The Financial System
(Mishkin ch.2; recommended: ch.8)

• Role of the Financial System as a whole.
• Financial Markets – overview.
• Financial Intermediaries – overview.
• Financial Innovation and Regulation – problems.
• Current issues.
The Role of the Financial System

1. Channel funds from lenders/savers to borrowers/spenders
2. Facilitate payments from buyers to sellers => Money (ch.3)
Money Markets

### Table 1: Principal Money Market Instruments

<table>
<thead>
<tr>
<th>Type of Instrument</th>
<th>1980</th>
<th>1990</th>
<th>2000</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Treasury bills</td>
<td>216</td>
<td>527</td>
<td>647</td>
<td>1,591</td>
</tr>
<tr>
<td>Negotiable bank certificates of deposit (large denominations)</td>
<td>317</td>
<td>543</td>
<td>1,053</td>
<td>1,762</td>
</tr>
<tr>
<td>Commercial paper</td>
<td>122</td>
<td>557</td>
<td>1,619</td>
<td>951</td>
</tr>
<tr>
<td>Federal funds and security repurchase agreements</td>
<td>64</td>
<td>388</td>
<td>768</td>
<td>1,919</td>
</tr>
</tbody>
</table>


- Note that rankings by market size change over time. (All grow in nominal terms.)
# Capital Markets

## TABLE 2 Principal Capital Market Instruments

<table>
<thead>
<tr>
<th>Type of Instrument</th>
<th>1980</th>
<th>1990</th>
<th>2000</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate stocks (market value)</td>
<td>1,601</td>
<td>4,146</td>
<td>17,627</td>
<td>21,363</td>
</tr>
<tr>
<td>Residential mortgages</td>
<td>1,106</td>
<td>2,886</td>
<td>5,463</td>
<td>9,863</td>
</tr>
<tr>
<td>Corporate bonds</td>
<td>366</td>
<td>1,008</td>
<td>2,230</td>
<td>6,436</td>
</tr>
<tr>
<td>U.S. government securities</td>
<td>407</td>
<td>1,653</td>
<td>2,184</td>
<td>4,359</td>
</tr>
<tr>
<td>(marketable long-term)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. government agency securities</td>
<td>193</td>
<td>435</td>
<td>1,616</td>
<td>6,199</td>
</tr>
<tr>
<td>State and local government bonds</td>
<td>310</td>
<td>870</td>
<td>1,192</td>
<td>2,925</td>
</tr>
<tr>
<td>Bank commercial loans</td>
<td>459</td>
<td>818</td>
<td>1,091</td>
<td>1,175</td>
</tr>
<tr>
<td>Consumer loans</td>
<td>355</td>
<td>813</td>
<td>536</td>
<td>679</td>
</tr>
<tr>
<td>Commercial and farm mortgages</td>
<td>352</td>
<td>829</td>
<td>1,214</td>
<td>2,463</td>
</tr>
</tbody>
</table>

# Financial Intermediaries

<table>
<thead>
<tr>
<th>Type of Intermediary</th>
<th>1980</th>
<th>1990</th>
<th>2000</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Depository institutions (banks)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial banks</td>
<td>1,481</td>
<td>3,334</td>
<td>6,469</td>
<td>12,670</td>
</tr>
<tr>
<td>Savings and loan associations and mutual savings banks</td>
<td>792</td>
<td>1,365</td>
<td>1,218</td>
<td>2,157</td>
</tr>
<tr>
<td>Credit unions</td>
<td>67</td>
<td>215</td>
<td>441</td>
<td>1,005</td>
</tr>
<tr>
<td><strong>Contractual savings institutions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life insurance companies</td>
<td>464</td>
<td>1,367</td>
<td>3,136</td>
<td>6,035</td>
</tr>
<tr>
<td>Fire and casualty insurance companies</td>
<td>182</td>
<td>533</td>
<td>862</td>
<td>1,527</td>
</tr>
<tr>
<td>Pension funds (private)</td>
<td>504</td>
<td>1,629</td>
<td>4,355</td>
<td>7,966</td>
</tr>
<tr>
<td>State and local government retirement funds</td>
<td>197</td>
<td>737</td>
<td>2,293</td>
<td>4,846</td>
</tr>
<tr>
<td><strong>Investment intermediaries</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finance companies</td>
<td>205</td>
<td>610</td>
<td>1,140</td>
<td>1,474</td>
</tr>
<tr>
<td>Mutual funds</td>
<td>70</td>
<td>654</td>
<td>4,435</td>
<td>11,527</td>
</tr>
<tr>
<td>Money market mutual funds</td>
<td>76</td>
<td>498</td>
<td>1,812</td>
<td>2,678</td>
</tr>
</tbody>
</table>


<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 and thrift institutions</td>
<td>Charters and examines the books of federally-chartered commercial banks and thrift institutions; 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 and insurance companies</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 $250,000 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 and systemically important financial institutions; sets reserve requirements for all banks</td>
</tr>
</tbody>
</table>
Key Distinctions

- Primary Markets vs. Secondary Markets: Examples? Definitions?
  Important for Demand: Flows << Outstanding quantities.

- Debt Markets vs. Equity Markets: Examples? Definitions?

  How do Money Markets relate to the “Market for Money”?

- Exchanges vs. Over-the-Counter Markets: Definitions? Examples?

- Direct vs. Indirect Finance: Legal/institutional definition.
  Some intermediaries essentially replicate direct finance (e.g., index funds) – then economically unimportant.
Financial Innovation

• Perspective on chapter 2: The Financial System is always changing.
  
  *When you study current institutions, study them as examples that teach you about economic incentives that shape the system.*

• Competitive pressures due to fundamental technical and economic changes
  - Individual investing: shift from specific stocks to Mutual Funds to ETFs
  - Securitization: Liquidity and diversification – overdone?
  - Globalization: Aging populations in developed countries.

• Competitive pressures to “innovate around” costly government regulations.
  - Examples: MBS tranches designed for ratings; special purpose vehicles
    
    => *Regulators must be vigilant; rule-avoidance is tolerable only if the rule is bad.*

Economic Question #1: Why is the Financial System important?

1. Includes payment system – vital and sensitive to disruption.

2. Economic growth requires investment – investment needs financing.
   - History of financial crises: Subprime mortgage crisis 2007-08;
     The Great Depression; Japan in the 1990s; Mexico 1995.
   - History of financial repression: credit controls, allocations, regulations.
     => in normal times: Don’t take efficient financing for granted.

3. Personal finance – mistakes are costly.
Economic Question #2: Why do Financial Intermediaries matter?

• Good question! Why not rely on markets? Much of intermediation is similar to transactions that could be done on markets. Possible answers:

1. Transactions Cost. Examples: Mutual funds, ETFs.
   Convenient but not essential – do these institutions “matter”?

2. Risk sharing. Example: Diversification—in loans, credit cards etc.
   Known risks can be transferred to markets (pre-2007: CLO, CDO, ABS)

   Problem: Someone must have incentives to produce reliable information.
   • Intermediaries = answer to asymmetric information: collect information about borrowers; make loan decisions; profit from bearing credit risks.
     - Strong incentives to screen borrowers – mitigate adverse selection.
     - Strong incentives to monitor borrowers – mitigate moral hazard.
   • Securitization: Package loans into securities to diversify default risks and provides liquidity. Problem: weak incentives to produce information.
Economic Question #3: What motivates Financial Regulation?

- Asymmetric information #1: Financial intermediaries are also borrowers.
  
  Who can produce credible information about intermediaries?
  - Depositors themselves: Costly. Lack of information => Bank runs.
  - Markets: Partly (credit ratings). Incentives distorted by “Too-Big-To-Fail”.
  - Regulation: avoids duplication of effort; efficiency argument if threat of no-bailouts is not credible. Deposit insurance to avoid bank runs (FDIC).

- Asymmetric information #2: Financial markets can be manipulated.
  - Motivates regulations against fraud, insider trading, front-running (SEC).
    => Financial markets are not “free markets”. Legal framework matters.

- Arguments against regulation: Costly, subject to abuse, blocks innovation.
  => Financial history = Cycles of regulation and deregulation.

[Notes on Mishkin Ch.2 - P.11]

• Boom in house prices until 2006. Financed by mortgage-backed securities (MBS)

• Collapse of major financial institution as MBS prices fell:
  - Bear Stearns (Mar’08): top-5 investment bank; unable to refinance overnight Repo loans – assets sold to JP Morgan, with Federal Reserve assistance.
  - Countrywide Financial (Jul’08): #1 mortgage lender.
  - Lehman Brothers (9/14/08) – bankrupt. Merrill Lynch sold to Bank of America
  - Prime Reserve fund “breaks the buck.” Run on money market funds.
  - Goldman & Morgan Stanley convert to bank holding companies.
Responses to the Financial Crisis

• Direct policy responses:
  - Federal Reserve expands discount lending (Dec.’07); invokes emergency rules starts credit programs for non-banks (Mar.’08)
  - TARP (Troubled Asset Relief Program) Oct.’08: increase in bank capital.
  - Pres. Obama’s “stimulus” (Feb.’09): fiscal expansion, $800billion.

• New financial regulations (2010 Dodd-Frank Act):
  - Financial Stability Oversight Council headed by Treasury secretary, nine members including Fed chair. Monitors institutions Too-Big-To-Fail.
  - Consumer Financial Protection Bureau – regulator inside the Fed.
  - Restrictions on proprietary trading by banks

• Markets responses: “Back to basics” in lending. Tighter credit standards for mortgages and other credit. No demand for securitization.
Related Questions

- Why did a decline in house prices have such catastrophic consequences?
  - Risky financing: banks/investment banks used Repo market to finance MBS
    Repo = overnight loan, technically sale followed by next-day repurchase
    Repo borrowers relied on refinancing. Surprise: Run on non-banks.
  - Misjudgments about diversification: mortgage pools were split into tranches;
    top tier is safe if risks are idiosyncratic, non-systematic.
  - The “Too-Big-To-Fail” problem – distorted market signals (premiums, ratings)

- Why did government allow these problems to persist?
  - Political support for home ownership – bipartisan policy goal.
  - Mandates for low-income lending; e.g. 1977 Community Reinvestment Act.

- How can we revive private mortgage markets?
  - Mostly government-run or guaranteed: FHA, FNMA, Freddie Mac.

- Will the new regulations prevent the next crisis?