Barreto, Spring 2014, DePauw University

NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Econ 390: Macro Topics

# Exam 2: Macro Data—**SUGGESTED ANSWERS (see also Exam2S014Answers.xls)**

*15 Questions. Ten questions worth 5 points and five worth 10 points.*

Open the Excel workbook Exam2S2014.xls. It is the only file you are allowed to have open. Do not cheat. If you have any questions, raise your hand and I will help you.

**Immediately Save As to your I drive folder.** You don’t have to change

the name of the file, but it has to be in your I drive folder so I can access it.

***GDP***

Q1) In the *GDP* sheet, use the FRED Excel add-in to download quarterly real potential GDP and real GDP for the United States for as many years as you can that have data for both series.

Hint: Make sure the dates align.

Q2) Use FRED’s graphing tool to plot these two series.

Hint: Remember the basic elements of a good chart.

Q3) Download real consumption and real investment via FRED.

Q4) Use the SERIES formula method to add these two series to your chart. Briefly explain below what you did.

**See Exam2S014Answers.xls.**

**Save your workbook now.**

Q5) This chart is not a good way to support the claim that investment volatility is driving fluctuations in GDP because you can’t really see anything. What would be a better approach? You don’t have to do it—just tell me what you would do and what the chart would look like.

You could do individual charts of %change over time in Real GDP, C, and I. If you made them have the same y axis scale, the volatility in I would stand out as I being much more variable than Y or C. That’s what I did on the screencast.

***Unemployment***

Proceed to the *UDef* sheet.

Q6) In cells A1 and A2, enter formulas that compute LFPR and U based on the numbers in the flow chart. (Obviously, you will have to do some computations to fill in the missing numbers.)

Q7) In the text box, explain the difference between being unemployed versus out of the labor force.

**See Exam2S014Answers.xls.**

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Proceed to the *Search* sheet.

Q8) (10 points) Use simulation (click the MC Sim button) to demonstrate that n=10 is the optimal number of job offers to acquire. Describe the simulation results below, citing specific numbers to show that n\*=10.

With n=10, average net pay was 1099.976.

With n=11, average net pay was 1098.691.

With n=9, average net pay was 1092.025.

So, 10 and 11 are close and I suppose I could more repetitions (I did 1,000), but I’m in a hurry and this shows that, on average, net pay is maximized at n=10.

**See Exam2S014Answers.xls.**

As I graded the exam, I noticed that a few sims showed average net pay was higher for n=9 or n=11. This is because we are running too few repetitions with an average net pay function that is not sharply pointed at n=10. Some students ran another sim (which is good) and a couple used more reps (which is excellent). One said, “The right answer is n=9.” That student was tricked by the method of simulation—it’s a potentially dangerous method.

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Q9) How does this search model help explain an increase in the full-employment or target unemployment rate from around 4% in the 1960s and 1970s to 5% or more today?

Because costs of search have fallen (mostly driven by the internet and technology), the optimal number of job offers to acquire has risen and this raises the length of time people are unemployed. That’s the story anyway. (Demographic changes also undoubtedly play a role.)

***Inflation***

Proceed to the *USInflation* sheet.

Q10) Use FRED to get the annual inflation rate based on the CPI (CPIAUCSL) for the United States from 1950 to 2013.

**See Exam2S014Answers.xls.**

Q11) (10 points) Point to a particular time period where US inflation performance was bad and explain how and why this would harm the economy.

I drew a chart to see when inflation was bad and then scrolled down to see the exact years. In 1979, 1980, and 1981, the US had double-digit inflation. This high inflation would harm the economy because high inflation is variable inflation and interest rates would be high and bounce around a lot. This uncertain climate would be bad for investment and thus hurt GDP and cause unemployment.

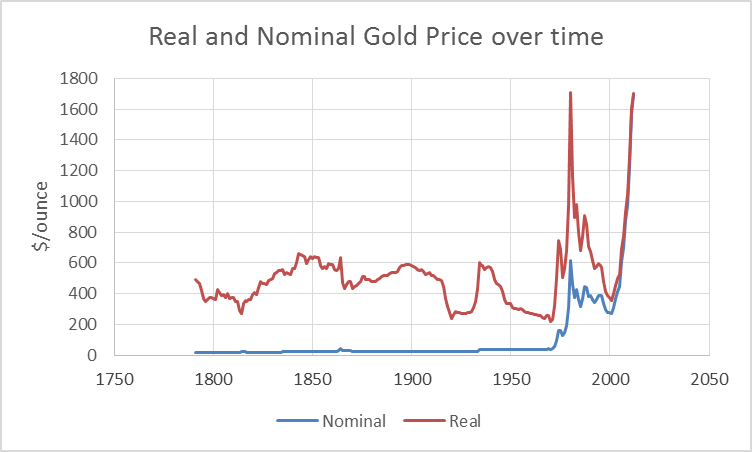
The chain is this: high inflation 🡪 variable inflation 🡪 high interest rates 🡪 low I 🡪 low GDP and high unem

Proceed to the *Gold* sheet.

Q12) (10 points) Use the data to compute the real price of gold in 2012 dollars and make a chart that compares the nominal and real price of gold.

In a text box below your chart, answer this question: The nominal price of gold, $1,700/ounce in 2012, is much, much higher than it has ever been before. The previous peak (before the current run up) was just over $600 in 1980. Does the real price of gold tell the same story about the incredibly high price of gold?

**See Exam2S014Answers.xls** for details and computations, but here’s the chart:



Here’s the answer in the text box: No, the real price series says that gold is at about the same price as it was in 1980, not 3 times more. The real price is high, certainly relative to where it used to bounce around, $400 to $600, but we've been here before.

I'd stay away from gold . . . too risky . . .

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***Money***

Q13) (10 points) Give two reasons that explain why it is so hard to show an empirical relationship between growth in the money supply and inflation.

1. Because there is a time lag between the increase in Ms and its effect on prices.
2. Because there are many other confounding factors that could obscure the relationship.
3. Because we measure money badly.

Any 2 of these 3 will work or perhaps you have another plausible answer.

Q14) (5 points) What was the monetarist experiment and what were the results?

That was Volcker’s wringing inflation out of the US economy in the early 1980s by greatly restricting growth in the money supply. The experiment worked in the sense that inflation came down (and has been under control since), but many economists believe the Fed inadvertently was way more restrictive than it thought it was being because we mismeasure monetary aggregates. This triggered a deep recession that was unnecessary.

Q15) (10 points) Mexico has had bouts of severe inflation. Most recently, in 1995 and 1996, the annual percentage change in the CPI was about 35%. What would you expect interest rates to be during this time and why?

Very high because of the Fisher Effect: i = r + . So with inflation at 35%, i would be easily into the 40% and 50% range and even higher because high inflation is variable inflation. Lenders respond by charging high nominal rates to guard against spikes in inflation eroding their real return.

**Save your workbook one last time. When you turn in your exam, I will check to make sure it is in your I drive folder.**