

## Lecture 19: Money and Banking

### I. Money and the Rise of Banks

1. Why money? Bartering (directly trading products or services) became too expensive, because with bartering, two matches must be made: you have to have something someone else wants, and they have to have something you want. With money, only one match must be made, because everyone accepts money.

2. Indeed, this is the definition of *money*: money is something that is universally accepted as payment. Initially, money was something that had value, like tobacco leaves or precious metals, but actually it's better that "money" not have alternative uses, because then it will only be used in transactions. Today's money includes *currency* (paper money and coins) and *checking accounts*.

3. The rise of modern money (currency and checking accounts) occurred simultaneously with the rise of *banks*. Originally, banks developed simply as a safe place to store the gold and silver that were being used as money. Gold and silver were heavy and bulky to carry around, and they paid banks to hold the gold and silver. People would deposit gold and silver in well protected banks and receive paper receipts. Eventually, the paper receipts were used for payment, so they were the first paper money.

4. Bankers were smart people, and they began to see that owners of the deposits of gold and silver didn't all come in to the bank at once and remove their deposits. We'll call these deposits *reserves*. Banks therefore had *excess reserves*. Bankers came up with the idea they could *loan these excess reserves and charge interest*. Effectively, bankers created more paper money based on these excess reserves, loaned the money, and charged interest. This activity eventually earned banks more than the fees they charged for depositing the gold and silver. In fact, the lending business became so good that banks began to *pay* people to deposit their gold and silver.

5. This is called the *fractional reserve system*. A given amount of reserves ( in the old days, gold and silver, today deposits of paychecks or investments) can support a much larger amount of money. If, for example, only 10% of the deposits will be withdrawn by depositors at a given time, then banks can create \$9 in money for loans for every \$1 deposited as reserves.

6. In the old days, each bank had its own paper currency (money). This was fine as long as most economic activity occurred in a small geographic area. But it became inadequate as economic activity became more national. Also, bank failures became a problem if more depositors wanted their money than the bank held in the reserves in the vault, and there was no "back-up" system for handling these failures. Both problems eventually led to the creation of a *national bank, the Federal Reserve System*. More on the "Fed" later.

## II. The Nation's Super-Bank: the Federal Reserve

1. The Federal Reserve (the "Fed") is the nation's central bank, or "super" bank. It was established to address the problems of money creation being handled by individual banks.

2. Fed is run by appointees of the President (with confirmation by the Senate). The managers of the Fed are called "Governors" (not the same as Governors of states). The head governor is the Chair (today, Greenspan). Although the Chair has a term of four years, the term does not necessarily coincide with the term of the President. Also, the Fed is viewed as independent of the President, since its budget comes from member banks and not from the President's budget, and the terms of the governors other than the Chair is 14 years.

### 3. Functions of the Fed

- a. *regulatory*: establishes rules for banks to follow that insure safety for both depositors and borrowers
- b. *common currency*: the Fed's paper currency (Federal Reserve Notes) replaced the individual currencies of banks, and this common currency facilitated economic transactions across the country
- c. *control the creation of money*: the most important function of the Fed is its control over the money creation process. The Fed has three tools to do this:
  - 1) control of the *required reserve ratio* - The required reserve ratio is the % of the outstanding money supply (or loans) that banks need to keep in the vault. To stimulate more money creation, the Fed would lower the required reserve ratio. To reduce money creation, the Fed would increase the required reserve ratio.
  - 2) control of two interest rates: The Fed directly controls the *discount rate*, which is the interest rate charged to banks for borrowing reserves from the Fed (not to be confused with the "discount rate" used in present value analysis) and the *federal funds rate*, which is the interest charged by one bank for loans made to other banks. To stimulate more money creation, the Fed would lower these two rates, and to reduce money creation, the Fed would increase these two rates.
  - 3) *Open market operations*: Occurs when the Fed directly increases or decreases the reserves (what's in the vaults) of banks. So to increase money creation, the Fed will add reserves to banks' vaults. Conversely, to decrease money creation, the Fed will take away reserves from banks' vaults.
- d. The Fed uses the three money creation tools in two ways. *First*, it uses them to keep the banking system stable and to prevent "runs on banks". If an individual bank gets into a situation where it doesn't have enough reserves

in the vault to handle folks who want their "cash", then the Fed can make emergency loans to the bank or simply augment its reserves. Also, if the Fed thinks all banks are making too many loans and creating too much money, the Fed can increase the required reserve ratio.

*Second*, the Fed will use these tools to affect the business cycle in the economy. Specifically, the Fed will use the tools to try to prevent or shorten recessions and moderate expansions. This is called *monetary policy*, and is the topic of the next lecture.