submitted to WITS server."**

And the button will change to **Cancel.**

GSIM will start downloading the data for the query and the text in status column will change:

From
**"This query is ready to download data from the WITS server"**

To

**"Data Preparation – This GSIM Query data is being prepared at the WITS Server"**

You can cancel the request at any point of time.

After the query data is downloaded to local machine, the text in status column will change:

To
**"The GSIM query ready to process locally"**

Also the **Process** button will be enabled in Data process column.  GSIM is now ready to process the query locally.

*Step 2*

In this step, Global Simulation Engine will work on the downloaded data on the user computer. This is highly CPU and memory intensive task and it runs on the user computer as back ground processes.

By clicking on **Process** button for which data was downloaded will show the window like below.
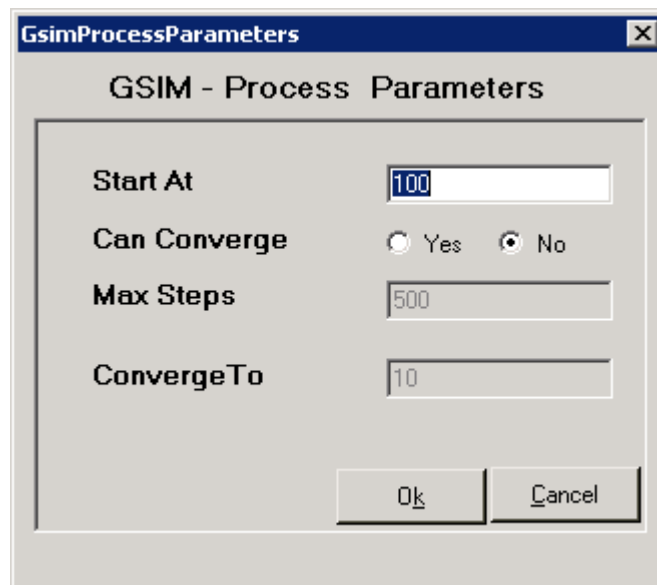
The above are the control parameters for the engine and advanced users may change these values. The Start At is the number of steps the solution space is divided in identifying the value from initial tariffs to proposed final tariffs. For example, for *Start At value of 100,* the engine divides the solution space into 100 steps, and takes one pass through a central calculation loop, performing the calculation 100 times, moving from initial tariffs to proposed final tariffs.

Convergence is the relative difference between the total percent changes in trade quantities, over two consecutive passes through the central calculation.

If the *CanConverge* option is true, *Converge To* value is the relative difference between the total percent changes in trade quantities, over two consecutive passes at which to stop the calculation. Lowering the *converge to* value increases the time-to-solution. *MaxSteps* is the stopping criterion to prevent runaway calculation with impossible-to-satisfy parameters. For example, *MaxSteps* of 500 instructs the engine to stop the calculation if the *Converge To* value is not found in 500 steps.

If the *CanConverge* option is false, *Converge To* and *MaxSteps* control parameters are not applicable.

**Please be caution on changing the default values and this screen is meant for advanced user. Changing the default value may consume more CPU and memory, and also may take longer time to complete the processes.**

Click OK on the GSIM – Processes Parameter screen will change the status

From

**"The GSIM query ready to process locally"**

To

**"Data Process – This GSIM Query is being processed locally"**.

And the button will change to **Cancel**.

Completion of this stage will take some time depending upon the volume of data GSIM will process. Once the local processing is done the text in status column will change

From

**"Data Process – This GSIM Query is being processed locally"**

To

**"The GSIM Query ready to View"**

Also the **Report view** button will be enabled in **Report View** column.

*Step 3*

Click on the **Report View** button to open report window as shown in **Screen Shots: 2** above. That will show you "**Detailed Data**" report. You can also view two other reports called "Total Welfare Effects" and "Export Changes (World Prices) by changing the selection. You can **Save** the report in main screen (**Screen Shots: 1**) by clicking "**Save**" button or in the Report window **(Screen Shots: 2)** by clicking "**Save as CSV file"** button. You need to click on refresh button to know the current status of the particular query.

**SMART with Users' Data:**

In this module, users can export the template, fill it with their own data, import it back to the module and run the SMART simulation.  If only a part of the data elements are available with the users, they can download the data from the SMART module within WITS and use only the missing elements to be combined with the own data.

Select the *SMART with Users' Data* on the menu bar to perform SMART simulation.

Use the Import SMART Data button to import the comma separated value tariff file.

Enter the query name, description. Please use the template file to prepare the tariff file. Use the Browse button to select the prepared tariff file. The default values for elasticity's are shown and user can edit if needed. Click on Proceed button.

A screen like below is shown. Click on Process button to start the SMART simulation on the imported tariff file.

A screen like below is shown. Click on the Refresh button to refresh the simulation status.



Once the SMART engine completes the processing, the View Report button is enabled. On click of View Report, shows the report like below.



Please refer to WITS User manual or WITS online help for SMART Reports