

# Final Exam. Econ520. Spring 2021

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UNC

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## Instructions:

- Answer all questions.
- Clearly number your answers. Write legibly.
- Do *not* write your answers on the question sheets.
- *Explain* your answers – do not just state them.
- *Show* your derivations – do not just state the final result.
- Do not refer to any notes or books. You may use a calculator.
- The total time is **180** minutes.
- The total number of points is 100.

# 1 Short Questions

1. Why isn't there a demand side in all of the growth models that we wrote down?

**Answer:** One of the key insights from the short/medium run models is that supply determines medium run output. Why is this? Mechanically, it happens because price expectations catch up with actual prices and then the supply curve becomes vertical. The economic mechanism is really that factor supplies do not depend on the level of aggregate demand. How many hours people want to work depends on wages and on how much is paid to those who don't work. It does not depend on aggregate demand.

2. Imagine the Fed could credibly commit to an inflation target of 2%. Would you expect to see a stable Phillips curve? Explain.

**Answer:** The short answer is "yes." The Phillips curve comes about because higher than expected inflation leads to increased AS. A credible commitment by the Fed would anchor the Phillips curve.

3. Consider a central bank in a high inflation environment that wants to bring inflation down. Can you think of mechanisms or institutional arrangements that would dampen the recession associated with slowing the money growth rate?

**Answer:** The key is to bring inflation expectations down. This is because the link between slower money growth and recession works through deviations between actual and expected inflation. Possible institutional arrangements (all of these have been tried in the real world):

- (a) Peg the currency credibly (e.g., via a currency board) against a currency with lower inflation.
- (b) Write the inflation target into law.

4. Explain why fixed exchange rate regimes are vulnerable to speculative attacks, even if the economic fundamentals are sound.

**Answer:** The short answer: the peg insures the speculators against currency movements that go against them.

5. Consider an environment with floating exchange rates and no capital mobility. How would a foreign fiscal expansion affect the domestic economy? You don't need a model for this; just logic.

**Answer:** There is no effect. No capital flows means  $NX = 0$ . A fiscal expansion increases export demand. But the FX market is not in equilibrium. The home currency must appreciate until net exports are zero again. Then there is no change in aggregate demand at home.

Be sure to explain your answers.

## 2 Government Transfers

The U.S. government currently pays transfers to households. Critics argue that these transfers reduce labor supply. Assuming this is true, what are the short and medium run effects of such transfers?

Illustrate your answer using an AS-AD diagram and explain the economic mechanisms that lead to changes in output, prices, and interest rates.

The appropriate model for this question is the closed economy AS/AD model. Here are the equations:

- Aggregate supply:  $Y^s = F\left(\frac{P}{P^e} \frac{1}{1+m}, z\right)$
- Aggregate demand combines
  - IS:  $Y = C(Y - T) + I(Y, i) + G$
  - LM:  $M/P = YL(i)$

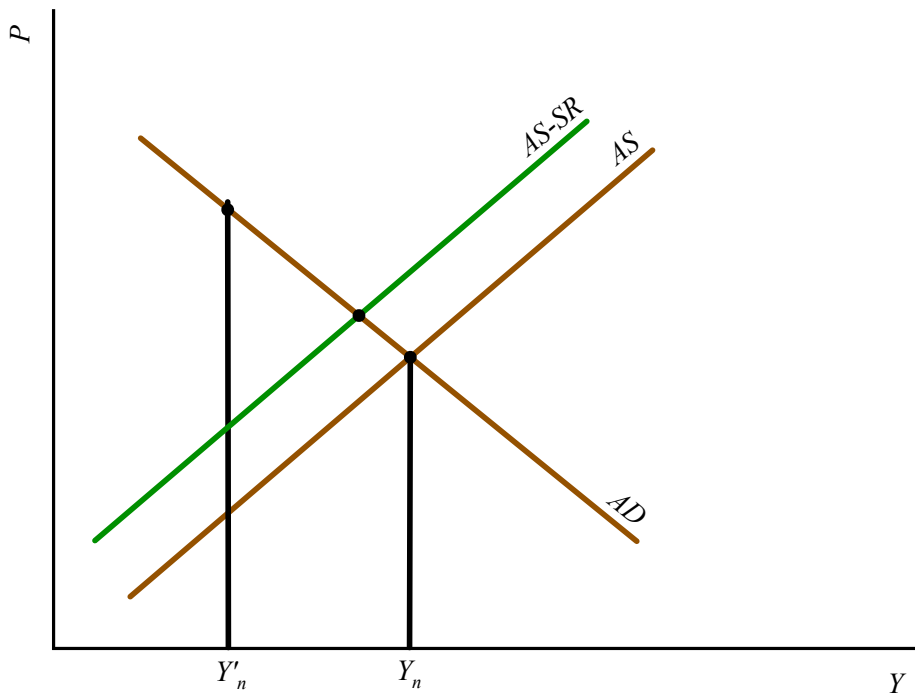
### Questions:

1. Graph the new medium run equilibrium. What happens to investment, consumption, and interest rates?

**Answer:** MR-AS shifts left as labor supply declines.

One could argue that AD shifts out. It probably does, but then the transfers need to be financed somehow. So it's unclear and not of primary importance.

MR equilibrium has higher prices and lower output. In the background: investment declines; so does consumption. The interest rate rises. If it did not, AD would exceed AS. Note that the change in  $i$  looks ambiguous if you just look at the IS/LM graph ( $M/P \downarrow$ , but also  $Y \downarrow$ ).



2. Graph the new short-run equilibrium. What happens to investment, consumption, and interest rates?

**Answer:** The SR shift in AS is smaller than the MR shift (b/c price expectations lag behind prices). So we get a smaller contraction than in the MR and a small price increase.  $I$  and  $C$  again decline. The interest rate  $i$  rises.

3. Explain what happens during the transition to the medium run equilibrium.

**Answer:** Prices are above  $P^e$ , so  $P^e$  starts to rise. That shifts AS up. Prices rise. The reduction in AD comes about either because  $M/P$  declines and therefore  $i$  rises. We get stagflation.

4. If the president asked you whether the Fed could do anything to prevent output and employment from falling, what would you answer?

**Answer:** The Fed could push AD out. In the short-run, this would prevent the output decline. But over time, price expectations will catch on and you just end up with inflation. Once medium run supply declines, demand management cannot do anything about it.

**Answer:**

### 3 Open

Recall the equations for the open economy AS/AD model with fixed exchange rates:

- IS:  $Y = C(Y - T) + I(Y, i) + G + NX(Y, Y^*, \bar{E}P/P^*)$
- LM:  $M/P = YL(i)$ .
- AS:  $Y = F(\frac{P}{P^e} \frac{1}{1+m}, z)$  with  $P^e = P$  in the medium run.
- UIP:  $i = i^*$

Consider an economy starts in the medium-run equilibrium where  $P = P^e$  . .

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End of exam.