xtline — Panel-data line plots

Description

xtline draws line plots for panel data.

Quick start

Matrix of line plots of $y$ against time variable $tvar$ with panel identifier $pvar$
\[ \texttt{xtline y, i(pvar) t(tvar)} \]

Same as above, but using $\texttt{xtset}$ data
\[ \texttt{xtline y} \]

As above, but overlay line plots for each panel identifier $pvar$
\[ \texttt{xtline y, overlay} \]

Add “My Title” to graph showing a matrix of line plots
\[ \texttt{xtline y, byopts(title(My Title))} \]

Add “My Title” to graph of overlaid line plots
\[ \texttt{xtline y, overlay title(My Title)} \]

Menu

Statistics  >  Longitudinal/panel data  >  Line plots
## Syntax

**Graph by panel**

```
xpline varlist [if] [in] [ , panel_options ]
```

**Overlaid panels**

```
xpline varname [if] [in] , overlay [ overlaid_options ]
```

<table>
<thead>
<tr>
<th><strong>panel_options</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><code>i(varname_i)</code></td>
<td>use <code>varname_i</code> as the panel ID variable</td>
</tr>
<tr>
<td><code>t(varname_t)</code></td>
<td>use <code>varname_t</code> as the time variable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Plot</strong></th>
<th><strong>cline_options</strong></th>
<th>affect rendition of the plotted points connected by lines</th>
</tr>
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<tr>
<th><strong>Add plots</strong></th>
<th><strong>addplot(plot)</strong></th>
<th>add other plots to the generated graph</th>
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**Y axis, Time axis, Titles, Legend, Overall**

<table>
<thead>
<tr>
<th><strong>twoway_options</strong></th>
<th>any options other than by() documented in [G-3] twoway_options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>byopts(byopts)</strong></td>
<td>affect appearance of the combined graph</td>
</tr>
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<table>
<thead>
<tr>
<th><strong>overlaid_options</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><code>overlay</code></td>
<td>overlay each panel on the same graph</td>
</tr>
<tr>
<td><code>i(varname_i)</code></td>
<td>use <code>varname_i</code> as the panel ID variable</td>
</tr>
<tr>
<td><code>t(varname_t)</code></td>
<td>use <code>varname_t</code> as the time variable</td>
</tr>
</tbody>
</table>

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<tr>
<th><strong>Plots</strong></th>
<th><strong>plot#opts(cline_options)</strong></th>
<th>affect rendition of the # panel line</th>
</tr>
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<td><strong>Add plots</strong></td>
<td><strong>addplot(plot)</strong></td>
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A panel variable and a time variable must be specified. Use `xtset` (see [XT] xtset) or specify the `i()` and `t()` options. The `t()` option allows noninteger values for the time variable, whereas `xtset` does not.
Options for graph by panel

\(i(varname_i)\) and \(t(varname_t)\) override the panel settings from `xtset`; see `[XT] xtset`. \(varname_i\) is allowed to be a string variable. \(varname_t\) can take on noninteger values and have repeated values within panel. That is to say, it can be any numeric variable that you would like to specify for the \(x\)-dimension of the graph. It is an error to specify \(i()\) without \(t()\) and vice versa.

\textbf{Plot}

\(cline_options\) affect the rendition of the plotted points connected by lines; see `[G-3] cline_options`.

\textbf{Add plots}

\texttt{addplot(plot)} provides a way to add other plots to the generated graph; see `[G-3] addplot_option`.

\textbf{Y axis, Time axis, Titles, Legend, Overall}

\(twoway_options\) are any of the options documented in `[G-3] twoway_options`, excluding \(by()\). These include options for titling the graph (see `[G-3] title_options`) and for saving the graph to disk (see `[G-3] saving_option`).

\texttt{byopts(byopts)} allows all the options documented in `[G-3] by_option`. These options affect the appearance of the by-graph. \texttt{byopts()} may not be combined with \texttt{overlay}.

Options for overlaid panels

\textbf{Main}

\(overlay\) causes the plot from each panel to be overlaid on the same graph. The default is to generate plots by panel. This option may not be combined with \texttt{byopts()} or be specified when there are multiple variables in \texttt{varlist}.

\(i(varname_i)\) and \(t(varname_t)\) override the panel settings from `xtset`; see `[XT] xtset`. \(varname_i\) is allowed to be a string variable. \(varname_t\) can take on noninteger values and have repeated values within panel. That is to say, it can be any numeric variable that you would like to specify for the \(x\)-dimension of the graph. It is an error to specify \(i()\) without \(t()\) and vice versa.

\textbf{Plots}

\texttt{plot#opts(cline_options)} affect the rendition of the \(#\)th panel (in sorted order). The \(cline_options\) can affect whether and how the points are connected; see `[G-3] cline_options`.

\textbf{Add plots}

\texttt{addplot(plot)} provides a way to add other plots to the generated graph; see `[G-3] addplot_option`.

\textbf{Y axis, Time axis, Titles, Legend, Overall}

\(twoway_options\) are any of the options documented in `[G-3] twoway_options`, excluding \(by()\). These include options for titling the graph (see `[G-3] title_options`) and for saving the graph to disk (see `[G-3] saving_option`).
Remarks and examples

Example 1

Suppose that Tess, Sam, and Arnold kept a calorie log for an entire calendar year. At the end of the year, if they pooled their data together, they would have a dataset (for example,_xtline1.dta) that contains the number of calories each of them consumed for 365 days. They could then use_xtset to identify the date variable and treat each person as a panel and use_xtline to plot the calories versus time for each person separately.

```
. use https://www.stata-press.com/data/r16/xtline1
. xtset person day
   panel variable:  person (strongly balanced)
   time variable:  day, 01jan2002 to 31dec2002
delta:  1 day
. xtline calories, tlabel(#3)
```

Specify the_overlay option so that the values are plotted on the same graph to provide a better comparison among Tess, Sam, and Arnold.
. xtline calories, overlay

```
\begin{figure}
\centering
\includegraphics[width=\textwidth]{xtline.png}
\end{figure}
```

References


Also see

[XT] *xtset* — Declare data to be panel data

[G-2] *graph twoway* — Twoway graphs

[TS] *tsline* — Time-series line plots