

Bayesian estimation — Bayesian estimation commands

[Description](#) [Video examples](#) [Also see](#)

Description

Bayesian estimation in Stata is similar to standard estimation—simply prefix the estimation commands with `bayes:` (see [\[BAYES\] bayes](#)). You can also refer to [\[BAYES\] bayesmh](#) and [\[BAYES\] bayesmh evaluators](#) for fitting more general Bayesian models.

The following estimation commands support the `bayes` prefix.

Command	Entry	Description
Linear regression models		
<code>regress</code>	[BAYES] bayes: regress	Linear regression
<code>hetregress</code>	[BAYES] bayes: hetregress	Heteroskedastic linear regression
<code>tobit</code>	[BAYES] bayes: tobit	Tobit regression
<code>intreg</code>	[BAYES] bayes: intreg	Interval regression
<code>trunreg</code>	[BAYES] bayes: trunreg	Truncated regression
<code>mvreg</code>	[BAYES] bayes: mvreg	Multivariate regression
<code>+qreg</code>	[BAYES] bayes: qreg	Quantile regression
Binary-response regression models		
<code>logistic</code>	[BAYES] bayes: logistic	Logistic regression, reporting odds ratios
<code>logit</code>	[BAYES] bayes: logit	Logistic regression, reporting coefficients
<code>probit</code>	[BAYES] bayes: probit	Probit regression
<code>cloglog</code>	[BAYES] bayes: cloglog	Complementary log–log regression
<code>hetprobit</code>	[BAYES] bayes: hetprobit	Heteroskedastic probit regression
<code>binreg</code>	[BAYES] bayes: binreg	GLM for the binomial family
<code>biprobit</code>	[BAYES] bayes: biprobit	Bivariate probit regression
Ordinal-response regression models		
<code>ologit</code>	[BAYES] bayes: ologit	Ordered logistic regression
<code>oprobit</code>	[BAYES] bayes: oprobit	Ordered probit regression
<code>hetoprobit</code>	[BAYES] bayes: hetoprobit	Heteroskedastic ordered probit regression
<code>ziologit</code>	[BAYES] bayes: ziologit	Zero-inflated ordered logit regression
<code>zioprobit</code>	[BAYES] bayes: zioprobit	Zero-inflated ordered probit regression
Categorical-response regression models		
<code>mlogit</code>	[BAYES] bayes: mlogit	Multinomial (polytomous) logistic regression
<code>mprobit</code>	[BAYES] bayes: mprobit	Multinomial probit regression
<code>clogit</code>	[BAYES] bayes: clogit	Conditional logistic regression

Count-response regression models

<code>poisson</code>	[BAYES] bayes: poisson	Poisson regression
<code>nbreg</code>	[BAYES] bayes: nbreg	Negative binomial regression
<code>gnbreg</code>	[BAYES] bayes: gnbreg	Generalized negative binomial regression
<code>tpoisson</code>	[BAYES] bayes: tpoisson	Truncated Poisson regression
<code>tnbreg</code>	[BAYES] bayes: tnbreg	Truncated negative binomial regression
<code>zip</code>	[BAYES] bayes: zip	Zero-inflated Poisson regression
<code>zinb</code>	[BAYES] bayes: zinb	Zero-inflated negative binomial regression

Generalized linear models

<code>glm</code>	[BAYES] bayes: glm	Generalized linear models
------------------	---------------------------	---------------------------

Fractional-response regression models

<code>fracreg</code>	[BAYES] bayes: fracreg	Fractional response regression
<code>betareg</code>	[BAYES] bayes: betareg	Beta regression

Survival regression models

<code>streg</code>	[BAYES] bayes: streg	Parametric survival models
--------------------	-----------------------------	----------------------------

Sample-selection regression models

<code>heckman</code>	[BAYES] bayes: heckman	Heckman selection model
<code>heckprobit</code>	[BAYES] bayes: heckprobit	Probit regression with sample selection
<code>heckoprobit</code>	[BAYES] bayes: heckoprobit	Ordered probit model with sample selection

Longitudinal/panel-data regression models

<code>xtreg</code>	[BAYES] bayes: xtreg	Random-effects linear regression
<code>xtlogit</code>	[BAYES] bayes: xtlogit	Random-effects logit regression
<code>xtprobit</code>	[BAYES] bayes: xtprobit	Random-effects probit regression
<code>xtologit</code>	[BAYES] bayes: xtologit	Random-effects ordered logit regression
<code>xtoprobit</code>	[BAYES] bayes: xtoprobit	Random-effects ordered probit regression
<code>xtnlogit</code>	[BAYES] bayes: xtnlogit	Random-effects multinomial logit regression
<code>xtpoisson</code>	[BAYES] bayes: xtpoisson	Random-effects Poisson regression
<code>xtnbreg</code>	[BAYES] bayes: xtnbreg	Random-effects negative binomial regression

Multilevel regression models

<code>mixed</code>	[BAYES] bayes: mixed	Multilevel linear regression
<code>metobit</code>	[BAYES] bayes: metobit	Multilevel tobit regression
<code>meintreg</code>	[BAYES] bayes: meintreg	Multilevel interval regression
<code>melogit</code>	[BAYES] bayes: melogit	Multilevel logistic regression
<code>meprobit</code>	[BAYES] bayes: meprobit	Multilevel probit regression
<code>mecloglog</code>	[BAYES] bayes: mecloglog	Multilevel complementary log–log regression
<code>meologit</code>	[BAYES] bayes: meologit	Multilevel ordered logistic regression
<code>meoprobit</code>	[BAYES] bayes: meoprobit	Multilevel ordered probit regression
<code>mepoisson</code>	[BAYES] bayes: mepoisson	Multilevel Poisson regression
<code>menbreg</code>	[BAYES] bayes: menbreg	Multilevel negative binomial regression
<code>meglm</code>	[BAYES] bayes: meglm	Multilevel generalized linear model
<code>mestreg</code>	[BAYES] bayes: mestreg	Multilevel parametric survival regression

Time-series models

`var` [BAYES] **bayes: var** Vector autoregression

DSGE models

`dsge` [BAYES] **bayes: dsge** Linear DSGE model

`dsge1` [BAYES] **bayes: dsge1** Nonlinear DSGE model

⁺This command is part of *StataNow*.

Video examples

[Introduction to Bayesian statistics, part 1: The basic concepts](#)

[Introduction to Bayesian statistics, part 2: MCMC and the Metropolis–Hastings algorithm](#)

Also see

[BAYES] **bayes** — Bayesian regression models using the `bayes` prefix⁺

[BAYES] **bayesmh** — Bayesian models using Metropolis–Hastings algorithm⁺

[BAYES] **bayesmh evaluators** — User-defined evaluators with `bayesmh`

[BAYES] **Bayesian postestimation** — Postestimation tools for `bayesmh` and the `bayes` prefix

[BAYES] **Intro** — Introduction to Bayesian analysis

[BAYES] **Glossary**

Stata, Stata Press, and Mata are registered trademarks of StataCorp LLC. Stata and Stata Press are registered trademarks with the World Intellectual Property Organization of the United Nations. StataNow and NetCourseNow are trademarks of StataCorp LLC. Other brand and product names are registered trademarks or trademarks of their respective companies. Copyright © 1985–2023 StataCorp LLC, College Station, TX, USA. All rights reserved.



For suggested citations, see the FAQ on [citing Stata documentation](#).