Wilfrid W. Csaplar Jr., Ph.D. Economics 350 Final 2020/5/4

Do NOT write your name anywhere. (Canvas will tell me who turned in the exam.) Take pictures of your answers and use your own software or https://pdfcandy.com/ to create a PDF. If necessary, resize it to A4. Upload that to Canvas. Upload each answer as a separate file with that question. Failure to follow directions will cost you one point. The Excel files should be uploaded directly to Canvas.

You are not allowed to use your books, notes, the internet, or other people when taking this test. You can use the internet to access Canvas and to convert your answers to PDF files. Nothing else.

Failure to follow these directions will cost you 1 point. The test has 240 points (to be scaled down to 200 points) and is scheduled to take 120 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 12-point question should take 6 minutes. I have it set up to only give you an hour and a half.

If you run out of time or lose your internet connection, you can do a second submission. You do NOT have to redo the questions you already did. I will be able to see every submission. If you have problems, you can always contact me via Zoom or e-mail. If you use Zoom, open it in a new tab or window.

1) (12 points) Answer EITHER Part A OR Part B.
A) Explain without a graph, how the efficiency wage can lead to wage rigidity. (I know that "without a graph" is redundant because I gave you no way to draw a graph.)
B) Explain without a graph, how expectations about competitors' responses to your price changes could lead to price rigidity. (I know that "without a graph" is redundant because I gave you no way to draw a graph.)

2) (12 points) Answer EITHER Part A OR Part B.
A) Suppose that initial claims for unemployment benefits increased by 6% in March. (I calculated that they actually increased by 1152% based upon data from tradingeconomics.com.) We were in a boom until March. Use the table below to figure out the probability of entering a recession. Briefly explain how you reached your conclusion. * means inverted series.

Table 4

Proportions of Occurrences In Which Trends of Various MAGNITUDES Involved Cyclical Reversals of Business Activity

	De creasing Trends During Cyclical Expansions								**Increasing Trends During Cyclical Contractions**							
	Percentage Decrease Larger Than								*Percentage Increase Larger Than*							
Primary Leading	*0.0*	*0.3*	*0.5*	*1.0*	*3.0*	*5.0*	*10.0*	*20.0*	*0.0*	*0.3*	*0.5*	*1.0*	*3.0*	*5.0*	*10.0*	*20.0*
Initial claims unemploy ins*	0.21	0.21	0.22	0.23	0.36	0.45	0.64	0.82	0.39	0.43	0.43	0.47	0.56	0.75	0.90	1.00

B) In the supplemental text, the last step of forecasting is "judgement." What does that mean? Explain why they have that step.

3) (14 points) Answer EITHER Part A OR Part B.
A) Suppose the currency-deposit ratio is 30% and the reserve-deposit ratio is 10%. If the Fed buys $1000 worth of bonds and the money multiplier process works all the way through, then how much will the money supply change? Show all work and briefly explain what you did.
B) What are two advantages of the central bank using rules over discretion? Explain your logic.

4) (16 points) Answer EITHER Part A OR Part B.
A) Your supplemental textbook says that for a variable to be a good one for predicting, it must have "timing". What does that mean? Why should a variable have timing?
B) Are initial claims for unemployment procyclical, countercyclical, or acyclical? Briefly explain your logic. Are they a leading, lagging, or roughly coincident? Briefly explain your logic.

5) (20 points) Answer EITHER Part A OR Part B.
A) Draw the LRAS/SRAS/AD for the Neo-Classical model. Use it to give their explanation of the business cycle. Is inflation procyclical or countercyclical in their model? State how you can tell that on your graph.
B) Draw the SRAS curve for Neo-Classical model. Explain why it takes its shape. How does that curve lead to the neutrality of money in the short run?

6) (20 points) Answer EITHER Part A OR Part B.
A) Draw the supply/demand for the US$ on the foreign exchange market with the euro, €, as the other currency. Draw the effects of the price level in the EU decreasing. Explain why the curve(s) moved as drawn. Which currency appreciated? State how you know which one appreciated.
B) Draw the graph of the fundamental exchange rate and the peg. Have the peg too high for the amount of money available. State how you found the point they are at. What happens to the money supply? Why will that happen? Illustrate that on the graph and explain why it changed as drawn.

7) (20 points) Answer EITHER Part A OR Part B. If you need to explain something, type in the same tab as your answer.
A) Use the tab Q7A of the Excel File to forecast the Steeler's score through the rest of the season. (This is actual data from 2014.) Use the same value, same change, same percent change, five game moving average, and four game weighted moving average.
B) Use the tab Q7B of the Excel File to calculate the CPI with 2010 as a base year, using Laspeyres and Paasche methods then calculate the PCE. Also calculate inflation for all three methods.

8) (20 points) Answer EITHER Part A OR Part B.
A) Draw the Augmented SRPC/LRPC diagram. Have the graph show the unemployment rate as 4% and the expected inflation of 3%. Given your graph, how much inflation is in the economy at the start? Explain how you reached that conclusion. Suppose the Fed decides to increase the money supply 2% and people believe that. Illustrate the effects of that on the graph. Explain why the curve(s) moved as drawn and how you found the new point. Given your graph, what are the inflation rate and unemployment rate at the end of the movement? How did you reach the conclusion?
B) State the hysteresis theory of the natural rate of unemployment. Suppose that the COVID-19 attack ends in May and everybody goes back to work before the month's end. Do you think this theory would lead to a higher natural rate of unemployment? Explain your logic. FYI, at the end of February, the unemployment rate was 3.5%. At the end of March it was 4.4% (tradingeconomics.com) I estimate that at the end of April it was about 25% based upon the number of people laid off according to ABC News.

9) (20 points) Answer EITHER Part A OR Part B.
A) Draw the IS/LM/FE diagram. Illustrate the effects of an increase in the future marginal productivity of capital. Explain why the curve(s) moved as drawn. What happens to the interest rate and GDP?
B) Draw the IS curve with a closed economy and with an open economy and flexible exchange rate. Explain why both of them slope down and why one of them is flatter than the other.

10) (22 points) Answer EITHER Part A OR Part B.
A) Suppose the government spends $500 per year, makes transfers of $450 - 1% of GDP per year, and pays $110 of interest per year. The tax revenue is 20% of GDP. If GDP is $4500, then how much is the government deficit or surplus. Suppose the full-employment level GDP is $5500. How much is the full-employment deficit or surplus? What is the primary deficit or surplus? Show all calculations. Is the government doing good fiscal policy? Explain your logic.
B) Given the side-effects of taxes, would a head tax (everybody pays the same amount for their head) or

an income tax be a better tax? Only examine them from the views of economic incentives, not from an equity point of view, nor from a total revenue point of view. Would a sales tax on food or a property tax be a better tax? Explain your logic.

11) (24 points) Answer EITHER Part A OR Part B. If you need to explain something, type in the same tab as your answer.
A) Use the data in the tab "Q11A" of the Excel File to forecast quantity as a function of the different prices, and income. Check for multi-collinearity of the independent variables. Is it acceptable to leave all three variables in? Why or why not? **If it is not acceptable**, re-run the regression without one variable and tell me why you left that variable out. **If it is acceptable**, then tell me how many pounds of nuts you would expect to sell to a person with an income of $40,000 if you charged $6/lb of nuts, and $12/lb of pears. Given the results, are pears and nuts substitutes, likely substitutes, likely unrelated, likely complements, or complements? Explain your logic.
B) Use the data in the sheet "Q11B" on the Excel File to run a regression to predict sales as a function of income and price. Do the quick checks for heteroscedasticity and autocorrelation. Explain how you know whether or not you had each problem. **If there is only a problem with autocorrelation or find both problems,** then run a regression which would adjust for that problem. Explain what you did and why. **If there is only a problem with heteroscedasticity,** then do the formal test for it and explain what you did.

12) (40 points) Answer EITHER Part A OR Part B. If you need to explain something, type in the same tab as your answer.
A) Use the data in the tab Q12A of the Excel File to forecast sales through the end of 2011. Also, seasonally adjusted sales for **all dates**. If their sales for 2013 were $8000, then how much would they expect to sell in the third quarter (July) of 2013? Do all calculations in the Excel sheet. If you want to explain anything, then do it on the spreadsheet. Plot the actual sales and the forecast in the same graph.
B) Suppose consumption is $100 more than 80% of (average of this year's disposable income and last year's disposable income). The tax rate is 40% of GDP. Investment is 50% of this year's GDP. Government spending is $500. Exports are $400 and imports are 14% of this year's GDP. Write these equations. Solve the equations for Y_t as a function of exogenous variables and lagged values of GDP. Show all work. What is the short-run government spending multiplier? Briefly state how you found it. If GDP had been $4000 for several years, then use the tab Q12B on the Excel File to calculate the levels of GDP for the next 25 years. Plot the data for GDP on the Excel sheet making sure everything is labeled. What is the pattern of the graph? State how you reached that conclusion