

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 240 points (to be scaled down to 200 points) and is scheduled to take 120 minutes (2 hours.) Therefore, expect to spend 1 minute for every 2 points. For example, a 12-point question should take 6 minutes. I can give some extra time, but I will not give much.

1) (12 points) Answer EITHER Part A OR Part B.

A) Table 4 of your supplemental text is entitled **Proportions of Occurrences In Which Trends of Various MAGNITUDES Involved Cyclical Reversals of Business Activity**. Part of the table is recreated below. New housing permits actually decreased 11.7% in October, what would that tell you? Explain your logic.

Decreasing Trends During Cyclical Expansions	Percentage Decrease Larger Than							
	0.0	0.3	0.5	1.0	3.0	5.0	10.0	20.0
Housing Permits	0.29	0.33	0.33	0.37	0.48	0.59	0.77	1.00

B) When referring to whether or not a variable is a good one for forecasting, we said that its “timing.” What does that mean and why do we need it?

2) (16 points) Answer EITHER Part A OR Part B.

A) Use the data in the tab **CPI** in the [Excel file](#) to find the Laspeyrs Price Index using 2002 as the base year. Calculate the inflation for each year. Calculate the Paasche Price Index also using 2002 as the base year. Calculate the inflation for each year. DO NOT give me indices with other base years.

B) The data in the tab **Steelers** in the [Excel file](#) shows how many points they scored in each game. Predict their scores through the Super Bowl. (If some of the predictions are correct, they will not get to the Super Bowl, but pretend they will.)

3) (16 points) Answer EITHER Part A OR Part B.

A) What is meant by *seigniorage*? Why would a country want to do that?

B) Explain why the change in the debt-to-GDP ratio =  $\Delta B/PY - (B/PY) * (\Delta PY/PY)$ . In other words, what are the two events which could change the debt-to-GDP ratio and why they would change the ratio as described?

4) (16 points) Answer EITHER Part A OR Part B.

A) What can the government do to move the LRPC to the left? Explain why their action would have that effect.

B) How can *tax-based income policies* (TIP) be used to reduce inflation? Explain how it could reduce inflation.

5) (18 points) For EITHER *initial unemployment claims* OR *duration of unemployment*, is that variable pro-cyclical, acyclical, or counter-cyclical? Is it leading, lagging, or roughly coincident? Explain your logic for both parts.

6) (20 points) Answer EITHER Part A OR Part B.

A) Draw the supply and demand for dollars on the foreign exchange market versus the yen. Illustrate the effects of an increase in the Japanese price level. Explain why the curve(s) moved as drawn. Which currency appreciated? How can you tell?

B) Draw the supply and demand for dollars on the foreign exchange market versus the Mexican Peso. Prove that if the government controls the money supply, then they lose control of the exchange rate.

7) (20 points) Answer EITHER Part A OR Part B.

A) Explain how a fixed markup can cause prices to be sticky and menu costs cause both wages and prices to be sticky.

B) Explain how the efficiency wage can cause wages to be sticky using an appropriate diagram.

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

A) The Neo-Keynesian school feels that expansionary monetary policy will not work under certain circumstances. Use an appropriate diagram to prove their point.

B) Draw the Neo-Classical LRAS/SRAS/AD diagram for a 6% increase in government spending, but people were expecting a 8% increase in government spending. Explain why the curve(s) moved as drawn. What happens to GDP and the price level?

9) (24 points) Answer EITHER Part A OR Part B.

A) Run a regression using the data in the tab **Sales** in the [Excel file](#) to predict the sales. 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 do the correction for autocorrelation which I taught you. Explain what you did, why you did that, and how you reached your conclusion as to whether or not it exists. **If you find auto-correlation but not heteroscedasticity**, then do the correction for autocorrelation which I taught you. Explain what you did, why you did that, and how you reached your conclusion as to whether or not it exists. **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. Use 1.98 as your cutoff. **If you find neither heteroscedasticity nor auto-correlation**, then predict the quantity you would sell if the price was \$15.00/unit.

B) Use the data in the tab **Cheese** in the [Excel file](#) to predict the quantity of cheese sold. Do the test for multicollinearity. **If you find it**, then correct for it and re-run the regression. Explain why you corrected for it in that manner. **If you did not find it**, then tell me if it was an overall good regression, which variables are significant, and predict your sales of cheese if your customers earn \$20,000., the price of cheese is \$18/lb, and the price of crackers are \$2.50/lb. Briefly explain each answer.

10) (30 points) Answer EITHER Part A OR Part B or Part C.

A) Illustrate the effects of an increase in government spending on the IS/LM/FE diagram and the real MS/MD diagram. Explain why the curves moved as drawn. What happens to the GDP, interest rates, and the real volume of money?

B) Illustrate the effects of an increase in the Fed's purchases of bonds on the IS/LM/FE diagram and the real MS/MD diagram. Explain why the curves moved as drawn. What happens to the GDP, interest rates, and the real volume of money?

11) (48 points) Answer EITHER Part A OR Part B.

A) Using the data in the tab **Forecast** in the [Excel file](#) to predict the sales through the second quarter of 2011 using the method which takes into consideration the seasonality of the variable. Graph your forecast and the original sales in the same graph.

B) Suppose consumption is  $0.9 \cdot [(Y_t + Y_{t-1} + Y_{t-2})/3 - T_t]$ , taxes are  $0.1 \cdot Y_t$ , investment is  $.3 \cdot (Y_t - Y_{t-1})$ , government spending is 900, and net exports is  $300 - 0.11 \cdot Y_t$ . Use these equations to solve for GDP as a function of exogenous and lagged variables. Show all work. Use your results to put equations in the Excel sheet **Equations** and forecast for 30 periods assuming GDP was 5000 last year and 3000 two years ago. Suppose there is a permanent change in government spending to 930. Run another set of equations in the spreadsheet. Graph the results for GDP in both simulations in the same graph. What type of pattern is that? Briefly explain your logic. How much are the short-run and long-run government spending multipliers? Explain your logic and show all work.