set iter — Control iteration settings

Description Syntax Option Remarks and examples Also see

Description

`set iterlog` and `set maxiter` control the display of the iteration log and the maximum number of iterations, respectively, for estimation commands that iterate and for the Mata optimization functions `moptimize()`, `optimize()`, and `solvenl()`.

`set iterlog` specifies whether to display the iteration log. The default setting is `on`, which displays the log. You can specify `set iterlog off` to suppress it. To change whether the iteration log is displayed for a particular estimation command, you need not reset `iterlog`; you can specify the `log` or `nolog` option with that command. If you do not specify `log` or `nolog`, the `iterlog` setting is used. To view the current setting of `iterlog`, type `display c(iterlog)`.

`set maxiter` specifies the default maximum number of iterations. To change the maximum number of iterations performed by a particular estimation command, you need not reset `maxiter`; you can specify the `iterate(#)` option with that command. If you do not specify `iterate(#)`, the `maxiter` value is used. To view the current setting of `maxiter`, type `display c(maxiter)`.

Syntax

Set whether to display the iteration log

`set iterlog { on | off } [ , permanently ]`

Set default maximum iterations

`set maxiter` # `[ , permanently ]`

is any number between 0 and 16,000; the initial value is set to 300.

Option

`permanently` specifies that, in addition to making the change right now, the setting be remembered and become the default setting when you invoke Stata.

Remarks and examples

The `iterlog` setting is particularly useful in combination with the `nolog` and `log` options; see example 1 below. Also see [R] **Maximize** for details about the options. The `iterlog` setting has no effect on commands that suppress the iteration log by default, for example, commands prefixed with `svy`. To display the log with those commands, you need to use the `log` option.

You will rarely need to modify the `maxiter` setting to change the maximum number of iterations used by Stata's iterative commands. Instead, you may want to specify the `iterate()` option with these commands. For example, specifying `iterate(0)` is useful for viewing results evaluated at the initial value of the coefficient vector.

The `iterlog` and `maxiter` settings also control the default output displayed by the Mata optimization functions `moptimize()`, `optimize()`, and `solvenl()`.

Example 1: Display and suppress the iteration log

Stata estimation commands that iterate usually display the iteration log by default:

```
. sysuse auto
(1978 automobile data)

. logit foreign mpg

Iteration 0:  Log likelihood =  -45.03321
Iteration 1:  Log likelihood = -39.380959
Iteration 2:  Log likelihood = -39.288802
Iteration 3:  Log likelihood =  -39.28864
Iteration 4:  Log likelihood =  -39.28864

Logistic regression                                     Number of obs =     74
                                                        LR chi2(1)    =  11.49
                                                        Prob > chi2   = 0.0007
Log likelihood = -39.28864                              Pseudo R2     = 0.1276

------------------------------------------------------------------------------
     foreign | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
         mpg |   .1597621   .0525876     3.04   0.002     .0566922     .262832
       _cons |  -4.378866   1.211295    -3.62   0.000    -6.752961   -2.004771
------------------------------------------------------------------------------
```

You can suppress the log by specifying the `nolog` option:

```
. logit foreign mpg, nolog

Logistic regression                                     Number of obs =     74
                                                        LR chi2(1)    =  11.49
                                                        Prob > chi2   = 0.0007
Log likelihood = -39.28864                              Pseudo R2     = 0.1276

------------------------------------------------------------------------------
     foreign | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
         mpg |   .1597621   .0525876     3.04   0.002     .0566922     .262832
       _cons |  -4.378866   1.211295    -3.62   0.000    -6.752961   -2.004771
------------------------------------------------------------------------------
```

If you want to suppress the iteration log from all estimation commands every time they are run within the current Stata session, type

```
. set iterlog off
```

We can run `logit` again but now without the `nolog` option, and the iteration log will not be displayed:

```
. logit foreign mpg
Logistic regression                                     Number of obs =     74
                                                        LR chi2(1)    =  11.49
                                                        Prob > chi2   = 0.0007
Log likelihood = -39.28864                              Pseudo R2     = 0.1276

------------------------------------------------------------------------------
     foreign | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
         mpg |   .1597621   .0525876     3.04   0.002     .0566922     .262832
       _cons |  -4.378866   1.211295    -3.62   0.000    -6.752961    -2.004771
------------------------------------------------------------------------------
```

Or we can run a different command, for example, `mlogit`, and the log will still be suppressed:

```
. mlogit rep78 mpg
Multinomial logistic regression                         Number of obs =     69
                                                        LR chi2(4)    =  15.88
                                                        Prob > chi2   = 0.0032
Log likelihood = -85.752375                             Pseudo R2     = 0.0847

------------------------------------------------------------------------------
       rep78 | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
1            |
         mpg |   .0708122   .1471461     0.48   0.630    -.2175888    .3592132
       _cons |  -4.137144    3.15707    -1.31   0.190    -10.32489     2.0506
-------------+----------------------------------------------------------------
2            |
         mpg |  -.0164251   .0926724    -0.18   0.859    -.1980597    .1652096
       _cons |  -1.005118   1.822129    -0.55   0.581    -4.576426     2.56619
-------------+----------------------------------------------------------------
3            |  (base outcome)
-------------+----------------------------------------------------------------
4            |
         mpg |   .0958626   .0633329     1.51   0.130    -.0282676    .2199927
       _cons |  -2.474187   1.341131    -1.84   0.065    -5.102756    .1543813
-------------+----------------------------------------------------------------
5            |
         mpg |   .2477469   .0764076     3.24   0.001     .0979908     .397503
       _cons |  -6.653164   1.841794    -3.61   0.000    -10.26301   -3.043314
------------------------------------------------------------------------------
```

With the `iterlog` setting `off`, we can display the iteration log for specific commands by specifying the `log` option:

```
. mlogit rep78 mpg, log
Iteration 0:  Log likelihood = -93.692061
Iteration 1:  Log likelihood = -86.581485
Iteration 2:  Log likelihood = -85.767758
Iteration 3:  Log likelihood = -85.752385
Iteration 4:  Log likelihood = -85.752375
Iteration 5:  Log likelihood = -85.752375
Multinomial logistic regression                 Number of obs =     69
                                                LR chi2(4)    =  15.88
                                                Prob > chi2   = 0.0032
Log likelihood = -85.752375                     Pseudo R2     = 0.0847
```

rep78	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
1						
mpg	.0708122	.1471461	0.48	0.630	-.2175888	.3592132
_cons	-4.137144	3.15707	-1.31	0.190	-10.32489	2.0506
2						
mpg	-.0164251	.0926724	-0.18	0.859	-.1980597	.1652096
_cons	-1.005118	1.822129	-0.55	0.581	-4.576426	2.56619
3	(base outcome)					
4						
mpg	.0958626	.0633329	1.51	0.130	-.0282676	.2199927
_cons	-2.474187	1.341131	-1.84	0.065	-5.102756	.1543813
5						
mpg	.2477469	.0764076	3.24	0.001	.0979908	.397503
_cons	-6.653164	1.841794	-3.61	0.000	-10.26301	-3.043314

You can switch back to displaying iteration logs by typing

```
. set iterlog on
```

The default setting will be restored automatically the next time you invoke Stata. If you want the setting to be remembered for future Stata sessions, specify the `permanently` option with `set iterlog`. ◁

Also see

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

[R] **set** — Overview of system parameters

[M-5] **moptimize( )** — Model optimization

[M-5] **optimize( )** — Function optimization

[M-5] **solvenl( )** — Solve systems of nonlinear equations

For suggested citations, see the FAQ on citing Stata documentation.