

Place your name on the back of this sheet of paper and nowhere else. Staple your answers face up on the front of this sheet of paper. Failure to follow these directions will cost you 10 points. Your assignment will be typed, except graphs can be drawn by hand and mathematical equations can be done by hand. Turn in the Excel file via Canvas. Place your name on an otherwise blank page of the Excel file. Failure to type this assignment will cost you 10 points. If you use double-sided printing or print on the back of scrap paper, I will give you one additional point.

All questions except for #4 should be done before class on 8/30. You will hand all of the answers in together. Because I will not be starting the lab class until 3:00, you will not have to do the lab during the hour after the lecture. So, I will give you 48 hours to do the lab and turn the whole thing in. So, it will be due on Sunday at 5:00.

1) (10 points each) Answer each part in separate paragraphs. For each of the events, determine the probability the economy is changing. Explain how you reached that conclusion. Your answer should be in the form of, "There is a 100% chance of an expansion. I used Table 3 because... I used the first half because... I used column 3 because..."

A) Suppose we are in a recession and the housing permits increased for four months straight.

B) Look at <https://www.dol.gov/ui/data.pdf> to see how many months the seasonally adjusted initial claims for unemployment has increased. Tell me how many months that is, and then figure out what is the probability the economy is changing.

C) Suppose consumer debt/personal income decreased 0.6% in a month while the economy is growing.

D) Suppose manufacturing and trade sales increased 0.4% during a recession.

2) (10 points) Why do we use moving averages of variables when forecasting?

3) (10 points) Why is the last step in forecasting "use judgement" or "use other evidence"? (The supplemental text uses two different phrases to mean the same thing.)

4) Suppose the economy is described by $C_t = 300 + .9[\text{Average}(Y_t, Y_{t-1}, Y_{t-2}) - T_t]$, $T_t = .2Y_t$, $I_t = .1Y_t$, $G = 600$, $NX_t = 100 - .02Y_t$. Use these equations to answer this question.

A) (25 points) Use the system of equations to solve for Y as a function of exogenous variable(s) and parameters.

B) (15 points) Put the equations into an Excel spreadsheet. Use it to find the GDP for the next 60 years if last two years' GDP were \$4000 each. Use the Excel spreadsheet to find both the long-run government spending multiplier and the short-run government spending multiplier if government spending went up by \$10. Do this for both temporary and permanent changes of \$10.