

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 #1 should be done before class. You will hand all of the answers in together.

1) Suppose the economy is described by $C_t = 600 + .8((Y_t + Y_{t-1})/2 - T_t)$, $T_t = .3Y_t$, $I_t = 0.4(Y_t - Y_{t-1})$, $G = 700$, $NX_t = 800 - 0.06Y_t$. Use these equations to answer this question.

A) (20 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 10 years if the last year's GDP was \$3400. Have Excel plot the GDP over that period. Is that monotonic convergence, monotonic divergence, oscillating convergence, oscillating divergence, or something else? Explain your logic.

2) (10 points each) For each of these events, tell me the probability the economy is changing and whether that is a recession or a boom. Tell me how you determined which column to use.

Answer each part in separate paragraphs.

A) According to <https://fred.stlouisfed.org/series/M1SL>, M1 has decreased for 7 straight months.

B) Personal income less transfer payments increases for two months during a recession.

C) According to <https://www.federalreserve.gov/releases/h6/current/default.htm>, in the most recent month, M1 decreased by 0.83%.

D) The initial claims for unemployment insurance decreases .7% during a recession.

3) (10 points) If the leading indicators are saying that the economy is rising, but the lagging indicators are signaling that the economy is falling, then where in the business cycles are we most likely? Explain your logic.

4) (15 points) Explain how the supplemental textbook's cyclical score can be used to figure out the way the economy is going.