

Homework 4

Eco 4306 Economic and Business Forecasting

Spring 2019

Due: Wednesday, March 6, before the class

Problem 1

Obtain the annual data for percentage change in Per Capita Personal Income in Texas for the period 1947-2017 from FRED, code **TXPCPI**. Note that this time series on FRED is in dollars, so you either need to switch the units to percentage change directly on FRED or construct the percentage change in EViews yourself.

- (a) Change your sample to 1947-2010. Use this data to recreate the two panels in Figure 7.7, but for Texas 1947-2010 instead of California 1969-2002.
- (b) Compare your results in (a) with those in Figure 7.7. Based on the shape of AC and PAC, does the growth in per capita personal income in Texas follow a similar process as the growth in per capita personal income in California?
- (c) Use AC and PAC functions from (a) to determine the order p of the suitable $AR(p)$ model and estimate this $AR(p)$ model for the period 1947-2010.
- (d) Use the model from (c) to create a forecast for period 2011-2017. Also generate the standard errors for this forecast and use it to construct the lower and upper bounds of the 95% confidence interval for the forecast. Plot the actual data together with the forecast and its 95% confidence interval. Change the options for the chart (line colors, text in legend entries) so that is is clear what the chart shows to any person who would look at it.
- (e) Comment on the accuracy of the forecast.