**Chapter 9 - The Banking Firm and Bank Management**

We saw in CH 8, that commercial banks and bank loans play an extremely important role in the economy, supplying over $5T of credit annually.  By efficiently channeling funds from savers to borrowers, the economy operates more efficiently, increasing output, employment, wealth, etc., improving our standard of living.  An efficient credit market (student loans, mortgages, credit cards, business loans, etc.), facilitated by commercial banks, significantly contributes to our high standard of living in the U.S. economy, the highest in the world.

Commercial banks are the most important financial intermediaries in the economy, so it is important to understand how they operate, and understand **bank management.**

**THE BANK BALANCE SHEET**

To understand how a bank operates, we first examine a commercial bank's balance sheet, where: Total Assets = Debt + Equity (or TA = Total Liabilities + Capital)   
See page 212 for a summary of the balance sheet of all commercial banks in 1999 in U.S.,  items are in percent (%).

**BANK LIABILITIES = Sources of Bank Funds:**

**1. Checkable Deposits - (10%)**   
a. Demand deposits (non-interest-bearing checking)   
b. NOW accounts - interest-bearing checking   
c. Money market deposit accounts (MMDAs) - money market mutual funds.

Checkable deposits are payable on demand, you can write a check for any amount, including your entire balance.  Checkable deposits are lowest cost source of funds for a bank, sometimes 0 (demand deposits), because people like the liquidity of checking accounts and will forego interest for convenience of checks.

**2. Nontransaction Deposits (59%) are the Primary source of bank funds**   
a. Savings accounts (passbook savings)   
b. Small-denomination Time Deposits (CDs, certificate of deposits), fixed maturity from several months to 10 years, less than $100,000.  Higher interest rates than passbook savings, penalties for early withdrawal, less liquid, more costly for the bank.   
c. Large-denomination Time Deposits, over $100,000, bought by corporations, money market funds and other banks.  Liquid, negotiable, marketable, can be resold in secondary market before they mature, like a corporate bond or T-bond.  Alternative to commercial paper and T-bills.

**3. Borrowings (23%) of bank funds:**   
a. from other banks - Fed Funds Market - to meet reserve requirements   
b. from FRS - discount rate - to meet reserve requirements   
c. from parent companies - bank holding companies   
d. from corporations and from foreign banks - negotiable CDs and Eurodollar deposits

**3. Bank capital (8%)**, equity from issuing new stock or capital from retained earnings.  Bank capital is also a cushion against a drop in the value of its assets, to protect against insolvency, bankruptcy.

***NOTE:*** Banks are usually highly leveraged - 92% D/A ratio, very ***thinly*** capitalized.

**BANK ASSETS = Uses of Bank Funds:**

A bank uses its deposits to acquire income-earning assets, to make profits, by earning more interest on assets than they pay out on liabilities.

**1. Reserves (1%):** Deposits kept on account at the Fed (all banks have an account at the Fed) + Vault cash on hand at bank, stored in the vault overnight.

Some reserves are required by FRS, as a percentage of deposits.  **Reserve requirements** - percentage a bank is **required** to hold as a percent of certain deposits. Notice that reserves (R) are only about 1.6% of Deposits (D), checking and saving deposits, (1 / 63).  Banks also hold excess reserves, in addition to required reserves for increased liquidity, to meet demand for cash withdrawals and check clearing.

**2. Securities (22%)**: Banks also hold securities like Tbills and muni bonds and GNMA bonds, etc.  Commercial banks are not allowed to own stock, must only own government debt instruments.

**3. Loans (72%):** Most bank profits come from Loans. Loans make up 72% of bank assets:   
a. Commercial loans to businesses   
b. real estate loans (mortgages, home improvement loans, etc.)   
c. consumer loans (credit card, automobiles)   
d. interbank loans, Federal Funds market   
e. other loans

Loans are less liquid than other assets (e.g. securities, TBills, etc.) because the assets tied up for the length of the loan, 30 years in the case of a typical mortgage.   Loans are also more risky, higher default risk than securities.  Because loans are more risky and less liquid, they earn more interest for banks.

**4. Other Assets (5%):** Property, plant and equipment.  Buildings, office equipment, computer systems, etc.

**BASIC OPERATION OF A BANK:**   
**See series of T-accounts on pages 217-219.**

Points:

1. When a bank increases deposits, it gains additional bank reserves; when deposits decrease, banks lose reserves.   
2. Banks want to convert excess reserves into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ . Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**GENERAL PRINCIPLES OF BANK MANAGEMENT**

We now look at bank management, how it manages assets (loans) and liabilities (deposits) to maximize profits.

*1. Liquidity Management* - maintaining enough liquid assets to meet obligations to depositors (for cash withdrawals) and to FRS.

*2. Asset Management* - managing assets (loan portfolio) to achieve diversification and minimize default risk/credit risk and interest rate risk.

*3. Liability Management* - acquire/attract funds (deposits) at lowest possible cost.

*4. Capital Adequacy Management* - maintaining the appropriate net worth to meet federal regulations and prevent bank failure.

**1. LIQUIDITY MANAGEMENT**- Management of bank reserves. Two concerns: 1) excess reserves and 2) insufficient reserves.

Bank is holding non interest-bearing assets,  reserves pay 0 interest. Loans generate interest income (*example:* credit cards @ 20%). Opp cost of excess reserves is the lost/foregone interest income.  Banks therefore want to minimize excess reserves.  However, if a bank has deficient reserves, there could possibly be a costly readjustment process.  Banks want to hold the optimal amount of excess reserves, but the optimal amount is NOT zero.

*Example:* see page 220. Assume reserve requirement is 10%, banks are required to hold minimum reserves equal to 10% of checking and savings deposits.

Scenario #1: Bank initially has excess reserves.  Required reserves: $10m. Actual reserves: $20m. Excess reserves in the amount of $10m.

Assume a deposit outflow of $10m. People move to Florida for the winter and withdraw $10m from Bank One.  Or Stock market boom and people transfer money from checking to mutual funds. Or there is a natural disaster (flood, earthquake, hurricane) and there is a large deposit outflow.  Bank can handle the $10m deposit outflow and still meet the 10% reserve requirement without having to make any other changes in its balance sheet.

Scenario #2: Bank has no excess reserves,  page 220.  Deposit outflow of $10m.  The bank now has NO reserves and required reserves are $9m.

***Four options for bank to meet reserve requirement, p. 221-222:***

1. Borrow $9m from other banks in the Fed Funds market at the Federal Funds rate. Currently: \_\_\_\_\_\_\_% WSJ.

2. Sell $9m of securities - Tbills.  Disadvantages: a) transactions costs and b) converting interest-bearing assets to non interest-bearing assets.

3. Borrow $9m from FRS @ discount rate, currently \_\_\_%.  Discount rate usually lower than the Fed Funds rate.

4. Reduce loans by $9m : a) calling them in - actually not renewing them.  *Example:* many commercial loans are short term, renewable at short intervals. Customers will be upset, and will go to other banks or b) selling $9m of loans to other banks.

***Point:*** Optimal amount of excess reserves is not zero.  Banks hold excess reserves to provide insurance, a cushion against unexpected deposit outflows. The cost of excess reserves is the opportunity cost of interest on loans.

Currently: Total Reserves: $38,873B, Required Reserves: $37,843B,  Excess Reserves: $1030B, so Excess Reserves = 2.65% of required reserves.

Borrowing from FRS: $480m, about 1.2% of Total Reserves.

**ASSET MANAGEMENT**

Banks want to manage their assets (loans) to maximize profits by:

1. Assess creditworthiness of loan customers, avoid costly defaults. Banks are usually conservative - defaults are less than 1% of bank loans.  Optimal number of loan defaults is not zero.   Why?

2. Purchase securities, subject to banking regulations.  Usually restricted to treasury securities and muni bonds.

3. Diversify assets. Short and long term securities. Diversity loan portfolio - commercial, auto, student, mortgage, credit card, etc. Undiversified loan portfolios are exposed to risk. *Example:* too many real estate or farm loans in one area is risky.

4. Manage assets to ensure liquidity, holding sufficient liquid assets like T-Bills in case of large deposit outflows, loss of reserves.  T-Bills are so safe and liquid that they are considered "secondary reserves."   Bank has to balance liquidity (holding reserves and T-Bills) against increased earnings from less liquid assets (holding loans).

**LIABILITY MANAGEMENT**

Banks used to rely on demand deposits (no interest) for their main source of funds - 60%, in 1960s.  Before 1980, banks were not allowed to pay interest on checking, so there was no competition for demand deposits.  Also, the fed funds market was not developed, so inter-bank borrowing was rare, to meet reserve requirements.  Therefore, banks used to focus on asset management (optimal loan portfolio), because liabilities (demand deposits) were stable and non-competitive.

Starting in the 1960s, fed funds market developed, so banks had access to a new source of funds: other banks. Also, banks began to issue negotiable CDs, which allowed banks access to another source of funds besides deposits.  Banks now placed greater emphasis on liability management, due to increased flexibility for attracting sources of funds.  They no longer needed to rely exclusively on checking deposits.  They now set goals for asset (growth) and then acquired funds (issuing liabilities) as they needed for new loans.

Suppose Citizens Bank has an attractive $10m loan opportunity.  It would take a long time to get $10m in new deposits, but it could issue a $10m CD to attract funds. Possible buyer: ?? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Usual amount $1m or more, 1 mo-1 year. Current rates: \_\_\_\_\_\_\_\_\_\_\_\_\_

Or suppose there is an unexpected deposit outflow, banks can now use the Fed Funds market to acquire sufficient reserves easily and efficiently.

Important changes over the last 30 years in bank balance sheets:

1. Negotiable CDs and bank borrowing (Fed Funds market) now account for 44% of bank liabilities, vs. 2% in 1960.

2. Checking deposits have declined in importance as a source of bank liabilities: 11% now vs. 61% in 1960.

3. Increased alternatives and greater flexibility in liability management, have given banks greater flexibility to manage assets profitably, banks have increased the percentage of assets held as loans to 66% in 1999, vs. only 46% in 1960.  More loans = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

MANAGING ASSETS AND INTEREST RATE RISK - separate handout and lecture notes on Web.   
 