Title

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sem and gsem option from() — Specifying starting values

Syntax Description Option Remarks and examples Also see

Syntax

$\{$sem $|$ gsem$\}$ ... $\left[\,, \text{ ... } \texttt{from}(matname\left[\,, \texttt{ skip}\right]) \text{ ... }\right]$

$\{$sem $|$ gsem$\}$ ... $\left[\,, \text{ ... } \texttt{from}(svlist) \text{ ... }\right]$

where *matname* is the name of a Stata matrix and

where *svlist* is a space-separated list of the form

  eqname:*name* = *#*

Description

See [SEM] **intro 12** for a description of starting values.

Starting values are usually not specified. When there are convergence problems, it is often necessary to specify starting values. You can specify starting values by using

   1. suboption init() as described in [SEM] **sem and gsem path notation**, or by using

   2. option from() as described here.

Option from() is especially convenient for using the solution of one model as starting values for another.

Option

skip is an option of from(*matname*). It specifies to ignore any parameters in *matname* that do not appear in the model being fit. If this option is not specified, the existence of such parameters causes sem (gsem) to issue an error message.

Remarks and examples

Remarks are presented under the following headings:

   Syntax 1, especially useful when dealing with convergence problems
   Syntax 2, seldom used

Option from() can be used with sem or gsem. We illustrate below using sem.

Syntax 1, especially useful when dealing with convergence problems

Say you are attempting to fit

    . sem *your_full_model*, ...

and are having difficulty with convergence. Following the advice in [SEM] **intro 12**, you have simplified your model,

    . sem *your_simple_model*, ...

and that does converge. You now want to use those values as starting values for the full model. Let's imagine that there are 47 estimated parameters in the simple model.

Using the standard init() method for specifying starting values, you now have a real job in front of you. You have to type your full model, find all the places where you want to add starting values, and add an init() suboption. Just a piece of your full model might read

    ... (y<-L1 L2) (L1->x1 x2) (L2->x3 L4) ...

and you need to modify that to read

    ... (y<-(L1, init(14.283984)) L2)   ///
        (L1->(x1, init(2.666532)) (x2, init(-6.39499))) ///
        (L2->x3 L4) ...

That change handles 3 of the 47 parameters you need to specify.

There is an easier way. Type

    . sem *your_simple_model*, ...
    . matrix b = e(b)
    . sem *your_full_model*, ... from(b)

Here is how this works:

1. You fit the simple model. sem stores the resulting parameters in e(b).

2. You store the fitted parameters in Stata matrix b.

3. To fit your full model, type the model just as you would usually, and add option from(b). That option tells sem to get any starting values it can from Stata matrix b. sem does that and then follows its usual logic for producing starting values for the remaining parameters.

Just because you use from(b) does not mean you cannot specify starting values with init(). You can even specify starting values for some of the same parameters. Starting values specified by init() take precedence over those obtained from from().

Syntax 2, seldom used

In syntax 2, you specify

    . sem ..., ... from(*eqname*:*name* = # *eqname*:*name* = # ...)

For instance, you could type

    . sem ..., ... from(var(X):_cons=10)

or you could type

    . sem ..., ... var(X, init(10))

It is usually easier to type the second. See [SEM] **sem and gsem path notation**.

You may combine the two notations. If starting values are specified for a parameter both ways, those specified by init() take precedence.

Also see

[SEM] **sem** — Structural equation model estimation command

[SEM] **gsem** — Generalized structural equation model estimation command

[SEM] **sem and gsem path notation** — Command syntax for path diagrams

[SEM] **gsem model description options** — Model description options

[SEM] **sem model description options** — Model description options

[SEM] **gsem estimation options** — Options affecting estimation

[R] **maximize** — Details of iterative maximization