

# ECON 4160: Seminars autumn semester 2013—FIFTH SEMINAR

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## Exercise set to seminar 5 (week 46)

1. Problem 1 and 3a-3d in *Postponed Exam, spring 2006*.
2. Download the zip file *FOLIORENTE*. The data is in in7 format and in xls format. The in7 version contains brief variable definitions in the usual way. The data is quarterly and seasonally unadjusted.

Use the data set to investigate the monetary policy response function in Norway (often called the “Taylor rule”). Use 2001q1 as the start of the estimation period.

The data set contains two variables that are candidates for measuring the business-cycle element in the response function: The unemployment rate ( $UAKU$ ) and mainland economy GDP in fixed prices ( $YF$ ). You may want to experiment with both of these variables. In the case of  $YF$ , you can construct a HP-filtered trend GDP by using the `smooth.hp(VAR,LAMDA,VAR_DEST)` function in the Calculator, and then construct a deviation from trend to use in your models. It is custom to take log of  $YF$  first, so that  $VAR$  in the `smooth.hp` function becomes  $LYF$ .  $LAMDA$  is the smoothing parameter and  $VAR_DEST$  is the destination variable. A popular choice of  $LAMBDA$  for quarterly data is 1600, but this is for US data. Both Norges Bank and Statistics Norway use much higher values for Norwegian mainland GDP in their publications. Here you can try with  $\lambda = 36000$ .

- (a) Formulate and estimate a model that contains contemporaneous and/or lagged values of the explanatory variables. Use OLS as the estimation method. Use a sample that ends before the financial crisis. Then re-estimate the model on a sample that includes the periods of the financial crisis and after. How do you interpret the outcome? Can you model the impact of the financial crisis on your monetary policy response function.
- (b) Test the weak exogeneity of the business cycle variable in your estimated response function. Use a sample that ends before the financial crisis.
- (c) Explore the hypothesis that Norges Bank reacts to the expected rate of inflation one quarter ahead. Why is IV estimation necessary in this case? (Note: To include the lead of inflation you need to create that variable in Calculator, set *Lag-Length* to  $-1$ . If you write in a batch file, you can write `lag(VAR, -1)`, where  $VAR$  is the variable you want to lead).