

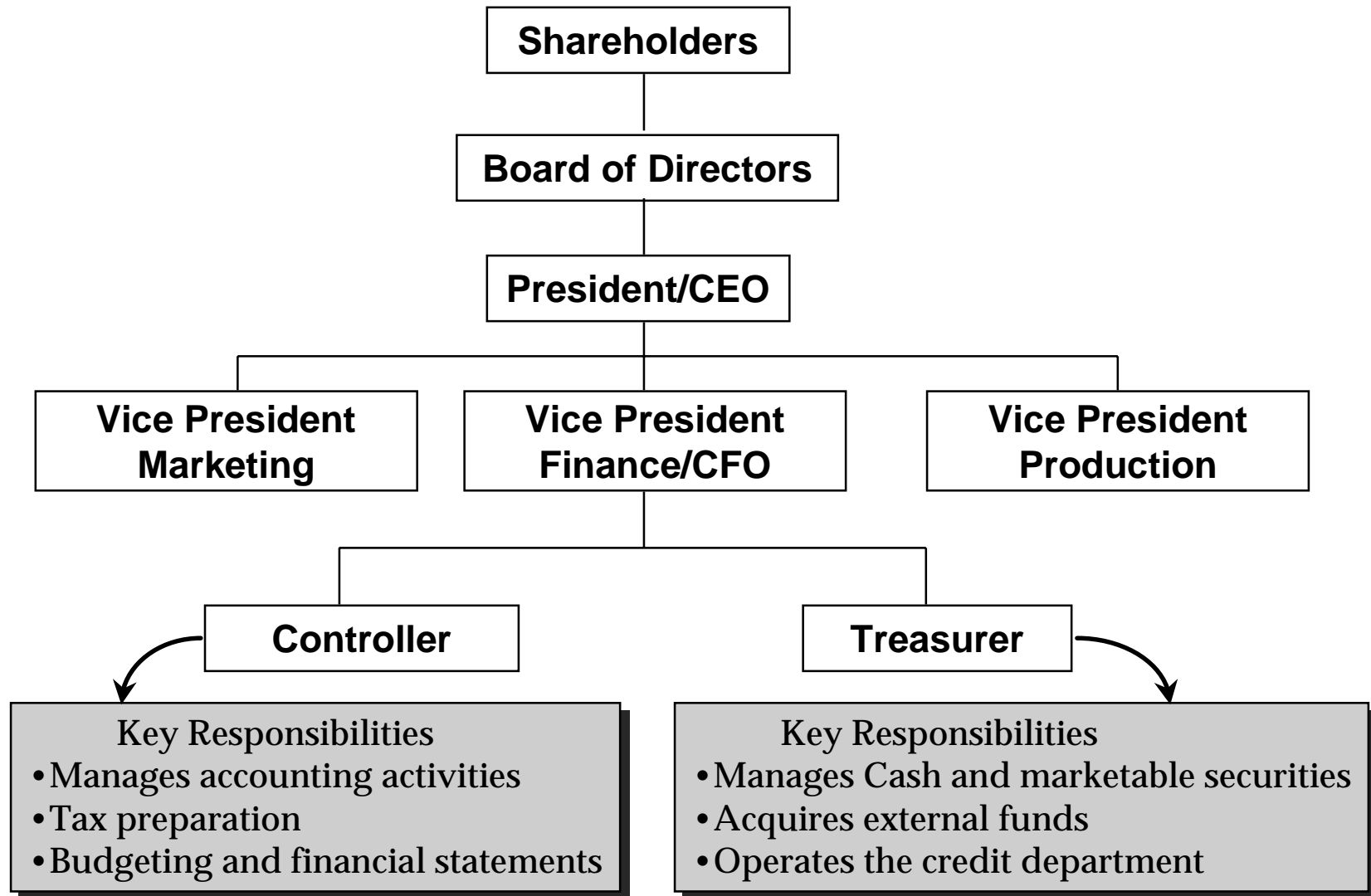
Overview of Financial Management

- ***Finance***: Describes both the money resources available to the firm and the management of those resources.
- ***Financial Management***: The acquisition, management and financing of resources for firms by means of money.
 - Resources are physical (cash, inventory, equipment, machinery) and people (managers and employees of the firm).
 - Money to acquire resources comes from a number of sources: internal cash flow, borrowing, leasing, new stock issues.

Overview of Financial Management

- **Primary goal:** From the shareholders' point of view, maximize the value of the firm's common stock.
 - Maximize present value of future returns to its shareholders.
 - Future returns are the dividends shareholders will be paid as well as future selling price of stock.
- **Primary responsibility:** Manage all the firm's resources as efficiently as possible.
 - Balance the need for resources against the risks and the returns expected from their use.

Finance & Organizational Structure



The Financial Environment

- Performance is affected by a variety of factors.
 - Health of the economy, taxes, interest rates, political and regulatory environment
- Firm is ultimately judged by the *external financial markets* where stocks/bonds are traded.
- Financial institutions collect money from savers and use the funds to make loans or investments.
 - Commercial banks
 - Thrift institutions
 - Non-depository institutions
 - Pension funds, insurance companies, investment companies, and finance companies.

Forms of Business Organization

SOLE PROPRIETORSHIP

Strengths

Easy to establish.
Income taxed to owner.
Owner receives profits and losses.
Easy to dissolve.

Weaknesses:

Unlimited liability.
Limited skills.
Difficulty raising funds.
Ownership not easily transferred.

PARTNERSHIP

Strengths

Raising funds easier.
Income taxed to owner.
More skills available.

Weaknesses:

Unlimited liability for partners.
Partnership dissolved if partner dies.
Difficult to transfer ownership.

CORPORATION

Strengths

Limited liability.
Easier to raise funds.
Unlimited life.
Easy to transfer ownership.

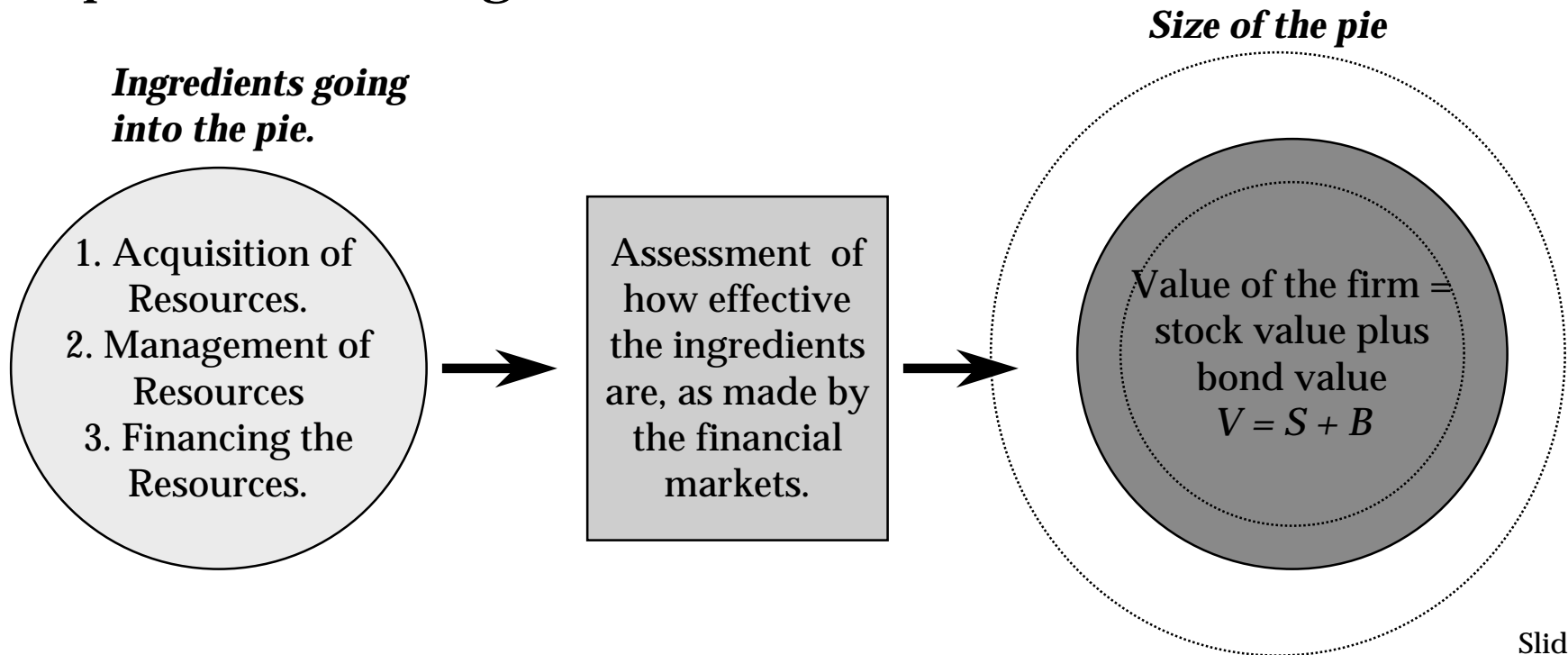
Weaknesses:

Taxation of income and dividends.
More expensive form to organize.
More government regulation.
Greater disclosure of financials.

Financial Management - Key Idea 1

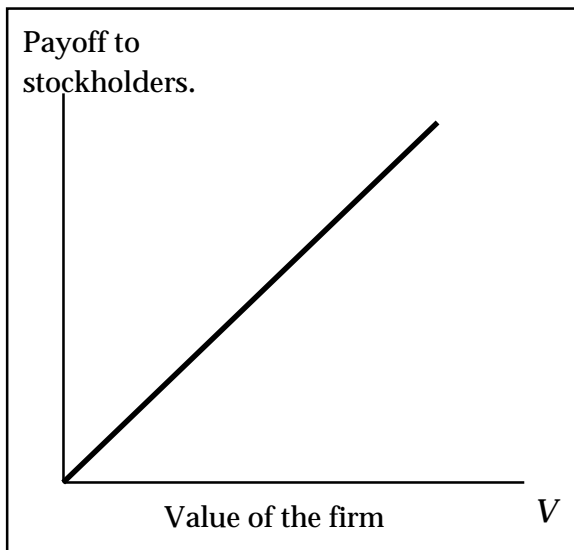
■ Key Idea 1: The Goal of the Firm is to Maximize Its Market Value.

The Firm as a Pie - Depending on how the investment community assesses a firm's decisions, the size of the pie can be enlarged or shrunk.

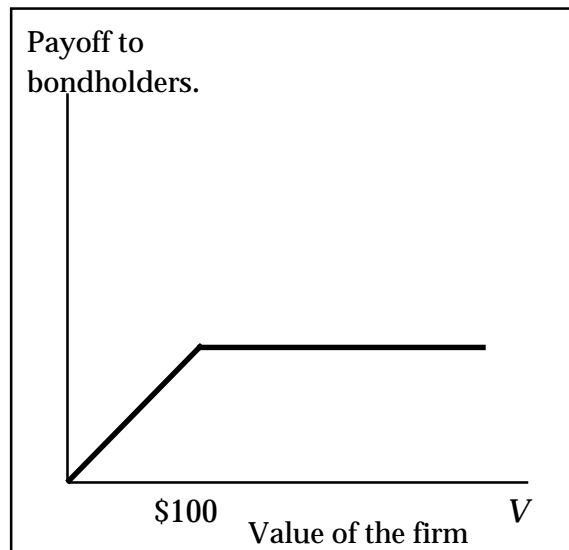


Key Idea 1 (cont'd)

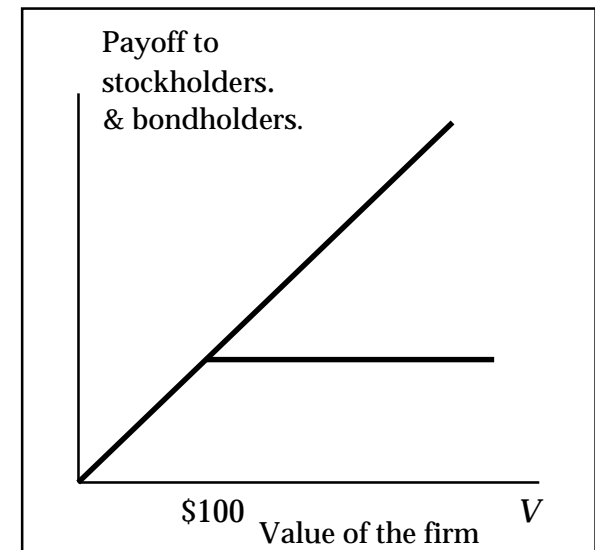
- Maximizing the firm's market value is equivalent to maximizing the value of stockholders' and bondholders' claims on the firm.
- Compare and contrast stockholders vs. bondholders:



Value of stockholders' claims are a function of the total value of the firm.



All is well as long as the firm is healthy and total value of the firm exceeds the claims of the bondholders.



Bondholders have a fixed, but limited claim while stockholders may receive nothing or a lot.

Financial Management - Key Idea 2

- **Key Idea 2: Financial Markets are Efficient**
- An efficient market is one in which market prices quickly reflect all available information about the firm.
 - If information about the economy, firm, or the firm's prospects for the future is favorable, the price of the firm's stock will go up over time.
 - Conversely, if information suggests hard times, increased competition, drop in coal prices, market price of the firm's stock will go down.
- ***The best indication of what a firm is worth is to look at what someone is willing to pay for a claim on the firm.***

Financial Management - Key Idea 3

- **Key Idea 3: Firms Focus on Cash flows and Their Incremental Effects.**
- **Three major components of firm value:**
 - ① Magnitude of the future cash flows to be received
 - ② Timing of these cash flows
 - ③ Risks associated with receiving the cash flows
- **Accounting vs. Financial Management:**
 - Accountants look at earnings; financial managers use cash flows.
 - Accountants focus on the past; finance is concerned with tracking future cash inflows and outflows.
 - Accounting earnings are a bookkeeping entry - not something that you can take to the bank.

Financial Management - Key Idea 4

- **Key Idea 4: A Dollar Today is Worth More than a Dollar Tomorrow.**
- **Basic instinct: When in doubt, take the cash sooner rather than later.**
 - **Net Present Value (NPV):** The present value of the future cash flows, discounted at the opportunity cost of capital, or required rate of return, minus the initial investment.

$$\text{net present value} = \frac{\text{future value of cash inflows}}{1 + \text{discount rate based on foregone opportunities}} - \text{initial investment}$$

- **Discount:** To determine the value today of an amount to be received in the future.
- **Opportunity Cost:** The cost of the best foregone alternative.

Financial Management - Key Idea 5

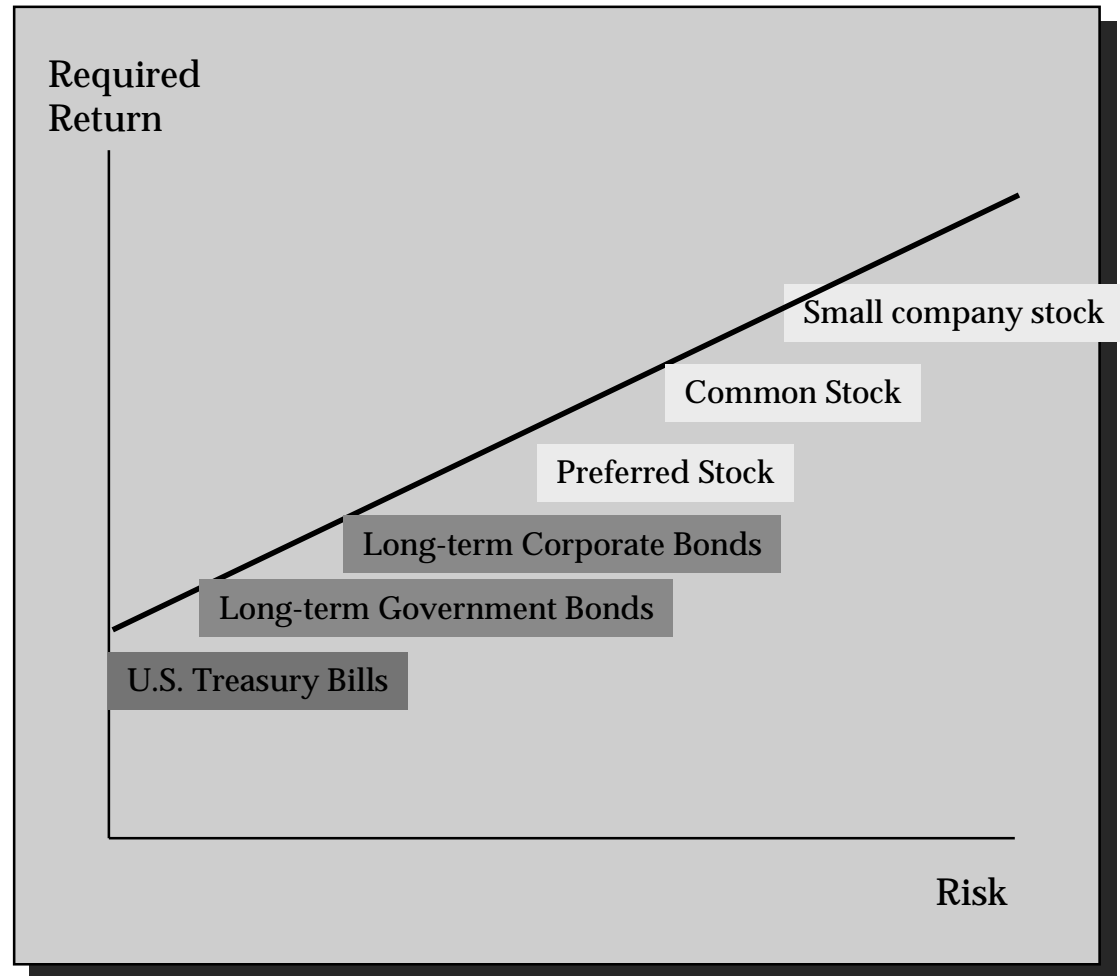
■ Key Idea 5: Risk and Return Go Hand-in-Hand

- Risk: The uncertainty of something happening with the possibility of a less-than-desirable outcome.
- Required Return: The return necessary for a firm or investor to accept a certain level of risk.
- Two basic choices:
 - ① Price the risk - see if the level of return is commensurate with the risk.
 - ② Hedge or eliminate some or all of the risk.



Risk vs. Return: Selected Securities

- Relationship between risk and return is a key idea in finance.
- U.S. Treasury bills provide a risk-free return.
- As risk increases, as evidenced by default and liquidity premiums, the returns demanded by investors increase.
- Increase risk results in an increased cost to the issuer of the security.



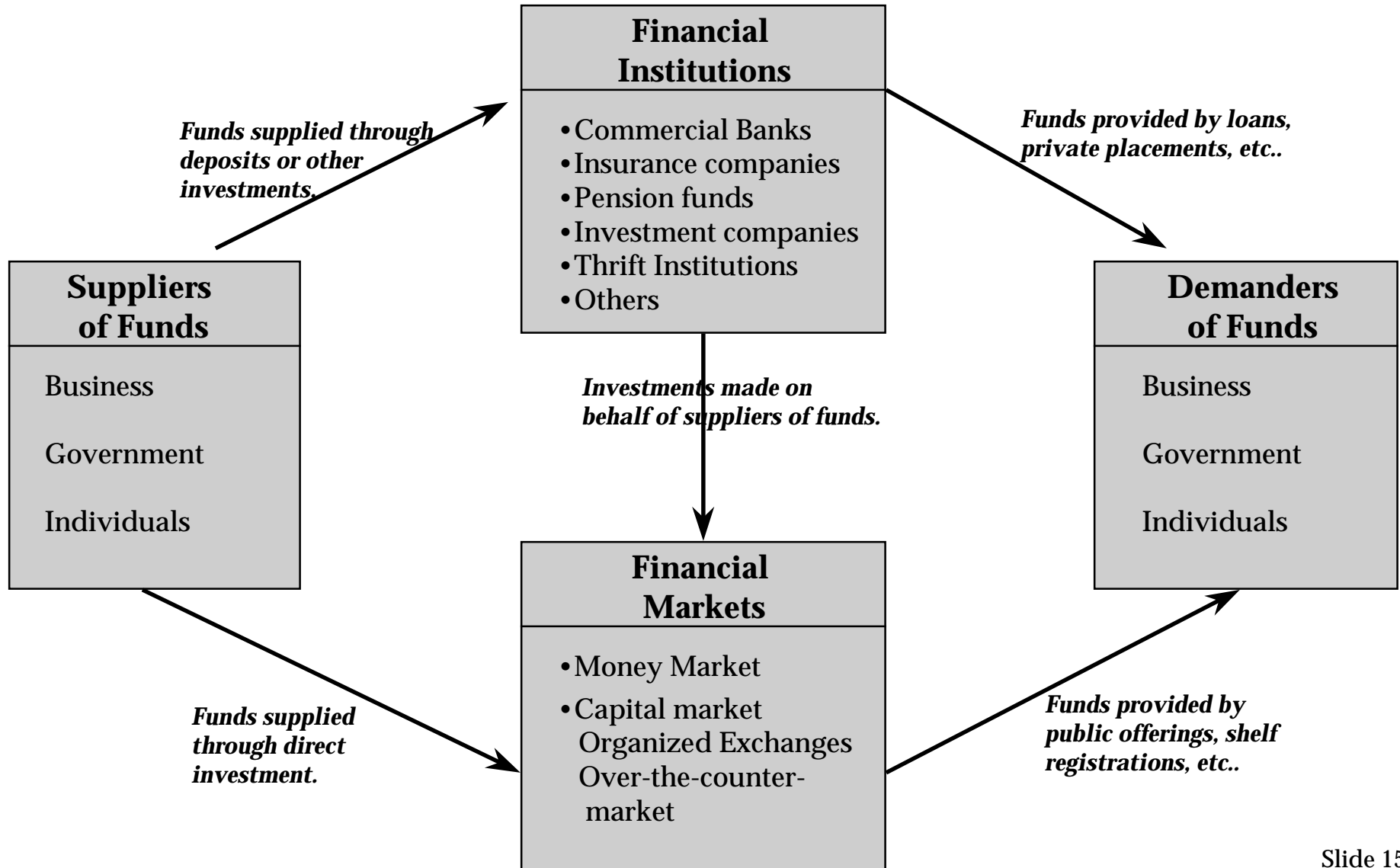
Financial Management - Key Idea 6

- **Key Idea 6: Options Are Valuable**
- **Option:** Investment that allows, but does not require, one to undertake some financial opportunity on or before a specified date.
 - Flexibility is what gives options their added value.
 - Option valuation models are newest development in financial theory.
- **Examples of options:**
 - Managerial flexibility associated with making capital budgeting decisions.
 - Mineral and petroleum leases.
 - Part of guarantees, loans or insurance contracts.

Financial Institutions

- Exist to bring together *suppliers* and *demanders* of funds.
- Major institutions in the U.S. financial system:
 - Commercial banks - traditional financial institution.
 - Insurance companies and pension funds.
 - Investment companies - including mutual funds.
 - Thrift institutions, i.e., savings and loans and CUs.
- Provide a substantial portion of funds available to corporations and other demanders of funds.
- Consider the relationship among suppliers and demanders of funds . . .

Supply and Demand for Funds



Financial Markets - Some Terms

- **Money Market:** Financial market in which funds are borrowed or lent for short periods of time (up to one year).
- **Capital Market:** Financial market in which long-term financial assets such as bonds and stocks are bought or sold.
- **Primary Market:** Market in which financial assets are originally sold, with the proceeds going to the issuing firm or government.
- **Secondary Market:** Market for financial assets that have already been issued, including organized exchanges and OTC market.
- **Organized Security Exchanges:** Formal organizations that have a physical location and exist to bring together buyers and sellers of securities in the secondary market.
- **Over-The-Counter (OTC) Market:** A market for securities in which buyers and sellers are brought together through computer and/or telecommunications facilities.

Secondary Equity Markets in U.S.

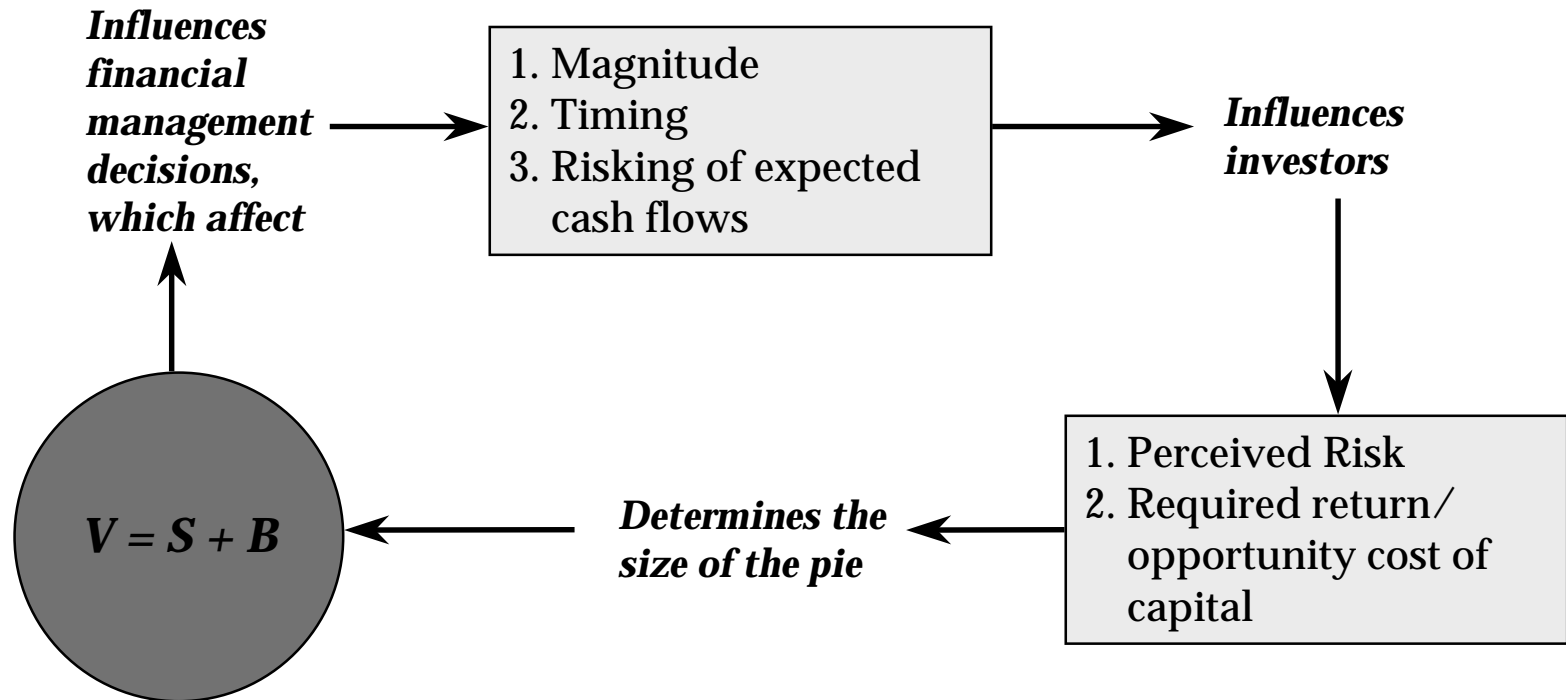
	Share Volume		Dollar Volume	
	(in millions)	Percent	(in millions)	Percent
New York Stock Exchange	73,420	44.0%	\$2,456,533	55.6%
American Stock Exchange	4,523	2.7%	\$ 58,511	1.3%
Regional Stock Exchanges	7,859	4.7%	\$ 225,806	5.1%
NASDAQ/OTC	81,244	48.6%	\$1,678,925	38.0%
	167,046	100.0%	\$4,418,224	100.0%

- Trading on the NYSE has been diminishing; though it is still the largest equity market in the United States.
- Both the share and dollar volume in the OTC market has grown substantially in recent years.

Why is the Financial System Important?

- An effective means of bringing together suppliers and demanders of funds.
- The secondary market makes it easier for a firm to raise external debt or equity capital - ease of buying and selling.
- Financial system changes rapidly, affording new opportunities. New institutions, securities and markets appear every year.
- Value of the firm is determined in the financial markets - the welfare of the firm and all stakeholders depend on this valuation system.

Investor Actions & Financial Management



- ◆ Depicts relationship between the firm's financial management decisions and investors' actions.
- ◆ Because of interrelated and circular nature of the decision making process, managers must understand importance of financial markets and financial assets in decision making process.

Real Asset Investment Analysis



- (1) *Cash raised by selling financial assets to investors;*
- (2) *Cash invested in the firm's operations;*
- (3) *Cash generated by the firm's operations;*
- (4) *Cash reinvested;*
- (5) *Cash Returned to the investors.*

Investment Analysis - Some Terms

- ***Real Assets:*** Assets used to produce goods and services.
- ***Financial Assets:*** Claims to the income generated by real assets (also called securities).
- ***Financial Markets:*** Markets in which financial assets are traded.
- ***Capital Budgeting Decision:*** Decision as to which real assets the firm should acquire.
- ***Financing Decision:*** Decision as to how to raise the money to pay for a firm's investments in real assets.

Capital Budgeting Decision

- The success of capital budgeting decisions is usually judged in terms of value.
- Good investment projects are worth more than they cost.
- Today's investments provide benefits in the future - financial manager is concerned with ***size*** of benefits and ***how long the firm must wait*** for them.
- Project evaluation techniques provide a disciplined, analytical approach to project proposals.

Capital Budgeting vs. Financing?

- Intel decides to spend \$500 million to develop a new microprocessor.
- Volkswagen decides to raise 350 million deutschmarks through a bank loan.
- Exxon constructs a pipeline to bring natural gas on shore from the Gulf of Mexico.
- Pierre Lapin sells shares to finance expansion of his newly formed securities trading firm.
- Glaxo buys a license to produce and sell a new drug developed by a biotech company.
- Merck issues new shares to help pay for the purchase of Medco, a pharmaceutical distribution company.

Accounting and Finance

■ Different Statements for Different Purposes

➤ Financial Accounting Statements:

- Prepared according to generally accepted accounting procedures (GAAP).
- Reported to the firm's stockholders in the **annual report**.

➤ Tax Reporting Statements:

- Because of differences in what is allowed between tax reporting (IRS) and what is required for GAAP.
- Tax consequences are of vital importance because payment of taxes is a direct cash outflow for the firm.

➤ Reports for Internal Management

- Based on divisions, cost centers, or some other unit.
- Direct costing, contribution margin analysis, standard costs and variances.
- Managerial accounting issues.

Purposes of Accounting Statements

- Provides an accounting picture of the firm for interested parties - investors, creditors and the firm's management.
- Reports what happened to the firm in terms of sales, assets, liabilities, earnings, dividends, etc.
- Helps investors form expectations about the required returns and riskiness of the firm.
- As expectations are revised with respect to magnitude, timing or riskiness of the firm's returns, ***the market value of the firm is affected.***

Income Statement

- Presents a summary of revenues and expenses for the firm during the last year.
- Provides an analysis before and after income tax and financing expenses.
- Some Terms:
 - Gross Margin: A measure of what a firm sells goods for in relation to the cost of the goods; computed as net sales minus the cost of goods sold.
 - Operating Profit: The earning of the firm after all expenses, except interest and taxes, before adjustments.
 - Earning Available for Common Stockholders (EAC): Net income minus cash dividends on preferred stock.

Income Statement (cont'd)

Income Statement for The Martin Corporation (in millions)

	For Fiscal Year		
	1992	1993	1995
Sales	\$7,778	\$8,135	\$8,517
Cost of Goods Sold	4,371	4,572	4,762
Gross Margin	3,407	3,563	3,755
Selling, general, and administrative exp.	2,504	2,645	2,755
Operating Profit	903	918	1,000
Other expenses () or income	14	(15)	(147)
Earnings before interest and taxes, EBIT	917	903	853
Interest	89	100	99
Earnings before taxes, EBT	828	803	754
Income taxes	332	297	284
Net Income	\$ 496	\$ 506	\$ 470

- ***GAAP statements are prepared on an accrual, not a cash, basis.***
- ***The \$470 million in net income in 1994 does not mean that firm earned \$470 million in cash.***
- ***Note that the firm's revenues increased but NI fluctuated.***

Earnings per Share

- By putting earnings on a per share basis, the effects of changes in the number of shares of common stock outstanding can be held constant.
- Earnings per share, *EPS*, is calculated as follows:

$$EPS = \frac{\text{earnings available for common S.H.}}{\text{number of shares of common stock outstanding}} = \frac{NI - \text{cash dividends on P.S.}}{\text{\# of shares of common stock outstanding}}$$

- For Martin in 1994, EPS was $\$470/158.5 = \2.97 per share.
- During 1993 it was $\$3.15/\text{share}$ and in 1992, $\$3.00/\text{share}$.
- Three measures of EPS:
 - Simple EPS - as calculated above.
 - Primary EPS - includes “all likely to be converted securities”.
 - Fully diluted EPS - includes total conversion of stock.

Balance Sheet

- Provides a record of the firm - its assets, liabilities and resulting stockholders' equity.
- Figures are presented in terms of *historical costs*.
- Figures do not represent market values, the effects of inflation, or other current information.
- Balance sheet presents, at best, only a rough idea of the value of the firm.
- Consider the following balance sheet for The Martin Corporation . . .

Balance Sheet (cont'd)

Balance Sheet for The Martin Corporation

	1992	1993	1994
Assets			
Current Assets			
Cash and marketable securities	\$ 1	\$ 100	\$ 0
Accounts receivable	292	288	310
Inventory	487	439	488
Other expenses	255	250	331
Total current assets	1,035	1,077	1,129
Long-term assets			
Net property and equipment	2,648	2,860	3,093
Other	622	714	976
Total long-term assets	3,270	3,564	4,069
Total Assets	<u>\$4,305</u>	<u>4,651</u>	<u>\$5,198</u>
Liabilities and Stockholders' Equity			
Current liabilities			
Accounts payable	\$ 632	\$ 617	\$ 650
Short-term debt	202	404	549
Accruals and other	537	538	633
Total current liabilities	1,371	1,559	1,832
Long-term liabilities			
Long-term debt and leases	921	1,268	1,417
Deferred taxes	434	458	487
Other	207	147	189
Total long-term liabilities	1,562	1,873	2,093
Stockholders' equity			
Common stock: 204.2 shares issued	344	359	373
Less: Treasury stock	-803	-1,196	-1,334
Retained earnings	2,049	2,285	2,457
Less: Unearned ESOP and restricted stock compensation	-172	-168	-160
Less: Cumulative foreign currency adjustment	-46	-61	-63
Total stockholders' equity	1,372	1,219	1,273
Total liability and stockholders' equity	<u>\$4,305</u>	<u>\$4,651</u>	<u>\$5,198</u>

Assets

- Assets are divided into two major sections: current assets (less than or equal to 1 year) and long-term assets (longer than 1 year).
- The *net basis* reflects accumulated depreciation charged over the years as an expense in order to match expenses with associated revenues.
- For simplicity, we have included “other” as long-term assets; sometimes you will see this as intangible assets.

Balance Sheet (cont'd)

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Liabilities

- Liabilities are also divided into current and long-term .
- Although not shown directly on the balance sheet, lease obligations are recorded as part of long-term debt.
- The present value of long-term lease commitments is recorded as a long-term liability. A corresponding dollar amount is included in the property/equipment account to show the use of these assets.
- Deferred taxes represents the difference in taxes paid to IRS and reported per GAAP.

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Other Liabilities

- Martin has only common stock outstanding.
- Martin has an employee stock ownership plan (ESOP) which is essentially an employee trust fund.
- Retained earnings reflects the sum of the firm's net income over its life, less all cash dividends and other adjustments.
- Retained earnings ties together the income statement and balance sheet and allows assets to equal liabilities and stockholders' equity.
- Retained earnings is a claim on assets, not an asset account; this account does not contain any cash.

Analysis of Accounting Statements

- It is necessary to look at trends; generally 3-5 years worth of data to assess firm's performance.
- Compare the firm's performance to that of the industry.
- Careful reading of financials will point to other factors - contractual obligations, future financing policies, plans for expansion or restructuring, or sale of assets that may have significant impacts.
- "Quality" of earnings are also important. Earnings associated with cash revenues are much higher quality than longer-term credit sales.
- Analysis may raise further questions for which additional information is needed - don't view the analysis as an end in itself.

Common-Size Statements

	The Martin Corporation			Industry		
	1992	1993	1994	1992	1993	1994
Sales	100%	100%	100%	100%	100%	100%
Cost of Goods Sold	56.2	56.2	55.9	56.4	56.9	54.3
<i>Gross Margin</i>	43.8	43.8	44.1	43.6	43.1	45.7
Selling, general, and adminis.	32.0	32.7	34.1	30.6	34.4	33.8
Earnings before interest and taxes,	11.8	11.1	10.0	13.0	8.7	11.9
Interest	1.2	1.2	1.2	1.8	1.6	1.9
Earnings before taxes, EBT	10.6	9.9	8.8	11.2	7.1	10.0
Income taxes	4.3	3.7	3.3	4.1	2.8	3.6
Net Income (<i>net profit margin</i>)	6.3%	6.2%	5.5%	7.1%	4.3%	6.4%

- Divide various components of the income statement by *net sales*.
- Net sales equal 100% and everything else is a percentage of sales.
- **Gross Profit Margin:** Represents the sales relative to the cost of goods sold.
- **Net Profit Margin:** Indicates how net income (after all expenses) relates to sales.
- Simplest and most direct way to analyze changes over time.

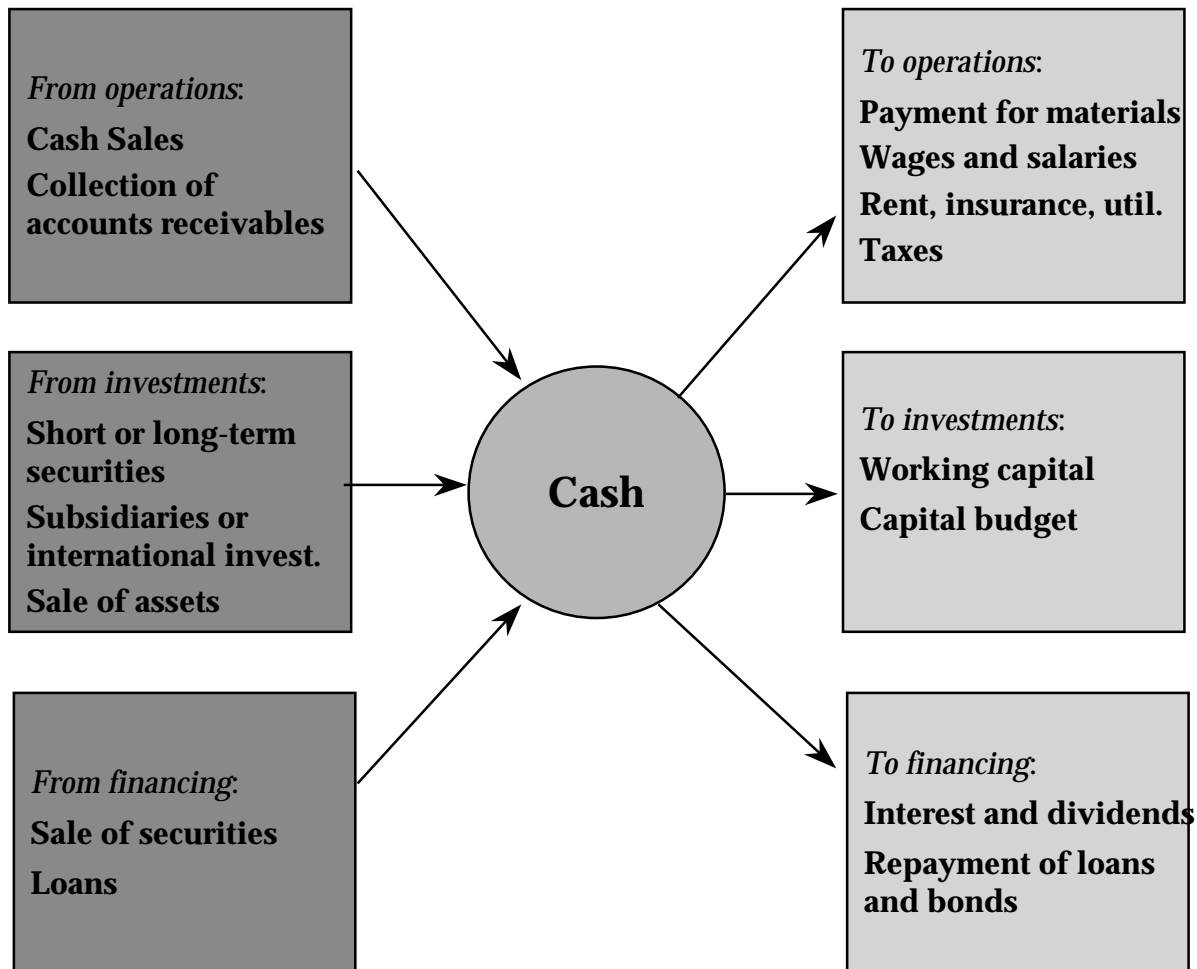
Common-Size Balance Sheet

	The Martin Corporation			Industry		
	1992	1993	1994	1992	1993	1994
Assets						
Current						
Cash and marketable securities	0.0%	2.2%	0.0%	3.8%	2.7%	2.5%
Accounts receivable	6.8	6.2	6.0	16.4	15.6	14.0
Inventory	11.3	9.4	9.4	15.9	15.0	16.3
Other	5.9	5.4	6.3	3.7	4.9	4.4
Total Current Assets	24.0	23.2	21.7	39.8	38.2	37..2
Long-term						
Property and Equipment	61.5	61.5	59.5	37.1	37.6	35.9
Other	14.5	15.3	18.8	23.1	24.2	26.9
Total Assets	100%	100%	100%	100%	100%	100%
Liabilities and Stockholders' Equity						
Current						
Accounts payable	14.7%	13.2%	12.5%	11.2%	10.9%	10.4%
Short-term Debt	4.7	8.7	10.5	16.6	14.9	3.8
Accruals and other	12.5	11.6	12.2	13.5	14.8	12.5
Total current	31.9	33.5	35.2	41.3	40.6	26.7
Long-term						
Long-term debt and leases	21.4	27.3	27.3	12.9	18.7	24.3
Deferred taxes and other	14.9	13.0	13.0	11.9	12.2	16.7
Stockholders' equity	31.8	26.2	24.5	33.9	28.5	32.3
Total Liability and S.H. Equity	100%	100%	100%	100%	100%	100%

Common-Size Balance Sheet (cont'd)

- All statement components are divided by *total assets* to put them on a common percentage basis.
- Some findings about Martin Corp.'s asset side:
 - Martin's current assets have declined;
 - Martin carries substantially less cash, AR, inventory.
 - Well above industry in property and equipment, but has less in "other" assets.
- Some findings about Martin Corp.'s liability side:
 - More AP and more short-term debt than the industry
 - Increased reliance on long-term debt and more than the industry average.
- Overall, Martin has a lower level of cash, AR and inventory, higher levels of long-term assets and debt.

Cash Flow Analysis



- **The firm's cash inflows arise from its operations, its investments, and its financing activities.**
- **The firm's outflows go to its operations, its investment needs and its financing needs.**
- **Inflows will not equal outflows over any period of time, except by chance.**
- **The excess of inflows (outflows) results in an increase (decrease) in the firm's cash account.**

Statement of Cash Flows

- Statement of Cash Flows: Accounting statement that reports the flow of cash into and out of the firm in terms of operating, investing, and financing activities.
- Advantages of the Statement of Cash Flows:
 - ① Specific focus on the three separate activities of *operations, investments, and financing* is beneficial.
 - ② The statement removes the effects of accruals, and it restates such items as collectibles or salaries to a cash basis.
 - ③ The statement breaks out gross, as opposed to net, figures for such items as long-term debt transactions. Provides insight into total long-term financing obtained and what has been paid off.

Statement of Cash Flows (cont'd)

Statement of Cash Flows for The Martin Corporation (in millions)

	1992	1993	1994
Operating Activities			
Net Income	\$ 496	\$ 506	\$ 470
Deferred taxes	14	41	(28)
Depreciation and Amortization	247	274	304
Nonrecurring items			
Change in cash from:			
Working capital	57	3	(72)
Other assets and liabilities	(42)	36	157
Net cash provided by operating activities	772	860	831
Investing Activities			
Capital expenditures	(695)	(624)	(560)
Proceeds from land, buildings and equip.	8	5	7
Other investments (dispositions)	39	(165)	(230)
Net cash used by investing activities	(648)	(784)	(783)
Financing Activities			
Increase (decrease) in short-term debt	150	208	93
Issuance of long-term debt	189	423	274
Payment of long-term debt	(248)	(45)	(79)
Common stock issued (retired)	39	32	13
Purchases of common stock for treasury	(40)	(420)	(146)
Dividends paid	(245)	(275)	(299)
Other	(8)	(7)	(4)
Net cash provided (used) by financing	(163)	(84)	(148)
Reclassification of marketable security		108	
Net increase (decrease) in cash and short-term investments	\$ (39)	\$ 100	\$ (100)

- The statement is broken into three separate categories: *operating*, *investing* and *financing* activities.
- The Martin Corp. generated \$831 million in cash from operations in 1994, used \$783 million for investing activities, and used \$148 million for financing activities.
- Net result was a \$100 million decrease in cash and marketable securities.

Statement of Cash Flows (cont'd)

■ Some Disadvantages:

❶ **Direct vs. indirect approach to reporting.**

- **Direct** method states collection and payments from operating activities.
- **Indirect** method starts from the income statements and then makes adjustments as needed.

❷ **Statement does not reconcile the differences between taxes as reported on income statement with what was actually paid.**

❸ **The statement permits but does not require separate disclosure of the cash flows with discontinued operations and extraordinary items.**

❹ **Non-cash investing and financing activities (capital leases, asset exchanges) are not included in this report.**

❺ **Interest or dividends received, as well as interest paid, are treated as operating activities; however, dividends paid are treated as a financing activity.**

Financial Ratio Analysis

- Useful approach in analyzing a firm's financial performance.
- Ratios compare accounting variables.
- Draw from both the income statement and the balance sheet.
- Ratios are grouped into five basic categories:
 - Liquidity Ratios - Indicate the firm's ability to meet its short-run obligations.
 - Asset Management Ratios - Indicate how efficiently the firm is using its assets.
 - Debt Management Ratios - Deal with the amount of debt in the firm's capital structure and its ability to service that debt.
 - Profitability Ratios: Relate net income to sales, assets, or SH equity
 - Market Ratios: Indicate what is happening to the firm's relative market price, earnings and cash dividends.

Liquidity Ratios

- Measure the firm's ability to fulfill its short-term commitments out of current or liquid assets.
- Focus is on current assets and liabilities - less important in terms of long-term viability and profitability.
- Current Ratio: Indicates ability of the firm to meet current obligations; current assets divided by current liabilities.

$$\text{current ratio} = \frac{\text{current assets}}{\text{current liabilities}} = \frac{\$1,129}{\$1,832} = 0.6$$

- Assumes a regular cash flow and that both AR and inventory can be readily converted into cash.
- Current ratio of 2.0 is sometimes employed as a standard of comparison. Ratio < 1.0 indicative of financial difficulties.

Liquidity Ratios (cont'd)

- Quick ratio: Indicates the firm's ability to meet current obligations without using inventory; current assets minus inventory divided by current liabilities.

$$\text{quick ratio} = \frac{\text{current assets} - \text{inventory}}{\text{current liabilities}} = \frac{\$1,129 - \$488}{\$1,832} = 0.3$$

- Motivation: Inventory is often not highly liquid or convertible to cash.
- Ability to meet short-term obligations with cash, marketable securities and accounts receivable.
- Also called the ***acid-test*** ratio.
- Quick ratios less than 1.0 are not alarming in and of themselves. Very high quick ratios suggest excess cash or a credit policy that needs revamping.

Asset Management Ratios

- By looking at the various amount and types of assets, they attempt to determine if they are too high/low with regard to current operating levels.
- If too many funds are tied up in certain types of assets , the firm is not as profitable as it should be.
- Inventory Turnover: Measures the number of times a year the firm turns over its inventory.

$$\text{inventory turnover} = \frac{\text{cost of goods sold}}{\text{inventory}} = \frac{\$4,762}{\$488} = 9.8$$

- The higher the inventory ratio, the more times a year the firm is “moving” or turning over its inventory.
- High ratios indicate efficient inventory management and low ratios indicate obsolete inventory or poor mgmt.

Asset Management Ratios (cont'd)

- Long-Term Asset Turnover: Indicates the firm's ability to generate sales in relation to its long-term asset base; sales divided by fixed assets.

$$\text{long - term asset turnover} = \frac{\text{sales}}{\text{long - term assets}} = \frac{\$8,517}{\$4,069} = 2.1$$

- By comparing long-term assets (primarily property and equipment) to sales, this ratio provides an indication of how effective the firm is in using these assets.
- High ratio indicates effective utilization.
- Total Asset Turnover: Provides an indication of the firm's ability to generate sales in relation to its total asset base.

$$\text{total asset turnover} = \frac{\text{sales}}{\text{total assets}} = \frac{\$8,517}{\$5,198} = 1.6$$

- Low ratio suggest need to reassess firm's overall strategy, marketing effort and capital expenditure program.

Debt Management Ratios

- Focus is on the liabilities and stockholders' equity from the balance sheet and income statement.
- Total Debt to Total Assets: Indicates how much of the firm's funds are being supplied by creditors.

$$\text{total debt to total assets} = \frac{\text{total debt}}{\text{total assets}} = \frac{\$1,832 + \$2,093}{\$5,198} = 0.76$$

- High ratio indicates the use of financial leverage to magnify earnings.
- Low ratio indicates relatively low use of creditor funds.
- Martin Corp. has 76% of its *book-value-based* capital structure in debt-type instruments.
- This highlights the extensive use of debt, or financial leverage by the company.

Debt Management Ratios (cont'd)

- **Times Interest Earned:** Indicates the firm's ability to meet its interest requirements.

$$\text{times interest earned} = \frac{\text{earnings before interest and taxes}}{\text{interest}} = \frac{\$853}{\$99} = 8.6$$

- shows how far EBIT can decline before the firm probably will have trouble servicing its debt.
- High ratio indicates a “safe situation”, but perhaps not enough financial leverage is being used.
- **Fixed Charges Ratio:** Indicates the firm's ability to meet its legal financing obligations, including leases.

$$\text{fixed charges coverage} = \frac{\text{EBIT} + \text{lease expenses}}{\text{interest} + \text{lease expenses}} = \frac{\$853 + \$70}{\$99 + \$77} = 5.5$$

- More comprehensive ratio than times interest earned.
- High fixed charges ratio is more desirable than low one.

Profitability Ratios

- Focus is on the profit-generating ability of the firm.
- Net profit margin as generated in the common-size income statement.

$$\text{net profit margin} = \frac{\text{net income}}{\text{sales}} = \frac{\$470}{\$8,517} = 5.5\%$$

- Low net profit margin indicates either or both:
 - Firm is not generating enough sales relative to its expenses.
 - Expenses are out of control.
- Net profit margins vary considerably among industries.
- Return on Total Assets: Indicates the ability of the firm to earn a satisfactory return on assets it employs.

$$\text{return on total assets} = \frac{\text{net income}}{\text{total assets}} = \frac{\$470}{\$5,198} = 9.0\%$$

- Important measure of the efficiency of management; provides indication of future growth prospects.

Profitability Ratios (cont'd)

- Return on Equity: Indicates return on the owners' investment in the firm.

$$\text{return on equity} = \frac{\text{net income}}{\text{stockholders' equity}} = \frac{\$470}{\$1,273} = 36.9\%$$

- Provides an accounting-based indication of the effectiveness of the firm and its management.
- It is directly affected by the return on total assets and the amount of financial leverage employed.
- However, this ratio does not focus on the actual returns to the firms' owners in terms of cash dividends and/or market appreciation.
- For this reason, *return on equity is not a reliable measure of returns.*

Market Ratios

- Focus of these ratios is more on the investors' viewpoint.
- Price/Earnings (P/E) Ratio: Indicates how much investors are willing to pay for the firm's current earnings.

$$\text{price / earnings} = \frac{\text{market price per share}}{\text{earnings per share}} = \frac{\$68.06}{\$2.97} = 22.9 \text{ times}$$

- Causes of high P/E ratios:
 - Little or no earnings
 - High expected growth.
- Since Martin's earnings are relatively strong, the high P/E ratio is an indicator of how investors future the company's future prospects.
- Because P/E ratios fluctuate over time, it is helpful to look at trends for the company and the stock market.

Market Ratios (cont'd)

- Dividend Yield: Indicates the percentage amount of cash dividends paid by the firm relative to the market price of its common stock.

$$\text{dividend yield} = \frac{\text{dividends per share}}{\text{market price per share}} = \frac{\$1.89}{\$68.06} = 2.8\%$$

- Returns from investing in stocks come from cash dividends and from appreciation or loss in market price.
- The dividend yield is part of the total return.
- Firms with high growth prospects have relatively low cash dividends and a relatively high market price (meaning they have a low dividend yield).
- Conversely, firms with low growth prospects (or options) typically have higher dividend yields.

Market Ratios (cont'd)

- **Dividend Payout Ratio:** Indicates how the firm is splitting its earnings between returning them to common shareholders and reinvesting them in the firm.

$$\text{dividend payout} = \frac{\text{dividends per share}}{\text{earnings per share}} = \frac{\$1.89}{\$2.97} = 63.6\%$$

- High-growth firms typically reinvest most of their earnings instead of paying them out, resulting in low payout ratios.
- Slow-growth firms in stable industries typically pay out a much higher percentage of their earnings.
- Dividend payout ratios are an important part of the cash dividend policy decision.

Ratios - An Industry Comparison

RATIOS	The Martin Corporation			Industry		
	1992	1993	1994	1992	1993	1994
Liquidity						
Current	0.8	0.7	0.6	1.0	0.9	1.4
Quick	0.4	0.4	0.3	0.6	0.6	0.8
Asset Management						
Inventory Turnover	9.0	10.4	9.8	5.2	5.9	4.6
Long-term asset turnover	2.4	2.3	2.1	2.5	2.5	2.2
Total asset turnover	1.8	1.7	1.6	1.4	1.6	1.4
Debt Management						
Total debt to total assets	0.7	0.7	0.7	0.6	0.7	0.7
Times interest earned	10.3	9.0	8.6	7.4	5.7	6.5
Fixed charges coverage	6.6	6.0	5.5	5.1	4.5	5.0
Profitability						
Net profit margin	6.3%	6.2%	5.5%	7.1%	4.3%	6.4%
Return on total assets	11.5%	10.9%	9.0%	9.4%	5.9%	8.9%
Return on equity	36.2%	41.5%	36.9%	28.0%	21.7%	27.4%
Market						
Price/earnings	21.2	20.0	22.9	10.2	17.5	18.1
Dividend yield	2.3%	2.7%	2.8%	2.9%	2.9%	2.8%
Dividend payout	49.3%	54.3%	63.6%	29.9%	50.1%	45.1%