

9.B

The GTAPAgg Data Aggregation Program

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GTAPAgg is a Windows program used to prepare data bases for the GTAP economic model. The full GTAP Version 5 data base covers 57 commodities and 66 regions. Nearly all applications of the GTAP model use an aggregation of this data base. *GTAPAgg* helps you prepare an *aggregation scheme* then uses your scheme to prepare an aggregated data base for the GTAP model. The program is very simple to use and is accompanied by an on-line help file.

The main *GTAPAgg* window shows a column of seven buttons. Normally, you would use the top buttons first, then work downwards. The buttons are for instructions and help, reading and saving the aggregation scheme, viewing and changing the aggregation mappings, and finally, for creating the aggregated data base.

9.B.1 Creating an Aggregation

An aggregation scheme is a system of mappings between the many sectors and regions of the original GTAP data base and smaller numbers of sectors and regions in the aggregated data base that you want to create. It consists of three mappings — for regions, sectors and primary factors. For regions, you must fill in the names of your new (aggregated) regions, and must specify to which new region each of the original GTAP regions corresponds. The same interface is used to choose

mappings for sectors and factors. You can create tables in several formats summarizing these mappings. The tables may be copied to a spreadsheet or word-processing program.

GTAPAgg stores aggregation schemes in a text file, normally with the extension or suffix *AGG*. You might start off by reading in a previously prepared scheme. Otherwise, GTAPAgg starts up with a default 3 x 3 aggregation.

Similar screens are used to view and edit both regional and sectoral (tradable commodity) aggregations. For regions, you are able to: (1) use the bottom panel to change the number of new, aggregated, regions, their names and descriptions (try right clicking), and (2) use the right panel to show to which new regions each original region is mapped. Each new region must have a unique code (12 letters maximum). However the longer "new region descriptions" are optional. Use the same techniques to edit the sectoral (tradable commodity) aggregation.

For factors (endowment commodities), you must in addition specify the SLUG/ETRAE settings. Each factor is either "sluggish" or "mobile". Each sluggish factor has an ETRAE number less than or equal to zero. Convey your intentions by entering a negative ETRAE number (which implies sluggish) or "mobile" in the final column of the bottom panel. The GTAP model insists that at least one of the aggregated factors is called "capital".

GTAPAgg offers a timesaving way to make a table documenting your aggregations. If you are editing either the regional or sectoral aggregations, you can use the *Copy* button to send a report of the aggregation to the clipboard. Then open your spreadsheet program and paste the report into a blank worksheet. Delete columns or rows you do not need, then paste the table into your word processing program for final formatting. Alternatively, paste the report directly from GTAPAgg to MS Word. It will appear in Word as tab-separated text. Select the text and choose the menu command *Table...Convert Text to Table* (tab separators). Other word-processors probably work in a similar way.

9.B.2 Data Files

A global GTAP data file, *GTAPAGG.DAT*, accompanies the GTAPAgg program. It follows a special format which only the GTAPAgg program can decipher. The program also includes the global GTAP sets file (*gsdset.har*), global parameters file (*gsdpar.har*), and global time-series trade data files. The data files must be located in the same directory as the main program file.

When GTAPAgg produces a new aggregated data base, five files are produced:

- a flows data file, *basedata.har*, in HAR format,
- a parameters file, *default.prm*, in HAR format,
- a sets file, *sets.har*, in HAR format,

- a data summary file, *baseview.har*, derived from *basedata.har*,
- a file of tax rates, *baserate.har*, derived from *basedata.har*,
- sometimes, a file of aggregated time-series data, *tstrade.har*.

It is vital that these files are used together as a group. Therefore, GTAPAgg bundles all the above files together into a ZIP archive. The idea is to prevent files from different aggregations from getting mixed up. The aggregation scheme file may also be included in the ZIP archive. Use a program such as *Unzip* (or *WinZip* or *PKUnzip*) to unpack the files into the subdirectory where they will be needed. Alternatively, if you have the *RunGTAP* program for running the GTAP model, you can use its *New Version Wizard* command to load the ZIP archive directly.

Sometimes, the GTAP time-series data base may be bundled with GTAPAGG. If so, you will get the option, just before an aggregated data base is created, of simultaneously aggregating the time-series data as well. The same commodity and regional mappings will be used for the time-series data as for the main aggregation. The aggregated time-series data will show, for each aggregated commodity and for each year from 1965 to 1998, a matrix size $REG \times REG$ of inter-regional trade volumes. Computing all this will add a few seconds to the total job time. Although the time series data is not required by the GTAP model and *RunGTAP*, you may find it useful as background information.

Most of the files produced by GTAPAgg are stored in a special type of file, called *Header Array* or HAR file. You need a utility program, *ViewHAR*, to view or extract data from these files. If GTAPAgg can locate the *ViewHAR* program on your hard disk, you will be given an option to view the output files as soon as they are created.

9.B.3 GTAPAgg Versions

Some versions of GTAPAgg prevent you from creating a data base over a certain size. The *Full edition* imposes no such limitation. It is available to those who purchase the full GTAP data base. The *Limited edition* allows no more than 10 aggregated regions or sectors. The *Free* or *Demo edition* allows no more than 3 aggregated regions or sectors. The current edition of GTAPAgg only works with the GTAP Version 5 data base.