

Write your name on the cover of the test booklet and nowhere else. Enclose this sheet with the booklet. The Excel file will be handed in via Canvas. Your name will only appear on a page of the file that has nothing else on it. 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 (but you can take some extra time.) Therefore, expect to spend 1 minute for every 2 points. For example, a 10-point question should take 5 minutes.

The first table is from Table 3, "Proportion of Occurrences in Which Trends of Various DURATIONS Involve Cyclical Reversals of Business Activities." The first columns are for "Decreasing Trends During Cyclical Expansions - Months" and that later columns are for "Increasing Trends During Cyclical Contractions - Months". It is for Change in Consumer Debt.

1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
.34	.38	.40	.50	.56	.67	.71	.71	.27	.31	.31	.50	.53	.56	.69	.69

The next table is from Table 4, "Proportion of Occurrences in Which Trends of Various MAGNITUDES Involve Cyclical Reversals of Business Activities." The first columns are for "Decreasing Trends During Cyclical Expansions - Percent Decrease Larger Than" and that later columns are for "Increasing Trends During Cyclical Contractions - Percent Increase Larger Than". It is for Change in Consumer Debt.

0.0	0.3	0.5	1.0	3.0	5.0	10	20	0.0	0.3	0.5	1.0	3.0	5.0	10	20
.34	.50	.63	.91	1.0	1.0	1.0	1.0	.30	.67	.71	.83	1.0	1.0	1.0	1.0

1) (10 points) For EITHER the event in Part A OR the event in Part B, determine the probability that the economy is changing direction. Briefly tell me how you figured out which table to use, which half of it to use, and which column to use. Also tell me if the probability you gave me is for entering a recession or a boom.

- A) The change in consumer debt decreases .4% during a boom.
 B) The change in consumer debt increases for 5 months during a recession.

2) (14 points) Answer EITHER Part A OR Part B.

- A) We gave many reasons why countercyclical fiscal policy might not work as well as we would like or might be counterproductive. Tell me one of them and explain its impact on fiscal policy.
 B) We gave many reasons why countercyclical monetary policy might not work as well as we would like or might be counterproductive. Tell me one of them and explain its impact on monetary policy.

3) (14 points) Answer EITHER Part A OR Part B.

- A) Both of the schools of thought, Neo-Keynesian and Neo-Classical, are accurate some of the time and inaccurate some of the time. Which school is more accurate now? Explain your logic.
 B) Which type of shock, demand shock or supply shock, is our economy having now? Explain your logic.

4) (16 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.

B) Suppose the USA had an unemployment rate of 7%, a deficit of 1% of GDP, a full-employment surplus of 2% of GDP, and a primary surplus of 1/2% of GDP. Do you think that the government described is doing good fiscal policy? Explain your logic.

5) (16 points) Answer EITHER Part A OR Part B.

A) Draw the S/D for the US\$ with the Japanese yen, ¥, as the other currency. Suppose the US government pegged the exchange rate too low. Is that going to force the US government to buy US\$ or sell them on the exchange market? Explain your logic. Can they do this forever? Explain your logic.

B) Draw the S/D for British pound, £ with the Canadian dollar, C\$, as the other currency. Illustrate the effects of high inflation in Britain. Explain why the curve(s) moved as drawn. Which currency appreciated? Explain your logic.

6) (18 points) Answer EITHER Part A OR Part B.

A) For both *economic significance* and *statistical adequacy* why both are necessary for a variable to be a good variable to rely on when forecasting.

B) Why is it likely that unemployment might be leading before a recession and lagging afterwards?

7) (20 points) Answer EITHER Part A OR Part B. CPI or forecasts with graph

A) Use the tab “CPI” on [final.xlsx](#) to calculate the CPI for all years using just 2020 as the base year. Calculate the Paasche Price Index and PCE Index for all years with 2020 as the base year. Calculate all inflation rates which can be calculated. Looking only at the data in the file, was 2020 a good choice of base year? Explain your logic.

B) Use the tab “Forecast” on [final.xlsx](#) to forecast the winning margin for the next 7 games. (These are the actual winning margins for Bethany College’s baseball team this season. They have only three games left, but pretend they have 7 more.)

8) (20 points) Answer EITHER Part A OR Part B.

A) Use the balance sheet to the right to answer this question. Show all work. Assume the bank decides to loan out all excess reserves and the currency-deposit ratio is 0. How much excess reserves does this bank have? What are the changes to the balance sheet if the bank loaned out all of its excess reserves? Briefly explain your entries. If the money multiplier process went to its fullest, then how much would the money supply change?

Assets		Liabilities & N. W.	
Cash	70	Checking	1000
Reserves	120	Savings	200
Loans	1300	Loans	10
Other	20	Other	300

B) Explain the money multiplier process. In other words, explain how a \$1000 bond purchase by the Fed will increase the money supply by more than \$1000. Use a bank balance sheet two show the first two steps. Do not worry about putting the initial situation on the balance sheet. Only put the changes.

9) (26 points) Answer EITHER Part A OR Part B.

A) Run a regression using the data in the tab **Butter** in the [Excel file](#) to predict the sales of butter. Use the results to predict the sales of butter if the person’s income is \$40,000.00, the price of butter is \$4/lb, and

the year is 1999. Briefly explain how you chose reached that conclusion. Do you think the overall results are good? Explain your answer. Do the test for multi-colinearity. Is there a problem with it? Explain how you reached the conclusion. **If there is multi-colinearity**, then explain how you solve the problem without actually doing it. Explain why you chose to do that. **If there is not a problem with multi-colinearity**, then for each variable, tell me whether or not it is significant and how you reached that conclusion.

B) Run a regression using the data in the tab **Hats** in the [Excel file](#) to predict the sales of hats. Do the quick tests for both auto-correlation and heteroscedasticity. For both of them, tell me if you think there is a problem with it and the logic you used to reach that conclusion. **If you find both auto-correlation and heteroscedasticity**, then modify the data to solve the auto-correlation problem and rerun the regression. Briefly explain what you did and why. **If you find auto-correlation but not heteroscedasticity**, then modify the data to solve the auto-correlation problem and rerun the regression. Briefly explain what you did and why. **If you find heteroscedasticity but not auto-correlation**, then do the formal test for heteroscedasticity. Explain what you did, why you did that, and how you reached your conclusion as to whether or not it exists.

10) (38 points) Answer EITHER Part A OR Part B. Answer EITHER Part A OR Part B using the Excel file called [final.xlsx](#).

A) Suppose the economy is described by $C_t = 0.3(Y_t + Y_{t-1} + Y_{t-2})$, $I_t = 0.1Y_t$, $NX_t = 300 - 0.15Y_t$, and $G_t = 1200$. Find the current level of GDP as a function of government spending and lagged GDP. Show all work. Put the work into the Excel file on **Math** and use it to forecast GDP for 40 more years. Assume that the GDP for the past two years was \$2000 each. Suppose the government spending increased \$10 on a permanent basis. Find the short-run and long-run government spending multiplier.

B) Use the data on the sheet “**season**” on the Excel file to find the seasonally adjusted value of sales for all periods and forecast until the end of 2022. Show all calculations on the spreadsheet.

11) (48 points) Draw EITHER the event in Part A OR the event in Part B on LRAS/SRAS/AD, IS/LM/FE, and augmented SRPC/LRPC. State why the curves moved as drawn. Use the same event on all three graphs. We had two different SRAS curves. Draw the one which is consistent with the augmented SRPC. State what happens to GDP, unemployment rate, interest rates, and inflation rate.

A) Starting at full employment with 5% inflation, the central bank cuts the growth of the money supply by 3% and people believe the announcement.

B) The economy starts at an unemployment rate of 3% and an inflation rate of 2%. The government takes no action and the economy goes back to equilibrium on its own.