Title

> **threshold postestimation —** Postestimation tools for threshold

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Postestimation commands

The following standard postestimation commands are available after `threshold`:

Command	Description
estat summarize	summary statistics for the estimation sample
estat vce	variance–covariance matrix of the estimators (VCE)
estimates	cataloging estimation results
etable	table of estimation results
forecast	dynamic forecasts and simulations
lincom	point estimates, standard errors, testing, and inference for linear combinations of coefficients
nlcom	point estimates, standard errors, testing, and inference for nonlinear combinations of coefficients
predict	predictions and their SEs, residuals, etc.
predictnl	point estimates, standard errors, testing, and inference for generalized predictions
test	Wald tests of simple and composite linear hypotheses
testnl	Wald tests of nonlinear hypotheses

predict

Description for predict

predict creates a new variable containing predictions such as linear predictions, standard errors, and residuals.

Menu for predict

Statistics > Postestimation

Syntax for predict

> predict [*type*] *newvar* [*if*] [*in*] [, *statistic* <u>dynamic</u>(*time_constant*)]

statistic	Description
Main	
xb	linear prediction; the default
stdp	standard error of the linear prediction
<u>residuals</u>	residuals

These statistics are available both in and out of sample; type predict ... if e(sample) ... if wanted only for the estimation sample.

Options for predict

    ⎡ **Main** ⎦

xb, the default, calculates the linear prediction.

stdp calculates the standard error of the linear prediction.

residuals calculates the residuals in the equations for observable variables.

    ⎡ **Options** ⎦

dynamic(*time_constant*) specifies that predict begin producing dynamic forecasts at *time_constant*, which must be in the sample for which observations on the dependent variable exist and given in the scale of the time variable specified in tsset. For example, dynamic(tq(2014q4)) causes dynamic predictions to begin in the fourth quarter of 2014, assuming that the time variable is quarterly; see [D] **Datetime**. If the model contains exogenous variables, they must be present for the whole predicted sample. dynamic() may not be specified with stdp or residuals.

Remarks and examples

We assume that you have already read [TS] **threshold**. In this entry, we illustrate some of the features of predict after using threshold to estimate the parameters of a threshold regression model.

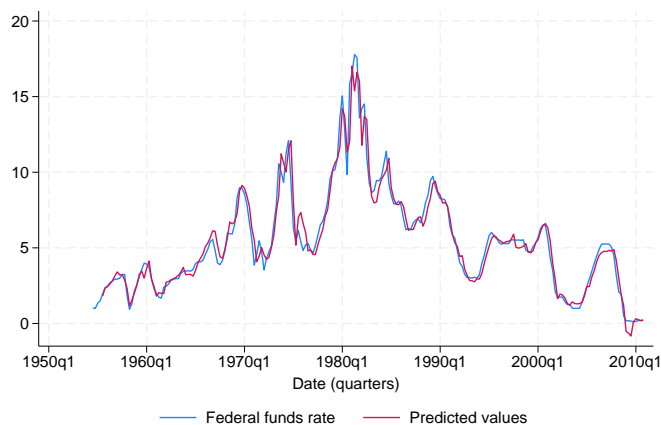▷ Example 1: One-step ahead predictions

In example 3 of [TS] **threshold**, we selected the threshold autoregression model where the federal funds interest rate (`fedfunds`) is a function of its own first lag, inflation (`inflation`), and output gap (`ogap`). We estimated two thresholds using the Bayesian information criterion and `l2.ogap` as the threshold variable. We refit that model here, but we directly specify two thresholds by using the `nthresholds(2)` option. We obtain the one-step ahead predictions for the dependent variable using the default settings for `predict`. The predictions are stored in the new variable `fedf`.

```
. use https://www.stata-press.com/data/r18/usmacro
(Federal Reserve Economic Data - St. Louis Fed)
. threshold fedfunds, regionvars(l.fedfunds inflation ogap) threshvar(l2.ogap)
> nthresholds(2)
  (output omitted)
. predict fedf
(option xb assumed; predicted values)
```

Next, we graph the actual values (`fedfunds`) and predicted values (`fedf`) using `tsline`. We change the label for `fedf` to "Predicted values"; see [TS] **tsline**.

```
. tsline fedfunds fedf, legend(label(2 "Predicted values"))
```


The one-step ahead predicted values follow the actual federal funds interest rate closely.

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▷ Example 2: Dynamic predictions

Continuing the example above, we may instead want to obtain dynamic predictions and compare them with the actual values. Within `dynamic()`, we specify that dynamic predictions will begin in the first quarter of 2003. Our data were `tsset` as quarterly data, so we use the function `tq()` to convert 2003q1 into a numeric date that Stata understands; see [FN] **Date and time functions**.

```
. predict fedfdyn, dynamic(tq(2003q1))
(option xb assumed; predicted values)
```

We again use `tsline` to plot the actual data and dynamic predictions. We use the `tline()` option to add a vertical line that shows the beginning date of our dynamic predictions and restrict the range to quarters 2002q1 to the end of the sample using `tin()`.

```
. tsline fedfunds fedfdyn if tin(2002q1,), ytitle("Dynamic predictions")
> tline(2003q1) legend(label(2 "Dynamic forecasts"))
```
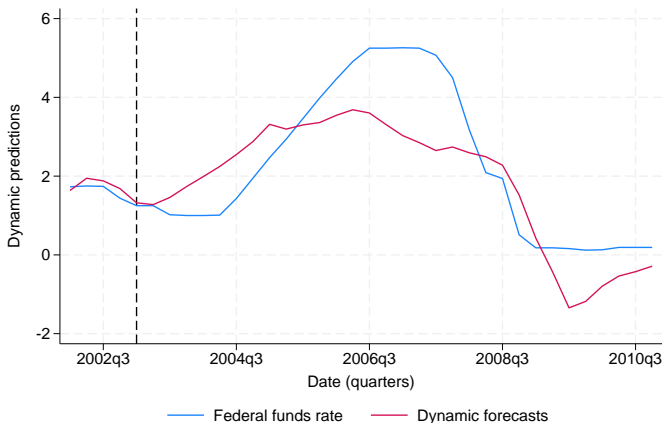

The dynamic forecast does well tracking the increase in the federal funds interest rate beginning 2004q3 and the subsequent decline around 2007q1.

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Also see

[TS] **threshold** — Threshold regression

[U] **20 Estimation and postestimation commands**