

Commands

Command	Explanation	Abbreviation
freduse UNRATE	imports FRED unemployment data	
tssmooth ma	generates moving average of time series	
scalar a = 5	defines scalar $a = 5$	
scalar list	lists scalars	
ttail(df,c)	gives $Pr(T > 2.3)$ for $T \sim t(df)$	
invttail(df,c)	gives the value t^* such that $Pr(T > t^*) = c$	

Examples

FRED. To install `freduse` command,

```
ssc install freduse
search freduse
```

choose *SJ-6-3 st0110* and install

Moving Average. Generate 12 period (11 month lag plus current) MA smoothing,

```
freduse UNRATE          import FRED's UNRATE data (unemployment rate)
generate month = mofd(daten)  converts FRED monthly format into Stata format
tsset month, monthly        sets time variable, tells Stata it's monthly
tssmooth ma MAUNRATE = UNRATE, window(11 1 0)
tsline MAUNRATE
```

Summary Statistics and Scalars.

```
sum UNRATE, detail
scalar xbar = r(mean)          xbar equals UNRATE mean
scalar n = r(N)                n equals number of UNRATE obs
scalar s = r(sd)               s equals UNRATE standard deviation
```

Tails and Confidence Intervals. Construct 95% CI for the *UNRATE* mean using

$$\bar{x} \pm t_{\alpha/2, df} \times \frac{s}{\sqrt{n}}.$$

95% confidence interval means $\alpha = 0.05$. There are $n = 840$ observations so $df = 839$. Critical value is $t_{0.025, 839} = \text{invttail}(839, 0.025)$. Construct the confidence interval with

```
scalar lconf = xbar - invttail(839, 0.025)*s/sqrt(n)
scalar uconf = xbar + invttail(839, 0.025)*s/sqrt(n)
```

Type in `scalar list` to see the values of each scalar. Notice that *lconf* and *uconf* are the same values from using `mean UNRATE`, and that s/\sqrt{n} is the standard error.