

Quantitative Method

Assignment 10

Due January 23, 2007

Let $invent_t$ be the real value inventories in the United States during year t , let GDP_t denote real gross domestic product, and let $r3_t$ denote the (ex post) real interest rate on three-month T-bills. The ex post real interest rate is (approximately) $r3_t = i3_t - inf_t$, where $i3_t$ is the rate on three-month T-bills and inf_t is the annual inflation rate. The change in inventories, $\Delta inven_t$, is the *inventory investment* for the year. The *accelerator model* of inventory investment is

$$\Delta inven_t = \beta_0 + \beta_1 \Delta GDP_t + U_t,$$

- (a) Use the data in *inven.xls* to estimate the accelerator model. Report the results in the usual form and interpret the equation. Is $\hat{\beta}_1$ statistically greater than zero?
- (b) Test this equation for AR(1) serial correlation.
- (c) If you find evidence of serial correlation, reestimate the equation by Cochrane-Orcutt and compare the results.
- (d) Test the equation in part (c) for AR(1) serial correlation.