What serves as Mo?

"The pivotal issue, then, is not whether you respond to my needs by cash or by check but for how much."
Commercial Banks

- Checking accounts serve as Money

- In US, Checking Accounts are liabilities of Federally Insured Commercial Banks (CBs) (or thrifts).

- Most CBs (such as Citibank) are owned by Bank Holding Companies (BHCs). Often these have a similar name (as Citigroup), but they are separately incorporated.

- A CB is not liable for the debts of its BHC or vice versa. If a BHC fails, its CB(s) simply get new owners.
The Monetary Aggregates
($/09, $ billions, s.a.)

Official M1:
- Currency in circulation  849.8  (53.2%)
- Checkable Deposits (excl Sweep Accts)  741.0  (46.4%)
  Demand Deposits  406.6
  Other (NOW etc)  334.4
- Non-Bank traveler's checks  5.2  (0.3%)
- Total M1  1,596.0

M1-S (Unofficially computed for this course):
- Currency in circulation  849.8  (35.5%)
- Checkable Deposits (incl Sweep Accts)  1,536.2  (64.2%)
  Official  741.0
  Sweep Accts (est.)  795.2
- Non-Bank traveler's checks  5.2  (0.2%)
- Total M1-S  2,391.2

M2:
- M1  1,596.0
- Savings Deposits (incl MMDA)  4,445.0
- Small time deposits  1,307.3
- Retail Money Market Mutual Funds  979.2
- Total M2  8,326.6

MZM (Zero-Maturity M, computed by St. Louis Fed per Wm. Poole):
- M1  1,596.0
- Savings Deposits (incl MMDA)  4,445.0
- All Money Market Mutual Funds  3,517.6
  Retail  979.2
  Institution-only  2,538.4
- Total MZM  9,558.6

MMDA = Money Market Deposit Account, a Bank/Thrift liability.
MMMF = Money Market Mutual Fund, not a Bank/Thrift liability.

Data sources: Federal Reserve Statistical Release H.6; St. Louis Fed
(http://research.stlouisfed.org/aggregate/swdata.html) for estimated Sweep Accounts.

(M3 discontinued)
### Commercial Bank Assets and Liabilities
#### Insured Commercial Banks
##### Dec. 31, 2010
###### (billions of dollars)

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities &amp; Net Worth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Reserves</td>
<td>Checkable Deposits</td>
</tr>
<tr>
<td>Vault Cash</td>
<td>Demand Deposits</td>
</tr>
<tr>
<td>Balances w/ Fed</td>
<td>NOW Accounts</td>
</tr>
<tr>
<td>Excess Reserve Balances</td>
<td>Savings Deposits</td>
</tr>
<tr>
<td>Other Cash Assets</td>
<td>MMDA</td>
</tr>
<tr>
<td>Debt Securities</td>
<td>Other Savings</td>
</tr>
<tr>
<td>Loans</td>
<td>Time Deposits (CDs)</td>
</tr>
<tr>
<td></td>
<td>Small (&lt; $100,000)</td>
</tr>
<tr>
<td></td>
<td>Large (≥ $100,000)</td>
</tr>
<tr>
<td>Fed Funds Sold</td>
<td>Deposits at Foreign Branches</td>
</tr>
<tr>
<td>Other Assets</td>
<td>Fed Funds Purchased</td>
</tr>
<tr>
<td></td>
<td>Other Liabilities</td>
</tr>
<tr>
<td></td>
<td>Total Liabilities</td>
</tr>
<tr>
<td></td>
<td>Equity Capital (Net Worth)</td>
</tr>
<tr>
<td></td>
<td>A - L</td>
</tr>
<tr>
<td></td>
<td>A = Total Assets</td>
</tr>
<tr>
<td></td>
<td>Liabilities + NW</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Required Reserves</td>
<td>71</td>
</tr>
<tr>
<td>Vault Cash</td>
<td>57</td>
</tr>
<tr>
<td>Balances w/ Fed</td>
<td>14</td>
</tr>
<tr>
<td>Excess Reserve Balances</td>
<td>487</td>
</tr>
<tr>
<td>Other Cash Assets</td>
<td>305</td>
</tr>
<tr>
<td>Debt Securities</td>
<td>2321</td>
</tr>
<tr>
<td>Loans</td>
<td>6450</td>
</tr>
<tr>
<td>Fed Funds Sold</td>
<td>454</td>
</tr>
<tr>
<td>Other Assets</td>
<td>1896</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Checkable Deposits</td>
<td>945</td>
</tr>
<tr>
<td>Demand Deposits</td>
<td>689</td>
</tr>
<tr>
<td>NOW Accounts</td>
<td>256</td>
</tr>
<tr>
<td>Savings Deposits</td>
<td>5286</td>
</tr>
<tr>
<td>MMDA</td>
<td>3257</td>
</tr>
<tr>
<td>Other Savings</td>
<td>1084</td>
</tr>
<tr>
<td>Time Deposits (CDs)</td>
<td>1212</td>
</tr>
<tr>
<td>Small (&lt; $100,000)</td>
<td>886</td>
</tr>
<tr>
<td>Large (≥ $100,000)</td>
<td>326</td>
</tr>
<tr>
<td>Deposits at Foreign Branches</td>
<td>1549</td>
</tr>
<tr>
<td>Fed Funds Purchased</td>
<td>520</td>
</tr>
<tr>
<td>Other Liabilities</td>
<td>1672</td>
</tr>
<tr>
<td>Total Liabilities</td>
<td>10,653</td>
</tr>
<tr>
<td>Equity Capital (Net Worth)</td>
<td>1331</td>
</tr>
<tr>
<td>A - L</td>
<td></td>
</tr>
<tr>
<td>A = Total Assets</td>
<td>11,984</td>
</tr>
<tr>
<td>Liabilities + NW</td>
<td>11,984</td>
</tr>
</tbody>
</table>

Checkable Deposits ($m)

1. Traditional Demand Deposits
   - Could not pay interest, 1933-2010.
   - Only held by CBs

2. Other Checkable Deposits (OCD)
   - Mostly NOW Accts.
   - Negotiable Order of Withdrawal
   - May pay interest
   - Held by CBs or Thrifts
   - Authorized nationally by 1980 DIDMCA
   - Non-Business only

- Same reserve requirements by 1980 DIDMCA
Didmik

Depositary Institutions Deregulation and Monetary Control Act of 1980

- Permitted banks, thrifts to offer NOW accounts.
- Set uniform reserve requirements for all banks, thrifts.
- Phased out deposit interest ceilings on savings.
Near-Moneys (in M2)

1. Passbook Savings Deposits
   - Fixed present value, 0 maturity.
   - Interest accumulates
   - No checking
   - Pre-1970's, only non OD type of Bank Deposit.

2. Small Time Deposits (< $100,000)
   - Certificate of Deposit (CD)
   - Fixed Maturity, interest
   - Penalty for early withdrawal
   - 1971 innovation
   - in M2 if < $100,000 "small"
3. Money Market Mutual Funds

MMMFs

- Not a bank or thrift liability
- Set up as a Mutual Fund, regulated by SEC.

- Holds only short-term, marketable debt.
  - Treasury Bills
  - Corp. Commercial Paper (CP)
  - Bank Certificates of Deposit (CDs)

⇒ Stable share value (unlike equity funds)
- Most "penny round"
- But investor bears residual present value & credit risk (until 2008).
- Most allow limited checking through a CB.
- Not Federally insured, yet safe (ordinarily)

- Early 1970's innovation to avoid deposit interest ceiling.

- In M2 if retail
- In M3 if institution only.
Sept 2008 development with MMMFs:

- CP Ratings
  P-1 - Safest
  P-2 - Moderately risky

- Some MMMFs enhanced yields with P-2 CP, since T-Bills, P-1 yields near 0.

- Summer 08 - P-2 CP fell to a yield discount of ~ 5% yr rel. to P-1 paper, T-Bills.

- Sept 08 - Primary Reserve Fund (a MMMF)
  "broke bank"
  i.e. market value of portfolio fell more than 1%, so couldn't "penny round" to $1.00
  in fact, fell to 97¢/$.  
  → Treasury, Fed moved to support P-2 CP market to prevent negative returns on high-risk MMMFs.

- Makes no more sense than protecting stock funds from neg. daily returns.
4. **Money Market Deposit Acts.**

(MMDA)

- Pay interest - No ceiling since inception in 1983
- No reserve requirements since 1/91
- Limited checking, 6/month
- Fixed present value like Savings, Checking
- General liability of issuing CB or Thrift, unlike MMMF
- Federally insured. (FDIC)
- Authorized by 1982 Garn-St Germaine Act
  - to compete with MMMF
  - effective 1/83
  - MMMF ↓ 25% immediately without incident
5. **Sweep Accts**

- MMDA balances that act as unlimited checking accts.
- Now half of all checking accts.
- In M1-5, M2, not M1!
- Important since 1995.
- Move next class.
Fractional Reserve Banking

Req'd. Reserves = $60.7B
5/09

Checkable Deps. = $153.6B
Incl. Smt. Sweeps, 5/09

\[ R_r = \frac{R_r}{D} = 4.0 \% \] (5/09)

= required reserve ratio.

Other assets less liquid.

\[ \Rightarrow \text{potential illiquidity problem} \]

- Banks make a hit on \( R_r \)
  \[ \Rightarrow \text{fractional tax on} \ D \]

- Since 10/08, Fed pays interest, excess \( R \) (only)

- Before 10/08, Banks kept \( R \) very near \( R_r \).
Commercial Bank Assets, 12/10

"Loans"  54\% of A
  - Unsecured loans
  - Customer relationship
  - Less marketable, less liquid
  - Higher interest rates

"Securities"  19\%
  - Securitized loans (not equities)
  - Bonds, Bills, Commercial Paper
  - More marketable, more liquid
  - Lower interest rates
  - May have interest rate risk even if high grade

Excess Reserves  4\%

Other Cash Assets  3\%

Required Reserves  1\%

Other Assets  19\%
Commercial Bank Loans by Type, 12/10

Real Estate 55%
  Incl. HELOC*

Personal 19%
  Incl. Auto, Credit Card

Commercial & Industrial 17%

Other 9%

Prime Rate

* = Interest rate banks charge “Prime Customers”.

Many variable rate loans, lines of credit tied to Prime Rate.

Below-Prime discounting common since 1980s. “Super-Prime” Rate?

* HELOC = revolving Home Equity Line of Credit.

From Insured Commercial Bank Assets and Liabilities, Domestic and Foreign Offices (4.20), 12/31/10
Commercial Bank Securities by Type, 12/10

Mortgage-Backed Securities  55%
Pass-through pools of mortgages
Guaranteed by Fannie Mae, Freddie Mac,
other parties

Govt Agency Bonds  10%
Fannie Mae, Freddie Mac, etc.

US Treasury  8%
Bills (<1yr), Notes (<10 yr), Bonds (to 30 yr)

State & Local Bonds etc.  7%
Exempt from Federal Income Tax

Other  20%
Corporate bonds, Commercial Paper etc.
Bank loans far exceed monetary deposits.

**Financial Intermediation (F.I.)**

When banks fund loans with CDs, they act as Financial Intermediaries.

- Important, but non-monetary function of banks.
- No illiquidity risk or interest rate risk if CDs have same maturities as corresponding loans.
- Move in Ch. 27.

"Near Moneys"

Passbook Savings, MMDA

- 0 maturity
- MMDAs have limited checking
- Gray area between money, Financial Intermediation.
Federal Funds Market

Fed Funds
- Funds on deposit w/ Fed
- Used as clearing balances
- Count as legal reserves

Fed Funds Rate
- Rate banks charge each other
  for use of Fed Funds
  overnight or short-term

\[
\text{FF "purchased" (L)} = \text{borrowed} \quad \$520 \quad B \quad (10/10)
\]

\[
\text{FF "sold" (A)} = \text{lent} \quad - \quad \$454 \quad B
\]

\[
\text{= Non-Bank Repos:} \quad \$66 \quad B
\]

(For more on Repos, next lecture)
Net Worth
(Capital Accounts)

\[ NW = A - L \]

Balance sheet identity:

\[ A = L + NW \]

Solvent if \( NW > 0 \)

Insolvent if \( NW < 0 \)

\( NW \) protects Depositors, FDIC against losses on Assets

\( NW = \) equity interest of banks' shareholders.

\[ \frac{NW}{A} = 11.1\% \quad 12/10 \]  \hspace{1cm} (was 6.8\% 12/02)

\[ \frac{A}{NW} = \text{"Leverage" - M+B} \]

\[ = 9.0:1 \quad 12/10 \]  \hspace{1cm} (was 14.7:1 12/02)
Federal Deposit Insurance

FDIC: Federal Deposit Insurance Corp.

- Founded 1935

- Insures depositors to $250,000 per depositor per bank.
  - Since 10/08
  - $100,000 previously, 1982-2008.

- Controls entry into banking by withholding ins. to new banks.
Glass-Steagall Act 1933

Separated Commercial Banks from Investment Banks.

- CBs -
  hold Deposits
  make Loans
  do not underwrite new securities
  Federally Insured

- IBs -
  No Deposits
  Underwrite new security issues.
  - high risk
  Not Federally Insured.

- Single Holding Co. could not own
  or control both CB & IB.
Glass-Steagall Repealed 1999

- Gramm Leach Bliley Act

- Bank Holding Cos (like Citigroup) may now own both CB's (like Citibank), IBs, Insurance Cos.

- CB subsidiaries are still separately incorporated, but may be misled to make risky, undiversified loans to I.B.

- "Firewalls" are supposed to prevent this.

- But often CB, BHC hard to untangle in practice.

- BHCs often control 100's of legal entities, operate in dozens of countries.

- More in Ch. 28