



How To Run The SPSM

This guide describes how to run the Social Policy Simulation Model (SPSM) using Visual SPSM and Classic SPSM.



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Table of Contents

| | |
|---|----|
| Introduction..... | 2 |
| Running SPSM using Visual SPSM | 2 |
| Introduction..... | 2 |
| Creating, Opening, and Saving Simulations | 2 |
| File types..... | 3 |
| Control parameters which are changed when saving a simulation | 3 |
| Editing Parameters | 4 |
| Executing Simulations and Viewing the Log Window..... | 7 |
| Contents of Log Window..... | 7 |
| Viewing Tables and Distributions | 8 |
| Viewing Microdata | 9 |
| Reading and Saving Parameter Files | 10 |
| Configuring your machine to write include files using Notepad..... | 11 |
| Window States | 12 |
| Visual SPSM Options | 12 |
| Help..... | 13 |
| Using Tools | 13 |
| Running SPSM using Classic SPSM | 13 |
| MS-DOS overview..... | 13 |
| SPSD/M Files and Directories | 15 |
| SPSD Environment Variables..... | 18 |
| SPSM Control | 19 |
| SPSM Dialogue Structure | 19 |
| Parameter Editing Facility | 21 |
| Changing Parameter Values Interactively | 21 |
| Changing Parameter Values Using Include Files | 22 |
| Configuring your machine to write include files using Notepad..... | 22 |
| SPSM Batch Facility..... | 22 |
| Command Line Method | 22 |
| Control File Method..... | 23 |
| Changing the language in Classic SPSM..... | 23 |
| Running SPSM using other methods | 24 |

Introduction

This guide will describe the operation of the Social Policy Simulation Model. There are two ways of running the model, using the Visual SPSM interface and using the Classic SPSM interface. Both methods are described.

This guide assumes that you are familiar with the content of the [*SPSD/M Introduction and Overview*](#) guide. If you are not, please read that guide first.

Running SPSM using Visual SPSM

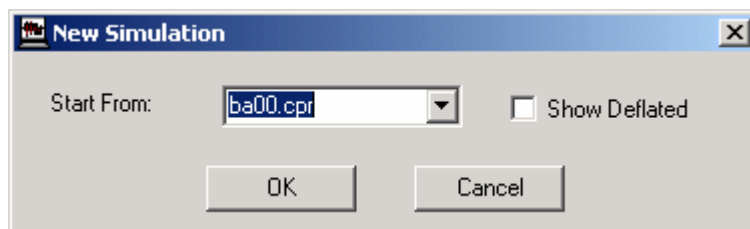
INTRODUCTION

This section will describe how to run the SPSM using the Visual SPSM interface. The Visual SPSM provides a method of editing parameters, executing simulations, and examining output without knowledge of the command prompt environment.

Note that the screen snapshots provided are examples and may not exactly reflect the version you are currently using.

CREATING, OPENING, AND SAVING SIMULATIONS

To start a new simulation, click on new simulation. You will get the following box:



New simulations always start with default parameters which were installed with the product. You start then by opening a control parameter file. There are two kinds: normal and deflated. The syntax for normal control parameters files is:

`baCY.cpr`

where CY is the last two digits of the year of interest. So `ba00.cpr` would be the default simulation for 2000 which would simulate the 2000 tax and transfer system on a population grown to represent 2000.

You also have the option to open deflated parameters control parameters. Deflated simulations always run the base year population, but then apply other year's tax and transfer systems to them, deflated to the dollars of the base year. Their syntax is:

`baCY_DY.cpr`

Where CY is the year of the tax and transfer system and DY represents the database year. So, `ba00_02.cpr` would be a simulation which would run the 2000 tax and transfer system, deflated to 2002 dollars, on the 2002 population.

To open a previously created simulation, click on **File, Open**.

To save a simulation, click on either **Save** or **Save As...** in the **File** menu. Note that when you save a simulation, a number of files as well as some control parameters will be saved.

File types

When you save a simulation, the four full sets of parameter files (control, database adjustment, base tax/transfer, variant tax/transfer), will always be saved. If parameters have been changed from the default parameters, parameter difference files will also be saved. Finally, the current state of the various open windows will be saved so your interface will look the same the next time you open the simulation. Note that different output files may be created when you run a simulation. But when you use "Save As", the output files are not saved – they are only produced when running a simulation. The following tables lists all the files which can be produced when you save a simulation:

Database Inputs

| | |
|------|--------------------------------------|
| .SPD | SPSD binary database file |
| .FXV | SHS household level expenditure data |
| .WGT | SPSD file containing survey weights |

Parameters

Complete parameters

| | |
|--------|-------------------------------------|
| .CPR | Control parameter file |
| .APR | Database adjustment parameter File |
| _B.MPR | Base Tax/transfer parameter file |
| _V.MPR | Variant Tax/transfer parameter file |

Changed parameters

| | |
|--------|--|
| .CPD | Control parameter difference file |
| .APD | Database adjustment parameter difference file |
| _B.MPD | Base Tax/transfer parameter difference file |
| _V.MPD | Variant Tax/transfer parameter difference file |

Visual SPSM state

| | |
|------|-------------------|
| .STA | Visual SPSM state |
|------|-------------------|

While the following are the various output files which can be produced when simulations are run:

SPSM Outputs

Printable

| | |
|------|--|
| .TBL | Output tables result file |
| .PRN | Case output facility text results file |

Input to further analysis

| | |
|------|-------------------------------------|
| .MRS | Binary SPSM results file |
| .SSD | SAS file |
| .SFM | SAS formats source code output file |

Control parameters which are changed when saving a simulation

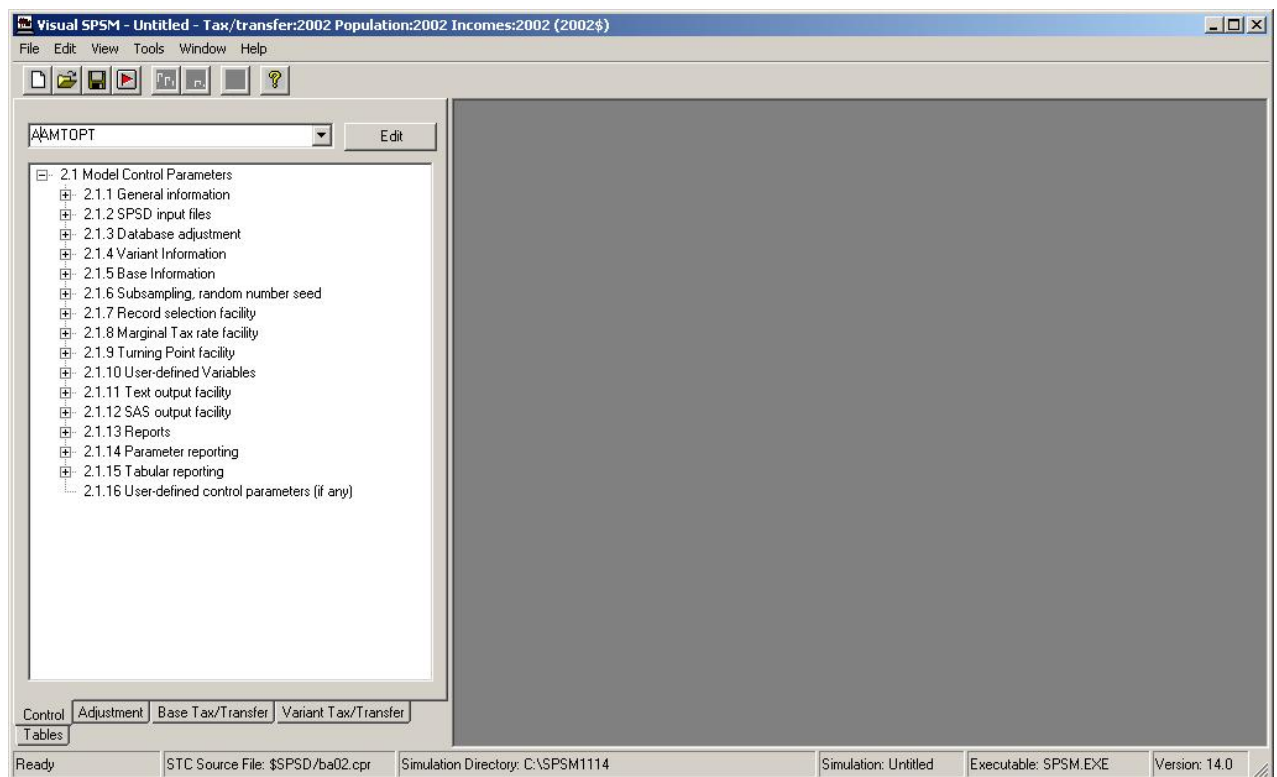
When you save a simulation, certain control parameters will be changed to reflect the name of the saved simulation. They are:

| Parameter name | Parameter label | Example value (Simulation = test) |
|----------------|--------------------------------------|--------------------------------------|
| OUTCPR | Name of control parameter file (out) | test.cpr |

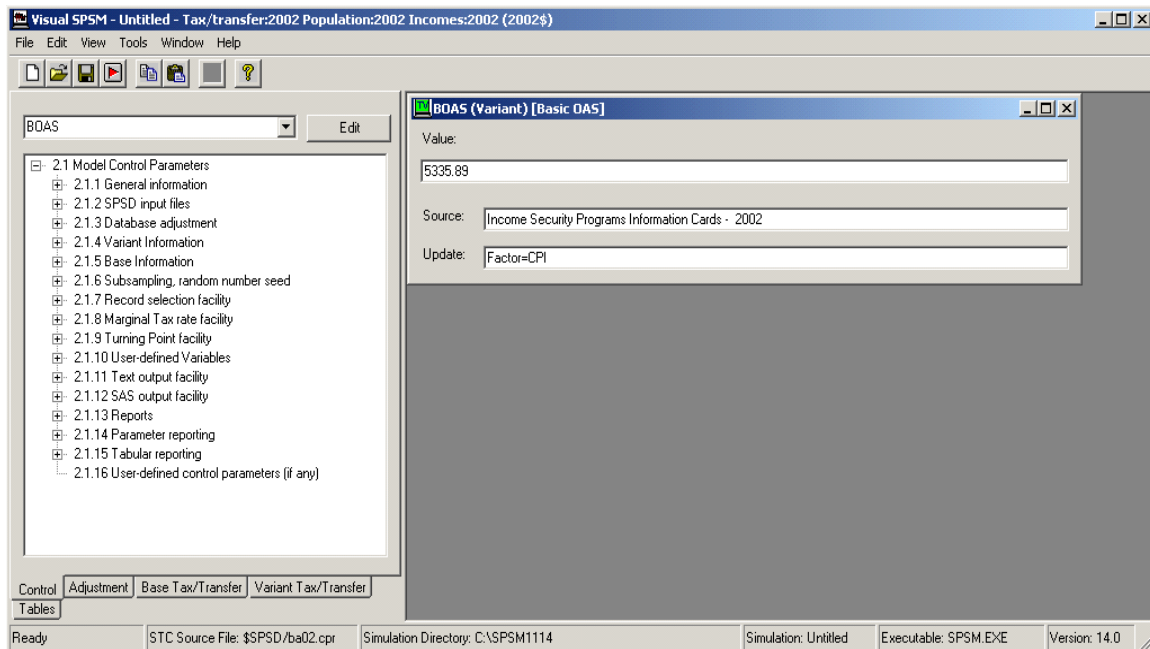
| | | |
|-----------|---|------------|
| OUTLOG | Name of log file (out) | test.log |
| INPAPR | Name of database adjustment parameter file (in) | test.apr |
| OUTAPR | Name of database adjustment parameter file (out) | test.apr |
| INPVARMPR | Name of variant tax/transfer parameter file (in) | test_V.mpr |
| OUTVARMPR | Name of variant tax/transfer parameter file (out) | test_V.mpr |
| OUTVARMRS | Name of variant results file (out) | test.mrs |
| INPBASMPR | Name of base tax/transfer parameter file (in) | test_B.mpr |
| OUTASC | Name of text output file (out) | test.prn |
| OUTTBL | Name of report file (out) | test.tbl |

EDITING PARAMETERS

Once you have created or opened a simulation you can edit the parameters before executing the SPSM. The next figures show the basic windows of Visual SPSM.

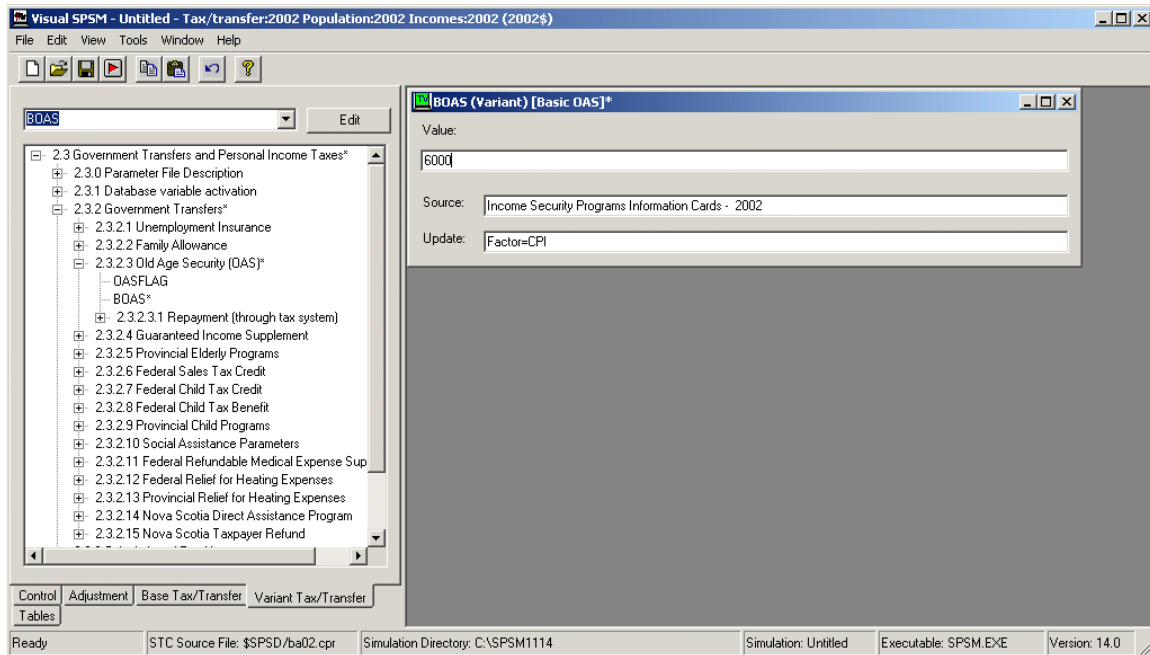


There are five tabs at the bottom left of the window. The first four will open panes with parameter trees: control parameters, adjustment parameters, base tax and transfer parameters, and variant tax and transfer parameters. **Note that the Base tax/transfer parameters are only used when BASMETH is set to 2 or 3 and that the Variant tax/transfer parameters are only used when VARMETH is set to 2 or 3.**

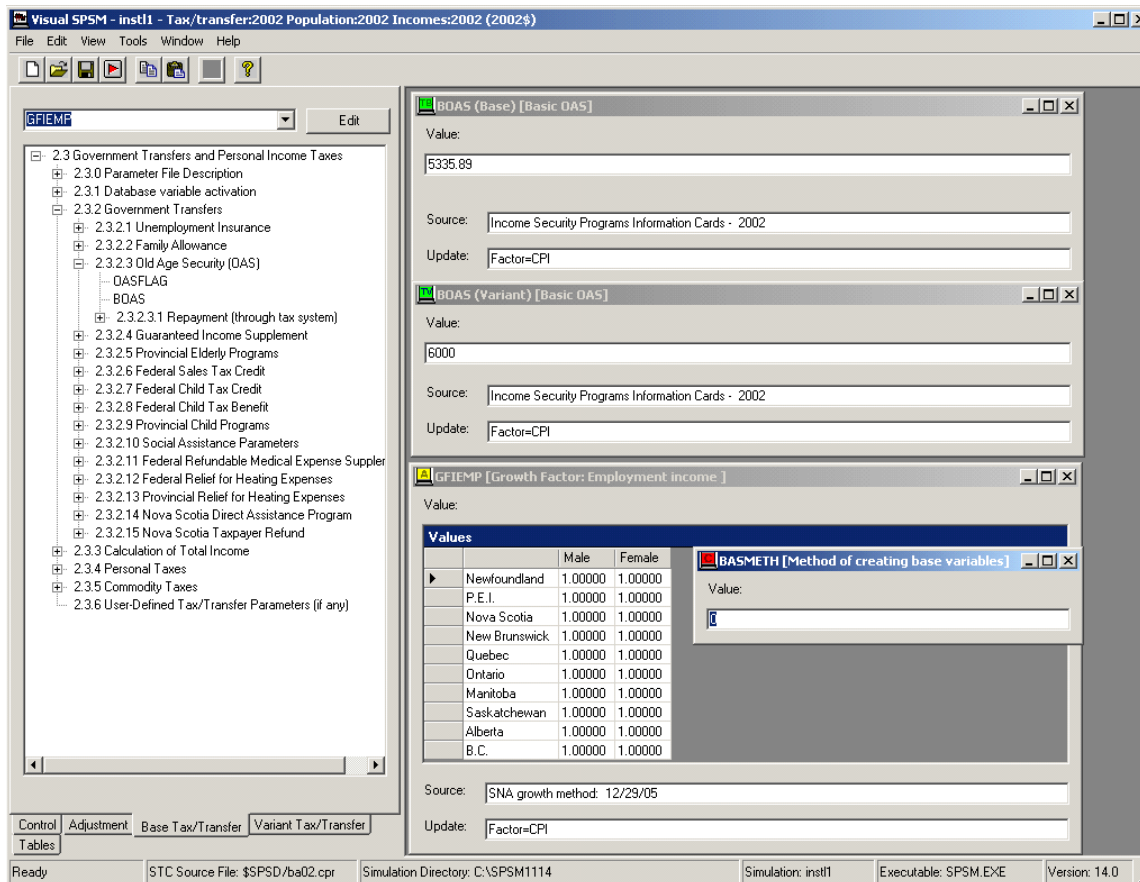


There are two methods to open the parameter you want to edit. One method is to find the parameter in the hierarchical tree. So, for example, if you wanted to edit the basic amount of Old Age Security (OAS) in the variant scenario, you would first click on the variant tax/transfer tab. Then you'd open the tree by clicking on Government transfers, then Old Age Security, then finally double click on BOAS which will open the BOAS window. If you already know the name of the parameter that you are looking for, you can also simply type in the name in the box above the tree and then click Edit. The parameter window will open. Note that you can input any type of parameter from any tab in this edit box. So, for example, if you are in the Control tab and type in GFIEMP, then the parameter window for GFIEMP opens, even though it's an adjustment parameter. Note that when you input a tax/transfer parameter in any tab but the Base Tax/Transfer, the variant value will be opened. You can only open the Base parameters from the Base tab.

Once a parameter window is opened, you can then change the parameter's value, source, and update factor. When you change the value of a parameter, an asterisk is placed in the title of the parameter, as well as in the tree. Once you save the simulation, the asterisks will disappear. **You should always save a simulation prior to executing it.**



Note that parameter windows have colour coded icons in the top left hand corner (see figure below). Control parameters have a red icon with a C in it. Database adjustment parameters have a yellow icon with an A in it. All tax and transfer parameters have green icons. The base tax and transfer parameters have a TB in the icon while the variant tax and transfer parameters have a TV in the icon.



EXECUTING SIMULATIONS AND VIEWING THE LOG WINDOW

Once you have finished editing the parameters you should **save your simulation** (so that your changes are included in the simulation) and then execute the simulation. Visual SPSM will then call spsm.exe which runs the simulation in the same manner as Classic SPSM.

To run a simulation, click on **File, Execute Simulation** or press the Execute button in the toolbar. Once the run is complete, a box will open which will indicate if there were any errors or warnings produced during the simulation, or whether the simulation ran without problems.

If an error or warning is found, the log window is opened. You should look at this window to find the error or warning. The following section gives a brief description of what is seen in the log window.

Contents of Log Window

SPSM, immediately after being invoked, displays a copyright notice and a greeting screen. The dialogue which follows consists basically of six prompts, which are described in turn below.

1) Enter name of input control parameter file ==>

This will be the name of your saved simulation. It will point to all the new parameter

files which were created when the simulation was saved.

2) Enter specification for generating output files ==>

This will also be the name of your saved simulation.

3) Do you wish to modify any control parameters ? ==>

The answer will be no. If there were any errors or warnings in the control parameters, they will appear here. An example:

```
Do you wish to modify any control parameters ? ==> N
error(962): 'hdprov' is not an analysis variable in XTSPEC # 1
error(964): no analysis expression in XTSPEC # 1
error(948): parameter error in batch mode
```

4) Any further control parameter changes ? ==>

The answer will always be no. The model will then load the database adjustment parameters. **If there are any errors in them, they will be listed prior to the sample parameters shown.**

5) Do you wish to modify any database adjustment parameters ? ==>

The answer will be no. Note that any errors will be listed before this section. The model will then read the base and variant tax and transfer parameters. **If there are any errors in them, they will be listed prior to the sample parameters shown.**

6) Do you wish to modify any variant tax/transfer parameters ? ==>

Depending on the version of Visual SPSM, it is possible that a parameter may be changed here for technical reasons. This has no impact on results.

The SPSM now performs the simulation. At the conclusion of the simulation, SPSM will output some summary information and list the names of all output files produced.

VIEWING TABLES AND DISTRIBUTIONS

Once a simulation has been run, you can view any tables or distributions which were produced. They can be found in the Tables tab. The built-in tables are shown first, followed by the user tables and then the distribution.

By default, only Table 0 and Table 1 are produced. See the [User's Guide](#) for more information on how to turn on the other default tables, create user tables, or use the Distributional Analysis facility.

Visual SPSM - inst11 - Tax/transfer:2002 Population:2002 Incomes:2002 (2002\$)

File Edit View Tools Window Help

GFIEMP Edit

Output Tables

- Built-in Tables
 - Table 0: Results for Census Families
 - Quantities
 - Table 1: Results for Census Families by Province
- User Tables
 - Distribution

Table 0

SPSD/M (Database 14.00) Mon Jan 16 15:35:56 2006

Base Description: No base results

Variant Description: Current values for 2002 [Driver: Version 14.0 : 91-10, File: inst11_V.mpr]

Sample: 1.0000 AGENAME='Standard'

Results for Census Families

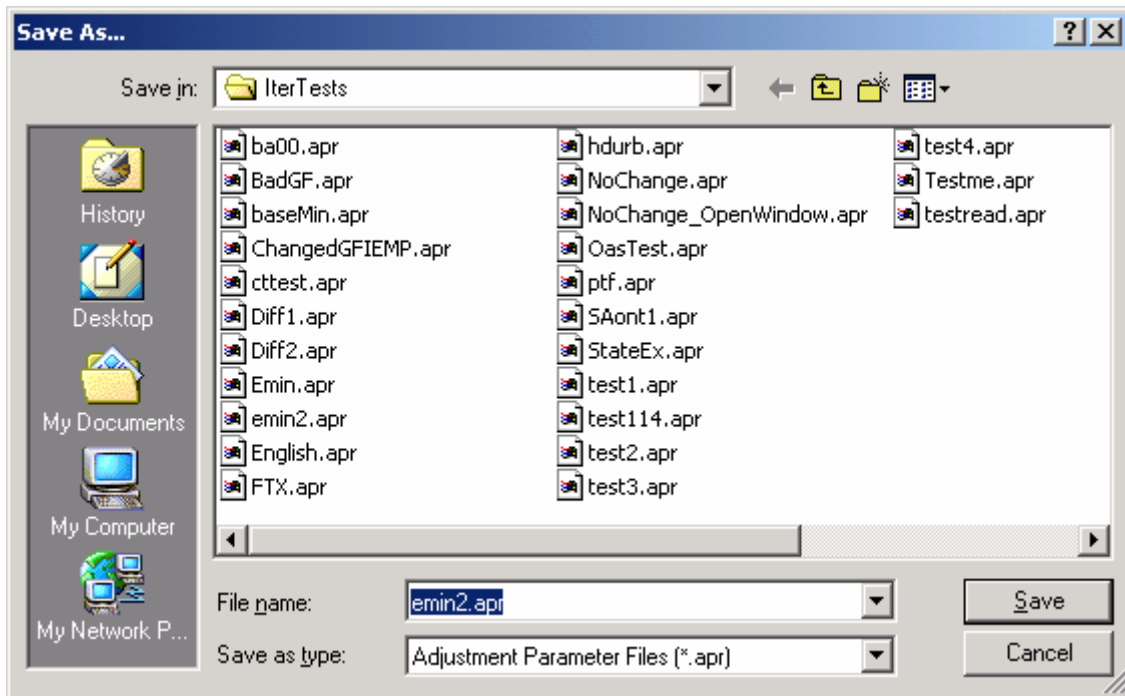
| Variable (x1,000,000) | TOTAL |
|---------------------------|-----------|
| Family Units (x1000) | 14810.1 |
| Persons (x1000) | 30972.0 |
| SLID Survey Records | 35407.0 |
| SPSD Records | 94838.0 |
| Income (Base) | 540087.9 |
| Income (Variant) | 540087.9 |
| Change | 0.0 |
| Number of Gainers (x1000) | 0.0 |
| Number of Losers (x1000) | 0.0 |
| No Change (x1000) | 14810.1 |
| Gainer's Gain | 0.0 |
| Loser's Loss | 0.0 |
| Total Income | 772064.7 |
| Market Income | 676419.2 |
| Wages and Salaries | 518669.4 |
| Self-Employment Income | 41452.8 |
| Investment Income | 46588.3 |
| Other Income | 69708.8 |
| Transfer Income | 95645.5 |
| Total Tax | 232396.1 |
| Net Transfers | -136750.6 |
| Disposable Income | 608352.9 |
| Consumable Income | 540087.9 |
| Federal Taxes | 146816.8 |
| Federal Income Tax | 86568.5 |
| UI/EI Contributions | 8175.6 |
| UI/EI Benefit Recovery | 181.9 |
| CPP/QPP Contributions | 16939.1 |
| Other Recoveries | 0.0 |
| Federal Commodity Taxes | 34532.7 |
| Federal Transfers | 84478.4 |
| Federal Family Allow. | 0.0 |
| CTC / Child Benefits | 6969.3 |

Tables: Control Adjustment Base Tax/Transfer Variant Tax/Transfer

Ready STC Source File: \$SPSD/ba02.cpr Simulation Directory: C:\SPSM1114 Simulation: inst11 Executable: SPSM.EXE Version: 14.0

VIEWING MICRODATA

If you have produced textual microdata by using the Text Output Facility or the Turning Point Facility, you can view it by clicking on the View, Microdata in the menu bar.



Two files will be saved. One will contain the full set of parameters for the current simulation and the second will be the parameter difference file which only contains the parameters which are different from the default.

| | Full parameter files | Parameter difference files | Optional Parameter include files |
|-----------------------|----------------------|----------------------------|----------------------------------|
| Control parameters | test.cpr | test.cpd | test.cpi |
| Adjustment parameters | test.apr | test.apd | test.api |
| Base tax/transfer | test_B.mpr | test_B.mpd | test.mpi |
| Variant tax/transfer | test_V.mpr | test_V.mpd | test.mpi |

These files are now available to be read by other simulations. Note that when simulations are saved in Visual SPSM, the full parameter files and the parameter difference files are always saved for all four parameter types.

To read in previously produced parameters, you click on **File, Read Parameter Files**. In addition to the full parameter files and the parameter difference files, you can also read in partial include files (*.cpi, *.api, *.mpi). These files are created by users with a text processor and contain only selected parameters. They can be very useful since they allow you to mix and match parameters. They can be created using Notepad.

Configuring your machine to write include files using Notepad

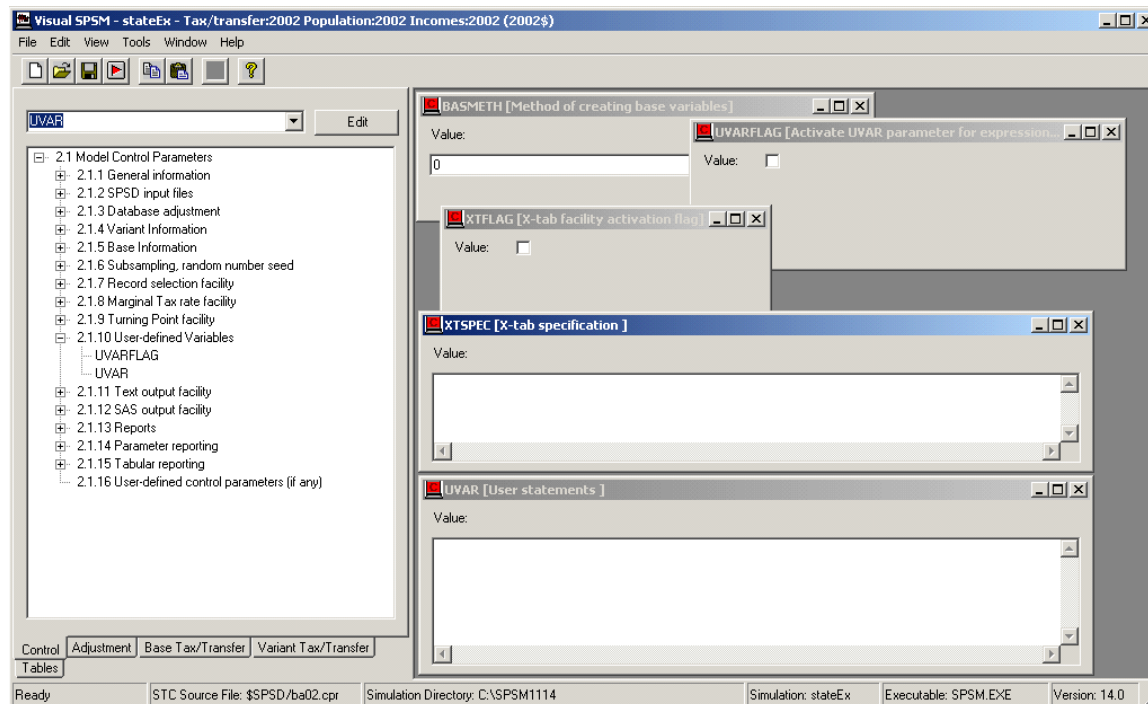
We encourage SPSM users to use include files in order to organize their work. In order to write these files, you'll need a text editor. Windows come with a basic text editor called Notepad. You may notice that when using Notepad a .txt extension is automatically added to your include files (*.api; *.mpi; *.cpi).

Should you encounter this problem, go to Windows Explorer. On **Windows 2000/XP** machines, open Tools/Folder Options/File Types/New. In the "File Extension" field, type in "CPI" and select "Ok". Repeat the steps for API and MPI files, and you'll find that the automatically generated .txt extensions disappear.

WINDOW STATES

If you frequently modify certain parameters, you may wish to be able to group them together so that you can open them at once. It can be time consuming to do this repeatedly, so you might wish to open and resize the windows you want, and then save the window state. This will create a file which will contain information on which windows were open, as well as the size and location of the windows. It will **not** save the content of the parameters in the windows. By doing this, when working on a new simulation, you can simply load the window state to easily view and edit some of your favorite parameters.

To save a window state, go to **File, Save Window State**. To load a window state, go to **File, Load Window State**.



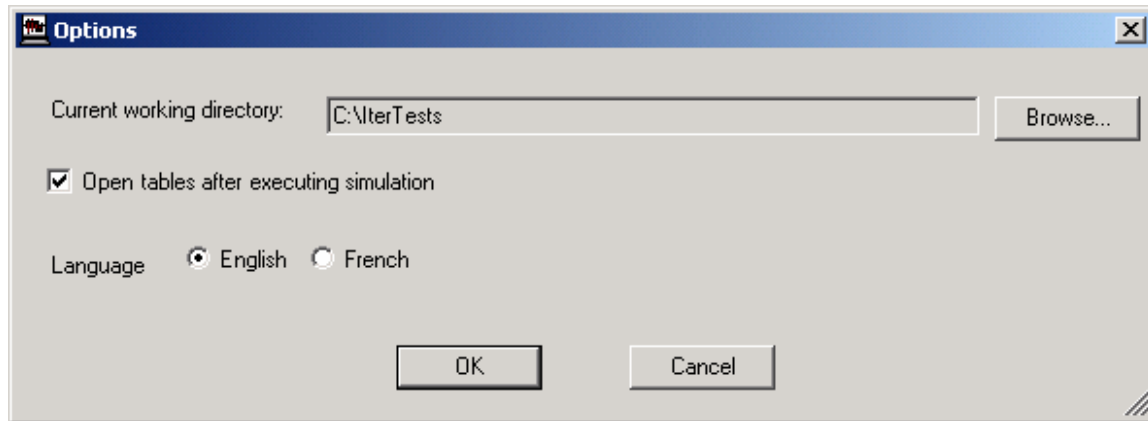
VISUAL SPSM OPTIONS

If you click on **Tools, Options**, you can change three default options.

The current working directory is the default location for opening and saving simulations. Note that once you open or save a simulation in a different directory, the current working directory will automatically be changed to that directory.

There is an option which will open a table in addition to the diagnostic log after a simulation is executed.

Finally, you can change the Visual SPSM language. It will only take effect the next time Visual SPSM is opened.



HELP

Under the Help menu, you can find the SPSM help file which gives you information about the SPSM (and which includes this guide) as well as About Visual SPSM which provides information about this version of Visual SPSM as well as information on the spsm executable used.

USING TOOLS

Some SPSM tools can be used with Visual SPSM. Please see the [*Tools User's Guide*](#) for more information about how to use these tools.

Running SPSM using Classic SPSM

Running the SPSM using the Classic SPSM interface means that you will be running the model using an MS-DOS environment. When you click on **Classic SPSM**, a command prompt will open with the correct environment variables and path set.

MS-DOS OVERVIEW

For people unfamiliar with the MS-DOS environment, accessed using the command prompt, this section will serve as a brief refresher.

Files

A file is a collection of stored information. Because you can store many files on disk, naming files is an important task. Good filenames are descriptive. File names for the

SPSM should not contain any spaces. A filename may also have an extension, although one is not required. An extension always begins with a period followed by characters (normally three). The extension allows you to group files into categories by giving more information about what is in the file.

Directories

Because many files may be created, you need a method of organizing files so you can efficiently store and retrieve data. A directory (or folder) is used to organize groups of related files. First you determine how your files are related and then you create a directory and add your files to it. Directories are stored on the disk with the files. We recommend that you do not use spaces when naming directories.

The root directory, or simply, the root, is the main directory on a hard or floppy disk. The root directory cannot be deleted. A subdirectory is a directory which is below, and included in, another directory. It is any directory other than the root. The current directory is the directory in which you are currently working. The current directory is the directory which MS-DOS accesses when you specify a file without specifying a directory. When you open Classic SPSM, the current directory is set as your default working folder. A parent directory is the directory one level above the current directory in the hierarchy.

Pathnames

Before MS-DOS can find a file in a directory that is not in the current directory you must tell it where to locate it. You do this by specifying a pathname. A pathname consists of a drive specifier, a series of directory names, and a filename. A backslash separates each of the elements. For example the following pathname specifies that the file README.TXT is located in disk drive D: in the directory SOFTWARE which has the parent directory USERS. The root is always indicated by a single backslash.

```
D:\USERS\SOFTWARE\README.TXT
```

When running an executable which is not in the current directory, you must either specify a pathname as for files, or include the path of the environment variable PATH. The directory where the SPSM executables exist is included automatically in this environment variable when you open the Classic SPSM shortcut.

Using Directories

MS-DOS uses several commands to list, create, locate, change and delete directories. The key actions are to create, delete and change directories.

| Command | Short Form | Purpose |
|---------|------------|---|
| MKDIR | MD | Add a new directory to the tree structure |
| RMDIR | RD | Remove a directory from the tree structure |
| CHDIR | CD | Display the current directory or change the current directory |

All these commands take as their argument a directory name. For example, MKDIR

\USERS will create a directory called USERS one level below the root. The command CHDIR \USERS will make \USERS the current directory. If you wish to display the name of the current directory simply enter the CHDIR command with no arguments. The command RMDIR \USERS would then delete the USERS directory. Note that you cannot delete the root or the current directory. The RMDIR command will not remove a subdirectory that contains files or other subdirectories; thus users must delete any contained files before removing a subdirectory.

Other Useful Commands

Here are other commands which may prove useful:

| Command | Purpose |
|---------|---|
| COPY | Copies a file or a directory |
| DEL | Deletes a file or a directory |
| DIR | Lists files in directory |
| EXIT | Exits the command prompt |
| REM | Indicates that the rest of the line is to be taken as a comment |
| SET | Displays, sets, or removes environment variables |

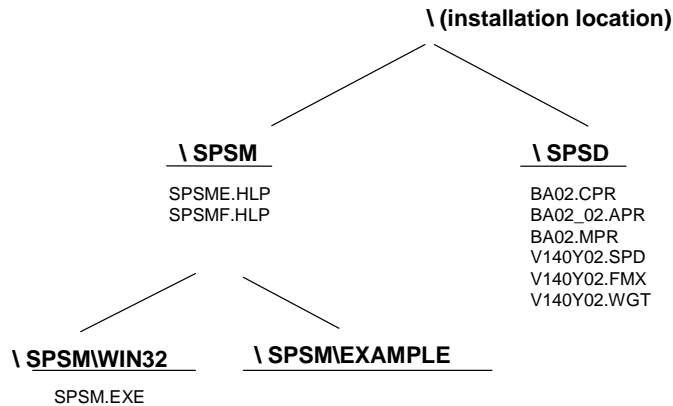
SPSD/M FILES AND DIRECTORIES

All SPSPD/M files are maintained using a directory structure that follows certain conventions. Directories can also be referred to as folders under some operating systems. Users are strongly urged to organize their work in directories as well. Directories provide a structure for organizing files on disk.

Executable files have either a .exe, .com, or .bat extension. They are executed by simply typing the file name (without the extension), followed by a carriage return at the command prompt. The spsm.exe program is an example of such a file. Assuming that you have chosen the default installation directory, the full pathname of the executable SPSPM program for version 14 is something like:

```
c:\program files\statcan\spsdml4.0\spsm\win32\spsm.exe.
```

The following figure shows part of the SPSPD/M directory structure and selected file contents.



During the user dialogue several specifications of input and output files are required. If the user does not specify a full pathname when specifying a file, the file will be read from, or written to, the current directory.

When about to begin an analysis using the SPSM, the user should create a new directory to store all the input parameter files and outputs. Any name may be selected for this directory. Directories can be created either in the command prompt using the MKDIR command, or by using "My Computer".

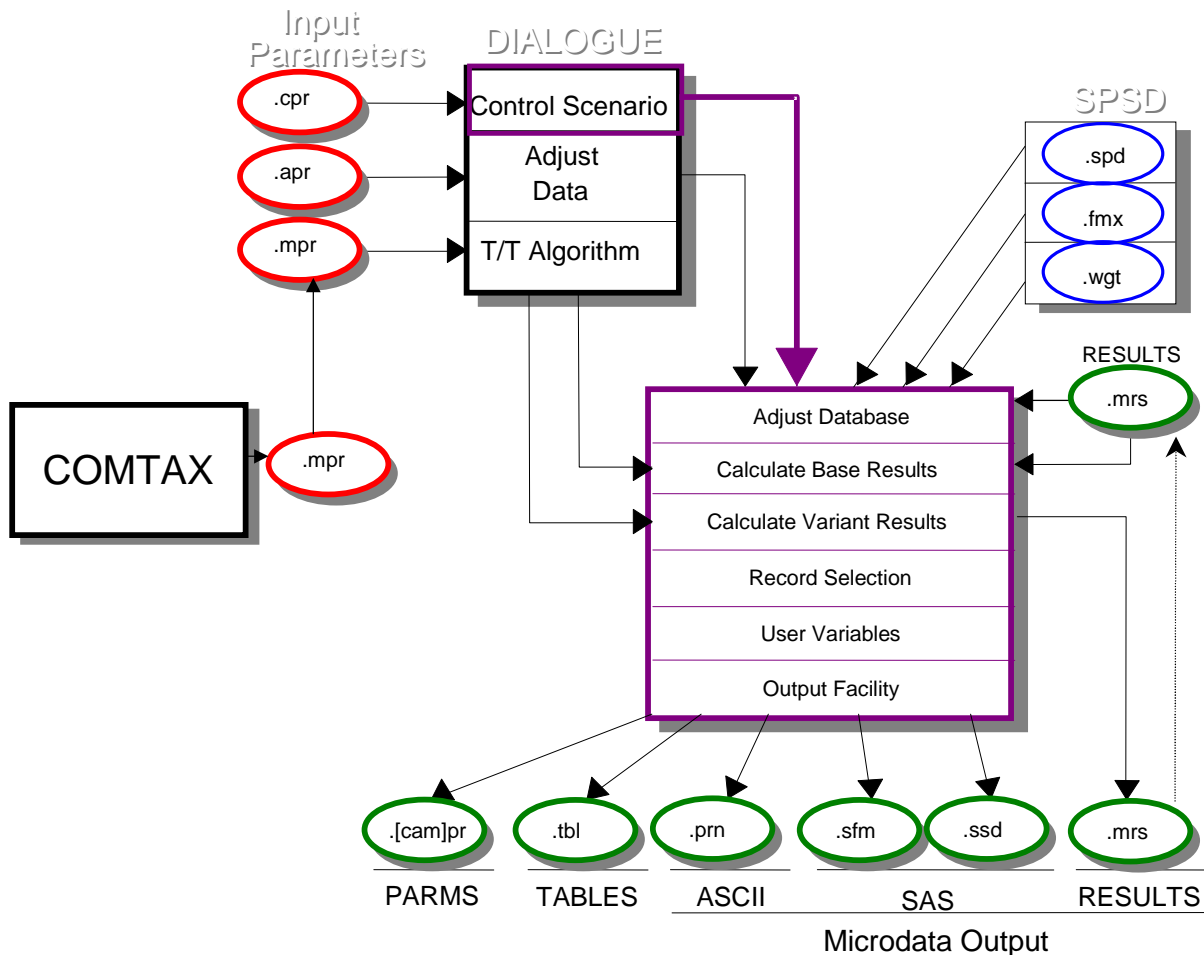
The following table gives the file extension naming conventions used for SPSM input and output files.

| | | |
|---------------------------------------|------|---|
| Database Inputs | | |
| | .SPD | SPSD binary database file |
| | .FXV | SHS household level expenditure data |
| | .WGT | SPSD file containing survey weights |
| Parameter Inputs | | |
| Complete and mandatory | | |
| | .CPR | Control parameter file |
| | .APR | Database adjustment parameter File |
| | .MPR | Tax/transfer parameter file |
| Partial and optional, created by user | | |
| | .CPI | Control parameter include file |
| | .API | Database adjustment parameter include file |
| | .MPI | Tax/transfer parameter include file |
| Partial, created by Visual SPSM | | |
| | .CPD | Control parameter difference file |
| | .APD | Database adjustment parameter difference file |
| | .MPD | Tax/transfer parameter difference file |
| SPSM Outputs | | |
| Printable | .TBL | Output tables result file |
| | .PRN | Case output facility text results file |
| Input to further analysis | .MRS | Binary SPSM results file |
| | .SSD | SAS file |
| | .SFM | SAS formats source code output file |
| Program Run Control | | |
| | .BAT | SPSM Dialogue commands |
| | .CMD | SPSM Dialogue commands |
| | .CTL | SPSM Dialogue commands |
| Visual SPSM state | | |
| | .STA | Visual SPSM state |

SPSD/M File Naming Conventions

The database files are all named by Statistics Canada and should not be changed. There are many types of input parameters. The parameter files with .CPR, .APR and .MPR must be complete and valid SPSM parameter files and values for all three must be specified for any given program run. The .CPI, .API, and .MPI files are created by the user with a text editor and contain subsets of the corresponding .CPR, .APR and .MPR files. The .CPD, .APD and .MPD are similarly subsets of parameters but they are created automatically by Visual SPSM.

The relationships of all these files to the structure of the SPSM is shown in the following diagram. File types with their extension are shown in ellipses.



SPSD/M Files and Relationships

This diagram can be used as a handy reference while becoming familiar with the files and naming conventions.

SPSD ENVIRONMENT VARIABLES

Environment variables can be used to generalize the names of various input files used by SPSM. For example, the .cpr files in this release contain entries such as the following:

```
INSPSD $SPSD/v140y02.spd
```

The SPSP environment variable is set when you open the Classic SPSM shortcut. If you used the default locations when installing the SPSP, the preceding is equivalent to

```
INSPSD c:/program files/statcan/spsdm14.0/spsd/v140y02.spd
```

This file name expansion only works in the leading position of the path name. If the environment variable is not defined, the name is not expanded and an error message will result.

The Classic SPSM shortcut defines the SPSP and SPSM environment variable and adds

the appropriate directory to the PATH environment variables so that when you run the spsm from any subdirectory, it will know where to find the executable.

SPSM CONTROL

Overall operation of SPSM is controlled through a user dialogue which has a number of distinct phases. The overall result of this dialogue, however, is the creation of one or more parameter files, which together provide a complete specification of the SPSM run.

The most important of these files is the control parameter file. Every execution of the SPSM produces one such file, which contains, among other things, a complete description of all other files used or produced in the run. These other files are specified through string parameters in the control parameter file. The conventions used are the same as those of the operating system. For MS-DOS these conventions are as follows:

- a) Names can be given in upper or lower case; case is not significant.
- b) If the drive specifier is absent, the current drive is assumed.
- c) If a path specifier is absent, the default directory for the current drive is used. Either forward or backward slashes may be used to delimit the elements of the path.
- d) File names consist of characters, followed by a dot, followed by an extension (normally three characters). We recommend that spaces not be used in file names.

SPSM Dialogue Structure

SPSM, immediately after being invoked, displays a copyright notice and a greeting screen. The dialogue which follows consists basically of six prompts, which are described in turn below.

1) Enter name of input control parameter file ==>

A control parameter file contains a fair number of parameters. Typically, the user will wish to perform a run similar to one previously performed. He or she should enter the name of an existing control parameter file similar to that desired in response to this prompt. A fully specified file name may be specified (e.g. \$spsd/ba08.cpr). The .cpr file extension will be automatically generated if omitted. SPSM may produce error messages at this point if syntactic problems occur in the specified file.

2) Enter specification for generating output files ==>

The control parameter file has a number of parameters that specify the file names of output files that the SPSM may produce. Specifically, these parameters are OUTCPR, OUTAPR, OUTVARMPR, OUTVARMRS, OUTASC, OUTSAS, and OUTTBL. It is unlikely that all of these files will be produced in a given run, although the file given by OUTCPR, which contains the control parameters for the run, is always produced. If the user enters a file name in response to this prompt, names for all output files will be generated from it by changing the file extension. For example, if the user enters test1, then the generated output file names will be test1.cpr, test1.apr, etc. A fully qualified file name (e.g. /tmp/junk) can also be specified. Using this technique, all

output files can be directed to some other directory. If the user just presses ENTER then the values of these parameters will remain unchanged from those of the input control parameter file. Note that any control parameter, including those specifying output file names, can be changed in Step 3) below.

3) Do you wish to modify any control parameters ? ==>

If the user answers YES to this question, then a dialogue allowing changes to control parameters will follow. The form of this dialogue is described in the section titled Parameter Editing Facility. After all changes have been made, the user issues the GO command. At this point SPSM checks the control parameters for consistency and validity, and issues error messages if it finds any problems.

4) Any further control parameter changes ? ==>

If error messages were issued, or if the user remembered additional changes that should have been made, the response to this question should be YES. If this is done, the dialogue will return to Step 2) above, otherwise the new values of the control parameter are written to the file OUTCPR and the dialogue continues with Step 5).

5) Do you wish to modify any database adjustment parameters ? ==>

After reading in the database adjustment parameters from the file specified in the INPAPR control parameter and displaying selected values from that file, this prompt will be displayed. As before, answering YES will activate the parameter editing facility, allowing the user to make changes to the database adjustment parameters. If any database adjustment parameters are changed as a result, SPSM will modify the control parameter INPAPR to be equal to OUTAPR and print a message to that effect. This means that if the resulting control parameter file is used as input in a subsequent run, the correct database adjustment parameter file will be referenced.

6) Do you wish to modify any variant tax/transfer parameters ? ==>

This prompt is very similar to Step 5), except that the user has the opportunity to change variant tax/transfer parameters. If no variant results are being produced (i.e. VARMETH was set to 0) then this prompt will not be displayed.

After these six dialogue steps are complete, SPSM will perform the run. The run may be interrupted at any time by pressing CTRL-BRK or CTRL-C. CTRL-BRK will stop SPSM without producing information while CTRL-C will stop SPSM and will produce information on the number of persons and household process and the size of the sample. The user will then be asked whether the run should be continued or terminated. At the conclusion of the run, SPSM will output some summary information and list the names of all output files produced.

Two general points should be noted. First, the dialogue can be interrupted at any point by pressing either:

- CTRL-BRK. If this is done during the dialogue, SPSM will terminate, returning the user to the operating system.
- CTRL-C the user will be asked whether the run should be continued or terminated.

Second, the parameter editing facility can be used, in Steps 3), 5), and 6), to examine

parameter values as well as change them.

PARAMETER EDITING FACILITY

The parameter editing facility provides a method by which a user may change the values of parameters without using a text editor to modify a parameter input file. The section titled SPSM Dialogue Structure describes how to invoke the parameter editing facility during the SPSM dialogue. This section describes how the facility operates.

After the parameter editing facility has been invoked, a prompt (==>) appears. At this point the user may enter a command, or the name of a parameter. Entering a parameter name will allow the user to examine or modify that parameter. The valid commands that can be given are LIST, which displays the names of currently accessible parameters, and READ, whose effect is described in the section titled Read Facility, and GO, which terminates the parameter editing facility and resumes the main dialogue.

Changing Parameter Values Interactively

If a valid parameter name is entered in response to the ==> prompt, the current value of the parameter will be displayed. If the user starts to enter a new value, the current displayed value will disappear, and the new value being typed will appear. If, on the other hand, an editing key (such as HOME) is the first key pressed, the existing parameter value will be retained and can be modified using the editing keys. The ENTER key is used to indicate that changes are complete. Recognized editing keys and their meanings follow.

| | |
|-----------|---|
| HOME | Move cursor to leftmost position. |
| END | Move cursor to rightmost position. |
| LEFT | Move cursor one position to left. |
| RIGHT | Move cursor one position to right. |
| DEL ARROW | Delete character to left of cursor. |
| DEL | Delete character under cursor. |
| INS | Toggle between insert and overstrike mode. |
| ESC | Discard changes to values, and restart with original value. |

If the parameter being edited is a vector, look-up table, or array, the dialogue is slightly different. If the dimension can be changed, then a prompt allowing such change is issued. Next, if the parameter is an array, the column to be modified is requested. Finally, a prompt is issued for each element of the parameter in turn. All the editing keys listed above can be used.

Multi-Line Strings

If the parameter being edited is a long string, the editing facility will generate a prompt indicating which line of the string is being displayed. The following additional editing keys then become available. As before, the ENTER key is used to indicate that changes are complete.

| | |
|----|--------------------------------|
| UP | Go to previous line of string. |
|----|--------------------------------|

DOWN Go to next line of string.
CTRL-x Split line at cursor.
PGUP Go to first line of parameter.
PGDN Go to last line of parameter.

Changing Parameter Values Using Include Files

If the READ command is issued, the user will be prompted for the name of a file containing values for one or more parameters. Such a file (called an include file) would typically have been created by modifying another parameter file using a text editor. The named include file will be read, and the values for the parameters given in the file will replace the corresponding current parameter values. The READ command is useful to manipulate small groups of parameters, and can be used to ‘mix and match’ elements of tax/transfer scenarios. It is the recommended method of changing parameters in Classic SPSM.

Though you can include sources and update factors, they are not necessary. An example of the content of a control parameter include file (test.cpi) might be:

```
T0FLAG 0  
T3FLAG 1
```

If the include file name specified to the READ command lacks a file extension, default file extensions will be generated depending on the type of parameters being modified. Specifically, control parameter include files have a default extension of .cpi, database adjustment of .api, and tax/transfer of .mpi. We suggest users follow the same convention for organizing parameter include files.

Configuring your machine to write include files using Notepad

We encourage SPSM users to use include files in order to organize their work. In order to write these files, you’ll need a text editor. Windows comes with a basic text editor called Notepad. You may notice that when using Notepad a .txt extension is automatically added to your include files (*.api; *.mpi; *.cpi).

Should you encounter this problem, go to Windows Explorer. On **Windows 2000/XP** machines, open Tools/Folder Options/File Types/New. In the “File Extension” field, type in “CPI” and select “Ok”. Repeat the steps for API and MPI files, and you’ll find that the automatically generated .txt extensions disappear.

SPSM BATCH FACILITY

Sometimes it is desirable to be able to control the operation of SPSM in an automatic fashion, without needing a human operator to respond to prompts. The SPSM batch facility fulfills this need. Two methods are provided, depending on the complexity of interaction necessary.

Command Line Method

In the command line method, which is suitable for the simulation of short dialogue interactions, the responses are indicated in a single string on the command line used to

invoke SPSM, with the pound symbol '#' being used to delimit each response from the next. (Note that MS-DOS places a limit of 128 characters on a command line). For example, the line

```
spsm $spsd/ba08#temp#N#N#N#N
```

would invoke SPSM using the control parameter file \$spsd/ba08.cpr and create output files temp.cpr, temp.tbl, etc. The Ns indicate 'No' responses to the normal questions that SPSM asks the user. In the more complicated example

```
spsm temp##Y#SAMPLEREQ#.001#read#$spsm/example/detsum.cpi#go#N#N#N
```

SPSM is run using the control parameter file temp.cpr, with a requested sample of 0.1%. The control parameter include file \$spsm/example/detsum.cpi is read during the control parameter dialogue. This file will activate the case output facility, and produce a detailed summary report of each household.

You can have multiple such commands in a single file which you can save with a .bat or .cmd extension. In the command prompt, you then just need to type in the name of this .bat file and multiple simulations can be run.

Control File Method

In the control file method, SPSM is invoked on the command line with a single argument, being the name of a file containing the exact responses SPSM would expect to receive had the dialogue proceeded normally. Each line of the file corresponds to a prompt that the user would have responded to. If the file temp.ctl had been edited to contain the following 6 lines:

```
/spsd/ba08
temp
N
N
N
N
```

or a single line

```
/spsd/ba08#temp#N#N#N#N
```

and if SPSM had been invoked as follows:

```
spsm temp.ctl
```

then the result would have been identical to the first example given above in the section titled Command Line Method.

CHANGING THE LANGUAGE IN CLASSIC SPSM

The **SPSM Classic** shortcut will run SPSM in English while the **MSPS classique** shortcut will run SPSM in French. It is possible, though, to change the language by changing the SPSMLANG environment variable. From the command prompt, if you type in:

```
set SPSMLANG=E
```


SPSM will run in English.

```
set SPSMLANG=F
```

SPSM will run in French.

Running SPSM using other methods

We recommend using Visual SPSM or Classic SPSM to run the spsm. However, if you wish to run SPSM using some other software you can do so. You will need to set the environment variables. The method of doing this will vary depending on your operating system and the software used.

Two environment variables must be set, SPSM and SPSPD. If you installed SPSM in the default location, they would be set to the following values:

| | |
|-------|--|
| SPSM | C:\Program Files\StatCan\SPSDM14.0\spsm |
| SPSPD | C:\Program Files\StatCan\SPSDM14.0\spspd |

You may also wish to set the language of the SPSM by setting SPSMLANG to either E or F for English or French.

Finally, the path of the executable, assuming that you installed SPSM in its default location, will be:

C:\Program Files\StatCan\SPSDM14.0\spsm\win32

If you have questions about setting up the model to run in a different environment, please phone us at (613) 951-3774 or email us at spsdm@statcan.ca.