

How can I graph data with dates in Stata?

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Graphing data with dates in Stata can be easily achieved by following a few simple steps. First, ensure that the date variable is properly formatted in Stata using the "date" data type. Next, use the "tsset" command to set the date variable as the time index for the dataset. This will allow Stata to recognize the dates as a time series. Then, use the appropriate graphing command (e.g. "line" or "scatter") to plot the data, making sure to specify the date variable as the x-axis. Additional customization options are available to further enhance the graph, such as adding labels and adjusting the time intervals on the x-axis. By correctly formatting and setting the date variable, and using the appropriate graphing commands, one can easily create visual representations of data with dates in Stata.

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This FAQ shows examples of graphing data where the x axis represents dates.

For these examples, we will use the sp500 data file that comes with Stata and we can use it via the sysuse command.

This data file contains data for all of the trading days in 2001.

sysuse sp500, clear

This file has variables like high and low that represents the

high and low trading price for a given day and date which is a date

variable indicating the date. We could use the graph

twoway line command to graph the high and low closing price for the year, as shown below.

graph twoway line high low date



This graph does not look that bad. The xaxis is properly labeled with the dates, but the selection of the values labeling this axis could be better. Also, it could be difficult to change the values labeling the x axis since these are date values.

Instead of using graph twoway line we can use graph twoway tsline

which is specifically designed for making line graphs where the x axis is a date variable. We first need to use the `tsset` command to tell Stata that the variable `date` represents time and that its period is daily, see below.

```
tsset date, daily
```

```
time variable: date, 02jan2001 to 31dec2001, but with gaps
```

Now we can use `graph twoway tsline` to graph the data.

```
graph twoway tsline high low
```



Note that we did not need to specify date in the command.

This is because Stata knew, from the `tsset` command, what the time variable was for this data file. Next, note that the labels for the x axis are labeled much better with more logical values having been chosen.

In addition to these benefits, there are options we can use that understand that the x axis is a date variable and are much easier to use. For example, say that we wanted the x axis to be

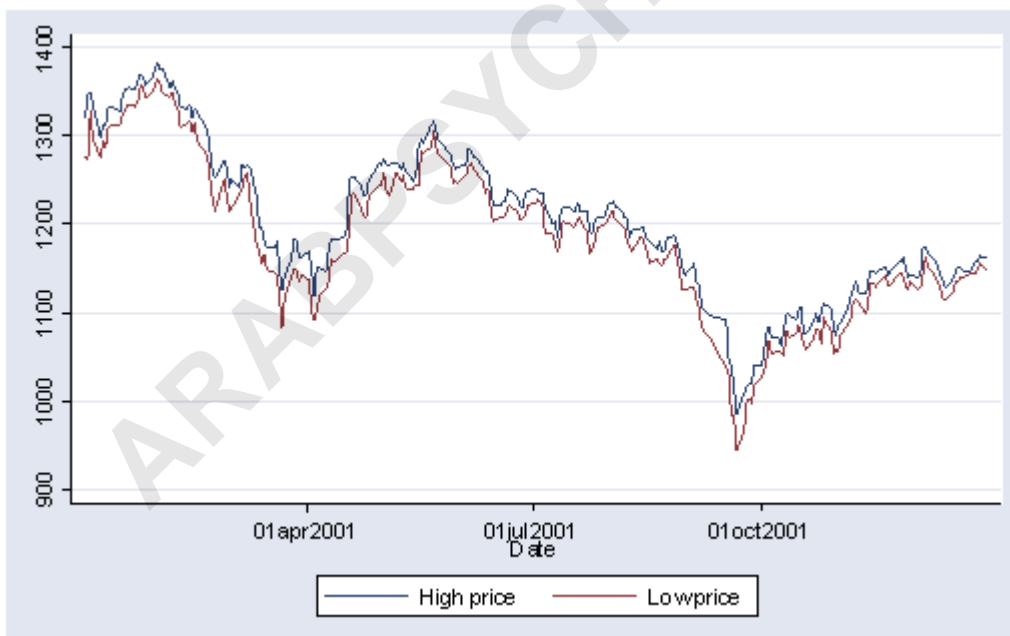
labeled

with just 01apr2001, 01jul2001, and 01oct2001, we can use the `tlabel()`

option as shown below. Other options that can be used in a similar way include

`ttick()`, `tmlabel()`, `tmtick()`, and `tscale()`, see `axis_options` for more details.

`graph twoway tline high low, tlabel(01apr2001 01jul2001 01oct2001)`



We can change the format of the display of the date

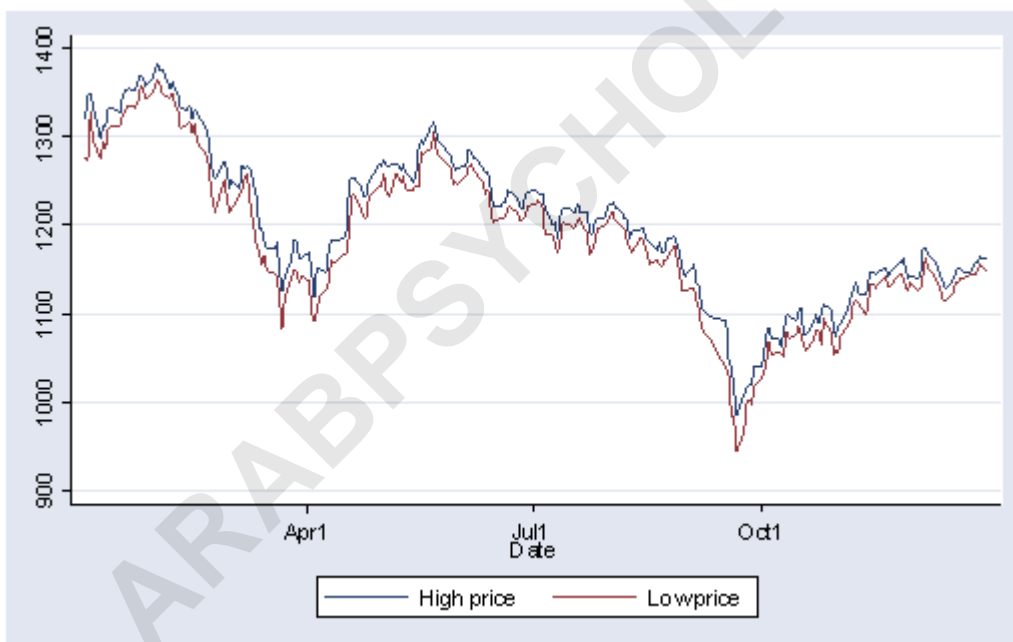
variable using the format()

option where we can supply in valid format that we would supply

using the format command.

Here we change the format of the date to be month and day.

graph twoway tline high low , tlabel(01apr2001 01jul2001 01oct2001, format(%tdmd))



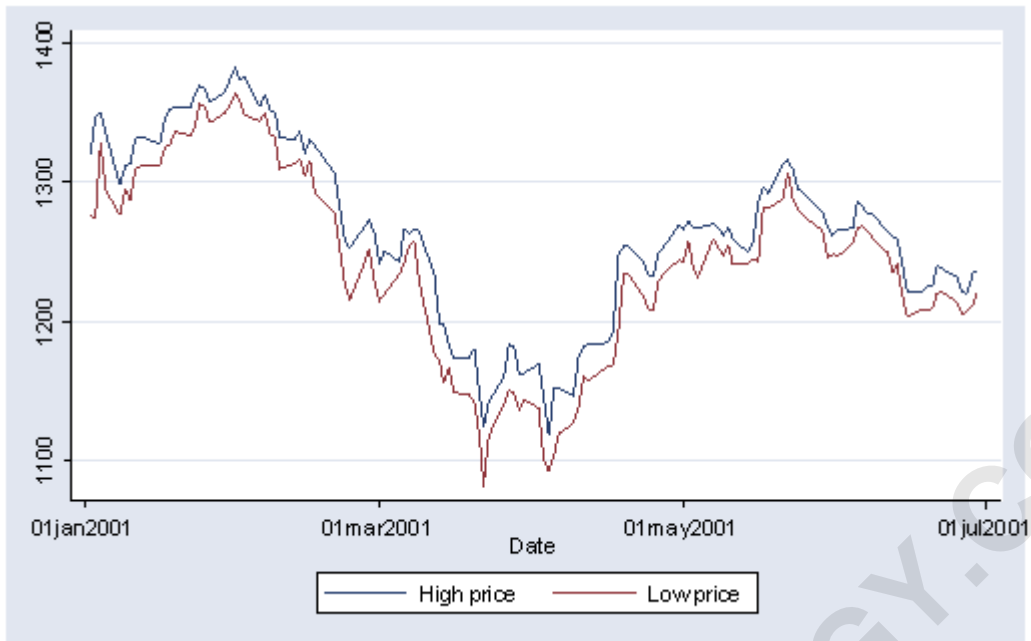
The tline() option also understands that the x axis is composed of dates and can be used to place lines at particular dates.

```
graph twoway tline high low , tline(01apr2001  
01jul2001 01oct2001)
```



We can use `if tin()` to specify a range of date values that we would like to graph. Here we graph just the data for the first half of the year.

```
graph twoway tline high low if tin(01jan2001,  
30jun2001)
```



For more information

See the help for `twoway_tslines`.