

**qreg postestimation** — Postestimation tools for qreg, iqreg, sqreg, and bsqreg

Postestimation commands    [predict](#)    [margins](#)    [Remarks and examples](#)  
 Also see

## Postestimation commands

The following postestimation commands are available after `qreg`, `iqreg`, `bsqreg`, and `sqreg`:

| Command                      | Description   |
|------------------------------|---|
| <code>contrast</code>        | contrasts and ANOVA-style joint tests of estimates  |
| <code>estat summarize</code> | summary statistics for the estimation sample  |
| <code>estat vce</code>       | variance–covariance matrix of the estimators (VCE)  |
| <code>estimates</code>       | cataloging estimation results   |
| † <code>forecast</code>      | dynamic forecasts and simulations   |
| * <code>hausman</code>       | Hausman’s specification test  |
| <code>lincom</code>          | point estimates, standard errors, testing, and inference for linear combinations of coefficients    |
| <code>linktest</code>        | link test for model specification   |
| <code>margins</code>         | marginal means, predictive margins, marginal effects, and average marginal effects                  |
| <code>marginsplot</code>     | graph the results from margins (profile plots, interaction plots, etc.)                             |
| <code>nlcom</code>           | point estimates, standard errors, testing, and inference for nonlinear combinations of coefficients |
| <code>predict</code>         | predictions, residuals, influence statistics, and other diagnostic measures                         |
| <code>predictnl</code>       | point estimates, standard errors, testing, and inference for generalized predictions                |
| <code>pwcompare</code>       | pairwise comparisons of estimates   |
| <code>test</code>            | Wald tests of simple and composite linear hypotheses  |
| <code>testnl</code>          | Wald tests of nonlinear hypotheses  |

\* `hausman` is not appropriate after `bsqreg`, `isqreg`, or `sqreg`.

† `forecast` is not appropriate with `mi` estimation results.

# 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

For `qreg`, `iqreg`, and `bsqreg`

```
predict [type] newvar [if] [in] [, [xb|stdp|residuals]]
```

For `sqreg`

```
predict [type] newvar [if] [in] [, equation(eqno[,eqno]) statistic]
```

| <i>statistic</i>       | Description  |
|------------------------|--|
| Main                   |  |
| <code>xb</code>        | linear prediction; the default                         |
| <code>stdp</code>      | standard error of the linear prediction                |
| <code>stddp</code>     | standard error of the difference in linear predictions |
| <code>residuals</code> | 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.

`stddp` is allowed only after you have fit a model using `sqreg`. The standard error of the difference in linear predictions ( $\mathbf{x}_{1j}\mathbf{b} - \mathbf{x}_{2j}\mathbf{b}$ ) between equations 1 and 2 is calculated.

`residuals` calculates the residuals, that is,  $y_j - \mathbf{x}_j\mathbf{b}$ .

`equation(eqno[,eqno])` specifies the equation to which you are making the calculation.

`equation()` is filled in with one `eqno` for the `xb`, `stdp`, and `residuals` options. `equation(#1)` would mean that the calculation is to be made for the first equation, `equation(#2)` would mean the second, and so on. You could also refer to the equations by their names. `equation(income)` would refer to the equation named `income` and `equation(hours)` to the equation named `hours`.

If you do not specify `equation()`, results are the same as if you had specified `equation(#1)`.

To use `stddp`, you must specify two equations. You might specify `equation(#1, #2)` or `equation(q80, q20)` to indicate the 80th and 20th quantiles.

## margins

### Description for margins

`margins` estimates margins of response for linear predictions.

### Menu for margins

Statistics > Postestimation

### Syntax for margins

```
margins [marginlist] [, options]
```

```
margins [marginlist] , predict(statistic ...) [options]
```

| <i>statistic</i>       | Description                           |
|------------------------|---------------------------------------|
| <code>xb</code>        | linear prediction; the default        |
| <code>stdp</code>      | not allowed with <code>margins</code> |
| <code>stddp</code>     | not allowed with <code>margins</code> |
| <code>residuals</code> | not allowed with <code>margins</code> |

Statistics not allowed with `margins` are functions of stochastic quantities other than  $e(b)$ .

For the full syntax, see [R] [margins](#).

## Remarks and examples

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

### ► Example 1

In [example 4](#) of [R] [qreg](#), we fit regressions for the lower and the upper quartile of the price variable. The `predict` command can be used to obtain the linear prediction after each regression.

```
. use http://www.stata-press.com/data/r15/auto
(1978 Automobile Data)
. qreg price weight length foreign, quantile(.25)
(output omitted)
. predict q25
(option xb assumed; fitted values)
. qreg price weight length foreign, quantile(.75)
(output omitted)
. predict q75
(option xb assumed; fitted values)
```

We can use the variables generated by `predict` to compute the predicted interquartile range, that is,

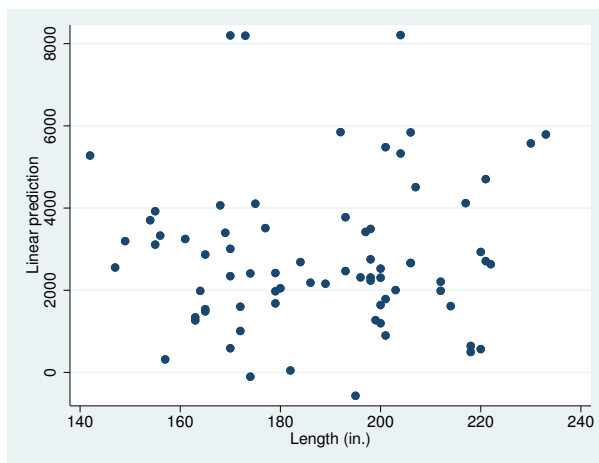
```
. generate iqr1 = q75 - q25
```

If we directly perform the interquartile range regression with the `iqreg` command, we can predict the interquartile range and also the standard error for the prediction.

```
. iqreg price weight length foreign, quantile(.25 .75)
  (output omitted)
. predict iqr2
  (option xb assumed; fitted values)
. predict stdp, stdp
```

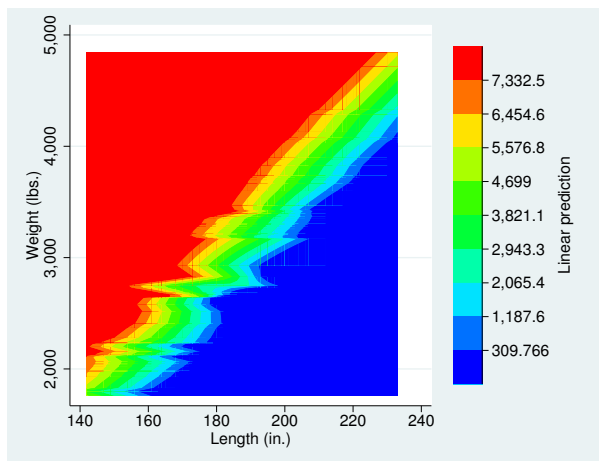
We now plot the predicted interquartile range versus variable length:

```
. scatter iqr2 length
```



As stated in [example 5](#) of [\[R\] qreg](#), the negative coefficient for the `length` variable means that increases in length imply decreases in the interquartile range and therefore in price dispersion. Consequently, we could have expected a downward trend in the plot, but there is not. This is because the regression output indicates that when we hold the rest of the variables constant, an increase in `length` leads to a decrease in `iqr2`. However, there is a high correlation between `weight` and `length`, which could be masking the effect of `length` on `iqr2`. We can achieve a better visualization by using a contour plot.

```
. twoway contour iqr2 weight length, level(10)
```



We can see the effect by setting a fixed value of `length` on the vertical axis, say, 3,000 lbs. When we move from left to right on the horizontal axis, we see that for small values of `length`, `iqr2` values are shown in red, meaning high values, and when we move toward the right, the graph indicates transition into increasingly smaller values.

◀

## Also see

[R] [qreg](#) — Quantile regression

[U] [20 Estimation and postestimation commands](#)