CHAPTER 1

THE INVESTMENT ENVIRONMENT
THE INVESTMENT ENVIRONMENT

- Real Assets versus Financial Assets
- Financial Markets and the Economy
- Clients of the Financial System
The Investment Environment

- The Environment Responds to Clientele Demand
- Markets and Market Structure
- Ongoing Trends
REAL ASSETS VERSUS FINANCIAL ASSETS

The material wealth of a society is determined ultimately by the productive capacity of its economy—the goods and services that can be provided to its members. This productive capacity is a function of the real assets of the economy: the land, buildings, knowledge, and machines that are used to produce goods and the workers whose skills are necessary to use those resources.
REAL ASSSTS VERSUS FINANCIAL ASSETS

- Together, physical and “human” assets generate the entire spectrum of output produced and consumed by the society.
In contrast to such real assets are financial assets such as stocks or bonds. These assets, per se, do not represent a society’s wealth. Shares of stock are no more than sheets of paper or, more likely, computer entries and do not directly contribute to the productive capacity of the economy.
Instead, financial assets contribute to the productive capacity of the economy indirectly, because they allow for separation of the ownership and management of the firm and facilitate the transfer of funds to enterprises with attractive investment opportunities.
REAL ASSSTS VERSUS FINANCIAL ASSETS

- Financial assets certainly contribute to the wealth of the individuals or firms holding them. This is because financial assets are *claims* to the income generated by real assets or claims on income from the government.
REAL ASSETS VERSUS FINANCIAL ASSETS

When the real assets used by a firm ultimately generate income, the income is allocated to investors according to their ownership of the financial assets, or securities, issued by the firm.
Bondholders, for example, are entitled to a flow of income based on the interest rate and par value of the bond. Equityholders or stockholders are entitled to any residual income after bondholders and other creditors are paid.
REAL ASSETS VERSUS FINANCIAL ASSETS

- In this way the values of financial assets derive from and depend on the values of the underlying real assets of the firm.
REAL ASSETS VERSUS FINANCIAL ASSETS

- Real assets produce goods and services, whereas financial assets define the allocation of income or wealth among investors.
REAL ASSETS VERSUS FINANCIAL ASSETS

- Individuals can choose between consuming their current endowments of wealth today and investing for the future. When they invest for the future, they may choose to hold financial assets.
REAL ASSETS VERSUS FINANCIAL ASSETS

- The money a firm receives when it issues securities (sells them to investors) is used to purchase real assets.
- Ultimately, then, the returns on a financial asset come from the income produced by the real assets that are financed by the issuance of the security.
REAL ASSSTS VERSUS FINANCIAL ASSETS

- In this way, it is useful to view financial assets as the means by which individuals hold their claims on real assets in well-developed economies.
REAL ASSETS VERSUS FINANCIAL ASSETS

- Most of us cannot personally own auto plants (a real asset), but we can hold \textit{shares} of General Motors or Ford (financial assets), which provide us with income derived from the production of automobiles.
REAL ASSETS VERSUS FINANCIAL ASSETS

- Real and financial assets are distinguished operationally by the balance sheets of individuals and firms in the economy.
- Whereas real assets appear only on the asset side of the balance sheet, financial assets always appear on both sides of balance sheets.
REAL ASSETS VERSUS FINANCIAL ASSETS

- Your financial claim on a firm is an asset, but the firm’s issuance of that claim is the firm’s liability.
- When we aggregate over all balance sheets, financial assets will cancel out, leaving only the sum of real assets as the net wealth of the aggregate economy.
Another way of distinguishing between financial and real assets is to note that financial assets are created \textit{and destroyed} in the ordinary course of doing business.
REAL ASSETS VERSUS FINANCIAL ASSETS

- For example, when a loan is paid off, both the creditor’s claim (a financial asset) and the debtor’s obligation (a financial liability) cease to exist.

- In contrast, real assets are destroyed only by accident or by wearing out over time.
The distinction between real and financial assets is apparent when we compare the composition of national wealth in the United States, presented in Table 1.1, with the financial assets and liabilities of U.S. households shown in Table 1.2.
REAL ASSETS VERSUS FINANCIAL ASSETS

- National wealth consists of structures, equipment, inventories of goods, and land. (A major omission in Table 1.1 is the value of “human capital”—the value of the earnings potential of the work force.)
### Table 1.1 Domestic Net Worth

<table>
<thead>
<tr>
<th>Assets</th>
<th>$ Billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real estate</td>
<td>$19,111</td>
</tr>
<tr>
<td>Equipment and software</td>
<td>3,142</td>
</tr>
<tr>
<td>Inventories</td>
<td>1,264</td>
</tr>
<tr>
<td>Consumer durables</td>
<td>2,914</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$26,431</strong></td>
</tr>
</tbody>
</table>

Note: Column sums may differ from total because of rounding error.

REAL ASSETS VERSUS FINANCIAL ASSETS

- Table 1.2 includes financial assets such as bank accounts, corporate equity, bonds, and mortgages.
<table>
<thead>
<tr>
<th>Assets</th>
<th>$ Billion</th>
<th>% Total</th>
<th>Liabilities and Net Worth</th>
<th>$ Billion</th>
<th>% Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Real assets</strong></td>
<td></td>
<td></td>
<td><strong>Liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real estate</td>
<td>$14,351</td>
<td>29.7%</td>
<td>Mortgages</td>
<td>$5,798</td>
<td>12.0%</td>
</tr>
<tr>
<td>Consumer durables</td>
<td>2,914</td>
<td>6.0</td>
<td>Consumer credit</td>
<td>1,706</td>
<td>3.5</td>
</tr>
<tr>
<td>Other</td>
<td>122</td>
<td>0.3</td>
<td>Bank and other loans</td>
<td>321</td>
<td>0.7</td>
</tr>
<tr>
<td>Total real assets</td>
<td>$17,387</td>
<td>35.9%</td>
<td>Other</td>
<td>493</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td>$8,319</td>
<td>17.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Financial assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deposits</td>
<td>$4,895</td>
<td>10.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life insurance reserves</td>
<td>915</td>
<td>1.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pension reserves</td>
<td>8,349</td>
<td>17.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate equity</td>
<td>5,035</td>
<td>10.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equity in noncorp. business</td>
<td>4,972</td>
<td>10.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mutual fund shares</td>
<td>2,840</td>
<td>5.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal trusts</td>
<td>842</td>
<td>1.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt securities</td>
<td>2,402</td>
<td>5.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>761</td>
<td>1.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total financial assets</strong></td>
<td>$31,009</td>
<td>64.1</td>
<td><strong>Net worth</strong></td>
<td>$40,078</td>
<td>82.8</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$48,396</td>
<td>100.0%</td>
<td></td>
<td>$48,396</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Note: Column sums may differ from total because of rounding error.
Persons in the United States tend to hold their financial claims in an indirect form. In fact, only about 40% of the adult U.S. population holds shares directly. The claims of most individuals on firms are mediated through institutions that hold shares on their behalf: institutional investors such as pension funds, insurance companies, mutual funds, and endowment funds.
Table 1.3 shows that today approximately half of all U.S. equity is held by institutional investors.
<table>
<thead>
<tr>
<th>Sector</th>
<th>Share Ownership, $ Billions</th>
<th>% Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private pension funds</td>
<td>$1,591.3</td>
<td>11.7%</td>
</tr>
<tr>
<td>State and local pension funds</td>
<td>1,100.3</td>
<td>8.1</td>
</tr>
<tr>
<td>Insurance companies</td>
<td>990.4</td>
<td>7.3</td>
</tr>
<tr>
<td>Mutual and closed-end funds</td>
<td>2,470.4</td>
<td>18.1</td>
</tr>
<tr>
<td>Bank personal trusts</td>
<td>206.2</td>
<td>1.5</td>
</tr>
<tr>
<td>Foreign investors</td>
<td>1,524.4</td>
<td>11.2</td>
</tr>
<tr>
<td>Households and nonprofit organizations</td>
<td>5,471.8</td>
<td>40.2</td>
</tr>
<tr>
<td>Other</td>
<td>270.4</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$13,625.2</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>


28
We stated earlier that real assets determine the wealth of an economy, whereas financial assets merely represent claims on real assets. Nevertheless, financial assets and the markets in which they trade play several crucial roles in developed economies. Financial assets allow us to make the most of the economy’s real assets.
Consumption Timing

- Some individuals in an economy are earning more than they currently wish to spend. Others—for example, retirees—spend more than they currently earn.

- How can you shift your purchasing power from high-earnings periods to low-earnings periods of life? One way is to “store” your wealth in financial assets.
Consumption Timing

- In high-earnings periods, you can invest your savings in financial assets such as stocks and bonds. In low-earnings periods, you can sell these assets to provide funds for your consumption needs.
Consumption Timing

- By so doing, you can shift your consumption over the course of your lifetime, thereby allocating your consumption to periods that provide the greatest satisfaction.
Consumption Timing

- Thus financial markets allow individuals to separate decisions concerning current consumption from constraints that otherwise would be imposed by current earnings.
 Allocation of Risk

- Virtually all real assets involve some risk. When GM builds its auto plants, for example, its management cannot know for sure what cash flows those plants will generate.
Allocation of Risk

- Financial markets and the diverse financial instruments traded in those markets allow investors with the greatest taste for risk to beat that risk while other less-risk-tolerant individuals can, to a greater extent, stay on the sidelines.
Allocation of Risk

- For example, if GM raises the funds to build its auto plant by selling both stocks and bonds to the public, the more optimistic, or risk-tolerant, investors buy shares of stock in GM.
Allocation of Risk

- The more conservative individuals can buy GM bonds, which promise to provide a fixed payment.
- The stockholders bear most of the business risk, but reap potentially higher rewards.
Allocation of Risk

- Thus capital markets allow the risk that is inherent to all investments to be borne by the investors most willing to bear that risk.
This allocation of risk also benefits the firms that need to raise capital to finance their investments. When investors can self-select into security types with risk-return characteristics that best suit their preferences, each security can be sold for the best possible price. This facilitates the process of building the economy’s stock of real assets.
Today, with global markets and large-scale production, the size and capital requirements of firms have skyrocketed. For example, General Electric lists on its balance sheet about $44 billion of property, plant, and equipment. Corporations of such size simply could not exist as owner-operated firms.
Separation of Ownership and Management

- General Electric actually has more than one-half million stockholders, whose ownership stake in the firm is proportional to their holdings of shares.
Separation of Ownership and Management

* Such a large group of individuals obviously cannot actively participate in the day-to-day management of the firm. Instead, they elect a board of directors, which in turn hires and supervises the management of the firm.
Separation of Ownership and Management

- This structure means that the owners and managers of the firm are different. This gives the firm a stability that the owner-managed firm cannot achieve.
Separation of Ownership and Management

- For example, if some stockholders decide they no longer wish to hold shares in the firm, they can sell their shares to other investors, with no impact on the management of the firm.
Separation of Ownership and Management

- Thus financial assets and the ability to buy and sell those assets in financial markets allow for easy separation of ownership and management.
Separation of Ownership and Management

How can all of the disparate owners of the firm, ranging from large pension funds holding thousands of shares to small investors who may hold only a single share, agree on the objectives of the firm?
Separation of Ownership and Management

- Again, the financial markets provide some guidance. All may agree that the firm’s management should pursue strategies that enhance the value of their shares. Such policies will make all shareholders wealthier and allow them all to better pursue their personal goals, whatever those goals might be.
Separation of Ownership and Management

- Do managers really attempt to maximize firm value? It is easy to see how they might be tempted to engage in activities not in the best interest of the shareholders.
Separation of Ownership and Management

- For example, they might engage in empire building or avoid risky projects to protect their own jobs or overconsume luxuries such as corporate jets, reasoning that the cost of such perquisites is largely borne by the shareholders.
These potential conflicts of interest are called **agency problems** because managers, who are hired as agents of the shareholders, may pursue their own interests instead.

Several mechanisms have evolved to mitigate potential agency problems.
Separation of Ownership and Management

First, compensation plans tie the income of managers to the success of the firm. A major part of the total compensation of top executives is typically in the form of stock options, which means that the managers will not do well unless the stock price increases, benefiting shareholders.
Separation of Ownership and Management

- Of course, we’ve learned more recently that overuse of options can create its own agency problem. Options can create an incentive for managers to manipulate information to prop up a stock price temporarily, giving them a chance to cash out before the price returns to a level reflective of the firm’s true prospects. More on this shortly.
Separation of Ownership and Management

- Second, while boards of directors are sometimes portrayed as defenders of top management, they can, and in recent years increasingly do, force out management teams that are underperforming.
Separation of Ownership and Management

- Third, outsiders such as security analysts and large institutional investors such as pension funds monitor firms closely and make the life of poor performers at the least uncomfortable.
Separation of Ownership and Management

- Finally, bad performers are subject to the threat of takeover. If the board of directors is lax in monitoring management, unhappy shareholders in principle can elect a different board.
Separation of Ownership and Management

- They do this by launching a proxy contest in which they seek to obtain enough proxies (i.e., rights to vote the shares of other shareholders) to take control of the firm and vote in another board. However, this threat is usually minimal. Shareholders who attempt such a fight have to use their own funds, while management can defend itself using corporate coffers. Most proxy fights fail.
Separation of Ownership and Management

- The real takeover threat is from other firms. If one firm observes another underperforming, it can acquire the underperforming business and replace management with its own team. The stock price should rise to reflect the prospects of improved performance, which provides incentive for firms to engage in such takeover activity.
A Crisis in Corporate Governance

- Nevertheless, neither monitoring nor market discipline is perfect, and most observers agree that boards have not been sufficiently diligent in monitoring management.
A Crisis in Corporate Governance

- Despite these mechanisms to align incentives of shareholders and managers, the 3 years between 2000 and 2002 were filled with a seemingly unending series of scandals that collectively point to a crisis in corporate governance.
- These episodes suggest that agency and incentive problems are far from solved.
A Crisis in Corporate Governance

- Most (but not all) of the scandals fell into three broad categories:
  - manipulation of financial data to misrepresent the actual condition of the firm
  - systematically misleading and overly optimistic research reports put out by stock market analysts
A Crisis in Corporate Governance

- allocations of initial public offerings to corporate executives as a quid pro quo for personal favors or the promise to direct future business back to the manager of the IPO
A Crisis in Corporate Governance

- Perhaps the underlying theme that ties these scandals together is distorted incentives that tilted decisions toward short-term payoffs rather than long-term value.
Accounting Scandals

- The spate of accounting scandals is symbolized by Enron and its auditor Arthur Andersen.
- Enron used so-called special purpose entities to hide massive amounts of debt, inflate reported profits, and funnel massive profits to corporate insiders.
- Arthur Andersen was convicted for obstructing justice by shredding documents.
Accounting Scandals

- One reason this sort of manipulation paid is that executives commonly were compensated with potentially massive stock options. Even if the stock price could be propped up by misleading information only for a short period, this could give option holders enough time to cash out before the firm’s true prospects were revealed.
Accounting Scandals

- Table 1.4 lists some of the largest stock option payoffs in history: not all were of questionable propriety, but they do illustrate the temptation to manage information about the company even if the market can be fooled only temporarily.
Table 1.4  Largest Option Exercises by Heads of Major U.S. Companies, 1997–2001

<table>
<thead>
<tr>
<th>Executive</th>
<th>Company</th>
<th>Year of Exercise</th>
<th>Payout ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lawrence Ellison</td>
<td>Oracle</td>
<td>2001</td>
<td>$706</td>
</tr>
<tr>
<td>Michael Eisner</td>
<td>Walt Disney</td>
<td>1998</td>
<td>570</td>
</tr>
<tr>
<td>Michael Dell</td>
<td>Dell Computer</td>
<td>2000</td>
<td>233</td>
</tr>
<tr>
<td>Sanford Weill</td>
<td>Citigroup</td>
<td>1997</td>
<td>220</td>
</tr>
<tr>
<td>Thomas Siebel</td>
<td>Siebel Systems</td>
<td>2001</td>
<td>175</td>
</tr>
<tr>
<td>Stephen Case</td>
<td>AOL Time Warner</td>
<td>1997</td>
<td>158</td>
</tr>
<tr>
<td>John Chambers</td>
<td>Cisco Systems</td>
<td>2000</td>
<td>156</td>
</tr>
<tr>
<td>Gerald Levin</td>
<td>AOL Time Warner</td>
<td>2000</td>
<td>153</td>
</tr>
</tbody>
</table>

What about the auditors who were supposed to be the watchdogs of the firms? Here too, incentives were skewed. Recent changes in business practice made the consulting arm of these firms more lucrative than the auditing function.
Accounting Scandals

- For example, Andersen earned more money in 2000 by consulting for Enron than by auditing it; it would not be surprising to see that Andersen, and other auditors, might be lenient in their auditing work to protect their consulting contracts.
Wall Street stock analysts regularly publish research reports on a wide range of firms along with buy or sell recommendations. Yet only the smallest fraction of firms (less than 2%) were assigned sell recommendations and, as it turns out, many firms given buy recommendations were privately called dogs (or worse) by these market analysts.
Analyst Scandals

- Rather than provide unbiased reports, analysts were pressed into the service of the investment banking business.
Analyst Scandals

- The most notorious of these episodes involved Jack Grubman of Salomon Smith Barney (part of Citigroup) who allegedly upgraded his rating of AT&T to win Salomon a role as co-manager of AT&T’s massive stock sale.
Analyst Scandals

- Again, conflicts of interest and distorted incentives—in short, agency problems—played a role in these scandals. Analysts were commonly compensated not for the accuracy or insightfulness of their analysis, but for their role in garnering investment banking business for their firms. And the payoffs could be huge.
Initial Public Offerings

- Firms that wish to raise funds by selling stock to the public for the first time hire investment banking firms to manage their initial public offering, or IPO.
- The investment banker assesses demand for the offering and allocated shares to interested investors.
Initial Public Offerings

Because IPOs typically provide excellent initial returns, these allocations are highly coveted. Some investment banking firms that managed IPOs made a practice of awarding allocations to favored clients in what resembled kickback schemes.
Initial Public Offerings

• For example, CSFB allocated shares with the expectation that recipients would direct stock trading business to its brokerage arm. Other allocations were apparently granted to corporate executives in return for their promise of investment banking business.
A Crisis in Corporate Governance

- These episodes indicate that many investment bankers were more focused on short-term profits than long-term reputations. In the boom years, there was considerable temptation to focus on the short term, investment bankers earned about $10 billion in fees by issuing $245 billion in new securities in just the 1½ year ending in the first quarter of 2000.
A Crisis in Corporate Governance

We will discuss in Chapter 3 some of the specific regulatory responses to these scandals. For the most part, however, they are focused on re-aligning incentives by:

- severing the link between stock market analyst compensation and investment banking business
A Crisis in Corporate Governance

- making corporate executives and board members personally responsible for the accuracy of financial reports
- mandating a greater role for disinterested outsiders on the board of directors
A Crisis in Corporate Governance

- creating a new oversight board to oversee the auditing of public companies
- prohibiting auditors from providing various other services
- beefing up the budget of the SEC
One proposal that has not been yet endorsed by regulators is for firms to move from option-based to stock-based compensation with added restrictions that executives hold shares for longer periods. The goal would be to align their incentives with the long-term success of the firm and to eliminate the incentive to curry short-term advantage at the cost of long-term performance.
We can classify the clientele of the investment environment into three groups:

- the household sector
- the corporate sector
- the government sector
This scheme is not perfect; it excludes some organizations such as not-for-profit agencies and has difficulty with some hybrids such as unincorporated or family-run businesses. Nevertheless, from the standpoint of capital markets, the three-group classification is useful.
Households constantly make economic decisions concerning activities such as work, job training, retirement planning, and savings versus consumption. We will take most of these decisions as being already made and focus on financial decisions specifically. Essentially, we concern ourselves only with what financial assets households desire to hold.
The Household Sector

- Even this limited focus, however, leaves a broad range of issues to consider. Most households are potentially interested in a wide array of assets, and the assets that are attractive can vary considerably depending on the household’s economic situation.
The Household Sector

- Even a limited consideration of taxes and risk preferences can lead to widely varying asset demands, and this demand for variety is, as we shall see, a driving force behind financial innovation.
The Household Sector

- Taxes lead to varying asset demands because people in different tax brackets “transform” before-tax income to after-tax income at different rates.
The Household Sector

- For example, high-tax-bracket investors naturally will seek securities that are exempt from state and local taxes. This, in turn, creates demand for portfolios that specialize in tax-exempt bonds of one particular state.
The Household Sector

- In other words, differential tax status creates “tax clienteles” that in turn give rise to demand for a range of assets with a variety of tax implications. The demand of investors encourages entrepreneurs to offer such portfolios (for a fee, of course!).
The Household Sector

Risk considerations also create demand for a diverse set of investment alternatives. At an obvious level, differences in risk tolerance create demand for assets with a variety of risk-return combinations. Individuals also have particular hedging requirements that contribute to diverse investment demands.
The Household Sector

Consider, for example, a resident of New York City who plans to sell her house and retire to Miami, Florida, in 15 years. Such a plan seems feasible if real estate prices in the two cities do not diverge before her retirement. How can one hedge Miami real estate prices now, short of purchasing a home there immediately rather than at retirement?
The Household Sector

- One way to hedge the risk is to purchase securities that will increase in value if Florida real estate becomes more expensive. This creates a hedging demand for an asset with a particular risk characteristic.
The Household Sector

- Such demands lead profit-seeking financial corporations to supply the desired goods: observe Florida real estate investment trusts (REITs) that allow individuals to invest in securities whose performance is tied to Florida real estate prices.
If Florida real estate becomes more expensive, the REIT will increase in value. The individual’s loss as a potential purchaser of Florida real estate is offset by her gain as an investor in that real estate. This is only one example of how a myriad of risk-specific assets are demanded and created by agents in the financial environment.
The Household Sector

- Risk motives also lead to demand for ways that investors can easily diversify their portfolios and even out their risk exposure. We will see that these diversification motives inevitably give rise to mutual funds that offer small individual investors the ability to invest in a wide range of stocks, bonds, precious metals, and virtually all other financial instruments.
The Business Sector

- Whereas household financial decisions are concerned with how to invest money, businesses typically need to raise money to finance their investments in real assets: plant, equipment, technological know-how, and so forth.
The Business Sector

- Table 1.5 presents balance sheets of U.S. corporations as a whole. The heavy concentration in real assets is obvious. Broadly speaking, there are two ways for businesses to raise money—they can borrow it, either from banks or directly from households by issuing bonds, or they can “take in new partners” by issuing stocks, which are ownership shares in the firm.
<table>
<thead>
<tr>
<th>Assets</th>
<th>$ Billion</th>
<th>% Total</th>
<th>Liabilities</th>
<th>$ Billion</th>
<th>% Total</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td><strong>Liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>17.2%</td>
<td>Bonds and mortgages</td>
<td>$3,447</td>
<td>18.9%</td>
</tr>
<tr>
<td>Real estate</td>
<td>4,760</td>
<td>26.1%</td>
<td>Bank loans</td>
<td>772</td>
<td>4.2%</td>
</tr>
<tr>
<td>Inventories</td>
<td>1,264</td>
<td>6.9%</td>
<td>Other loans</td>
<td>675</td>
<td>3.7%</td>
</tr>
<tr>
<td><strong>Total real assets</strong></td>
<td>$9,166</td>
<td>50.2%</td>
<td>Trade debt</td>
<td>1,289</td>
<td>7.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td>3,515</td>
<td>19.2%</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td></td>
<td></td>
<td><strong>Total liabilities</strong></td>
<td>$9,698</td>
<td>53.1%</td>
</tr>
<tr>
<td><strong>Financial assets</strong></td>
<td></td>
<td></td>
<td><strong>Net worth</strong></td>
<td>8,573</td>
<td>46.9%</td>
</tr>
<tr>
<td>Deposits and cash</td>
<td>$556</td>
<td>3.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketable securities</td>
<td>503</td>
<td>2.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer credit</td>
<td>53</td>
<td>0.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade credit</td>
<td>1,729</td>
<td>9.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>6,264</td>
<td>34.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total financial assets</strong></td>
<td>$9,106</td>
<td>49.8%</td>
<td><strong>Net worth</strong></td>
<td>8,573</td>
<td>46.9%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$18,271</td>
<td>100.0%</td>
<td><strong>TOTAL</strong></td>
<td>$18,271</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Note: Column sums may differ from total because of rounding error.
The Business Sector

- Businesses issuing securities to the public have several objectives. First, they want to get the best price possible for their securities. Second, they want to market the issues to the public at the lowest possible cost.

- This has two implications.
The Business Sector

- First, businesses might want to farm out the marketing of their securities to firms that specialize in such security issuance, because it is unlikely that any single firm is in the market often enough to justify a full-time security issuance division. Issue of securities requires immense effort. The security issue must be brought to the attention of the public.
The Business Sector

- Buyers then must subscribe to the issue, and records of subscriptions and deposits must be kept. The allocation of the security to each buyer must be determined, and subscribers finally must exchange money for securities. These activities clearly call for specialists.
The complexities of security issuance have been the catalyst for creation of an investment banking industry to cater to business demands. We will return to this industry shortly.
The second implication of the desire for low-cost security issuance is that most businesses will prefer to issue fairly simple securities that require the least extensive incremental analysis and, correspondingly, are the least expensive to arrange.
The Business Sector

- Such a demand for simplicity or uniformity by business-sector security issuers is likely to be at odds with the household sector’s demand for a wide variety of risk-specific securities.
The Business Sector

- This mismatch of objectives gives rise to an industry of middlemen who act as intermediaries between the two sectors, specializing in transforming simple securities into complex issues that suit particular market niches.
The Government Sector

- Like businesses, governments often need to finance their expenditures by borrowing. Unlike businesses, governments cannot sell equity shares: they are restricted to borrowing to raise funds when tax revenues are not sufficient to cover expenditures.
The Government Sector

- They also can print money, of course, but this source of funds is limited by its inflationary implications, and so most governments usually try to avoid excessive use of the printing press.
Governments have a special advantage in borrowing money because their taxing power makes them very creditworthy and, therefore, able to borrow at the lowest rates. The financial component of the federal government’s balance sheet is presented in Table 1.6. Notice that the major liabilities are government securities, such as Treasury bonds or Treasury bills.
<table>
<thead>
<tr>
<th>Assets</th>
<th>$ BILLION</th>
<th>% TOTAL</th>
<th>Liabilities</th>
<th>$ BILLION</th>
<th>% TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposits, currency, gold</td>
<td>111</td>
<td>19.3%</td>
<td>Currency</td>
<td>25</td>
<td>0.6%</td>
</tr>
<tr>
<td>Mortgages</td>
<td>76</td>
<td>13.1%</td>
<td>Government securities</td>
<td>3,433</td>
<td>79.4%</td>
</tr>
<tr>
<td>Loans</td>
<td>199</td>
<td>34.7%</td>
<td>Insurance and pension reserves</td>
<td>801</td>
<td>18.5%</td>
</tr>
<tr>
<td>Other</td>
<td>189</td>
<td>32.9%</td>
<td>Other</td>
<td>62</td>
<td>1.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>575</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>Total</strong></td>
<td><strong>4,321</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

Note: Column sums may differ from total because of rounding error.

The Government Sector

- A second, special role of the government is in regulating the financial environment. Some government regulations are relatively innocuous. For example, the Securities and Exchange Commission is responsible for disclosure laws that are designed to enforce truthfulness in various financial transactions.
When enough clients demand and are willing to pay for a service, it is likely in a capitalistic economy that a profit-seeking supplier will find a pay to provide and charge for that service. This is the mechanism that leads to the diversity of financial markets. Let us consider the market responses to the disparate demands of the three sectors.
Recall that the financial problem facing households is how best to invest their funds. The relative smallness of most households makes direct investment intrinsically difficult. A small investor obviously cannot advertise in the local newspaper his or her willingness to lend money to businesses that need to finance investments.
Instead, **financial intermediaries** such as banks, investment companies, insurance companies, or credit unions naturally evolve to bring the two sectors together.

Financial intermediaries sell their own liabilities to raise funds that are used to purchase liabilities of other corporations.
Financial Intermediation

- For example, a bank raises funds by borrowing (taking in deposits) and lending that money to (purchasing the loans of) other borrowers. The spread between the interest rates paid to depositors and the rates charged to borrowers is the source of the bank’s profit.
In this way, lenders and borrowers do not need to contact each other directly. Instead, each goes to the bank, which acts as an intermediary between the two.
Financial Intermediation

- The problem of matching lenders with borrowers is solved when each comes independently to the common intermediary. The convenience and cost savings the bank offers the borrowers and lenders allow it to profit from the spread between the rates on its loans and the rates on its deposits.
In other words, the problem of coordination creates a market niche for the bank as intermediary. Profit opportunities alone dictate that banks will emerge in a trading economy.
Financial Intermediation

- Financial intermediaries are distinguished from other businesses in that both their assets and their liabilities are overwhelmingly financial.

- Table 1.7 shows that the balance sheets of financial institutions include very small amounts of real assets.
# Table 1.7  Balance Sheet of Financial Institutions

<table>
<thead>
<tr>
<th>Assets</th>
<th>$ Billion</th>
<th>% Total</th>
<th>Liabilities</th>
<th>$ Billion</th>
<th>% Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Real assets</strong></td>
<td></td>
<td></td>
<td><strong>Liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment and structures</td>
<td>$ 528</td>
<td>3.1%</td>
<td>Deposits</td>
<td>$ 3,462</td>
<td>20.1%</td>
</tr>
<tr>
<td>Land</td>
<td>99</td>
<td>0.6%</td>
<td>Mutual fund shares</td>
<td>1,564</td>
<td>9.1%</td>
</tr>
<tr>
<td><strong>Total tangibles</strong></td>
<td>$ 628</td>
<td>3.6%</td>
<td>Life insurance reserves</td>
<td>478</td>
<td>2.8%</td>
</tr>
<tr>
<td><strong>Financial assets</strong></td>
<td></td>
<td></td>
<td>Pension reserves</td>
<td>4,651</td>
<td>27.0%</td>
</tr>
<tr>
<td>Deposits and cash</td>
<td>$ 364</td>
<td>2.1%</td>
<td>Money market securities</td>
<td>1,150</td>
<td>6.7%</td>
</tr>
<tr>
<td>Government securities</td>
<td>3,548</td>
<td>20.6%</td>
<td>Bonds and mortgages</td>
<td>1,589</td>
<td>9.2%</td>
</tr>
<tr>
<td>Corporate bonds</td>
<td>1,924</td>
<td>11.2%</td>
<td>Other</td>
<td>3,078</td>
<td>17.8%</td>
</tr>
<tr>
<td>Mortgages</td>
<td>2,311</td>
<td>13.4%</td>
<td><strong>Total liabilities</strong></td>
<td>$15,971</td>
<td>92.6%</td>
</tr>
<tr>
<td>Consumer credit</td>
<td>894</td>
<td>5.2%</td>
<td><strong>Net worth</strong></td>
<td>1,281</td>
<td>7.4%</td>
</tr>
<tr>
<td>Other loans</td>
<td>1,803</td>
<td>10.4%</td>
<td><strong>TOTAL</strong></td>
<td>$17,252</td>
<td>100.0%</td>
</tr>
<tr>
<td>Corporate equity</td>
<td>3,310</td>
<td>19.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2,471</td>
<td>14.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total financial assets</strong></td>
<td>16,625</td>
<td>96.4%</td>
<td></td>
<td>1,281</td>
<td>7.4%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$17,252</td>
<td>100.0%</td>
<td></td>
<td>$17,252</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Note: Column sums may differ from total because of rounding error.

Financial Intermediation

- Compare Table 1.7 with Table 1.5, the balance sheet of the nonfinancial corporate sector. The contrast arises precisely because intermediaries are middlemen, simply moving funds from one sector to another. In fact, from a bird’s-eye view, this is the primary social function of such intermediaries, to channel household savings to the business sector.
Financial Intermediation

- Other examples of financial intermediaries are investment companies, insurance companies, and credit unions. All these firms offer similar advantages, in addition to playing a middleman role.
Financial Intermediation

- First, by pooling the resources of many small investors, they are able to lend considerable sums to large borrowers.

- Second, by lending to many borrowers, intermediaries achieve significant diversification, meaning they can accept loans that individually might be risky.
Financial Intermediation

- Third, intermediaries build expertise through the volume of business they do. One individual trying to borrow or lend directly would have much less specialized knowledge of how to structure and execute the transaction with another party.
Financial Intermediation

- *Investment companies*, which pool together and manage the money of many investors, also arise out of the “smallness problem.” Here, the problem is that most household portfolios are not large enough to be spread across a wide variety of securities.
Financial Intermediation

- It is very expensive in terms of brokerage and trading costs to purchase one or two shares of many different firms, and it clearly is more economical for stocks and bonds to be purchased and sold in large blocks. This observation reveals a profit opportunity that has been filled by *mutual funds* offered by many investment companies.
Mutual funds pool the limited funds of small investors into large amounts, thereby gaining the advantages of large-scale trading; investors are assigned a prorated share of the total funds according to the size of their investment. This system gives small investors advantages that they are willing to pay for in the form of a management fee to the mutual fund operator.
Financial Intermediation

- Mutual funds are logical extensions of an investment club or cooperative, in which individuals themselves team up and pool funds. The fund sets up shop as a firm that accepts the assets of many investors, acting as an investment agent on their behalf.
Financial Intermediation

- Again, the advantages of specialization are sufficiently large that the fund can provide a valuable service and still charge enough for it to clear a handsome profit.
Financial Intermediation

- Economies of scale also explain the proliferation of analytic services available to investors. Newsletters, databases, and brokerage house research services all exploit the fact that the expense of collection information is best borne by having a few agents engage in research to be sold to a large client base.
This setup arises naturally. Investors clearly want information, but, with only small portfolios to manage, they do not find it economical to incur the expense of collecting it. Hence a profit opportunity emerges: A firm can perform this service for many clients and charge for it.
We said before that firms raise much of their capital by selling securities such as stocks and bonds to the public. Because these firms do not do so frequently, however, investment banking firms that specialize in such activities are able to offer their services at a cost below that of running an in-house security issuance division.
Investment Banking

- **Investment bankers** such as Merrill Lynch, Citigroup or Goldman. Sachs advised the issuing firm on the prices it can charge for the securities issued market conditions, appropriate interest rates, and so forth. Ultimately, the investment banking firm handles the marketing of the security issue to the public.
Investment Banking

- Investment bankers can provide more than just expertise to security issuers. Because investment bankers are constantly in the market, assisting one firm or another to issue securities, it is in the banker’s interest to protect and maintain its reputation for honesty.
Investment Banking

- The investment banker will suffer along with investors if it turns out that securities it has underwritten have been marketed to the public with overly optimistic or exaggerated claims, for the public will not be so trusting the next time that investment banker participates in a security sale.
As we have seen, this lesson was re-learned with considerable pain in the boom years of the late 1990s and the subsequent high-tech crash of 2000-2002. Too many investment bankers seemed to get caught up in the flood of money that could be made by pushing stock issues to an overly eager public.
The failure of many of these offerings soured the public on both the stock market and the firms managing the IPOs. At least some on Wall Street belatedly recognize that they squandered a valuable asset—reputational capital—and there are signs that they recognize as well that the conflicts of interest that engendered these deals are not only wrong but are bad for business as well.
The investment banker’s effectiveness and ability to command future business thus depends on the reputation it has established over time.

The economic incentives to maintain a trustworthy reputation are not nearly as strong for firms that plan to go to the securities markets only once or very infrequently.
Therefore, investment bankers (whose reputations are intact) can provide a certification role—a “seal of approval”—to security issuers. Their investment in reputation is another type of scale economy that arises from frequent participation in the capital markets.
Financial Innovation and Derivatives

- The investment diversity desired by households is far greater than most businesses have a desire to satisfy. Most firms find it simpler to issue “plain vanilla” securities, leaving exotic variants to others who specialize in financial markets. This, of course, creates a profit opportunity for innovative security design and repackaging that investment bankers are only too happy to fill.
Consider for example the astonishing changes in the mortgage markets since 1970, when mortgage pass-through securities were first introduced by the Government National Mortgage Association (GNMA, or Ginnie Mae). These pass-throughs aggregate individual home mortgages into relatively homogenous pools.
For example, the pool might total $100 million of 10 percent, 30-year conventional mortgages. The purchaser of the pool receives all monthly interest and principal payments made on the pool. The banks that originated the mortgages continue to service them but no longer own the mortgage investments; these have been passed through to the GNMA security holders.
Financial Innovation and Derivatives

- Pass-through securities were a tremendous innovation in mortgage markets. The *securitization* of mortgages meant that mortgages could be traded just like other securities in national financial markets.
Financial Innovation and Derivatives

- Availability of funds no longer depended on local credit conditions; with mortgage pass-throughs trading in national markets, mortgage funds could flow from any region to wherever demand was greatest.
Financial Innovation and Derivatives

- Although some aspects of these securities are relatively complex, the lesson is that security demand elicited a market response. The waves of product development in the last two decades are responses to perceived profit opportunities created by as-yet unsatisfied demands for securities with particular risk, return, tax and timing attributes.
Financial Innovation and Derivatives

- As the investment banking industry becomes ever more sophisticated, security creation and customization become more routine.
- This discussion leads to the notion of primitive versus derivative securities.
Financial Innovation and Derivatives

- A **primitive security** offers returns based only on the status of the issuer.

- For example, bonds make stipulated interest payments depending only on the solvency of the issuing firm. Dividends paid to stockholders depend as well on the board of directors’ assessment of the firm’s financial position.
Financial Innovation and Derivatives

- **Derivative securities** yield returns that depend on additional factors pertaining to the prices of other assets.

- For example, the payoff to stock options depends on the price of the underlying stock.
Financial Innovation and Derivatives

- Much of the innovation in security design may be viewed as the continual creation of new types of derivative securities from the available set of primitive securities.
Derivatives have become an integral part of the investment environment. One use of derivatives, perhaps the primary use, is to hedge risks. However, derivatives also can be used to take highly speculative positions. Moreover, when complex derivatives are misunderstood, firms that believe they are hedging might in fact be increasing their exposure to various sources of risk.
Financial Innovation and Derivatives

- While occasional large losses attract considerable attention, they are in fact the exception to the more common use of derivatives as risk-management tools. Derivatives will continue to play an important role in portfolio management and the financial system. We will return to this topic later in the text.
Response to Taxation and Regulation

- Many financial innovations are direct responses to government attempts either to regulate or to tax investments of various sorts. We can illustrate with several examples.
Response to Taxation and Regulation

- We have already noted how Regulation Q, which limited bank deposit interest rates, spurred the growth of the money market industry. It also was one reason for the birth of the Eurodollar market. Eurodollars are dollar-denominated time deposits in foreign accounts.
Because Regulation Q did not apply to these accounts, many U.S. banks and foreign competitors established branches in London and other cities outside the United States, where they could offer competitive rates outside the jurisdiction of U.S. regulators.
Response to Taxation and Regulation

- The growth of the Eurodollar market was also the result of another U.S. regulation: reserve requirements. Foreign branches were exempt from such requirements and were thus better able to compete for deposits.
Response to Taxation and Regulation

- Ironically, despite the fact that Regulation Q no longer exists, the Eurodollar market continues to thrive, thus complicating the lives of U.S. monetary policymakers.
Response to Taxation and Regulation

- Another innovation attributable largely to tax avoidance motives is the long-term deep discount, or zero-coupon, bond.

- Zero-coupon bonds, often called zeros, make no annual interest payments, instead providing returns to investors through a redemption price that is higher than the initial sales price.
Corporations were allowed for tax purposes to impute an implied interest expense based on this built-in price appreciation. The government’s technique for imputing tax-deductible interest expenses, however, proved to be too generous in the early years of the bonds’ lives, so corporations issued these bonds widely to exploit the resulting tax benefit.
Response to Taxation and Regulation

- Ultimately, the Treasury caught on and amended its interest imputation procedure, and the flow of new zeros dried up.
Response to Taxation and Regulation

Meanwhile, however, the financial markets had discovered that zeros were useful ways to lock in a long-term investment return. When the supply of primitive zero-coupon bonds ended, financial innovators created derivatives zeros by purchasing U.S. Treasury bonds, “stripping” off the coupons, and selling them separately as zeros.
Response to Taxation and Regulation

- There are plenty of other examples. The Eurobond market came into existence as a response to changes in U.S. tax law. Financial futures markets were stimulated by abandonment in the early 1970s of the system of fixed exchange rates and by new federal regulations that overrode state laws treating some financial futures as gambling arrangements.
Response to Taxation and Regulation

- The general tendency is clear: Tax and regulatory pressures on the financial system very often lead to unanticipated financial innovations when profit-seeking investors make an end run around the government’s restrictions. The constant game of regulatory catch-up sets off another flow of new innovations.
We can differentiate four types of markets:

- direct search markets
- brokered markets
- dealer markets
- auction markets
A **direct search market** is the least organized market. Here, buyers and sellers must seek each other out directly.

One example of a transaction taking place in such a market would be the sale of a used refrigerator in which the seller advertises for buyers in a local newspaper.
Direct Search Markets

- Such markets are characterized by sporadic participation and low-priced and nonstandard goods. It does not pay most people or firms to seek profits by specializing in such an environment.
The next level of organization is a *brokered market*. In markets where trading in a good is sufficiently active, brokers can find it profitable to offer search services to buyers and seller.
Brokered Markets

- A good example is the real estate market, where economies of scale in searches for available homes and for prospective buyers make it worthwhile for participants to pay brokers to conduct the searches for them.

- Brokers in given markets develop specialized knowledge on valuing assets traded in that given market.
Brokered Markets

- An important brokered investment market is the *primary market*, where new issues of securities are offered to the public.
- In the primary market investment bankers act as brokers; they seek out investors to purchase securities directly from the issuing corporation.
Another brokered market is that for large block transactions, in which very large blocks of stock are bought or sold. These blocks are so large (technically more than 10,000 shares but usually much larger) that brokers or “block houses” often are engaged to search directly for other large traders, rather than bringing the trade directly to the stock exchange where relatively smaller investors trade.
Dealer Markets

- When trading activity in a particular type of asset increases, *dealer markets* arise. Here, dealers specialize in various assets, purchasing them for their own inventory and selling them for a profit from their inventory.
- Dealers, unlike brokers, trade assets for their own accounts.
Dealer Markets

- The dealer’s profit margin is the “bid-asked” spread—the difference between the price at which the dealer buys from and sells to inventory.

- Dealer markets save traders on search costs because market participants can easily look up prices at which they can buy from or sell to dealers.
Dealer Markets

- Obviously, a fair amount of market activity is required before dealing in market is an attractive source of income. The over-the-counter securities market is one example of a dealer market.
Dealer Markets

- Trading among investors of already issued securities is said to take place in secondary markets. Therefore, the over-the-counter market is one example of a secondary market.
- Trading in secondary markets does not affect the outstanding amount of securities; ownership is simply transferred from one investor to another.
Auction Markets

- The most integrated market is an auction market, in which all transactors in a good converge at one place to bid on or offer a good. The New York Stock Exchange (NYSE) is an example of an auction market.
Auction Markets

- An advantage of auction markets over dealer markets is that one need not search to find the best price for a good. If all participants converge they can arrive at mutually agreeable prices and thus save the bid-asked spread.
Auction Markets

- Continuous auction markets (as opposed to periodic auctions such as in the art world) require very heavy and frequent trading to cover the expense of maintaining the market.
Auction Markets

- For this reason, the NYSE and other exchanges set up listing requirements, which limit the shares traded on the exchange to those of firms in which sufficient trading interest is likely to exist.

- The organized stock exchanges are also secondary markets. They are organized for investors to trade existing securities among themselves.
ONGING TRENDS

Several important trends have changed the contemporary investment environment:

- Globalization
- Securitization
- Financial engineering
- Revolution in information and communication networks
Globalization

- If a wider range of investment choices can benefit investors, why should we limit ourselves to purely domestic assets?
- **Globalization** requires efficient communication technology and the dismantling of regulatory constraints. These tendencies in worldwide investment environments have encouraged international investing in recent years.
Globalization

- U.S. investors commonly participate in foreign investment opportunities in several ways:
  - (1) they can purchase foreign securities using American Depository Receipts (ADRs), which are domestically traded securities that represent claims to shares of foreign stocks.
  - (2) they can purchase foreign securities that are offered in dollars.
Globalization

- (3) they can buy mutual funds that invest internationally.
- (4) they can buy derivative securities with payoffs that depend on prices in foreign security markets.
Globalization

- U.S. investors who wish to purchase foreign shares can often do so using American Depositary Receipts.
- Brokers who act as intermediaries for such transactions purchase an inventory of stock of some foreign issuer. The broker then issues an ADR that represents a claim to some number of those foreign shares held in inventory.
Globalization

- The ADR is denominated in dollars and can be traded on U.S. stock exchanges but is in essence no more than a claim on a foreign stock.
Globalization

- Thus, from the investor’s point of view, there is no more difference between buying a French versus a U.S. stock than there is in holding a Massachusetts-based stock compared with a California-based stock. Of course, the investment implications may differ.
Globalization

- A variation on ADRs are WEBS (World Equity Benchmark Shares), which use the same depository structure to allow investors to trade *portfolios* of foreign stocks in selected country.

- Each WEBS security tracks the performance of an index of share returns for a particular country.
Globalization

- WEBS can be traded by investors just like any other security (they trade on the American Stock Exchange), and thus enable U.S. investors to obtain diversified portfolios of foreign stocks in one fell swoop.
Globalization

- A giant step toward globalization took place in 1999, when 11 European countries established a new currency called the euro. The idea behind the euro is that a common currency will facilitate trade and encourage integration of markets across national boundaries.
Securitization

- Until recently, financial intermediaries were the only means to channel funds from national capital markets to smaller local ones. Securitization, however, now allows borrowers to enter capital markets directly. In this procedure pools of loans typically are aggregated into pass-through securities, such as mortgage pool pass-throughs.
Securitization

- Then, investors can invest in securities backed by those pools. The transformation of these pools into standardized securities enables issuers to deal in a volume large enough that they can bypass intermediaries.
- Today, most conventional mortgages are securitized by government-sponsored mortgage agencies.
Another example of securitization is the collateralized automobile receivable (CAR), a pass-through arrangement for car loans. The loan originator passes the loan payments through to the holder of the CAR. Aside from mortgages, the biggest asset-backed securities are for credit card debt, car loans, home equity loans, student loans, and debt of firms.
Securitization

- Figure 1.2 documents the composition and growth of the asset-backed securities market in the United States.
Figure 1.2
Asset-backed securities outstanding by major types of credit

Source: Bond Market Association.
Securitization

- Securitization also has been used to allow U.S. banks to unload their portfolios of shaky loans to developing nations. So-called Brady bonds (named after Nicholas Brady, former secretary of the Treasury) were formed by securitizing bank loans to several countries in shaky fiscal condition. The U.S. banks exchange their loans to developing nations for bonds backed by those loans.
Securitization

- The payments that the borrowing nation would otherwise make to the lending bank are directed instead to the holder of the bond. These bonds are traded in capital markets. Therefore, if they choose, banks can remove these loans from their portfolios simply by selling the bonds. In the event of a foreign default, the holders of the Brady bonds would have claim to the collateral.
Disparate investor demands elicit a supply of exotic securities. Creative security design often calls for bundling primitive and derivative securities into one composite security.
For example, Boise Cascade, with the assistance of Goldman, Sachs and other underwriters, has issued a hybrid security with features of preferred stock combined with various call and put option contracts. The security is structured as preferred stock for 4 years, at which time it is converted into common stock of the company.
However, the number of shares of common stock into which the security can be converted depends on the price of the stock in 4 years, which means that the security holders are exposed to risk similar to the risk they would bear if they held option positions on the firm.
Financial Engineering

- Quite often, creating a security that appears to be attractive requires **unbundling** of an asset.

- For example, a mortgage pass-through certificate can be unbundled into two classes. Class 1 receives only principal payments from the mortgage pool, whereas class 2 receives only interest payments.
The process of bundling and unbundling is called financial engineering, which refers to the creation and design of securities with custom-tailored characteristics, often regarding exposures to various sources of risk.
Financial Engineering

- Financial engineers view securities as bundles of (possibly risky) cash flows that may be carved up and repackaged according to the needs or desires of traders in the security markets.
- Many of the derivative securities we spoke of earlier in the chapter are products of financial engineering.
The Internet and other advances in computer networking have transformed many sectors of the economy and few more so than the financial sector. These advances will be treated in greater detail in Chapter 3.
Computer Networks

- we can mention a few important innovations:
  - online trading
  - online information dissemination
  - automated trade crossing
  - the tentative beginnings of Internet investment banking
Online trading connects a customer directly to a brokerage firm. Online brokerage firms can process trades more cheaply and therefore can charge lower commissions.

The average commission for an online trade is now below $20, compared to trades at full-service brokers that commonly run more than $100.
Electronic communication networks that allow direct trading among investors have exploded in recent years. These networks allow members to post buy or sell orders and to have those orders automatically matched up or “crossed” with orders of other traders in the system without benefit of an intermediary such as a securities dealer.
Firms that wish to sell new securities to the public almost always use the services of an investment banker. In 1995, Spring Street Brewing Company was the firm to sidestep this mechanism by using the Internet to sell shares directly to the public.
Computer Networks

- It posted a page on the World Wide Web to let investors know of its stock offering and successfully sold and distributed shares through its Internet site. Based on its success, it established its own Internet investment banking operation.
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- To date, such Internet investment banks have barely made an impact on the market, but they may augur changes in the future.