

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

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## 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
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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

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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,

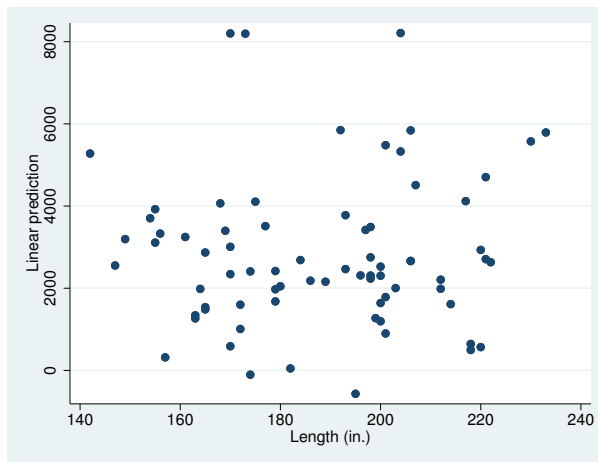
```
. generate iqr1 = q75 - q25
```

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
```

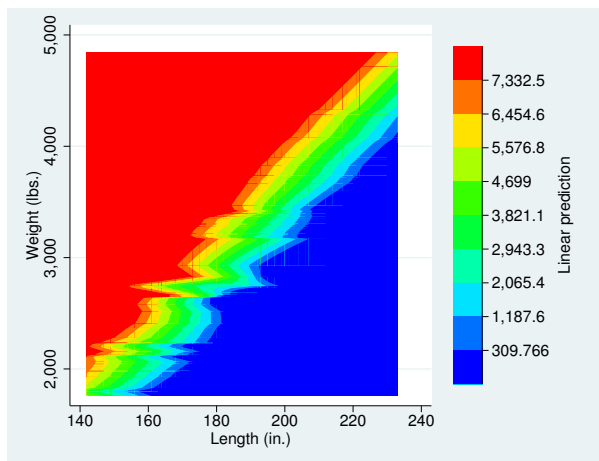
We now plot the predicted interquartile range versus variable length:

```
. 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](#)