**Title**

twoway lfit — Twoway linear prediction plots

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Menu</th>
<th>Description</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remarks and examples</td>
<td>Also see</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Syntax**

```
twoway lfit yvar xvar [if] [in] [weight] [, options]
```

**options**

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>range(# #)</code></td>
</tr>
<tr>
<td><code>n(#)</code></td>
</tr>
<tr>
<td><code>atobs</code></td>
</tr>
<tr>
<td><code>estopts(regress_options)</code></td>
</tr>
<tr>
<td><code>predopts(predict_options)</code></td>
</tr>
<tr>
<td><code>cline_options</code></td>
</tr>
<tr>
<td><code>axis_choice_options</code></td>
</tr>
<tr>
<td><code>twoway_options</code></td>
</tr>
</tbody>
</table>

See [G-3] `cline_options`, [G-3] `axis_choice_options`, and [G-3] `twoway_options`. All options are `rightmost`; see [G-4] `concept: repeated options`. `yvar` and `xvar` may contain time-series operators; see [U] 11.4.4 Time-series varlists. `aweights`, `fweights`, and `pweights` are allowed. Weights, if specified, affect estimation but not how the weighted results are plotted. See [U] 11.1.6 `weight`.

**Menu**

Graphics > Twoway graph (scatter, line, etc.)

**Description**

`twoway lfit` calculates the prediction for `yvar` from a linear regression of `yvar` on `xvar` and plots the resulting line.

**Options**

`range(# #)` specifies the `x` range over which predictions are to be calculated. The default is `range(. .)`, meaning the minimum and maximum values of `xvar`. `range(0 10)` would make the range 0 to 10, `range(. 10)` would make the range the minimum to 10, and `range(0 .)` would make the range 0 to the maximum.
n(#) specifies the number of points at which predictions over range() are to be calculated. The default is \text{n(3)}.

\text{atobs} is an alternative to \text{n()}. It specifies that the predictions be calculated at the \text{xvar} values. \text{atobs} is the default if \text{predopts()} is specified and any statistic other than the \text{xb} is requested.

\text{estopts(regress_options)} specifies options to be passed along to \text{regress} to estimate the linear regression from which the line will be predicted; see \text{[R] regress}. If this option is specified, \text{estopts(nocons)} is also often specified.

\text{predopts(predict_options)} specifies options to be passed along to \text{predict} to obtain the predictions after estimation by \text{regress}; see \text{[R] regress postestimation}.

\text{cline_options} specify how the prediction line is rendered; see \text{[G-3] cline_options}.

\text{axis_choice_options} associate the plot with a particular \text{y} or \text{x} axis on the graph; see \text{[G-3] axis_choice_options}.

\text{twoway_options} are a set of common options supported by all \text{twoway} graphs. These options allow you to title graphs, name graphs, control axes and legends, add lines and text, set aspect ratios, create graphs over \text{by()} groups, and change some advanced settings. See \text{[G-3] twoway_options}.

\section*{Remarks and examples}

\text{Remarks} are presented under the following headings:

- \text{Typical use}
- \text{Cautions}
- \text{Use with by()}

\subsection*{Typical use}

\text{twoway lfit} is nearly always used in conjunction with other \text{twoway} plottypes, such as

\begin{verbatim}
. use http://www.stata-press.com/data/r13/auto
   (1978 Automobile Data)
. scatter mpg weight || lfit mpg weight
\end{verbatim}

\begin{center}
\includegraphics[width=0.5\textwidth]{graph.png}
\end{center}

\text{Mileage (mpg) Fitted values}
Results are visually the same as typing

```
  . regress mpg weight
  . predict fitted
  . scatter mpg weight || line fitted weight
```

### Cautions

Do not use `twoway lfit` when specifying the `axis_scale_options yscale(log)` or `xscale(log)` to create log scales. Typing

```
  . scatter mpg weight, xscale(log) || lfit mpg weight
```

The line is not straight because the regression estimated for the prediction was for `mpg` on `weight`, not `mpg` on `log(weight)`. (The default for `n()` is 3 so that, if you make this mistake, you will spot it.)
Use with by()

`lfit` may be used with by() (as can all the twoway plot commands):

```
. scatter mpg weight || lfit mpg weight ||, by(foreign, total row(1))
```

Also see

[G-2] `graph twoway line` — Twoway line plots
[G-2] `graph twoway qfit` — Twoway quadratic prediction plots
[G-2] `graph twoway fpfit` — Twoway fractional-polynomial prediction plots
[G-2] `graph twoway mband` — Twoway median-band plots
[G-2] `graph twoway mspline` — Twoway median-spline plots
[G-2] `graph twoway lfitci` — Twoway linear prediction plots with CIs
[R] `regress` — Linear regression