

(January 20th, 2009)

SUPSMU: Excel Software

Advantages

1. Useful to save time.
2. It allows you to use many span options at a time.
3. Easy to use.
4. You can compare several span options to choose the proper one, depending on your interests.

Drawbacks

1. Span selection (model selection problem still unsolved, at least not 100% solved).

How to use it?

1. Download the following files in the same directory:
 - a. *Smoothing.xls*
 - b. *Input_Profile.xls*
 - c. *profile.csv*
 - d. *profile_1.csv* (Make sure your survey population¹ is posted in cells C2:C96. The population should be adjusted using survey factors)
 - e. *smoothed_profile.xls*
2. Open *Input_Profile.xls*.
 - a. Choose whatever the sheet you want (“prof1” for instance).
 - b. Place the unsmoothed age profile starting on cell C6.
 - c. Decide the number and magnitude of the span options (between 0 and 1 –no need to use more than 20 options) in row 6, starting at D column. Span option “cv” must be used always as default (in D6). (This step is not really necessary, but it is commendable in order to avoid confusions at the end).

¹ This is a discussion point in NTA, some countries could use the actual population, depending how big the difference is.

- d. Some modifications to the profile might help getting better results: keeping constant values for old ages in the profile, averaging peak values, taking average values of 90+, etc... After those changes are performed (or no one of them), the new (original) profile must be placed at cells B6:B96.
3. Open the file *Smoothing.xls* in the “Control” sheet and follow the next steps (See Figure 1):
 - a. Specify in cell C1 the directory of *Input_Profile.xls*.
 - b. If you decide to change the name of *Input_Profile.xls*, you have to specify the new one in C2.
 - c. Specify in C3 the name of the sheet where your profile was posted inside *Input_Profile.xls* (for example: “prof1”).
 - d. In C4 you have to say what the starting age is where you believe your profile starts with a significant value. Remember that in NTA we start smoothing profiles at the age with a significant value. A good example is the earnings profile where no income (or very low) is reported for young people.
 - e. Indicate in C5 the number of span options (k) you want to try for smoothing (you are not allowed to use more than 20 span options at a time). The span option “cv” (cross validation) is chosen by default (please do not change it at cell C6).
 - f. **Press Bottom 1:** Your profile is read it from *Input_Profile.xls* and save it to *profile.csv*. You are asked whether changes in *profile.csv* should be saved; please always choose the “YES” option (two times).
 - g. **Press Bottom 2:** R code for the k span options you have chosen is automatically generated and posted in the “Code” sheet.
 - i. Open R program in the directory where you are working, copy the R code and paste it on the working area of the R program. The smoothed profiles are saved in *smoothed_profile.xls*.
 - ii. Return to *Smoothing.xls*.
 - h. **Press Bottom 3:** Smoothed profiles in *smoothed_profile.xls* are placed in a table and negative values are changed for 0s. Two messages will appear asking you whether *smoothed_profile.xls* should be saved, you can choose either “Yes” or “No” with no consequences. All those profiles are posted beside the original unsmoothed profile in *Input_Profile.xls* and a graph with all of them is constructed, including the unsmoothed one. This graph can be used to decide which span option is better given your particular interest. You also can support your decision using the majority voting scheme and the error measures explained in the NTA website at: [Special Notes on Span](#)

4. WARNINGS!

- a. Maintain the file *Input_Profile.xls* opened at all time.
- b. Select span options just in the range [0, 1] (remember “cv” is always used by default).
- c. Do not choose span options with more than 3 decimal positions, there is no significant gain by doing that and the software was designed only to deal with 3 or less decimal positions.
- d. Please never erase cell A1 in sheet “Code” of *Smoothing.xls* [`aloha<-read.csv("profile.csv", header=T)`]. An error message will appear if you do that.
- e. If an error message appears in file *Smoothing.xls* (and a Visual Basic workspace appears) due to some error, close the file WITHOUT saving. If your *Smoothing.xls* file does not work after that, you always have the option to download it again from the NTA website. If the problem persists, please notify me.

Please feel free to write me for any question or comment at: gauss75@gmail.com (Iván Mejía).