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# SUPPORT FOR THE ANALYSIS OF TRADE AND TARIFF DATA

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# **SUPPORT FOR THE ANALYSIS OF TRADE AND TARIFF DATA**

ASSISTANCE FOR TRADE REFORM

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NATHAN ASSOCIATS

USAID/EGYPT POLICY AND PRIVATE SECTOR OFFICE

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## **DISCLAIMER:**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

## **Support for the Analysis of Trade and Tariff Data**

The expected deliverables for this activity were:

- Database and analytical system for evaluating different market access scenarios on Egypt's principal agricultural and industrial exports (covering at least 75% of Egypt's exports);
- Recommendations on the collection and evaluation of data on SPS- and TBT-type and other NTBs;
- Recommendations on obtaining commodity-specific Aggregate Measurement of Support (AMS) data for further analysis;
- Manual on access and explanation of the data used in the analytical system, and use of the system for market access scenarios;
- Training seminar and mentoring on the above;
- Report on simulations of the impact of alternative tariff reduction formulas on trade weighted protection in Egypt's principal export markets and on the Egyptian import market.

### **Database, Analytical System, Manuals, Training, and Simulations**

The major output of this consultancy consists of two separate computer files covering Egypt's agricultural and non-oil industrial exports. These files contain the databases, analytical systems, and reporting tables that are used to simulate the major market access scenarios proposed during the Doha Round. The commodities in the files account for more than 75% of Egypt's non-oil exports.

#### **Non-Agricultural Simulation Files**

- 1) Non-Agricultural Proposal Analysis Spreadsheet and Manual (The spreadsheet contains separate worksheets with tariff, trade, and analysis tables for evaluating each of the non-agricultural proposals submitted during the Doha Round).
- 2) Tariff Processing Files
  - a) Bound tariffs for Egypt's major non-agricultural export markets;
  - b) Applied tariffs for Egypt's major non-agricultural export markets;
  - c) Preferential tariffs for Egypt's major non-ag export markets, excluding the EU;
  - d) Manual for obtaining tariff data using WITS.
- 3) Trade Processing Files
  - a) Excel spreadsheets and manual for processing Comtrade data on non-ag exports.
  - b) Summary tables on Egypt's non-ag exports for 2003.

#### **Agricultural Simulation Files**

- 1) Agricultural Proposal Analysis Spreadsheet and Manual (The spreadsheet contains separate worksheets with tariff, trade, and analysis tables for evaluating each of the agricultural proposals submitted during the Doha Round.)
- 2) Tariff Processing Files
  - a) Bound tariffs for Egypt's major agricultural export markets;
  - b) Applied tariffs for Egypt's major agricultural export markets;
  - c) Preferential tariffs for Egypt's major ag export markets, excluding the EU;
  - d) Manual for obtaining tariff data using WITS.
- 3) Trade Processing Files
  - a) Excel spreadsheets and manual for processing Comtrade data on ag. exports;
  - b) Summary tables on Egypt's agricultural exports for 2003.

The above files include the entire tariff codes of Egypt's major trading partners and can thus be used for other types of analysis. In addition, a separate manual was developed that

provides an explanation of the principal Microsoft Excel commands used in processing trade and tariff data.

Training on data sources, spreadsheet commands for analyzing the data, and the analytic system were provided while the Senior Consultant was located in Cairo. One major training seminar was provided on techniques for processing trade data in Excel. Since large numbers of counterpart Egyptian staff members were unavailable to attend subsequent major training seminars because of the impending Hong Kong Ministerial Conference, additional training was provided to smaller groups of 1-5 persons on a case-by-case basis. In addition, the Consultant provided two training sessions on methods of accessing tariff data using the World Integrated Trade Solution (WITS) software that was developed by the World Bank, UNCTAD, etc.

Finally, the Consultants undertook a preliminary evaluation of the use of Microsoft Access as an alternative to Microsoft Excel for processing trade and tariff data. Our preliminary findings indicate no distinct advantages for using Microsoft Access, even though this is database software.

### **Recommendations on the collection and evaluation of data on SPS- and TBT-type and other NTBs**

As part of my TOR, I was asked to work with the staff of CD/WTO to review and make recommendations on the collection and evaluation of data on SPS/TBTs and NTBs. We did not have an opportunity to meet on this topic (the negotiations being the main priority), but here are a few thoughts on SPS/TBT (also sent by email). I think of NTBs as a very different issue since they are technically illegal for bound tariff lines and are part of the non-agricultural market access negotiations. Thus, NTBs should be addressed separately.

I am unaware of good models for the government's involvement in SPS/TBT. Because of overlapping institutions and rule making procedures and because of escalating costs, many developed countries are now in the process of reevaluating their SPS/TBT institutions. The problems can be even worse in developing countries which lack the financial resources for the implementation of SPS/TBT rules and procedures. The U.S. GAO recently did a report reviewing institutional reforms in several developed countries. The World Bank has done an overview of SPS in developing countries, but has little to say about international best practices for institutions. The Bank focuses more on success stories where private companies have expanded exports after meeting quality standards abroad.

I could think of three reasons CD/WTO might wish to collect SPS/TBT data.

1) *To evaluate individual SPS/TBTs measures and their conformance with WTO Agreements.* All SPS/TBT measures may increase the costs of trade, but that does not mean they are illegal. In most countries, the responsibility for responding to complaints from exporters about SPS/TBT measures abroad will fall to a trade remedies unit, similar to anti-dumping unit. The lead role on SPS/TBT cases will likely involve the specialized scientific institutions involved with setting a country's own domestic regulations (e.g. plant protection agency).

2) *As more general input into the negotiating process.* It might be helpful for developing countries to better understand the extent to which SPS/TBTs are being used in overseas markets. In the case of Indonesia's agricultural exports to Australia, we collected data on the number of holding orders (shipments held in port for SPS reasons) over a ten year period. The data showed a fourfold increase in the number of holding orders since the signing of the Uruguay Round. Similar types of data might be available for major Egyptian export markets.

3) *As an aid to exporters.* The transparency components of the SPS and TBT Agreements require that countries establish inquiry points for SPS/TBT. In my opinion, the goal was to facilitate communications among SPS/TBT institutions in various countries. One might also ask whether this information can be used to help exporters obtain updated information and become more familiar on SPS/TBT measures abroad. In my view, I think this is unlikely. SPS/TBT measures are too specialized and too numerous to rely on governments. Successful exporters are likely to rely on their own resources for market intelligence, including their own buyers.

Having said this, Nathan Associates' Emerge Project in the Philippines is planning to provide TA on the development of a standards and conformance portal (S&C Portal). The portal will offer online information on standards, technical regulations and conformity assessment requirements. The goal is improve the access of Philippine exporters to the global market by increasing their compliance with TBT requirements.

Phase 1 of the Project would develop the following:

- i. *web store* – a portal housing a collection of standards and standards-related documents that are for sale and that can be purchased online, by fax or email;
- ii. *Catalogue online* – a portal making available online the Philippine national standards/technical regulations. It will also provide a hyper-link with the websites on TBTs of the country's major trading partners;
- iii. *Standards and export alert system* – a portal providing an automated e-mail notification service that will help Philippine exporters and the local industry keep abreast of regulatory changes and standards in the local and global markets. The facility will provide exporters the opportunity to comment on proposed standards or changes in current standards before they become law;
- iv. *Online database* – a portal providing cross-search facilities on TBT compliance-related information such as directory of accredited laboratories, directory of certified companies and/or products/services, registry of accredited quality system certifying bodies, etc.

Phase 2 would be devoted to strengthening institutional linkages between the National Committees on TBT and SPS; training of staff on the use of the portal; and identification of options/alternatives on how to sustain and enhance the S&C Portal after the TA.

### **Recommendations on obtaining commodity-specific Aggregate Measurement of Support (AMS) data for further analysis**

Because most of the Consultancy focused on market access issues, the Consultants did not provide recommendations on obtaining commodity specific measures of support. However, the Senior and Junior Consultants still have days remaining that could be used to complete the recommendations on AMS. The Senior Consultants has 14 hrs remaining; the Junior Consultant has 37.5 hours remaining.

**Manual**

**Tariff Reduction Formula Analysis System  
(TRFAS)**

**December 8, 2005  
ATR Project**

## TARIFF REDUCTION FORMULA ANALYSIS SYSTEM

The Tariff Reduction Formula Analysis System consists of two spreadsheets covering agriculture (Ag Proposal Analysis) and non-agriculture (NonAg Proposal Analysis), respectively. The NonAg System includes fish products and excludes petroleum products. Within each spreadsheet, there is a series of sheets with the following information.

**Export Share.** This sheet contains Egypt's exports (year 2003) where exports are listed by major markets and major commodities. The sheet also contains row and column sums for each commodity and market. These are subtotals of the data contained in the table, and therefore do not include all Egyptian exports. Below the export data is a table of export shares. These are used to calculate trade-weighted averages in other parts of the system.

**Warning:** The method used to calculate shares will depend on the purpose of the shares. If one is calculating trade-weighted shares for all of Egypt's exports in all markets, one uses the share of trade in total exports. If one is calculating trade-weighted shares for commodities exported to a particular market, one use the share of trade in total exports to that market. If one is calculating trade-weighted shares of a particular market for each commodity, one uses the share of trade in total exports of the commodity.

**Bound Tariff.** This sheet contains the bound tariffs for each of Egypt's major export commodities in major markets. Below the bound tariff table is a table that calculates trade-weighted bound tariffs (see warning above about the use of weights.)

**Applied Tariff.** This sheet contains the applied tariffs for each of Egypt's major export commodities in major markets. Below the applied tariff table is a table that calculates trade-weighted applied tariffs.

**Preferential.** This sheet provides estimates of the tariffs that are "effectively" applied for each of Egypt's major export commodities in major markets. For GAFTA countries, preferential rates are assumed to be zero. For the US, preferential rates are a weighted average of MFN and preferential rates, where the weights are determined by the share of total exports coming in under MFN, GSP, and QIZ. Preferential rates for the EU market are not yet included in the Table. For all countries, preferential rates are assumed equal to MFN rates. Below the table of effective rates is a table that calculates trade-weighted effective tariffs.

### Scenario Sheets

**Agriculture: G20 Formula, EU Formula, G10 Formula, US Formula, ACP Formula  
Industrial (Non Ag); Based Scenario, Scenario1, Scenario2**

Each of the spreadsheets contains a series of sheets covering Doha proposals. These scenarios estimate new bound rates based on formula reductions proposed in Doha. In the case of agriculture, the sheets cover proposals by each of the major country groupings (G20, EU, G!), US, and ACP). In the case of non-agriculture, the base scenario is the Swiss formula with a

coefficient of 10 for developed countries and 30 for developing countries. Scenario1 is the Swiss formula with a coefficient of 5 for developed countries and 20 for developing countries. Scenario2 is used for comparisons with other scenarios. Currently, the settings for Scenario2 are the same as those for scenario1.

*Simulation Analysis. The right-hand side of each scenario sheet contains the parameters using in each of the proposals. One can simulate new proposals by changing these parameters. The results automatically feed throughout the entire system and are summarize in the sheets described below.*

In the scenario sheets, new applied and effective rates are estimated. When the new bound rate is below the current applied, the applied rate is set equal to the new bound rate. When the new bound rate is still above the current effective rate, there is water in applied rate and is unaffected by the reduction in bound rates. The exact same method is also applied to preferential (effective) rates.

Warning: At time of writing, the computer programs developed for this system were indicating “0” for bound rates in cases where the commodities were unbound in the WTO. This problem still needs to be fixed. Tariffs on unbound commodities would be unaffected by the formula cuts, provided that they remain unbound after the Doha Round.

**Sum Country:** This Table presents trade-weighted average tariffs in each of Egypt’s major markets. The Tables includes the trade-weighted bound, applied, and effective rates that currently exist in each market and that would result under each proposal for tariff reductions. The Table also provides a trade-weighted summary tariff for all commodities and all markets. This summary tariff may serve as a single guide to the results of each proposal.

**Sum Commodity:** This Table presents trade-weighted average tariffs for each of Egypt’s major commodity exports. The Tables includes the trade-weighted bound, applied, and effective rates that currently exist for each commodity and that would result under each proposal for tariff reductions. The Table also provides a trade-weighted summary tariff for all commodities and all markets. This summary tariff is identical to that provided in the summary sheet for Egypt’s export markets (Sum Country).



## Common Commands for Working with Trade and Tariff Data in Microsoft Excel

This report explains some of the more important commands for working with tariff and trade data in Microsoft Excel. The report assumes a basic understanding of Excel. Additional information on the commands can be found in Excel help documents and reference manuals.

The report is organized as follows:

- **Editing Data** -- These commands are often used to edit HS Codes for further manipulation and analysis. For example, HS codes for tariff data may consist of 8 or more digits. But since tariff codes are harmonized across countries at only 6 digits, the analyst may need to convert the 8 digit codes to 6 digit codes.
- **Analysis Commands** – These commands are used to analyze trade and tariff information. They are also used to analyze the tariff implications of Doha negotiating proposals.
- **Filtering Data** – These commands are used to group data into different categories for analysis. For example, one may have downloaded a dataset containing all of a country's exports. Filter commands can then be used to divide the dataset into different sectors, such as agriculture, manufacturing, and petroleum products.
- **Combining Data from Different Sources** – These commands are used to combine trade data and policy information from different sources into a single spreadsheet. For example, one might obtain trade data from COMTRADE and tariff data from IDB, which then must be consolidated into a single file.

### *Editing Data*

#### Copy, Paste Special/Values

The normal Excel copy command copies the underlying formulas and their references to other parts of the spreadsheet. This can lead to errors when the referenced cells also change. The **Copy, Paste Special/Values** command alleviates this problem by only copying values from one worksheet to another – i.e. *without* copying the underlying formulas.

- After copying the cells, click on the location where you want to paste the copied cells. Click “Edit” at the top of the screen, then click “Paste Special” in the dropdown menu. A box will appear. Highlight the circle next to “Values” and click “OK.”

#### LEFT(text,num chars)

This function allows you to extract letters or numbers from a text “string” (a sequence of letters and/or numbers). **Text** is the text string that contains the characters you want to extract. **Num\_chars** specifies the number of characters you want to extract. **LEFT** specifies that you wish to extract characters starting from the left end of the text string.

- Suppose that cell B2 contains an eight-digit HS Code (52010036), but that you are working only with six-digit codes. To copy only the first six digits of this string into a new cell, you would type the formula: = LEFT(B2,6) to obtain “520100”.

### **RIGHT(text,num chars)**

This function performs the same operation as LEFT, except that RIGHT extracts characters starting from the right end of the text string.

- Suppose that cell B4 = “HO-520100” and that you want to copy this expression into another cell, but without the “HO-“ prefix. You would type the formula: =RIGHT(B4,6) to obtain “520100”.

### **& (Ampersand)**

The & function allows you to add number or letter to a cell entry.

- Suppose you are working with an agricultural HS code (“10120”) of five digits in cell B1 and need to add a zero to the code. The command A1 = “0”&B1 will produce “010120” in cell A1. Many other combinations of concatenation can also be used and can be found in Excel Help Documents.

### **ISBLANK and ISNA**

When downloading or entering data, some data may be unavailable. As a result, cells may be blank, or contain the entry “N/A” for not available. Excel may have difficulty interpreting such cells. The IS formula allows you to check whether the underlying value of a cell is blank or “N/A”.

- The formula: =ISNA(B1) will return an entry of “True” if cell B1 equals “N/A”, and an entry of “False” otherwise.
- Similarly, the formula: =ISBLANK(B1) will return an entry of “True” if cell B1 is blank, and an entry of “False” otherwise.

## ***Analysis Commands***

### **IF Command**

The IF command is a conditional statement which can be used to replace the value of cells depending on whether a statement is true or false. This is a powerful command that can be used in a variety of ways.

- Suppose that Egypt proposes a tariff cut of 50% if the existing tariff is greater than 100%, and 20% otherwise. Suppose that the existing tariff is contained in cell B1. The formula: = IF(B1>100,50,20) will return the correct value of the proposed tariff cut.
- Suppose that you have downloaded bound tariffs for a country, and that the entries for some HS codes are blank since these tariff lines are unbound. One can combine the IS and IF commands to replace these blanks with the word “Unbound” as follows: A1=IF(ISBLANK(B1)=True,Unbound,B1). In this command, the cell A1 is “Unbound” if B1 is blank; otherwise A1 is the same value as B1.

IF statements can be combined (nested) in a single cell in a series of very complicated ways. In the example above, there were only two tariff bands necessitating one IF statement. In the

Doha Round, negotiating proposals sometimes contain three or more bands. This may necessitate two or more IF statements all within a single cell.

**Sort Command**

The Sort command can be used to rank data across rows or columns of a spreadsheet. For example, suppose that Egyptian exports are contained in a spreadsheet with markets listed in the first row and commodities listed in the first column. Total exports to each market are found in the final row of the spreadsheet. Total exports of each commodity are found in the final column of the spreadsheet:

<b>Commodity</b>	<b>HS Code</b>	<b>India</b>	<b>EU</b>	<b>USA</b>	<b>Turkey</b>	<b>Korea</b>	<b>Totals (by Commodity)</b>
<b>Potatoes</b>	0701	.0	30.6	.0	.0	.0	<b>30.6</b>
<b>Onions</b>	0703	.0	8.4	.0	.3	.0	<b>8.7</b>
<b>Citrus Fruits</b>	0805	.0	7.2	.0	.0	.0	<b>7.2</b>
<b>Rice</b>	1006	.0	8.0	.1	30.1	.0	<b>38.2</b>
<b>Cotton</b>	5201	96.4	74.8	31.0	15.3	35.5	<b>253.0</b>
<b>Totals (by Market)</b>		<b>96.4</b>	<b>129.0</b>	<b>31.1</b>	<b>45.7</b>	<b>35.5</b>	<b>337.7</b>

One can sort in descending order across columns to find Egypt’s most important export markets, and in descending order across rows to find Egypt’s major export commodities.

- Select the exact entries of the spreadsheet that you wish to sort and then select the *Data, Sort* command.
- The *Sort* command may return a warning asking whether you want to expand the selection. If you want to sort all the data, check the box saying that you want to *Expand the Selection* and then press *Sort*. The Sort command should capture the entire screen. Otherwise, only the data selected in Step 1 will be sorted.
- Press on the options key and select whether you want to sort *Top to Bottom* or *Right to Left*.
- The screen should then ask what you want to *Sort By*. Select the column that contains totals by commodity, select *Descending* and Press *OK*. This will rank Egypt’s commodity exports in order of importance. Alternatively, select the row that contains totals to each export market. Press *Descending* order and *OK*. This will rank Egypt’s commodity export markets in order of importance.

**Subtotal Command**

You may have downloaded tariff data with 8 or more HS codes, but are working with data at the 6-digit level. As a result, you need to calculate an average of the 8-digit tariffs for each 6-digit code. In order to calculate these averages:

- Create 6-digit HS codes for each product using the *LEFT* command as explained above;
- Put the columns containing the six-digit HS codes and the tariffs next to each other and then select them;
- Click on *Data, Subtotal*;

- In the dropdown menu, select the column with HS codes for the *At Each Change In Box*;
- Choose “Average” for the *Use Function Box*;
- The results of the averaging process are contained in three different screens which are accessed by the 1,2, and 3 buttons at the top left corner of the subtotal spreadsheet. You will probably find it easiest to work with the second screen. Note that moving across these screens can take a lot of time and lock up your computer.

If you plan to work with the subtotaled data and/or copy it to other spreadsheets, you will need to use the **Go To/Visible Cells Only** command that is discussed later in this report.

### ***Filtering and Reorganizing Data***

#### **Advanced Filter**

Filters allow you to find and work with a subset of items in a list of data. The **Advanced Filter** permits you to specify criteria for the subset of data you wish to work with. For example, you may have downloaded the entire tariff code of a country, but wish to work only with the HS codes pertaining to agriculture or some other sector.

- To use an Advanced Filter, click on “Data” at the top of the screen, drag the cursor over “Filter” in the dropdown menu, then click on “Advanced Filter.” You can filter “in place,” which hides but does not delete the lines that do not meet the criteria, or you can copy the filtered results to another location within the same worksheet as the unfiltered data. The “list range” is the group of cells you would like to filter; “criteria range” is the group of cells in which you specify the “filter criteria.” The filter criteria, for example, might pertain to HS codes for agriculture as indicated below:

**Table: Excel Filter for Agriculture<sup>1</sup>**

HS Code	HS Code
<=250000	
=290543	
=290544	
>=330100	<330200
>=350100	<350600
=380910	
=382360	
>=410100	<410400
>=430100	<430200
>=500100	<500400
>=510100	<510400
>=520100	<520400
>=530100	<530200
>=520200	<520300

<sup>1</sup> Source: Agricultural Agreement of the Uruguay Round. Includes fish products which technically are not covered by the Agricultural Agreement.

In the above filter, all 6-digit HS codes which meet the conditions less than or equal to 250000, or equal to 290543, or equal to 290544, or greater than or equal to 330100 and less than 3302200, etc. will be classified as agricultural commodities.

If you plan to work with the filtered data and/or copy it to other spreadsheets, you will need to use the **Go To/Visible Cells Only** command that is discussed elsewhere in this report.

### **Creating PivotTables**

When downloading data, you may find that the data you wish to work with are all listed in a single column. For example, you may have downloaded a file on Egyptian exports which has exports to each and every destination in a single column. PivotTables allow you to extract the data for each market and then transpose that data so that exports to each destination are contained in separate columns. This is a very easy command to master.

Suppose that you downloaded an export file with the column headings: *Commodity*, *Reporter*, *Trade*. The *Reporter* column contains the destination of Egyptian exports. The *Trade* column contains the value of exports. The *Commodity* column contains the HS code for each shipment.

<b>Reporter</b>	<b>Commodity</b>	<b>Trade</b>
<b>Albania</b>	H0-070190	44813
<b>Bulgaria</b>	H0-390410	222610
<b>Canada</b>	H0-190590	978
<b>Kuwait</b>	H0-701391	126171

In order to construct a two dimensional array with exports to each destination in separate columns:

- Choose *Data* at the top of the Excel window and *PivotTable and PivotChart Report* from the dropdown menu. The PivotTable and PivotChart Wizard popup window will appear.
- In the popup window, select *Microsoft Excel list or database* and *PivotTable*; then press *Next*;
- Place the *Commodity*, *Reporter*, and *Trade* columns of the dataset together and Select them. Note that when creating PivotTables, one selects columns – not rows.
- The data range should read columns A to C; select *Next* again;
- In the Pivot Table Window asking where you want to put the Table, select *Layout*;
- In the Layout window, move the box marked *Commodity* (on the right side of the window) to *Row*; move the box marked *Reporter* to *Column*; and move the box marked *Trade* to *Data*;
- Double click on *Trade* and make sure you select *Max*.
- Click *OK*; Click *OK* again; Click *Finish*. Your data should now be transposed into matrix form:

	Albania	Bulgaria	Canada	Kuwait
H0-070190	44813			
H0-390410		222610		
H0-190590			978	
H0-701391				126171

### **Go To/Visible Cells Only**

This command can be extremely important if you plan to work with data after it has been filtered or sorted. After you sort or apply a filter, the results are contained on your computer screen while the original data are hidden from view. If you try to manipulate the data, you may get errors since you manipulate the hidden data – not the filtered or sorted data. To work with the actual results of your sort or filter, you need to extract the results using **Go To/Visible Cells Only** and then copy them into a separate spreadsheet.

- Select the cells that are visible after the filter is applied.
- With these cells still selected, click on “Edit” at the top of the screen, then click on “Go To. . .” in the dropdown menu. A box will pop up.
- Click “Special” in the bottom left-hand corner, then click on the circle next to “Visible cells only” and click “OK.”
- You can use the “copy” command to copy these cells to the Clipboard and then paste them into a separate sheet. *Note: if you copy filtered results to the Clipboard without using the “Visible Cells Only” command, you will copy all items in the original list, including those items excluded by the filter.*

The **Go To/Visible Cells Only** is a difficult command to master, particularly when used with Subtotals. As a result, you may need to experiment with this command several times in order to extract your results correctly.

### ***Combining Data from Different Sources***

#### **VLOOKUP(lookup\_value,table\_array,col\_index\_num,range\_lookup)**

Suppose that you have downloaded tariff and trade data from two different sources. You now want to combine that data into a single table in which tariffs and trade are listed for each HS code. VLOOKUP allows you to identify a value (i.e., a number or expression) in a table, lookup information about that value in a second table, and automatically insert the information into the first table.

- **Lookup\_value** is the value you want to look up information about.
- **Table\_array** is the group of cells in which Excel searches for the information up. You must use a reference to a *range* (a specific set of cells, e.g., A3 through G35) or a *name* that you assign to that range. You may *not* use the name of a worksheet for table\_array.
- **Col\_index\_num** is the number of the column in the table array from which you want to draw your data.

- Range\_lookup indicates whether you want to find an exact match or an approximate match for *Lookup\_value*. If you want an exact match, set range\_lookup as FALSE; if you want an approximate match, set range\_lookup as TRUE.

### VLOOKUP Example

Suppose that you wish to create a table that lists the tariffs that countries place on Country A's goods. We will call the countries Venus, Mercury, and Pluto. The table will list the tariffs by commodity code at the HS-6 level:

*Worksheet 1 (Tariffs on Country A's goods)*

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
	HS Code	Venus	Mercury	Pluto
	520100			
	100630			
	070190			

Now, suppose that you have a separate worksheet within your Excel file that lists each country's tariffs. Imagine that Worksheet 2 contains the tariff values for Venus:

*Worksheet 2: Venus's tariff schedule*

	<b>A</b>	<b>B</b>	<b>C</b>
<b>1</b>	<i>HS6</i>	<i>Description</i>	<i>AV Duty</i>
<b>2</b>	520100	Cotton	10
<b>3</b>	100630	Rice	18
<b>4</b>	070190	Potatoes	25

You can use VLOOKUP to automatically move Venus's tariff rates from Worksheet 2 to Worksheet 1.

The first step is to assign a *name* to the array of cells in which you will look for the tariff rates. To do so, complete the following steps:

- Drag the cursor over all of the cells in the table *or* simply click on the blank gray rectangle at the upper left-hand corner of the worksheet. Clicking on this rectangle will select all of the cells in the sheet.
- With the cells still selected, click on the "Insert" menu at the top of the page, scroll over the word "Insert" in the dropdown menu, then click on "Define." Then enter a name for the array (e.g., "Venus").
- Now, in Worksheet 1, enter the following formula into cell B2:  
=VLOOKUP(A2,Venus,3,FALSE).

The formula tells Excel to look up the value in cell A2 of Worksheet 1 ("520100"), find that value in the array "Venus," and return the value that appears in column three of the row in which "520100" appears (10, in this case). The formula will automatically input that value into the cell B2 of the worksheet. Similarly, once can fill in the rest of the tariffs for Venus, etc.

**Manual**

**Processing Tariff  
Data Files in Export Markets  
(Including WITS)**

**Tariff Reduction Formula Analysis System**

**Note: Draft Only. Only includes WITS**

**December 4, 2005  
ATR Project**



## DOWNLOADING FULL TARIFF FILES (6-DIGIT) USING WITS

The Information below explains how to download the entire tariff codes of countries from WITS. The Explanations assumes that WITS is already operating on your computer.

- 1) Enter the WITS website by typing: [wits.worldbank.org](http://wits.worldbank.org).
- 2) Request the [Advance Query, Query Definition](#).
- 3) You must then provide a [Name](#) and [Description](#) for your query (eg. Test). Type in anything you wish. You must also select a data source for your query. For tariff information, choose the [UNCTAD TRAINS Database](#) since it appears to be the most complete.
- 4) On the left hand side of the screen, you must make four selections. First select [Reporters \(Markets\)](#). On the right, check the country or countries for which you wish tariff information. For example, check the boxes for the [European Union](#) and [United States](#). When you choose more than one country as in this example, the data will be provided in sequential blocks. The first set of rows will be the European Union, the second set of rows will be the United States.
- 5) On the left hand side of the screen, now select [Products](#). On the right hand side of the screen, make sure that [HS-Combined](#) is highlighted and in the [Select Product by](#) category, press on the [second](#) button. This will open up another screen. Check the box [All3-Sub-headings](#).
- 6) On the left hand side of the screen, now select [Partner Countries](#). On the right hand-side of the screen, check the box [World Wld](#).
- 7) On the left hand side of the screen, now select [Years](#). On the right hand side of the screen, check the boxes [2005, 2004](#), and [2003](#).
- 8) Information on the query is now complete. Before you can process the query, you must press the [Save](#) button in the top middle of the screen. The Window will request the Name and description of the query. These are the same as those filled out in step 1 above. Press [OK](#).
- 9) You are now ready to send the Query to Geneva. Press [Submit](#).
- 10) The Query will open up a new window asking you for additional. Press [Tariff/GSIM](#).
- 11) In the next window, you must choose the duty type. For example, check the box [Include MFN Rates](#). You could also request more than one type of duty by checking

the box **Include Bound rates**, but I usually find it easier to process separate requests for each duty type.

- 12) Also, check the box **Use the Latest Available Year**. Even though, you chose 2005, 2004, and 2003 earlier, the program will now choose the latest of these years for which information is available.
- 13) Press **OK**. In the Query **test submitted window**, press **OK** again.
- 14) Your requested is now being processed in Geneva. You may find out the status of the request by pushing the **Status** button at the top right hand side of the screen. On the status bar, your request will be **Running** or **Complete**.
- 15) In the Status Window after the Status of your requests is complete, you may view the results by selecting the **View** button next to your query.
- 16) After a few moments, the results will be transmitted from Geneva to your screen. In the **View Custom Query Results** window, press the button with the **Diskette** at window to save your results. Your results will now be saved in an Excel file for further analysis.

**After you have saved your results, you may go back to the Status window and press the Delete button to remove your query from the server in Geneva.**

**Manual**

**Processing COMTRADE  
Data Files on Exports**

**Tariff Reduction Formula Analysis System**

**December 1, 2005  
ATR Project**

## **Tariff Reduction Formula Analysis System**

### **Instructions for Processing Trade Data**

#### Processing Comtrade Export Data in Excel

- 1) Comtrade\_trade\_data\_Exports -- Contains raw export data downloaded from Comtrade. The data file contains Egyptian exports to all countries of the world. It is organized by HS code and contains the description, export value and export quantity, and definition of units. There are 14292 rows of data \*10 columns = 142920 data points. (See example)

#### Cleaning the Data

- 2) Clean1 – **Delete** all columns of data that are not needed (eg. period, trade flow, reporter, quantity, etc. (See example)
- 3) Clean2a -- The export data will need to be matched with tariff data using HS codes. In order to perform this matching, eliminate the “HO-“ in front of the codes using the command: **Right(cell, 6) and copy** into all cells of column A. (See example)
- 4) Clean2b -- Since Column A contains formulae, recopy column A onto itself using the **Copy, Paste Special, Values** command. Since column B with HO codes is no longer needed, it can be deleted.

#### Preparing the data for Filtering into agricultural and non-agricultural files.

- 5) The ag and non-ag filters are contained in the sheet **filter**. The filters are based on the HS codes listed in the Appendix to the Agriculture Agreement. Chapter 03, which covers fish products, is classified as Non-Ag.
- 5) Clean3 -- Many problems in using the Excel filter can arise because the format of data downloaded from an outside source, such as Comtrade, may not match the formatting of the Excel filter. It appears that the HS codes from Comtrade are in a text format. In order to have these codes match the format in the filter, we need to convert them to numerical format. First, insert a new worksheet called Clean3 and copy the trade data from Clean2b into this sheet. Then insert a new column a and set the cells in column A equal to column B + 0. Then Copy column A onto itself using the **Copy, Paste Special, Values** command. Note that the HS Codes in column A are now justified and low values no longer have a “0” preceding the code. Since column B with HO codes is no longer needed, it can be deleted.

#### Filtering the data into ag and non-ag trade.

- 6) Create new sheets called **Ag Trade** and **Non-Ag Trade** to store the filtered data.
- 7) Go to the Ag Trade worksheet and start the filter by selecting **Data, Filter, Advanced**.
  - a) In the dialogue box for range, go to Clean2b spreadsheet and select all rows of the sheet. Make sure you select all rows, not columns. Also make sure that you include the column headings. Select as the **range**.

- b) In the dialogue box for criteria, go to the filter spreadsheet and select the cells containing the Ag filter. Again, make sure you include the headings (HS code). Select as the [criteria](#).
  - c) In the dialogue box, select “copy to another location” and then go back to the Ag Trade sheet. Point to cell A1 and select A1 as the [location](#).
  - d) Press “**Ok**” to construct the Ag trade sheet. You now have a sheet with Egypt’s ag exports. There should be 3395 rows of data in the sheet.
- 8) Repeat the above process starting in the Non-Ag sheet and using the Non-Ag filter in the Filter sheet. The Non-Ag Sheet will contain 10896 rows of data.

#### Processing the Trade Files.

- 9) The spreadsheet [Export Processing File](#) is now over 21mb and is therefore quite large. In order to facilitate processing of the data, place the ag and non-ag export data into two separate spreadsheets called [Ag Trade](#) and [Non-Ag Trade](#).
- 10) The Ag Trade and Non-Ag Trade files contain thousands of rows of data by HS code and the destination of Egyptian exports. The data are still quite unwieldy. One way to facilitate processing is to transpose the data into matrix form with HS codes across rows and the destination of Egyptian exports down columns. The data can be transposed in this way using the Excel [Pivot Command](#).
- i. To transpose the Non-Ag Data, select the first three columns of the dataset. These columns refer to [HS codes](#), Egypt’s [trading partners](#), and the [value of exports](#). Note that when using the Pivot Command, one selects columns – not rows.
  - ii. Then select [Data, Pivot Table](#).
  - iii. In the Pivot Table window, select [Microsoft Excel and Pivot table](#); then press [Next](#). The data range should read columns A to C; select [Next](#) again.
  - iv. In the Pivot Table Window asking where you want to put the Table, select [Layout](#).
  - v. In the Layout Window, move the box marked [HS codes](#) (on the right side of the window) to [Row](#); move the boxed marked [Partner to Column](#); and move the box marked [Trade Value to Data](#).
  - vi. Double click on trade value and make sure you select [Sum](#).
  - vii. Click on “**OK**”; Click “**OK**” again; Click “[Finish](#)”. Your data should now be transposed into matrix form.
1. The Pivot Table contains around 1852 rows and 168 columns, and is still too large for analysis. Also, the Pivot Table cannot be edited directly since it contains various formula associated with the pivot table command. Before editing, create a new sheet and copy the table into the sheet using the [Copy, Paste Special, Values Only](#) command. The table is called [Transposed Non-Ag Trade](#). In this table, also eliminate blank, and grand total columns and data.
  2. The data in the grand total rows and columns cannot be trusted since the data were created during the pivot operation. For this reason, recalculate row (commodity) totals and column (country) totals using the Sum command. As usual, copy the totals column and row onto themselves using the [Copy, Paste Special, Values Only](#) command. This eliminates the formulas from the cell entries.

3. The resulting table can be edited in a number of ways. I chose first to aggregate all EU countries into a single EU block since all countries have the same bound and applied rates. The results are shown in the sheet [EU](#).

#### Ranking Egypt's top commodity exports and markets

- 11) In order to create a spreadsheet of manageable size, we need to rank Egyptian exports by commodity and country. The first step is to rank by commodity.
  - i. Create a new sheet and copy the table from [EU](#) into the sheet. The sheet is called [Comrank](#).
  - ii. [Cut](#) the Column WrldTotal from the right hand side of the spreadsheet and [Insert](#) into column B.
  - iii. Select the exact entries of column B and select the [Data, Sort](#) command
  - iv. The Sort command should return a warning asking whether you want to expand the section. Check the box saying that you want to [Expand the Selection](#) and then press [Sort](#). The Sort command should capture the entire screen.
  - v. The screen should then ask what you want to [Sort By](#). Select [WrldTotal](#) in [Descending](#) order and Press "[OK](#)." (Note there may be times when you need to select the options button and choose sort by columns rather than rows). The Table should now rank Egypt's exports in order of importance.
1. The Table indicates that a substantial amount of Egypt's exports are from the energy sector, particularly petroleum and fuel oils. One of the major export markets for these products is ship bunkers. Since the negotiating issues and economic importance of these sectors are very much different than those of the manufacturing sector, many countries treat their oil and non-oil sectors differently. In the spreadsheet, we have separated Egypt's exports into two sheets – [Non-Oil](#) and [Oil](#) where Oil includes all HS chapters of 27 and technically covers energy exports. At the bottom of the non-oil spreadsheet, we have Total Egypt's non-energy exports using the [Sum](#) command and then pasted the row onto itself using the [Copy, Paste Special, Values Only](#) command in order to remove the formulas.
- 12) The next step is to rank Egyptian Non-Oil Exports by market. The process is similar to that used to rank by commodities. The major difference is that we use a row sort rather than a column sort.
  - i. Create a new sheet and copy the table from Non-Oil in the sheet. The sheet is called [Mktrank](#).
  - ii. [Cut](#) the row Non-Oil Exports at the bottom of the spreadsheet and [Insert the Cells](#) into the top of the spreadsheet – say row 6. This makes the sorting process easier to visualize.
  - iii. Select the exact entries of the row Non-oil exports in row 6 and press [Data, Sort](#).
  - iv. The Sort command should return a warning asking whether you want to expand the section. Check the box saying that you want to [Expand the Selection](#) and then press [Sort](#). The Sort command should capture the entire screen.
  - v. The screen should then ask what you want to [Sort By](#). Select the row with [Non-Oil Exports](#) in [Descending](#) order and Press "[OK](#)." (Note there may be times when

you need to select the options button and choose sort by columns rather than rows). The Table should now rank Egypt's export markets in order of importance.

#### Summarizing the Results into a Final Export Table

- 13) Copy the results from the Mktrank table into a new sheet titled Summary. Use the **Copy, Paste Value, Only Command** in order to eliminate the formulas from the sort command. To condense information on the table, switch to Arial Narrow Font 9, Column Width 6, and reformat the numbers using the **number, custom, #,00,,** command.
- 14) In Sum1, the table is reorganized in columns where we have also aggregated Egypt's exports for GAFTA trading partners.
- 15) In Sum2, the table is reorganized in rows to reflect Egypt's major commodity exports.

See Final Export Table.