

FINANCING DECISIONS AND MARKET EFFICIENCY

An Overview of Corporate Financing

► **We now begin** our analysis of long-term financing decisions—an undertaking we will not complete until Chapter 25. This chapter provides an introduction to corporate financing. It reviews with a broad brush several topics that will be explored more carefully later on.

We start the chapter by looking at aggregate data on the sources of financing. Much of the money for new investments comes from profits that companies retain and reinvest. The remainder comes from selling new debt or equity securities. These financing patterns raise several interesting questions. Do companies rely too heavily on internal financing rather than on new issues of debt or equity? Are debt ratios of U.S. corporations dangerously high? How do patterns of financing differ across the major industrialized countries?

Our second task in the chapter is to review some of the essential features of debt and equity. Lenders and stockholders have different *cash flow rights* and also different *control rights*. The lenders have first claim on cash flow, because they are promised definite cash payments for interest and principal. The stockholder receives whatever cash is left over after the lenders are

paid. Stockholders, on the other hand, have complete control of the firm, providing that they keep their promises to lenders. As owners of the business, stockholders have the ultimate control over what assets the company buys, how the assets are financed, and how they are used. Of course, in large public corporations the stockholders delegate these decisions to the board of directors, who in turn appoint senior management. In these cases *effective* control often ends up with the company's management.

The simple division of cash flow among debt and equity glosses over the many different types of debt that companies issue. Therefore, we close our discussion of debt and equity with a brief canter through the main categories of debt. We also pause to describe certain less common forms of equity, particularly preferred stock.

The financial crisis that started in the summer of 2007 demonstrated the importance of healthy financial markets and institutions. We will review the crisis, introduce you to the major financial institutions, and look at the roles that financial institutions play in corporate financing and in the economy at large.

14-1 Patterns of Corporate Financing

Corporations invest in long-term assets (primarily property, plant, and equipment) and in net working capital (current assets minus current liabilities). Figure 14.1 shows where U.S. corporations get the cash to pay for these investments. Most of the cash is generated internally. That is, it comes from cash flow allocated to depreciation and from retained earnings (earnings not paid out as cash dividends).¹ Shareholders are happy to plow this

¹ In Figure 14.1, internally generated cash was calculated by adding depreciation to retained earnings. Depreciation is a noncash expense. Thus, retained earnings understate the cash flow available for reinvestment.

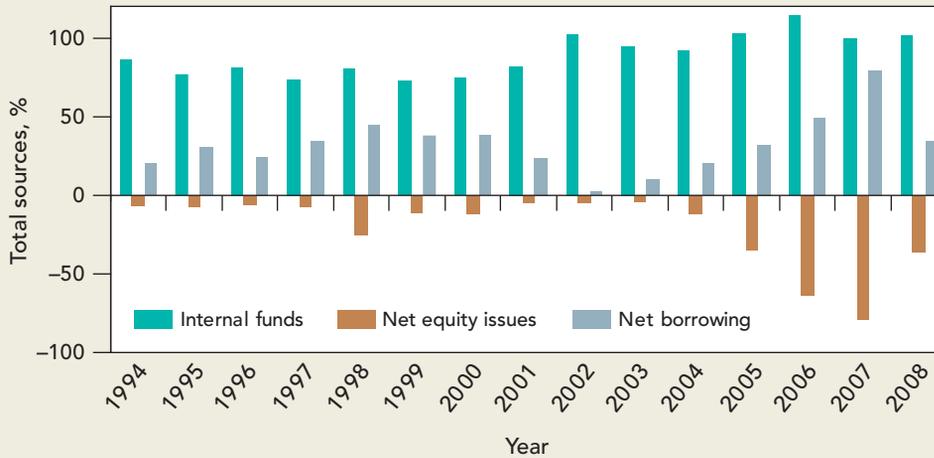


FIGURE 14.1

Sources of funds for U.S. nonfinancial corporations expressed as a fraction of the total.

Source: Board of Governors of the Federal Reserve System, Division of Research and Statistics, Flow of Funds Accounts Table F.102 at www.federalreserve.gov/releases/z1/current/data.htm.

cash back into the firm, provided that investments are positive NPV. Every positive-NPV outlay increases shareholder value.

U.S. corporations are not alone in relying mostly on internally generated cash. For example, internal cash flow makes up more than two-thirds of corporate financing in Germany, Japan, and the U.K.

Sometimes internal cash flow more than covers investment. More often it does not, and the company faces a financial deficit. To cover the deficit, the company must cut back on dividends in order to increase retained earnings, or it must raise new debt or equity capital from outside investors. So there are two basic financing decisions. First, what fraction of profits should be plowed back into the business rather than paid out to shareholders? Second, what fraction of the financial deficit should be met with debt rather than equity? Thus the firm needs a payout policy (Chapter 16) and a debt policy (Chapters 17 and 18).

Take a look at U.S. equity issues in Figure 14.1. Net issues were *negative* in every year. This means that the cash raised by share issues was less than the cash paid out to shareholders by repurchase of previously outstanding shares. (Corporations can buy back their own shares, or they may purchase and retire other firms' shares in the course of mergers and acquisitions.) The choice between cash dividends and repurchases is another aspect of payout policy.

Stock repurchases in the U.S. were especially large in 2006 and 2007, which accounts for the large negative net equity issues in those years. Figure 14.1 shows that the negative equity issues were approximately offset by borrowing. In aggregate, U.S. corporations were switching from equity to debt financing.

Do Firms Rely Too Much on Internal Funds?

We have seen that on average internal funds (retained earnings plus depreciation) cover most of the cash needed for investment. It seems that internal financing is more convenient than external financing by stock and debt issues. But some observers worry that managers have an irrational or self-serving aversion to external finance. A manager seeking comfortable employment could be tempted to forego a risky but positive-NPV project if it involved launching a new stock issue and facing awkward questions from potential

investors. Perhaps managers take the line of least resistance and dodge the “discipline of capital markets.”

We do not mean to paint managers as loafers. There are also some good reasons for relying on internally generated funds. The cost of issuing new securities is avoided, for example. Moreover, the announcement of a new equity issue is usually bad news for investors, who worry that the decision signals lower future profits or higher risk.² If issues of shares are costly and send a bad-news signal to investors, companies may be justified in looking more carefully at those projects that would require a new stock issue.

How Much Do Firms Borrow?

The mix of debt and equity financing varies widely from industry to industry and from firm to firm. Debt ratios also vary over time for particular firms. These variations are a fact of life: there is no constant, God-given debt ratio, and if there were, it would change. But a few aggregate statistics will do no harm.

Table 14.1 shows the aggregate balance sheet of all U.S. manufacturing corporations. If all these businesses were merged into a single gigantic firm, Table 14.1 would be its balance sheet. Assets and liabilities in the table are entered at book values, that is, accounting values. These do not generally equal market values. The numbers are nevertheless instructive. Notice that firms had long-term debt of \$1,385 billion and equity of \$2,775 billion. The ratio of long-term debt to long-term debt plus equity was, therefore, $\$1,385 / (\$1,385 + \$2,775) = .33$.³

Table 14.1 is of course only a snapshot. Is there a long-term trend to more debt and less equity? The answer depends partly on how you measure the debt ratio, as Figure 14.2 demonstrates. In book-value terms the debt ratio crept steadily upward until 1990, when it began to dip as firms opted to pay down debt. The picture is rather different in terms of market values. Booming stock prices until 1999 ensured that for many years the amount of long-term debt grew less rapidly than the market value of equity, but this trend reversed in the stock market declines of 2000–2003 and 2008.

Assets	\$ Billions	Liabilities	\$ Billions
Current assets ^a	\$2,037	Current liabilities ^a	\$1,578
Fixed assets	\$2,749	Long-term debt	\$1,385
Less depreciation	<u>1,459</u>	Other long-term liabilities ^b	<u>1,105</u>
Net fixed assets	1,291	Total long-term liabilities ^b	2,490
Other long-term assets	<u>3,515</u>	Stockholder's equity	<u>2,775</u>
Total assets	\$6,843	Total liabilities and stockholders' equity	\$6,843

TABLE 14.1 Aggregate balance sheet for manufacturing corporations in the United States, fourth quarter, 2008 (figures in \$ billions)

^a See Table 30.1 for a breakdown of current assets and liabilities.

^b Includes deferred taxes and several miscellaneous categories.

Source: U.S. Census Bureau, *Quarterly Report for Manufacturing, Mining and Trade Corporations*, 2008 (www.census.gov/econ/qfr).

² Managers do have insiders' insights and naturally are tempted to issue stock when the price looks good to them, that is, when they are less optimistic than outside investors. The outside investors realize this and will buy a new issue only at a discount from the pre-announcement price. More on stock issues in Chapter 15.

³ This debt ratio may be understated, because “Other long-term liabilities” probably include some debt-equivalent claims. We will not pause to sort through these other liabilities, however.

Should we be concerned that book debt ratios are higher today than they were 50 years ago? It is true that higher debt ratios mean that more companies will fall into financial distress when a serious recession hits the economy. But all companies live with this risk to some degree, and it does not follow that less risk is better. Finding the optimal debt ratio is like finding the optimal speed limit. We can agree that accidents at 30 miles per hour are generally less dangerous than accidents at 60 miles per hour, but we do not therefore set the speed limit on all roads at 30. Speed has benefits as well as risks. So does debt, as we see in Chapter 18.

International Comparisons Corporations in the U.S. are generally viewed as having less debt than many of their foreign counterparts. That was true in the 1950s and 1960s. Now it is not so clear.

International comparisons of corporate debt ratios are muddled by differences in accounting methods, but the European Union has constructed a database of harmonized accounts that provides at least a rough indication of where the U.S. ranks in the debt-ratio league. Figure 14.3 compares the average ratio of total liabilities to total liabilities plus equity for the manufacturing industry in a sample of countries. You can see that Germany and Italy have the highest ratios, while the U.S. is roughly in the middle of the pack.

FIGURE 14.2

Ratio of debt to net worth for nonfinancial corporations, 1955–2008Q2.

Source: Board of Governors of the Federal Reserve System, Division of Research and Statistics, Flow of Funds Accounts Table B.102 at www.federalreserve.gov/releases/z1/current/data.htm.

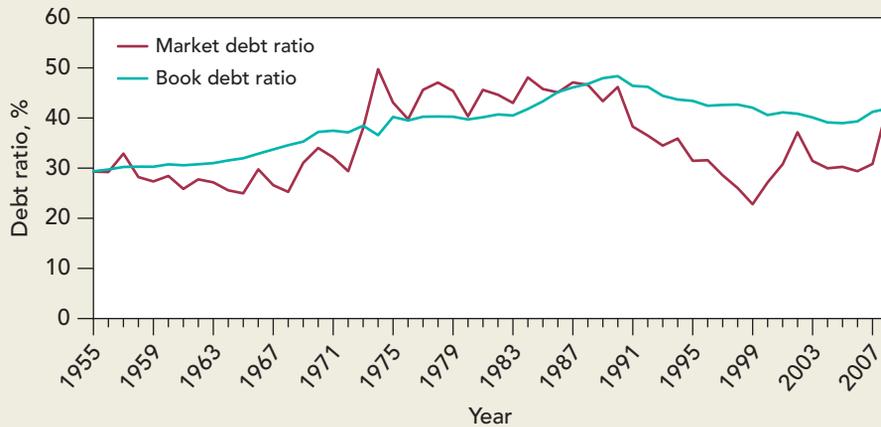


FIGURE 14.3

Ratios of total liabilities to total liabilities plus equity for manufacturing industry, 2006.

Source: European Union *Bach* database of harmonized company accounts. © European Communities, 1995–2006.



14-2 Common Stock

Now we take a brief tour of the debt and equity securities issued by corporations. We start with Table 14.2, which shows how the common stock of Honeywell International is recorded on its books.

The maximum number of shares that can be issued is known as the *authorized share capital*; for Honeywell it was 2 billion shares. If management wishes to increase the number of authorized shares, it needs the agreement of shareholders. By December 2008 Honeywell had issued only 958 million shares, so it could issue over a billion more without further shareholder approval.

Most of the issued shares were held by investors. These shares are said to be *issued and outstanding*. But Honeywell has also bought back 223 million shares from investors. Repurchased shares are held in the company's treasury until they are either canceled or resold. Treasury shares are said to be *issued but not outstanding*.

The issued shares are entered into the company's books at their par value. Each Honeywell share had a par value of \$1.00. Thus the total book value of the issued shares was $958 \text{ million} \times \$1.00 = \$958 \text{ million}$. Par value has little economic significance.⁴ Some companies issue shares with no par value. In this case, the stock is listed in the accounts at an arbitrarily determined figure.

The price of new shares sold to the public almost always exceeds par value. The difference is entered in the company's accounts as additional paid-in capital or capital surplus. Thus, if Honeywell sold an additional 100,000 shares at \$40 a share, the common stock account would increase by $100,000 \times \$1.00 = \$100,000$ and the capital surplus account would increase by $100,000 \times \$39.00 = \$3,900,000$.

Honeywell distributed part of its earnings as dividends. The remainder was retained in the business and used to finance new investments. The cumulative amount of retained earnings was \$16,250 million.

The next entry in the common stock account shows the amount that the company has spent on repurchasing its common stock. The repurchases have reduced the stockholders' equity by \$14,015 million.

Honeywell's net common equity had a book value in December 2008 of \$7,187 million. That works out at $7,187/735 = \$9.78$ per share. But in December 2008, Honeywell's shares were priced at about \$35 each. So the market value of the outstanding common stock was $735 \text{ million} \times \$35 = \$25,725 \text{ million}$, about \$18 billion higher than book value.

Common shares (\$1 par value per share)	\$ 958
Additional paid-in capital	3,994
Retained earnings	16,250
Treasury shares	<u>(14,015)</u>
Net common equity	\$ 7,187
<i>Note:</i>	
Authorized shares	2,000
Issued shares, of which	958
Outstanding	735
Treasury shares	223

TABLE 14.2

Book value of common stockholders' equity of Honeywell International, Inc., December 31, 2008 (figures in millions).

Source: Honeywell International, *Annual Reports*.

⁴ Some states do not allow companies to sell shares below par value. Also some states calculate an annual franchise tax based on the total par value of the company's shares. Therefore par value has traditionally been set at a low figure.

Ownership of the Corporation

A corporation is owned by its common stockholders. Some of this common stock is held directly by individual investors, but the greater proportion belongs to **financial institutions** such as mutual funds, pension funds, and insurance companies. For example, look at Figure 14.4. You can see that in the U.S. about 50% of common stock is held by financial institutions, with pension funds and mutual funds each holding about 20%.

What do we mean when we say that these stockholders *own* the corporation? The answer is obvious if the company has issued no other securities. Consider the simplest possible case of a corporation financed solely by common stock, all of which is owned by the firm's chief executive officer (CEO). This lucky owner-manager receives all the cash flows and makes all investment and operating decisions. She has complete *cash-flow rights* and also complete *control rights*.

These rights are split up and reallocated as soon as the company borrows money. If it takes out a bank loan, it enters into a contract with the bank promising to pay interest and eventually repay the principal. The bank gets a privileged, but limited, right to cash flows; the residual cash-flow rights are left with the stockholder. Thus common stock is a *residual claim* on the firm's assets and cash flow.

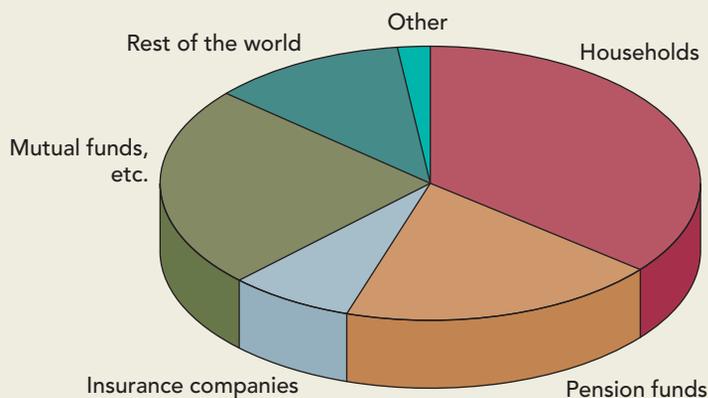
The bank typically protects its claim by imposing restrictions on what the firm can or cannot do. For example, it may require the firm to limit future borrowing, and it may forbid the firm to sell off assets or to pay excessive dividends. The stockholders' control rights are thereby limited. However, the contract with the bank can never restrict or determine all the operating and investment decisions necessary to run the firm efficiently. (No team of lawyers, no matter how long they scribbled, could ever write a contract covering all possible contingencies.)⁵ The owner of the common stock retains the residual rights of control over these decisions. For example, she may choose to increase the selling price of the firm's products, to hire temporary rather than permanent employees, or to construct a new plant in Miami Beach rather than Hollywood.⁶

Ownership of the firm can of course change. If the firm fails to make the promised payments to the bank, it may be forced into bankruptcy. Once the firm is under the "protection" of a bankruptcy court, shareholders' cash-flow and control rights are tightly restricted

FIGURE 14.4

Holdings of corporate equities, fourth quarter, 2008.

Source: Board of Governors of the Federal Reserve System, Division of Research and Statistics, Flow of Funds Accounts Table L.213 at www.federalreserve.gov/releases/z1/current/data.htm.



⁵ Theoretical economists therefore stress the importance of *incomplete contracts*. Their point is that contracts pertaining to the management of the firm *must* be incomplete and that someone must exercise residual rights of control. See O. Hart, *Firms, Contracts, and Financial Structure* (Oxford: Oxford University Press, 1995).

⁶ Of course, the bank manager may suggest that a particular decision is unwise, or even threaten to cut off future lending, but the bank does not have any *right* to make these decisions.

and may be extinguished altogether. Unless some rescue or reorganization plan can be implemented, the bank will become the new owner of the firm and will acquire the cash-flow and control rights of ownership. (We discuss bankruptcy in Chapter 32.)

There is no law of nature that says residual cash-flow rights and residual control rights have to go together. For example, one could imagine a situation where the debtholder gets to make all the decisions. But this would be inefficient. Since the benefits of good decisions are felt mainly by the common stockholders, it makes sense to give them control over how the firm's assets are used.

We have focused so far on a firm that is owned by a single stockholder. Public corporations are owned by many stockholders. Ownership can be widely dispersed, with tens of thousands of stockholders, none owning a significant block of shares. It has been widely believed that ownership in the U.S. is more widely dispersed than in other countries. However, recent research by Clifford Holderness shows that this is not the case. He finds that 96% of a sample of U.S. public corporations have block holders with at least 5% of the outstanding shares. Some countries have more concentrated ownership than the U.S., some have less. The U.S. lies in the middle of the pack.⁷

The common stockholders in widely held corporations still have the residual rights over the cash flows and have the ultimate right of control over the company's affairs. In practice, however, their control is limited to an entitlement to vote, either in person or by proxy, on appointments to the *board of directors*, and on other crucial matters such as the decision to merge. Many shareholders do not bother to vote. They reason that, since they own so few shares, their vote will have little impact on the outcome. The problem is that, if all shareholders think in the same way, they cede effective control and management gets a free hand to look after its own interests.

Voting Procedures

In most companies stockholders elect directors by a system of *majority voting*. In this case, each director is voted upon separately and stockholders can cast one vote for each share that they own. If a company's articles permit *cumulative voting*, the directors are voted upon jointly and stockholders can, if they wish, allot all their votes to just one candidate.⁸ Cumulative voting makes it easier for a minority group among the stockholders to elect directors who will represent the group's interests. That is why some shareholder groups campaign for cumulative voting.

On many issues a simple majority of votes cast is sufficient to carry the day, but the company charter may specify some decisions that require a *supermajority* of, say, 75% of those eligible to vote. For example, a supermajority vote is sometimes needed to approve a merger.

The issues on which stockholders are asked to vote are rarely contested, particularly in the case of large, publicly traded firms. Occasionally, there are *proxy contests* in which the firm's existing management and directors compete with outsiders for effective control of the corporation. But the odds are stacked against the outsiders, for the insiders can get the firm to pay all the costs of presenting their case and obtaining votes.

Dual-Class Shares and Private Benefits

Usually companies have one class of common stock and each share has one vote. Occasionally, however, a firm may have two classes of stock outstanding, which differ in their

⁷ See R. La Porta, F. Lopez-de-Silanes, and A. Shleifer, "Corporate Ownership around the World," *Journal of Finance* 54 (1999), pp. 471–517; and C. Holderness, "The Myth of Diffuse Ownership in the United States," *Review of Financial Studies* 22 (April 2009), pp. 1377–1408.

⁸ For example, suppose there are five directors to be elected and you own 100 shares. You therefore have a total of $5 \times 100 = 500$ votes. Under the majority voting system, you can cast a maximum of 100 votes for any one candidate. Under a cumulative voting system, you can cast all 500 votes for your favorite candidate.

A Contest Over Voting Rights

“Not so long ago,” wrote *The Economist* magazine, “shareholder friendly companies in Switzerland were as rare as Swiss admirals. Safe behind anti-takeover defences, most managers treated their shareholders with disdain.” However, *The Economist* perceived one encouraging sign that these attitudes were changing. This was a proposal by the Union Bank of Switzerland (UBS) to change the rights of its equity-holders.

UBS had two classes of shares—bearer shares, which are anonymous, and registered shares, which are not. In Switzerland, where anonymity is prized, bearer shares usually traded at a premium. UBS’s bearer shares had sold at a premium for many years. However, there was another important distinction between the two share classes. The registered shares carried five times as many votes as an equivalent investment in the bearer shares. Presumably attracted by this feature, an investment company, BK Vision, began to accumulate a large position in the registered shares, and its price rose to a 38% premium over the bearer shares.

At this point UBS announced its plan to merge the two classes of shares, so that the registered shares

would become bearer shares and would lose their superior voting rights. Since all UBS’s shares would then sell for the same price, UBS’s announcement led to a rise in the price of the bearer shares and a fall in the price of the registered.

Martin Ebner, the president of BK Vision, objected to the change, complaining that it stripped the registered shareholders of some of their voting rights without providing compensation. The dispute highlighted the question of the value of superior voting stock. If the votes are used to secure benefits for *all* shareholders, then the stock should not sell at a premium. However, a premium would arise if holders of the superior voting stock expected to secure benefits for themselves alone.

To many observers UBS’s proposal was a welcome attempt to prevent one group of shareholders from profiting at the expense of others and to unite all shareholders in the common aim of maximizing firm value. To others it represented an attempt to take away their rights. In any event, the debate over the proposal was never fully resolved, for UBS shortly afterward agreed to merge with SBC, another Swiss bank.

right to vote. For example, when Google made its first issue of common stock, the founders were reluctant to give up control of the company. Therefore, the company created two classes of shares. The A shares, which were sold to the public, had 1 vote each, while the B shares, which were owned by the founders, had 10 votes each. Both classes of share had the same cash-flow rights, but they had different control rights.

When there are two classes of stock, shareholders with the extra voting power may sometimes use it to toss out bad management or to force management to adopt policies that enhance shareholder value. But, as long as both classes of share have identical cash-flow rights, all shareholders benefit equally from such changes. So here is the question: if everyone gains equally from better management, why do shares with superior voting power typically sell at a premium? The only plausible reason is that there are *private benefits* captured by the owners of these shares. For example, a holder of a block of voting shares might be able to obtain a seat on the board of directors or access to perquisites provided by the company. (How about a ride to Bermuda on the corporate jet?) The shares might have extra bargaining power in an acquisition. Or they might be held by another company, which could use its voting power and influence to secure a business advantage. These are some of the reasons why shares with more votes usually sell for a higher price.

These private benefits of control seem to be much larger in some countries than others. For example, Tatiana Nenova has looked at a number of countries in which firms may have

two classes of stock.⁹ In the United States the premium that an investor needed to pay to gain voting control amounted to only 2% of firm value, but in Italy it was over 29% and in Mexico it was 36%. It appears that in these two countries majority investors are able to secure large private benefits. The Finance in the News box describes a major dispute in Switzerland over the value of superior voting rights.

Even when there is only one class of shares, minority stockholders may be at a disadvantage; the company's cash flow and potential value may be diverted to management or to one or a few dominant stockholders holding large blocks of shares. In the U.S., the law protects minority stockholders from exploitation, but minority stockholders in other countries do not always fare so well.¹⁰

Financial economists sometimes refer to the exploitation of minority shareholders as *tunneling*; the majority shareholder tunnels into the firm and acquires control of the assets for himself. Let us look at tunneling Russian-style.

EXAMPLE 14.1 ● Raiding the Minority Shareholders

To grasp how the scam works, you first need to understand *reverse stock splits*. These are often used by companies with a large number of low-priced shares. The company making the reverse split simply combines its existing shares into a smaller, more convenient, number of new shares. For example, the shareholders might be given 2 new shares in place of the 3 shares that they currently own. As long as all shareholdings are reduced by the same proportion, nobody gains or loses by such a move.

However, the majority shareholder of one Russian company realized that the reverse stock split could be used to loot the company's assets. He therefore proposed that existing shareholders receive 1 new share in place of every 136,000 shares they currently held.¹¹

Why did the majority shareholder pick the number "136,000"? Answer: because the two minority shareholders owned less than 136,000 shares and therefore did not have the right to *any* shares. Instead they were simply paid off with the par value of their shares and the majority shareholder was left owning the entire company. The majority shareholders of several other companies were so impressed with this device that they also proposed similar reverse stock splits to squeeze out their minority shareholders.

Such blatant exploitation would not be permitted in the U.S. or many other countries.



Equity in Disguise

Common stocks are issued by corporations. But a few equity securities are issued not by corporations but by partnerships or trusts. We will give some brief examples.

Partnerships Plains All American Pipeline LP is a *master limited partnership* that owns crude oil pipelines in the United States and Canada. You can buy "units" in this partnership on

⁹ T. Nenova, "The Value of Corporate Voting Rights and Control: A Cross-Country Analysis," *Journal of Financial Economics* 68 (June 2003) pp. 325–352.

¹⁰ International differences in the opportunities for dominant shareholders to exploit their position are discussed in S. Johnson et al., "Tunnelling," *American Economic Review* 90 (May 2000), pp. 22–27.

¹¹ Since a reverse stock split required only the approval of a simple majority of the shareholders, the proposal was voted through.

the New York Stock Exchange, thus becoming a *limited partner* in Plains All American. The most the limited partners can lose is their investment in the company.¹² In this and most other respects, the partnership units are just like the shares in an ordinary corporation. They share in the profits of the business and receive cash distributions (like dividends) from time to time.

Partnerships avoid corporate income tax; any profits or losses are passed straight through to the partners' tax returns. Offsetting this tax advantage are various limitations of partnerships. For example, the law regards a partnership merely as a voluntary association of individuals; like its partners, it is expected to have a limited life. A corporation, on the other hand, is an independent legal "person" that can, and often does, outlive all its original shareholders.

Trusts and REITs Would you like to own a part of the oil in the Prudhoe Bay field on the north slope of Alaska? Just call your broker and buy a few units of the Prudhoe Bay Royalty Trust. BP set up this trust and gave it a royalty interest in production from BP's share of the Prudhoe Bay revenues. As the oil is produced, each trust unit gets its share of the revenues.

This trust is the passive owner of a single asset: the right to a share of the revenues from BP's Prudhoe Bay production. Operating businesses, which cannot be passive, are rarely organized as trusts, though there are exceptions, notably *real estate investment trusts*, or *REITs* (pronounced "reets").

REITs were created to facilitate public investment in commercial real estate; there are shopping center REITs, office building REITs, apartment REITs, and REITs that specialize in lending to real estate developers. REIT "shares" are traded just like common stocks. The REITs themselves are not taxed, so long as they distribute at least 95% of earnings to the REITs' owners, who must pay whatever taxes are due on the dividends. However, REITs are tightly restricted to real estate investment. You cannot set up a widget factory and avoid corporate taxes by calling it a REIT.

Preferred Stock

Usually when investors talk about "stock" or "equity", they are referring to common stock. But Honeywell also has authorization to issue up to 40 million shares of **preferred stock**, and this too would form part of its equity. Despite its name, preferred stock provides only a small part of most companies' cash needs and it will occupy less time in later chapters. However, it can be a useful method of financing in mergers and certain other special situations.

Like debt, preferred stock offers a series of fixed payments to the investor. The company can choose *not* to pay a preferred dividend, but in that case it may not pay a dividend to its common stockholders. Most issues of preferred are known as *cumulative preferred stock*. This means that the firm must pay *all* past preferred dividends before common stockholders get a cent. If the company does miss a preferred dividend, the preferred stockholders generally gain some voting rights, so that the common stockholders are obliged to share control of the company with the preferred holders. Directors are also aware that failure to pay the preferred dividend earns the company a black mark with investors, so they do not take such a decision lightly.

¹² A partnership can offer limited liability *only* to its limited partners. The partnership must also have one or more general partners, who have unlimited liability. However, general partners can be corporations. This puts the corporation's shield of limited liability between the partnership and the human beings who ultimately own the general partner.

14-3 Debt

When companies borrow money, they promise to make regular interest payments and to repay the principal. However, this liability is limited. Stockholders have the right to default on the debt if they are willing to hand over the corporation's assets to the lenders. Clearly, they will choose to do this only if the value of the assets is less than the amount of the debt.¹³

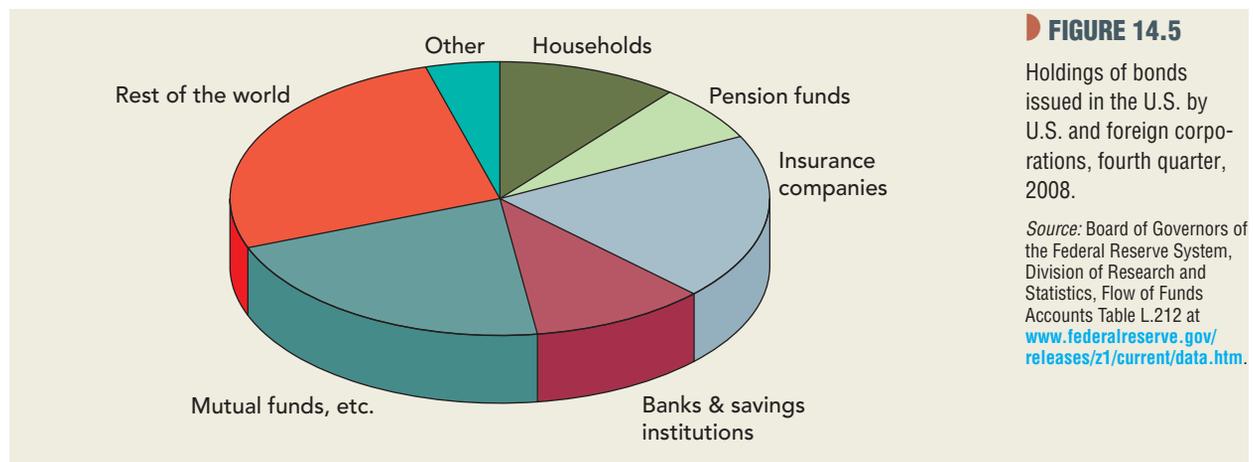
Because lenders are not considered to be owners of the firm, they do not normally have any voting power. The company's payments of interest are regarded as a cost and are deducted from taxable income. Thus interest is paid from *before-tax* income, whereas dividends on common and preferred stock are paid from *after-tax* income. Therefore the government provides a tax subsidy for debt that it does not provide for equity. We discuss debt and taxes in detail in Chapter 18.

We have seen that financial institutions own the majority of corporate equity. Figure 14.5 shows that this is also true of the company's bonds. In this case it is the insurance companies that own the largest stake.¹⁴

Debt Comes in Many Forms

The financial manager is faced with an almost bewildering choice of debt securities. For example, look at Table 14.3, which shows the many ways that Honeywell has borrowed money. Honeywell has also entered into a number of other arrangements that are not shown on the balance sheet. For example, it has arranged lines of credit that allow it to take out further short-term bank loans. Also it has entered into a swap that converts some of its fixed-rate debt into floating-rate debt.

You are probably wondering what a swap or floating-rate debt is. Relax—later in the book we explain the various features of corporate debt. For the moment, simply notice



¹³ In practice this handover of assets is far from straightforward. Sometimes there may be thousands of lenders with different claims on the firm. Administration of the handover is usually left to the bankruptcy court (see Chapter 32).

¹⁴ Figure 14.5 does not include shorter-term debt such as bank loans. Almost all short-term debt issued by corporations is held by financial institutions.

TABLE 14.3

Large firms issue many different securities. This table shows some of the debt securities on Honeywell's balance sheet in December 2008.

Bank loans
Commercial paper
Notes
Unsecured debentures
Floating-rate bonds
Zero-coupon bonds
Money multiplier notes
Industrial development bonds

that the mixture of debt securities that each company issues reflects the financial manager's response to a number of questions:

1. *Should the company borrow short-term or long-term?* If your company simply needs to finance a temporary increase in inventories ahead of the holiday season, then it may make sense to take out a short-term bank loan. But suppose that the cash is needed to pay for expansion of an oil refinery. Refinery facilities can operate more or less continuously for 15 or 20 years. In that case it would be more appropriate to issue a long-term bond.¹⁵

Some loans are repaid in a steady, regular way; in other cases the entire loan is repaid at maturity. Occasionally either the borrower or the lender has the option to terminate the loan early and to demand that it be repaid immediately.

2. *Should the debt be fixed or floating rate?* The interest payment, or coupon, on long-term bonds is commonly fixed at the time of issue. If a \$1,000 bond is issued when long-term interest rates are 10%, the firm continues to pay \$100 per year regardless of how interest rates fluctuate.

Most bank loans and some bonds offer a variable, or *floating*, rate. For example, the interest rate in each period may be set at 1% above LIBOR (London Interbank Offered Rate), which is the interest rate at which major international banks lend dollars to each other. When LIBOR changes, the interest rate on your loan also changes.

3. *Should you borrow dollars or some other currency?* Many firms in the U.S. borrow abroad. Often they may borrow dollars abroad (foreign investors have large holdings of dollars), but firms with overseas operations may decide to issue debt in a foreign currency. After all, if you need to spend foreign currency, it probably makes sense to borrow foreign currency.

Because these international bonds have usually been marketed by the London branches of international banks they have traditionally been known as **eurobonds** and the debt is called **eurocurrency** debt. A eurobond may be denominated in dollars, yen, or any other currency. Unfortunately, when the single European currency was established, it was called the *euro*. It is, therefore, easy to confuse a *eurobond* (a bond that is sold internationally) with a bond that is denominated in euros.

4. *What promises should you make to the lender?* Lenders want to make sure that their debt is as safe as possible. Therefore, they may demand that their debt is *senior* to other debt. If default occurs, senior debt is first in line to be repaid. The *junior*, or *subordinated*, debtholders are paid only after all senior debtholders are satisfied (though all debtholders rank ahead of the preferred and common stockholders).

¹⁵ A company might choose to finance a long-term project with short-term debt if it wished to signal its confidence in the future. Investors would deduce that, if the company anticipated declining profits, it would not take the risk of being unable to take out a fresh loan when the first one matured. See D. Diamond, "Debt Maturity Structure and Liquidity Risk," *Quarterly Journal of Economics* 106 (1991), pp. 709–737.

The firm may also set aside some of its assets specifically for the protection of particular creditors. Such debt is said to be *secured* and the assets that are set aside are known as *collateral*. Thus a retailer might offer inventory or accounts receivable as collateral for a bank loan. If the retailer defaults on the loan, the bank can seize the collateral and use it to help pay off the debt.

Usually the firm also provides assurances to the lender that it will not take unreasonable risks. For example, a firm that borrows in moderation is less likely to get into difficulties than one that is up to its gunwales in debt. So the borrower may agree to limit the amount of extra debt that it can issue. Lenders are also concerned that, if trouble occurs, others will push ahead of them in the queue. Therefore, the firm may agree not to create new debt that is senior to existing debtholders or to put aside assets for other lenders.

5. *Should you issue straight or convertible bonds?* Companies often issue securities that give the owner an option to convert them into other securities. These options may have a substantial effect on value. The most dramatic example is provided by a **warrant**, which is *nothing but* an option. The owner of a warrant can purchase a set number of the company's shares at a set price before a set date. Warrants and bonds are often sold together as a package.

A **convertible bond** gives its owner the option to exchange the bond for a predetermined number of shares. The convertible bondholder hopes that the issuing company's share price will zoom up so that the bond can be converted at a big profit. But if the shares zoom down, there is no obligation to convert; the bondholder remains a bondholder.

A Debt by Any Other Name

The word *debt* sounds straightforward, but companies make a number of promises that look suspiciously like debt but are treated differently in the accounts. Some of these disguised debts are easily spotted. For example, accounts payable are simply obligations to pay for goods that have already been delivered and are therefore like short-term debt.

Other arrangements are less obvious. For example, instead of borrowing to buy new equipment, the company may rent or **lease** it on a long-term basis. In this case, the firm promises to make a series of lease payments to the owner of the equipment. This is just like the obligation to make payments on an outstanding loan. If the firm gets into deep water, it can't choose to miss out on its debt interest, and it can't choose to skip those lease payments.

Here is another example of a disguised debt. At the end of 2008 Honeywell had promised its employees postretirement health care and life insurance benefits valued at \$17 billion. However, Honeywell had set aside only \$8.5 billion to help meet this obligation. The *unfunded* obligation amounted to \$8.5 billion.

There is nothing underhand about any of these obligations. They are all clearly shown on the balance sheet or explained in the notes to the accounts. Sometimes, however, companies go to considerable lengths to ensure that investors do *not* know how much the companies have borrowed. For example, Enron was able to borrow \$658 million by setting up *special-purpose entities* (SPEs), which raised cash by a mixture of equity and debt and then used these debts to help fund the parent company. None of this debt showed up on Enron's balance sheet.

Variety's the Very Spice of Life

We have indicated several dimensions along which corporate securities can be classified. That gives the financial manager plenty of choice in designing securities. As long as you can convince investors of its attractions, you can issue a convertible, subordinated, floating-rate bond denominated in Swedish kronor. Rather than combining features of existing

securities, you may create an entirely new one. We can imagine a coal mining company issuing convertible bonds on which the payment fluctuates with coal prices. We know of no such security, but it is perfectly legal to issue it—and who knows?—it might generate considerable interest among investors.

Given the enormous variety of corporate securities, it's no surprise to find hybrids that incorporate features of both debt and equity. The dividing line between debt and equity is sometimes hard to locate. For example, monthly income preferred stock (MIPS) is subordinated debt that is repackaged as preferred stock. MIPS is treated as equity on the issuing company's balance sheet, but the Internal Revenue Service treats the preferred dividends as tax-deductible interest.¹⁶ MIPS is debt for tax purposes, equity otherwise.

Financial managers don't care what a security is called; they care how it works. ("What's in a name? That which we call a rose by any other name would smell as sweet.")¹⁷ But a security's classification as debt or equity does matter for accounting and tax purposes. Classification can sometimes be challenging. It doesn't help to say that "Debt is safe, equity is risky," because there are plenty of examples of safe equity (preferred stock issued by a blue-chip corporation, for example) and risky debt (junk bonds). It does help to remember that equity is a *residual claim* that participates in the upsides and downsides of the business after debt claims are satisfied. Equity has residual cash-flow rights and residual control rights. Debt has first claim on cash flows, but its claim is limited. It does not participate in the upsides of the business. Debt has no control rights unless the firm defaults or violates debt covenants.

14-4 Financial Markets and Institutions

That completes our tour of corporate securities. You may feel like the tourist who has just seen 12 cathedrals in five days. But there will be plenty of time in later chapters for reflection and analysis. It is now time to move on and to look briefly at the markets in which the firm's securities are traded and at the financial institutions that hold them.

We have explained that corporations raise money by selling financial assets such as stocks and bonds. This increases the amount of cash held by the company and the amount of stocks and bonds held by the public. These issues are known as *primary issues* that are sold in the **primary market**. But in addition to helping companies to raise cash, financial markets also allow investors to trade stocks or bonds among themselves. For example, Ms. Watanabe might decide to raise some cash by selling her Sony stock at the same time that Mr. Hashimoto invests his savings in Sony. So they make a trade. The result is simply a transfer of ownership from one person to another, which has no effect on the company's cash, assets, or operations. Such purchases and sales are known as *secondary transactions* and they take place in the **secondary market**.

Some financial assets have less active secondary markets than others. For example, when a company borrows money from a bank, the bank acquires a financial asset (the company's promise to repay the loan with interest). Banks do sometimes sell packages of loans to other banks, but generally they retain the loan until it is repaid by the borrower. Other financial assets are regularly traded. Some of these assets, such as shares of stock, are traded on organized exchanges like the New York, London, or Tokyo stock exchanges. In other cases there is no organized exchange, and the assets are traded by a network of dealers. Such markets are known as *over-the-counter (OTC)* markets. For example, most government and corporate bonds are traded OTC.

Some financial markets are not used to raise cash but instead help firms to manage their risks. In these markets firms can buy or sell derivatives, whose payoffs depend on the prices

¹⁶ See P. Irvine and J. Rosenfeld, "Raising Capital Using Monthly Income Preferred Stock: Market Reaction and Implications for Capital Structure Theory," *Financial Management* 29 (Summer 2000), pp. 5–20.

¹⁷ *Romeo and Juliet*, Act II, Scene 2.

of other securities or commodities. For example, if a chocolate producer is worried about rising cocoa prices, it can use the derivatives markets to fix the price at which it buys its future cocoa requirements.

The Financial Crisis of 2007–2009

The financial crisis of 2007–2009¹⁸ raised many questions, but it settled one question conclusively: Yes, financial markets and institutions are important. When financial markets and institutions ceased to operate properly, the world was pushed deeper into a global recession.

For the U.S., the recession was the worst since the Great Depression of the 1930s. But financial crises have hit many other countries. Carmen Reinhart and Kenneth Rogoff examined 18 postwar financial crises in the developed world, several crises in developing economies, and two earlier historical episodes.¹⁹ They found that systemic banking crises are typically preceded by credit booms and asset price bubbles. The crises result, on average, in a 35% real drop in housing prices spread over a period of six years. Stock prices fall 55% over three and a half years. Output falls by 9% over two years, and unemployment rises 7% over four years. Government debt rises 86% from its precrisis level.

Crisis always come as nasty surprises. Perhaps managers, investors, and policymakers ignore the many prior crises. (“Those who cannot remember the past are condemned to repeat it.”)²⁰ Perhaps they believe that their country is different or this time is different.

The crisis of 2007–2009 cannot be blamed on any short list of economic events. We can note a few of the many contributing factors, however. We start with easy-money policies adopted by the U.S. Federal Reserve and other central banks after the collapse of the technology stock bubble in 2000. At the same time, large balance-of-payments surpluses in Asian economies were invested back into U.S. Treasuries and other debt securities. This also contributed to lax credit.

Low interest rates and easy credit helped fuel a dramatic increase in housing prices in the U.S. and several other countries, including the U.K., Ireland, and Spain. Housing prices reached a peak in 2006, but then started to fall.

Many subprime mortgages had been packaged together and resold to banks. As house prices fell, investors became increasingly worried about the losses that these banks were suffering. By August banks had become wary about lending to each other for more than a few days, and central banks were forced to inject massive liquidity. Lenders demanded more and more collateral for what were ordinarily safe, routine transactions.

During the fall of 2007 prices of debt that was backed by subprime mortgages continued to decline. In March 2008, the Federal Reserve bailed out Bear Stearns through an arranged merger with J.P. Morgan. Public money and guarantees were required to induce J.P. Morgan to engage in the transaction.

Although the financial system, particularly banks, came under tremendous pressure during 2008, the real economy was not much affected. That changed in September 2008, when Lehman Brothers was *not* bailed out by the government. Lehman’s bankruptcy meant major losses for investors and other financial institutions. More important, the investors and institutions now feared that new risks could be lurking in every balance sheet. Many of those fears were justified. For example, AIG, once an AAA-rated insurance company, turned out to have massive exposure from insuring bonds against default. Bailing out AIG cost the U.S. Treasury about \$85 billion.

¹⁸ We write this chapter in July 2009. We hope that “2007–2009” is not overly optimistic.

¹⁹ C. Reinhart and K. Rogoff, “The Aftermath of Financial Crises,” *American Economic Review* 99 (May 2009), pp. 466–472. Among the 18 postwar crises in developed countries, they put particular emphasis on “the big five” (Spain 1977, Norway 1987, Finland 1991, Sweden 1991, and Japan 1992). The emerging market episodes are the 1997–1998 Asian Crisis (Indonesia, Malaysia, and the Philippines), Colombia 1998, and Argentina 2001. The historical episodes are Norway 1899 and the U.S. 1929.

²⁰ This maxim appears in many versions. We have quoted the American philosopher George Santayana.

By first quarter of 2009, economic activity in the U.S. and many other countries was declining rapidly. Unemployment rose dramatically. As international trade fell away, export-based economies such as Japan and Germany were hit particularly badly. It was the worst worldwide crisis since the Great Depression.

The Role of Financial Institutions

We have described some of the consequences when financial institutions don't work as designed. We should say more about how they should work. What functions are they supposed to serve?

Financial institutions act as *financial intermediaries* that gather the savings of many individuals and reinvest them in loans or in the financial markets. For example, banks raise money by taking deposits and by selling debt and common stock to investors. They then lend the money to companies and individuals. Of course banks must charge sufficient interest to cover their costs and to compensate depositors and other investors.

Banks and their immediate relatives, such as savings and loan companies, are the most familiar intermediaries. But there are many others, such as insurance companies and mutual funds. In the United States insurance companies are more important than banks for the *long-term* financing of business. They hold massive investments in corporate stocks and bonds, and they often make long-term loans directly to corporations. Most of the money for these loans comes from the sale of insurance policies. Say you buy a fire insurance policy on your home. You pay cash to the insurance company, which it invests in the financial markets. In exchange you get a financial asset (the insurance policy). You receive no interest on this asset, but if a fire does strike, the company is obliged to cover the damages up to the policy limit. This is the return on your investment. Of course, the company will issue not just one policy but thousands. Normally the incidence of fires averages out, leaving the company with a predictable obligation to its policyholders as a group.

Why are financial intermediaries different from a manufacturing corporation? First, the financial intermediary may raise money in special ways, for example, by taking deposits or by selling insurance policies. Second, the financial intermediary invests in *financial assets*, such as stocks, bonds, or loans to businesses or individuals. By contrast, the manufacturing company's main investments are in *real* assets, such as plant and equipment. Thus the intermediary receives cash flows from its investment in one set of financial assets (stocks, bonds, etc.) and repackages those flows as a different set of financial assets (bank deposits, insurance policies, etc.). The intermediary hopes that investors will find the cash flows on this new package more attractive than those provided by the original security.

Financial intermediaries contribute in many ways to our individual well-being and the smooth functioning of the economy. Here are some examples.

The Payment Mechanism Think how inconvenient life would be if all payments had to be made in cash. Fortunately, checking accounts, credit cards, and electronic transfers allow individuals and firms to send and receive payments quickly and safely over long distances. Banks are the obvious providers of payments services, but they are not alone. For example, if you buy shares in a money-market mutual fund, your money is pooled with that of other investors and is used to buy safe, short-term securities. You can then write checks on this mutual fund investment, just as if you had a bank deposit.

Borrowing and Lending Almost all financial institutions are involved in channeling savings toward those who can best use them. Thus, if Ms. Jones has more money now than she needs and wishes to save for a rainy day, she can put the money in a bank savings deposit. If Mr. Smith wants to buy a car now and pay for it later, he can borrow money from the bank. Both the lender and borrower are happier than if they were forced to spend cash as it arrived. Of course, individuals are not alone in needing to raise cash. Companies with

profitable investment opportunities may wish to borrow from the bank, or they may raise the finance by selling new shares or bonds. Governments also often run at a deficit, which they fund by issuing large quantities of debt.

In principle, individuals or firms with cash surpluses could take out newspaper advertisements or surf the Net looking for those with cash shortages. But it can be cheaper and more convenient to use a financial intermediary, such as a bank, to link up the borrower and lender. For example, banks are equipped to check out the would-be borrower's credit-worthiness and to monitor the use of cash lent out. Would you lend money to a stranger contacted over the Internet? You would be safer lending the money to the bank and letting the bank decide what to do with it.

Notice that banks promise their checking account customers instant access to their money and at the same time make long-term loans to companies and individuals. This mismatch between the liquidity of the bank's liabilities (the deposits) and most of its assets (the loans) is possible only because the number of depositors is sufficiently large that the bank can be fairly sure that they will not all want to withdraw their money simultaneously.

Pooling Risk Financial markets and institutions allow firms and individuals to pool their risks. For instance, insurance companies make it possible to share the risk of an automobile accident or a household fire. Here is another example. Suppose that you have only a small sum to invest. You could buy the stock of a single company, but then you would be wiped out if that company went belly-up. It is generally better to buy shares in a mutual fund that invests in a diversified portfolio of common stocks or other securities. In this case you are exposed only to the risk that security prices as a whole will fall.

The basic functions of financial markets are the same the world over. So it is not surprising that similar institutions have emerged to perform these functions. In almost every country you will find banks accepting deposits, making loans, and looking after the payments system. You will also encounter insurance companies offering life insurance and protection against accident. If the country is relatively prosperous, other institutions, such as pension funds and mutual funds, will also have been established to help manage people's savings.

Of course there are differences in institutional structure. Take banks, for example. In many countries where securities markets are relatively undeveloped, banks play a much more dominant role in financing industry. Often the banks undertake a wider range of activities than they do in the United States. For example, they may take large equity stakes in industrial companies; this would not generally be allowed in the United States.

Financial managers are faced with two broad financing decisions:

1. How much of internally generated cash flow should be plowed back into the business? How much should be paid out to shareholders by cash dividends or share repurchases?
2. To what extent should the firm use debt rather than equity financing?

The answers to these questions depend on the firm's payout policy and debt policy.

Figure 14.1 summarizes how U.S. corporations raise and spend money. Have another look at it and try to get a feel for the numbers. Notice that internally generated cash is the major source of financing for investment. Borrowing is also significant. Net equity issues have been negative, however—that is, share repurchases have been larger than share issues.

Common stock is the simplest form of finance. The common stockholders own the corporation. They get all of the cash flow and assets that are left over after the firm's debts have been paid. Common stock is therefore a residual claim that participates in the upsides and downsides



SUMMARY

of the business. Debt has first claim on cash flows, but its claim is limited. Debt has no control rights unless the firm defaults or violates debt covenants.

Preferred stock is another form of equity financing. Preferreds promise a fixed dividend, but if the board of directors decides to skip the dividend, holders of the preferred have no recourse. The firm must pay the preferred dividends before it pays any dividends on common stock, however.

Debt is the most important source of external financing. Holders of bonds and other corporate debt are promised interest payments and return of principal. If the company cannot make these payments, the debt investors can sue for payment or force bankruptcy. Bankruptcy usually means that the debt holders take over and either sell the company's assets or continue to operate them under new management.

Note that the tax authorities treat interest payments as a cost and therefore the company can deduct interest when calculating its taxable income. Interest is paid from pretax income, whereas dividends and retained earnings come from after-tax income. That is one reason why preferred stock is a less important source of financing than debt. Preferred dividends are not tax-deductible.

Book debt ratios in the United States have generally increased over the post-World War II period. However, they are not appreciably higher than the ratios in the other major industrialized countries.

The variety of debt instruments is almost endless. The instruments differ by maturity, interest rate (fixed or floating), currency, seniority, security, and whether the debt can be converted into equity.

The majority of the firm's debt and equity is owned by financial institutions—notably banks, insurance companies, pension funds, and mutual funds. The crisis of 2007–2009 dramatized the crucial role that these institutions play. They finance much of corporate investment, as well as investment in real estate and other assets. They run the payments mechanism, help individuals diversify and manage their portfolios, and help companies manage risk.



FURTHER READING

A useful article for comparing financial structure in the United States and other major industrial countries is:

R. G. Rajan and L. Zingales, "What Do We Know about Capital Structure? Some Evidence from International Data," *Journal of Finance* 50 (December 1995), pp. 1421–1460.

For a discussion of the allocation of control rights and cash-flow rights between stockholders and debt holders, see:

O. Hart, *Firms, Contracts, and Financial Structure* (Oxford: Oxford University Press, 1995).

Robert Merton gives an excellent overview of the functions of financial institutions in:

R. Merton, "A Functional Perspective of Financial Intermediation," *Financial Management* 24 (Summer 1995), 23–41.

The Winter 2009 issue of the Journal of Financial Perspectives contains several articles on the crisis of 2007–2009. See also:

V. V. Acharya and M. W. Richardson, eds., *Restoring Financial Stability* (Hoboken, NJ: John Wiley & Sons, 2009).

The following works cover financial crises more generally:

F. Allen and D. Gale, *Understanding Financial Crises* (Oxford: Oxford University Press, 2007).

C. Reinhart and K. Rogoff, "The Aftermath of Financial Crises," *American Economic Review* 99 (May 2009), pp. 466–472.

C. M. Reinhart and K. Rogoff, *This Time Is Different: Eight Centuries of Financial Folly* (Princeton: Princeton University Press, 2009).



Select problems are available in McGraw-Hill Connect. Please see the preface for more information.

BASIC

PROBLEM SETS

1. *True or false?*
 - a. Net stock issues by U.S. nonfinancial corporations are in most years small but positive.
 - b. Most capital investment by U.S. companies is funded by retained earnings and reinvested depreciation.
 - c. Debt ratios in the U.S. have generally increased over the past 50 years.
2. The authorized share capital of the Alfred Cake Company is 100,000 shares. The equity is currently shown in the company's books as follows:

Common stock (\$.50 par value)	\$40,000
Additional paid-in capital	10,000
Retained earnings	<u>30,000</u>
Common equity	80,000
Treasury stock (2,000 shares)	<u>5,000</u>
Net common equity	\$75,000

- a. How many shares are issued?
 - b. How many are outstanding?
 - c. Explain the difference between your answers to (a) and (b).
 - d. How many more shares can be issued without the approval of shareholders?
 - e. Suppose that Alfred Cake issues 10,000 shares at \$2 a share. Which of the above figures would be changed?
 - f. Suppose instead that the company bought back 5,000 shares at \$5 a share. Which of the above figures would be changed?
3. There are 10 directors to be elected. A shareholder owns 80 shares. What is the maximum number of votes that he or she can cast for a favorite candidate under (a) majority voting? (b) cumulative voting?
4. Fill in the blanks, using the following terms: floating rate, common stock, convertible, subordinated, preferred stock, senior, warrant.
 - a. If a lender ranks behind the firm's general creditors in the event of default, his or her loan is said to be _____.
 - b. Interest on many bank loans is based on a _____ of interest.
 - c. A(n) _____ bond can be exchanged for shares of the issuing corporation.
 - d. A(n) _____ gives its owner the right to buy shares in the issuing company at a pre-determined price.
 - e. Dividends on _____ cannot be paid unless the firm has also paid any dividends on its _____.
5. True or false?
 - a. In the United States, most common shares are owned by individual investors.
 - b. An insurance company is a financial intermediary.
 - c. Investments in partnerships cannot be publicly traded.

INTERMEDIATE

6. In 2008 Pfizer had 12,000 million shares of common stock authorized, 8,863 million in issue, and 6,746 million outstanding (figures rounded to the nearest million). Its equity account was as follows:

Common stock	\$ 443
Additional paid-in capital	70,283
Retained earnings	44,148
Treasury shares	(57,391)

- a. What was the par value of each share?
 - b. What was the average price at which shares were sold?
 - c. How many shares had been repurchased?
 - d. What was the average price at which the shares were repurchased?
 - e. What was the net book value of Pfizer's common equity?
7. Inbox Software was founded in 2007. Its founder put up \$2 million for 500,000 shares of common stock. Each share had a par value of \$.10.
- a. Construct an equity account (like the one in Table 14.2) for Inbox on the day after its founding. Ignore any legal or administrative costs of setting up the company.
 - b. After two years of operation, Inbox generated earnings of \$120,000 and paid no dividends. What was the equity account at this point?
 - c. After three years the company sold 1 million additional shares for \$5 per share. It earned \$250,000 during the year and paid no dividends. What was the equity account?
8. Look back at Table 14.2.
- a. Suppose that Honeywell issued an additional 50 million shares at \$30 a share. Rework Table 14.2 to show the company's equity after the issue.
 - b. Suppose that Honeywell *subsequently* repurchased 20 million shares at \$35 a share. Rework Table 14.2 to show the effect of this further change.
9. Suppose that East Corporation has issued voting and nonvoting stock. Investors hope that holders of the voting stock will use their power to vote out the company's incompetent management. Would you expect the voting stock to sell for a higher price? Explain.
10. In 2007 Beta Corporation earned gross profits of \$760,000.
- a. Suppose that it is financed by a combination of common stock and \$1 million of debt. The interest rate on the debt is 10%, and the corporate tax rate is 35%. How much profit is available for common stockholders after payment of interest and corporate taxes?
 - b. Now suppose that instead of issuing debt Beta is financed by a combination of common stock and \$1 million of preferred stock. The dividend yield on the preferred is 8% and the corporate tax rate is still 35%. How much profit is now available for common stockholders after payment of preferred dividends and corporate taxes?
11. Look up the financial statements for a U.S. corporation on the Internet and construct a table like Table 14.3 showing the types of debt that the company has issued. What arrangements has it made that would allow it to borrow more in the future? (*Hint:* You will need to look at the notes to the accounts to answer this.)
12. Which of the following features would increase the value of a corporate bond? Which would reduce its value?
- a. The borrower has the option to repay the loan before maturity.
 - b. The bond is convertible into shares.

- c. The bond is secured by a mortgage on real estate.
 - d. The bond is subordinated.
13. Construct a time line of the important events in the financial crisis that started in the summer of 2007. When do you think the crisis ended? You will probably want to review some of the entries under Further Reading before you answer.
 14. We mention several causes of the financial crisis. What other causes can you identify? You will probably want to review some of the entries under Further Reading before you answer.

CHALLENGE

15. The shareholders of the Pickwick Paper Company need to elect five directors. There are 200,000 shares outstanding. How many shares do you need to own to *ensure* that you can elect at least one director if (a) the company has majority voting? (b) it has cumulative voting?

-
1. Use data from the Standard & Poor's market insight database at www.mhhe.com/edumarketinsight to work out the financing proportions given in Figure 14.1 for a particular industrial company for some recent year.
 2. The Web site www.federalreserve.gov/releases/z1/current/default.htm provides data on sources of funds and an aggregate balance sheet for nonfarm nonfinancial corporations. Look at Table F.102 for the latest year. What proportion of the cash that companies needed was generated internally and how much had to be raised on the financial markets? Is this the usual pattern? Now look at "new equity issues." Were companies on average issuing new equity or buying their shares back?
 3. An aggregate balance sheet for U.S. manufacturing corporations can be found on www.census.gov/econ/qfr. Find the balance sheet for the latest year. What was the ratio of long-term debt to long-term debt plus equity? What about the ratio of all long-term liabilities to long-term liabilities plus equity?



REAL-TIME DATA ANALYSIS

STANDARD
& POOR'S