THE FEDERAL RESERVE AND THE MONEY SUPPLY

The Federal Reserve is America’s central bank. It has the unique right to create U.S. dollars. Counterparts abroad: the Bank of Japan, the Bundesbank, the Bank of England, etc. Jan. 1 the Bundesbank, Banque de France, Banca d’Italia will cede their roles to the new European Central Bank.

A central bank’s balance sheet (simplified):

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government bonds</td>
<td>Money</td>
</tr>
</tbody>
</table>

In an open-market operation the CB prints money to buy more bonds, putting more money into circulation – or sells bonds to withdraw money from circulation. This affects the interest rate – and because the interest rate affects spending, it affects the economy.
DETERMINATION OF THE INTEREST RATE

Two ways to think about it:

1. \( i \) must be such as to make supply and demand for money equal. Reason: if people regard their money holdings as inadequate, they will try to sell bonds (or borrow). But you can’t have sellers without buyers: price of bonds will fall (interest rate rise) until no net selling. And conversely if people are holding more money than they want.

2. \( i \) must be such as to make supply and demand for bonds equal. This is equivalent!

Usually thinking in terms of money is more convenient.
FORCES THAT CHANGE INTEREST RATES:

1. Changes in money demand: most important are changes in Y and changes in price level. We leave \( P \) on one side, to return later (crucial role in long run). But other things equal, higher Y leads to higher money demand (more transactions), and hence to higher interest rate. This is the *LM relationship*.

2. Changes in money supply: basically under control of central bank. Higher M implies lower \( i \).

Interest rate matters to economy, because high \( i \) means low spending (housing and other investment), low \( i \) high spending.
MONEY SUPPLY: SOME MORE DETAIL

Actually a two-tier structure: Federal Reserve plus private banks:

*Fed*

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds</td>
<td>Monetary base (aka High-powered money)</td>
</tr>
</tbody>
</table>

*Banks*

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reserves</td>
<td>Bank deposits</td>
</tr>
<tr>
<td>Loans</td>
<td></td>
</tr>
<tr>
<td>Bonds</td>
<td></td>
</tr>
</tbody>
</table>

Monetary base = reserves + currency
HOW AN OPEN MARKET OPERATION WORKS
(simplified case: no currency, banks hold constant proportion of deposits as reserves – say, 0.2)

1. Fed buys $100 million in bonds from banks
2. Banks lend out $100 million; it must return as deposits.
3. Banks lend out $80 million; this must return as deposits.
4. Banks lend out $64 million ....

Eventual *money multiplier* is $1 + 0.8 + 0.64 + ... = 5$

In general, in economy with no currency, money multiplier is $1/d$, where $d$ is reserve/deposit ratio.

In economy with currency (most US monetary base is, in fact, currency), also need to know currency/deposit ratio.

Formula is:

When it matters: when banks are in trouble (US 1930-31, Japan now)
MONETARY POLICY:

1. Money supply can be changed at short notice – all it takes is a phone call to banks.

2. The Fed actually sets a target range for short-term interest rate, which is revised roughly every 6 weeks.

3. Most advanced countries have found it a good idea to give the central bank a lot of independence. (Otherwise temptation to politicize policy – e.g., print a lot of money in run-up to elections).

4. Why can’t anyone understand what Alan Greenspan is saying?