BANKING AND FINANCIAL INTERMEDIATION

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PLAN

- Lesson 1: Banks, Financial Intermediaries, and Central Banks
- Lesson 2: Bank Accounting
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- Lesson 5: Liquidity Risk and Liquidity Management
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- Lesson 10: Credit Lines, and liquidity insurance
- Lesson 11: Prudential and Monetary Policy
- Lesson 12: Asset Management

REFERENCES

- Saunders A, Cornett, M (2008) Financial Institutions Management (McGraw-Hill)
- Bessis J (2010) Risk Management in Banking (John Wiley)

EVALUATION

- Final Exam 100 %

BANKS, FINANCIAL INTERMEDIARIES, AND CENTRAL BANKS

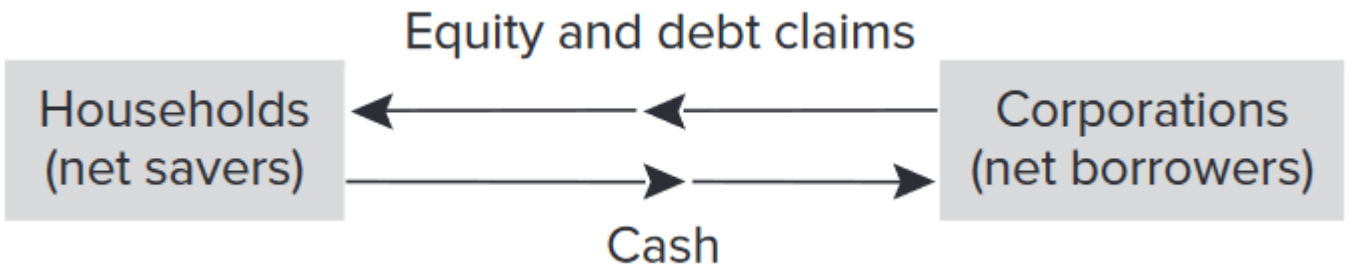
Chapter 1-6 Saunders and Cornett (2008) : Depository Institutions, Finance Companies, Investment Banks, Mutual Funds, and Insurance Companies.

WHY ARE FINANCIAL INSTITUTIONS SPECIAL?

- Banks originally operated as a full-service industry (commercial banking, investment banking, asset management, insurance…)
- Starting in 1930, and specially in the 1970s and 1980s new unregulated financial services industries sprang-up.
- Nowadays regulatory barriers, technology and financial innovation make financial services being offered again under the umbrella of large holding companies

COMPANY	SERVICE
J.P. Morgan Chase	Commercial Bank
J.P. Morgan Chase Bank	Investment Bank
J.P. Morgan Securities	Securities and Mutual Funds
J.P. Morgan Insurance Agency	Insurance

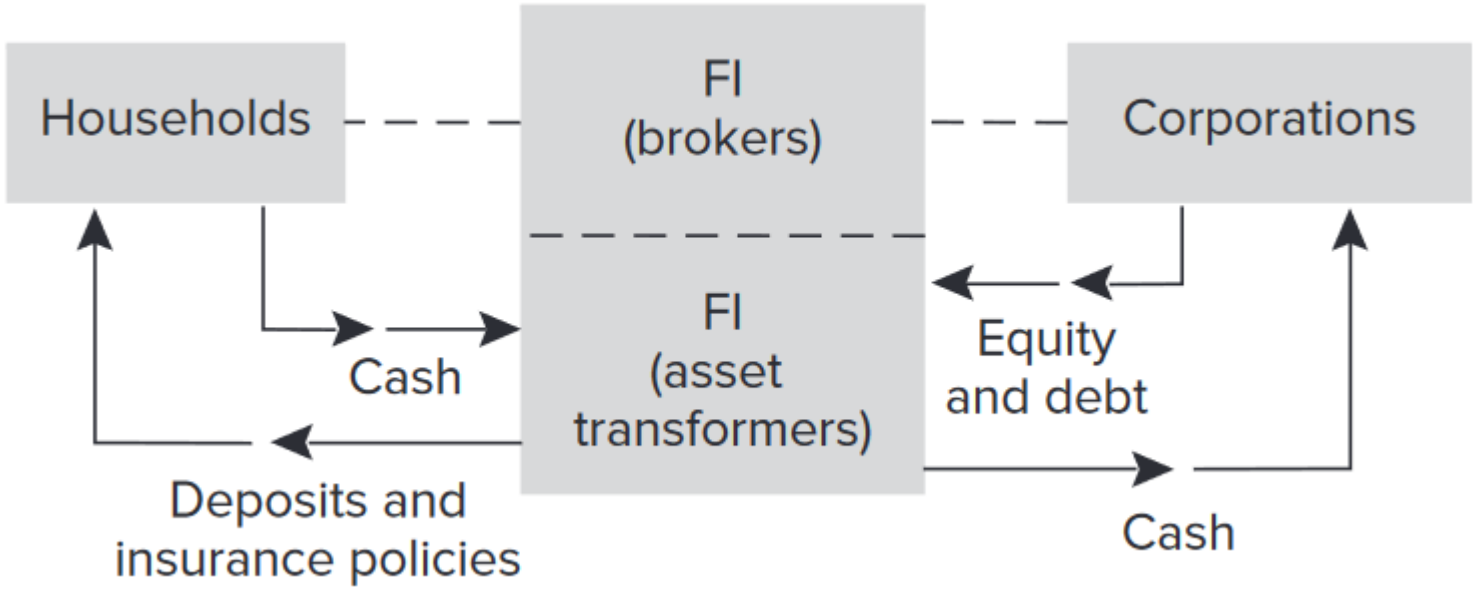
A WORLD WITH OUT FINANCIAL INSTITUTIONS



Because of (1) monitoring costs, (2) liquidity costs, and (3) risks the household is not willing to face, the average household saver may view direct investment as an unattractive proposition.

FINANCIAL INSTITUTIONS SERVE AS INTERMEDIARIES

Financial Institutions = Financial Intermediaries = **FI**



WHAT ARE THE SPECIAL FEATURES OF FINANCIAL INSTITUTIONS?

- **INFORMATION COSTS:** The aggregation of funds in an FI provides greater incentive to collect information about customers and to monitor their actions. Larger FI can do this at a lower average cost.
- **LIQUIDITY AND PRICE RISK:** FIs provide financial claims to household savers with superior liquidity attributes and with lower risk.
- **TRANSACTION COST SERVICES:** Economies of scale in transaction costs.
- **MATURITY INTERMEDIATION:** FIs can better bear the risk of maturity mismatch between assets and liabilities.
- **TRANSMISSION OF MONETARY POLICY:** Depository institutions are the conduit through which monetary policy actions by the country's central bank.
- **CREDIT ALLOCATION**: FIs are often viewed as the major, and sometimes only, source of financing for particular sectors of the economy, such as farming, small business, and residential real estate.
- **INTERGENERATIONAL WEALTH TRANSFERS**: FIs, especially life insurance companies and pension funds, provide savers with the ability to transfer wealth from one generation to the next.
- **PAYMENT SERVICES**: The efficiency with which depository institutions provide payment services such as check clearing directly benefits the economy.
- **DENOMINATION INTERMEDIATION**: FIs, such as mutual funds, allow small investors to overcome constraints to buying assets imposed by large minimum denomination size.

THE ROLE OF FINANCIAL INTERMEDIARIE: REDUCE INFORMATION COSTS

One problem faced by an average saver directly investing in a commercial firm's financial claims is the high cost of information collection. Household savers must monitor the actions of firms in a timely and complete fashion after purchasing securities. Failure to monitor exposes investors to **AGENCY COSTS**, that is, the risk that the firm's owners or managers will take actions with the saver's money contrary to the promises contained in the covenants of its securities contracts.

1. FI's role as Delegated Monitor
2. FI's role as Information Producer

THE TRANSMISSION OF MONETARY POLICY

- M1 and M2 definitions contain Bank's deposit contracts.
- One reason for deposit insurance and bailouts during the financial crisis was so that central banks could implement aggressive monetary policy actions to combat collapsing financial markets.
- Monetary policy actions include open market operations (purchase and sell of securities), setting the interest rate on the "lender of last resort", and setting reserve requirements.

COMPOSITION OF FINANCIAL INSTITUTIONS

TABLE 1–2 Percentage Shares of Assets of Financial Institutions in the United States, 1860-2015

Sources: Randall Kroszner, "The Evolution of Universal Banking and Its Regulation in Twentieth Century America," chap. 3 in Anthony Saunders and Ingo Walter, eds., *Universal Banking Financial System Design Reconsidered* (Burr Ridge, IL: Irwin, 1996); and Federal Reserve Board, "Flow of Fund Accounts," various issues. *www.federalreserve.gov*

	1860	1922	1929	1948	1960	1970	1980	2000	2005	2010	2015
Commercial banks	71.4%	63.3%	53.7%	54.5%	40.8%	42.6%	40.7%	30.5%	29.3%	32.8%	35.8%
Thrift institutions	17.8	13.9	14.0	12.0	21.0	23.0	25.0	10.1	10.2	7.3	6.7
Insurance companies	10.7	16.7	18.6	26.0	24.2	19.0	16.2	15.6	15.0	14.8	15.0
Investment companies	—	0.0	2.4	0.3	0.7	0.7	2.0	15.8	13.7	18.0	22.6
Pension funds	—	0.0	0.7	3.8	7.7	8.0	9.5	8.8	6.2	7.6	7.5
Finance companies	—	0.0	2.0	2.7	5.2	5.7	6.2	6.9	7.3	5.3	4.3
Securities brokers and dealers	0.0	5.3	8.1	0.7	0.4	0.7	0.3	12.1	17.3	13.4	6.3
Real estate investment trusts	—	—	—	—	0.0	0.3	0.1	0.2	1.0	0.8	1.8
Total (%)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total ($ trillions)	0.001	0.08	0.12	0.22	0.50	1.08	3.14	15.93	23.80	27.42	30.45

GLOBAL TREND: FEWER AND LARGER BANKS (2020)

Name	ASSETS (T USD)
Industrial and Commercial Bank of China (ICBC)	4.3
China Construction Bank Corp.	3.6
Agricultural Bank of China	3.5
JPMorgan Chase	3.38
Bank of China	3.2
Mitsubishi UFJ Financial Group	2.9
HSBC	2.7
Bank of America	2.43
BNP Paribas	2.42
Credit Agricole	2.25

NOTE: Accounting treatment affects the assets reported and therefore the ranking

DEPOSITORY INSTITUTIONS

- **COMMERCIAL BANKS:** Diversified institutions having a large concentration of residential mortgage assets but holding commercial and consumer loans as well.
- **SAVINGS INSTITUTIONS:** Focused on residential mortgage assets
- **CREDIT UNIONS:** Focuses on consumer loans funded with member deposits.

Depository Institutions

Assets	Liabilities and Equity
Loans	Deposits
Other assets	Other liabilities and equity

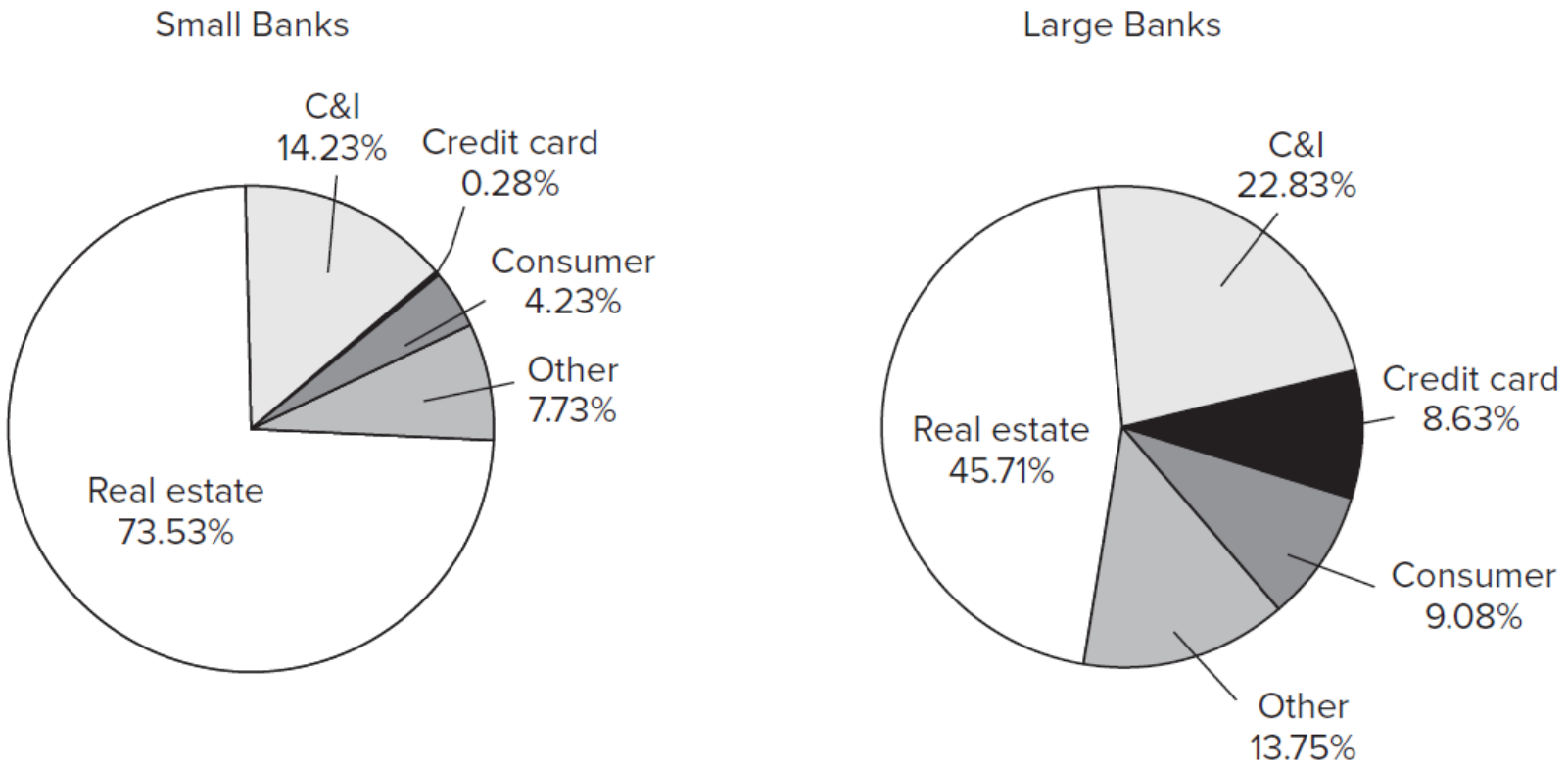
LARGEST DEPOSITORY INSTITUTIONS (2015)

TABLE 2–2
Largest Depository Institutions, 2015 (Banks and Savings Institutions Ranked by Total Assets as of 2015, in billions of dollars)

Source: Quarterly reports, 2015.

Company	Banking Assets	Holding Company Assets
1. J.P. Morgan Chase	$2,134.1	$2,448.0
2. Bank of America	1,629.5	2,152.0
3. Wells Fargo	1,629.5	1,720.6
4. Citigroup	1,337.5	1,829.4
5. U.S. Bancorp	414.0	419.1
6. PNC Financial Services Corp.	343.6	354.2
7. Bank of New York Mellon	343.6	395.3
8. State Street Corp.	289.4	294.6
9. Capital One	254.4	310.6
10. TD Bank	252.4	253.2

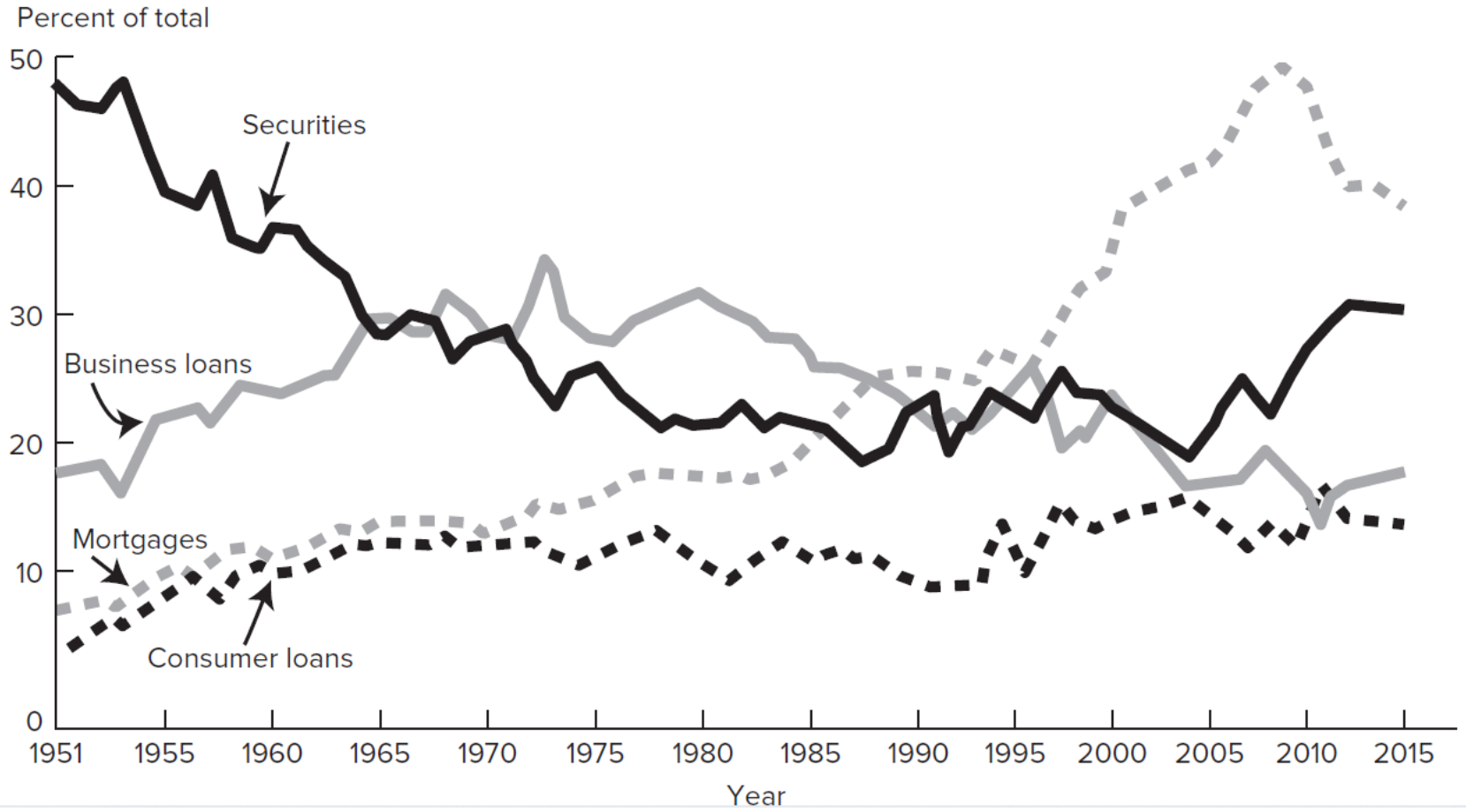
COMMERCIAL BANKS: LOAN PORTFOLIOS



Note: Small banks are defined as banks with assets less than $1 billion. Large banks are defined as banks with assets of $1 billion or more.

BALANCE SHEET

Source: Federal Deposit Insurance Corporation, Statistics on Depository Institutions. *www.fdic.gov*



BALANCE SHEET (ALL U.S. COMMERCIAL BANKS)

June 30, 2015 (in billions of dollars)

Assets				
Loans and securities				$11,722.4
Investment securities			$3,953.0	
U.S. government securities		$2,015.3		
Other		1,937.7		
Total loans			7,769.4	
Interbank loans		94.8		
Loans excluding interbank		7,674.6		
Commercial and industrial	$1,737.6			
Real estate	3,801.9			
Individual	1,301.2			
All other	945.9			
Less: Reserve for loan losses	112.0			
Total cash assets				1,770.0
Other assets				1,186.8
Total assets				14,679.2

LIABILITIES AND EQUITY

- Commercial Banks tend to have very high leverage
- Liabilities include mostly deposits and interbank loans
- Equity consists mainly of common and preferred stock, additional paid-in capital and retained earnings.
- Because of the relatively low cost of deposit funding, banks tend to hold equity close to the minimum levels set by regulators.
- Part of the TARP program of 2008–09 was the Capital Purchase Program intended to encourage U.S. financial institutions to build capital to increase the flow of financing to U.S. businesses and consumers and to support the U.S. economy.
- Under the program, the Treasury purchased more than $200 billion of senior preferred equity. The senior preferred shares rank senior to common stock should the bank be closed. In addition to capital injections received as part of the Capital Purchase Program, TARP provided additional emergency funding to Citigroup ($25 billion) and Bank of America ($20 billion). Through 2015, $245 billion of TARP capital injections had been allocated to DIs, of which $236.5 billion has been paid back plus a return of $34.6 billion in dividends and assessments to the government.

BALANCE SHEET (ALL U.S. COMMERCIAL BANKS)

June 30, 2015 (in billions of dollars)

Liabilities			
Total deposits			$11,108.4
Deposits held in foreign offices		$1,345.9	
Deposits held in domestic offices		9,762.5	
Transaction accounts	$1,750.5		
Nontransaction accounts	8,012.0		
Borrowings			1,578.2
Other liabilities			339.1
Total liabilities			13,025.7
Total equity capital			1,653.5

HOW TO AVOID BANKS FROM GOING BANKRUPT?

- As part of the 2010 Wall Street Reform and Consumer Protection Act, the largest banks are subject to annual stress tests, designed to ensure that the banks are properly capitalized.
- Scenarios used as part of the stress tests range from mild to calamitous, with the most extreme including a 5 percent decline in gross domestic product, an unemployment rate of 12 percent, and a volatile stock market that loses half its value.
- EU law requires the ECB to carry out stress tests on supervised banks at least once per year.

FINANCIAL SERVICE: FINANCE COMPANIES

- The main service provided by finance companies is lending (consumer, business, and mortgage).
- Finance Companies do not rely on deposits but instead on short-and long term debt as a source of funds.
- Finance Companies can lend to customers that depository institutions find too risky.

SOME HISTORY

- The first major finance company was originated during the Depression, when General Electric Corp. created General Electric Capital Corp. (GECC) as a means of financing appliance sales to cash-constrained customers who were unable to get installment credit from banks. Installment credit is a loan that is paid back to the lender with periodic payments (installments) consisting of varying amounts of interest and principal (e.g., auto loans, home mortgages, and student loans).
- GE Capital's consumer finance and banking businesses today provide millions of customers with loans, including credit card, personal, auto financing, and real estate loans.
- During the Financial Crisis its loan operations caused the price of equity of GE to drop by half, and as a non FDIC approved institution it was difficult to receive the FDIC temporary liquidity guarantee program (TLGP).

BALANCE SHEET

TABLE 3–1
Assets and Liabilities of U.S. Finance Companies, 2015

Source: Federal Reserve Board, December 2015. *www.federalreserve.gov*

	Billions of Dollars		Percent of Total Assets	
Assets				
Accounts receivable gross	$1,431.9		78.5%	
Consumer	881.0		48.3	
Business	416.9		22.9	
Real estate	134.0		7.3	
Less: Reserves for unearned income	(20.2)		(1.1)	
Less: Reserves for losses	(23.0)		(1.3)	
Accounts receivable net		$1,388.7		76.1%
Cash		132.9		7.3
Securities		79.6		4.4
All other		221.6		12.2
Total assets		$1,822.6		100.0%
Liabilities and Capital				
Bank loans		$149.6		8.2%
Commercial paper		121.0		6.7
Debt due to parent		153.6		8.4
Debt not elsewhere classified		967.3		53.1
All other liabilities		197.4		10.8
Capital, surplus, and undivided profits		233.9		12.8
Total liabilities and capital		$1,822.8		100.0%

TYPES OF FINANCE COMPANIES

- Sales Finance Institutions (e.g., Ford Motor Credit and Sears Roebuck Acceptance Corp.): Specialize in making loans to the customers of a particular retailer or manufacturer. Because sales finance institutions can frequently process loans faster and more conveniently (generally at the location of purchase) than depository institutions, this sector of the industry competes directly with depository institutions for consumer loans.
- Personal Credit Institutions: (e.g., HSBC Finance and AIG American General) specialize in making installment and other loans to consumers. Personal credit institutions will make loans to customers that depository institutions find too risky to lend to (due to low income or a bad credit history).
- Business Credit Institutions: (e.g., CIT Group and U.S. Bancorp Equipment Finance) are companies that provide financing to corporations, especially through equipment leasing and factoring, in which the finance company purchases accounts receivable from corporate customers.

TYPES OF FINANCE COMPANIES

- The industry is quite concentrated, with the largest 20 firms accounting for more than 65 percent of its assets. In addition, many of the largest finance companies, such as Ford Motor Credit Corp., tend to be wholly owned or captive subsidiaries of major manufacturing companies. A major role of a captive finance company is to provide financing for the purchase of products manufactured by the parent, as Ford Motor Credit Corp. does for cars.

Company Name	Total Receivables ($ millions)	Type of Finance Company	Ownership
Ally Financial	$105,173	Sales finance	NYSE-listed independent
American Express	18,401	Personal credit	NYSE-listed independent that also owns American Express Bank
Bank of America (credit card business)	98,445	Personal credit	Part of Bank of America
Capital One Financial	88,726	Personal credit	NYSE-listed independent that also owns Capital One Bank
CIT Group	20,448	Business credit	NYSE-listed independent
Citigroup (credit card business)	134,109	Personal credit	Part of Citigroup
Discover Financial Services	68,335	Personal credit	NYSE-listed independent
Ford Motor Credit Company	85,699	Sales finance	Captive of Ford
General Electric Capital Corporation	78,064	Sales finance and business credit	Captive of GE
HSBC Finance Corp.	19,475	Personal credit	Subsidiary of HSBC Holdings
J.P. Morgan Chase (credit card business)	126,979	Personal credit	Part of J.P. Morgan Chase
Synchrony Financial	63,520	Personal credit	NYSE-listed independent

LOAN SHARKS AND SUBPRIME LENDING

- Most finance companies that offer loans to consumers charge rates commensurate with the higher risk, and there are a few **LOAN SHARK** companies that prey on desperate consumers, charging exorbitant rates as high as 30 percent per year or more.
- Another case of a subprime lender is the payday lender. Payday lenders provide short-term cash advances that are often due when borrowers receive their next paycheck.
- The payday loan industry is regulated at the state level. As of 2015, 15 states had effectively banned payday lending. When not explicitly banned, laws that prohibit payday lending are usually in the form of usury limits. Payday lenders have succeeded in getting around usury laws in some states by forming relationships with nationally chartered banks based in a different state with no usury ceiling (such as South Dakota or Delaware).

FINANCE COMPANIES: MORTGAGES

- Since finance companies are not subject to as extensive regulations as are banks, finance companies are often willing to issue mortgages to riskier borrowers than commercial banks. They compensate for this additional risk by charging higher interest rates and fees.
- Mortgages can be made either directly or as **SECURITIZED MORTGAGE ASSETS.** Securitization of mortgages involves the pooling of a group of mortgages with similar characteristics, the removal of these mortgages from the balance sheet, and the subsequent sale of interests in the pool to secondary market investors.
- Securitization of mortgages results in the creation of mortgage-backed securities (e.g., government agency securities, collateralized mortgage obligations), which can be traded in secondary mortgage markets. While removed from its balance sheet, the finance company that originates the mortgage may still service the mortgage portfolio for a fee.

FINANCE COMPANIES: BUSINESS LOANS

- Business loans represent 28.5 percent of the loan portfolio of finance companies. Finance companies have several advantages over commercial banks in offering services to small business customers.
- First, as mentioned earlier, they are not subject to regulations that restrict the types of products and services they can offer.
- Second, because finance companies do not accept deposits, they have no bank-type regulators looking directly over their shoulders.
- Third, being in many cases subsidiaries of corporate-sector holding companies, finance companies often have substantial industry and product expertise.
- Fourth, as mentioned in regard to consumer loans, finance companies are more willing to accept risky customers than are commercial banks.
- Fifth, finance companies generally have lower overheads than banks have; for example, they do not need tellers or branches for taking deposits.

LIABILITIES AND EQUITY

- To finance asset growth, finance companies have relied primarily on short-term commercial paper and other debt (longer-term notes and bonds). Thus, management of liquidity risk is quite different from that in commercial banks that mostly rely on deposits.
- Finance companies also now rely less heavily on bank loans for financing.
- Unlike banks and thrifts, finance companies cannot issue deposits. Rather, to finance assets, finance companies rely heavily on short-term commercial paper, with many having direct sale programs in which commercial paper is sold directly to mutual funds and other institutional investors on a continuous day by-day basis.
- Indeed, finance companies are now the largest issuers in the short-term commercial paper market. Most commercial paper issues have maturities of 30 days or less, although they can be issued with maturities of up to 270 days.

SECURITIES FIRMS AND INVESTMENT BANKS

- Underwriting (securities firms) and brokerage services (investment banks)
- Securities firms and investment banks primarily help net suppliers of funds (e.g., households) transfer funds to net users of funds (e.g., businesses) at a low cost and with a maximum degree of efficiency.
- Securities firms and investment banks do not transform the securities issued by the net users of funds into claims that may be "more" attractive to the net suppliers of funds (e.g., banks and their creation of bank deposits and loans). Rather, they serve as brokers intermediating between fund suppliers and users.
- Investment banking involves the raising of debt and equity securities for corporations or governments. This includes the origination, underwriting, and placement of securities in money and capital markets for corporate or government issuers.
- Securities services involve assistance in the trading of securities in the secondary markets (brokerage services and/or market making).
- Investment banking also includes corporate finance activities such as advising on mergers and acquisitions (M&As), as well as advising on the restructuring of existing corporations.
- Securities trading and underwriting is a profit-generating activity that does not require FIs to actually hold or invest in the securities they trade or issue for their customers, except for very short periods either as part of their trading inventory or during the underwriting period for new issues.

THE REST OF THE INDUSTRY

- Regional securities firms that are often subdivided into large, medium, and small categories and concentrate on servicing customers in a particular region, e.g., New York or California.
- Specialized discount brokers that effect trades for customers on- or offline without offering investment advice or tips.
- Specialized electronic trading securities firms that provide a platform for customers to trade without the use of a broker.
- Venture capital firms that pool money from individual investors and other FIs (e.g., hedge funds, pension funds, and insurance companies) to fund relatively small and new businesses (e.g., in biotechnology).
- Other firms in this industry include research boutiques, floor specialists, companies with large clearing operations, and other firms that do not fit into one of the preceding categories.

INVESTMENT BANKING

- Investment banking refers to activities related to underwriting and distributing new issues of debt and equity.
- New issues can be either primary, the first-time issues of companies (sometimes called **IPOs** [initial public offerings]), or secondary issues (the new issues of seasoned firms whose debt or equity is already trading).

TABLE 4–3
Top Underwriters of Global Debt and Equity

Source: Thompson Reuters Deals Intelligence, 2015. *www.thompsonreuters.com*

	Full Year 2015	
Manager	**Amount (billions)**	**Market Share**
J.P. Morgan	$ 461.9	7.5%
Bank of America Merrill Lynch	392.4	6.4
Citigroup	388.2	6.3
Barclays	380.8	6.2
Morgan Stanley	326.2	5.3
Top ten	$3,313.6	53.7%
Industry total	$6,170.0	100.0%

	Full Year 2015	
Type	**Amount (billions)**	**Top-Ranked Manager**
Total debt	$5,299.9	J.P. Morgan
Convertible debt	90.1	J.P. Morgan
Investment-grade debt	2,641.4	J.P. Morgan
Mortgage-backed securities	447.8	Credit Suisse
Asset-backed securities	344.1	Citigroup
Common stock	779.9	Goldman Sachs
IPOs	188.4	Morgan Stanley
Syndicated loans	4,662.5	Bank of America Merrill Lynch

EXAMPLE

- An investment bank agrees to underwrite an issue of 20 million shares of stock for Murray Construction Corp. on a firm commitment basis (underwriter's agreement to assume all inventory risk). The investment bank pays $15.50 per share to Murray Construction Corp. for the 20 million shares of stock. It then sells those shares to the public for $16.35 per share. How much money does Murray Construction Corp. receive? What is the profit to the investment bank? If the investment bank can sell the shares for only $14.75, how much money does Murray Construction Corp. receive? What is the profit to the investment bank?

If $p = 16.35$

MCC receives

$\$15.50 \times 20{,}000{,}000 = \$310{,}000{,}000$

Profit to the investment bank

$(\$16.35 - \$15.50) \times 20{,}000{,}000 = \$17{,}000{,}000$

If $p = 14.75$

MCC receives

$\$15.50 \times 20{,}000{,}000 = \$310{,}000{,}000$

Profit to the investment bank

$(\$14.75 - \$15.50) \times 20{,}000{,}000 = -\$15{,}000{,}000$

EXAMPLE

- Suppose, instead, that the investment bank agrees to underwrite the 20 million shares on a best-efforts basis. The investment bank is able to sell 18.4 million shares for $15.50 per share, and it charges Murray Construction Corp. $0.375 per share sold. How much money does Murray Construction Corp. receive? What is the profit to the investment bank? If the investment bank can sell the shares for only $14.75, how much money does Murray Construction Corp. receive? What is the profit to the investment bank?

If $p = 15.50$

MCC Receives

$$(\$15.50 - \$0.375) \times 18{,}400{,}000 = \$278{,}300{,}000$$

Profit investment bank

$$(\$0.375) \times 18{,}400{,}000 = \$6{,}900{,}000$$

If $p = 14.75$

MCC Receives

$$(\$14.75 - \$0.375) \times 18{,}400{,}000 = \$264{,}500{,}000$$

Profit investment bank

$$(\$0.375) \times 18{,}400{,}000 = \$6{,}900{,}000$$

VENTURE CAPITAL

- A difficulty for new and small firms in obtaining debt financing from commercial banks is that CBs are generally not willing or able to make loans to new companies with no assets and business history.
- New and small firms often turn to investment banks (and other firms) that make venture capital investments to get capital financing as well as advice.
- Venture capital is a professionally managed pool of money used to finance new and often high-risk firms.
- Venture capital is generally provided to back an untried company and its managers in return for an equity investment in the firm.
- Rather, they purchase an equity interest in the firm that gives them the same rights and privileges associated with an equity investment made by the firm's other owners.
- As equity holders, venture capital firms are not generally passive investors.
- In contrast to institutional venture capital firms, angel venture capitalists (or angels) are wealthy individuals who make equity investments. Angel venture capitalists have invested much more in new and small firms than institutional venture capital firms.
- They normally look for high return/risk trade-off and an easy exit.

MARKET MAKING

- Market making involves creating a secondary market in an asset by a securities firm or investment bank. Thus, in addition to being primary dealers in government securities and underwriters of corporate bonds and equities, investment banks make a secondary market in these instruments.
- *Agency* transactions are two-way transactions on behalf of *customers,* for example, acting as a *stockbroker* or dealer for a fee or commission. On the NYSE, a market maker in a stock such as IBM may, upon the placement of orders by its customers, buy the stock at $190 from one customer and immediately resell it at $191 to another customer. The $1 difference between the buy and sell price is usually called the bid– ask spread and represents a large portion of the market maker's profit.
- In *principal* transactions, the market maker seeks to profit on the price movements of securities and takes either long or short inventory positions for its own account. (Or an inventory position may be taken to stabilize the market in the securities.) In the example above, the market maker would buy the IBM stock at $190 and hold it in its own portfolio in expectation of a price increase later on.

TRADING

- *Position trading* involves purchasing large blocks of securities on the expectation of a favorable price move. Position traders maintain long or short positions for intervals of up to several weeks or even months.
- *Pure arbitrage* entails buying an asset in one market at one price and selling it immediately in another market at a higher price. Pure arbitrage "locks in" profits that are available in the market. This profit position usually occurs with no equity investment, the use of only very short-term borrowed funds, and reduced transaction costs for securities firms. Pure arbitrageurs often attempt to profit from price discrepancies that may exist between the spot, or cash, price of a security and its corresponding futures price.
- *Risk arbitrage* involves buying securities in anticipation of some information release, such as a merger or takeover announcement or a Federal Reserve interest rate announcement.
- *Program trading* is defined by the NYSE as the simultaneous buying and selling of a portfolio of at least 15 different stocks valued at more than $1 million, using computer programs to initiate such trades.
- *Stock brokerage* involves the trading of securities on behalf of individuals who want to transact in the money or capital markets.
- *Electronic brokerage,* offered by major brokers, involves direct access via the Internet to the trading floor, therefore bypassing traditional brokers.

INVESTING

- Investing involves managing not only pools of assets such as closed- and open-end mutual funds but also pension funds in competition with life insurance companies.
- Securities firms can manage such funds either as agents for other investors or as principals for themselves. The objective in funds management is to choose asset allocations to beat some return–risk performance benchmark such as the S&P 500 index.
- Since this business generates fees that are based on the size of the pool of assets managed, it tends to produce a more stable flow of income than does either investment banking or trading.

CASH MANAGEMENT

- Investment banks offer bank deposit–like cash management accounts (CMAs) to individual investors and since the 1999 Financial Services Modernization Act, deposit accounts themselves.
- Most of these CMAs allow customers to write checks against some type of mutual fund account.
- The advantage of brokerage firm CMAs over commercial bank deposit accounts is that they make it easier to buy and sell securities. The broker can take funds out of the CMA account when an investor buys a security and deposit funds back into the CMA when the investor sells securities.

M&A, BACK-OFFICE AND OTHER SERVICES

- Investment banks are frequently involved in providing advice or assisting in mergers and acquisitions.
- Other services include custody and escrow services, clearance and settlement services, and research and other advisory services—for example, giving advice on divestitures and asset sales.

MUTUAL FUND AND HEDGE FUND COMPANIES

- Mutual funds and hedge funds are financial institutions that pool the financial resources of individuals and companies and invest in diversified portfolios of assets.
- An open ended mutual fund (the major type of mutual fund) continuously stands ready to sell new shares to investors and to redeem outstanding shares on demand at their fair market value.
- These funds provide opportunities for small investors to invest in financial securities and diversify risk. Mutual funds are also able to generate greater economies of scale by incurring lower transaction costs and commissions than are incurred when individual investors buy securities directly.
- Hedge funds are a type of investment pool that solicit funds from (wealthy) individuals and other investors (e.g., commercial banks) and invest these funds on their behalf. Hedge funds are similar to mutual funds in that they are pooled investment vehicles that accept investors' money and generally invest it on a collective basis. Investments in hedge funds, however, are restricted to more wealthy clients.

MUTUAL FUND AND HEDGE FUND COMPANIES

TABLE 5–1 Growth of Mutual Fund Industry, 1940-2015

Sources: Investment Company Institute, *2006 Investment Company Fact Book* (Washington, DC: Investment Company Institute, May 2006) and *Trends in Mutual Fund Investing*, various issues. *www.ici.org*

Year	Total Net Assets (billions)	Gross Sales (billions)	Redemptions (billions)	Net Sales (billions)	Number of Funds
2015	$15,944.6	$20,933.3	$20,808.8	$124.5	8,137
2012	13,052.2	17,022.0	16,620.6	401.4	7,588
2010	11,831.9	18,207.5	18,319.1	–111.6	7,580
2009	11,113.0	20,680.0	20,680.2	–0.2	7,684
2008	9,603.6	26,346.7	25,725.8	620.9	8,022
2007	12,001.5	23,471.7	22,353.4	1,118.3	8,026
2005	8,904.8	14,042.5	13,648.4	394.1	7,975
2000	6,964.6	11,109.4	10,586.6	522.8	8,155
1995	2,811.3	3,600.6	3,314.9	285.7	5,725
1990	1,065.2	1,564.8	1,470.8	94.0	3,079
1980	134.8	247.4	216.1	31.3	564
1970	47.6	4.6	3.0	1.6	361
1960	17.0	2.1	0.8	1.3	161
1950	2.5	0.5	0.3	0.2	98
1940	0.5	N/A	N/A	N/A	68

Note: Data include money market funds. Institute "gross sales" figures include the proceeds of initial fund underwritings prior to 1970.

TYPES OF MUTUAL FUNDS

- Equity funds
- Bond funds
- Hybrid funds
- Money market funds (short term)

COMPOSITION

TABLE 5–2 Growth in Long-Term versus Short-Term Mutual Funds, 1980-2015 (in billions of dollars)

Source: Federal Reserve Bulletin, "Flow of Fund Accounts," various issues. *www.federalreserve.gov*

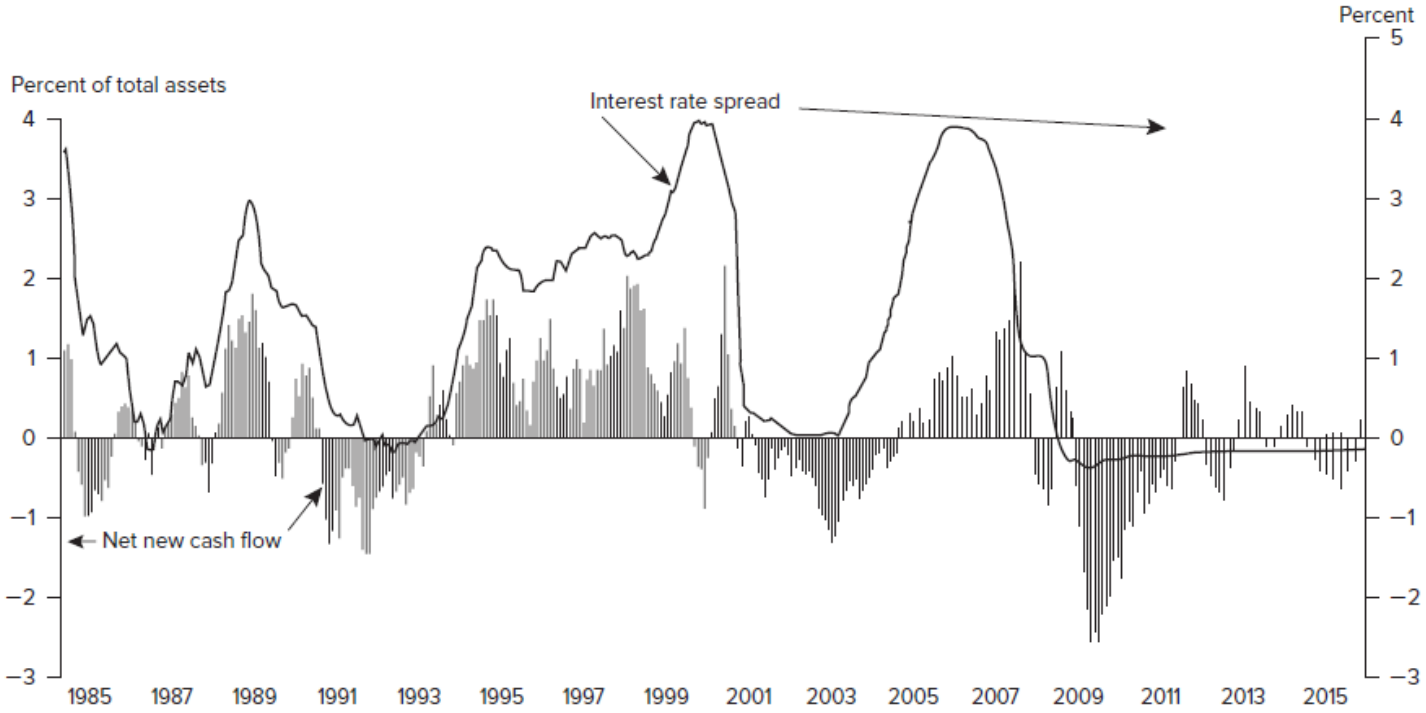
	1980	1990	1999	2000	2002	2004	2007	2008	2009	2012	2015
Panel A: Equity, Hybrid, and Bond Mutual Funds											
Holdings at market value	$61.8	$608.4	$4,538.5	$4,433.1	$3,638.4	$5,436.3	$7,829.0	$5,435.3	$6,961.6	$9,326.1	$12,574.6
Household sector	52.1	511.6	2,894.9	2,704.3	2,218.3	3,417.6	4,832.0	3,442.6	4,161.1	5,633.5	7,917.8
Nonfinancial corporate business	1.5	9.7	127.0	121.9	95.8	140.5	217.5	143.3	161.9	179.6	239.4
State and local governments	0.0	4.8	33.4	30.8	24.3	27.5	34.5	29.8	37.5	66.0	82.1
Commercial banking	0.0	1.9	12.4	15.0	19.6	18.1	29.6	19.6	46.1	45.8	53.5
Credit unions	0.0	1.4	2.5	2.2	3.5	3.1	2.1	2.0	1.3	2.2	2.1
Insurance companies	1.1	30.7	101.4	99.9	79.6	119.6	195.2	125.4	146.1	213.5	251.4
Private pension funds	7.1	40.5	1,056.5	1,131.7	931.9	1,278.2	1,848.2	1,229.5	1,817.3	2,383.8	3,051.4
State and local government retirement funds	0.0	7.8	140.9	178.3	167.4	235.9	296.4	181.1	226.7	306.2	411.9
Rest of world	0.0	0.0	169.5	149.0	98.0	195.8	373.5	262.0	363.6	495.4	565.1
Panel B: Money Market Mutual Funds											
Total assets	$76.4	$493.3	$1,579.6	$1,812.1	$2,223.9	$1,879.8	$3,033.1	$3,757.3	$3,258.3	$2,649.6	$2,627.1
Household sector	64.3	389.4	774.2	937.3	1,071.7	904.1	1,346.6	1,581.9	1,313.1	1,112.4	990.4
Nonfinancial corporate business	7.0	19.7	196.8	213.9	319.7	299.6	548.5	710.6	641.7	519.4	571.2
Nonfinancial noncorporate business	0.0	6.7	40.7	49.4	61.3	66.5	74.3	75.4	73.7	80.7	89.9
State and local governments	0.0	0.0	51.2	53.9	58.7	78.6	116.6	113.3	122.0	157.5	170.8
Insurance companies	1.9	19.1	19.4	23.1	27.6	30.5	42.3	71.9	63.3	49.8	47.4
Private pension funds	2.6	17.8	76.9	81.1	84.5	84.9	93.5	95.7	96.4	135.7	137.5
State and local government retirement funds	0.0	2.8	11.8	13.2	15.5	11.6	12.4	14.3	14.3	38.9	53.8
Funding corporations	0.6	36.6	400.5	429.0	568.6	381.1	752.8	1,024.5	857.1	458.3	455.3
Rest of world	0.0	1.2	8.1	11.2	16.3	22.9	46.0	69.7	76.9	96.9	110.8

M M M F

Money market mutual funds provide an alternative investment to interest-bearing deposits at commercial banks.

FIGURE 5–2 Interest Rate Spread and Net New Cash Flow to Retail Money Market Funds, 1985-2015

Source: Investment Company Institute, *Investment Company Fact Book* (Washington, DC: Investment Company Institute, various issues). *www.ici.org*



Note: Net new cash flow is a percentage of retail money market fund assets and is shown as a six-month moving average. The interest rate spread is the difference between the taxable money market fund yield and the average interest rate on savings deposits; the series is plotted with a six-month lag.

WHO INVESTS IN MF IN THE U.S.?

TABLE 5–4
Selected Characteristics of Household Owners of Mutual Funds*

Source: Investment Company Institute, *Profile of Mutual Fund Shareholders,* various years (Washington, DC: Investment Company Institute). *www.ici.org*

	2015	1995
Demographic Characteristics:		
Median age	51 years	44 years
Median household income	$ 87,500	$ 60,000
Median household financial assets	$200,000	$ 50,000
Percent:		
Married or living with a partner	73.0	71.0
Employed	71.0	80.0
Four-year college degree or more	51.0	58.0
Household financial assets invested in mutual funds	51.5	36.0
Owning fund inside employer-sponsored retirement funds	80.0	17.0
Owning fund outside employer-sponsored retirement funds	60.0	28.3
Mutual Fund Ownership Characteristics:		
Median mutual fund assets	$103,000	$ 18,000
Median number of funds owned	3	3
Fund Types Owned (percent):		
Equity	88	73
Bond	42	49
Hybrid	35	N/A
Money market	54	52

* Characteristics of primary financial decision maker in the household.

MUTUAL FUNDS OBJECTIVES

- Regulations require that mutual fund managers specify the investment objectives of their funds in a prospectus available to potential investors. This prospectus should include a list of the securities that the fund holds.

TABLE 5–5
Total Net Asset Value of Equity, Hybrid, and Bond Funds by Investment Classification

Source: Investment Company Institute, *2015 Investment Company Fact Book* (Washington, DC: Investment Company Institute, 2015). *www.ici.org*

Classification of Fund	Combined Assets ($ billions)	Percent of Total
Total net assets	**$15,852.4**	**100.0%**
Capital appreciation	1,856.5	11.7
World equity	2,079.4	13.1
Total return	4,378.5	27.6
Total equity funds	**$ 8,314.3**	**52.4%**
Total hybrid funds	**$ 1,351.8**	**8.5%**
Investment grade	1,525.2	9.6
High-yield bond	378.5	2.4
World bond	463.7	2.9
Government bond	253.9	1.6
Multisector	273.2	1.7
State municipal	156.2	1.0
National municipal	410.3	2.6
Total bond funds	**$ 3,461.0**	**21.8%**
Taxable money market funds	2,464.5	15.6
Tax-exempt money market funds	260.8	1.6
Total money market funds	**$ 2,725.3**	**17.2%**

RETURNS FROM MUTUAL FUND OWNERSHIP

- Income and dividends.
- Capital gains occur when assets are sold by a mutual fund at prices higher than the purchase price
- Capital appreciation in the underlying values of the assets held in a fund's portfolio add to the value of mutual fund shares.
- With respect to capital appreciation, mutual fund assets are normally **marked-to-market** daily. This means that the managers of the fund calculate the current value of each mutual fund share by computing the daily market value of the fund's total asset portfolio and then dividing this amount by the number of mutual fund shares outstanding.
- The resulting value is called the net asset value **(NAV)** of the fund. This is the price the investor gets when selling shares back to the fund that day or buying any new shares in the fund on that day.

EXAMPLE: IMPACT OF CAPITAL APPRECITAION ON NAV

Suppose a mutual fund contains 4,000 shares of Sears, Roebuck currently trading at $22.00, 1,200 shares of Exxon/Mobil currently trading at $77.00, and 1,500 shares of AT&T currently trading at $33.75. The mutual fund currently has 15,000 shares outstanding held by investors. Thus, today, the NAV of the fund is calculated as:

$$NAV = \frac{4000 \times \$22.00 + 1200 \times \$77.00 + 1500 \times \$33.75}{15000} = \$15.402$$

If next month Sears shares increase to $26.50, Exxon/Mobil shares increase to $78, and AT&T shares increase to $35, the NAV (assuming the same number of shares outstanding) would increase to:

$$NAV = \frac{4000 \times \$26.50 + 1200 \times \$78 + 1500 \times \$35}{15000} = \$16.807$$

EXAMPLE: IMPACT OF INVESTMENT SIZE ON NAV

Consider the mutual fund in last example, but suppose that today 1,000 additional investors buy into the mutual fund at the current NAV of $15.402. This means that the fund manager now has $15,402 in additional funds to invest. Suppose the fund manager decides to use these additional funds to buy additional shares in Sears. At today's market price, he or she can buy $15,402 ÷ $22.00 = 700 additional shares of Sears. Thus, the mutual fund's new portfolio of shares would be 4,700 in Sears, 1,200 in Exxon/Mobil, and 1,500 in AT&T. At the end of the month, the NAV of the portfolio would be:

$$NAV = \frac{4700 \times \$26.50 + 1200 \times \$78 + 1500 \times \$35}{16000} = \$16.916$$

Note that the fund's value changed over the month due to both capital appreciation and investment size.

EXAMPLE: IMPACT OF FLOWS ON NAV

- Consider the same example as before, but assume that the mutual fund preserves the same weights in the portfolio as before the injection of $15,402 (assume it is possible to buy fractions of shares)

$$x_1 = \frac{4000 \times \$22.00}{4000 \times \$22.00 + 1200 \times \$77.00 + 1500 \times \$33.75} = 0.3809$$

$$x_2 = \frac{1200 \times \$77.00}{4000 \times \$22.00 + 1200 \times \$77.00 + 1500 \times \$33.75} = 0.4000$$

$$x_3 = \frac{1500 \times \$33.75}{4000 \times \$22.00 + 1200 \times \$77.00 + 1500 \times \$33.75} = 0.2191$$

EXAMPLE: IMPACT OF FLOWS ON NAV(CONT.)

How many new shares to buy of each asset?

$$initial\ money = 4000 \times \$22.00 + 1200 \times \$77.00 + 1500 \times \$33.75 = 231025$$

$$\frac{(4000+n_1)\times\$22.00}{\$231025+\$15402} = 0.3809$$

$$n_1 = 0.3809 \times \frac{\$246427}{\$22.00} - 4000 = 266.5475$$

$$n_2 = 0.4000 \times \frac{\$246427}{\$77.00} - 1200 = 80.1403$$

$$n_3 = 0.2191 \times \frac{\$246427}{\$33.75} - 1500 = 99.7676$$

NAV After price appreciation

$$NAV = \frac{4266.5475 \times 26.50 + 1280.1403 \times 78 + 1599.7676 \times 35}{16000} = 16.807$$

NAV REFLECTS FUNDAMENTAL INFORMATION ABOUT A FUND

EXCHANGE TRADED FUNDS

- Similar to closed-end funds in that a fixed number of shares are outstanding at any point in time, an *exchange-traded fund* (ETF) is an investment company with shares that trade intraday on stock exchanges at market-determined prices. Like a mutual fund, an ETF offers investors a proportionate share in a pool of stocks, bonds, and other assets.
- While ETFs are registered with the SEC as investment companies, they differ from traditional mutual funds both in how their shares are issued and redeemed and in how their shares or units are traded.

TABLE 5–7
Differences between Open-End Mutual Funds, Closed-End Mutual Funds, and ETFs

	Open-End Mutual Fund	Closed-End Mutual Fund	ETF
Number of shares	No limit on shares	Fixed number of shares	Fixed number of shares
Trading	Shares not traded on an exchange but bought from and sold to fund	Shares traded on an exchange	Shares traded on an exchange
Price	Price based on NAV	Price based on supply and demand, not NAV	Price based on NAV
Intraday trading	Trades at market close only	Trading occurs all day	Trading occurs all day

EXCHANGE TRADED FUNDS

- ETF shares are created by an institutional investor's depositing of a specified block of securities with the ETF.
- In return for this deposit, the institutional investor receives a fixed amount of ETF shares, some or all of which may then be sold on a stock exchange.
- Individual investors can buy and sell the ETF shares only when they are listed on an exchange. Unlike an institutional investor, a retail investor cannot purchase or redeem shares directly from the ETF, as with a traditional mutual fund.
- Because ETFs behave like stocks, investors are subject to capital gains taxes only when they sell their shares. Thus, ETF investors can defer capital gains for as long as they hold the ETF.
- These features of ETFs (intraday tradability, transparency, tax efficiency, and access to specific markets or asset classes) have contributed to the growing popularity of ETFs. ETFs also have gained favor due to the rising popularity of passive investments (discussed below), increasing use of asset allocation models, and a move toward external fee-based models of compensation.
- Generally, the price at which an ETF trades closely tracks the market value of the securities held in the portfolio. One reason for this fairly close relationship is the ability for authorized participants (APs) to create or redeem ETF shares at net asset value at the end of each trading day. An AP is typically a large financial institution that enters into a legal contract with an ETF distributor to create and redeem shares of the fund.

MUTUAL FUND COSTS

- Loads: Sales or redemption charges
- Operating Expenses: management fees
- Marketing and distribution fees: (12b-1 fees)

HEDGE FUNDS

- Hedge funds are, however, not subject to the numerous regulations that apply to mutual funds for the protection of individuals, such as regulations requiring a certain degree of liquidity, regulations requiring that mutual fund shares be redeemable at any time, regulations protecting against conflicts of interest, regulations to ensure fairness in the pricing of funds shares, disclosure regulations, and regulations limiting the use of leverage.
- Historically, hedge funds avoided regulations by limiting the number of investors to fewer than 100 individuals (below that required for SEC registration), who must be deemed "accredited investors." To be accredited, an investor must have a net worth of more than $1 million or have an annual income of at least $200,000 ($300,000 if married).
- These stiff financial requirements allowed hedge funds to avoid regulation under the theory that individuals with such wealth should be able to evaluate the risk and return on their investments.

HEDGE FUNDS

- In 2010 federal regulators increased the oversight of hedge funds
- Even with this increased oversight, because hedge funds remain exempt from many of the rules and regulations governing mutual funds, they can use aggressive strategies that are unavailable to mutual funds, including short selling, leveraging, program trading, arbitrage, and derivatives trading. Further, since hedge funds that do not exceed $100 million in assets under management do not register with the SEC, their actual data cannot be independently tracked.
- Hedge fund managers generally charge two types of fees: management fees and performance fees. As with mutual funds, the management fee is computed as a percentage of the total assets under management and typically runs between 1.5 and 2.0 percent. Performance fees are unique to hedge funds. Performance fees give the fund manager a share of any positive returns on a hedge fund.
- Offshore Hedge Funds (lower capital gain tax)

INSURANCE COMPANIES

- Insurance services offered by FIs protect individuals and corporations (policyholders) from adverse events.
- By accepting premiums, FIs that offer insurance services promise policyholders compensation if certain specified events occur.
- These policies represent financial liabilities to the insurance company.
- With the premiums collected, insurance companies invest in financial securities such as corporate bonds and stocks
- Insurance services are classified into two major groups: life and property–casualty.
- Life insurance provides protection against the possibility of untimely death, illnesses, and retirement. Property–casualty insurance protects against personal injury and liability such as accidents, theft, and fire.

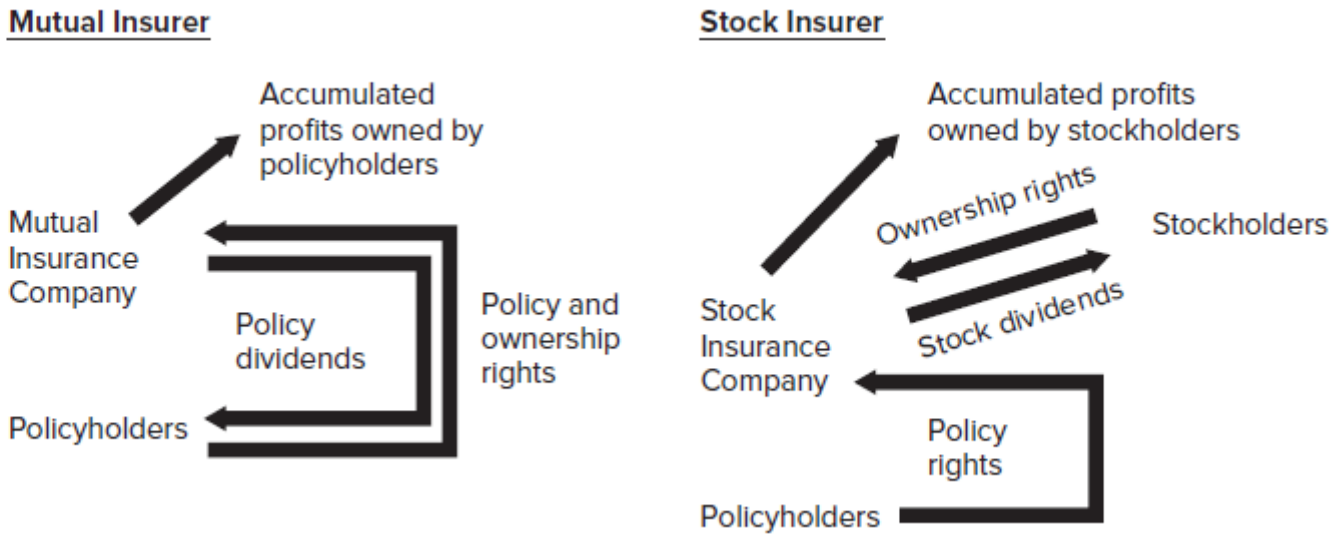
INSURANCE COMPANIES

TABLE 6–1
Biggest Life Insurers

Sources: *Best's Review*, July 2015; and authors' research. *www.ambest.com*

Rank	Insurance Company	Form of Ownership	Assets (billions)
1	Metropolitan Life	Stock	$608.3
2	Prudential of America	Stock	551.6
3	Manulife Financial	Stock	272.1
4	Teachers Insurance and Annuity	Stock	272.1
5	AIG	Stock	268.4
6	New York Life	Mutual	265.6
7	Northwestern Mutual	Mutual	230.1
8	Lincoln Financial	Stock	227.6
9	MassMutual Financial	Mutual	209.1
10	Aegon USA Inc.	Stock	209.1

FIGURE 6–1
Mutual versus Stock Insurance Companies



MOST COMMON LIFE INSURANCE: ORDINARY LIFE

- *Term life.* A term life policy is the closest to pure life insurance, with no savings element attached. Essentially, the individual receives a payout contingent on death during the coverage period. The term of coverage can vary from as little as 1 year to 40 years or more.
- *Whole life.* A whole life policy protects the individual over an entire lifetime. In return for periodic or level premiums, the individual's beneficiaries receive the face value of the life insurance contract on death. Thus, there is certainty that if the policyholder continues to make premium payments, the insurance company will make a payment—unlike term insurance. As a result, whole life has a savings element as well as a pure insurance element.
- *Endowment life.* An endowment life policy combines a pure (term) insurance element with a savings element. It guarantees a payout to the beneficiaries of the policy if death occurs during some endowment period (e.g., prior to reaching retirement age). An insured person who lives to the endowment date receives the face amount of the policy.

TYPES OF LIFE INSURANCE

- *Variable life.* Unlike traditional policies that promise to pay the insured the fixed or face amount of a policy if a contingency arises, variable life insurance invests fixed premium payments in mutual funds of stocks, bonds, and money market instruments. Usually, policyholders can choose mutual fund investments to reflect their risk preferences. Thus, variable life provides an alternative way to build savings compared with the more traditional policies such as whole life because the value of the policy increases or decreases with the asset returns of the mutual fund in which the premiums are invested.
- *Universal life and variable universal life.* Universal life allows both the premium amounts and the maturity of the life contract to be changed by the insured, unlike traditional policies that maintain premiums at a given level over a fixed contract period. In addition, for some contracts, insurers invest premiums in money, equity, or bond mutual funds—as in variable life insurance—so that the savings or investment component of the contract reflects market returns. In this case, the policy is called variable universal life

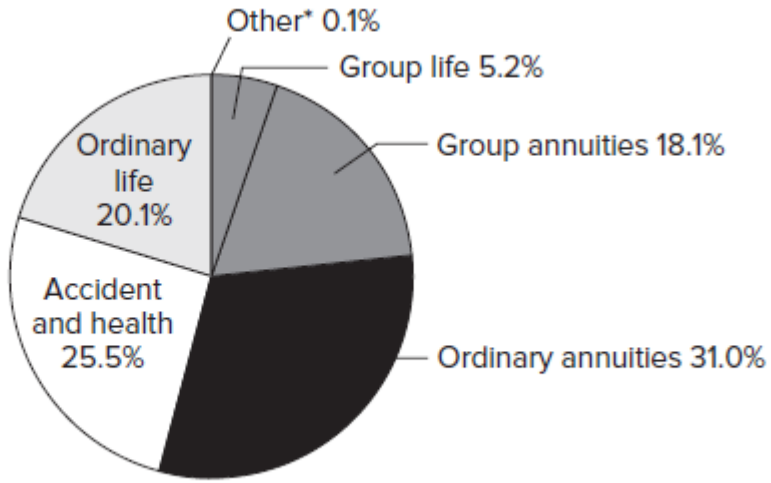
LIFE INSURANCE INDUSTRY BALANCE SHEET

Assets		Percent of Total Assets
Bonds	$2,777.9	43.4%
Preferred stock	9.4	0.2
Common stock	79.9	1.2
Mortgage loans	383.2	6.0
Real estate	22.2	0.3
Contract loans	133.0	2.1
Cash and short-term investments	102.6	1.6
Other invested assets	240.0	3.8
Premiums due	29.3	0.5
Accrued investment income	34.8	0.5
Separate account assets	2,447.3	38.2
Other assets	139.4	2.2
Total assets	$6,399.0	100.0%
Liabilities and Capital/Surplus		
Net policy reserves	$2,779.3	43.4%
Deposit-type contracts	278.8	4.4
Policy claims	43.5	0.7
Other liabilities	486.6	7.6
Separate account business	2,445.0	38.2
Total capital and surplus	365.8	5.7
Total liabilities and capital/surplus	$6,399.0	100.0%

TYPES OF LIFE INSURANCE

FIGURE 6–2
Distribution of Life Insurance Premiums Written

Source: *Best's Review*, September 2015. *www.ambest.com*



*Includes credit life and industrial life

PROPERTY AND CASUALTY INSURANCE

- Property insurance involves insurance coverages related to the loss of real and personal property. Casualty (liability) insurance concerns protection against legal liability exposures.
- *Fire insurance.* Protects against the perils of fire, lightning, and removal of property damaged in a fire (2.3 percent of all premiums written in 2014; 16.6 percent in 1960).
- *Homeowners multiple-peril (MP) insurance.* Protects against multiple perils of damage to a personal dwelling and personal property as well as provides liability coverage against the financial consequences of legal liability due to injury done to others. Thus, it combines features of both property and liability insurance (15.2 percent of all premiums written in 2014; 5.2 percent in 1960).
- *Commercial multiple-peril insurance.* Protects commercial firms against perils and is similar to homeowners multiple-peril insurance (6.9 percent of all premiums written in 2014; 0.4 percent in 1960).

PROPERTY AND CASUALTY INSURANCE

- *Automobile liability and physical damage (PD) insurance.* Provides protection against (1) losses resulting from legal liability due to the ownership or use of the vehicle (auto liability) and (2) theft of or damage to vehicles (auto physical damage) (38.6 percent of all premiums written in 2014; 43.0 percent in 1960).
- *Liability insurance (other than auto).* Provides either individuals or commercial firms with protection against nonautomobile-related legal liability. For commercial firms, this includes protection against liabilities relating to their business operations (other than personal injury to employees covered by workers' compensation insurance) and product liability hazards (12.7 percent of all premiums written in 2014; 6.6 percent in 1960).