

estimates stats — Model-selection statistics

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Description

`estimates stats` reports model-selection statistics, including the Akaike information criterion (AIC) and the Bayesian information criterion (BIC). These measures are appropriate for maximum likelihood models.

If `estimates stats` is used for a non-likelihood-based model, such as `qreg`, missing values are reported.

Quick start

Display table of statistics for last estimation command

```
estimates stats
```

Display table of statistics for stored estimates `m1` and `m2`

```
estimates stats m1 m2
```

Specify $N = 1,000$ for calculation of BIC

```
estimates stats, n(1000)
```

Menu

Statistics > Postestimation

Syntax

```
estimates stats [ namelist ] [ , n(#) ]
```

where *namelist* is a name, a list of names, `_all`, or `*`. A name may be `.`, meaning the current (active) estimates. `_all` and `*` mean the same thing.

Option

`n(#)` specifies the N to be used in calculating BIC; see [\[R\] BIC note](#).

Remarks and examples

[stata.com](http://www.stata.com)

If you type `estimates stats` without arguments, a table for the most recent estimation results will be shown:

```
. use http://www.stata-press.com/data/r14/auto
(1978 Automobile Data)
. logistic foreign mpg weight displ
(output omitted)
. estimates stats
```

Akaike's information criterion and Bayesian information criterion

Model	Obs	ll(null)	ll(model)	df	AIC	BIC
.	74	-45.03321	-20.59083	4	49.18167	58.39793

Note: $N = \text{Obs}$ used in calculating BIC; see [\[R\] BIC note](#).

Regarding the note at the bottom of the table, N is an ingredient in the calculation of BIC; see [\[R\] BIC note](#). The note changes if you specify the `n()` option, which tells `estimates stats` what N to use. $N = \text{Obs}$ is the default.

Regarding the table itself, `ll(null)` is the log likelihood for the constant-only model, `ll(model)` is the log likelihood for the model, `df` is the number of degrees of freedom, and AIC and BIC are the Akaike and Bayesian information criteria.

Models with smaller values of an information criterion are considered preferable.

`estimates stats` can compare estimation results:

```
. use http://www.stata-press.com/data/r14/auto
(1978 Automobile Data)
. logistic foreign mpg weight displ
(output omitted)
. estimates store full
. logistic foreign mpg weight
(output omitted)
. estimates store sub
```

```
. estimates stats full sub
```

Akaike's information criterion and Bayesian information criterion

Model	Obs	ll(null)	ll(model)	df	AIC	BIC
full	74	-45.03321	-20.59083	4	49.18167	58.39793
sub	74	-45.03321	-27.17516	3	60.35031	67.26251

Note: N=Obs used in calculating BIC; see [\[R\] BIC note](#).

Stored results

`estimates stats` stores the following in `r()`:

Matrices

`r(S)` matrix with 6 columns (N, ll0, ll, df, AIC, and BIC) and rows corresponding to models in table

Methods and formulas

See [\[R\] BIC note](#).

Also see

[\[R\] estimates](#) — Save and manipulate estimation results