


EXERCISES

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1. **A financial crisis:** Suppose the economy starts with GDP at potential, the real interest rate and the marginal product of capital both equal to 3 percent, and a stable inflation rate of 2 percent. A mild financial crisis hits that raises the financial friction from zero to 2 percent.
 - (a) Analyze the effect of this shock in an IS/MP diagram.
 - (b) What policy response would you recommend to the Federal Reserve? What would be the effect of this policy response on the economy?
 - (c) How would your answer to part (b) change if the financial crisis were very severe, raising the financial friction to 6 percent?
 - (d) What other policy responses might be considered in this case?

-  2. **The Great Depression:** The “Roaring Twenties” led to an enormous run-up in stock prices. By 1928–1929, policymakers at the Federal Reserve had become concerned that there was a bubble in the stock market. In response, they tightened monetary policy by raising interest rates sharply. Answer the following questions:
 - (a) In an IS/MP diagram, show the effect on the economy of the increase in interest rates by the Fed.
 - (b) This policy had the desired effect of “popping” the stock market bubble, and stock prices fell sharply at the end of 1929 and into 1930. This created uncertainty in markets about the future, which, together with the loss in stock-market wealth, reduced consumption and investment. Show this second shock in your original IS/MP diagram.
 - (c) What is the effect of these two shocks on inflation? Show this in a graph of the Phillips curve. In the late 1920s, the average inflation rate was approximately zero. What will happen to the inflation rate over time in response to the shocks in parts (a) and (b)?
 - (d) Suppose the Federal Reserve left the nominal interest rate unchanged in response to the changes in inflation from part (c). What further change would have occurred in the IS/MP diagram?
 - (e) Summarize what you learn from this exercise about the Great Depression.

3. **Predicting the fed funds rate:** Consider the following simple monetary policy rule:

$$R_t - \bar{r} = \bar{m}(\pi_t - \bar{\pi}) + \bar{n}\tilde{Y}_t.$$

In the following questions, you are asked to gather data on inflation and short-run output to feed into this policy rule. A good resource for the data you will need is the FRED database of the St. Louis Fed, available at <http://research.stlouisfed.org/fred2/>.

- (a) Pick some reasonable values for the parameters of this policy rule, and explain why you chose these values.
- (b) Obtain data on the CPI inflation rate for the most recent 12-month period possible (you may include food and energy in your CPI calculation or not—your choice). Discuss briefly this value of the inflation rate.

- (c) Create an estimate of \tilde{Y}_t for the U.S. economy. Explain how to construct this estimate, and discuss its value. You may find it helpful to use the series GDPDOT from the FRED database.
- (d) Use these data and the monetary policy rule you specified above to see what fed funds rate the policy rule indicates. How does this compare to the current fed funds rate? (*Hint*: Be sure that you are comparing two nominal rates; the simple rule above only gives you the real portion.)
- (e) If the rates are different, why do you think that is the case? What would you recommend to the Fed, based on your calculation?

4. **Government policy and the financial crisis:** Based on what you've learned, pick one policy action undertaken by the U.S. government in response to the financial crisis. In a half-page essay, explain the policy action and the rationale behind the policy. Also, discuss briefly a possible criticism of the policy action.

5. **Reading the minutes of the FOMC:** The Federal Open Market Committee (FOMC) is the formal name of the group chaired by Bernanke (and his successor) that meets every 6 weeks or so to set monetary policy in the United States. Immediately after the meeting, the FOMC issues a statement consisting of a few paragraphs that summarizes its position. Then, 3 weeks later, the FOMC releases the minutes of its meeting. These minutes contain extensive details about the issues that were discussed in the meeting.

Suppose your job is to explain Federal Reserve policy to the CEO of a corporation. Do a Web search for the latest FOMC minutes. Then answer the questions below:

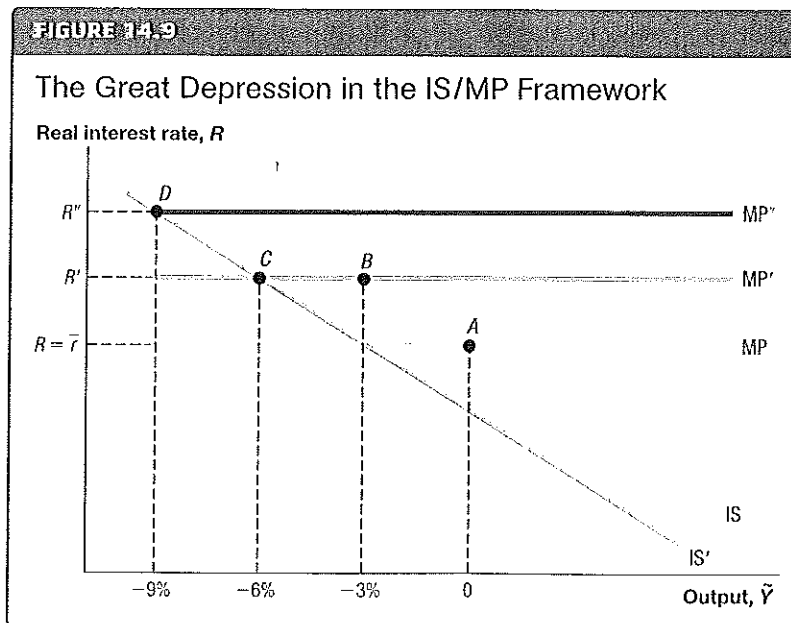
- (a) What action did the FOMC take, if any, regarding the level of the fed funds rate? Why did it make this choice?
 - (b) Pick a paragraph or two from the FOMC minutes, and quote it in your answer. Using the short-run model, explain, using graphs and words, the economic consequences of the events in the paragraph(s) you've quoted. You do not need to analyze anything else in the economy; just focus on what you've chosen.
 - (c) Pick one other thing that is mentioned in the minutes that you do not understand (for example, a term with which you are unfamiliar). Do some research to discover its economic significance, and explain it in two or three sentences.
6. **The current state of the European economy:** Write a couple of paragraphs about the state of the economy in the euro area over the past several years. What has happened to inflation, real GDP growth, and unemployment? What about a key policy interest rate set by the European Central Bank (ECB)? [*Hint*: The ECB sets several key interest rates, including a "deposit rate" (the interest rate that the ECB pays on deposits from banks) and a "lending rate" (the interest rate it charges for overnight loans). All are useful and interesting. To keep everybody on the same page, consider the lending rate.] An extremely helpful resource for this exercise is the ECB's Statistical Data Warehouse, which you can find using a search engine. In answering this question, it may be helpful to copy some of the ECB's graphs.

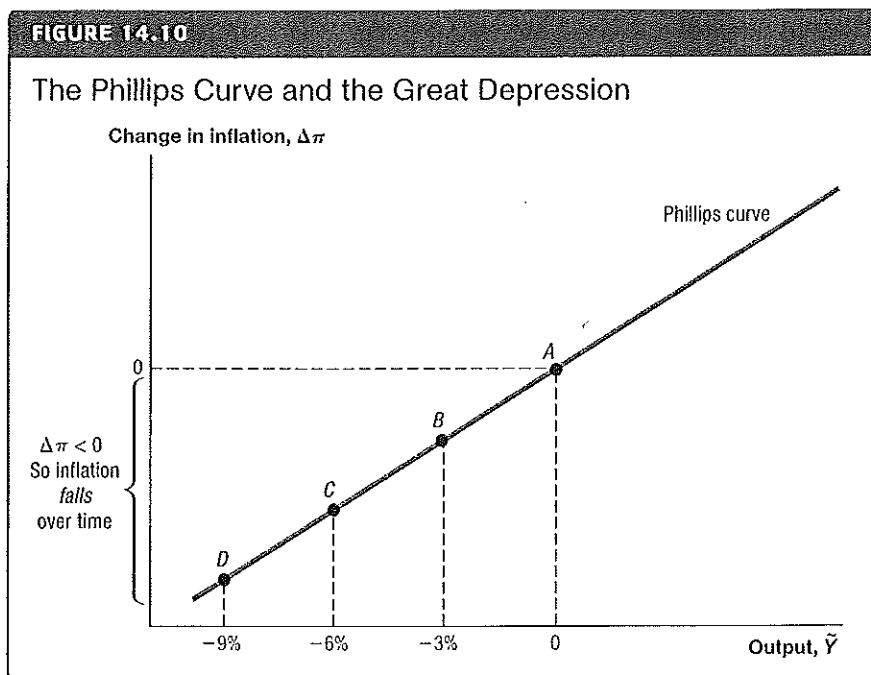


WORKED EXERCISE

2. The Great Depression:

- (a) When the Fed tightened monetary policy in 1928–1929, it raised interest rates. In Figure 14.9, this is shown in the movement of the economy from point *A* to point *B*, which caused a small slowdown in economic activity by reducing investment.
- (b) The stock market bubble then popped, which created tremendous uncertainty in the economy, further reducing consumption and investment. This is modeled as a negative aggregate demand shock (a lower \bar{a}_c and \bar{a}_i), which shifts the IS curve down and to the left, depressing economic activity further as the economy moves from *B* to *C*.
- (c) The Phillips curve is shown in Figure 14.10. The recession in the economy caused the inflation rate to decline. Because the inflation rate was already approximately zero, the decline through the Phillips curve led to *deflation*—a negative inflation rate.
- (d) If the Fed had left the nominal interest rate unchanged, then the deflation would have caused the real interest rate to rise even further. To see this, recall the Fisher equation, $i_t = R_t + \pi_t$, which can be rearranged to yield $R_t = i_t - \pi_t$. If i_t does not change, then a decline in π_t will cause the real interest rate to increase. This is shown in the original IS/MP diagram in Figure 14.9 by another shift up in the MP schedule. The economy moves from *C* to *D*, causing yet another decline in short-run output. The combination of these three factors caused a large shortfall in output—that is, the Great Depression.





- (e) This exercise reveals how a sequence of events can conspire to reduce GDP below potential by a significant amount (the exact numbers in this exercise—the -3 percent, -6 percent, and -9 percent—are just examples). Moreover, we see the vicious circle between deflation and depression that can continue to push the economy further below potential unless some other change breaks this dynamic. In the actual Great Depression, the Fed devalued the dollar by breaking from the gold standard, which is essentially an “unconventional policy” that allowed the Fed to increase the money supply substantially and create some inflation, ending the deflationary spiral.