Description

The following postestimation commands are available after \texttt{qreg}, \texttt{iqreg}, \texttt{bsqreg}, and \texttt{sqreg}:


d| Command | Description |
---|---|---|
| \texttt{estat summarize} | summary statistics for the estimation sample |
| \texttt{estat vce} | variance–covariance matrix of the estimators (VCE) |
| \texttt{estimates} | cataloging estimation results |
| \texttt{forecast}\(^1\) | dynamic forecasts and simulations |
| \texttt{lincom} | point estimates, standard errors, testing, and inference for linear combinations of coefficients |
| \texttt{linktest} | link test for model specification |
| \texttt{margins} | marginal means, predictive margins, marginal effects, and average marginal effects |
| \texttt{marginsplot} | graph the results from margins (profile plots, interaction plots, etc.) |
| \texttt{nlcom} | point estimates, standard errors, testing, and inference for nonlinear combinations of coefficients |
| \texttt{predict} | predictions, residuals, influence statistics, and other diagnostic measures |
| \texttt{predictnl} | point estimates, standard errors, testing, and inference for generalized predictions |
| \texttt{test} | Wald tests of simple and composite linear hypotheses |
| \texttt{testnl} | Wald tests of nonlinear hypotheses |

\(^1\) \texttt{forecast} is not appropriate with \texttt{mi} estimation results.
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]
```

<table>
<thead>
<tr>
<th>statistic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>xb</td>
<td>linear prediction; the default</td>
</tr>
<tr>
<td>stdp</td>
<td>standard error of the linear prediction</td>
</tr>
<tr>
<td>stddp</td>
<td>standard error of the difference in linear predictions</td>
</tr>
<tr>
<td>residuals</td>
<td>residuals</td>
</tr>
</tbody>
</table>

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

Menu for predict

Statistics > Postestimation > Predictions, residuals, etc.

Options for predict

```
Main
```

- `xb`, the default, calculates the linear prediction.
- `stddp` calculates the standard error of the linear prediction.
- `equation(eqno[,eqno])` specifies the equation to which you are making the calculation. `equation()` is filled in with one `eqno` for the `xb`, `stddp`, 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.
- `stddp` is allowed only after you have fit a model using `sqreg`. The standard error of the difference in linear predictions ($x_{1j}b - x_{2j}b$) between equations 1 and 2 is calculated.
- `residuals` calculates the residuals, that is, $y_j - x_jb$.

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.
Remarks and examples

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/r14/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)
```

![Contour Plot](image)

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