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**Special Topics in Applied Econometrics: Cross-Country Studies  
Summer Term 2012**

**Hands-On Assignment 1:**  
**Estimating a Growth Equation Via Pooled OLS**

Please take out the following hands-on assignment in Matlab

1. Go to the website of Penn World Tables and download data in .csv format on real GDP per capita (rgdp) for all countries for the time period 1970-2009. Import these data into an Excel spreadsheet which can subsequently be loaded into Matlab
2. Run the program „DataProg.m“ to process the data into a balanced data set of quinquennial data, containing the growth rate of real GDP per capita between  $t$  and  $t-1$  as well as the log of real GDP per capita
3. Using the data, estimate Equation (1.2) via pooled OLS [Equation (1.3)] with  $y_{it}$  the growth rate of real GDP per capita between  $t-1$  and  $t$  and  $x_{it}$  the period initial value of the log per capita real GDP, that is,  $(rgdpl_{t-1})$
4. Estimate the asymptotic variance of the regression parameters [Equation (1.4)] and calculate the t-statistic of the regressors
5. Test for serial correlation in the error terms
6. Test for heteroscedasticity. Choose  $h_{it}$  to contain  $rgdpl$  and  $rgdpl^2$
7. If necessary, calculate heteroscedasticity and serial correlation robust standard errors for the estimated parameters
8. Interpret results