

ECO 721 Spring 2009
Homework #4
(Assigned 4/27/09, Due 5/4/09)

1. From the class extract of data from the PSID and using Stata program for continuous marriage spells, which are both available at <http://www.uncg.edu/bae/people/ribar/teaching/ECO721/>, modify the program to create an indicator for being employed.

Estimate the following models and report coefficient estimates and individual test of significance results:

- a. a continuous time exponential hazard model of the association of *tvage*, *year*, *tvwhite*, *tvblack*, *tvheduc* and employment status (all measured at the beginning of the marriage spell) with exits from marriage;
- b. a continuous time Gompertz hazard model with the same explanatory variables, and
- c. a Cox partial likelihood hazard model with the same explanatory variables.

Use the estimation results to:

- d. Discuss the assumptions regarding duration dependence in each of these models. What do the results indicate about these assumptions (which specifications can we reject)?
- e. Discuss how the estimated association between calendar year and marriage exits differs across the models. Explain these differences.

2. Download and run the Stata program *lab6_disc_haz.do*. The program uses the marriage data from the PSID to estimate three discrete-time (logit) models of the duration of marriage spells. Examine the program and results and use these to answer the following questions.

- a. What assumptions do each of the models make regarding the shape or pattern of duration dependence? What do the estimation results indicate about the pattern of duration dependence?
- b. How do the estimated associations between the explanatory variables and marriage differ across the models? Explain why the results do or don't change.