

# Exporting data from IMPLAN to GAMS

By Leroy Stodick, University of Idaho, 5 March 2004

Revised by Stephen Cooke, Implan Group LLC, 26 March 2014

## A. Instructions for creating SAM data from IMPLAN for use with check.gms:

Assuming you have purchased and installed Implan software and needed state or regional data files, you begin by creating a regional model in IMPLAN: (skip to (B) if the state Implan model is already built and open within the Implan software)

1. Open IMPLAN software ver. 3.1.
2. Select 'New Model'.
3. Name the model, e.g., G:/State1\_CGE/State\_Implan\_Model\_1, and select 'Save'.
4. Select the desired state (or region(s)) from the 'Available IMPLAN Data Files' list.
5. Check 'Build through multipliers' and select 'Continue'.
6. IMPLAN will construct the model and then show a statement in the lower left corner that "Your Implan model ... is complete."

## B. Instructions for extracting SAM data from IMPLAN for use with check.gms:

Now assuming your state Implan model is already built and open, to export the needed SAM files:

1. Select 'Social Accounts', 'IxC Social Accounting Matrix', 'Export', 'Industry Detailed SAM files (CSV only)', 'GAMS 26 file'. Browse to file folder, e.g., G:/State1\_CGE, select 'ok'. Wait for window statement: "Your file was exported successfully."
2. Look in the file folder you browse to above and you should see in a subfolder, e.g., "State\_Implan\_Model\_1" that contains 26 nxm.dat files where n and m are integers. The 26 Implan SAM to CGE files have been created and saved.
3. Close IMPLAN software ver. 3.1.

## C. SAM to GAMS files: Check.gms, Aggreg.gms and Map.gms

Assuming you have the three interrelated SAM to CGE GAMS programs CHECK.GMS, AGGREG.GMS and MAP.GMS, these files are used to create a SAM file from these 26 nxm.dat files that a GAMS program can read.<sup>1</sup> The CHECK.GMS program reads the IMPLAN files and calls AGGREG.GMS that aggregates the sectors according to the aggregation that calls MAP.GMS in which the sectoring scheme is defined.

Make work project. Due to output file naming inconsistencies between different versions of Implan and associated lack of updating of the three gams files being used, all 26 nxm.dat files need to be renamed to include a prefix, e.g., 2012 followed by a space so that '1x2.dat' become '2012 1x2.dat.' This prefix is added so that it can be deleted by the gams code subsequently as it reads the data. If the prefixes don't exist, gams can't find them, it can't delete them and it can't read the data.

So take 10 minutes and add '2012 ' prefixes to your 26 nxm.dat files.

Now the CHECK.GMS file now needs to be modified by the user to tell the program where to look for the renamed 2012 nxm.dat files. In particular, global variables are used to set the locations of the various directories where the programs, the input data and the output file are located. These variables are set in CHECK.GMS. The first variable is PROGPATH which is the directory where AGGREG.GMS and MAP.GMS

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<sup>1</sup> Besides these you should also have gams2xcl.gms, model.gms, report.gms, SAM.gms, SAM.gdx in this example in file G:/State1\_CGE

are located. It is also the directory where the output file named MAP.GMS will be saved. It is set by altering the following line:

```
$SETGLOBAL PROGPATH G:\CGE_NEW\State1_CGE\
```

The next variable is called DATAPATH which sets the directory where the 26 data files created by IMPLAN are located. It is set by altering the following line:

```
$SETGLOBAL DATAPATH G:\CGE_NES\State1_CGE\State1_IMPLAN_Model1 \
```

The next variable is called DATANAM which sets the file name suffix for all the 26 IMPLAN files. It is set by altering the following line:

```
$SETGLOBAL DATANAM 2012
```

The last global variable to set is called ADJUST which allows the user to choose whether the SAM includes imports and exports of activities or commodities. Set ADJUST to NO to import and export activities and set ADJUST to YES to import and export commodities.

```
$SETGLOBAL ADJUST YES
```

MAP.GMS is the file which contains the aggregation scheme. This file describes the way the un-aggregated activities, commodities, factors, institutions, and government entities are to be aggregated. The user must first define a set K which names the aggregated sectors. The user must then define a set named MAP(K,R) which describes the Cartesian mapping from the set of un-aggregated sectors (R) to the set of aggregated sectors (K). (The set R is defined in CHECK.GMS. The user does not need to redefine it.) Each of the 528 activities (named 1 to 528) must be mapped to exactly one aggregated sector listed in K. Similarly, each of the following sectors must be mapped to exactly one aggregated sector:

5001, Employee compensation

6001, Proprietary income

7001, Other property income

10001 – 10009, Personal consumption deciles 1-9

11001 – 11003, Fed'l gov't: Non-defense, Defense, Investment

12001 – 12003, State & Local gov't: Non-education, Education, Investment

13001, Investment: Enterprises (Corporations)

14001 – 14002, Investment: Gross private fixed investment (Capital) & Inventory sales deletions

25001, Foreign trade

28001, Domestic trade

Use the sample MAP file to see how to define this mapping. Run the programs by running CHECK.GMS. This file calls AGGREG.GMS which in turn calls MAP.GMS. The output file named SAM.GMS contains the aggregated SAM which can be included in any GMS program.