

## LECTURE 35: MONETARY POLICY II

- I. Tools of the Fed
  - a. The Fed has a few tools in how it influences the economy. Each tool changes the federal funds rate.
  - b. Open-Market Operations
    - i. The Fed's most commonly used tool is directly changing the money supply through "open-market operations."
    - ii. The Federal Reserve has the right to sell government bonds (to fund the government's debt) and has the right to print money.
    - iii. If it sells government bonds, it collects dollars in return, lowering the money supply.
    - iv. If it buys government bonds, it gives up dollars in return, increasing the money supply.
    - v. Since the Federal funds rate is the price of borrowing money, more dollars means the interest rate falls. A smaller money supply means it rises.
    - vi. As a general rule, the Fed keeps the discount rate (which they set) close to the Federal funds rate.
  - c. Reserve Ratio (Reserve Requirement)
    - i. Banks create money. When they loan out excess reserves (and charge interest), they are creating money.
    - ii. By changing the reserve ratio/requirement, the Fed alters how much money a bank can create because it changes how much money the bank must hold in its coffers. By raising the reserve ratio, it decreases the money supply and the monetary multiplier.
    - iii. This puts upward pressure on interest rates.
  - d. The Discount Rate
    - i. By changing the discount rate, the Fed changes how easy it is to borrow additional money from the Fed. Lowering the discount rate increases banks' reserves.
    - ii. This is particularly effective because these loans are not subject to the reserve requirement. If a bank borrows \$100 million, it can lend out all \$100 million.

## II. What Actually Happens

- a. If the Fed uses any of these tools to expand the money supply, it's expansionary monetary policy. Here's how it works:
  - i. Banks will have excess reserves,
  - ii. Thus, there's a lower Federal funds rate,
  - iii. Thus, banks will be more willing to lend out to others, causing longer-term rates to fall and the money supply to increase,
    1. Our monetary multiplier plays a big role here. A single increase in the money supply by the Fed results in *a lot* of money supply creation. Remember: banks create money when they make loans.
  - iv. Thus, more people borrow money (AD shifts right),
  - v. Thus, GDP increases and consumption and investment rise.
- b. Like in fiscal policy, the greater the multiplier (this time the monetary multiplier), the greater the shift in AD.
- c. Note the Fed does *not* set interest rates. Interest rates are ultimately set by the market. The Fed merely influences interest rates.
- d. The opposite occurs with contractionary monetary policy to fight inflation. The Fed reduces excess reserves and the interest rate rises.

## III. Challenges

- a. Can't handle real shocks: just fiscal policy, because monetary policy shifts AD, it can't respond to recessions caused by real shocks.
- b. Lags: the delay between problem and solution still exist here, but they are less severe.
  - i. Recognition lag—it takes time to identify the problem.
  - ii. Effectiveness lag—it takes time for investors to apply the new interest rates to investment and for that effect to be felt in real GDP.
- c. Demand for Cash: the actual monetary multiplier is lower than the theory
  - i. The equation for the monetary multiplier assumes everyone puts 100% of their money in the bank.
  - ii. In fact many people, when they take a loan, get at least some of it in cash. Thus that portion never enters the banking system and is thus not multiplied.
  - iii. This highlights the point made earlier: the Fed doesn't set interest rates and does not have direct control over the resulting price. It merely influences that price and is thus subject to other factors.

- d. Liquidity Trap: when monetary policy doesn't work anymore.
  - i. The Fed's expansionary monetary policy is based on lowering interest rates. But interest rates have a floor; you can't have a negative interest rate.
  - ii. When there's a recession and interest rates are already low, economists refer to this as a *liquidity trap*—when adding more liquidity has little-to-no positive effect on lending.
  - iii. The Fed can make more reserves available, but it can't make banks lend the money. Banks might simply want liquidity in their coffers to assuage potential problems in the future.