

ECO 327Y - APPLIED ECONOMETRICS
COMPUTER PROBLEM SET 3

Since 1992, the Bank of Canada has adopted inflation targeting. The current target band is 1-3%. That means that if inflation is expected to rise above the upper band, then the bank is committed to raise interest rates and try to slow the growth of money and credit; the reverse is supposed to occur if inflation is expected to fall below the band. Because money affects inflation with long and variable lags, the Bank tries to predict what inflation will be about 18 months in the future when it makes current policy. In this assignment you will try to play Governor Thiessen (or Governor Dodge) and use your econometric skills to forecast inflation. I've provided a data set with some information on the price level P_t (as measured by the CPI) and a few macro variables. I've also provided a sample program that generates your dependent variable and runs a simple forecasting equation.

$$\Pi_{t+18} = \beta_1 + \beta_2 \Pi_t + \beta_3 X_t + e_t$$

where

$\Pi_t = 1200 * \ln(P_t/P_{t-1})$ is the inflation rate from month t-1 to month t, expressed on an annualized basis

X_t is a vector of other macroeconomic variables (eg. the unemployment rate).

The program and sample data are available on my web site.

You are free to use other data from the CANSIM data base. In fact, it's a good idea to think of a few variables that you might add to this regression and go get them yourself! The only rule is that you must make sure that your forecast of inflation 18 months in the future only uses information available today. After you fit your regression, use it to estimate inflation up to the end of 2002.

References: (Available on the 327 Web site.) These are fairly technical papers. But the introductions and first part of the papers should be interesting and useful for you.

Forecasting Inflation J. Stock and M. Watson., NBER Working Paper 7023 (March, 1999).

The Indicator Models of Core Inflation for Canada R. Dion, Bank of Canada Working Paper 99-13 (September 1999).

Summarize your results in a report that contains the following:

1. The Theory

A very brief (no more than 1 page) summary of what are the main issues in this literature and how your research fits into it.

2. The Data

A description of the data that you used and some important features. Provide precise details of your data in an appendix. Give precise sources and a reproducible summary of any data transformations that you did. If you think that there are some interesting plots, you can provide them either in the text or in the appendix.

3. The Model and Empirical Results

State precisely the model(s) that you have estimated and the hypotheses that you have tested. Summarize the evidence and give conclusions.

4. Economic Interpretation

What do your results suggest about the sources of inflation in Canada?

5. Prediction

Use the model that you have estimated to predict the rate of inflation beginning in 1999:7 and up to the end of 2000. Do you expect inflation to increase or decrease over the next year. Discuss.

Throughout this assignment, you should proceed as if the assumptions of the Classical Linear Normal Model (A1-A5 in our notes) hold.