

Goals for this session

- Gain a good sense of why we care about money supply
- Understand a few of the 'tools' of monetary policy.

Pre-exercise: Capitol Hill Baby Sitting Co-op

You are not going to be asked ever to know this story. I used this story in session solely to try and give you more intuition behind money supply and how it affects the economy

If you google 'capitol hill baby sitting co-op', you will find many articles describing it. There is even a wikipedia page for it. Slate also has a very nice write-up about it. It is a canonical story in economics, and one I find very helpful for understanding money.

Note:

There are a few different 'tools' the federal reserve has to control the money supply. We are going to discuss two of them today: **Reserve Requirements**, and **Open Market Operations**. Other types we won't discuss today but may cover next time: Quantitative easing, discount rate, paying interest on reserves).

Problems

1. Changing Reserve Requirements

- (a) Draw a bank's 'balance sheet', and place the following liabilities and assets on it in the correct column: [See attached page](#)
 - Reserves (\$300)
 - Loans (\$1800)
 - Deposits (\$2000)
 - Owners' equity (\$100)
- (b) Money Multiplier
 - Draw the balance sheets of a few banks to illuminate how the money multiplier works on a \$100 initial deposit. [See attached page](#)

- What is the formula for the money multiplier? **Increase in checking account balance throughout all banks = (initial cash deposit) * 1/(reserve ratio)**
 - How is it similar/different to the aggregate expenditure multiplier? **The story is similar to the aggregate expenditure multiplier. The 'reserve ratio' is analogous to $MPS = 1 - MPC$. The difference is the outcome of the AE multiplier was the total affect on spending (GDP), however in this case it is just an increase in account balance. M1 will increase by (increase in account balance due to multiplier) - initial deposit. See pg 275 at the bottom in the book for a discussion on the money multiplier.**
 - What crucial assumption does this multiplier rely on? **That banks will lend out money until they can't lend any more because of the required ratio. If banks decide to hold more reserves than the required ratio, the multiplier will be weaker.**
- (c) The Federal Reserve decides to lower the reserve requirement. This means banks can now lend out (**more**/less) money, and makes money supply (**rise**/fall). This will shift AD (**out**/in).

2. Open Market Operations

- (a) What is an 'open market operation'? **Federal Reserve buys or sells U.S. Treasuries on the secondary (open) market. Note they do NOT buy directly from the federal government in their treasury auctions and are actually prohibited from doing so.**
- (b) How do 'open market operations' affect the money supply? **Let's say the fed is buying bonds. When they buy a bond, the bond is no longer in the market, but is traded for cash which counts as M2! (Bonds are not in M2).**
- (c) How might it affect directly affect interest rates on bonds? (we will discuss interest rates a lot more over the next 2 weeks in class) **When the fed buys bonds this means there is more demand for bonds. What will happen to the prices of bonds? They will go up. What does this mean for the interest rate? The interest rate goes down. What does this mean for investment? It is cheaper for businesses to borrow money so they will make more investments.**

Definitions we didn't cover today but you shouldn't forget about

- Three properties of money - (Medium of Exchange, Store of Value, Unit of Account)
- M1 vs. M2 definitions of money - ($M1 = \text{currency} + \text{demand deposits} + \text{other checking deposits} \dots$ $M2 = M1 + \text{savings/loans deposits} + \text{money market mutual funds}$. M2 is a broader definition of money supply)
- Structure of Federal Reserve System and the FOMC (See class notes/book)
- Purpose of the Federal Reserve (Monetary policy, supervision and regulation, banker's bank, lender of last resort... see your class notes/book)
- Dual Mandate of Federal Reserve (Stable prices, and full employment. This is the goal.)
- Stress Testing (simulation to determine if a bank's owner's equity is high enough to deal with various financial crisis scenarios.)
- Volker Rule (Prohibits banks from speculating against their customer's assets)

II a)

Bank	
Assets	Liabilities
Reserves (\$300)	Deposits (\$2,000)
Loans (\$1,800)	Owner's Equity (\$100)
\$2,100	\$2,100

Note: • Sum of Assets = Sum of Liabilities (\$2,100)

b) Assume Reserve Requirement = 20%

Bank 1		Bank 2		Bank 3	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
+ \$20 Reserve	+ \$100 Deposit	+ 16 R	+ \$80 D	+ 12.8 R	+ 64 D
+ \$80 Loan		+ 64 L		+ 51.2 L	