

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 Moodle. 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.

1) Suppose consumption is \$40 more than 80% of (average of this year's GDP, last year's GDP, two years ago's GDP, and three years ago's GDP minus this year's taxes). The tax rate is 1/4 of GDP. Investment is 40% of the value of (this year's GDP - last year's GDP). Government spending is \$400. Exports are \$200 and imports are 20% of this year's GDP.

A) (6 points) Write these equations.

B) (10 points) 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.

C) (8 points) If GDP had been \$2000 for several years, then have Excel calculate the levels of GDP for the next 30 years.

D) (10 points) 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

2) (10 points) For EITHER *price level* OR *inflation*, determine if the plot of that variable general looks like monotonic convergence, monotonic divergence, oscillating convergence, or oscillating divergence. Explain your logic.

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

A) Determine if *average duration of unemployment* is pro-cyclical, counter-cyclical, or acyclical. Explain your logic. Determine if it is leading, roughly coincident, or lagging. Explain your logic.

B) Explain what *timing* means and why a variable needs that to be a good indicator used in forecasting.

4) (10 points) Answer EITHER Part A OR Part B.

A) Parts of Tables 3 and 4 are copied below. Use them to determine the probability of an economy reversing direction if the economy was in a recession and you saw M1 increase by 0.4%. Explain how you knew which table and which column to use.

B) Parts of Tables 3 and 4 are copied below. Use them to determine the probability of an economy reversing direction if the economy was in a boom and you saw M1 decrease for 4 months. Explain how you knew which table and which column to use.

5) (36 points) Answer EITHER Part A OR Part B.

A) Illustrate the effects of an increase in the corporate tax rate, τ_c , on the LRAS/SRAS/AD, IS/LM/FE, and real MS/real MD diagrams. Explain why the curve(s) moved as drawn. What happens to the price level, unemployment rate interest rates, and GDP?

B) Illustrate the effects of a decrease in the interest rate on money, i^M , on the LRAS/SRAS/AD, IS/LM/FE, and real MS/real MD diagrams. Explain why the curve(s) moved as drawn. What happens to the price level, unemployment rate, interest rates, and GDP?

Table 3

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

	Decreasing Trends During Cyclical Expansions								Increasing Trends During Cyclical Contractions							
	Months of Duration								Months of Duration							
Primary Leading	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
M1 Money Supply	0.20	0.32	0.43	0.47	0.60	0.64	0.69	0.69	0.25	0.36	0.43	0.56	0.60	0.75	0.75	0.75

Table 4

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

	Decreasing 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
M1 Money Supply	0.20	0.33	0.47	0.75	1.00	1.00	1.00	1.00	0.25	0.43	0.47	0.69	1.00	1.00	1.00	1.00