

**The Tools of Monetary Policy**  
*Practice Activity*

**Introduction:** For each of the questions below, assume the following:

- At present the Federal Reserve of the United States requires banks to keep 20% of their total deposits in reserve.
- The Fed wishes to target an inflation rate of between 2% and 3%.
- America's natural rate of unemployment is believed to be 5%

1. The economy is currently experiencing inflation of 5%. The nominal interest rate is currently 9%.

a. Calculate the real interest rate.

b. Identify how the Fed could change each of the following to achieve its targeted inflation rate:

i. The Discount Rate:

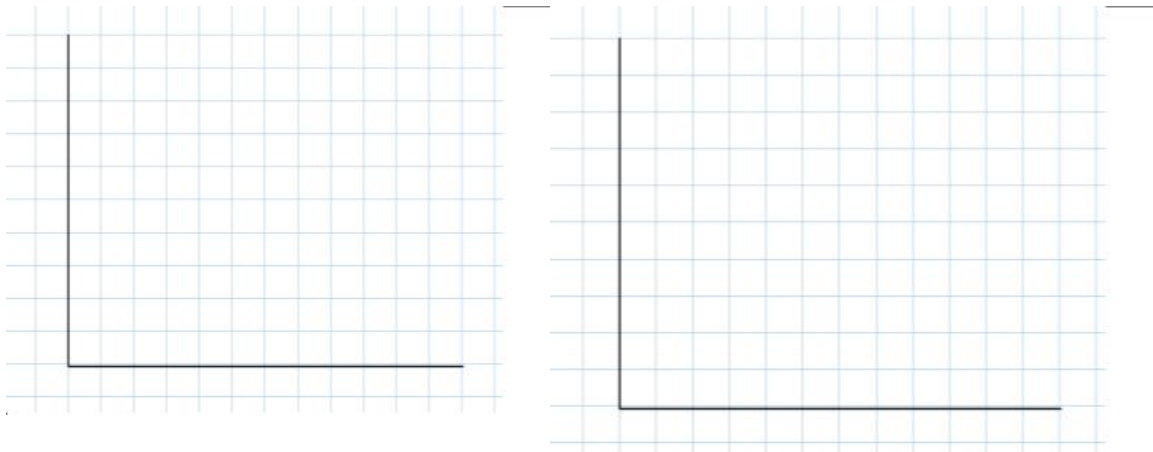
ii. The Reserve Requirement:

c. Which open market operation should the Fed engage in to achieve its goal? Explain the process by which OMO can be used to reduce the rate of inflation.

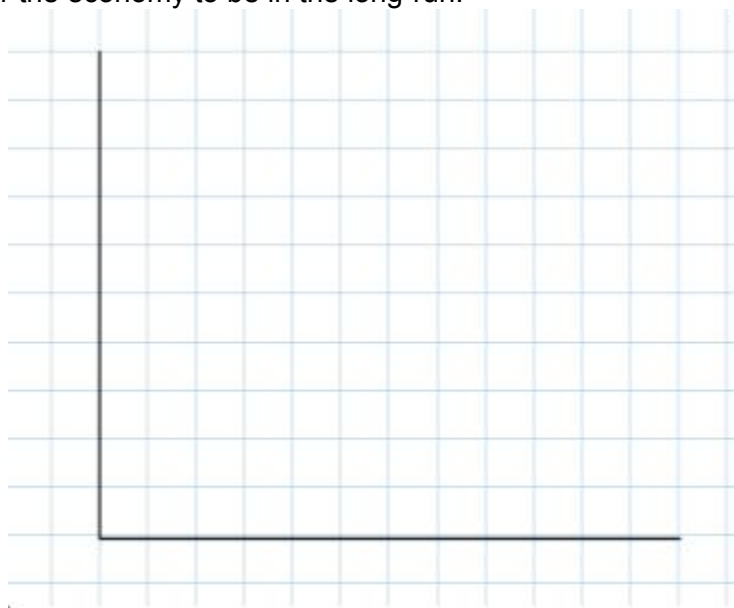
d. On the graphs below, show the effect of the Fed's actions in

i. The Money Market

ii. An AD/AS diagram



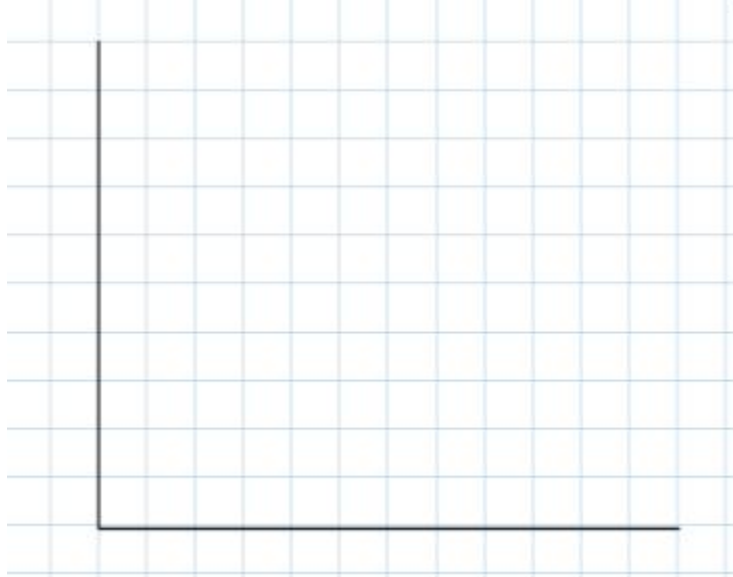
2. The economy is in a mild recession caused by a fall in export demand from the country's trading partners. Unemployment is 7% and the inflation rate is 1%.
- a. Using a correctly labelled graph of both the short-run and the long-run Phillips Curve, show where the United State's is at present and where the Fed desires for the economy to be in the long-run.



- b. Assume the Fed takes no action and the government does not engage in any fiscal policies. Explain how the US economy will adjust to the fall in exports in the long-run.
- i. Using a correctly labelled graph, show the changes in AD and/or AS that will occur assuming no policy actions are taken.



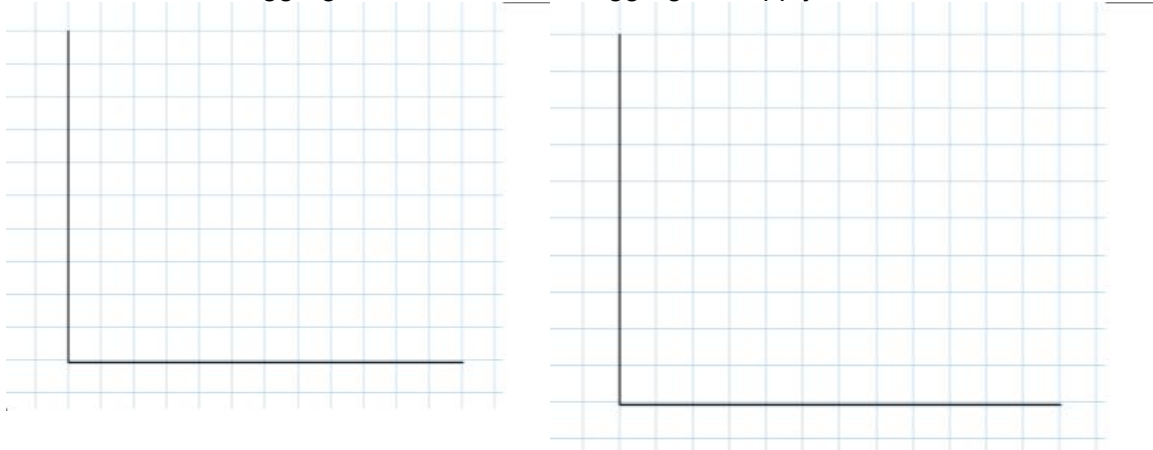
- ii. Show the changes that will occur to the short-run and/or the long-run Phillips Curve as the economy adjusts to the fall in export demand.



- c. Now assume that the Fed decides to engage in open market operations to help the economy recover from its mild recession. The Open Market Committee buys \$50 billion worth of government bonds from the public.
  - i. Knowing the reserve ratio is 0.2, calculate the total change in the money supply that could result from the Fed's bond purchase.

ii. Explain the process by which the Fed's initial bond purchase leads to a proportionally larger increase in the money supply.

iii. Using correctly labelled graphs, show the effect of the Fed's bond purchase on both the short-run and long-run Phillips Curve and to aggregate demand and/or aggregate supply.



d. Assume that instead of just buying bonds, the Fed decides to lower the reserve requirement to 0.1.

i. Calculate the size of the money multiplier following the decrease in the reserve ratio.

ii. Assume that "Commercial Bank X" has total deposits equaling \$400 million and had no excess reserves before the Fed lowered the reserve requirement. How much will "Bank X's" excess reserves change by following the Fed's policy?

iii. Assume "Bank X" loans out its newly acquired excess reserves. Calculate the total change in the money supply that could result from these new loans.