**University of California, Davis**

**Econ 101- Intermediate Macroeconomic Theory**

**Summer Session 2, 2013**

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**Final Exam**

**September 11th, 2013**

**Please put your name and ID on your scantron**

**Please fill in Version “A” on your scantron**

Please complete the following information:

**Name:**

**Student ID Number:**

You will have 110 minutes to complete this exam. This exam consists of two parts. The first part consists of 20 multiple choice questions worth 50 points. The second part consists of 4 short answer questions worth a total of 75 points.

**PART 1: Multiple Choice (50 points- 2.5 points each)- Please choose the best answer**

1) The IS curve represents

A) the single level of output where financial markets are in equilibrium.

B) the single level of output where the goods market is in equilibrium.

C) the combinations of output and the interest rate where the goods market is in equilibrium.

D) the combinations of output and the interest rate where the money market is in equilibrium.

E) none of the above

2) Which of the following occurs as the economy moves leftward along a given IS curve?

A) an increase in taxes causes a reduction in demand for goods

B) an increase in the interest rate causes a reduction in the money supply

C) a reduction in government spending causes a reduction in demand for goods

D) an increase in the interest rate causes investment spending to decrease

E) an increase in the interest rate causes money demand to increase

3) Suppose the economy is currently operating on both the LM curve and the IS curve. Which of the following is true for this economy?

A) Financial markets are in equilibrium.

B) The quantity supplied of bonds equals the quantity demanded of bonds.

C) The money supply equals money demand.

D) Production equals demand.

E) all of the above

4) Suppose investment spending is NOT very sensitive to the interest rate. Given this information, we know that

A) the LM curve should be relatively steep.

B) neither the IS nor the LM curve will be affected.

C) the IS curve should be relatively flat.

D) the LM curve should be relatively flat.

E) the IS curve should be relatively steep.

5) For this question, assume that investment spending depends only on output and no longer depends on the interest rate. Given this information, an increase in government spending

A) will cause investment to decrease.

B) will have no effect on output.

C) will cause an increase in output and have no effect on the interest rate.

D) may cause investment to increase or to decrease.

E) will cause investment to increase.

Use the information provided below to answer the following questions.

The non-institutional civilian population is 250 million, of which 100 million are employed and 10 million are unemployed.

6) Based on the information above, the unemployment rate is

A) 9.1%.

B) 11.1%

C) 4%.

D) 10%.

E) 6.6%.

7) In the wage-setting relation, the nominal wage tends to decrease when

A) the price level increases.

B) the unemployment rate decreases.

C) the minimum wage increases.

D) unemployment benefits decrease.

E) all of the above

8) The natural level of output is the level of output that occurs when

A) the unemployment rate is zero.

B) there are no discouraged workers in the economy.

C) the economy is operating at the unemployment rate consistent with both the wage-setting and price-setting equations.

D) the goods market and financial markets are in equilibrium.

E) the markup (m) is zero.

9) For this question, assume that Y = N. Based on our understanding of the labor market model presented in Chapter 6, we know that an increase in the market power or firms will cause

A) a reduction in the natural level of output.

B) an increase in the natural level of output.

C) no change in the natural level of output.

D) an increase in the natural level of employment.

10) When the economy is operating at a point where output is greater than the natural level of output, which of the following occurs?

A) the price level will be higher next period than it is this period.

B) the price level is greater than the expected price level.

C) the unemployment rate is less than the natural unemployment rate.

D) all of the above

E) none of the above

11) The aggregate demand curve will shift to the right when which of the following occurs?

A) a rise in the price level

B) a decrease in the price level

C) a reduction in consumer confidence

D) a reduction in the money supply

E) a reduction in taxes

12) Assume the economy is initially operating at the natural level of output. Now suppose a budget is passed that calls for an increase in government spending. This increase in government spending will, in the *medium* run, have NO effect on which of the following?

A) the price level

B) the interest rate

C) employment

D) all of the above

E) none of the above

13) An increase in the price of oil will cause which of the following in the medium run?

A) no change in the price level

B) an increase in the unemployment rate

C) no change in the level of output

D) a reduction in the interest rate

E) none of the above

14) If u < un, we know with certainty that

A) P < Pe.

B) Y < Yn.

C) P = Pe.

D) P > Pe.

15) For this question, assume that the Phillips curve equation is represented by the following equation:

πt - πt-1 = (m + z) - αut. A reduction in the unemployment rate will cause

A) an increase in the markup over labor costs.

B) a reduction in the markup over labor costs (i.e., a reduction in m).

C) an increase in the inflation rate over time.

D) a decrease in the inflation rate over time.

E) none of the above

16) The original Phillips curve implied or assumed that

A) the expected rate of inflation would be zero.

B) the markup over labor costs was zero.

C) the actual and expected rates of inflation would always be equal.

D) all of the above

E) none of the above

17) Which of the following explains why the original Phillips curve relation disappeared or, as some economists have remarked, "broke down" in the 1970s?

A) more labor contracts became indexed to changes in inflation.

B) monetary policy became contractionary.

C) individuals assumed that expected inflation would be zero

D) individuals changed the way they formed expectations of inflation.

E) individuals assumed the expected price level for the current year would be equal to the actual price level from the previous year.

18) Suppose the Phillips curve is represented by the following equation: πt - πt-1 = 0.2 - 2ut. Given this information, we know that the natural rate of unemployment in this economy is

A) 20%.

B) 5%.

C) 6.5%.

D) 10%.

E) none of the above

19) American Recovery and Reinvestment Act 2009 calls for

A) both tax reductions and government spending reductions.

B) both tax increases and government spending reductions.

C) both tax increases and government spending increases.

D) both tax reductions and government spending increases.

20) Which of the following will occur when an economy is faced with a liquidity trap situation?

A) the aggregate demand curve is now downward sloping

B) a reduction in the price level will cause a leftward shift in the aggregate demand curve

C) the aggregate demand curve is now vertical or upward sloping

D) a reduction in the price level will cause a rightward shift in the aggregate demand curve

**PART 2: Short Answer Questions (4 questions- 75 points)**

1. The Economy in the Short Run and Medium Run (30 pts)

Suppose that the United States enters into a war that requires costly production of weapons and other types of defense spending. In the context of our model, all defense spending counts as government expenditure.

1. Use an IS-LM diagram to represent that macroeconomy in the **short run.** Assume that the economy starts at point A (you must show this point on your graph), and that the output is equal to the natural rate of output at this point. In response to the shock (war spending), label the short-run equilibrium as **A’**. At this point, what can you say about the changes in output, the interest rate, consumption and investment (*Hint: for any of these, you may say ambiguous if it is impossible to tell what happens*). You may assume that **prices are fixed** for now.

1. *Now consider the following IS-LM model:*

 C = c0 + c1(Y - T)

 I = b0 + b1Y –b2i

 M/P = d1Y –d2i

Assume that we know the following about the parameters: *b*1 < *b*2*d*1/*d*2.

Given this information, what do we know about changes in output, consumption and investment at the new short-run equilibrium (after the spending shock) relative to the starting point? Explain the intuition behind the movement in Investment. Do you see “crowding out”?

1. Let’s move now to the medium run by examining the economy in the context of the AD-AS model. **We no longer assume that prices are fixed**, but instead, use the AD and AS curves we derived in class.

Use the AD-AS model to graphically represent this economy in the **short run and medium run**. As in the prior parts, label your initial equilibrium as **point A** (where Y=Yn), the short run equilibrium as **point A’**, and the medium run equilibrium as **point B.**

State explicitly what happens to output and prices in the medium run, relative to the initial point.

1. Now show what is happening in the goods and financial markets in the background. Do this by using the **IS-LM** model: graphically represent the goods and financial markets using the IS-LM diagram in the short-run and medium-run. Label your initial equilibrium as **point A**, the short run equilibrium as **point A’**, and the medium run equilibrium as **point B.** Continue to use the AD-AS assumptions, that prices are not necessarily fixed but also not completely flexible (*Hint: This is very similar to your part (a), except for the assumption on prices)*.

State explicitly what happens to the interest rate and investment in the short and medium run (keep assuming that *b*1 < *b*2*d*1/*d*2).

Finally, we will continue to look at a shock from military spending, but now think of a more concrete example: the Unites States entering into World War 2 while still mired in the Great Depression. Before the U.S. entered the war, output was very low compared to the natural output and interest rates were close to 0% (classical liquidity trap). One way we might think of this is from the equations used above: **d2** is infinitely large, so that *b*2*d*1/*d*2 is close to 0, and obviously *b*1 > *b*2*d*1/*d*2.

1. Show how the IS-LM model can now be represented in a diagram. Show a point on the IS-LM diagram that represents where the economy is before entering into World War 2 (you can label this point A). What can you say about how the government spending shock (which increases the budget deficit) will affect investment?
2. Now represent this scenario in the AD-AS model. Show the AD-AS diagram, with the initial point (point A) at Y < Yn, and then how the spending shock can move the economy back to the natural output. Given what you see, are you surprised that the United States was not able to escape the Great Depression until after World War 2? How could the normal market mechanism have failed to get us closer to the potential output?
3. AD-AS Model: Supply Shock (15 pts)

Suppose we start from some hypothetic natural level of output and unemployment. In this question, we assume that there is a structural change in the labor market. You will describe how this structural change makes itself present in the short run and medium run in response to this “shock.”

Part of the reason that the natural rate of unemployment is positive (we described this as “structural unemployment”) is due to frictions in matching workers of a particular skill set with a job that fits their abilities. For example, most students who graduate from college are unemployed for the first couple months until they find a job. In Economics speak, this is a **“Search Cost”** and it can vary depending on the fluidity of the labor market.

For this question, we will think about the implications of reducing this search cost. For example, posting jobs online and being able to conduct job interviews over the internet (e.g. using Skype) allows firms to fill job vacancies more quickly.

1. Use the Wage-Setting (WS) and Price-Setting (PS) relations to show what will be the effect on the labor market (*Hint:* remember, structural changes are part of the function F that we saw in class). Show what happens to the natural rate of unemployment and the real wage graphically. Label all axis and intercepts. Label your initial equilibrium as **point A,** and the new equilibrium as **point B**. State explicitly what happens to unemployment and real wages.
2. Now let’s take this to the AD-AS model to explore what happens in the short and medium run. In a graph, show what happens to output and prices in the short run and medium run. You can labor your initial point as **point A,** your short run equilibrium as **point A’**, and your medium run equilibrium as **point B.**

Give a **verbal narration** of what is happening in the short run (what shifts and by how much), and then what is the mechanism that gets us to the medium run.

**State explicitly**: what are the changes in output, unemployment and price-level in the short run? What about the overall changes in the same 3 variables in the medium run?

1. AD-AS Model (15 pts)

Analysis of the macroeconomic effects of changes in the money supply indicated that **money is “neutral” in the medium run.**

1. Explain why this is the case, using what you know about the medium-run changes in the macroeconomic variables we saw in class in response to monetary policy.
2. Suppose there is a reduction in government spending. Will fiscal policy action also be neutral in the medium run? Explain.
3. The Phillips Curve (15 pts)

For this question, use the “Modified” Phillips relation we saw in class: $π\_{t}=π\_{t}^{e}+\left(m+z\right)-∝u\_{t}$.

1. Derive the “**Non-Accelerationist Inflation Rate of Unemployment (NAIRU)**” using the equation above. In other words, show how deviations from the natural rate of unemployment are related to deviations from the expected inflation rate.
2. Using this NAIRU equation, let $π\_{t}^{e}=π\_{t-1}^{}$, and the following U.S. data: let the natural rate of unemployment be 6%, $π\_{t-1}^{}$=2%, the current unemployment rate be 7.4%, and use α=1.

Given this information, what should the inflation rate be today?

1. Go back to the Modified Phillips curve: : $π\_{t}=π\_{t}^{e}+\left(m+z\right)-∝u\_{t}$. Robert Lucas famously predicted before the 1981 recession (he was wrong) that If the Federal Reserve is fully credible, then it should be able to lower the inflation rate very quickly and still not suffer a high unemployment rate. Given what we know about expectations, explain the intuition/theory behind Lucas’s argument. Why might he have been wrong about the U.S. not suffering a recession?
2. Why might the natural rate of unemployment be different across countries and even change over time?