Preface to the Second Edition

This second edition updates the revised edition (revised to support Stata 8) to reflect Stata 9, which was released in April 2005, and Stata 10, which was released in June 2007. The updates include the syntax and output changes that took place in both versions. For example, as of Stata 9 the `estat phtest` command replaces the old `stphtest` command for computing tests and graphs for examining the validity of the proportional-hazards assumption. As of Stata 10, all `st` commands (as well as other Stata commands) accept option `vce(`*vcetype*`)`. The old `robust` and `cluster(`*varname*`)` options are replaced with `vce(robust)` and `vce(cluster` *varname*`)`. Most output changes are cosmetic. There are slight differences in the results from `streg, distribution(gamma)`, which has been improved to increase speed and accuracy.

Chapter 8 includes a new section on nonparametric estimation of median and mean survival times. Other additions are examples of producing Kaplan–Meier curves with at-risk tables and a short discussion of the use of boundary kernels for hazard function estimation.

Stata's facility to handle complex survey designs with survival models is described in chapter 9 in application to the Cox model, and what is described there may also be used with parametric survival models.

Chapter 10 is expanded to include more model-building strategies. The use of fractional polynomials in modeling the log relative-hazard is demonstrated in chapter 10. Chapter 11 includes a description of how fractional polynomials can be used in determining functional relationships, and it also includes an example of using concordance measures to evaluate the predictive accuracy of a Cox model.

Chapter 16 is new and introduces power analysis for survival data. It describes Stata's ability to estimate sample size, power, and effect size for the following survival methods: a two-sample comparison of survivor functions and a test of the effect of a covariate from a Cox model. This chapter also demonstrates ways of obtaining tabular and graphical output of results.

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