

RAISING CAPITAL

On May 24, 2006, in an eagerly awaited initial public offering (IPO), credit card giant MasterCard went public. Assisted by the investment bank Goldman Sachs, MasterCard sold 61.5 million shares of stock to the public at a price of \$39.00. In a nod to the public's unfortunate fascination with credit, the stock price jumped to \$46.00 at the end of the day, an 18 percent increase. But although the MasterCard IPO was a fairly large one, it wasn't even the biggest on this particular day. The Bank of China went public

the same day in what was one of the largest IPOs in history. Even though the shares were priced at only \$0.38, the company sold over 26 billion shares, raising almost \$10 billion. In this chapter, we will examine the process by which companies such as MasterCard sell stock to the public, the costs of doing so, and the role of investment banks in the process.

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All firms must, at varying times, obtain capital. To do so, a firm must either borrow the money (debt financing), sell a portion of the firm (equity financing), or both. How a firm raises capital depends a great deal on the size of the firm, its life cycle stage, and its growth prospects.

In this chapter, we examine some of the ways in which firms actually raise capital. We begin by looking at companies in the early stages of their lives and the importance of venture capital for such firms. We then look at the process of going public and the role of investment banks. Along the way, we discuss many of the issues associated with selling securities to the public and their implications for all types of firms. We close the chapter with a discussion of sources of debt capital.¹

¹We are indebted to Jay R. Ritter of the University of Florida for helpful comments and suggestions for this chapter.

16.1 The Financing Life Cycle of a Firm: Early-Stage Financing and Venture Capital

One day, you and a friend have a great idea for a new computer software product that helps users communicate using the next-generation meganet. Filled with entrepreneurial zeal, you christen the product Megacomm and set about bringing it to market.

Working nights and weekends, you are able to create a prototype of your product. It doesn't actually work, but at least you can show it around to illustrate your idea. To actually develop the product, you need to hire programmers, buy computers, rent office space, and so on. Unfortunately, because you are both college students, your combined assets are not sufficient to fund a pizza party, much less a start-up company. You need what is often referred to as OPM—other people's money.

Your first thought might be to approach a bank for a loan. You would probably discover, however, that banks are generally not interested in making loans to start-up companies with no assets (other than an idea) run by fledgling entrepreneurs with no track record. Instead your search for capital would likely lead you to the **venture capital (VC)** market.

venture capital (VC)
Financing for new, often high-risk ventures.

VENTURE CAPITAL

The term *venture capital* does not have a precise meaning, but it generally refers to financing for new, often high-risk ventures. For example, before it went public, Netscape Communications was VC financed. Individual venture capitalists invest their own money; so-called “angels” are usually individual VC investors, but they tend to specialize in smaller deals. Venture capital firms specialize in pooling funds from various sources and investing them. The underlying sources of funds for such firms include individuals, pension funds, insurance companies, large corporations, and even university endowment funds. The broad term *private equity* is often used to label the rapidly growing area of equity financing for nonpublic companies.²

Venture capitalists and venture capital firms recognize that many or even most new ventures will not fly, but the occasional one will. The potential profits are enormous in such cases. To limit their risk, venture capitalists generally provide financing in stages. At each stage, enough money is invested to reach the next milestone or planning stage. For example, the *first-stage financing* might be enough to get a prototype built and a manufacturing plan completed. Based on the results, the *second-stage financing* might be a major investment needed to actually begin manufacturing, marketing, and distribution. There might be many such stages, each of which represents a key step in the process of growing the company.

Venture capital firms often specialize in different stages. Some specialize in very early “seed money,” or ground floor, financing. In contrast, financing in the later stages might come from venture capitalists specializing in so-called mezzanine-level financing, where *mezzanine level* refers to the level just above the ground floor.

The fact that financing is available in stages and is contingent on specified goals being met is a powerful motivating force for the firm's founders. Often, the founders receive



For a list of well-known VC firms, see www.vfinance.com.

²So-called vulture capitalists specialize in high-risk investments in established, but financially distressed, firms. Vulgar capitalists invest in firms that have bad taste (OK, we made up this last bit).

relatively little in the way of salary and have substantial portions of their personal assets tied up in the business. At each stage of financing, the value of the founder's stake grows and the probability of success rises.

In addition to providing financing, venture capitalists often actively participate in running the firm, providing the benefit of experience with previous start-ups as well as general business expertise. This is especially true when the firm's founders have little or no hands-on experience in running a company.

SOME VENTURE CAPITAL REALITIES

Although there is a large venture capital market, the truth is that access to venture capital is really very limited. Venture capital companies receive huge numbers of unsolicited proposals, the vast majority of which end up in the circular file unread. Venture capitalists rely heavily on informal networks of lawyers, accountants, bankers, and other venture capitalists to help identify potential investments. As a result, personal contacts are important in gaining access to the venture capital market; it is very much an "introduction" market.

Another simple fact about venture capital is that it is incredibly expensive. In a typical deal, the venture capitalist will demand (and get) 40 percent or more of the equity in the company. Venture capitalists frequently hold voting preferred stock, giving them various priorities in the event that the company is sold or liquidated. The venture capitalist will typically demand (and get) several seats on the company's board of directors and may even appoint one or more members of senior management.

CHOOSING A VENTURE CAPITALIST

Some start-up companies, particularly those headed by experienced, previously successful entrepreneurs, will be in such demand that they will have the luxury of looking beyond the money in choosing a venture capitalist. There are some key considerations in such a case, some of which can be summarized as follows:

1. *Financial strength is important:* The venture capitalist needs to have the resources and financial reserves for additional financing stages should they become necessary. This doesn't mean that bigger is necessarily better, however, because of our next consideration.
2. *Style is important:* Some venture capitalists will wish to be very much involved in day-to-day operations and decision making, whereas others will be content with monthly reports. Which are better depends on the firm and also on the venture capitalists' business skills. In addition, a large venture capital firm may be less flexible and more bureaucratic than a smaller "boutique" firm.
3. *References are important:* Has the venture capitalist been successful with similar firms? Of equal importance, how has the venture capitalist dealt with situations that didn't work out?
4. *Contacts are important:* A venture capitalist may be able to help the business in ways other than helping with financing and management by providing introductions to potentially important customers, suppliers, and other industry contacts. Venture capitalist firms frequently specialize in a few particular industries, and such specialization could prove quite valuable.
5. *Exit strategy is important:* Venture capitalists are generally not long-term investors. How and under what circumstances the venture capitalist will "cash out" of the business should be carefully evaluated.



The Internet is a tremendous source of venture capital information, both for suppliers and demanders of capital. For example, the site at www.dealflow.com prompts you to search the firm's database as either an entrepreneur (capital seeker) or a venture capitalist (capital supplier).



For more VC info and links, see www.globaltechnoscan.com.

CONCLUSION

If a start-up succeeds, the big payoff frequently comes when the company is sold to another company or goes public. Either way, investment bankers are often involved in the process. We discuss the process of selling securities to the public in the next several sections, paying particular attention to the process of going public.

Concept Questions

16.1a What is venture capital?

16.1b Why is venture capital often provided in stages?

16.2 Selling Securities to the Public: The Basic Procedure

Many rules and regulations surround the process of selling securities. The Securities Act of 1933 is the origin of federal regulations for all new interstate securities issues. The Securities Exchange Act of 1934 is the basis for regulating securities already outstanding. The Securities and Exchange Commission, or SEC, administers both acts.

A series of steps is involved in issuing securities to the public. In general terms, the basic procedure is as follows:

1. Management's first step in issuing any securities to the public is to obtain approval from the board of directors. In some cases, the number of authorized shares of common stock must be increased. This requires a vote of the shareholders.
2. The firm must prepare a **registration statement** and file it with the SEC. The registration statement is required for all public, interstate issues of securities, with two exceptions:
 - a. Loans that mature within nine months.
 - b. Issues that involve less than \$5 million.

The second exception is known as the *small-issues exemption*. In such a case, simplified procedures are used. Under the basic small-issues exemption, issues of less than \$5 million are governed by **Regulation A**, for which only a brief offering statement is needed. Normally, however, a registration statement contains many pages (50 or more) of financial information, including a financial history, details of the existing business, proposed financing, and plans for the future.

3. The SEC examines the registration statement during a waiting period. During this time, the firm may distribute copies of a preliminary **prospectus**. The prospectus contains much of the information in the registration statement, and it is given to potential investors by the firm. The preliminary prospectus is sometimes called a **red herring**, in part because bold red letters are printed on the cover.

A registration statement becomes effective on the 20th day after its filing unless the SEC sends a *letter of comment* suggesting changes. In that case, after the changes are made, the 20-day waiting period starts again. It is important to note that the SEC does not consider the economic merits of the proposed sale; it merely makes sure that various rules and regulations are followed. Also, the SEC generally does not check the accuracy or truthfulness of information in the prospectus.

registration statement

A statement filed with the SEC that discloses all material information concerning the corporation making a public offering.

Regulation A

An SEC regulation that exempts public issues of less than \$5 million from most registration requirements.

prospectus

A legal document describing details of the issuing corporation and the proposed offering to potential investors.

The registration statement does not initially contain the price of the new issue. Usually, a price amendment is filed at or near the end of the waiting period, and the registration becomes effective.

4. The company cannot sell these securities during the waiting period. However, oral offers can be made.
5. On the effective date of the registration statement, a price is determined and a full-fledged selling effort gets under way. A final prospectus must accompany the delivery of securities or confirmation of sale, whichever comes first.

Tombstone advertisements (or, simply, *tombstones*) are used by underwriters during and after the waiting period. An example is reproduced in Figure 16.1. The tombstone contains the name of the issuer (the World Wrestling Federation, or WWF, in this case). It provides some information about the issue, and it lists the investment banks (the underwriters) involved with selling the issue. The role of the investment banks in selling securities is discussed more fully in the following pages.

The investment banks on the tombstone are divided into groups called *brackets* based on their participation in the issue, and the names of the banks are listed alphabetically within each bracket. The brackets are often viewed as a kind of pecking order. In general, the higher the bracket, the greater is the underwriter's prestige.

Concept Questions

16.2a What are the basic procedures in selling a new issue?

16.2b What is a registration statement?

red herring

A preliminary prospectus distributed to prospective investors in a new issue of securities.

tombstone

An advertisement announcing a public offering.



Find out what firms are going public this week at cbs.marketwatch.com.

Alternative Issue Methods

When a company decides to issue a new security, it can sell it as a public issue or a private issue. In the case of a public issue, the firm is required to register the issue with the SEC. However, if the issue is to be sold to fewer than 35 investors, the sale can be carried out privately. In this case, a registration statement is not required.³

For equity sales, there are two kinds of public issues: a **general cash offer** and a **rights offer** (or *rights offering*). With a cash offer, securities are offered to the general public. With a rights offer, securities are initially offered only to existing owners. Rights offers are fairly common in other countries, but they are relatively rare in the United States, particularly in recent years. We therefore focus primarily on cash offers in this chapter.

The first public equity issue that is made by a company is referred to as an **initial public offering**, *IPO*, or an *unseasoned new issue*. This issue occurs when a company decides to go public. Obviously, all initial public offerings are cash offers. If the firm's existing shareholders wanted to buy the shares, the firm wouldn't have to sell them publicly in the first place.

³A variety of different arrangements can be made for private equity issues. Selling unregistered securities avoids the costs of complying with the Securities Exchange Act of 1934. Regulation significantly restricts the resale of unregistered equity securities. For example, the purchaser may be required to hold the securities for at least one year. Many of the restrictions were significantly eased in 1990 for very large institutional investors, however. The private placement of bonds is discussed in a later section.

16.3

general cash offer

An issue of securities offered for sale to the general public on a cash basis.

rights offer

A public issue of securities in which securities are first offered to existing shareholders. Also called a *rights offering*.

initial public offering

A company's first equity issue made available to the public. Also called an *unseasoned new issue* or an *IPO*.

FIGURE 16.1

An Example of
a Tombstone
Advertisement

This announcement is neither an offer to sell nor a solicitation of an offer to buy any of these securities.
The offering is made only by the Prospectus.

New Issue

11,500,000 Shares



World Wrestling Federation Entertainment, Inc.

Class A Common Stock

Price \$17.00 Per Share

Copies of the Prospectus may be obtained in any State in which this announcement is circulated from only such of the Underwriters, including the undersigned, as may lawfully offer these securities in such State.

U.S. Offering

9,200,000 Shares

This portion of the underwriting is being offered in the United States and Canada.

Bear, Stearns & Co. Inc.

Credit Suisse First Boston

Merrill Lynch & Co.

Wit Capital Corporation

Allen & Company <small>Incorporated</small>	Banc of America Securities LLC	Deutsche Banc Alex. Brown
Donaldson, Lufkin & Jenrette	A.G. Edwards & Sons, Inc.	Hambrecht & Quist
Prudential Securities	SG Cowen	Wassertein Perella Securities, Inc.
Axiom Capital Management, Inc.	Blackford Securities Corp.	J.C. Bradford & Co.
Joseph Charles & Assoc., Inc.	Chatsworth Securities LLC	Gabelli & Company, Inc.
Gaines, Berland Inc.	Jefferies & Company, Inc.	Josephthal & Co. Inc.
Raymond James & Associates, Inc.		Neuberger Berman, LLC
Tucker Anthony Cleary Gull		Sanders Morris Mundy
		Wachovia Securities, Inc.

International Offering

2,300,000 Shares

This portion of the underwriting is being offered outside of the United States and Canada.

Bear, Stearns International Limited

Credit Suisse First Boston

Merrill Lynch International

Method	Type	Definition
Public Traditional negotiated cash offer	Firm commitment cash offer	The company negotiates an agreement with an investment banker to underwrite and distribute the new shares. A specified number of shares are bought by underwriters and sold at a higher price.
	Best efforts cash offer	The company has investment bankers sell as many of the new shares as possible at the agreed-upon price. There is no guarantee concerning how much cash will be raised.
	Dutch auction cash offer	The company has investment bankers auction shares to determine the highest offer price obtainable for a given number of shares to be sold.
Privileged subscription	Direct rights offer	The company offers the new stock directly to its existing shareholders.
	Standby rights offer	Like the direct rights offer, this contains a privileged subscription arrangement with existing shareholders. The net proceeds are guaranteed by the underwriters.
Nontraditional cash offer	Shelf cash offer	Qualifying companies can authorize all shares they expect to sell over a two-year period and sell them when needed.
	Competitive firm cash offer	The company can elect to award the underwriting contract through a public auction instead of negotiation.
Private	Direct placement	Securities are sold directly to the purchaser, who, at least until recently, generally could not resell securities for at least two years.

TABLE 16.1

The Methods of Issuing New Securities



*IPO information is widely available. Try www.ipohome.com and *IPO Central* at www.hoovers.com*

A **seasoned equity offering (SEO)** is a new issue for a company with securities that have been previously issued.⁴ A seasoned equity offering of common stock can be made by using a cash offer or a rights offer.

These methods of issuing new securities are shown in Table 16.1. They are discussed in Sections 16.4 through 16.8.

seasoned equity offering (SEO)

A new equity issue of securities by a company that has previously issued securities to the public.

Concept Questions

16.3a What is the difference between a rights offer and a cash offer?

16.3b Why is an initial public offering necessarily a cash offer?

Underwriters

If the public issue of securities is a cash offer, **underwriters** are usually involved. Underwriting is an important line of business for large investment firms such as Merrill Lynch. Underwriters perform services such as the following for corporate issuers:

1. Formulating the method used to issue the securities.
2. Pricing the new securities.
3. Selling the new securities.

⁴The terms *follow-on offering* and *secondary offering* are also commonly used.

16.4

underwriters

Investment firms that act as intermediaries between a company selling securities and the investing public.

syndicate

A group of underwriters formed to share the risk and to help sell an issue.

gross spread

Compensation to the underwriter, determined by the difference between the underwriter's buying price and offering price.

Typically, the underwriter buys the securities for less than the offering price and accepts the risk of not being able to sell them. Because underwriting involves risk, underwriters usually combine to form an underwriting group called a **syndicate** to share the risk and to help sell the issue.

In a syndicate, one or more managers arrange, or *comanage*, the offering. The lead manager typically has the responsibility of dealing with the issuer and pricing the securities. The other underwriters in the syndicate serve primarily to distribute the issue and produce research reports later on. In recent years, it has become fairly common for a syndicate to consist of only a small number of *comanagers*.

The difference between the underwriter's buying price and the offering price is called the **gross spread**, or underwriting discount. It is the basic compensation received by the underwriter. Sometimes, on smaller deals, the underwriter will get noncash compensation in the form of warrants and stock in addition to the spread.⁵

CHOOSING AN UNDERWRITER

A firm can offer its securities to the highest bidding underwriter on a *competitive offer* basis, or it can negotiate directly with an underwriter. Except for a few large firms, companies usually do new issues of debt and equity on a *negotiated offer* basis. The exception is public utility holding companies, which are essentially required to use competitive underwriting.

There is evidence that competitive underwriting is cheaper to use than negotiated underwriting. The underlying reasons for the dominance of negotiated underwriting in the United States are the subject of ongoing debate.

TYPES OF UNDERWRITING

Three basic types of underwriting are involved in a cash offer: firm commitment, best efforts, and dutch auction.

firm commitment underwriting

The type of underwriting in which the underwriter buys the entire issue, assuming full financial responsibility for any unsold shares.



Learn more about investment banks at Merrill Lynch (www.ml.com).

Firm Commitment Underwriting In **firm commitment underwriting**, the issuer sells the entire issue to the underwriters, who then attempt to resell it. This is the most prevalent type of underwriting in the United States. This is really just a purchase–resale arrangement, and the underwriter's fee is the spread. For a new issue of seasoned equity, the underwriters can look at the market price to determine what the issue should sell for, and more than 95 percent of all such new issues are firm commitments.

If the underwriter cannot sell all of the issue at the agreed-upon offering price, it may have to lower the price on the unsold shares. Nonetheless, with firm commitment underwriting, the issuer receives the agreed-upon amount, and all the risk associated with selling the issue is transferred to the underwriter.

Because the offering price usually isn't set until the underwriters have investigated how receptive the market is to the issue, this risk is usually minimal. Also, because the offering price usually is not set until just before selling commences, the issuer doesn't know precisely what its net proceeds will be until that time.

best efforts underwriting

The type of underwriting in which the underwriter sells as much of the issue as possible, but can return any unsold shares to the issuer without financial responsibility.

Best Efforts Underwriting In **best efforts underwriting**, the underwriter is legally bound to use “best efforts” to sell the securities at the agreed-upon offering price. Beyond this, the underwriter does not guarantee any particular amount of money to the issuer. This form of underwriting has become uncommon in recent years.

⁵Warrants are options to buy stock at a fixed price for some fixed period.

Dutch Auction Underwriting With **Dutch auction underwriting**, the underwriter does not set a fixed price for the shares to be sold. Instead, the underwriter conducts an auction in which investors bid for shares. The offer price is determined based on the submitted bids. A Dutch auction is also known by the more descriptive name *uniform price auction*. This approach to selling securities to the public is relatively new in the IPO market and has not been widely used there, but it is very common in the bond markets. For example, it is the sole procedure used by the U.S. Treasury to sell enormous quantities of notes, bonds, and bills to the public.

The best way to understand a Dutch or uniform price auction is to consider a simple example. Suppose the Rial Company wants to sell 400 shares to the public. The company receives five bids as follows:

Bidder	Quantity	Price
A	100 shares	\$16
B	100 shares	14
C	200 shares	12
D	100 shares	12
E	200 shares	10

Thus, bidder A is willing to buy 100 shares at \$16 each, bidder B is willing to buy 100 shares at \$14, and so on. The Rial Company examines the bids to determine the highest price that will result in all 400 shares being sold. So, for example, at \$14, A and B would buy only 200 shares, so that price is too high. Working our way down, all 400 shares won't be sold until we hit a price of \$12, so \$12 will be the offer price in the IPO. Bidders A through D will receive shares; bidder E will not.

There are two additional important points to observe in our example. First, all the winning bidders will pay \$12—even bidders A and B, who actually bid a higher price. The fact that all successful bidders pay the same price is the reason for the name “uniform price auction.” The idea in such an auction is to encourage bidders to bid aggressively by providing some protection against bidding a price that is too high.

Second, notice that at the \$12 offer price, there are actually bids for 500 shares, which exceeds the 400 shares Rial wants to sell. Thus, there has to be some sort of allocation. How this is done varies a bit; but in the IPO market, the approach has been to simply compute the ratio of shares offered to shares bid at the offer price or better, which, in our example, is $400/500 = .8$, and allocate bidders that percentage of their bids. In other words, bidders A through D would each receive 80 percent of the shares they bid at a price of \$12 per share.

THE AFTERMARKET

The period after a new issue is initially sold to the public is referred to as the *aftermarket*. During this time, the members of the underwriting syndicate generally do not sell securities for less than the offering price.

The principal underwriter is permitted to buy shares if the market price falls below the offering price. The purpose of this would be to support the market and stabilize the price against temporary downward pressure. If the issue remains unsold after a time (for example, 30 days), members can leave the group and sell their shares at whatever price the market will allow.⁶

⁶Occasionally, the price of a security falls dramatically when the underwriter ceases to stabilize the price. In such cases, Wall Street humorists (the ones who didn't buy any of the stock) have referred to the period following the aftermarket as the *aftermath*.

Dutch auction underwriting

The type of underwriting in which the offer price is set based on competitive bidding by investors. Also known as a *uniform price auction*.



Green Shoe provision

A contract provision giving the underwriter the option to purchase additional shares from the issuer at the offering price. Also called the *overallotment option*.

lockup agreement

The part of the underwriting contract that specifies how long insiders must wait after an IPO before they can sell stock.

THE GREEN SHOE PROVISION

Many underwriting contracts contain a **Green Shoe provision** (sometimes called the *overallotment option*), which gives the members of the underwriting group the option to purchase additional shares from the issuer at the offering price.⁷ Essentially all IPOs and SEOs include this provision, but ordinary debt offerings generally do not. The stated reason for the Green Shoe option is to cover excess demand and oversubscriptions. Green Shoe options usually last for 30 days and involve 15 percent of the newly issued shares.

In practice, usually underwriters initially go ahead and sell 115 percent of the shares offered. If the demand for the issue is strong after the offering, the underwriters exercise the Green Shoe option to get the extra 15 percent from the company. If demand for the issue is weak, the underwriters buy the needed shares in the open market, thereby helping to support the price of the issue in the aftermarket.

LOCKUP AGREEMENTS

Although they are not required by law, almost all underwriting contracts contain so-called **lockup agreements**. Such agreements specify how long insiders must wait after an IPO before they can sell some or all of their stock. Lockup periods have become fairly standardized in recent years at 180 days. Thus, following an IPO, insiders can't cash out until six months have gone by, which ensures that they maintain a significant economic interest in the company going public.

Lockup periods are also important because it is not unusual for the number of locked-up shares to exceed the number of shares held by the public, sometimes by a substantial multiple. On the day the lockup period expires, there is the possibility that a large number of shares will hit the market on the same day and thereby depress values. The evidence suggests that, on average, venture capital-backed companies are particularly likely to experience a loss in value on the lockup expiration day.

THE QUIET PERIOD

Once a firm begins to seriously contemplate an IPO, the SEC requires that a firm and its managing underwriters observe a “quiet period.” This means that all communications with the public must be limited to ordinary announcements and other purely factual matters. The quiet period ends 40 calendar days after an IPO. The SEC's logic is that all relevant information should be contained in the prospectus. An important result of this requirement is that the underwriter's analysts are prohibited from making recommendations to investors. As soon as the quiet period ends, however, the managing underwriters typically publish research reports, usually accompanied by a favorable “buy” recommendation.

In 2004, two firms experienced notable quiet period-related problems. Just before Google's IPO, an interview with Google cofounders Sergey Brin and Larry Page appeared in *Playboy*. The interview almost caused a postponement of the IPO, but Google was able to amend its prospectus in time. In May 2004, Salesforce.com's IPO was delayed because an interview with CEO Mark Benioff appeared in *The New York Times*. Salesforce.com finally went public two months later.

⁷The term *Green Shoe provision* sounds quite exotic, but the origin is relatively mundane. The term comes from the name of the Green Shoe Manufacturing Company, which, in 1963, was the first issuer that granted such an option.

Concept Questions**16.4a** What do underwriters do?**16.4b** What is the Green Shoe provision?

IPOs and Underpricing

16.5

Determining the correct offering price is the most difficult thing an underwriter must do for an initial public offering. The issuing firm faces a potential cost if the offering price is set too high or too low. If the issue is priced too high, it may be unsuccessful and have to be withdrawn. If the issue is priced below the true market value, the issuer's existing shareholders will experience an opportunity loss when they sell their shares for less than they are worth.

Underpricing is fairly common. It obviously helps new shareholders earn a higher return on the shares they buy. However, the existing shareholders of the issuing firm are not helped by underpricing. To them, it is an indirect cost of issuing new securities. For example, on January 26, 2006, McDonald's sold a portion of its Chipotle Mexican Grill chain through an IPO. Investors were offered 7.9 million shares at a price of \$22 per share. The stock opened at \$45 and rose to a first-day high of \$48.28 before closing at \$44.00: a 100 percent gain in the first day. Based on these numbers, Chipotle stock was apparently underpriced by \$22, which means that the company missed out on an additional \$173.8 million. That's a lot of money, but it pales in comparison to the money "left on the table" by companies such as eToys, whose 8.2 million share 1999 IPO was underpriced by \$57 per share, or almost a half a billion dollars in all! eToys could have used the money: It was bankrupt within two years.

IPO UNDERPRICING: THE 1999–2000 EXPERIENCE

Table 16.2, along with Figures 16.2 and 16.3, shows that 1999 and 2000 were extraordinary years in the IPO market. Almost 900 companies went public, and the average first-day return across the two years was about 65 percent. During this time, 194 IPOs doubled, or more than doubled, in value on the first day. In contrast, only 39 did so in the preceding 24 years combined. One company, VA Linux, shot up 698 percent!

The dollar amount raised in 2000, \$66 billion, was a record, followed closely by 1999 at \$65 billion. The underpricing was so severe in 1999 that companies left another \$36 billion "on the table," which was substantially more than 1990–1998 combined; and in 2000, the amount was at least \$27 billion. In other words, over the two-year period, companies missed out on \$63 billion because of underpricing.

October 19, 1999, was one of the more memorable days during this time. The World Wrestling Federation (WWF) (now known as World Wrestling Entertainment, or WWE) and Martha Stewart Omnimedia both went public, so it was Martha Stewart versus "Stone Cold" Steve Austin in a Wall Street version of MTV's *Celebrity Deathmatch*. When the closing bell rang, it was a clear smack-down as Martha Stewart gained 98 percent on the first day compared to 48 percent for the WWF. If you're interested in finding out how IPOs have done recently, check out our nearby *Work the Web* box.

TABLE 16.2

Number of Offerings,
Average First-Day Return,
and Gross Proceeds of
Initial Public Offerings:
1975–2005

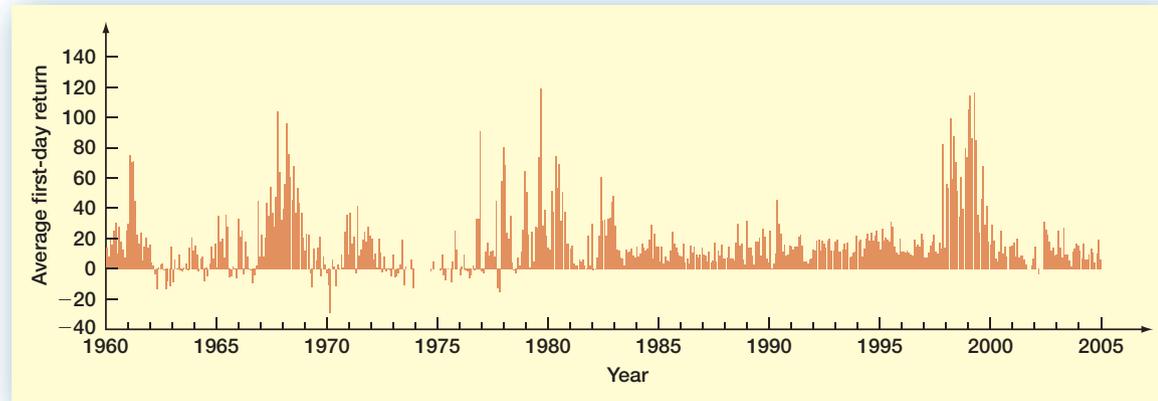
Year	Number of Offerings*	Average First-Day Return, %†	Gross Proceeds, \$ Millions‡
1975	12	−1.5	262
1976	26	1.9	214
1977	15	3.6	127
1978	20	11.2	209
1979	39	8.5	312
1980	75	13.9	934
1981	197	6.2	2,367
1982	81	10.7	1,016
1983	521	9.0	11,225
1984	222	2.5	2,841
1985	216	6.2	5,492
1986	480	5.9	15,816
1987	341	5.6	12,911
1988	128	5.4	4,125
1989	119	7.9	5,155
1990	112	10.5	4,225
1991	287	11.7	15,398
1992	395	10.1	21,777
1993	505	12.7	28,899
1994	412	9.8	17,784
1995	461	21.1	28,745
1996	687	17.0	42,572
1997	483	13.9	32,478
1998	317	20.1	34,585
1999	487	69.6	65,069
2000	385	55.4	65,627
2001	81	13.7	34,368
2002	70	8.6	22,136
2003	68	12.4	10,122
2004	186	12.2	32,380
2005	169	9.8	28,677
1975–1979	112	5.7	1,124
1980–1989	2,380	6.8	61,880
1990–1999	4,146	21.1	291,531
2000–2005	959	29.0	193,310
1975–2005	7,597	17.3	547,845

*The number of offerings excludes IPOs with an offer price of less than \$5.00, ADRs, best efforts, units, and Regulation A offers (small issues, raising less than \$1.5 million during the 1980s), real estate investment trusts (REITs), partnerships, and closed-end funds. Banks and S&Ls and non-CRSP-listed IPOs are included.

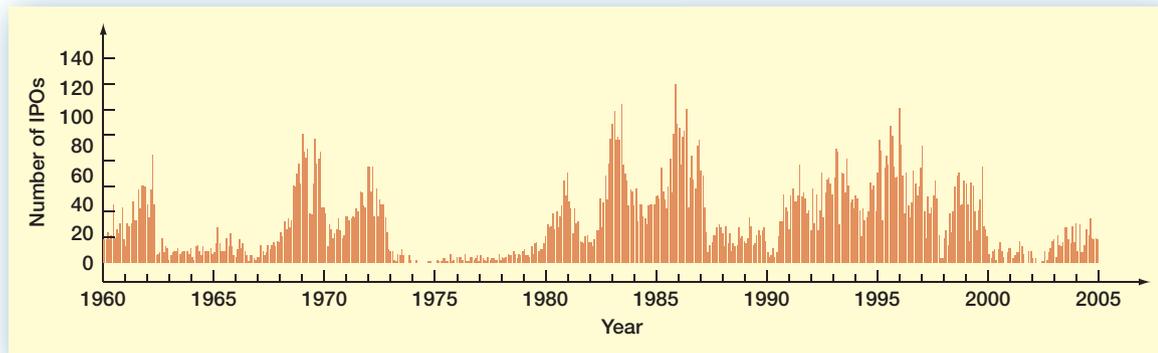
†First-day returns are computed as the percentage return from the offering price to the first closing market price.

‡Gross proceeds data are from Securities Data Co., and they exclude over-allotment options but include the international tranche, if any. No adjustments for inflation have been made.

SOURCE: Professor Jay R. Ritter, University of Florida.

FIGURE 16.2 Average Initial Returns by Month for SEC-Registered Initial Public Offerings: 1960–2005

SOURCE: R.G. Ibbotson, J.L. Sindelar, and J.R. Ritter, “The Market’s Problems with the Pricing of Initial Public Offerings,” *Journal of Applied Corporate Finance* 7 (Spring 1994), as updated by the authors.

FIGURE 16.3 Number of Offerings by Month for SEC-Registered Initial Public Offerings: 1960–2005

SOURCE: R.G. Ibbotson, J.L. Sindelar, and J.R. Ritter, “The Market’s Problems with the Pricing of Initial Public Offerings,” *Journal of Applied Corporate Finance* 7 (Spring 1994), as updated by the authors.

EVIDENCE ON UNDERPRICING

Figure 16.2 provides a more general illustration of the underpricing phenomenon. What is shown is the month-by-month history of underpricing for SEC-registered IPOs.⁸ The period covered is 1960 through 2005. Figure 16.3 presents the number of offerings in each month for the same period.

Figure 16.2 shows that underpricing can be quite dramatic, exceeding 100 percent in some months. In such months, the average IPO more than doubled in value, sometimes in a matter of hours. Also, the degree of underpricing varies through time, and periods of severe underpricing (“hot issue” markets) are followed by periods of little underpricing (“cold issue” markets). For example, in the 1960s, the average IPO was underpriced by

⁸The discussion in this section draws on R.G. Ibbotson, J.L. Sindelar, and J.R. Ritter, “The Market’s Problems with the Pricing of Initial Public Offerings,” *Journal of Applied Corporate Finance* 7 (Spring 1994).

WORK THE WEB



So how much money have companies left on the table recently? We went to www.hoovers.com to see. Here is what we found for the first half of 2006:

Money Left On The Table

Company	Lead Underwriter	Offer Price	Pricing Valuation (mil.)	First Trade Price	First Trade Valuation (mil.)	Money on the Table (mil.)
Grupo Aeroportuario del Pacífico, S.A. de C.V.	Credit Suisse Securities (USA) LLC	\$21.00	\$870.8	\$30.00	\$1,244.0	\$373.2
Tim Hortons Inc.	Goldman, Sachs & Co.	\$23.16	\$671.7	\$31.95	\$926.5	\$254.9
Chipotle Mexican Grill, Inc.	Morgan Stanley & Co. Incorporated	\$22.00	\$173.3	\$45.00	\$354.6	\$181.2
Crocs, Inc.	Piper Jaffray & Co.	\$21.00	\$207.9	\$30.00	\$297.0	\$89.1
Ternium S.A.	Citigroup Global Markets	\$20.00	\$496.9	\$23.05	\$572.7	\$75.8

As you can see, Grupo Aeroportuario del Pacífico, S.A. de C.V., led the list, leaving \$373 million on the table because of underpricing. However, Chipotle Mexican Grill may have been worse off: The company left \$181 million on the table (based on the opening price), which was over 50 percent of the initial amount raised!

21.2 percent. In the 1970s, the average underpricing was much smaller (9.0 percent), and the amount of underpricing was actually very small or even negative for much of that time. Underpricing in the 1980s ran about 6.8 percent. For 1990–1999, IPOs were underpriced by 21.1 percent on average, and they were underpriced by 29 percent in 2000–2005.

From Figure 16.3, it is apparent that the number of IPOs is also highly variable through time. Further, there are pronounced cycles in both the degree of underpricing and the number of IPOs. Comparing Figures 16.2 and 16.3, we see that increases in the number of new offerings tend to follow periods of significant underpricing by roughly six months. This probably occurs because companies decide to go public when they perceive that the market is highly receptive to new issues.

Table 16.2 contains a year-by-year summary of underpricing for the years 1975–2005. As indicated, a grand total of 7,597 companies were included in this analysis. The degree of underpricing averaged 17.3 percent overall for the 31 years examined. Securities were overpriced on average in only 1 of the 31 years; in 1975, the average decrease in value was –1.5 percent. At the other extreme, in 1999, the 487 issues were underpriced, on average, by a remarkable 69.6 percent.

WHY DOES UNDERPRICING EXIST?

Based on the evidence we've examined, an obvious question is why underpricing continues to exist. As we discuss, there are various explanations; but to date, there is a lack of complete agreement among researchers as to which is correct.

We present some pieces of the underpricing puzzle by stressing two important caveats to our preceding discussion. First, the average figures we have examined tend to obscure the fact that much of the apparent underpricing is attributable to the smaller, more highly

Jay Ritter on IPO Underpricing around the World

The United States is not the only country in which initial public offerings (IPOs) of common stock are underpriced. The phenomenon exists in every country with a stock market, although the extent of underpricing varies from country to country.

In general, countries with developed capital markets have more moderate underpricing than in emerging markets. During the Internet bubble of 1999–2000, however, underpricing in the developed capital markets increased dramatically. In the United States, for example, the average first-day return during 1999–2000 was 65 percent. At the same time that underpricing in the developed capital markets increased, the underpricing of IPOs sold to residents of China moderated. The Chinese average has come down to a mere 25.7 percent, which is lower than it had been in the early and mid-1990s. After the bursting of the Internet bubble in mid-2000, the level of underpricing in the United States, Germany, and other developed capital markets has returned to more traditional levels.

The following table gives a summary of the average first-day returns on IPOs in a number of countries around the world, with the figures collected from a number of studies by various authors.

Country	Sample Size	Time Period	Avg. Initial Return	Country	Sample Size	Time Period	Avg. Initial Return
Australia	381	1976–1995	12.1%	Malaysia	401	1980–1998	104.1%
Austria	83	1984–2002	6.3	Mexico	37	1987–1990	33.0
Belgium	93	1984–2004	14.2	Netherlands	143	1982–1999	10.2
Brazil	62	1979–1990	78.5	New Zealand	201	1979–1999	23.0
Canada	540	1971–2002	7.0	Nigeria	63	1989–1993	19.1
Chile	55	1982–1997	8.8	Norway	68	1984–1996	12.5
China	432	1990–2000	256.9	Philippines	104	1987–1997	22.7
Denmark	117	1984–1998	5.4	Poland	140	1991–1998	27.4
Finland	99	1984–1997	10.1	Portugal	21	1992–1998	10.6
France	571	1983–2000	11.6	Singapore	441	1973–2001	29.6
Germany	545	1978–2001	31.1	South Africa	118	1980–1991	32.7
Greece	363	1976–2005	25.1	Spain	99	1986–1998	10.7
Hong Kong	857	1980–2001	17.3	Sweden	332	1980–1998	30.5
India	2,713	1990–2004	95.4	Switzerland	120	1983–2000	34.9
Indonesia	265	1989–2003	20.2	Taiwan	293	1986–1998	31.1
Iran	279	1991–2004	22.4	Thailand	292	1987–1997	46.7
Israel	285	1990–1994	12.1	Turkey	282	1990–2004	10.8
Italy	181	1985–2001	21.7	United Kingdom	3,122	1959–2001	17.4
Japan	1,689	1970–2001	28.4	United States	15,333	1960–2005	18.1
Korea	477	1980–1996	74.3				

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speculative issues. This point is illustrated in Table 16.3, which shows the extent of underpricing for IPOs over the period from 1980 through 2005. Here, the firms are grouped based on their total sales in the 12 months prior to the IPO.

As illustrated in Table 16.3, the underpricing tends to be higher for firms with few to no sales in the previous year. These firms tend to be young firms, and such young firms can be very risky investments. Arguably, they must be significantly underpriced, on average, just to attract investors, and this is one explanation for the underpricing phenomenon.

TABLE 16.3 Average First-Day Returns, Categorized by Sales, for IPOs: 1980–2005*

Annual Sales of Issuing Firms	1980–1989		1990–1998		1999–2000		2001–2005	
	Number of Firms	First-Day Average Return						
\$0 ≤ sales < \$10m	393	10.1%	671	17.2%	328	69.8%	77	6.1%
\$10m ≤ sales < \$20m	253	8.7	377	18.7	139	79.9	27	10.5
\$20m ≤ sales < \$50m	492	7.6	777	18.7	152	74.5	70	9.7
\$50m ≤ sales < \$100m	345	6.5	574	13.0	89	60.4	72	16.1
\$100m ≤ sales < \$200m	241	4.6	444	11.9	54	35.5	79	14.7
\$200m ≤ sales	278	3.5	628	8.7	87	26.0	209	10.9
All	2,002	7.1	3,471	14.8	849	64.6	534	11.3

*Sales, measured in millions, are for the last 12 months prior to going public. All sales have been converted into dollars of 2003 purchasing power, using the Consumer Price Index. There are 6,854 IPOs, after excluding IPOs with an offer price of less than \$5.00 per share, units, REITs, ADRs, closed-end funds, banks and S&Ls, firms not listed on CRSP within six months of the offer date, and 140 firms with missing sales. The average first-day return is 18.5 percent.

SOURCE: Professor Jay R. Ritter, University of Florida.

The second caveat is that relatively few IPO buyers will actually get the initial high average returns observed in IPOs, and many will actually lose money. Although it is true that, on average, IPOs have positive initial returns, a significant fraction of them have price drops. Furthermore, when the price is too low, the issue is often “oversubscribed.” This means investors will not be able to buy all of the shares they want, and the underwriters will allocate the shares among investors.

The average investor will find it difficult to get shares in a “successful” offering (one in which the price increases) because there will not be enough shares to go around. On the other hand, an investor blindly submitting orders for IPOs tends to get more shares in issues that go down in price.

To illustrate, consider this tale of two investors. Smith knows very accurately what the Bonanza Corporation is worth when its shares are offered. She is confident that the shares are underpriced. Jones knows only that prices usually rise one month after an IPO. Armed with this information, Jones decides to buy 1,000 shares of every IPO. Does he actually earn an abnormally high return on the initial offering?

The answer is no, and at least one reason is Smith. Knowing about the Bonanza Corporation, Smith invests all her money in its IPO. When the issue is oversubscribed, the underwriters have to somehow allocate the shares between Smith and Jones. The net result is that when an issue is underpriced, Jones doesn’t get to buy as much of it as he wanted.

Smith also knows that the Blue Sky Corporation IPO is overpriced. In this case, she avoids its IPO altogether, and Jones ends up with a full 1,000 shares. To summarize this tale, Jones gets fewer shares when more knowledgeable investors swarm to buy an underpriced issue and gets all he wants when the smart money avoids the issue.

This is an example of a “winner’s curse,” and it is thought to be another reason why IPOs have such a large average return. When the average investor “wins” and gets the entire allocation, it may be because those who knew better avoided the issue. The only way underwriters can counteract the winner’s curse and attract the average investor is to underprice new issues (on average) so that the average investor still makes a profit.

Another reason for underpricing is that the underpricing is a kind of insurance for the investment banks. Conceivably, an investment bank could be sued successfully by angry customers if it consistently overpriced securities. Underpricing guarantees that, at least on average, customers will come out ahead.

A final reason for underpricing is that before the offer price is established, investment banks talk to big institutional investors to gauge the level of interest in the stock and to gather opinions about a suitable price. Underpricing is a way that the bank can reward these investors for truthfully revealing what they think the stock is worth and the number of shares they would like to buy.

Concept Questions

16.5a Why is underpricing a cost to the issuing firm?

16.5b Suppose a stockbroker calls you up out of the blue and offers to sell you “all the shares you want” of a new issue. Do you think the issue will be more or less underpriced than average?

New Equity Sales and the Value of the Firm

16.6

We now turn to a consideration of seasoned offerings, which, as we discussed earlier, are offerings by firms that already have outstanding securities. It seems reasonable to believe that new long-term financing is arranged by firms after positive net present value projects are put together. As a consequence, when the announcement of external financing is made, the firm’s market value should go up. Interestingly, this is not what happens. Stock prices tend to decline following the announcement of a new equity issue, although they tend to not change much following a debt announcement. A number of researchers have studied this issue. Plausible reasons for this strange result include the following:

1. *Managerial information:* If management has superior information about the market value of the firm, it may know when the firm is overvalued. If it does, it will attempt to issue new shares of stock when the market value exceeds the correct value. This will benefit existing shareholders. However, the potential new shareholders are not stupid, and they will anticipate this superior information and discount it in lower market prices at the new-issue date.
2. *Debt usage:* A company’s issuing new equity may reveal that the company has too much debt or too little liquidity. One version of this argument says that the equity issue is a bad signal to the market. After all, if the new projects are favorable ones, why should the firm let new shareholders in on them? It could just issue debt and let the existing shareholders have all the gain.
3. *Issue costs:* As we discuss next, there are substantial costs associated with selling securities.

The drop in value of the existing stock following the announcement of a new issue is an example of an indirect cost of selling securities. This drop might typically be on the order of 3 percent for an industrial corporation (and somewhat smaller for a public utility); so, for a large company, it can represent a substantial amount of money. We label this drop the *abnormal return* in our discussion of the costs of new issues that follows.

To give a couple of recent examples, in May 2006, the NYSE Group, parent company of the New York Stock Exchange, announced a secondary offering. Its stock fell about 4.1 percent on the day. Similarly, in March 2006, online movie rental company Netflix announced a secondary offering to raise about \$100 million. Its stock dropped 5.3 percent on the news. In both cases, the stock price drop was slightly higher than we would expect.

Concept Questions

- 16.6a** What are some possible reasons why the price of stock drops on the announcement of a new equity issue?
- 16.6b** Explain why we might expect a firm with a positive NPV investment to finance it with debt instead of equity.

16.7 The Costs of Issuing Securities

Issuing securities to the public isn't free, and the costs of different methods are important determinants of which is used. These costs associated with *floating* a new issue are generically called *flotation costs*. In this section, we take a closer look at the flotation costs associated with equity sales to the public.

THE COSTS OF SELLING STOCK TO THE PUBLIC

The costs of selling stock are classified in the following list and fall into six categories: (1) the gross spread, (2) other direct expenses, (3) indirect expenses, (4) abnormal returns (discussed previously), (5) underpricing, and (6) the Green Shoe option.

THE COSTS OF ISSUING SECURITIES

1. *Gross spread* The gross spread consists of direct fees paid by the issuer to the underwriting syndicate—the difference between the price the issuer receives and the offer price.
2. *Other direct expenses* These are direct costs, incurred by the issuer, that are not part of the compensation to underwriters. These costs include filing fees, legal fees, and taxes—all reported on the prospectus.
3. *Indirect expenses* These costs are not reported on the prospectus and include the costs of management time spent working on the new issue.
4. *Abnormal returns* In a seasoned issue of stock, the price of the existing stock drops on average by 3 percent on the announcement of the issue. This drop is called the abnormal return.
5. *Underpricing* For initial public offerings, losses arise from selling the stock below the true value.
6. *Green Shoe option* The Green Shoe option gives the underwriters the right to buy additional shares at the offer price to cover overallotments.

Table 16.4 reports direct costs as a percentage of the gross amount raised for IPOs, SEOs, straight (ordinary) bonds, and convertible bonds sold by U.S. companies over the five-year period from 1990 through 2003. These are direct costs only. Not included are indirect expenses, the cost of the Green Shoe provision, underpricing (for IPOs), and abnormal returns (for SEOs).

As Table 16.4 shows, the direct costs alone can be very large, particularly for smaller issues (less than \$10 million). On a smaller IPO, for example, the total direct costs amount to 15.36 percent of the amount raised. This means that if a company sells \$10 million in stock, it will net only about \$8.5 million; the other \$1.5 million goes to cover the underwriter spread and other direct expenses. Typical underwriter spreads on an IPO range from about

TABLE 16.4 Direct Costs as a Percentage of Gross Proceeds for Equity (IPOs and SEOs) and Straight and Convertible Bonds Offered by Domestic Operating Companies: 1990–2003

Proceeds (\$ in millions)	Equity															
	IPOs				SEOs				Bonds							
	Number of Issues	Gross Spread	Other Direct Expense	Total Direct Cost	Number of Issues	Gross Spread	Other Direct Expense	Total Direct Cost	Number of Issues	Gross Spread	Other Direct Expense	Total Direct Cost				
2–9.99	624	9.15%	6.21%	15.36%	267	7.56%	5.32%	12.88%	8	5.73%	2.78%	8.51%	70	1.39%	2.35%	3.74%
10–19.99	704	7.33	4.30	11.63	519	6.32	2.49	8.81	20	5.26	2.90	8.16	104	1.33	1.59	2.92
20–39.99	1,336	6.99	2.82	9.81	904	5.73	1.51	7.24	27	4.74	1.72	6.46	159	1.22	0.90	2.12
40–59.99	771	6.96	2.25	9.21	677	5.28	0.92	6.20	33	3.29	1.01	4.30	152	0.72	0.63	1.35
60–79.99	403	6.88	1.77	8.65	489	5.07	0.74	5.81	61	2.70	0.61	3.31	113	1.52	0.76	2.28
80–99.99	245	6.79	1.55	8.34	292	4.95	0.61	5.56	17	2.16	0.56	2.72	159	1.39	0.56	1.95
100–199.99	438	6.48	1.19	7.67	657	4.57	0.43	5.00	100	2.56	0.39	2.95	677	1.60	0.52	2.12
200–499.99	197	5.91	0.81	6.72	275	3.99	0.27	4.26	53	2.34	0.22	2.56	333	1.43	0.37	1.80
500 and up	72	4.66	0.49	5.15	83	3.48	0.16	3.64	17	2.05	0.11	2.16	118	0.62	0.20	0.82
Total	4,790	7.17	3.22	10.39	4,163	5.37	1.35	6.72	336	2.99	0.81	3.80	1,885	1.36	0.61	1.97

Source: I. Lee, S. Lochhead, J. Ritter, and Q. Zhao, "The Costs of Raising Capital," *Journal of Financial Research* 19 (Spring 1996), updated by the authors.

5 percent up to 10 percent or so, but for well over half of the IPOs in Table 16.4, the spread is exactly 7 percent; so this is, by far, the most common spread.

Overall, four clear patterns emerge from Table 16.4. First, with the possible exception of straight debt offerings (about which we will have more to say later), there are substantial economies of scale. The underwriter spreads are smaller on larger issues, and the other direct costs fall sharply as a percentage of the amount raised—a reflection of the mostly fixed nature of such costs. Second, the costs associated with selling debt are substantially less than the costs of selling equity. Third, IPOs have higher expenses than SEOs, but the difference is not as great as might originally be guessed. Finally, straight bonds are cheaper to float than convertible bonds.

As we have discussed, the underpricing of IPOs is an additional cost to the issuer. To give a better idea of the total cost of going public, Table 16.5 combines the information in Table 16.4 for IPOs with data on the underpricing experienced by these firms. Comparing the total direct costs (in the fifth column) to the underpricing (in the sixth column), we see that they are roughly the same size, so the direct costs are only about half of the total. Overall, across all size groups, the total direct costs amount to 10 percent of the amount raised, and the underpricing amounts to 24 percent.

Finally, with regard to debt offerings, there is a general pattern in issue costs that is somewhat obscured in Table 16.4. Recall from Chapter 7 that bonds carry different credit ratings. Higher-rated bonds are said to be investment grade, whereas lower-rated bonds are noninvestment grade. Table 16.6 contains a breakdown of direct costs for bond issues after the investment and noninvestment grades have been separated.

Table 16.6 clarifies three things regarding debt issues. First, there are substantial economies of scale here as well. Second, investment-grade issues have much lower direct costs, particularly for straight bonds. Finally, there are relatively few noninvestment-grade issues in the smaller size categories, reflecting the fact that such issues are more commonly handled as private placements, which we discuss in a later section.

THE COSTS OF GOING PUBLIC: THE CASE OF SYMBION

On February 6, 2004, Symbion, Inc., the Nashville-based owner and operator of outpatient surgery centers, went public via an IPO. Symbion issued 7.2 million shares of stock at a price of \$15.00 each, 2,584,000 of which were underwritten by Symbion's lead investment bank, Credit Suisse First Boston LLC, with the remaining 4,616,000 underwritten by a syndicate made up of seven other investment banks.

Even though the IPO raised a gross sum of \$108 million, Symbion got to keep only about \$96 million after expenses. The biggest expense was the 7 percent underwriter spread, which is very standard for an offering of this size. Symbion sold each of the 7.2 million shares to the underwriters for \$13.95, and the underwriters in turn sold the shares to the public for \$15.00 each. Thus, of the \$108 million investors paid for the shares, Symbion received \$100,440,000.

But wait—there's more. Symbion spent \$10,048 in SEC registration fees, \$12,000 in other filing fees, and \$100,000 to be listed on the NASDAQ. The company also spent \$1.29 million on accounting to obtain the necessary audits, \$5,250 for a transfer agent to physically transfer the shares and maintain a list of shareholders, \$565,000 for printing and engraving expenses, \$1.16 million for legal fees and expenses, and, finally, \$67,702 in miscellaneous expenses.

As Symbion's outlays show, an IPO can be a costly undertaking! In the end, Symbion's expenses totaled \$11,904,000, of which \$8,694,000 went to the underwriters and \$3,210,000 went to other parties. The total cost to Symbion was 11 percent of the issue

TABLE 16.5 Direct and Indirect Costs, in Percentages, of Equity IPOs: 1990–2003

Proceeds (\$ in Millions)	Number of Issues	Gross Spread	Other Direct Expense	Total Direct Cost	Underpricing
2–9.99	624	9.15%	6.21%	15.36%	18.18%
10–19.99	704	7.33	4.30	11.63	10.02
20–39.99	1,336	6.99	2.82	9.81	17.91
40–59.99	771	6.96	2.25	9.21	29.57
60–79.99	403	6.88	1.77	8.65	39.20
80–99.99	245	6.79	1.55	8.34	45.36
100–199.99	438	6.48	1.19	7.67	37.10
200–499.99	197	5.91	0.81	6.72	17.12
500 and up	72	4.66	0.49	5.15	12.19
Total	4,790	7.17	3.22	10.39	23.55

Source: I. Lee, S. Lochhead, J. Ritter, and Q. Zhao, “The Costs of Raising Capital,” *Journal of Financial Research* 19 (Spring 1996), updated by the authors.

TABLE 16.6 Average Gross Spreads and Total Direct Costs for Domestic Debt Issues: 1990–2003

Proceeds (\$ in Millions)	Convertible Bonds												Straight Bonds					
	Investment Grade				Noninvestment Grade				Investment Grade				Noninvestment Grade					
	Number of Issues	Gross Spread	Total Direct Cost	Number of Issues	Gross Spread	Total Direct Cost	Number of Issues	Gross Spread	Total Direct Cost	Number of Issues	Gross Spread	Total Direct Cost	Number of Issues	Gross Spread	Total Direct Cost			
2–9.99	0	—	—	0	—	—	40	0.62%	1.90%	0	—	—	0	—	—			
10–19.99	0	—	—	1	4.00%	5.67%	68	0.50	1.35	2	2.74%	4.80%	2	2.74%	4.80%			
20–39.99	0	—	—	11	3.47	5.02	119	0.58	1.21	13	3.06	4.36	13	3.06	4.36			
40–59.99	3	1.92%	2.43%	21	3.33	4.48	132	0.39	0.86	12	3.01	3.93	12	3.01	3.93			
60–79.99	4	1.65	2.09	47	2.78	3.40	68	0.57	0.97	43	2.99	4.07	43	2.99	4.07			
80–99.99	3	0.89	1.16	9	2.54	3.19	100	0.66	0.94	56	2.74	3.66	56	2.74	3.66			
100–199.99	28	2.22	2.55	50	2.57	3.00	341	0.55	0.80	321	2.71	3.39	321	2.71	3.39			
200–499.99	26	1.99	2.18	17	2.62	2.85	173	0.50	0.81	156	2.49	2.90	156	2.49	2.90			
500 and up	12	1.96	2.09	1	2.50	2.57	97	0.28	0.38	20	2.45	2.71	20	2.45	2.71			
Total	76	1.99	2.26	157	2.81	3.47	1,138	0.51	0.85	623	2.68	3.35	623	2.68	3.35			

Source: I. Lee, S. Lochhead, J. Ritter, and Q. Zhao, “The Costs of Raising Capital,” *Journal of Financial Research* 19 (Spring 1996), updated by the authors.

proceeds, which is a little higher than might be expected. At least part of the reason is that the company had filed to go public in 2003. Midway through the process, the company and its underwriters determined that the market conditions were not favorable for an IPO, so the company withdrew its registration. The costs for this previous registration were included in the 2004 IPO.

Concept Questions

16.7a What are the different costs associated with security offerings?

16.7b What lessons do we learn from studying issue costs?

16.8 Rights

When new shares of common stock are sold to the general public, the proportional ownership of existing shareholders is likely to be reduced. However, if a preemptive right is contained in the firm's articles of incorporation, the firm must first offer any new issue of common stock to existing shareholders. If the articles of incorporation do not include a preemptive right, the firm has a choice of offering the issue of common stock directly to existing shareholders or to the public.

An issue of common stock offered to existing stockholders is called a *rights offering* (or *offer*, for short) or a *privileged subscription*. In a rights offering, each shareholder is issued rights to buy a specified number of new shares from the firm at a specified price within a specified time, after which the rights are said to *expire*. The terms of the rights offering are evidenced by certificates known as *share warrants* or *rights*. Such rights are often traded on securities exchanges or over the counter.

Rights offerings have some interesting advantages relative to cash offers. For example, they appear to be cheaper for the issuing firm than cash offers. In fact, a firm can do a rights offering without using an underwriter; whereas, as a practical matter, an underwriter is almost a necessity in a cash offer. Despite this, rights offerings are fairly rare in the United States; however, in many other countries, they are more common than cash offers. Why this is true is a bit of a mystery and the source of much debate; but to our knowledge, no definitive answer exists.

THE MECHANICS OF A RIGHTS OFFERING

To illustrate the various considerations a financial manager faces in a rights offering, we will examine the situation faced by the National Power Company, whose abbreviated initial financial statements are given in Table 16.7.

As indicated in Table 16.7, National Power earns \$2 million after taxes and has 1 million shares outstanding. Earnings per share are thus \$2, and the stock sells for \$20, or 10 times earnings (that is, the price–earnings ratio is 10). To fund a planned expansion, the company intends to raise \$5 million worth of new equity funds through a rights offering.

To execute a rights offering, the financial management of National Power will have to answer the following questions:

1. What should the price per share be for the new stock?
2. How many shares will have to be sold?
3. How many shares will each shareholder be allowed to buy?

NATIONAL POWER COMPANY Balance Sheet			
Assets		Shareholders' Equity	
Assets	\$15,000,000	Common stock	\$ 5,000,000
		Retained earnings	10,000,000
Total	<u>\$15,000,000</u>	Total	<u>\$15,000,000</u>
Income Statement			
	Earnings before taxes	\$ 3,030,303	
	Taxes (34%)	1,030,303	
	Net income	<u>\$ 2,000,000</u>	
	Shares outstanding	1,000,000	
	Earnings per share	\$ 2	
	Market price per share	\$ 20	
	Total market value	\$20,000,000	

TABLE 16.7

National Power Company
Financial Statements
before Rights Offering

Also, management will probably want to ask this:

4. What is likely to be the effect of the rights offering on the per-share value of the existing stock?

It turns out that the answers to these questions are highly interrelated. We will get to them in just a moment.

The early stages of a rights offering are the same as those for the general cash offer. The difference between a rights offering and a general cash offer lies in how the shares are sold. In a rights offer, National Power's existing shareholders are informed that they own one right for each share of stock they own. National Power will then specify how many rights a shareholder needs to buy one additional share at a specified price.

To take advantage of the rights offering, shareholders have to exercise the rights by filling out a subscription form and sending it, along with payment, to the firm's subscription agent (the subscription agent is usually a bank). Shareholders of National Power will actually have several choices: (1) Exercise their rights and subscribe for some or all of the entitled shares, (2) order some or all of the rights sold, or (3) do nothing and let the rights expire. As we will discuss, this third course of action is inadvisable.

NUMBER OF RIGHTS NEEDED TO PURCHASE A SHARE

National Power wants to raise \$5 million in new equity. Suppose the subscription price is set at \$10 per share. How National Power arrives at that price we will discuss later; but notice that the subscription price is substantially less than the current \$20 per share market price.

At \$10 per share, National Power will have to issue 500,000 new shares. This can be determined by dividing the total amount of funds to be raised by the subscription price:

$$\begin{aligned} \text{Number of new shares} &= \frac{\text{Funds to be raised}}{\text{Subscription price}} && [16.1] \\ &= \frac{\$5,000,000}{10} = 500,000 \text{ shares} \end{aligned}$$

Because stockholders always get one right for each share of stock they own, 1 million rights will be issued by National Power. To determine how many rights will be needed to

buy one new share of stock, we can divide the number of existing outstanding shares of stock by the number of new shares:

$$\begin{aligned} \text{Number of rights needed} &= \frac{\text{Old shares}}{\text{New shares}} && [16.2] \\ \text{to buy a share of stock} &= \frac{1,000,000}{500,000} = 2 \text{ rights} \end{aligned}$$

Thus, a shareholder will need to give up two rights plus \$10 to receive a share of new stock. If all the stockholders do this, National Power will raise the required \$5 million.

It should be clear that the subscription price, the number of new shares, and the number of rights needed to buy a new share of stock are interrelated. For example, National Power can lower the subscription price. If it does, more new shares will have to be issued to raise \$5 million in new equity. Several alternatives are worked out here:

Subscription Price	Number of New Shares	Number of Rights Needed to Buy a Share of Stock
\$20	250,000	4
10	500,000	2
5	1,000,000	1

THE VALUE OF A RIGHT

Rights clearly have value. In the case of National Power, the right to buy a share of stock worth \$20 for \$10 is definitely worth something. In fact, if you think about it, a right is essentially a call option, and our discussion of such options in Chapter 14 applies here. The most important difference between a right and an ordinary call option is that rights are issued by the firm, so they more closely resemble warrants. In general, the valuation of options, rights, and warrants can be fairly complex, so we defer discussion of this subject to a later chapter. However, we can discuss the value of a right just prior to expiration to illustrate some important points.

Suppose a shareholder of National Power owns two shares of stock just before the rights offering is about to expire. This situation is depicted in Table 16.8. Initially, the price of

TABLE 16.8

The Value of Rights: The Individual Shareholder

Initial Position	
Number of shares	2
Share price	\$20
Value of holding	\$40
Terms of Offer	
Subscription price	\$10
Number of rights issued	2
Number of rights for a new share	2
After Offer	
Number of shares	3
Value of holding	\$50
Share price	\$16.67
Value of one right: Old price – New price	\$20 – 16.67 = \$3.33

Initial Position	
Number of shares	1 million
Share price	\$20
Value of firm	\$20 million
Terms of Offer	
Subscription price	\$10
Number of rights issued	1 million
Number of rights for a new share	2
After Offer	
Number of shares	1.5 million
Share price	\$16.67
Value of firm	\$25 million
Value of one right	$\$20 - 16.67 = \3.33

TABLE 16.9

National Power Company
Rights Offering

National Power is \$20 per share, so the shareholder's total holding is worth $2 \times \$20 = \40 . The National Power rights offer gives shareholders with two rights the opportunity to purchase one additional share for \$10. The additional share does not carry a right.

The stockholder who has two shares will receive two rights. The holding of the shareholder who exercises these rights and buys the new share will increase to three shares. The total investment will be $\$40 + 10 = \50 (the \$40 initial value plus the \$10 paid to the company).

The stockholder now holds three shares, all of which are identical because the new share does not have a right and the rights attached to the old shares have been exercised. Because the total cost of buying these three shares is $\$40 + 10 = \50 , the price per share must end up at $\$50/3 = \16.67 (rounded to two decimal places).

Table 16.9 summarizes what happens to National Power's stock price. If all shareholders exercise their rights, the number of shares will increase to 1 million + .5 million = 1.5 million. The value of the firm will increase to \$20 million + 5 million = \$25 million. The value of each share will thus drop to $\$25 \text{ million} / 1.5 \text{ million} = \16.67 after the rights offering.

The difference between the old share price of \$20 and the new share price of \$16.67 reflects the fact that the old shares carried rights to subscribe to the new issue. The difference must be equal to the value of one right—that is, $\$20 - 16.67 = \3.33 .

An investor holding no shares of outstanding National Power stock who wants to subscribe to the new issue can do so by buying some rights. Suppose an outside investor buys two rights. This will cost $\$3.33 \times 2 = \6.67 (to account for previous rounding). If the investor exercises the rights at a subscription price of \$10, the total cost will be $\$10 + 6.67 = \16.67 . In return for this expenditure, the investor will receive a share of the new stock, which, as we have seen, is worth \$16.67.

Exercising Your Rights: Part I

EXAMPLE 16.1

In the National Power example, suppose the subscription price is set at \$8. How many shares will have to be sold? How many rights will you need to buy a new share? What is the value of a right? What will the price per share be after the rights offer?

To raise \$5 million, $\$5 \text{ million} / 8 = 625,000$ shares will need to be sold. There are 1 million shares outstanding, so it will take $1 \text{ million} / 625,000 = 8/5 = 1.6$ rights to buy a new share

(continued)

of stock (you can buy five new shares for every eight you own). After the rights offer, there will be 1.625 million shares, worth \$25 million altogether, so the per-share value will be $\$25/1.625 = \15.38 . The value of a right in this case is the \$20 original price less the \$15.38 ending price, or \$4.62.

EX RIGHTS

National Power's rights have a substantial value. In addition, the rights offering will have a large impact on the market price of National Power's stock. That price will drop by \$3.33 on the **ex-rights date**.

The standard procedure for issuing rights involves the firm's setting a **holder-of-record date**. Following stock exchange rules, the stock typically goes ex rights two trading days before the holder-of-record date. If the stock is sold before the ex-rights date—"rights on," "with rights," or "cum rights"—the new owner will receive the rights. After the ex-rights date, an investor who purchases the shares will not receive the rights. This is depicted for National Power in Figure 16.4.

As illustrated, on September 30, National Power announces the terms of the rights offering, stating that the rights will be mailed on, say, November 1 to stockholders of record as of October 15. Because October 13 is the ex-rights date, only shareholders who own the stock on or before October 12 will receive the rights.

ex-rights date

The beginning of the period when stock is sold without a recently declared right, normally two trading days before the holder-of-record date.

holder-of-record date

The date on which existing shareholders on company records are designated as the recipients of stock rights. Also, the date of record.

EXAMPLE 16.2

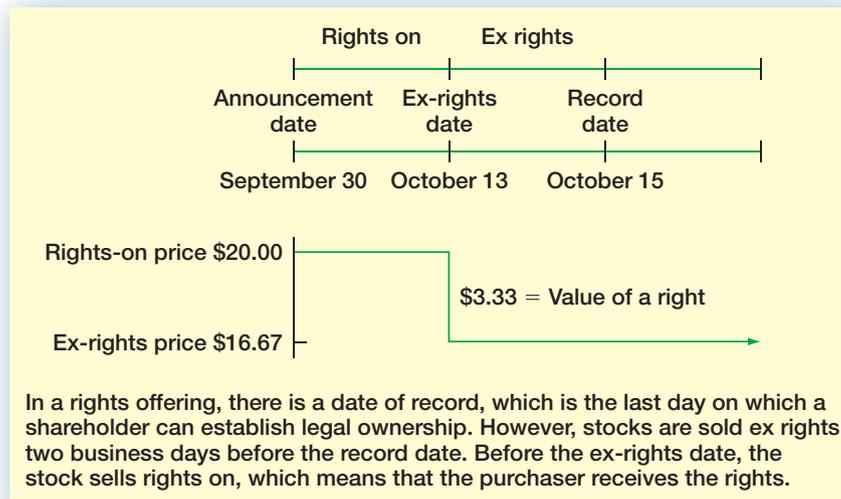
Exercising Your Rights: Part II

The Lagrange Point Co. has proposed a rights offering. The stock currently sells for \$40 per share. Under the terms of the offer, stockholders will be allowed to buy one new share for every five that they own at a price of \$25 per share. What is the value of a right? What is the ex-rights price?

You can buy five rights on shares for $5 \times \$40 = \200 and then exercise the rights for another \$25. Your total investment is \$225, and you end up with six ex-rights shares. The ex-rights price per share is $\$225/6 = \37.50 . The rights are thus worth $\$40 - 37.50 = \2.50 apiece.

FIGURE 16.4

Ex-Rights Stock Prices



Right On**EXAMPLE 16.3**

In Example 16.2, suppose the rights sell for only \$2 instead of the \$2.50 we calculated. What can you do?

You can get rich quickly because you have found a money machine. Here's the recipe: Buy five rights for \$10. Exercise them and pay \$25 to get a new share. Your total investment to get one ex-rights share is $5 \times \$2 + 25 = \35 . Sell the share for \$37.50 and pocket the \$2.50 difference. Repeat as desired.

THE UNDERWRITING ARRANGEMENTS

Rights offerings are typically arranged using **standby underwriting**. In standby underwriting, the issuer makes a rights offering, and the underwriter makes a firm commitment to “take up” (that is, purchase) the unsubscribed portion of the issue. The underwriter usually gets a **standby fee** and additional amounts based on the securities taken up.

Standby underwriting protects the firm against undersubscription, which can occur if investors throw away rights or if bad news causes the market price of the stock to fall below the subscription price.

In practice, only a small percentage (fewer than 10 percent) of shareholders fail to exercise valuable rights. This failure can probably be attributed to ignorance or vacations. Furthermore, shareholders are usually given an **oversubscription privilege**, which enables them to purchase unsubscribed shares at the subscription price. The oversubscription privilege makes it unlikely that the corporate issuer would have to turn to its underwriter for help.

standby underwriting

The type of underwriting in which the underwriter agrees to purchase the unsubscribed portion of the issue.

standby fee

An amount paid to an underwriter participating in a standby underwriting agreement.

EFFECTS ON SHAREHOLDERS

Shareholders can exercise their rights or sell them. In either case, the stockholder will neither win nor lose because of the rights offering. The hypothetical holder of two shares of National Power has a portfolio worth \$40. If the shareholder exercises the rights, she or he ends up with three shares worth a total of \$50. In other words, with an expenditure of \$10, the investor's holding increases in value by \$10, which means the shareholder is neither better nor worse off.

On the other hand, if the shareholder sells the two rights for \$3.33 each, he or she would obtain $\$3.33 \times 2 = \6.67 and end up with two shares worth \$16.67 and the cash from selling the right:

$$\begin{array}{r} \text{Shares held} = 2 \times \$16.67 = \$33.33 \\ \text{Rights sold} = 2 \times \$3.33 = \underline{6.67} \\ \text{Total} = \underline{\underline{\$40.00}} \end{array}$$

The new \$33.33 market value plus \$6.67 in cash is exactly the same as the original holding of \$40. Thus, stockholders cannot lose or gain by exercising or selling rights.

It is obvious that after the rights offering, the new market price of the firm's stock will be lower than the price before the rights offering. As we have seen, however, stockholders have suffered no loss because of the rights offering. Thus, the stock price decline is very much like that in a stock split, a device described in Chapter 18. The lower the subscription price, the greater is the price decline resulting from a rights offering. Because shareholders receive rights equal in value to the price drop, the rights offering does *not* hurt stockholders.

There is one last issue. How do we set the subscription price in a rights offering? If you think about it, you will see that the subscription price really does not matter. It has to be below the market price of the stock for the rights to have value; but beyond this, the price is arbitrary. In principle, it could be as low as we cared to make it as long as it was not zero. In other words, it is impossible to underprice a rights offer.

oversubscription privilege

A privilege that allows shareholders to purchase unsubscribed shares in a rights offering at the subscription price.

Concept Questions

- 16.8a** How does a rights offering work?
16.8b What questions must financial managers answer in a rights offering?
16.8c How is the value of a right determined?
16.8d When does a rights offering affect the value of a company's shares?
16.8e Does a rights offering cause share prices to decrease? How are existing shareholders affected by a rights offering?

16.9 Dilution

dilution

Loss in existing shareholders' value in terms of ownership, market value, book value, or EPS.

A subject that comes up quite a bit in discussions involving the selling of securities is **dilution**. Dilution refers to a loss in existing shareholders' value. There are several kinds:

1. Dilution of percentage ownership.
2. Dilution of market value.
3. Dilution of book value and earnings per share.

The differences between these three types can be a little confusing, and there are some common misconceptions about dilution, so we discuss it in this section.

DILUTION OF PROPORTIONATE OWNERSHIP

The first type of dilution can arise whenever a firm sells shares to the general public. For example, Joe Smith owns 5,000 shares of Merit Shoe Company. Merit Shoe currently has 50,000 shares of stock outstanding; each share gets one vote. Joe thus controls 10 percent (5,000/50,000) of the votes and gets 10 percent of the dividends.

If Merit Shoe issues 50,000 new shares of common stock to the public via a general cash offer, Joe's ownership in Merit Shoe may be diluted. If Joe does not participate in the new issue, his ownership will drop to 5 percent (5,000/100,000). Notice that the value of Joe's shares is unaffected; he just owns a smaller percentage of the firm.

Because a rights offering would ensure Joe Smith an opportunity to maintain his proportionate 10 percent share, dilution of the ownership of existing shareholders can be avoided by using a rights offering.

DILUTION OF VALUE: BOOK VERSUS MARKET VALUES

We now examine dilution of value by looking at some accounting numbers. We do this to illustrate a fallacy concerning dilution; we do not mean to suggest that accounting value dilution is more important than market value dilution. As we illustrate, quite the reverse is true.

Suppose Upper States Manufacturing (USM) wants to build a new electricity-generating plant to meet future anticipated demands. As shown in Table 16.10, USM currently has 1 million shares outstanding and no debt. Each share is selling for \$5, and the company has a \$5 million market value. USM's book value is \$10 million total, or \$10 per share.

USM has experienced a variety of difficulties in the past, including cost overruns, regulatory delays in building a nuclear-powered electricity-generating plant, and below-normal profits. These difficulties are reflected in the fact that USM's market-to-book ratio is $\$5/\$10 = .50$ (successful firms rarely have market prices below book values).

	Initial	After Taking on New Project	
		With Dilution	With No Dilution
Number of shares	1,000,000	1,400,000	1,400,000
Book value	\$10,000,000	\$12,000,000	\$12,000,000
Book value per share (<i>B</i>)	\$10	\$8.57	\$8.57
Market value	\$5,000,000	\$6,000,000	\$8,000,000
Market price (<i>P</i>)	\$5	\$4.29	\$5.71
Net income	\$1,000,000	\$1,200,000	\$1,600,000
Return on equity (ROE)	.10	.10	.13
Earnings per share (EPS)	\$1	\$.86	\$1.14
EPS/ <i>P</i>	.20	.20	.20
<i>P</i> /EPS	5	5	5
<i>P</i> / <i>B</i>	.5	.5	.67
Project cost \$2,000,000		NPV = -\$1,000,000	NPV = \$1,000,000

TABLE 16.10

New Issues and Dilution:
The Case of Upper States
Manufacturing

Net income for USM is currently \$1 million. With 1 million shares, earnings per share are \$1, and the return on equity is $\$1/\$10 = 10\%$.⁹ USM thus sells for five times earnings (the price–earnings ratio is 5). USM has 200 shareholders, each of whom holds 5,000 shares. The new plant will cost \$2 million, so USM will have to issue 400,000 new shares ($\$5 \times 400,000 = \2 million). There will thus be 1.4 million shares outstanding after the issue.

The ROE on the new plant is expected to be the same as for the company as a whole. In other words, net income is expected to go up by $.10 \times \$2$ million = \$200,000. Total net income will thus be \$1.2 million. The following will result if the plant is built:

1. With 1.4 million shares outstanding, EPS will be $\$1.2/1.4 = \$.857$, down from \$1.
2. The proportionate ownership of each old shareholder will drop to $5,000/1.4$ million = .36 percent from .50 percent.
3. If the stock continues to sell for five times earnings, then the value will drop to $5 \times \$.857 = \4.29 , representing a loss of \$.71 per share.
4. The total book value will be the old \$10 million plus the new \$2 million, for a total of \$12 million. Book value per share will fall to $\$12$ million/ 1.4 million = \$8.57.

If we take this example at face value, then dilution of proportionate ownership, accounting dilution, and market value dilution all occur. USM's stockholders appear to suffer significant losses.

A Misconception Our example appears to show that selling stock when the market-to-book ratio is less than 1 is detrimental to stockholders. Some managers claim that the resulting dilution occurs because EPS will go down whenever shares are issued when the market value is less than the book value.

When the market-to-book ratio is less than 1, increasing the number of shares does cause EPS to go down. Such a decline in EPS is accounting dilution, and accounting dilution will always occur under these circumstances.

Is it also true that market value dilution will necessarily occur? The answer is *no*. There is nothing incorrect about our example, but why the market value has decreased is not obvious. We discuss this next.

⁹Return on equity, or ROE, is equal to earnings per share divided by book value per share, or, equivalently, net income divided by common equity. We discuss this and other financial ratios in some detail in Chapter 3.

The Correct Arguments In this example, the market price falls from \$5 per share to \$4.29. This is true dilution, but why does it occur? The answer has to do with the new project. USM is going to spend \$2 million on the new plant. However, as shown in Table 16.10, the total market value of the company is going to rise from \$5 million to \$6 million, an increase of only \$1 million. This simply means that the NPV of the new project is $-\$1$ million. With 1.4 million shares, the loss per share is $\$1/1.4 = \$.71$, as we calculated before.

So, true dilution takes place for the shareholders of USM because the NPV of the project is negative, not because the market-to-book ratio is less than 1. This negative NPV causes the market price to drop, and the accounting dilution has nothing to do with it.

Suppose the new project has a positive NPV of \$1 million. The total market value rises by $\$2$ million + 1 million = $\$3$ million. As shown in Table 16.10 (third column), the price per share rises to \$5.71. Notice that accounting dilution still takes place because the book value per share still falls, but there is no economic consequence of that fact. The market value of the stock rises.

The \$.71 increase in share value comes about because of the \$1 million NPV, which amounts to an increase in value of about \$.71 per share. Also, as shown, if the ratio of price to EPS remains at 5, then EPS must rise to $\$5.71/5 = \1.14 . Total earnings (net income) rises to $\$1.14$ per share \times 1.4 million shares = $\$1.6$ million. Finally, ROE will rise to $\$1.6$ million/ 12 million = 13.33%.

Concept Questions

16.9a What are the different kinds of dilution?

16.9b Is dilution important?

16.10 Issuing Long-Term Debt

The general procedures followed in a public issue of bonds are the same as those for stocks. The issue must be registered with the SEC, there must be a prospectus, and so on. The registration statement for a public issue of bonds, however, is different from the one for common stock. For bonds, the registration statement must indicate an indenture.

Another important difference is that more than 50 percent of all debt is issued privately. There are two basic forms of direct private long-term financing: term loans and private placement.

Term loans are direct business loans. These loans have maturities of between one year and five years. Most term loans are repayable during the life of the loan. The lenders include commercial banks, insurance companies, and other lenders that specialize in corporate finance. **Private placements** are similar to term loans except that the maturity is longer.

The important differences between direct private long-term financing and public issues of debt are these:

1. A direct long-term loan avoids the cost of Securities and Exchange Commission registration.
2. Direct placement is likely to have more restrictive covenants.
3. It is easier to renegotiate a term loan or a private placement in the event of a default. It is harder to renegotiate a public issue because hundreds of holders are usually involved.

term loans

Direct business loans of typically one to five years.

private placements

Loans (usually long-term) provided directly by a limited number of investors.

4. Life insurance companies and pension funds dominate the private placement segment of the bond market. Commercial banks are significant participants in the term loan market.
5. The costs of distributing bonds are lower in the private market.

The interest rates on term loans and private placements are usually higher than those on an equivalent public issue. This difference reflects the trade-off between a higher interest rate and more flexible arrangements in the event of financial distress, as well as the lower costs associated with private placements.

An additional, and very important, consideration is that the flotation costs associated with selling debt are much less than the comparable costs associated with selling equity.

Concept Questions

16.10a What is the difference between private and public bond issues?

16.10b A private placement is likely to have a higher interest rate than a public issue. Why?

Shelf Registration

To simplify the procedures for issuing securities, in March 1982 the SEC adopted Rule 415 on a temporary basis, and it was made permanent in November 1983. Rule 415 allows shelf registration. Both debt and equity securities can be shelf registered.

Shelf registration permits a corporation to register an offering that it reasonably expects to sell within the next two years and then sell the issue whenever it wants during that two-year period. For example, in March 2006, insurance giant Prudential filed with the SEC to offer \$5 billion in debt securities, preferred stock, and other securities. Not all companies can use Rule 415. The primary qualifications are these:

1. The company must be rated investment grade.
2. The firm cannot have defaulted on its debt in the past three years.
3. The aggregate market value of the firm's outstanding stock must be more than \$150 million.
4. The firm must not have violated the Securities Act of 1934 in the past three years.

Shelf registration allows firms to use a *dribble* method of new equity issuance. In dribbling, a company registers the issue and hires an underwriter as its selling agent. The company sells shares in “drips and drabs” from time to time directly via a stock exchange (for example, the NYSE). Companies that have used dribble programs include Wells Fargo & Co., Pacific Gas and Electric, and The Southern Company.

The rule has been controversial. Arguments have been constructed against shelf registration:

1. The costs of new issues might go up because underwriters might not be able to provide as much current information to potential investors as they would otherwise, so investors would pay less. The expense of selling the issue piece by piece might therefore be higher than that of selling it all at once.
2. Some investment bankers have argued that shelf registration will cause a “market overhang” that will depress market prices. In other words, the possibility that the company may increase the supply of stock at any time will have a negative impact on the current stock price.

16.11

shelf registration

Registration permitted by SEC Rule 415, which allows a company to register all issues it expects to sell within two years at one time, with subsequent sales at any time within those two years.

Shelf registration is much more common with bonds than stocks, but some equity shelf sales do occur. For example, in May 2004, the Internet travel service company Priceline.com filed a shelf registration to sell \$100 million in common stock.

Concept Questions

- 16.11a** What is shelf registration?
16.11b What are the arguments against shelf registration?

16.12 Summary and Conclusions

This chapter has looked at how corporate securities are issued. The following are the main points:

1. The costs of issuing securities can be quite large. They are much lower (as a percentage) for larger issues.
2. The direct and indirect costs of going public can be substantial. However, once a firm is public, it can raise additional capital with much greater ease.
3. Rights offerings are cheaper than general cash offers. Even so, most new equity issues in the United States are underwritten general cash offers.

CHAPTER REVIEW AND SELF-TEST PROBLEMS

- 16.1 Flotation Costs** The L5 Corporation is considering an equity issue to finance a new space station. A total of \$15 million in new equity is needed. If the direct costs are estimated at 7 percent of the amount raised, how large does the issue need to be? What is the dollar amount of the flotation cost?
- 16.2 Rights Offerings** The Hadron Corporation currently has 3 million shares outstanding. The stock sells for \$40 per share. To raise \$20 million for a new particle accelerator, the firm is considering a rights offering at \$25 per share. What is the value of a right in this case? The ex-rights price?

ANSWERS TO CHAPTER REVIEW AND SELF-TEST PROBLEMS

- 16.1** The firm needs to net \$15 million after paying the 7 percent flotation costs. So the amount raised is given by:
- $$\text{Amount raised} \times (1 - .07) = \$15 \text{ million}$$
- $$\text{Amount raised} = \$15 \text{ million} / .93 = \$16.129 \text{ million}$$
- The total flotation cost is thus **\$1.129 million**.
- 16.2** To raise \$20 million at \$25 per share, $\$20 \text{ million} / 25 = 800,000$ shares will have to be sold. Before the offering, the firm is worth $3 \text{ million} \times \$40 = \$120 \text{ million}$. The issue will raise \$20 million, and there will be 3.8 million shares outstanding. The value of an ex-rights share will therefore be $\$140 \text{ million} / 3.8 \text{ million} = \36.84 . The value of a right is thus $\$40 - 36.84 = \3.16 .

CONCEPTS REVIEW AND CRITICAL THINKING QUESTIONS

1. **Debt versus Equity Offering Size** In the aggregate, debt offerings are much more common than equity offerings and typically much larger as well. Why?
2. **Debt versus Equity Flotation Costs** Why are the costs of selling equity so much larger than the costs of selling debt?
3. **Bond Ratings and Flotation Costs** Why do noninvestment-grade bonds have much higher direct costs than investment-grade issues?
4. **Underpricing in Debt Offerings** Why is underpricing not a great concern with bond offerings?

Use the following information to answer the next three questions. Eyetech Pharmaceuticals, Inc., a company that develops treatments for eye problems, went public in January 2004. Assisted by the investment bank Merrill Lynch, Eyetech sold 6.5 million shares at \$21 each, thereby raising a total of \$136.5 million. At the end of the first day of trading, the stock sold for \$32.40 per share, down slightly from a high of \$33.00. Based on the end-of-day numbers, Eyetech shares were apparently underpriced by about \$11 each, meaning that the company missed out on an additional \$67 million.

5. **IPO Pricing** The Eyetech IPO was underpriced by about 54 percent. Should Eyetech be upset at Merrill Lynch over the underpricing?
6. **IPO Pricing** In the previous question, would it affect your thinking to know that the company was incorporated less than four years earlier, had only \$30 million in revenues for the first nine months of 2003, and had never earned a profit? Additionally, the company had only one product, Macugen, which had won fast-track status from the FDA, but still did not have approval to be sold.
7. **IPO Pricing** In the previous two questions, how would it affect your thinking to know that in addition to the 6.5 million shares offered in the IPO, Eyetech had an additional 32 million shares outstanding? Of those 32 million shares, 10 million shares were owned by pharmaceutical giant Pfizer, and 12 million shares were owned by the 13 directors and executive officers.
8. **Cash Offer versus Rights Offer** Ren-Stimpy International is planning to raise fresh equity capital by selling a large new issue of common stock. Ren-Stimpy is currently a publicly traded corporation, and it is trying to choose between an underwritten cash offer and a rights offering (not underwritten) to current shareholders. Ren-Stimpy management is interested in minimizing the selling costs and has asked you for advice on the choice of issue methods. What is your recommendation and why?
9. **IPO Underpricing** In 1980, a certain assistant professor of finance bought 12 initial public offerings of common stock. He held each of these for approximately one month and then sold. The investment rule he followed was to submit a purchase order for every firm commitment initial public offering of oil and gas exploration companies. There were 22 of these offerings, and he submitted a purchase order for approximately \$1,000 in stock for each of the companies. With 10 of these, no shares were allocated to this assistant professor. With 5 of the 12 offerings that were purchased, fewer than the requested number of shares were allocated.

The year 1980 was very good for oil and gas exploration company owners: On average, for the 22 companies that went public, the stocks were selling for 80 percent above the offering price a month after the initial offering date. The assistant professor looked at his performance record and found that the \$8,400 invested in the 12 companies had grown to \$10,000, representing a return of only about 20 percent (commissions were negligible). Did he have bad luck, or should he have expected to do worse than the average initial public offering investor? Explain.

10. IPO Pricing The following material represents the cover page and summary of the prospectus for the initial public offering of the Pest Investigation Control Corporation (PICC), which is going public tomorrow with a firm commitment initial public offering managed by the investment banking firm of Erlanger and Ritter. Answer the following questions:

- a. Assume you know nothing about PICC other than the information contained in the prospectus. Based on your knowledge of finance, what is your prediction for the price of PICC tomorrow? Provide a short explanation of why you think this will occur.
- b. Assume you have several thousand dollars to invest. When you get home from class tonight, you find that your stockbroker, whom you have not talked to for weeks, has called. She has left a message that PICC is going public tomorrow and that she can get you several hundred shares at the offering price if you call her back first thing in the morning. Discuss the merits of this opportunity.

PROSPECTUS

PICC

200,000 shares

PEST INVESTIGATION CONTROL CORPORATION

Of the shares being offered hereby, all 200,000 are being sold by the Pest Investigation Control Corporation, Inc. ("the Company"). Before the offering there has been no public market for the shares of PICC, and no guarantee can be given that any such market will develop.

These securities have not been approved or disapproved by the SEC nor has the commission passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

	Price to Public	Underwriting Discount	Proceeds to Company*
Per share	\$11.00	\$1.10	\$9.90
Total	\$2,200,000	\$220,000	\$1,980,000

*Before deducting expenses estimated at \$27,000 and payable by the Company.

This is an initial public offering. The common shares are being offered, subject to prior sale, when, as, and if delivered to and accepted by the Underwriters and subject to approval of certain legal matters by their Counsel and by Counsel for the Company. The Underwriters reserve the right to withdraw, cancel, or modify such offer and to reject offers in whole or in part.

Erlanger and Ritter, Investment Bankers

July 12, 2007

Prospectus Summary

The Company	The Pest Investigation Control Corporation (PICC) breeds and markets toads and tree frogs as ecologically safe insect-control mechanisms.
The Offering	200,000 shares of common stock, no par value.
Listing	The Company will seek listing on NASDAQ and will trade over the counter.
Shares Outstanding	As of June 30, 2007, 400,000 shares of common stock were outstanding. After the offering, 600,000 shares of common stock will be outstanding.
Use of Proceeds	To finance expansion of inventory and receivables and general working capital, and to pay for country club memberships for certain finance professors.

Selected Financial Information
(amounts in thousands except per-share data)

	Fiscal Year Ended June 30			As of June 30, 2007		
	2005	2006	2007	Actual	As Adjusted for	
					This Offering	
Revenues	\$60.00	\$120.00	\$240.00	Working capital	\$ 8	\$1,961
Net earnings	3.80	15.90	36.10	Total assets	511	2,464
Earnings per share	0.01	0.04	0.09	Stockholders' equity	423	2,376


QUESTIONS AND PROBLEMS

1. **Rights Offerings** Rebel, Inc., is proposing a rights offering. Presently there are 400,000 shares outstanding at \$75 each. There will be 70,000 new shares offered at \$70 each.
 - a. What is the new market value of the company?
 - b. How many rights are associated with one of the new shares?
 - c. What is the ex-rights price?
 - d. What is the value of a right?
 - e. Why might a company have a rights offering rather than a general cash offer?
2. **Rights Offerings** The Clifford Corporation has announced a rights offer to raise \$50 million for a new journal, the *Journal of Financial Excess*. This journal will review potential articles after the author pays a nonrefundable reviewing fee of \$5,000 per page. The stock currently sells for \$60 per share, and there are 5.2 million shares outstanding.
 - a. What is the maximum possible subscription price? What is the minimum?
 - b. If the subscription price is set at \$55 per share, how many shares must be sold? How many rights will it take to buy one share?
 - c. What is the ex-rights price? What is the value of a right?
 - d. Show how a shareholder with 1,000 shares before the offering and no desire (or money) to buy additional shares is not harmed by the rights offer.
3. **Rights** Red Shoe Co. has concluded that additional equity financing will be needed to expand operations and that the needed funds will be best obtained through a rights offering. It has correctly determined that as a result of the rights offering, the share price will fall from \$70 to \$62.75 (\$70 is the rights-on price; \$62.75 is the ex-rights price, also known as the *when-issued* price). The company is seeking \$15 million in additional funds with a per-share subscription price equal to \$40. How many shares are there currently, before the offering? (Assume that the increment to the market value of the equity equals the gross proceeds from the offering.)
4. **IPO Underpricing** The Woods Co. and the Mickelson Co. have both announced IPOs at \$40 per share. One of these is undervalued by \$8, and the other is overvalued by \$5, but you have no way of knowing which is which. You plan to buy 1,000 shares of each issue. If an issue is underpriced, it will be rationed, and only half your order will be filled. If you *could* get 1,000 shares in Woods and 1,000 shares in Mickelson, what would your profit be? What profit do you actually expect? What principle have you illustrated?
5. **Calculating Flotation Costs** The Educated Horses Corporation needs to raise \$40 million to finance its expansion into new markets. The company will sell new shares of equity via a general cash offering to raise the needed funds. If the offer price is \$35 per share and the company's underwriters charge an 8 percent spread, how many shares need to be sold?
6. **Calculating Flotation Costs** In the previous problem, if the SEC filing fee and associated administrative expenses of the offering are \$900,000, how many shares need to be sold?
7. **Calculating Flotation Costs** The Huff Co. has just gone public. Under a firm commitment agreement, Huff received \$15.05 for each of the 5 million shares sold.

BASIC

(Questions 1–8)



INTERMEDIATE
(Questions 9–15)

The initial offering price was \$16 per share, and the stock rose to \$19.50 per share in the first few minutes of trading. Huff paid \$800,000 in direct legal and other costs, and \$250,000 in indirect costs. What was the flotation cost as a percentage of funds raised?

8. **Price Dilution** CBO, Inc., has 100,000 shares of stock outstanding. Each share is worth \$80, so the company's market value of equity is \$8,000,000. Suppose the firm issues 20,000 new shares at the following prices: \$80, \$75, and \$70. What will the effect be of each of these alternative offering prices on the existing price per share?
9. **Dilution** Teardrop Inc., wishes to expand its facilities. The company currently has 10 million shares outstanding and no debt. The stock sells for \$50 per share, but the book value per share is \$20. Net income for Teardrop is currently \$18 million. The new facility will cost \$40 million, and it will increase net income by \$500,000.
- Assuming a constant price–earnings ratio, what will the effect be of issuing new equity to finance the investment? To answer, calculate the new book value per share, the new total earnings, the new EPS, the new stock price, and the new market-to-book ratio. What is going on here?
 - What would the new net income for Teardrop have to be for the stock price to remain unchanged?
10. **Dilution** The Metallica Heavy Metal Mining (MHMM) Corporation wants to diversify its operations. Some recent financial information for the company is shown here:

Stock price	\$	98
Number of shares		20,000
Total assets	\$9,000,000	
Total liabilities	\$3,600,000	
Net income	\$1,200,000	

MHMM is considering an investment that has the same PE ratio as the firm. The cost of the investment is \$900,000, and it will be financed with a new equity issue. The return on the investment will equal MHMM's current ROE. What will happen to the book value per share, the market value per share, and the EPS? What is the NPV of this investment? Does dilution take place?

11. **Dilution** In the previous problem, what would the ROE on the investment have to be if we wanted the price after the offering to be \$98 per share (Assume the PE ratio remains constant.) What is the NPV of this investment? Does any dilution take place?
12. **Rights** No Fool Mfg. is considering a rights offer. The company has determined that the ex-rights price would be \$52. The current price is \$55 per share, and there are 5 million shares outstanding. The rights offer would raise a total of \$60 million. What is the subscription price?
13. **Value of a Right** Show that the value of a right just prior to expiration can be written as:
- $$\text{Value of a right} = P_{RO} - P_X = (P_{RO} - P_S)/(N + 1)$$
- where P_{RO} , P_S , and P_X stand for the rights-on price, the subscription price, and the ex-rights price, respectively, and N is the number of rights needed to buy one new share at the subscription price.
14. **Selling Rights** Atlas Corp. wants to raise \$4.1 million via a rights offering. The company currently has 490,000 shares of common stock outstanding that sell for \$40 per share. Its underwriter has set a subscription price of \$36 per share and

will charge the company a 6 percent spread. If you currently own 5,000 shares of stock in the company and decide not to participate in the rights offering, how much money can you get by selling your rights?

- 15. Valuing a Right** Knight Inventory Systems, Inc., has announced a rights offer. The company has announced that it will take four rights to buy a new share in the offering at a subscription price of \$40. At the close of business the day before the ex-rights day, the company's stock sells for \$80 per share. The next morning, you notice that the stock sells for \$72 per share and the rights sell for \$6 each. Are the stock and the rights correctly priced on the ex-rights day? Describe a transaction in which you could use these prices to create an immediate profit.

WEB EXERCISES

- 16.1 IPO Filings** Go to www.ipohome.com and find the most recent IPO. Now go to the SEC Web site at www.sec.gov and look up the company's filings with the SEC. What is the name of the filing the company made to sell stock to the public? Look at the filing. What does this company do? How does the company propose to use the funds raised by the IPO?
- 16.2 Secondary Offerings** Go to www.ipohome.com and find the most recent secondary stock offering. At what price was the stock offered for sale to the public? How does this offer price compare to the market price on the stock on the same day?
- 16.3 Initial Public Offerings** What was the largest IPO? Go to www.ipohome.com and find out. What was the largest IPO ever? In what country was the company located? What was the largest IPO in the United States?



MINICASE

S&S Air Goes Public

Mark Sexton and Todd Story have been discussing the future of S&S Air. The company has been experiencing fast growth, and the two see only clear skies in the company's future. However, the fast growth can no longer be funded by internal sources, so Mark and Todd have decided the time is right to take the company public. To this end, they have entered into discussions with the investment bank of Crowe & Mallard. The company has a working relationship with Kim McKenzie, the underwriter who assisted with the company's previous bond offering. Crowe & Mallard have assisted numerous small companies in the IPO process, so Mark and Todd feel confident with this choice.

Kim begins by telling Mark and Todd about the process. Although Crowe & Mallard charged an underwriter fee of 4 percent on the bond offering, the underwriter fee is 7 percent on all initial stock offerings of the size of S&S Air's offering. Kim tells Mark and Todd that the company can expect to pay about \$1,200,000 in legal fees and expenses, \$12,000 in SEC registration fees, and \$15,000 in other filing fees. Additionally, to be listed on the NASDAQ, the company must pay \$100,000.

There are also transfer agent fees of \$6,500 and engraving expenses of \$450,000. The company should also expect to pay \$75,000 for other expenses associated with the IPO.

Finally, Kim tells Mark and Todd that to file with the SEC, the company must provide three years' audited financial statements. She is unsure about the costs of the audit. Mark tells Kim that the company provides audited financial statements as part of the bond covenant, and the company pays \$300,000 per year for the outside auditor.

1. At the end of the discussion, Mark asks Kim about the Dutch auction IPO process. What are the differences in the expenses to S&S Air if it uses a Dutch auction IPO versus a traditional IPO? Should the company go public through a Dutch auction or use a traditional underwritten offering?
2. During the discussion of the potential IPO and S&S Air's future, Mark states that he feels the company should raise \$50 million. However, Kim points out that if the company needs more cash in the near

future, a secondary offering close to the IPO would be problematic. Instead she suggests that the company should raise \$80 million in the IPO. How can we calculate the optimal size of the IPO? What are the advantages and disadvantages of increasing the size of the IPO to \$80 million?

3. After deliberation, Mark and Todd have decided that the company should use a firm commitment offering with Crowe & Mallard as the lead underwriter. The IPO will be for \$60 million. Ignoring underpricing, how much

will the IPO cost the company as a percentage of the funds received?

4. Many employees of S&S Air have shares of stock in the company because of an existing employee stock purchase plan. To sell the stock, the employees can tender their shares to be sold in the IPO at the offering price, or the employees can retain their stock and sell it in the secondary market after S&S Air goes public. Todd asks you to advise the employees about which option is best. What would you suggest to the employees?