

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 100 points (to be scaled up to 170 points) and is scheduled to take 50 minutes (but you can take the full 2 hours.) 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) (8 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 increases .4% during a recession.
- B) The change in consumer debt decreases for 4 months during a boom.

2) (8 points) Answer EITHER Part A OR Part B.

- A) Using one of the tables provided, how much would you choose to be the MCD for the change in consumer debt. Explain your logic.
- B) When typing these tables, I noticed what must have been a typographical error. The value just to the right of the solid line is .27 in the top table and .30 in the bottom table. Explain how we know that one of those numbers has to be wrong.

3) (10 points) Answer EITHER Part A OR Part B.

- A) The AIER uses the *Index of 500 Common Stock Prices (inflation adjusted)*, while the Conference Board uses the *Index of 500 Common Stock Prices*. Which do you think is a better indicator? Explain why you made that choice.
- B) Is the average duration of unemployment pro-cyclical, counter-cyclical, or acyclical? Explain your logic. Is it leading, lagging, or roughly coincident? Explain your logic.

4) (12 points) For EITHER *conformity* OR *smoothness*, explain what that term means and why we want a variable to have that quality.

5) (12 points) Answer EITHER Part A OR Part B.

A) Most economists feel the business cycles have become longer and less severe since World War II. What changes were put in our economy in the 1930s which would cause that? State two changes and explain how they would make the cycle longer and less severe.

B) Explain why some economists feel the data may not support the conclusion that the business cycles have become less severe.

6) Use the following equations to answer this question.  $C_t = 600 + 0.8(\text{average}(Y_t, Y_{t-1}, Y_{t-2}, Y_{t-3}) - T_t)$ .

$$T_t = 0.25Y_t \quad I_t = .3(Y_t - Y_{t-1}) \quad G_t = 900 \quad NX_t = 300 - 0.05Y_t$$

A) (12 points) Solve the equations for  $Y_t$  as a function of exogenous variables and lagged variables.

Keep coefficients as fractions rather than decimals. Show all work.

B) (10 points) Put the equations from Part A into a spreadsheet. Use it to predict GDP for 30 periods if the GDP for the last three periods was \$3500, \$3600, & \$3700 in that order. Make sure you format the numbers correctly. Use the spreadsheet to determine what would happen if the government spending went up \$100 permanently. Find both the long-run (30 periods) and short-run government spending multipliers for a permanent change in  $G$ .

C) (12 points) Have the computer plot both of the GDPs in Part B on the same graph. Make sure the graph is fully labeled. Is that pattern monotonic convergence, monotonic divergence, oscillating convergence, or oscillating divergence? Explain your logic.

7) (16 points) Answer EITHER Part A OR Part B.

A) Use the IS/LM/FE diagram to explain the neutrality of money.

B) Draw the SRAS/LRAS/AD diagram with the economy in an inflationary gap, like is the current situation in the USA. State how you know the graph shows an inflationary gap. What is the best monetary policy? Illustrate the effects of that on the graph. Explain why the curve(s) moved as drawn. What happens to GDP, inflation, and unemployment rate?