STATA Features

Interval-censored Cox model

- Genuine semiparametric modeling
- Left-censoring, right-censoring, interval-censoring
- Current-status and general interval-censored data
- Single- or multiple-record data New
- Stratified estimation
- Time-varying covariates New
- Two estimators for baseline hazard
- Robust and cluster—robust standard errors ^{New}
- Graphs of survivor, cumulative hazard, and hazard functions
- Residual diagnostics
- Graphical checks of proportional-hazards assumption
- Graphical checks of goodness of fit New



Do you know the exact failure times or event times?

You can fit the Cox proportional hazards model in Stata even if you don't.

Fit the model

The Cox proportional hazards model is widely used with right-censored event-time data because it does not require parameterization of the baseline hazard function and, under the proportional-hazards assumption, the hazard ratios are constant over time.

If we know the exact failure times, we can fit a Cox proportional hazards model using the **stcox** command. For instance, we can type

. stcox age_mean i.inject

to study the effect of mean age and injection status on failure times.

It is just as easy to fit a Cox proportional hazards model with interval-censored data, where we know only that the failure occurred sometime between two time points. With a single-record-per-subject data, we specify the variables containing the upper and lower endpoints for the failure time in **stintcox**'s **interval()** option.

. stintcox age_mean i.inject, interval(ltime rtime)

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Graph the results

Use **stcurve** to plot the survivor, hazard, or cumulative hazard function.

. stcurve, survival at(inject = (0 1))



Check the proportional-hazards assumption

We can assess the proportional-hazards assumption graphically using the **stintphplot** command.

stintphplot, interval(ltime rtime) by(inject)
adjustfor(age_mean)



Or we can test this assumption when fitting the model. Specify the **tvc()** option to interact covariates with time, and test for coefficients of time-interacted covariates equal to zero.

stintcox age_mean i.inject, interval(ltime rtime)
tvc(age_mean i.inject)

Predict baseline survivor function

For each individual, we can predict the baseline survivor functions corresponding to the lower and upper endpoints of our interval.

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