

CHAPTER 20

Initial Public Offerings, Investment Banking, and Financial Restructuring

On any given day, thousands of businesses go to the market to raise capital. Here are some examples of securities sold during 2009.

1. *SolarWinds, a network software developer, raised \$151.5 million in an initial public offering. The underwriters were led by JP Morgan, Goldman Sachs, and Morgan Stanley. Of the 12.1 million shares sold to the public, about three-fourths were new shares whose sale generated cash for SolarWinds; the balance came from founders and previous venture capital investors who were cashing in on their previous investments in SolarWinds.*
2. *Vertex Pharmaceuticals, already a publicly traded company, sold an additional 10 million shares at \$32 per share. After underwriting fees and other expenses, Vertex netted about \$313 million. Vertex plans to use the proceeds for continuing development of drugs already in its pipeline.*
3. *Oracle raised a total of \$4.5 billion by selling a combination of (1) 3.75% coupon 5-year bonds; (2) 5.0% coupon 10-year bonds; and (3) 6.25% coupon 30-year bonds. Bank of America, Morgan Stanley, and Wachovia were joint lead managers in the offering. Oracle stated that one use of the funds would be to help finance its proposed acquisition of Sun Microsystems.*

These three issues exemplify an initial public offering, an additional stock offering by an already-public company, and a debt offering. In each case, the underwriting investment bankers made substantial profits. After reading this chapter, you should have a better understanding of the procedures that these and other firms use to issue securities.



resource

The textbook's Web site contains an Excel file that will guide you through the chapter's calculations. The file for this chapter is **Ch20 Tool Kit.xls**, and we encourage you to open the file and follow along as you read the chapter.

Previous chapters described how a company makes capital structure and dividend policy decisions. Those decisions affect a firm's need for new capital and the form or forms in which this capital is raised. We now discuss the actual process of raising capital, including the roles played by investment banks and regulatory agencies.

20.1 THE FINANCIAL LIFE CYCLE OF A START-UP COMPANY

Most businesses begin life as proprietorships or partnerships, and if they become successful and grow, at some point they find it desirable to become corporations. Initially, most corporate stock is owned by the firms' founding managers and key employees. Even start-up firms that are ultimately successful usually begin with negative free cash flows because of their high growth rates and product development costs; hence, they must raise capital during these high-growth years. If the founding owner-managers have invested all of their own financial resources in the company, then they must turn to outside sources of capital. Start-up firms generally have high growth opportunities relative to assets-in-place, and they suffer from especially large problems with asymmetric information. Therefore, as we discussed in Chapter 15, they must raise external capital primarily as equity rather than debt.

To protect investors from fraudulent stock issues, in 1933 Congress enacted the Securities Act, which created the **Securities and Exchange Commission (SEC)** to regulate the financial markets.¹ The Securities Act regulates interstate public offerings, which we explain later in this section, but it also provides several exemptions that allow companies to issue securities through **private placements** that are not registered with the SEC. The rules governing these exemptions are quite complex, but in general they restrict the number and type of investors who may participate in an issue. **Accredited investors** include the officers and directors of the company, high-wealth individuals, and institutional investors. In a nonregistered private placement, the company may issue securities to an unlimited number of accredited investors but to only 35 nonaccredited investors. In addition, none of the investors can sell their securities in the secondary market to the general public.

For most start-ups, the first round of external financing comes through a private placement of equity to one or two individual investors, called **angels**. In return for a typical investment in the range of \$50,000 to \$400,000, the angels receive stock and perhaps also a seat on the board of directors. Because angels can influence the strategic direction of the company, it is best when they bring experience and industry contacts to the table, not just cash.

As the company grows, its financing requirements may exceed the resources of individual investors, in which case it is likely to turn to a **venture capital fund**. A venture capital fund is a private limited partnership, which typically raises \$30 million to \$80 million from a relatively small group of primarily institutional investors, including pension funds, college endowments, and corporations.² The managers of a

¹In addition to federal statutes, which affect transactions that cross state borders, states have "Blue Sky" laws that regulate securities sold just within the state. These laws were designed to prevent unscrupulous dealers from selling something of little worth, such as blue sky, to naïve investors.

²The typical venture capital fund is a private limited partnership, with limited partners and a general partner. The limited partners contribute cash but are prohibited from being involved in the partnership's decision making. Because of their limited participation, they are not held liable for any of the partnership's liabilities, except to the extent of their original investment. The general partner usually contributes a relatively modest amount of cash but acts as the partnership's manager. In return, the general partner normally receives annual compensation equal to 1% to 2% of the fund's assets plus a 20% share of the fund's eventual profits.

venture capital fund, called **venture capitalists**, or **VCs**, are usually very knowledgeable and experienced in a particular industry, such as health care or biotechnology. They screen hundreds of companies and ultimately fund around a dozen, called **portfolio companies**. The venture fund buys shares of the portfolio companies, and the VCs sit on the companies' boards of directors. The venture capital fund usually has a prespecified life of 7 to 10 years, after which it is dissolved, either by selling the portfolio companies' stock and distributing the proceeds to the funds' investors or by directly distributing the stock to the investors.

Self-Test

What is a private placement?

What is an angel?

What is a venture capital fund? A VC?

20.2 THE DECISION TO GO PUBLIC

Going public means selling some of a company's stock to outside investors in an initial public offering (IPO) and then letting the stock trade in public markets. For example, Visa, RiskMetrics Group, GT Solar International, and many other companies took this step in 2009. The advantages and disadvantages of public stock ownership are discussed next.

Advantages of Going Public

There are many advantages to going public, as we detail in the following list.

1. *Increases liquidity and allows founders to harvest their wealth.* The stock of a private, or closely held, corporation is illiquid. It may be hard for one of the owners who wants to sell some shares to find a ready buyer, and even if a buyer is located, there is no established price on which to base the transaction. This is one of the reasons that SolarWinds, a company whose IPO we mentioned in the opening vignette, went public in 2009.
2. *Permits founders to diversify.* As a company grows and becomes more valuable, its founders often have most of their wealth tied up in the company. By selling some of their stock in a public offering, they can diversify their holdings, thereby reducing the riskiness of their personal portfolios.
3. *Facilitates raising new corporate cash.* If a privately held company wants to raise cash by selling new stock, it must either go to its existing owners, who may not have any money or may not want to put more eggs in this particular basket, or else shop around for wealthy investors. However, it is usually quite difficult to get outsiders to put money into a closely held company, because if the outsiders do not have voting control (more than 50% of the stock) then the inside stockholders/managers can take advantage of them. Going public, which brings with it both public disclosure of information and regulation by the SEC, greatly reduces this problem and thus makes people more willing to invest in the company, which makes it easier for the firm to raise capital.
4. *Establishes a value for the firm.* If a company wants to give incentive stock options to key employees, it is useful to know the exact value of those options. Employees much prefer to own stock, or options on stock, that is publicly traded and therefore liquid. Also, when the owner of a privately owned business dies, state and federal tax appraisers must set a value on the company for estate tax purposes. Often these appraisers set a higher value than that of a similar publicly traded company.

5. *Facilitates merger negotiations.* Having an established market price helps when a company either is being acquired or is seeking to acquire another company in which the payment will be with stock.
6. *Increases potential markets.* Many companies report that it is easier to sell their products and services to potential customers after they become publicly traded.

Disadvantages of Going Public

There are also a number of disadvantages associated with going public, as follows.

1. *Cost of reporting.* A publicly owned company must file quarterly and annual reports with the SEC and/or various state agencies. These reports can be a costly burden, especially for small firms. In addition, compliance with the Sarbanes-Oxley Act often requires considerable expense and manpower.
2. *Disclosure.* Management may not like the idea of reporting operating data, because these data will then be available to competitors. Similarly, the owners of the company may not want people to know their net worth. But since a publicly owned company must disclose the number of shares owned by its officers, directors, and major stockholders, it is easy enough for anyone to multiply shares held by price per share to estimate the net worth of the insiders.
3. *Self-dealings and consumption of perks.* Consider a privately held company whose CEO owns less than 100% of the company. If the other owners are not involved in the day-to-day operations of the company, then the owner-manager has many opportunities for various types of legal but unethical self-dealings, including the payment of high salaries, nepotism, personal transactions with the business (such as a leasing arrangement), and not-truly-necessary fringe benefits. Observe that the owner-manager receives the full benefit of these perks but that the costs are partially born by the other owners. (Of course, if a company is wholly owned, then there is no ethical violation because the owner is also bearing the full cost of the perks.) Such self-dealings are much harder to arrange if a company is publicly owned.
4. *Inactive market and/or low price.* If the firm is very small and if its shares are not traded frequently, then its stock will not really be liquid and so the market price may not represent the stock's true value. Security analysts and stockbrokers simply will not follow the stock, because there will not be sufficient trading activity to generate enough brokerage commissions to cover the costs of following it.
5. *Control.* Because of possible tender offers and proxy fights, the managers of publicly owned firms who do not have voting control must be concerned about maintaining control. Further, there is pressure on such managers to produce annual earnings gains, even when it might be in the shareholders' best long-term interests to adopt a strategy that reduces short-term earnings but raises them in future years. These factors have led a number of public companies to "go private" in leveraged buyout deals, where the managers borrow the money to buy out the nonmanagement stockholders. We discuss the decision to go private in a later section.
6. *Investor relations.* Public companies must keep investors abreast of current developments. Many CFOs of newly public firms report that they spend two full days a week talking with investors and analysts.

Conclusions on Going Public

There are no hard-and-fast rules regarding if or when a company should go public. This is an individual decision that should be made on the basis of the company's and stockholders' own unique circumstances. If a company does decide to go public,

either by selling newly issued stock to raise new capital or by selling stock of the current owners, the key issue is setting the price at which shares will be offered to the public. The company and its current owners should want to set the price as high as possible: the higher the offering price, the smaller the fraction of the company the current owners will have to give up to obtain any specified amount of money. On the other hand, potential buyers want the price set as low as possible. We return to the establishment of the offering price later in the chapter, after we describe some other aspects of common stock financing.

Self-Test

What are the major advantages of going public?
What are the major disadvantages?

20.3 THE PROCESS OF GOING PUBLIC: AN INITIAL PUBLIC OFFERING

As the following sections show, an initial public offering is a lot more complicated, expensive, and time-consuming than simply making the decision to go public.

Selecting an Investment Bank

After a company decides to go public, it faces the problem of how to sell its stock to a large number of investors. Although most companies know how to sell their products, few have experience in selling securities. To help in this process, the company will interview a number of different **investment banks**, also called **underwriters**, and then select one to be the lead underwriter. To understand the factors that affect this choice, it helps to understand exactly what investment banks do.

First, the investment bank helps the firm determine the preliminary offering price, or price range, for the stock and the number of shares to be sold. The investment bank's reputation and experience in the company's industry are critical in convincing potential investors to purchase the stock at the offering price. In effect, the investment bank implicitly certifies that the stock is not overpriced, which obviously comforts investors. Second, the investment bank actually sells the shares to its existing clients, which include a mix of institutional investors and retail (that is, individual) customers. Third, the investment bank, through its associated brokerage house, will have an analyst "cover" the stock after it is issued. This analyst will regularly distribute reports to investors describing the stock's prospects, which will help to maintain an interest in the stock. Well-respected analysts increase the likelihood that there will be a liquid secondary market for the stock and that its price will reflect the company's true value.

The Underwriting Syndicate

The firm and its investment bank must next decide whether the bank will work on a **best efforts basis** or will **underwrite** the issue. In a best efforts sale, the bank does not guarantee that the securities will be sold or that the company will get the cash it needs, only that it will put forth its "best efforts" to sell the issue. On an underwritten issue, in contrast, the company does get a guarantee: the bank agrees to buy the entire issue and then resell the stock to its customers. Therefore, the bank bears significant risks in underwritten offerings. For example, on one IBM bond issue interest rates rose sharply and bond prices fell after the deal had been set but before the investment banks could sell the bonds to the ultimate purchasers. The banks lost somewhere between \$10 million and \$20 million. Had the offering been on a best efforts basis, IBM would have been the loser.

Except for extremely small issues, virtually all IPOs are underwritten. Investors are required to pay for securities within ten days, and the investment bank must pay the issuing firm within four days of the official commencement of the offering. Typically, the bank sells the stock within a day or two after the offering begins, but on occasion the bank miscalculates, sets the offering price too high, and thus is unable to move the issue. At other times, the market declines during the offering period, forcing the bank to reduce the price of the stock or bonds. In either instance, on an underwritten offering the firm receives the price that was agreed upon, so the bank must absorb any losses that are incurred.

Because they are exposed to large potential losses, investment banks typically do not handle the purchase and distribution of issues single-handedly unless the issue is a very small one. If the sum of money involved is large, then investment banks form **underwriting syndicates** in an effort to minimize the risk each individual bank faces. The banking house that sets up the deal is called the **lead**, or **managing, underwriter**. Syndicated offerings are usually covered by more analysts, which contributes to greater liquidity in the post-IPO secondary market. Thus, syndication provides benefits to both underwriters and issuers.

In addition to the underwriting syndicate, on larger offerings still more investment banks are included in a **selling group**, which handles the distribution of securities to individual investors. The selling group includes all members of the underwriting syndicate plus additional dealers who take relatively small percentages of the total issue from the members of the underwriting syndicate. Thus, the underwriters act as wholesalers while members of the selling group act as retailers. The number of brokerage houses in a selling group depends partly on the size of the issue, but it is normally in the range of 10 to 15.

A new selling procedure has recently emerged that takes advantage of the trend toward institutional ownership of stock. In this type of sale, called an **un-syndicated stock offering**, the managing underwriter—acting alone—sells the issue entirely to a group of institutional investors, thus bypassing both retail stockbrokers and individual investors. In recent years, about 50% of all stock sold has been by unsyndicated offerings. Behind this phenomenon is a simple motivating force: money. The fees that issuers pay on a syndicated offering, which include commissions paid to retail brokers, can run a full percentage point higher than those on unsyndicated offerings. Moreover, although total fees are lower in unsyndicated offerings, managing underwriters usually come out ahead because they do not have to share the fees with an underwriting syndicate. However, some types of stock do not appeal to institutional investors, so not all firms can use unsyndicated offers.

Regulation of Securities Sales

Sales of new securities, and also sales in the secondary markets, are regulated by the Securities and Exchange Commission and, to a lesser extent, by each of the 50 states. There are four primary elements of SEC regulation.

1. *Jurisdiction.* The SEC has jurisdiction over all **interstate public offerings** in amounts of \$1.5 million or more.
2. *Registration.* Newly issued securities (stocks and bonds) must be registered with the SEC at least 20 days before they are publicly offered. The **registration statement**, called Form S-1, provides financial, legal, and technical information about the company to the SEC. A **prospectus**, which is embedded in the S-1, summarizes this information for investors. The SEC's lawyers and accountants

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The SEC Web site allows users to search for any filings by a company, including Form S-1. See <http://www.sec.gov/edgar.shtml>.

analyze both the registration statement and the prospectus; if the information is inadequate or misleading, the SEC will delay or stop the public offering.³

3. *Prospectus.* After the SEC declares the registration to be effective, new securities may be advertised, but all sales solicitations must be accompanied by the prospectus. **Preliminary**, or “**red herring**,” **prospectuses** may be distributed to potential buyers during the 20-day waiting period after the registration is effective, but no sales may be finalized during this time. The “red herring” prospectus (so called because it has a standard legal disclaimer printed in red across its cover) contains all the key information that will appear in the final prospectus except the final price, which is generally set after the market closes the day before the new securities are actually offered to the public.
4. *Truth in reporting.* If the registration statement or prospectus contains **misrepresentations** or **omissions** of material facts, then any purchaser who suffers a loss may sue for damages. Severe penalties may be imposed on the issuer or its officers, directors, accountants, engineers, appraisers, underwriters, and all others who participated in the preparation of the registration statement or prospectus.

The Roadshow and Book-Building

After the registration statement has been filed, the senior management team, the investment banker, and the company’s lawyers go on a **roadshow**. The management team will make three to seven presentations each day to potential institutional investors, who typically are existing clients of the underwriters. The institutional investors ask questions during the presentation, but the management team may not give any information that is not in the registration statement. Nor may the management team make any forecasts or express any opinions about the value of their company. These provisions are due to the SEC-mandated **quiet period**. This quiet period begins when the registration statement is made effective and lasts for 40 days after the stock begins trading. Its purpose is to create a level playing field for all investors by ensuring that they all have access to the same information. It is not uncommon for the SEC to delay an IPO if managers violate the quiet period rules. The typical roadshow may last 10 to 14 days, with stops in 10 to 20 different cities. In many ways the process resembles a coming-out party for the company, but it is much more grueling and has much higher stakes.

After a presentation, the investment banker asks the investor for an indication of interest, based on the offering price range shown in the registration statement. The investment banker records the number of shares each investor is willing to buy, which is called **book-building**. As the roadshow progresses, an investment bank’s “book” shows how demand for the offering is building. Many IPOs are **oversubscribed**, with investors wishing to purchase more shares than are available. In such a case, the investment bank will allocate shares to the investors on a pro rata basis.⁴

³With the Internet, it is extremely easy to obtain the S-1 form, which typically has 50 to 200 pages of financial statements in addition to a detailed discussion of the firm’s business, the risks and opportunities the firm faces, its principal stockholders and managers, what will be done with the funds raised, and the like. This statement is filed with the SEC and is immediately available, through the Internet, to investors. The SEC staff reviews the filed S-1, and amendments may be issued (labeled S-1A, S-1B, etc.). The likely range for the offering price will be reported—for example, \$13 to \$15 per share. If the market strengthens or weakens while the stock is undergoing SEC review, the price may be increased or decreased right up until the last day. The SEC Web site with these and other filings is <http://www.sec.gov>.

⁴Most underwriting agreements contain an “overallotment option” that permits the underwriter to purchase additional shares from the company up to 15% of the issue size to cover promises made to potential buyers. This is called a “green shoe” agreement because it was first used in the 1963 underwriting of a company named Green Shoe.

If demand is high enough, the banks may increase the offering price; if demand is low, they will either reduce the offering price or withdraw the IPO. Sometimes low demand is specifically due to concern over the company's future prospects, but sometimes low demand is caused by a fall in the general stock market. Thus, the timing of the roadshow and offering date are important. As the old saying goes, sometimes it is better to be lucky than good.

If all goes well with the roadshow, the investment bank will finalize the offering price on the evening before the actual offering date.

The First Day of Trading

The first day of trading for many IPOs is wild and exciting. Table 20-1 shows the largest first-day returns for IPOs in the second half of 2008 and the first half of 2009. Some stocks end the day with large gains, such as the 59.50% price increase of Open Table, as shown in Line 1 of the table. Others have a sharp run-up and then fall back by the end of the day. A few IPOs actually end their first day with a loss.

According to a study of IPOs during 1990–1998 by Professors Tim Loughran and Jay Ritter, about 27.3% of the IPOs had an offer price that was lower than the low range in their initial registration filing, and these stocks had an average first-day return of 4.0%.⁵ Even though the average return was positive, 47% of these stocks actually ended the day with a loss or no gain. About 48.4% of IPOs had an offering price that was within the range of their initial filing. For such companies, the average first-day return was 10.8%. As a result of high demand during the roadshow, 24.3% of IPOs had a final offer price that exceeded their original range. These stocks had an average first-day return of 31.9%. Overall, the average first-day return was 14.1% during 1990–1998, with 75% of all IPOs having a positive return. During 1999, the average first-day return was an astronomical 70%!

You're probably asking yourself two questions: (1) How can you get in on these deals? (2) Why is the offering price so low? First, you probably can't get the chance to buy an

TABLE 20-1 Highest First-Day IPO Returns in 2009^a

RANK	COMPANY (SYMBOL)	FIRST-DAY		GAIN
		OFFERING PRICE	CLOSING PRICE	
1	OpenTable (OPEN)	\$20.00	\$31.89	59.50%
2	Rosetta Stone (RST)	\$18.00	\$25.12	39.60%
3	ChangYou.com (CYOU)	\$16.00	\$20.02	25.10%
4	Energy Recovery (ERII)	\$ 8.50	\$ 9.83	15.60%
5	DigitalGlobe (DGI)	\$19.00	\$21.50	13.20%
6	Mead Johnson Nutrition (MJN)	\$24.00	\$26.43	10.10%
7	SolarWinds (SWI)	\$12.50	\$13.75	10.00%
8	Bridgepoint Education (BPI)	\$10.50	\$11.10	5.70%
9	Chardan 2008 China Acqu (CACAU)	\$ 8.00	\$ 8.12	1.50%
10	Navios Maritime Acqu (NNA-U)	\$10.00	\$10.05	0.50%

^aThese are the highest first-day IPO returns in the 12 months prior to May 25, 2009.

Source: <http://www.ipohome.com>.

⁵See Tim Loughran and Jay R. Ritter, "Why Don't Issuers Get Upset about Leaving Money on the Table in IPOs?" *Review of Financial Studies*, 2002, pp. 413–444.

IPO at its offering price, especially not a “hot” one. Virtually all sales go to institutional investors and preferred retail customers. There are a few Web-based investment banks who are trying to change this, such as the OpenIPO of W. R. Hambrecht & Co., but right now it is difficult for small investors to get in on the better first-day IPOs.

Various theories have been put forth to explain IPO underpricing. As long as issuing companies don’t complain, investment banks have strong incentives to underprice the issue. First, underpricing increases the likelihood of oversubscription, which reduces the risk to the underwriter. Second, most investors who get to purchase the IPO at its offering price are preferred customers of the investment bank, and they became preferred customers by generating lots of commissions in the investment bank’s sister brokerage company. Therefore, the IPO is an easy way for the underwriter to reward customers for past and future commissions. Third, the underwriter needs an honest indication of interest when building the book prior to the offering, and underpricing is a possible way to secure this information from the institutional investors.

But why don’t issuing companies object to underpricing? Some do, and they are seeking alternative ways to issue securities, such as OpenIPO. However, most seem content to leave some money on the table. The best explanations seem to be that (1) the company wants to create excitement, and a price run-up on the first day does that; (2) only a small percentage of the company’s stock is generally offered to the public, so current stockholders lose less to underpricing than appears at first glance; and (3) IPO companies generally plan to have additional offerings in the future, and the best way to ensure future success is to have a successful IPO, which underpricing guarantees.

Although IPOs on average provide large first-day returns, their long-term returns over the following 3 years are below average. For example, if you could not get in at the IPO price but purchased a portfolio of IPO stocks on their second day of trading, your 3-year return would have been lower than the return on a portfolio of similar but seasoned stocks. In summary, the offering price appears to be too low, but the first-day run-up is generally too high.

The Costs of Going Public

During recent years, virtually all investment banks have charged a 7% **spread** between the price they pay the issuing company and the price at which they sell shares to the public. Thus, they keep 7% of the offering price as their compensation. For example, Rosetta Stone (RST), a developer of software for learning languages, went public in 2009. RST sold 3.125 million shares at an offering price of \$18.00 per share to the public (founders and other shareholders also sold 3.125 million of their own shares). In this IPO, the underwriters’ direct compensation was \$1.26 per share, which means that the stock was sold at a price of \$18 to the public but RST received only $\$18.00 - \$1.26 = \$16.74$ per share. For the 3.125 million shares issued by RST, these direct underwriting costs totaled about $\$1.26(3.125) = \3.9375 million; the underwriters also made the same amount on the shares they sold for founders and other existing shareholders.

But there are other direct costs, such as lawyers’ fees, accountants’ costs, printing, engraving, and so on. RST estimated that these fees totaled about \$3.5 million.

Last but not least are the indirect costs. The money left on the table, which is equal to the number of shares multiplied by the difference in the closing price and the offering price, can be quite large. RST experienced a first-day run-up to \$25.12 from an offering price of \$18.00, so its indirect costs totaled $3.125(\$25.12 - \$18.00) = \$22.25$ million. In addition, senior managers spend an enormous amount of time working on the IPO rather than managing the business, which certainly carries a high cost even if it cannot be easily measured.

Thus, Rosetta Stone received proceeds of $3.125(\$18 - \$1.26) = \$52.3$ million, the underwriters and their sales forces received \$3.9 million, other expenses totaled about \$3.5 million, and \$22.5 million was left on the table. There were undoubtedly other indirect costs due to the diversion of the management team. As you can see, an IPO is quite expensive.⁶

The Importance of the Secondary Market

An active secondary market after the IPO provides the pre-IPO shareholders with a chance to convert some of their wealth into cash, makes it easier for the company to raise additional capital later, makes employee stock options more attractive, and makes it easier for the company to use its stock to acquire other companies. Without an active secondary market, there would be little reason to have an IPO. Thus, companies should try to ensure that their stock will trade in an active secondary market before they incur the high costs of an IPO.

There are several types of secondary markets: physical stock exchanges, dealer markets, and bulletin boards. We discuss each of these below.

The physical exchanges, such as the NYSE and AMEX, conduct their trading in an actual location. In general, the NYSE and AMEX provide excellent liquidity. In order to have its stock listed, a company must apply to an exchange, pay a relatively small fee, and meet the exchange's minimum requirements. These requirements relate to the size of the company's net income, its market value, and its "float," which is the number of shares outstanding and in the hands of outsiders (as opposed to the number held by insiders, who generally do not actively trade their stock). Also, the company must agree to disclose certain information to the exchange and to help the exchange track trading patterns and thus ensure that no one is attempting to manipulate the stock's price. The size qualifications increase as a company moves from the AMEX to the NYSE.

Assuming a company qualifies, many believe that listing is beneficial to the company and to its stockholders. Listed companies receive a certain amount of free advertising and publicity, and their status as listed companies may enhance their prestige and reputation, which often leads to higher sales. Investors respond favorably to increased information, increased liquidity, and the confidence that the quoted price is not being manipulated. Listing provides investors with these benefits, which may help managers lower their firms' cost of equity and increase the value of their stock.⁷

The advantages of physical exchanges have been eroded—some would say eliminated—by computers and the Internet, which have benefited the dealer markets. The primary equity dealer markets are administered by Nasdaq, and they include the Nasdaq National Market and the Nasdaq SmallCap Market. Almost 85% of new IPO stocks trade in these markets. Unlike the physical exchanges, these consist of a network of dealers, with each dealer making a market in one or more stocks. A dealer makes a market in a company's stock by holding an inventory of the shares and then making offers to buy or sell the stock. Many stocks have excellent liquidity in these markets and

⁶For more on IPOs, see Roger G. Ibbotson, Jody L. Sindelar, and Jay R. Ritter, "The Market's Problems with the Pricing of Initial Public Offerings," *Journal of Applied Corporate Finance*, Spring 1994, pp. 66–74; Chris J. Muscarella and Michael R. Vetsuypens, "The Underpricing of 'Second' Initial Public Offerings," *Journal of Financial Research*, Fall 1989, pp. 183–192; Jay R. Ritter, "The Long-Run Performance of Initial Public Offerings," *Journal of Finance*, March 1991, pp. 3–27; and Jay R. Ritter, "Initial Public Offerings," *Contemporary Finance Digest*, Spring 1998, pp. 5–30.

⁷For additional discussion on the benefits of listing, see H. Kent Baker and Richard B. Edelman, "AMEX-to-NYSE Transfers, Market Microstructure, and Shareholder Wealth," *Financial Management*, Winter 1992, pp. 60–72; and Richard B. Edelman and H. Kent Baker, "Liquidity and Stock Exchange Listing," *The Financial Review*, May 1990, pp. 231–249.

remain there even though they easily meet the requirements for listing on the NYSE. Examples include Microsoft, Intel, Apple, and Cisco Systems.

Investment banks generally agree to make a market in a company's stock as part of their IPO duties. The diligence with which they carry out this task can have a huge effect on the stock's liquidity in the secondary market and thus on the success of the IPO.

Although the requirements for listing on the Nasdaq National Market or Small-Cap Market are not as stringent as for the NYSE, some companies fail to maintain them and hence are "delisted." For these companies, offers to buy or sell the stock may be posted on the OTC Bulletin Board, an electronic bulletin board administered by Nasdaq. However, there is very little liquidity in these stocks, and an IPO would be considered a failure if the company's stock ended up on the OTC Bulletin Board.

Regulating the Secondary Market

As we stated earlier, a liquid and crime-free secondary market is critical to the success of an IPO or any other publicly traded security. So, in addition to regulating the process for issuing securities, the Securities Exchange Commission also has responsibilities in the secondary markets. The primary elements of SEC regulation are set forth below.

1. *Stock exchanges.* The SEC *regulates all national stock exchanges*, and companies whose securities are listed on an exchange must file annual reports similar to the registration statement with both the SEC and the exchange.
2. *Insider trading.* The SEC has control over trading by corporate *insiders*. Officers, directors, and major stockholders must file monthly reports of changes in their holdings of the stock of the corporation. Any short-term profits from such transactions must be turned over to the corporation.
3. *Market manipulation.* The SEC has the power to *prohibit manipulation* by such devices as pools (large amounts of money used to buy or sell stocks to artificially affect prices) or wash sales (sales between members of the same group to record artificial transaction prices).
4. *Proxy statements.* The SEC has *control over the proxy statement* and the way the company uses it to solicit votes.

Control over credit used to buy securities is exercised by the Federal Reserve Board through **margin requirements**, which specify the maximum percentage of the purchase price someone can borrow. If a great deal of margin borrowing has persisted, then a decline in stock prices can result in inadequate coverages. This could force stockbrokers to issue **margin calls**, which require investors either to put up more money or have their margined stock sold to pay off their loans. Such forced sales further depress the stock market and thus can set off a downward spiral. The required margin at the time a stock is purchased has been 50% since 1974 (subsequent "maintenance margins" are lower and are generally set by individual lenders).

The securities industry itself realizes the importance of stable markets, sound brokerage firms, and the absence of stock manipulation.⁸ Therefore, the various exchanges work closely with the SEC to police transactions and to maintain the integrity and credibility of the system. Similarly, the **National Association of Securities**

⁸It is illegal for anyone to attempt to manipulate the price of a stock. During the 1920s and earlier, syndicates would buy and sell stocks back and forth at rigged prices so the public would believe that a particular stock was worth more or less than its true value. The exchanges, with the encouragement and support of the SEC, utilize sophisticated computer programs to help spot any irregularities that suggest manipulation, and they require disclosures to help identify manipulators. This same system helps to identify illegal insider trading. It is now illegal to manipulate a stock's price by spreading false news on the Internet.

Dealers (NASD) cooperates with the SEC to police trading in its dealer and OTC markets. These industry groups also cooperate with regulatory authorities to set net worth and other standards for securities firms, to develop insurance programs to protect the customers of failed brokerage houses, and the like.

In general, government regulation of securities trading, as well as industry self-regulation, is designed to ensure that (1) investors receive information that is as accurate as possible, (2) no one artificially manipulates the market price of a given stock, and (3) corporate insiders do not take advantage of their position to profit in their companies' stocks at the expense of other stockholders. Neither the SEC, the state regulators, nor the industry itself can prevent investors from making foolish decisions or from having "bad luck," but they can and do help investors obtain the best data possible for making sound investment decisions.

Questionable IPO Practices

Among the many revelations to come out during 2002 regarding investment banking was the practice by some investment banking houses of letting CEOs and other high-ranking corporate executives in on "hot" IPOs. In these deals, the demand for the new stock was far greater than supply at the offering price, so the investment banks were virtually certain that the stock would soar far above the offering price.

Some investment banks systematically allocated shares of hot IPOs to executives of companies that were issuing stocks and bonds—and thus generating fees to the banks who underwrote the deals. Bernie Ebbers, the chairman and CEO of WorldCom—one of the biggest sources of underwriting fees for investment banks—was given huge allocations in hot IPOs, and he made millions on these deals. Ebbers is just one example; a lot of this was going on in the late 1990s, at the height of the tech/dot-com bubble.

Government regulators have been investigating this practice, called "spinning," and corporate executives and investment bankers have been charged with something that amounts to a kickback scheme under which those executives who favored particular investment banks were rewarded with allocations in hot IPOs. Indeed, in 2003 ten Wall Street securities firms agreed to pay \$1.4 billion in fines to settle charges of investor abuse, including spinning. Although the practice may or may not be illegal (this has yet to be determined), it is certainly unethical. The corporate executives were paid to work for their stockholders, so they should have turned over any IPO profits to their companies—not kept those profits for themselves.

This kind of unethical and perhaps illegal behavior may help to explain IPO underpricing and "money left on the table." An executive might be more interested in getting a future hot IPO allocation than in whether or not the company gets the best terms from its investment bank. This situation would be exacerbated if the investment banks' analysts overstated prospects for the company and thereby pumped up its price just prior to the time when executives were to receive and exercise stock options.

In summary, we have a hard time justifying IPO underpricing during the late 1990s on rational economic grounds. People have come up with explanations for why companies let their investment banks price their stocks too low in IPOs, but those reasons seem rather weak. However, when coupled with what may have been a kickback scheme, the underpricing is less puzzling (but ethically troubling). Before closing, though, we should make it clear that relatively few corporate executives were corrupt. However, just as one rotten apple can spoil an entire barrel, a few bad executives—when combined with lax regulation—can help a bad practice become "the industry standard" and thus become widespread.

Self-Test

What is the difference between *best efforts* and *underwriting*?

What are some SEC regulations regarding sales of new securities?

What is a roadshow? What is book-building?

What is underpricing? Leaving money on the table?

What are some of the costs of going public?

A company is planning an IPO. Its underwriters have said the stock will sell at \$50 per share. The underwriters will charge a 7% spread. How many shares must the company sell to net \$93 million, ignoring any other expenses? (**2 million**)

20.4 EQUITY CARVE-OUTS: A SPECIAL TYPE OF IPO

In 2009, Bristol-Myers Squibb sold to the public about 15% of the equity in its wholly owned subsidiary, Mead Johnson Nutrition. In this transaction, the subsidiary, like the parent, became publicly owned, but the parent retained full control of the subsidiary by keeping about 85% of the subsidiary's common stock. (Parent companies typically retain at least 80% of the subsidiary's common stock to preserve their ability to file a consolidated tax return.) This type of transaction is called an **equity carve-out** (or **partial public offering**, or **spin-out**).⁹ The market's response to Mead Johnson's carve-out was positive—the stock price rose almost 10% during the first day of trading. Equity carve-outs raise an interesting question: Why do carve-out announcements typically result in stock price increases while the announcements of new stock issues by parent corporations generally decrease stock prices?

One possible answer is that carve-outs facilitate the evaluation of corporate growth opportunities on a line-of-business basis. Thus, analysts might have an easier time evaluating Mead Johnson as a separate company than when it was a part of Bristol-Myers. This also applies to providers of capital—Mead Johnson might be able to raise capital more effectively as a stand-alone company because investors are better able to evaluate its prospects. A third advantage to carve-outs is that they improve the ability of the parent to offer incentives to a subsidiary's managers. Thus, Mead Johnson can now offer equity incentives to its managers based on its own stock price rather than that of Bristol-Myers.

Equity carve-outs do have some associated costs. First, the underwriting commission involved in a carve-out is larger than for an equity offering by the parent. Second, because an equity carve-out is a type of initial public offering, there is a potential for underpricing the new offering. Third, key managers of the subsidiary must spend a significant amount of time marketing the new stock. Fourth, there are costs associated with the minority interest that is created in the carve-out. For example, the subsidiary's new board of directors must monitor all transactions between the subsidiary and the parent to ensure that the minority investors are not being exploited. Finally, there are additional costs such as annual reports, SEC filings, analyst presentations, and so on, which now must be borne both by parent and subsidiary.

Self-Test

Explain what is meant by an equity carve-out.

On average, equity carve-outs have increased shareholder wealth. What are some potential explanations for this observed phenomenon?

⁹For more information on equity carve-outs, see Roni Michaely and Wayne H. Shaw, "The Choice of Going Public: Spin-offs vs. Carve-outs," *Financial Management*, Autumn 1995, pp. 5–21; and Anand Vihj, "Long-Term Returns from Equity Carve-outs," *Journal of Financial Economics*, Vol. 51, 1999, pp. 273–308.

20.5 OTHER WAYS TO RAISE FUNDS IN THE CAPITAL MARKETS

IPOs are exciting and play a vital role in stimulating the entrepreneurship and innovation that are vital for economic growth. However, the funds raised through IPOs are only a small fraction of the total funding that companies raise from commercial banks and capital markets. We discuss other ways that firms raise cash from capital markets in the following sections.¹⁰

Preliminary Decisions

Before raising capital, a firm must make some initial, preliminary decisions, which include the following.

1. *Dollars to be raised.* How much new capital is needed?
2. *Type of securities used.* Should common, preferred, bonds, hybrid securities, or a combination be used? If common stock is to be issued, should it be done as a preemptive rights offering to current shareholders or by a direct sale to the general public?
3. *Competitive bid versus a negotiated deal.* Should the company simply offer a block of its securities for sale to the highest bidder, or should it negotiate a deal with an investment bank? These two procedures are called **competitive bids** and **negotiated deals**, respectively. Only about 100 of the largest firms listed on the NYSE, whose securities are already well known to the investment banking community, are in a position to use the competitive bidding process. The investment banks must do a great deal of investigative work (“due diligence”) to bid on an issue unless they are already quite familiar with the firm, and such costs would be too high to make it worthwhile unless the bank was sure of getting the deal. Therefore, except for the largest firms, offerings of stock and bonds are generally on a negotiated basis.
4. *Selection of an investment bank.* Most deals are negotiated, so the firm must select an investment bank. This can be an important decision for a firm that is going public. On the other hand, an older firm that has already “been to market” will have an established relationship with an investment bank. However, it is easy to change banks if the firm is dissatisfied. Different investment banking houses are better suited for different companies. For example, Goldman Sachs and Morgan Stanley are the leading tech-IPO underwriters. Investment banking houses sell new issues largely to their own regular brokerage customers, so the nature of these customers has a major effect on the ability of the house to do a good job for corporate issuers. Finally, a major factor in choosing an underwriter is the reputation of the analyst who will cover the stock in the secondary market, since a strong buy recommendation from a well-respected analyst can trigger a sharp price run-up.

Seasoned Equity Offerings

When a company with publicly traded stock issues additional shares, this is called a **seasoned equity offering**, also known as a *secondary* or *follow-on offering*. Because the stock is already publicly traded, the offering price will be based upon the existing

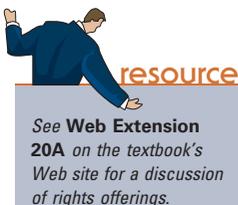
¹⁰For an excellent discussion of the various procedures used to raise capital, see Jay R. Ritter, “Investment Banking and Securities Issuance,” in *North-Holland Handbook of the Economics of Finance*, George Constantinides, Milton Harris, and René Stulz, eds. (Amsterdam: North-Holland, 2002). Also see Claudio Loderer, John W. Cooney, and Leonard D. Van Drunen, “The Price Elasticity of Demand for Common Stock,” *Journal of Finance*, June 1991, pp. 621–651.

market price of the stock. Typically, the investment bank buys the securities at a prescribed number of points below the closing price on the last day of registration. For example, suppose that in August 2010 the stock of Microwave Telecommunications Inc. (MTI) had a price of \$28.60 per share and that the stock had traded between \$25 and \$30 per share during the previous 3 months. Suppose further that MTI and its underwriter agreed that the investment bank would buy 10 million new shares at \$1 per share below the closing price on the last day of registration. If the stock closed at \$25 on the day the SEC released the issue, then MTI would receive \$24 per share. Typically, such agreements have an escape clause that provides for the contract to be voided if the price of the securities drops below some predetermined figure. In the illustrative case, this “upset” price might be set at \$24 per share. Thus, if the closing price of the shares on the last day of registration had been \$23.50, MTI would have had the option of withdrawing from the agreement.

The investment bank will have an easier job if the issue is priced relatively low. However, the issuer naturally wants as high a price as possible. A conflict of interest on price therefore arises between the investment bank and the issuer. If the issuer is financially sophisticated and makes comparisons with similar security issues, the investment bank will be forced to price close to the market.

As we discussed in Chapter 15, the announcement of a new stock offering by a mature firm is often taken as a negative signal—if the firm’s prospects were good, management would not want to issue new stock and thus share the rosy future with new stockholders. Therefore, the announcement of a new offering is taken as bad news. Consequently, the price will probably fall when the announcement is made, so the offering price will probably have to be set at a price below the pre-announcement market price.

One final point is that *if negative signaling effects drive down the price of the stock then all shares outstanding, not just the new shares, are affected*. Thus, if MTI’s stock should fall from \$28.60 to \$25 per share as a result of the financing and if the price remains at the new level, then the company would incur a loss of \$3.60 on each of the 50 million shares previously outstanding, or a total market value loss of \$180 million. This loss, like underwriting expenses, is a flotation cost, and it should be considered as a cost associated with the stock issue. Of course, if the company’s prospects really were poorer than investors thought, then the price decline would have occurred sooner or later anyway. On the other hand, if the company’s prospects are really not all that bad (the signal was incorrect), then over time MTI’s price should move back to its previous level. Yet even if the price does revert to its former level, there will have been a transfer of wealth from the original shareholders to the new shareholders. To prevent this, companies occasionally sell additional shares of stock through a rights offering (also called a preemptive rights offering), which we explain in *Web Extension 20A*.



Shelf Registrations

The selling procedures described so far, including the 20-day waiting period after registration with the SEC, apply to most security sales. However, under the SEC’s Rule 415, large, well-known public companies that issue securities frequently may file a master registration statement with the SEC and then update it with a short-form statement just prior to each individual offering. Under this procedure, a company can decide at 10 a.m. to sell securities and have the sale completed before noon. This procedure is known as **shelf registration** because, in effect, the company puts its new securities “on the shelf” and then sells them to investors when it feels the market is “right.” Firms with less than \$150 million in stock held by outside investors

cannot use shelf registrations. The rationale for this distinction is to protect investors who may not be able to obtain adequate financial data about a little-known company in the short time between announcement of a shelf issue and its sale. Shelf registrations have two advantages over standard registrations: (1) lower flotation costs and (2) more control over the timing of the issue.¹¹

Private Placements

In a *private placement*, securities are sold to one or a few investors, generally institutional investors. Private placements are most common with bonds, but they also occur with stocks. The primary advantages of private placements are (1) lower flotation costs and (2) greater speed, since the shares do not have to go through the SEC registration process.

Sometimes it is a privately held firm that makes a private placement. For example, Mars Inc., the family-owned candy maker, placed over \$1.5 billion of private debt in 2008. At other times it is a public company making a private placement. For example, Active Power, which provides flywheel-based backup power systems to ensure uninterruptible power supplies, raised \$3 million in 2009 by selling stock directly to Kinderhook Partners. Because Active Power is a publicly held company, this is called a **private placement of public equity**, or a **PIPE**. The most common type of private placement occurs when a company places securities directly with a financial institution, often an insurance company or a pension fund.

Many large companies make equity investments in suppliers or in start-up companies that are developing a related technology. For example, Microsoft's 2008 annual report showed \$5.6 billion of investments in the common stock of other companies, including a \$240 million investment in Facebook.

A potential disadvantage of a private placement is that if the securities are not registered with the SEC, they cannot be resold except to another large, "sophisticated" purchaser. However, many institutions meet this qualification, so there is a large potential market for the securities. In addition, companies are increasingly choosing to register the securities they privately place in order to improve their marketability after placement. With improved marketability, private placements are popular: more than \$28 billion of debt was placed privately in the United States during 2008.



Securitization

In Chapter 1 we discussed securitization in the context of mortgage markets, and now we discuss it in the context of capital formation. As the term is generally used, a **security** refers to a publicly traded financial instrument as opposed to a privately placed instrument. Thus, securities have greater liquidity than otherwise similar instruments that are not traded in an open market. In recent years, procedures have been developed to **securitize** various types of debt instruments, thus increasing their liquidity, lowering the cost of capital to borrowers, and generally increasing the efficiency of the financial markets.

Securitization occurs in two ways. First, a debt instrument that formerly was rarely traded becomes actively traded, usually because the size of the market increases and the terms of the debt instrument become more standardized. For example, this has occurred with commercial paper and junk bonds, both of which are now considered to be securities.

Second, a security can be created by the pledging of specific assets. This is called **asset securitization**, resulting in the creation of **asset-backed securities**. The

¹¹For more on shelf registrations, see David J. Denis, "The Costs of Equity Issues Since Rule 415: A Closer Look," *Journal of Financial Research*, Spring 1993, pp. 77–88.

Bowie Bonds Ch-Ch-Change Asset Securitization

In 1997, asset securitization was already booming, with bonds being backed by mortgages, car loans, credit cards, and student loans. But David Bowie juiced it up even more by issuing Bowie Bonds, which were backed by future royalties on more than 250 of his older songs. These bonds had a 10-year maturity and paid an interest rate of 7.9%. In a private placement, Prudential Insurance bought the entire issue for \$55 million in order to receive a whopping \$4.345 million in interest payment each year (assuming the songs generated enough in royalties). At the time of issue,

Moody's Investor Service was bullish on Bowie, since it gave his issue a rating of A3, high enough that the bonds were issued with an interest rate only 1.53 percentage points higher than 10-year Treasury bonds. However, in response to declining industry sales, Moody's downgraded the bonds to Baa3 in 2004. The bonds matured in 2007 and royalties reverted to Bowie.

Sources: "Bowie Ch-Ch-Changes the Market," *CFO*, April 1997, p. 20; and www.moody.com.

oldest type of asset securitization was in the mortgage industry, as we described in Chapter 1. Today, many different types of assets are used as collateral, including auto loans, credit card balances, and even the royalties from David Bowie's music!

The asset securitization process involves the pooling and repackaging of loans secured by relatively homogeneous, small-dollar assets (such as an automobile) into liquid securities. Usually several different financial institutions are involved, with each playing a different functional role. For example, an auto dealer might sell a car, the auto manufacturer's lending operation might originate the loan, an investment bank might pool similar car loans and structure the security, a federal agency might insure against credit risk, a second investment bank might sell the securities, and a pension fund might supply the final capital.

A similar process can occur with equipment leases. For example, CIT Group provides lease financing for equipment used by small and mid-sized companies. In 2009, CIT sold \$954 million in notes securitized by equipment leases. The notes qualify for the Fed's Term Asset-Backed Securities Loan Facility (TALF), which means that the investor, usually a bank, can use these notes as collateral for loans from the New York Fed. If you trace the money, it could easily be the case that the Fed is financing a new dishwashing machine for a restaurant in Milwaukee.

The process of securitization lowers costs and increases the availability of funds to borrowers, with the risk being transferred to the investor. But as we described in Chapter 1, if loans are originated to borrowers with high credit risk, then the cash flows received by the ultimate investor are likely to be low.

Self-Test

What is the difference between a competitive bid and a negotiated deal?

What is a private placement?

What is shelf registration?

What is securitization? What are its advantages to borrowers? What are its advantages to lenders?

20.6 INVESTMENT BANKING ACTIVITIES AND THEIR ROLE IN THE GLOBAL ECONOMIC CRISIS

Investment banks underwrite IPOs, underwrite seasoned equity offerings, and manage debt offerings. In other words, investment banks help firms raise capital, and lots of it: Table 20-2 shows that investment banks helped firms raise just over *\$4.7 trillion*

TABLE 20-2 Top Five Underwriters of Global Debt and Equity in 2008

MANAGER	PROCEEDS (BILLIONS)
JP Morgan	\$ 455.1
Barclays Capital	401.3
Citigroup	309.0
Deutsche Bank AG	308.6
Merrill Lynch	241.2
Industry total	\$4,714.9

Source: The Wall Street Journal Online, January 2, 2009.

during 2008, and that was a down year. Investment banks also engage in other activities. Because of increasingly relaxed regulations that culminated with the repeal of the Glass-Steagall Act in 1999, there is no longer a clear delineation between investment banks, brokerage firms, and commercial banks. In the following sections we discuss activities that are primarily associated with the investment banking arm of the financial conglomerates.

Mergers & Acquisitions

Many investment banks are actively involved in mergers and acquisitions (M&As) through three activities.

1. *Matchmaking.* Investment banks often find potential targets for acquirers, sometimes earning a finder's fee if the deal is successful.
2. *Advising.* Both the target and acquirer must document that the deal is "fair" for their stockholders by performing a due diligence valuation analysis. Investment banks often provide consulting advice during this stage of the M&A.
3. *Underwriting.* Most M&As require that new capital be raised. Investment banks underwrite these new issues.

Underwriting is the most lucrative of these activities, but if the deal falls through then no new securities will be underwritten. This makes one wonder how unbiased investment bankers are when finding targets and providing advice during negotiations.

Securitization

Investment banks often provide advice to financial institutions regarding the securitization of the institutions' loans or leases. In fact, investment banks frequently provide turnkey service by purchasing an institution's loans, securitizing the loans, and selling the newly created securities. Thus, the investment bank becomes the securitizer, not just the advisor. During the build-up to the global economic crisis, many investment banks were unable to sell all the mortgage-backed securities they created and were left holding some of them in their own portfolios. When the original borrowers began defaulting, the values of these securities owned by the investment banks plummeted, contributing to the downfall of Bear Stearns, Lehman Brothers, and Merrill Lynch.

Asset Management

Many investment banking companies create investment funds, such as a limited partnership (LP) that might invest in real estate in developing nations or an LP that might seek to exploit mispricing in various asset classes. In other words, they run



THE GLOBAL ECONOMIC CRISIS

Investment Banks and the Global Economic Crisis

There is plenty of blame to spread around for the cause of the global economic crisis, but investment banks certainly played a special role.

Among their many strategic errors, investment banks morphed from organizations that earned money primarily through fee-generating activities into organizations that earned money as highly levered investors. Investing is an inherently risky business, especially when the investments include extremely complicated mortgage-backed securities and credit default swaps. Investing becomes even riskier when you borrow \$33 for every \$1 of equity, as many investment banks did. This strategy works great if you earn more than you owe on your debt because leverage magnifies returns, and these magnified returns generated gigantic bonuses for senior managers at the investment banks. But it doesn't take too much of a decline in asset values and investment income to cause failure. In essence, the investment bankers were willing to risk it all for the chance of mind-boggling bonuses.

In addition to selling toxic investments (such as complex mortgage-backed securities) to pension funds and other financial institutions, the interconnectedness of failing investment banks threatened the entire world economy. Lehman Brothers had been borrowing short-term in the commercial paper market and investing long-term in risky assets. When those assets failed, Lehman defaulted on its commercial paper obligations,

many of which were owned by money market funds. This caused some funds, like the large Reserve fund, to “break the buck,” which means that their reported net asset value dropped below \$1, something that none of their investors ever expected. This led to a run on many money market funds and a huge disruption in the financial commercial paper markets.

Investment banks also were major players in the market for credit default swaps (CDS). If investment banks defaulted on their CDS, then it would cause potentially bankrupting financial distress at many other financial institutions.

Because many investment banks are subsidiaries of bank holding companies, the failure of the investment banks threatened the viability of the holding company and its other subsidiaries, such as commercial banks, which began limiting the credit they provided to their borrowers. In short, the financial crisis spread to the nonfinancial sector as financial institutions began cutting back on the credit they provided to the nonfinancial sector.

The investment banking landscape has certainly changed during the global economic crisis. Bear Stearns was acquired by JP Morgan, Lehman Brothers went bankrupt and was sold piecemeal, Merrill Lynch was acquired by Bank of America, and several investment banks, including Goldman Sachs, rechartered themselves as banks to qualify for TARP funds.

their own hedge funds, which can be quite lucrative. Like any other hedge fund, they raise capital for these funds from a variety of sources. But unlike other hedge funds, investment banks often have access to a special source—their own clients!

Here is how that works. Many investment banks have “wealth management” divisions or subsidiaries that provide investment advice to wealthy individuals or institutions such as pension funds. As advisors, they recommend investment strategies, including specific investments, to their clients. Some of these investments might be individual securities or mutual funds managed by other organizations. However, some of the recommended investments might be funds managed by the advisor's own investment bank. These might be great investments, but there is at least the appearance of a conflict of interest when advisors recommend funds managed by their own company.

In addition to managing clients' money, investment banks also invest their own money (actually, the money of their own stockholders and creditors) in financial securities. Sometimes the choice of investment is intentional, but sometimes it is not—as we mentioned previously, some investment banks were unable to sell all the mortgage-backed securities they created and were left holding some in their own portfolios.

Trading Operations

Many investment banking companies have trading operations through which they actively trade on the behalf of clients. For example, a client might need help in selling a large block of debt. Also, investment banking companies usually make a market in the stock of companies that they took public. Thus, these activities can be viewed as services provided to clients.

However, many investment banks also view their trading operations as profit centers. In other words, the traders try to buy low and sell high, and in the process they sometimes accumulate large positions that become difficult to unload.

Self-Test

What are some investment banking activities?

20.7 THE DECISION TO GO PRIVATE

In a **going private** transaction, the entire equity of a publicly held firm is purchased by a small group of investors, with the firm's current senior management usually maintaining or increasing their ownership stakes. The outside investors typically place directors on the now-private firm's board and arrange for the financing needed to purchase the publicly held stock. When the financing involves substantial borrowing, as it usually does, it is known as a **leveraged buyout (LBO)**. In some cases, the current management group raises the financing and acquires all of the equity of the company; these are called management buyouts (MBOs).

The outside equity in a buyout often comes from a **private equity (PE) fund**, which is a limited liability partnership created to own and manage investments in nontraded equity. Private equity funds raise money from wealthy investors and institutions like university endowments, pension funds, and insurance companies. The PE funds then take public firms private or invest in firms that already are privately held. Most PE funds plan on improving the companies' performance and then harvesting their investments by selling the company, perhaps in an IPO.¹²

Regardless of the deal's structure, going private initially affects the right-hand side of the balance sheet, the liabilities and capital, and not the assets: going private simply rearranges the ownership structure. Thus, going private involves no obvious operating economies, yet the new owners are generally willing to pay a large premium over the stock's current price in order to take the firm private. For example, prior to its acquisition by Columbia, the managers of Hospital Corporation of America (HCA) paid \$51 a share to outside (public) shareholders although the stock was selling for only about \$31 before the LBO offer was made. It is hard to believe that the managers of a company, who have the best information about the firm's potential profitability, would knowingly pay too much for the firm. Thus, HCA's managers must have regarded the firm as being grossly undervalued or else thought that they could significantly boost the firm's value under private ownership. This suggests that going private can increase the value of some firms sufficiently to enrich both managers and public stockholders. Other large companies going private recently include Wm. Wrigley Jr. Co. (2008), Chrysler (2008), The Tribune Company (2007), Univision (2006), Kinder Morgan (2006), and GMAC (2006).

¹²For more information on private equity, see Steve Kaplan, "Private Equity: Past, Present and Future," *Journal of Applied Corporate Finance*, Summer 2007, pp. 8–16; "Morgan Stanley Roundtable on Private Equity and Its Impact for Public Companies," *Journal of Applied Corporate Finance*, Summer 2006, pp. 8–37; and Stephen D. Prowse, "The Economics of the Private Equity Market," *Economic Review*, third quarter 1998, pp. 21–33.

The primary advantages to going private are (1) administrative cost savings, (2) increased managerial incentives, (3) increased managerial flexibility, (4) increased shareholder oversight and participation, and (5) increased use of financial leverage, which of course reduces taxes. We discuss each of these advantages in more detail in the following paragraphs.

1. *Administrative cost savings.* Because going private takes the stock of a firm out of public hands, it saves on the time and costs associated with securities registration, annual reports, SEC and exchange reporting, responding to stockholder inquiries, and so on.
2. *Increased managerial incentives.* Managers' increased ownership and equity incentive plans mean that managers benefit more directly from their own efforts; hence managerial efficiency tends to increase after going private. If the firm is highly successful then its managers can easily see their personal net worth increase twentyfold, but if the firm fails then its managers end up with nothing.
3. *Increased managerial flexibility.* Managers at private companies do not have to worry about what a drop in the next quarter's earnings will do to the firm's stock price, so they can focus on long-term, strategic actions that ultimately will have the greatest positive impact on the firm's value. Managerial flexibility concerning asset sales is also greater in a private firm, since such sales need not be justified to a large number of shareholders with potentially diverse interests.
4. *Increased shareholder oversight and participation.* Going private typically results in replacing a dispersed, largely passive group of public shareholders with a small group of investors who take a much more active role in managing the firm. These new equity investors have a substantial position in the private firm; hence they have a greater motivation to monitor management and to provide incentives to management than do the typical stockholders of a public corporation. Further, the new nonmanagement equity investors—frequently private equity firms, such as Kohlberg Kravis Roberts & Company (KKR), Carlyle Group, or Blackstone Group—are typically represented on the board, and they bring sophisticated industry and financial expertise and hard-nosed attitudes to the new firm.
5. *Increased financial leverage.* Going private usually entails a drastic increase in the firm's use of debt financing, which has two effects. First, the firm's taxes are reduced because of the increase in deductible interest payments, so more of the operating income flows through to investors. Second, the increased debt service requirements force managers to hold costs down to ensure that the firm has sufficient cash flow to meet its obligations—a highly leveraged firm simply cannot afford any fat.

One might ask why all firms are not privately held. The answer is that, although there are real benefits to private ownership, there are also benefits to being publicly owned. Most notably, public corporations have access to large amounts of equity capital on favorable terms, and for most companies, the advantage of access to public capital markets dominates the advantages of going private. Also, note that most companies that go private end up going public again after several years of operation as private firms. For example, Celanese AG, a global chemical company, went public in 1999. It was taken private in 2004 by Blackstone Capital Partners, a PE firm, and taken public in 2005.

Self-Test

- What is meant by the term "going private"?
- What is a private equity fund?
- What are the main benefits of going private?
- Why don't all firms go private to capture these benefits?

20.8 MANAGING THE MATURITY STRUCTURE OF DEBT

Chapters 15 and 26 describe the capital structure decision. But after a firm chooses the total amount of debt in its capital structure, it must still choose the maturities of the various securities that make up its debt. The following sections explain the factors associated with the choice of maturity structure.

Maturity Matching

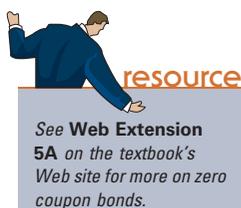
Assume that Consolidated Tools, a Cincinnati machine tool manufacturer, made the decision to float a \$25 million nonconvertible bond issue to help finance its 2010 capital budget. It must choose a maturity for the issue, taking into consideration the shape of the yield curve, management's own expectations about future interest rates, and the maturity of the assets being financed. To illustrate how asset maturities affect the choice of debt maturities, suppose Consolidated's capital projects consist primarily of new milling machinery. This machinery has an expected economic life of 10 years (even though it falls into the MACRS 5-year class life). Should Consolidated use debt with a 5-year, 10-year, 20-year, 30-year, or some other maturity?

Note that some of the new capital will come from common equity, which is permanent capital. On the other hand, debt maturities can be specified at the time of issue. If Consolidated financed its capital budget with 10-year sinking fund bonds, it would be matching asset and liability maturities. The cash flows resulting from the new machinery could be used to make the interest and sinking fund payments on the issue, so the bonds would be retired as the machinery wore out. If Consolidated used 1-year debt, then it would have to pay off this debt with cash flows derived from assets other than the machinery in question.

Of course, the 1-year debt could probably be rolled over year after year, out to the 10-year asset maturity. However, if interest rates rose then Consolidated would have to pay a higher rate when it rolled over its debt, and if the company experienced difficulties then it might not be able to refund the debt at a reasonable rate. Conversely, if it used 20-year or 30-year debt, it would have to service the debt long after the assets that were purchased with the funds had been scrapped and had ceased providing cash flows. This would worry lenders.

For all these reasons, *the safest all-around financing strategy is to match debt maturities with asset maturities*. In recognition of this fact, firms generally place great emphasis on maturity matching, and this factor often dominates the debt maturity decision.

Some firms use zero coupon bonds as a tool in matching maturities. We explain these bonds in *Web Extension 5A*.



Effects of Interest Rate Levels and Forecasts

Financial managers also consider interest rate levels and forecasts, both absolute and relative, when making financing decisions. For example, if long-term interest rates are high by historical standards and are expected to fall, managers will be reluctant to issue long-term debt, which would lock in those costs for long periods. We already know that one solution to this problem is to use a call provision, since callability permits refunding should interest rates drop. This flexibility comes at a cost, however, because of the call premium and also because the firm must set a higher coupon on callable debt. Floating-rate debt could be used, but another alternative would be to finance with short-term debt whenever long-term rates are historically high, and then, assuming that interest rates subsequently fall, sell a long-term issue to replace the short-term debt. Of course, this strategy has its risks: If interest rates move even higher, the firm will be forced to renew its short-term debt at higher and higher rates

or to replace the short-term debt with a long-term bond that costs even more than it would have when the original decision was made.

We could argue that capital markets are efficient and hence that it's not possible to predict future interest rates, because these rates will be determined by information that is not now known. Thus, under the efficient markets hypothesis, it would be unproductive for firms to try to "beat the market" by forecasting future capital costs and then acting on these forecasts. According to this view, financial managers ought to arrange their capital structures in such a manner that they can ride out almost any economic storm, and this generally calls for (1) using some "reasonable" mix of debt and equity and (2) using debt with maturities that more or less match the maturities of the assets being financed.

Information Asymmetries

In Chapter 5, we discussed bond ratings and the effects of changes in ratings on the cost and availability of capital. If a firm's current financial condition is poor, then its managers may be reluctant to issue new long-term debt because (1) a new debt issue would probably trigger a review by the rating agencies, and (2) debt issued when a firm is in poor financial shape would probably cost more and be subject to more severe restrictive covenants than debt issued from strength. Furthermore, in Chapters 15 and 26 we point out that firms are reluctant to use new common stock financing, especially when this might be taken as a negative signal. Thus, a firm that is in a weakened condition but whose internal forecasts indicate greater financial strength in the future would be inclined to delay long-term financing of any type until things improved. Such a firm would be motivated to use short-term debt even to finance long-term assets, with the expectation of replacing the short-term debt in the future with cheaper, higher-rated long-term debt.

Conversely, a firm that is strong now but that forecasts a potentially bad time in the period just ahead would be motivated to finance long term now rather than to wait. Each of these scenarios implies either that the capital markets are inefficient or that investors do not have the same information regarding the firm's future as does its financial manager. The second situation undoubtedly is true at times, and the first one possibly is true at times.

The firm's earnings outlook and the extent to which forecasted higher earnings per share are reflected in stock prices also have an effect on the choice of securities. If a successful R&D program has just been concluded and causes management to forecast higher earnings than do most investors, then the firm would not want to issue common stock. It would use debt and then, once earnings rise and push up the stock price, sell common stock to restore the capital structure to its target level.

Amount of Financing Required

Obviously, the amount of financing required will influence the financing decision. This is mainly because of flotation costs. A \$5 million debt financing, which is small in Wall Street terms, would most likely be done with a term loan or a privately placed bond issue, whereas a firm seeking \$2 billion of new debt would most likely use a public offering of long-term bonds.

Availability of Collateral

Generally, secured debt is less costly than unsecured debt. Thus, firms with large amounts of marketable fixed assets are likely to use a relatively large amount of long-term debt, especially mortgage bonds. Additionally, each year's financing decision would be influenced by the amount of qualified assets available as security for new bonds.

Self-Test

What are some factors that financial managers consider when choosing the maturity structure of their debt?

How do information asymmetries affect financing decisions?

20.9 REFUNDING OPERATIONS

A great deal of corporate debt was sold during the late 1990s. Because the call protection on much of this debt has ended and because interest rates have fallen since the debt was issued, many companies are analyzing the pros and cons of bond refundings. The basic approach is to estimate the incremental after-tax cash flows associated with the refunding. The cash flows in a refunding decision are due to the presence of debt, so the cash flows should be discounted at the after-tax cost of debt.

The best way to examine the refunding decision is through an example. Microchip Computer Company has a \$60 million bond issue outstanding that has a 12% annual coupon interest rate and 20 years remaining to maturity. This issue, which was sold 5 years ago, had flotation costs of \$3 million that the firm has been amortizing on a straight-line basis over the 25-year original life of the issue. The bond has a call provision that makes it possible for the company to retire the issue at this time by calling the bonds in at a 10% call premium. Investment banks have assured the company that it could sell an additional \$60 million to \$70 million worth of new 20-year bonds at an interest rate of 9%. To ensure that the funds required to pay off the old debt will be available, the new bonds will be sold 1 month before the old issue is called; thus, for 1 month the company will have to pay interest on two issues. Current short-term interest rates are 6%. Predictions are that long-term interest rates are unlikely to fall below 9%.¹³ Flotation costs on a new refunding issue will amount to \$2,650,000, and the firm's marginal federal-plus-state tax rate is 40%. Should the company refund the \$60 million of 12% bonds?

The following steps outline the decision process; they are summarized in the spreadsheet in Figure 20-1. This spreadsheet is part of the spreadsheet model, *Ch20 Tool Kit.xls*, developed for this chapter. The range of cells from A17 through H23 shows input data needed for the analysis, which were just discussed.



Step 1: Determine the Investment Outlay Required to Refund the Issue

Row 28. *Call premium on old issue:*

$$\begin{aligned} \text{Before tax} &: 0.10(\$60,000,000) = \$6,000,000 \\ \text{After tax} &: \$6,000,000(1 - T) = \$6,000,000(0.6) \\ &= \$3,600,000 \end{aligned}$$

Although Microchip must spend \$6 million on the call premium, this is a deductible expense in the year the call is made. Because the company is in the 40% tax bracket, it saves \$2.4 million in taxes; therefore, the after-tax cost of the call is only \$3.6 million.

Row 29. *Flotation costs on new issue:* Flotation costs on the new issue will be \$2,650,000. This amount cannot be expensed for tax purposes, so it provides no immediate tax benefit.

Row 30. *Flotation costs on old issue:* The old issue has an unamortized flotation cost of $(20/25)(\$3,000,000) = \$2,400,000$ at this time. If the issue is retired then the unamortized

¹³The firm's management has estimated that interest rates will probably remain at their present level of 9% or else rise; there is only a 25% probability that they will fall further.

FIGURE 20-1 Spreadsheet for the Bond Refunding Decision

	A	B	C	D	E	F	G	H	
15	Input Data (in thousands of dollars)								
16									
17	Existing bond issue =			\$60,000		New bond issue =		\$60,000	
18	Original flotation cost =			\$3,000		New flotation cost =		\$2,650	
19	Maturity of original debt =			25		New bond maturity =		20	
20	Years since old debt issue =			5		New cost of debt =		9.0%	
21	Call premium (%) =			10.0%					
22	Original coupon rate =			12.0%		Tax rate =		40.0%	
23	After-tax cost of new debt =			5.4%		Short-term interest rate =		6.0%	
24									
25	Schedule of cash flows								
26						Before-tax		After-tax	
27	<i>Investment Outlay</i>								
28	Call premium on the old bond					(\$6,000.0)		(\$3,600.0)	
29	Flotation costs on new issue					(\$2,650.0)		(\$2,650.0)	
30	Immediate tax savings on old flotation cost expense					\$2,400.0		\$960.0	
31	Extra interest paid on old issue					(\$600.0)		(\$360.0)	
32	Interest earned on short-term investment					\$300.0		\$180.0	
33	Total after-tax investment							(\$5,470.0)	
34									
35	<i>Annual Flotation Cost Tax Effects: t = 1 to 20</i>								
36	Annual tax savings from new issue flotation costs					\$132.5		\$53.0	
37	Annual lost tax savings from old-issue flotation costs					(\$120.0)		(\$48.0)	
38	Net flotation cost tax savings					\$12.5		\$5.0	
39									
40	<i>Annual Interest Savings Due to Refunding: t = 1 to 20</i>								
41	Interest on old bond					\$7,200.0		\$4,320.0	
42	Interest on new bond					(\$5,400.0)		(\$3,240.0)	
43	Net interest savings					\$1,800.0		\$1,080.0	
44									
45	Calculating the annual flotation cost tax effects and the annual interest savings								
46									
47	Annual Flotation Cost Tax Effects					Annual Interest Savings			
48	Maturity of the new bond (Nper)			20		Maturity of the new bond (Nper)		20	
49	After-tax cost of new debt (Rate)			5.4%		After-tax cost of new debt (Rate)		5.4%	
50	Annual flotation cost tax savings (Pmt)			\$5		Annual interest savings (Pmt)		\$1,080	
51									
52	Since the annual flotation cost tax effects and interest savings occur for the next 20 years, they represent annuities. To evaluate this project, we must find the present values of these savings. Using the function wizard and solving for present value, we find that the present values of these annuities are:								
53									
54									
55									
56	NPV of annual flotation cost savings			\$60.251		NPV of annual interest savings		\$13,014.174	
57									
58	Hence, the net present value of this bond refunding project will be the sum of the initial outlay and the present values of the annual flotation cost tax effects and interest savings.								
59									
60									
61	Bond Refunding NPV =	Initial Outlay	+	PV of flotation costs	+	PV of interest savings			
62	Bond Refunding NPV =	(\$5,470.000)	+	\$60.251	+	\$13,014.174			
63									
64	Bond Refund NPV =	\$7,604.425							



flotation cost may be recognized immediately as an expense, thus creating an after-tax savings of $\$2,400,000(T) = \$960,000$. Because this is a cash inflow, it is shown as a positive number.

Rows 31 and 32. *Additional interest:* One month's "extra" interest on the old issue, after taxes, costs \$360,000:

$$\begin{aligned}\text{Interest cost} &= (\text{Dollar amount})(1/12 \text{ of } 12\%)(1 - T) \\ &= (\$60,000,000)(0.01)(0.6) = \$360,000\end{aligned}$$

However, the proceeds from the new issue can be invested in short-term securities for 1 month. Thus, \$60 million invested at a rate of 6% will return \$180,000 in after-tax interest:

$$\begin{aligned}\text{Interest earned} &= (\$60,000,000)(1/12 \text{ of } 6\%)(1 - T) \\ &= (\$60,000,000)(0.005)(0.6) = \$180,000\end{aligned}$$

Row 33. *Total after-tax investment:* The total investment outlay required to refund the bond issue, which will be financed by debt, is thus \$5,470,000:¹⁴

Call premium	(\$3,600,000)
Flotation costs, new	(2,650,000)
Flotation costs, old, tax savings	960,000
Net additional interest	(180,000)
Total investment	<u><u>(\$5,470,000)</u></u>

Step 2: Calculate the Annual Flotation Cost Tax Effects

Row 36. *Tax savings on flotation costs on the new issue:* For tax purposes, flotation costs must be amortized over the life of the new bond, which is 20 years. Therefore, the annual tax deduction is

$$\frac{\$2,650,000}{20} = \$132,500$$

Since our spreadsheet shows dollars in thousands, this number appears as \$132.5 on the spreadsheet. Because the firm is in the 40% tax bracket, it has a tax savings of $\$132,500(0.4) = \$53,000$ a year for 20 years. This is an annuity of \$53,000 for 20 years.

Row 37. *Tax benefits lost on flotation costs on the old issue:* The firm, however, will no longer receive a tax deduction of \$120,000 a year for 20 years, so it loses an after-tax benefit of \$48,000 a year.

Row 38. *Net amortization tax effect:* The after-tax difference between the amortization tax effects of flotation on the new and old issues is \$5,000 a year for 20 years.

Step 3: Calculate the Annual Interest Savings

Row 41. *Interest on old bond, after tax:* The annual after-tax interest on the old issue is \$4.32 million:

$$(\$60,000,000)(0.12)(0.6) = \$4,320,000$$

¹⁴The investment outlay (in this case, \$5,470,000) is usually obtained by increasing the amount of the new bond issue. In the example given, the new issue would be \$65,470,000. However, the interest on the additional debt *should not* be deducted at Step 3 because the \$5,470,000 itself will be deducted at Step 4. If additional interest on the \$5,470,000 were deducted at Step 3 then interest would, in effect, be deducted twice. The situation here is exactly like that in regular capital budgeting decisions. Even though some debt may be used to finance a project, interest on that debt is not subtracted when developing the annual cash flows. Instead, the annual cash flows are *discounted* at the project's cost of capital.

TVA Ratchets Down Its Interest Expenses

In 1998, TVA raised \$575 million in 30-year debt. If it had issued fixed-rate debt, it would be stuck with high coupon payments if interest rates in the market fall. If it had issued floating-rate debt, it would be stuck with high coupon payments if interest rates rise. If it had issued callable debt, then it could refinance if interest rates fall. But the costs of refunding are high, and TVA would have to agonize over the decision of whether to refund or wait in the hopes that rates will fall. None of these three choices seemed desirable, so TVA issued a new type of security that finesses these problems.

The new bonds are officially called Putable Automatic Rate Reset Securities (PARRS), but they are commonly known as ratchet bonds. These bonds have a feature that resets the coupon rate each year, starting in 2003, to 94 basis points over the rate on the prevailing 30-year Treasury bond—provided the new coupon would be lower than the ratchet bond's current coupon. In other words, the coupon on the bond will fall if interest rates fall, but it will never increase from year to year, allowing TVA to lock in the lowest interest rates that

prevail during the bond's life. In essence, TVA gets to refund its debt in any year when rates fall, whence the term "ratchet."

The 94-basis-point spread is higher than the spread over Treasuries that normally exists on TVA's noncallable bonds, given its bond rating. However, if the bond rating deteriorates, then investors can "put" the bond by selling it back to TVA. The net effect is that investors are exposed to interest rate risk but not to credit risk, and they are compensated for interest rate risk by the relatively high spread.

These bonds were originally issued with a 6.750% coupon, and on the first reset date (June 1, 2003) the rate ratcheted down to 5.952%, reflecting the decline in long-term interest rates since 1998. By June 1, 2009, long-term interest rates had fallen so that the coupon rate on the PARRS was ratcheted down to 4.728%.

Sources: Andrew Kalotay and Leslie Abreo, "Ratchet Bonds: Maximum Refunding Efficiency at Minimum Transaction Cost," *Journal of Applied Corporate Finance*, Vol. 41, No. 1, Spring 1999, pp. 40–47; and TVA's Web site, <http://www.tva.gov>.

Row 42. *Interest on new bond, after tax:* The new issue has an annual after-tax cost of \$3,240,000:

$$(\$60,000,000)(0.09)(0.6) = \$3,240,000$$

Row 43. *Net annual interest savings:* Thus, the net annual interest savings is \$1,080,000:

Interest on old bonds, after tax	\$4,320,000
Interest on new bonds, after tax	<u>(3,240,000)</u>
Annual interest savings, after tax	<u>\$1,080,000</u>

Step 4: Determine the NPV of the Refunding

Row 56. *PV of the benefits:* The PV of the annual after-tax flotation cost benefit can be found using a financial calculator, with $N = 20$, $I/YR = 5.4$, $PMT = 5000$, and $FV = 0$. Solving for PV shows that the flotation cost savings have a present value equal to \$60,251. The PV of the \$1,080,000 annual after-tax interest savings is found with $N = 20$, $I/YR = 5.4$, $PMT = 1080000$ and $FV = 0$; solving for PV shows that the present value of after-tax interest cost savings is \$13,014,174.

These values are used in Row 62 when finding the NPV of the refunding operation:

Amortization tax effects	\$ 60,251
Interest savings	13,014,174
Net investment outlay	<u>(5,470,000)</u>
NPV from refunding	<u>\$ 7,604,425</u>

Because the net present value of the refunding is positive, it would be profitable to refund the old bond issue.

We can summarize the data shown in Figure 20-1 using a time line (amounts in thousands) as shown below:

	0	1	2	...	20
		5.4%			
After-tax investment	-5,470				
Flotation cost tax effects		5	5		5
Interest savings		<u>1,080</u>	<u>1,080</u>		<u>1,080</u>
Net cash flows	<u>-5,470</u>	<u>1,085</u>	<u>1,085</u>		<u>1,085</u>

$$\text{NPV}_{5.4\%} = \$7,604$$

Several other points should be made. First, because the cash flows are based on differences between contractual obligations, their risk is the same as that of the underlying obligations. Therefore, the present values of the cash flows should be found by discounting at the firm's least risky rate—its after-tax cost of marginal debt. Second, since the refunding operation is advantageous to the firm, it must be disadvantageous to bondholders; they must give up their 12% bonds and reinvest in new ones yielding 9%. This points out the danger of the call provision to bondholders, and it also explains why noncallable bonds command higher prices than callable bonds with the same coupon rate. Third, although it is not emphasized in the example, we assumed that the firm raises the investment required to undertake the refunding operation (the \$5,470,000 shown in Row 33 of Figure 20-1) as debt. This should be feasible because the refunding operation will improve the interest coverage ratio, even though a larger amount of debt is outstanding. Fourth, we set up our example in such a way that the new issue had the same maturity as the remaining life of the old one. Often, the old bonds have a relatively short time to maturity (say, 5 to 10 years), whereas the new bonds have a much longer maturity (say, 25 to 30 years). In such a situation, the analysis should be set up similarly to a replacement chain analysis in capital budgeting, which was discussed in Chapter 10. Fifth, refunding decisions are well suited for analysis with a computer spreadsheet program. Spreadsheets such as the one shown in Figure 20-1 are easy to set up, and once the model has been constructed, it is easy to vary the assumptions (especially the assumption about the interest rate on the refunding issue) and to see how such changes affect the NPV.

One final point should be addressed: Although our analysis shows that the refunding would increase the firm's value, would refunding *at this time* truly maximize the firm's expected value? If interest rates continue to fall then the company might be better off waiting, for this would increase the NPV of the refunding operation even more. The mechanics of calculating the NPV in a refunding are easy, but the decision of *when* to refund is not at all simple because it requires a forecast of future interest rates. Thus, the final decision on refunding now versus waiting for a possibly more favorable time is a judgment call.

To illustrate the timing decision, assume Microchip's managers forecast that long-term interest rates have a 50% probability of remaining at their present level of 9% over the next year. However, there is a 25% probability that rates could fall to 7% and a 25% probability they could rise to 11%. Further, assume that short-term rates are expected to remain 3 percentage points below long-term rates and that the call premium would be reduced by 5% if the call were delayed for 1 year.

The refunding analysis could then be repeated, as previously, but as if it were a year later. Thus, the old bonds would have only 19 years remaining to maturity.

We performed the analysis and found the NPV distribution of refunding 1 year from now:

Probability	Long-Term Interest Rate	NPV of Refunding One Year from Now
25%	7%	\$17,947,071
50	9	7,390,083
25	11	(1,359,939)

At first blush, it would seem reasonable to calculate the expected NPV of refunding next year in terms of the probability distribution. However, that would not be correct. If interest rates did rise to 11%, Microchip would not refund the issue; therefore, the actual NPV if rates rose to 11% would be zero. The expected NPV from refunding 1 year hence is therefore $0.25(\$17,947,071) + 0.50(\$7,390,083) + 0.25(\$0) = \$8,181,809$, versus \$7,604,425 if refunding occurred today.

Even though the expected NPV of refunding in 1 year is higher, Microchip's managers would probably decide to refund today. The \$7,604,425 represents a sure increase in firm value, whereas the \$8,181,809 is risky. Also, proper comparison requires that the \$8,181,809 be discounted back 1 year to today. Microchip's managers should opt to delay refunding only if the expected NPV from later refunding is sufficiently above today's sure NPV to compensate for the risk and time value involved.

Clearly, the decision to refund now versus refund later is complicated by the fact that there would be numerous opportunities to refund in the future rather than just a single opportunity 1 year from now. Furthermore, the decision must be based on a large set of interest rate forecasts, a daunting task in itself. Fortunately, financial managers making bond refunding decisions can now use the values of derivative securities to estimate the value of the bond issue's embedded call option. If the call option is worth more than the NPV of refunding today, the issue should not be immediately refunded. Rather, the issuer should either delay the refunding to take advantage of the information obtained from the derivative market or actually create a derivative transaction to lock in the value of the call option.¹⁵

Self-Test

How is bond refunding like a capital budgeting project?

20.10 MANAGING THE RISK STRUCTURE OF DEBT WITH PROJECT FINANCING

Historically, many large projects such as the Alaska pipeline have been financed by what is called **project financing**.¹⁶ We can only present an overview of the concept, for in practice it involves complicated provisions and can take on many forms.

¹⁵For more information on derivatives in general, see Chapter 23. For more information on the use of derivatives to help make call decisions, see Andrew J. Kalotay and George O. Williams, "How to Succeed in Derivatives without Really Buying," *Journal of Applied Corporate Finance*, Fall 1993, pp. 100–103. For more on bond refunding, see Raymond C. Chiang and M. P. Narayanan, "Bond Refunding in Efficient Markets: A Dynamic Analysis with Tax Effects," *Journal of Financial Research*, Winter 1991, pp. 287–302; David C. Mauer, "Optimal Bond Call Policies under Transactions Costs," *Journal of Financial Research*, Spring 1993, pp. 23–37; and Janet S. Thatcher and John G. Thatcher, "An Empirical Test of the Timing of Bond-Refunding Decisions," *Journal of Financial Research*, Fall 1992, pp. 219–230.

¹⁶For an excellent discussion of project financing, see Benjamin C. Esty, "Petrozuata: A Case Study on the Effective Use of Project Finance," *Journal of Applied Corporate Finance*, Fall 1999, pp. 26–42.

Project financing has been used to finance energy explorations, oil tankers, refineries, and electric generating plants. Generally, one or more firms will sponsor the project, putting up the required equity capital, while the remainder of the financing is furnished by lenders or lessors. Most often, a separate legal entity is formed to operate the project. Normally, the project's creditors do not have full recourse against the sponsors. In other words, the lenders and lessors must be paid from the project's cash flows and from the sponsors' equity in the project, because the creditors have no claims against the sponsors' other assets or cash flows. Often the sponsors write "comfort" letters, giving general assurances that they will strive diligently to make the project successful. However, these letters are not legally binding, so in project financing the lenders and lessors must focus their analysis on the inherent merits of the project and on the equity cushion provided by the sponsors.¹⁷

Project financing is not a new development. Indeed, back in 1299 the English Crown negotiated a loan with Florentine merchant banks that was to be repaid with 1 year's output from the Devon silver mines. Essentially, the Italians were allowed to operate the mines for 1 year, paying all the operating costs and mining as much ore as they could. The Crown made no guarantees as to how much ore could be mined or the value of the refined silver. A more current example involved GE Capital, the credit arm of General Electric, which recently financed a \$72 million project to build an aluminum can plant. The plant is owned by several beverage makers but it is operated independently, and GE Capital must depend on the cash flows from the plant to repay the loan. About half of all project financings in recent years have been for electric generating plants, including plants owned by electric utilities and cogeneration plants operated by industrial companies. Project financings are generally characterized by large size and a high degree of complexity. However, because project financing is tied to a specific project, it can be tailored to meet the specific needs of both the creditors and the sponsors. In particular, the financing can be structured so that both the funds provided during the construction phase and the subsequent repayments match the timing of the project's projected cash outflows and inflows.

Project financing offers several potential benefits over conventional debt financing. For one, project financing usually restricts the use of the project's cash flows, which means that the lenders—rather than the managers—can decide whether excess cash flows should be reinvested or instead used to reduce the loan balance by more than the minimum required. Conferring this power on the lenders reduces their risks. Project financings also have advantages for borrowers. First, because risks to the lenders are reduced, the interest rate built into a project financing deal may be relatively low. Second, because suppliers of project financing capital have no recourse against the sponsoring firms' other assets and cash flows, project financings insulate the firms' other assets from risks associated with the project being financed. Managers may be more willing to take on a large, risky project if they know that the company's existence would not be threatened if it fails.

¹⁷In another type of project financing, each sponsor guarantees its share of the project's debt obligations. Here the creditors also consider the creditworthiness of the sponsors in addition to the project's own prospects. It should be noted that project financing with multiple sponsors in the electric utility industry has led to problems when one or more of the sponsors has landed in financial trouble. For example, Long Island Lighting, one of the sponsors in the Nine Mile Point nuclear project, became unable to meet its commitments to the project, which forced other sponsors to shoulder an additional burden or else see the project cancelled and lose all their investment up to that point. The risk of such default makes many companies reluctant to enter into similar projects.

Project financings increase the number and type of investment opportunities; hence they make capital markets “more complete.” At the same time, project financings reduce the costs to investors of obtaining information and monitoring the borrower’s operations. To illustrate, consider an oil and gas exploration project that is funded using project financing. If the project were financed as an integral part of the firm’s normal operations, investors in all the firm’s outstanding securities would need information on the project. By isolating the project, the need for information is confined to the investors in the project financing, who need to monitor only the project’s operations and not those of the entire firm.

Project financings also permit firms whose earnings are below the minimum requirements specified in their existing bond indentures to obtain additional debt financing. In such situations, lenders look only at the merits of the new project, and its cash flows may support additional debt even though the firm’s overall situation does not. Project financings also permit managers to reveal proprietary information to a smaller group of investors, so project financings increase the ability of a firm to maintain confidentiality. Finally, project financings can improve incentives for key managers by enabling them to take direct ownership stakes in the operations under their control. By establishing separate projects, companies can provide incentives that are much more directly based on individual performance than is typically possible within a large corporation.

Self-Test

What is project financing? What are its advantages and disadvantages?

Summary

- The **Securities and Exchange Commission (SEC)** regulates securities markets.
- **Private placements** are securities offerings to a limited number of investors and are exempt from registration with the SEC.
- **Accredited investors** include the officers and directors of a company, high-wealth individuals, and institutional investors. These investors are eligible to buy securities in private placements.
- An **angel** is a wealthy individual who makes an equity investment in a start-up company.
- The managers of a **venture capital fund** are called **venture capitalists**, or **VCS**. They raise money from investors and make equity investments in start-up companies, called **portfolio companies**.
- **Going public** in an **initial public offering (IPO)** facilitates stockholder diversification, increases liquidity of the firm’s stock, makes it easier for the firm to raise capital, establishes a value for the firm, and makes it easier for a firm to sell its products. However, reporting costs are high, operating data must be disclosed, management self-dealings are harder to arrange, the price may sink to a low level if the stock is not traded actively, and public ownership may make it harder for management to maintain control.
- **Investment banks** assist in issuing securities by helping the firm determine the size of the issue and the type of securities to be used, by establishing the selling price, by selling the issue, and, in some cases, by maintaining an after-market for the stock.
- An investment bank may sell a security issue on a **best efforts basis**, or it may guarantee the sale by **underwriting** the issue.
- Before an IPO, the investment bank and management team go on a **roadshow** and make presentations to potential institutional investors.

- An IPO is **oversubscribed** if investors are willing to purchase more shares than are being offered at the IPO price.
- The **spread** is the difference between the price at which an underwriter sells a security and the proceeds that the underwriter gives to the issuing company. In recent years the spread for almost all IPOs has been 7%.
- An **equity carve-out** (also called a **partial public offering** or **spin-out**) is a special IPO in which a publicly traded company converts a subsidiary into a separately traded public company by selling shares of stock in the subsidiary. The parent typically retains a controlling interest.
- SEC Rule 415, also known as **shelf registration**, allows a company to register an issue and then sell that issue in pieces over time rather than all at once.
- A **seasoned equity offering** occurs when a public company issues additional shares of stock.
- A **private equity fund** is a limited liability partnership created to own and manage investments in the nontraded equity of firms.
- A company **goes private** when a small group of investors, including the firm's senior management, purchases all of the equity in the company. Such deals usually involve high levels of debt and are commonly called **leveraged buyouts (LBOs)**.
- If a bond has a call provision, then the issuer may **refund (call)** the bond prior to maturity and pay for it with a new debt issue at a lower interest rate.
- In **project financing**, the payments on debt are secured by the cash flows of a particular project.
- **Asset securitization** occurs when assets such as mortgages or credit card receivables are bundled together into a pool. Then bonds are created that use the payments in the pool to make interest and principal payments on the bonds.
- *Web Extension 20A* describes a **rights offering**.

Questions

- (20–1) Define each of the following terms:
- Going public; new issue market; initial public offering (IPO)
 - Public offering; private placement
 - Venture capitalists; roadshow; spread
 - Securities and Exchange Commission (SEC); registration statement; shelf registration; margin requirement; insiders
 - Prospectus; “red herring” prospectus
 - National Association of Securities Dealers (NASD)
 - Best efforts arrangement; underwritten arrangement
 - Refunding; project financing; securitization; maturity matching
- (20–2) Is it true that the “flatter” (more nearly horizontal) the demand curve for a particular firm's stock and the less important investors regard the signaling effect of the offering, the more important the role of investment banks when the company sells a new issue of stock?
- (20–3) The SEC attempts to protect investors who are purchasing newly issued securities by making sure that the information put out by a company and its investment banks is correct and is not misleading. However, the SEC does not provide an opinion about the real value of the securities; hence an investor might pay too much for some new stock and consequently lose heavily. Do you think the SEC should, as a part of every

new stock or bond offering, render an opinion to investors on the proper value of the securities being offered? Explain.

- (20-4) How do you think each of the following items would affect a company's ability to attract new capital and the flotation costs involved in doing so?
- A decision of a privately held company to go public
 - The increasing institutionalization of the "buy side" of the stock and bond markets
 - The trend toward financial conglomerates as opposed to stand-alone investment banking houses
 - Elimination of the preemptive right
 - The introduction in 1981 of shelf registration of securities
- (20-5) Before entering a formal agreement, investment banks carefully investigate the companies whose securities they underwrite; this is especially true of the issues of firms going public for the first time. Since the banks do not themselves plan to hold the securities but intend to sell them to others as soon as possible, why are they so concerned about making careful investigations?

Self-Test Problem

Solution Appears in Appendix A

- (ST-1) Blue Coral Breweries (BCB) is planning an IPO. Its underwriters have said the stock will sell at \$20 per share. The direct costs (legal fees, printing, etc.) will be \$800,000. The underwriters will charge a 7% spread.
- How many shares must BCB sell to net \$30 million?
 - If the stock price closes the first day at \$22, how much cash has BCB left on the table?
 - What are BCB's total costs (direct, indirect, and underwriting) for the IPO?

Problems

Answers Appear in Appendix B

EASY PROBLEMS 1-2

(20-1)
Profit or Loss on New
Stock Issue

Security Brokers Inc. specializes in underwriting new issues by small firms. On a recent offering of Beedles Inc., the terms were as follows:

Price to public	\$5 per share
Number of shares	3 million
Proceeds to Beedles	\$14,000,000

The out-of-pocket expenses incurred by Security Brokers in the design and distribution of the issue were \$300,000. What profit or loss would Security Brokers incur if the issue were sold to the public at the following average price?

- \$5 per share
 - \$6 per share
 - \$4 per share
- (20-2) The Beranek Company, whose stock price is now \$25, needs to raise \$20 million in common stock. Underwriters have informed the firm's management that they must price the new issue to the public at \$22 per share because of signaling effects. The

Underwriting and
Flotation Expenses

underwriters' compensation will be 5% of the issue price, so Beranek will net \$20.90 per share. The firm will also incur expenses in the amount of \$150,000.

How many shares must the firm sell to net \$20 million after underwriting and flotation expenses?

INTERMEDIATE PROBLEM 3

(20–3)
New Stock Issue

The Edelman Gem Company, a small jewelry manufacturer, has been successful and has enjoyed a good growth trend. Now Edelman is planning to go public with an issue of common stock, and it faces the problem of setting an appropriate price for the stock. The company and its investment banks believe that the proper procedure is to select several similar firms with publicly traded common stock and to make relevant comparisons.

Several jewelry manufacturers are reasonably similar to Edelman with respect to product mix, asset composition, and debt/equity proportions. Of these companies, Kennedy Jewelers and Strasburg Fashions are most similar. When analyzing the following data, assume that 2005 and 2010 were reasonably “normal” years for all three companies—that is, these years were neither especially good nor especially bad in terms of sales, earnings, and dividends. At the time of the analysis, r_{RF} was 8% and RP_M was 4%. Kennedy is listed on the AMEX and Strasburg on the NYSE, while Edelman will be traded in the Nasdaq market.

	Kennedy	Strasburg	Edelman (Totals)
Earnings per share*			
2010	\$ 4.50	\$ 7.50	\$ 1,200,000
2005	3.00	5.50	816,000
Price per share*			
2010	\$ 36.00	\$ 65.00	—
Dividends per share*			
2010	\$ 2.25	\$ 3.75	\$ 600,000
2005	1.50	2.75	420,000
Book value per share, 2010*	\$ 30.00	\$ 55.00	\$ 9 million
Market/book ratio, 2010	120%	118%	—
Total assets, 2010	\$28 million	\$ 82 million	\$20 million
Total debt, 2010	\$12 million	\$ 30 million	\$11 million
Sales, 2010	\$41 million	\$140 million	\$37 million

*The data are on a per share basis for Kennedy and Strasburg but are totals for Edelman.

- Assume that Edelman has 100 shares of stock outstanding. Use this information to calculate earnings per share (EPS), dividends per share (DPS), and book value per share for Edelman. (*Hint:* Edelman's 2010 EPS = \$12,000.)
- Calculate earnings and dividend growth rates for the three companies. (*Hint:* Edelman's EPS growth rate is 8%.)
- On the basis of your answer to part a, do you think Edelman's stock would sell at a price in the same “ballpark” as that of Kennedy and Strasburg—that is, in the range of \$25 to \$100 per share?
- Assuming Edelman's management can split the stock so that the 100 shares could be changed to 1,000 shares, 100,000 shares, or any other number, would such an action make sense in this case? Why or why not?

- e. Now assume that Edelman did split its stock and has 400,000 shares. Calculate new values for EPS, DPS, and book value per share. (*Hint:* Edelman's new 2010 EPS is \$3.00.)
- f. Return on equity (ROE) can be measured either as EPS divided by book value per share or as total earnings divided by total equity. Calculate ROEs for the three companies for 2010. (*Hint:* Edelman's 2010 ROE is 13.3%.)
- g. Calculate dividend payout ratios for the three companies for both years. (*Hint:* Edelman's 2010 payout ratio is 50%.)
- h. Calculate debt/total assets ratios for the three companies for 2010. (*Hint:* Edelman's 2010 debt ratio is 55%.)
- i. Calculate the P/E ratios for Kennedy and Strasburg for 2010. Are these ratios reasonable in view of relative growth, payout, and ROE data? If not, then what other factors might explain them? (*Hint:* Kennedy's P/E = 8)
- j. Now determine a range of values for Edelman's stock price, with 400,000 shares outstanding, by applying Kennedy's and Strasburg's P/E ratios, price/dividends ratios, and price/book value ratios to your data for Edelman. For example, one possible price for Edelman's stock is $(P/E \text{ Kennedy})(EPS \text{ Edelman}) = 8(\$3) = \$24$ per share. Similar calculations would produce a range of prices based on both Kennedy's and Strasburg's data. (*Hint:* Our range was \$24 to \$27.)
- k. Using the equation $r_s = D_1/P_0 + g$, find approximate r_s values for Kennedy and Strasburg. Then use these values in the constant growth stock price model to find a price for Edelman's stock. (*Hint:* We averaged the EPS and DPS g -values for Edelman.)
- l. At what price do you think Edelman's shares should be offered to the public? You will want to select a price that will be low enough to induce investors to buy the stock but not so low that it will rise sharply immediately after it is issued. Think about relative growth rates, ROEs, dividend yields, and total returns ($r_s = D_1/P_0 + g$).

CHALLENGING PROBLEMS 4–5

(20–4)

Refunding Analysis

Jan Volk, financial manager of Green Sea Transport (GST), has been asked by her boss to review GST's outstanding debt issues for possible bond refunding. Five years ago, GST issued \$40,000,000 of 11%, 25-year debt. The issue, with semiannual coupons, is currently callable at a premium of 11%, or \$110 for each \$1,000 par value bond. Flotation costs on this issue were 6%, or \$2,400,000.

Volk believes that GST could issue 20-year debt today with a coupon rate of 8%. The firm has placed many issues in the capital markets during the last 10 years, and its debt flotation costs are currently estimated to be 4% of the issue's value. GST's federal-plus-state tax rate is 40%.

Help Volk conduct the refunding analysis by answering the following questions.

- a. What is the total dollar call premium required to call the old issue? Is it tax deductible? What is the net after-tax cost of the call?
- b. What is the dollar flotation cost on the new issue? Is it immediately tax deductible? What is the after-tax flotation cost?
- c. What amounts of old-issue flotation costs have not been expensed? Can these deferred costs be expensed immediately if the old issue is refunded? What is the value of the tax savings?
- d. What is the net after-tax cash outlay required to refund the old issue?

- e. What is the semiannual tax savings that arises from amortizing the flotation costs on the new issue? What is the forgone semiannual tax savings on the old-issue flotation costs?
- f. What is the semiannual after-tax interest savings that would result from the refunding?
- g. Thus far, Volk has identified two future cash flows: (1) the net of new-issue flotation cost tax savings and old-issue flotation cost tax savings that are lost if refunding occurs and (2) after-tax interest savings. What is the sum of these two semiannual cash flows? What is the appropriate discount rate to apply to these future cash flows? What is their present value?
- h. What is the NPV of refunding? Should GST refund now or wait until later?

(20-5)

Refunding Analysis

Mullet Technologies is considering whether or not to refund a \$75 million, 12% coupon, 30-year bond issue that was sold 5 years ago. It is amortizing \$5 million of flotation costs on the 12% bonds over the issue's 30-year life. Mullet's investment banks have indicated that the company could sell a new 25-year issue at an interest rate of 10% in today's market. Neither they nor Mullet's management anticipate that interest rates will fall below 10% any time soon, but there is a chance that rates will increase.

A call premium of 12% would be required to retire the old bonds, and flotation costs on the new issue would amount to \$5 million. Mullet's marginal federal-plus-state tax rate is 40%. The new bonds would be issued 1 month before the old bonds are called, with the proceeds being invested in short-term government securities returning 6% annually during the interim period.

- a. Perform a complete bond refunding analysis. What is the bond refunding's NPV?
- b. What factors would influence Mullet's decision to refund now rather than later?

SPREADSHEET PROBLEM**(20-6)**

Build a Model: Bond Refunding



resource

Start with the partial model in the file *Ch20 P06 Build a Model.xls* on the textbook's Web site. Schumann Shoe Manufacturer is considering whether or not to refund a \$70 million, 10% coupon, 30-year bond issue that was sold 8 years ago. It is amortizing \$4.5 million of flotation costs on the 10% bonds over the issue's 30-year life. Schumann's investment bankers have indicated that the company could sell a new 22-year issue at an interest rate of 8% in today's market. Neither they nor Schumann's management anticipate that interest rates will fall below 6 percent anytime soon, but there is a chance that interest rates will increase.

- a. Perform a complete bond refunding analysis. What is the bond refunding's NPV?
- b. At what interest rate on the new debt is the NPV of the refunding no longer positive?

Mini Case

Randy's, a family-owned restaurant chain operating in Alabama, has grown to the point at which expansion throughout the entire Southeast is feasible. The proposed expansion would require the firm to raise about \$15 million in new capital. Because Randy's currently has a debt ratio of 50% and because family members already have all their personal wealth invested

in the company, the family would like to sell common stock to the public to raise the \$15 million. However, the family wants to retain voting control. You have been asked to brief family members on the issues involved by answering the following questions.

- a. What agencies regulate securities markets?
- b. How are start-up firms usually financed?
- c. Differentiate between a private placement and a public offering.
- d. Why would a company consider going public? What are some advantages and disadvantages?
- e. What are the steps of an initial public offering?
- f. What criteria are important in choosing an investment bank?
- g. Would companies going public use a negotiated deal or a competitive bid?
- h. Would the sale be on an underwritten or best efforts basis?
- i. Without actually doing any calculations, describe how the preliminary offering range for the price of an IPO would be determined.
- j. What is a roadshow? What is book-building?
- k. Describe the typical first-day return of an IPO and the long-term returns to IPO investors.
 - l. What are the direct and indirect costs of an IPO?
- m. What are equity carve-outs?
- n. Describe some ways other than an IPO that companies can use to raise funds from the capital markets.
- o. What are some other investment banking activities? How did these increase investment banks' risk?
- p. What is meant by "going private"? What are some advantages and disadvantages? What role do private equity funds play?
- q. How do companies manage the maturity structure of their debt?
- r. Under what conditions would a firm exercise a bond call provision?
- s. Explain how firms manage the risk structure of their debt with project financing.

SELECTED ADDITIONAL CASES

The following cases from Textchoice, Thomson Learning's online library, cover many of the concepts discussed in this chapter and are available at <http://www.textchoice2.com>.

Klein-Brigham Series:

Case 21, "Sun Coast Savings Bank," illustrates the decision to go public; Case 22, "Precision Tool Company," emphasizes the investment banking process; Case 23, "Art Deco Reproductions, Inc.," focuses on the analysis of a rights offering; and Case 24, "Bay Area Telephone Company," Case 24A, "Shenandoah Power Company," and Case 24B, "Tucson Entertainment, Inc.," illustrate the bond refunding decision.

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