Figure 1: Flow of Funds Through the Financial System

Lender-Savers
1. Households
2. Business firms
3. Government
4. Foreigners

Financial Intermediaries

Financial Markets

Borrower-Spenders
1. Business firms
2. Government
3. Households
4. Foreigners

DIRECT FINANCE

INDIRECT FINANCE
Figure 2: Sources of External Funds for Non-Financial Businesses

- Loans: 62%
- Bonds: 30%
- Stock: 2%
- Other: 6%
Direct and Indirect Finance

• Indirect external finance (that is, loans) is more important than direct finance (stocks and bonds)

• Generally, loans are the most important source of financing in most developed (and developing) economies.
Reasons for Financial Intermediaries

• Transaction Costs

• A direct saver-to-borrower venue may be too costly, if the saver is to be guaranteed a full return in the investment

• Financial intermediaries have the advantage of economies of scale and know how/expertise
Figure 3: Transaction Cost of Direct Finance

Mr. Jones

$1000

Mr. Brown

Cost=$400

Lawyer
Incompatible Incentives Between Borrowers and Lenders

1. **Asymmetric information**
   - Adverse selection (before loan is given)
   - Moral hazard problems (after the loan is given)
2. **Adverse Selection**

- The lemons problem in a used-car market

- Same principle, holds in bond and equity markets

Conclusion: For these market to work, we typically need to have a dealer/broker or intermediary
Moral Hazard / Principal-Agent Problem

Managers=Agents
Stockholders=Principals

• Different incentives
  – Managers may prefer higher pay/benefits
  – Stock owners: higher stock prices
Types of Financial Intermediaries

- Depository Institutions (Banks): accept deposits and make loans. These include commercial banks and thrifts.
  - Commercial banks (7,500 currently)
    - Raise funds primarily by issuing checkable, savings, and time deposits which are used to make commercial, consumer and mortgage loans
    - Collectively, these banks comprise the largest financial intermediary and have the most diversified asset portfolios
Types of Financial Intermediaries

• Thrifts: S&Ls, Mutual Savings Banks (1,500) and Credit Unions (8,900)
  – Raise funds primarily by issuing savings, time, and checkable deposits which are most often used to make mortgage and consumer loans, with commercial loans also becoming more prevalent at S&Ls and Mutual Savings Banks
  – Mutual savings banks and credit unions issue deposits as shares and are owned collectively by their depositors, most of which at credit unions belong to a particular group, e.g., a company’s workers
Contractual Savings Institutions (CSIs)

• All CSIs acquire funds from clients at periodic intervals on a contractual basis and have fairly predictable future payout requirements.
  – Life Insurance Companies receive funds from policy premiums, can invest in less liquid corporate securities and mortgages, since actual benefit pay outs are close to those predicted by actuarial analysis
  – Fire and Casualty Insurance Companies receive funds from policy premiums, must invest most in liquid government and corporate securities, since loss events are harder to predict
Contractual Savings Institutions (CSIs)

- All CSIs acquire funds from clients at periodic intervals on a contractual basis and have fairly predictable future payout requirements.
  - Pension and Government Retirement Funds hosted by corporations and state and local governments acquire funds through employee and employer payroll contributions, invest in corporate securities, and provide retirement income via annuities.
Types of Financial Intermediaries

- **Finance Companies** sell commercial paper (a short-term debt instrument) and issue bonds and stocks to raise funds to lend to consumers to buy durable goods, and to small businesses for operations.

- **Mutual Funds** acquire funds by selling shares to individual investors (many of whose shares are held in retirement accounts) and use the proceeds to purchase large, diversified portfolios of stocks and bonds.
Types of Financial Intermediaries

- **Money Market Mutual Funds** acquire funds by selling checkable deposit-like shares to individual investors and use the proceeds to purchase highly liquid and safe short-term money market instruments.
- **Investment Banks** advise companies on securities to issue, underwriting security offerings, offer M&A assistance, and act as dealers in security markets.
## Types of Financial Intermediaries

### TABLE 2.2  Principal Financial Intermediaries and Value of Their Assets

<table>
<thead>
<tr>
<th>Type of Intermediary</th>
<th>Value of Assets ($ billions, end of year)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Depository institutions (banks)</strong></td>
<td></td>
</tr>
<tr>
<td>Commercial banks</td>
<td>1,481</td>
</tr>
<tr>
<td>Savings and loan associations and mutual savings banks</td>
<td>792</td>
</tr>
<tr>
<td>Credit unions</td>
<td>67</td>
</tr>
<tr>
<td><strong>Contractual savings institutions</strong></td>
<td></td>
</tr>
<tr>
<td>Life insurance companies</td>
<td>464</td>
</tr>
<tr>
<td>Fire and casualty insurance companies</td>
<td>182</td>
</tr>
<tr>
<td>Pension funds (private)</td>
<td>504</td>
</tr>
<tr>
<td>State and local government retirement funds</td>
<td>197</td>
</tr>
<tr>
<td><strong>Investment intermediaries</strong></td>
<td></td>
</tr>
<tr>
<td>Finance companies</td>
<td>205</td>
</tr>
<tr>
<td>Mutual funds</td>
<td>70</td>
</tr>
<tr>
<td>Money market mutual funds</td>
<td>76</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>1980Q4</th>
<th>1990Q4</th>
<th>2003Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money Market Mutual Funds</td>
<td>76.42</td>
<td>493.32</td>
<td>2120.79</td>
</tr>
<tr>
<td>Mutual Funds</td>
<td>61.81</td>
<td>608.36</td>
<td>4072.60</td>
</tr>
<tr>
<td>Closed-End Funds</td>
<td>7.92</td>
<td>52.88</td>
<td>170.27</td>
</tr>
<tr>
<td>REITs</td>
<td>3.23</td>
<td>28.47</td>
<td>100.97</td>
</tr>
<tr>
<td>Brokers and Dealers</td>
<td>45.36</td>
<td>262.13</td>
<td>1502.31</td>
</tr>
<tr>
<td>Government-Sponsored Enterprises</td>
<td>195.14</td>
<td>477.60</td>
<td>2658.15</td>
</tr>
<tr>
<td>Federally Related Mortgage Pools</td>
<td>113.96</td>
<td>1019.86</td>
<td>3288.97</td>
</tr>
<tr>
<td>ABS Issuers</td>
<td>0.00</td>
<td>269.86</td>
<td>2511.56</td>
</tr>
<tr>
<td>Finance Companies</td>
<td>196.91</td>
<td>546.96</td>
<td>1244.94</td>
</tr>
<tr>
<td>Mortgage Companies</td>
<td>16.14</td>
<td>49.16</td>
<td>32.09</td>
</tr>
</tbody>
</table>
## Table 3. Balance Sheet of all US Commercial Banks, 2003

<table>
<thead>
<tr>
<th>Assets</th>
<th>Billions of $</th>
<th>% of Assets</th>
<th>Liabilities</th>
<th>Billions of $</th>
<th>% of Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank credit</td>
<td>6194.4</td>
<td>84.73</td>
<td>Deposits</td>
<td>4775.7</td>
<td>69.96</td>
</tr>
<tr>
<td>Securities in bank credit</td>
<td>1778.9</td>
<td>24.33</td>
<td>Transaction</td>
<td>634.8</td>
<td>9.30</td>
</tr>
<tr>
<td>U.S. government securities</td>
<td>1060.6</td>
<td>14.51</td>
<td>Nontransaction</td>
<td>4140.9</td>
<td>60.66</td>
</tr>
<tr>
<td>Other securities</td>
<td>718.3</td>
<td>9.83</td>
<td>Large time</td>
<td>1041.6</td>
<td>15.26</td>
</tr>
<tr>
<td>Loans and leases in bank credit</td>
<td>4415.5</td>
<td>60.40</td>
<td>Other</td>
<td>3099.3</td>
<td>45.40</td>
</tr>
<tr>
<td>Commercial and industrial</td>
<td>910.6</td>
<td>12.46</td>
<td>Borrowings</td>
<td>1481.2</td>
<td>21.70</td>
</tr>
<tr>
<td>Real estate</td>
<td>2255.4</td>
<td>30.85</td>
<td>From banks in the U.S.</td>
<td>403.2</td>
<td>5.91</td>
</tr>
<tr>
<td>Revolving home equity</td>
<td>258.4</td>
<td>3.53</td>
<td>From others</td>
<td>1078.1</td>
<td>15.79</td>
</tr>
<tr>
<td>Other-Mortgages</td>
<td>1997.0</td>
<td>27.32</td>
<td>Net due to related foreign offices</td>
<td>130.7</td>
<td>1.91</td>
</tr>
<tr>
<td>Consumer</td>
<td>602.0</td>
<td>8.23</td>
<td>Other liabilities</td>
<td>439.2</td>
<td>6.43</td>
</tr>
<tr>
<td>Security</td>
<td>202.2</td>
<td>2.77</td>
<td>Total Liabilities</td>
<td>6826.8</td>
<td></td>
</tr>
<tr>
<td>Other loans and leases</td>
<td>445.3</td>
<td>6.09</td>
<td>Residual (assets less liabilities)</td>
<td>483.6</td>
<td></td>
</tr>
<tr>
<td>Interbank loans</td>
<td>308.0</td>
<td>4.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash assets</td>
<td>331.0</td>
<td>4.53</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other assets</td>
<td>552.9</td>
<td>7.56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td><strong>7310.4</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 4: Assets of Financial Intermediaries

1980Q4
- 14% Banks
- 6% Insurance
- 13% Investment Funds
- 6% Financing
- 2% Thrifts & Credit Unions
- 8% Pensions
- 8% Asset-Backed & GSEs
- 24% GSEs

2003Q2
- 32% Banks
- 6% Insurance
- 6% Investment Funds
- 13% Financing
- 12% Thrifts & Credit Unions
- 8% Pensions
- 6% Asset-Backed & GSEs
- 23% GSEs
Regulation of Financial Markets

- Main Reasons for Regulation
  1. Increase Information to Investors
  2. Ensure the Soundness of Financial Intermediaries
Regulation Reason: Increase Investor Information

- Asymmetric information in financial markets means that investors may be subject to adverse selection and moral hazard problems that may hinder the efficient operation of financial markets and may also keep investors away from financial markets.

- The Securities and Exchange Commission (SEC) requires corporations issuing securities to disclose certain information about their sales, assets, and earnings to the public and restricts trading by the largest stockholders (known as insiders) in the corporation.
Regulation Reason: Increase Investor Information

• Such government regulation can reduce adverse selection and moral hazard problems in financial markets and increase their efficiency by increasing the amount of information available to investors. Indeed, the SEC has been particularly active recently in pursuing illegal insider trading.
Regulation Reason: Ensure Soundness of Financial Intermediaries

- Providers of funds to financial intermediaries may not be able to assess whether the institutions holding their funds are sound or not.
- If they have doubts about the overall health of financial intermediaries, they may want to pull their funds out of both sound and unsound institutions, with the possible outcome of a financial panic.
- Such panics produces large losses for the public and causes serious damage to the economy.
• To protect the public and the economy from financial panics, the government has implemented six types of regulations:
  – Restrictions on Entry
  – Disclosure
  – Restrictions on Assets and Activities
  – Deposit Insurance
  – Limits on Competition
  – Restrictions on Interest Rates
Regulation: Restriction on Entry

• Restrictions on Entry
  – Regulators have created very tight regulations as to who is allowed to set up a financial intermediary
  – Individuals or groups that want to establish a financial intermediary, such as a bank or an insurance company, must obtain a charter from the state or the federal government
  – Only if they are upstanding citizens with impeccable credentials and a large amount of initial funds will they be given a charter.
Regulation: Disclosure

• Disclosure Requirements

• There are stringent reporting requirements for financial intermediaries
  – Their bookkeeping must follow certain strict principles,
  – Their books are subject to periodic inspection,
  – They must make certain information available to the public.
• There are restrictions on what financial intermediaries are allowed to do and what assets they can hold

• Before you put your funds into a bank or some other such institution, you would want to know that your funds are safe and that the bank or other financial intermediary will be able to meet its obligations to you
Regulation: Restriction on Assets and Activities

- One way of doing this is to restrict the financial intermediary from engaging in certain risky activities.
- Another way is to restrict financial intermediaries from holding certain risky assets, or at least from holding a greater quantity of these risky assets than is prudent.
Regulation: Deposit Insurance

- The government can insure people depositors to a financial intermediary from any financial loss if the financial intermediary should fail.
- The Federal Deposit Insurance Corporation (FDIC) insures each depositor at a commercial bank or mutual savings bank up to a loss of $100,000 per account ($250,000 for IRAs).
• Similar government agencies exist for other depository institutions:
  – The National Credit Union Share Insurance Fund (NCUSIF) provides insurance for credit unions
 Regulation: Past Limits on Competition

- Although the evidence that unbridled competition among financial intermediaries promotes failures that will harm the public is extremely weak, it has not stopped the state and federal governments from imposing many restrictive regulations.

- In the past, banks were not allowed to open up branches in other states, and in some states banks were restricted from opening additional locations.
Regulation: Past Restrictions on Interest Rates

- Competition has also been inhibited by regulations that impose restrictions on interest rates that can be paid on deposits.
- These regulations were instituted because of the widespread belief that unrestricted interest-rate competition helped encourage bank failures during the Great Depression.
- Later evidence does not seem to support this view, and restrictions on interest rates have been abolished.
• Because banks play a very important role in determining the supply of money (which in turn affects many aspects of the economy), much regulation of these financial intermediaries is intended to improve control over the money supply

• One such regulation is reserve requirements, which make it obligatory for all depository institutions to keep a certain fraction of their deposits in accounts with the Federal Reserve System (the Fed), the central bank in the United States

• Reserve requirements help the Fed exercise more precise control over the money supply
### TABLE 2.3  Principal Regulatory Agencies of the U.S. Financial System

<table>
<thead>
<tr>
<th>Regulatory Agency</th>
<th>Subject of Regulation</th>
<th>Nature of Regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Securities and Exchange Commission (SEC)</td>
<td>Organized exchanges and financial markets</td>
<td>Requires disclosure of information, restricts insider trading</td>
</tr>
<tr>
<td>Commodities Futures Trading Commission (CFTC)</td>
<td>Futures market exchanges</td>
<td>Regulates procedures for trading in futures markets</td>
</tr>
<tr>
<td>Office of the Comptroller of the Currency</td>
<td>Federally chartered commercial banks</td>
<td>Charters and examines the books of federally chartered commercial banks and imposes restrictions on assets they can hold</td>
</tr>
<tr>
<td>National Credit Union Administration (NCUA)</td>
<td>Federally chartered credit unions</td>
<td>Charters and examines the books of federally chartered credit unions and imposes restrictions on assets they can hold</td>
</tr>
<tr>
<td>State banking and insurance commissions</td>
<td>State-chartered depository institutions</td>
<td>Charter and examine the books of state-chartered banks and insurance companies, impose restrictions on assets they can hold, and impose restrictions on branching</td>
</tr>
<tr>
<td>Federal Deposit Insurance Corporation (FDIC)</td>
<td>Commercial banks, mutual savings banks, savings and loan associations</td>
<td>Provides insurance of up to $100,000 for each depositor at a bank, examines the books of insured banks, and imposes restrictions on assets they can hold</td>
</tr>
<tr>
<td>Federal Reserve System</td>
<td>All depository institutions</td>
<td>Examines the books of commercial banks that are members of the system, sets reserve requirements for all banks</td>
</tr>
<tr>
<td>Office of Thrift Supervision</td>
<td>Savings and loan associations</td>
<td>Examines the books of savings and loan associations, imposes restrictions on assets they can hold</td>
</tr>
</tbody>
</table>