Raising Capital 19

OPENING CASE

On June 18, 2015, wearable health and fitness tracking devices company Fitbit went public at a price of $20 per share. Assisted by investment banks Deutsche Bank, Morgan Stanley, and Bank of America Merrill Lynch, Fitbit sold 36.575 million shares of stock to the public at a price of $20. Apparently, Fitbit stock was in shape for its IPO. The stock price opened trading at $30.40 and reached a high of $31.90, before closing at $29.68, a jump of more than 48 percent from the offer price. The Fitbit offer raised $731.5 million, a relatively large IPO. The current U.S. record holder is Visa, which raised $19.67 billion in its 2008 IPO. In this chapter, we will examine the process by which companies such as Fitbit sell stock to the public, the costs of doing so, and the role of investment banks in the process.

Businesses large and small have one thing in common: They need long-term capital. This chapter describes how they get it. We pay particular attention to what is probably the most important stage in a company's financial life cycle, the initial public offering. Such offerings are the process by which companies convert from being privately owned to being publicly owned. For many, starting a company, growing it, and taking it public is the ultimate entrepreneurial dream.

Please visit us at corecorporatefinance.blogspot.com for the latest developments in the world of corporate finance.

This chapter examines how firms raise capital. The financing method is generally tied to the firm's life cycle. Start-up firms are often financed via venture capital. As firms grow, they may want to "go public." A firm's first public offering is called an IPO, which stands for initial public offering. Later offerings are called SEOs, for seasoned equity offerings. This chapter follows the life cycle of the firm, covering venture capital, IPOs, and SEOs. Debt financing is discussed toward the end of the chapter.[1]

19.1 EARLY-STAGE FINANCING AND VENTURE CAPITAL

One day, you and a friend have a great idea for a new computer software product that will help 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 MBA 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 you search for other sources of capital.

One group of potential investors goes by the name of **angel investors**, or just **angels**. They may just be friends and family, with little knowledge of your product's industry and little experience backing start-up companies. However, some angels are more knowledgeable individuals or groups of individuals who have invested in a number of previous ventures.

Venture Capital

Alternatively, you might seek funds in the **venture capital (VC)** market. While venture capital does not have a precise definition, venture capitalists share some common characteristics. Three characteristics are particularly important:[2]

1. *VCs Are Financial Intermediaries that Raise Funds from Outside Investors.* VC firms are typically organized as limited partnerships. As with any limited partnership, limited partners invest with the general partner, who makes the investment decisions. The limited partners are frequently institutional investors, such as pension plans, endowments, and corporations. Wealthy individuals and families are often limited partners as well. This characteristic separates VCs from angels, since angels typically invest just their own money. In addition, corporations sometimes set up internal venture capital divisions to fund fledgling firms. However, Metrick and Yasuda point out that because these divisions invest the funds of their corporate parent, rather than the funds of others, they are not—in spite of their name—venture capitalists.
2. *VCs Play an Active Role in Overseeing, Advising, and Monitoring the Companies in Which They Invest.* For example, members of venture capital firms frequently join the board of directors. The principals in VC firms are generally quite experienced in business. By contrast, while entrepreneurs at the helm of start-up companies may be bright, creative, and knowledgeable about their products, they often lack much business experience.
3. *VCs Generally Do Not Want to Own the Investment Forever.* Rather, VCs look for an exit strategy, such as taking the investment public (a topic we discuss in the next section) or selling it to another company. Corporate venture capital does not share this characteristic, since corporations are frequently content to have the investment stay on the books of the internal VC division indefinitely.

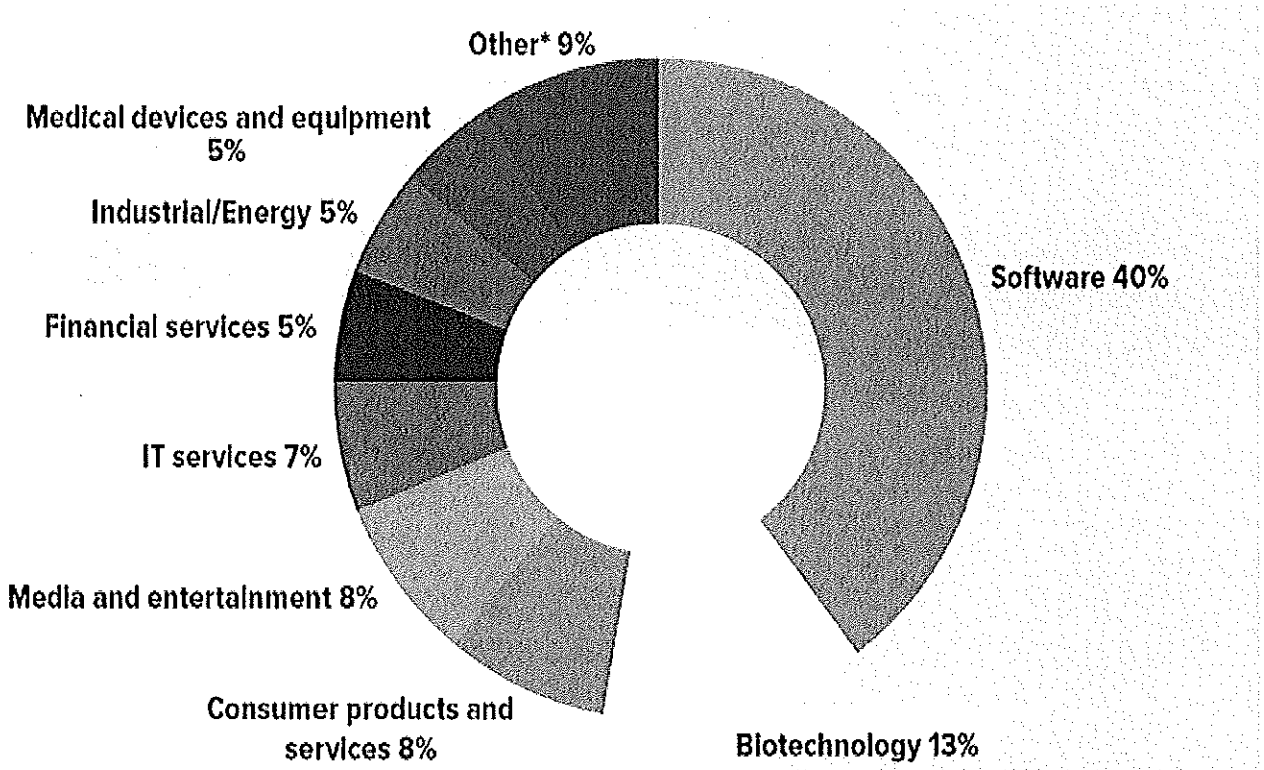
This last characteristic is quite important in determining the nature of typical VC investments. A firm must be a certain size to either go public or be easily sold. Since the investment is generally small initially, it must possess great growth potential; many businesses do not. For example, imagine an individual who wants to open a gourmet restaurant. If the owner is a true "foodie" with no desire to expand beyond one location, it is unlikely the restaurant will ever become large enough to go public. By contrast, firms in high-tech fields often have significant growth potential, and many VC firms specialize in this area.

Figure 19.1 shows VC investments by industry. As can be seen, a large percentage of these investments are in high-tech fields.

How often do VC investments have successful exits? While data on exits are difficult to come by, Figure 19.2 shows outcomes for over 11,000 companies funded in the 1990s.

As can be seen, nearly 50 percent (= 14% + 33%) went public or were acquired. However, the Internet bubble reached its peak in early 2000, so the period covered in the table may have been an unusual one. page 584

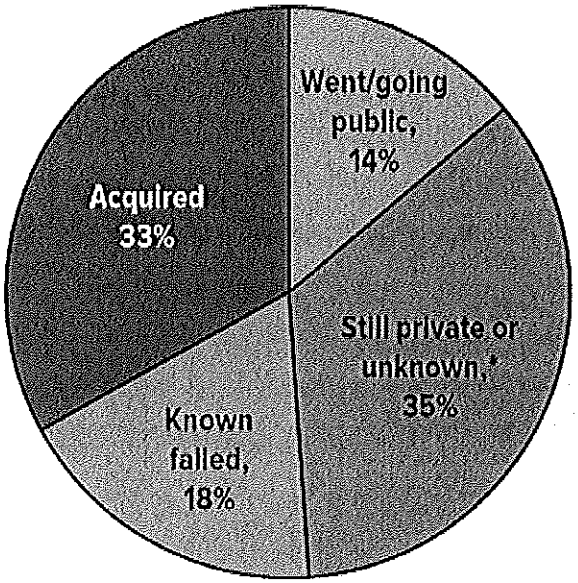
FIGURE 19.1
Venture Capital Investments in 2015 by Industry Sector



*Includes: Retailing/Distribution 2%, Healthcare services 1%, Semiconductors 1%, Computers and peripherals 1%, Telecommunications 1%, Business products and services 1%, Electronics/Instrumentation 1%, and Networking and equipment 1%.

Source: National Venture Capital Association.

FIGURE 19.2
Exit Funnel Outcomes of the 11,686 Companies First Funded from 1991 to 2000



Source: National Venture Capital Association.

Stages of Financing

Both practitioners and scholars frequently speak of stages in venture capital financing. Well-known classifications for these stages are as follows:[3]

1. *Seed Money Stage*. A small amount of financing needed to prove a concept or develop a product. Marketing is not included in this stage.

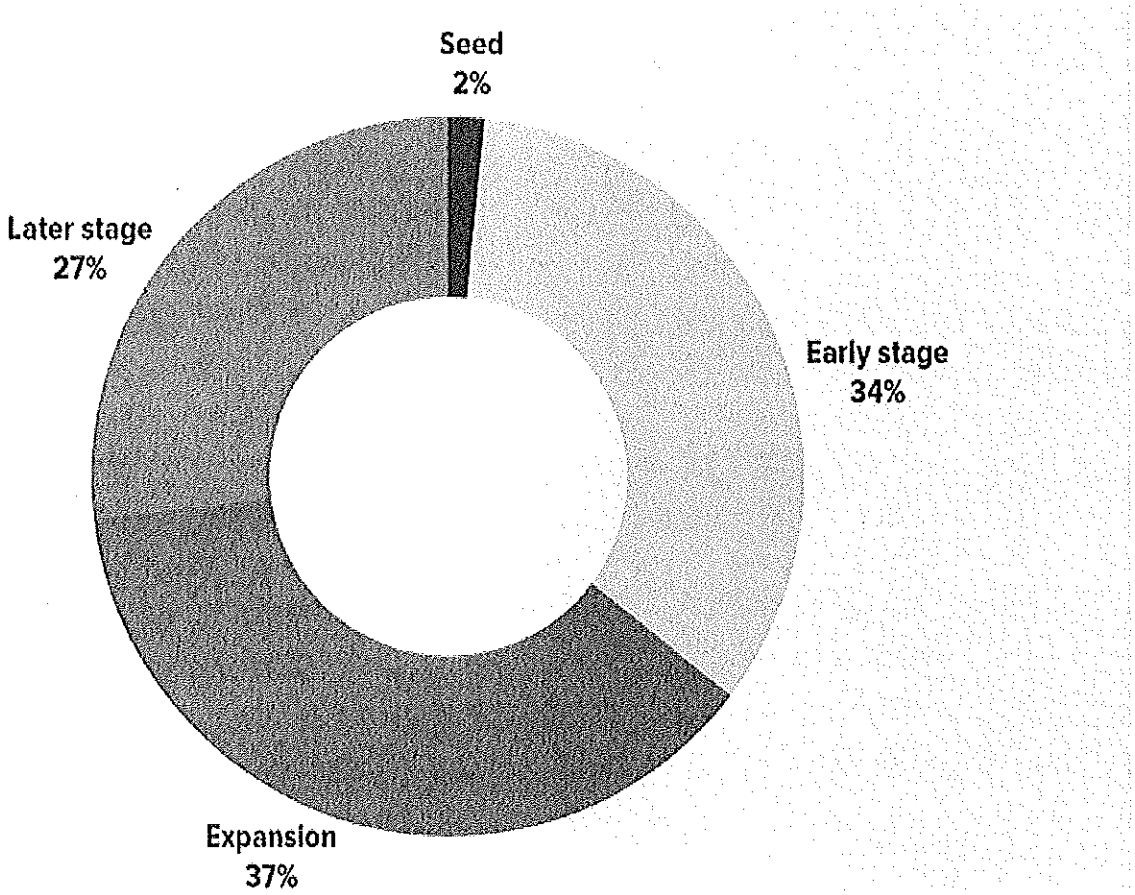
page 585

2. *Start-Up.* Financing for firms that started within the past year. Funds are likely to pay for marketing and product development expenditures.
3. *First-Round Financing.* Additional money to begin sales and manufacturing after a firm has spent its start-up funds.
4. *Second-Round Financing.* Funds earmarked for working capital for a firm that is currently selling its product but still losing money.
5. *Third-Round Financing.* Financing for a company that is at least breaking even and is contemplating an expansion. This round is also known as *mezzanine financing.*
6. *Fourth-Round Financing.* Money provided for firms that are likely to go public within half a year. This round is also known as *bridge financing.*

Although these categories may seem vague to the reader, we have found that the terms are well accepted within the industry. For example, the venture capital firms listed in *Pratt's Guide to Private Equity & Venture Capital Sources* indicate which of these stages they are interested in financing.[4]

Figure 19.3 shows venture capital investments by company stage. The authors of this figure use a slightly different classification scheme. *Seed* and *early stage* correspond to the first two stages above. *Later stage* roughly corresponds to Stages 3 and 4 above, and *expansion* roughly corresponds to Stages 5 and 6 above. As can be seen, venture capitalists invest little at the seed stage.

FIGURE 19.3
2015 Venture Capital Investment by Company Stage



Source: National Venture Capital Association.

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 (the wastebasket). Venture capitalists rely heavily on informal networks of engineers, scientists, 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. page 586

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. The venture capitalist will frequently hold voting convertible preferred stock, which gives 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.

Crowdfunding

To see how people rate crowdfunding websites, check out www.crowdfunding-website-reviews.com.

On April 5, 2012, the JOBS Act was signed into law. A provision of this act allowed companies to raise money through crowdfunding, the effort of individuals to raise money in small amounts. Crowdfunding was first used to underwrite the U.S. tour of British rock band Marillion, but the JOBS Act allows companies to sell equity by crowdfunding. The JOBS Act allows a company to issue up to $1 million in securities in a 12-month period, and investors are permitted to invest up to $100,000 in crowdfunding issues per 12 months. In 2015, crowdfunding rules set by the SEC went into effect for these new "exchanges." Investors in crowdfunding must be accredited: for an individual, this means more than $1 million in net worth or more than $200,000 in income for two of the past three years.

19.2 SELLING SECURITIES TO THE PUBLIC: THE BASIC PROCEDURE

We discuss the process of selling (issuing) securities to the public in the next several sections, paying particular attention to the process of going public.

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

There are many rules and regulations surrounding 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.

There is a series of steps 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. With just a few exceptions, the registration statement is required for all public, interstate issues of securities.

Normally, a registration statement contains many pages 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 put into 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 twentieth 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.

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 the 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 after the waiting period. An example is reproduced in Figure 19.4. 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) that are 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 are divided into groups called *brackets* on the tombstone, 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.

19.3 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.[5]

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 on a "first come, first served" basis. 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 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**, an 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.

A **seasoned equity offering (SEO)** is a new issue for a company with securities that have been previously issued. The terms *secondary* and *follow-on offering* are also commonly used. A seasoned equity offering of common stock can be made by using a cash offer or a rights offer.

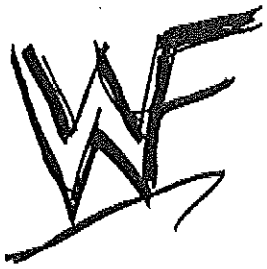
These methods of issuing new securities are shown in Table 19.1.

FIGURE 19.4
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 Incorporated | Banc of America Securities LLC | Deutsche Banc Alex. Brown

Donaldson, Lufkin & Jenrette | A.G. Edwards & Sons, Inc. | Hambrecht & Quist | ING Barings

Prudential Securities | SG Cowen | Wasserstein Perella Securities, Inc. | Advest, 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. | Neuberger Berman, LLC

Raymond James & Associates, Inc. | Sanders Morris Mundy

Tucker Anthony Cleary Gull | 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

TABLE 19.1
The Methods of Issuing New Securities

METHOD	TYPE	DEFINITION
Public		
Traditional negotiated cash offer	Firm commitment cash offer	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	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. Some best efforts offerings do not use an underwriter.
	Dutch auction cash offer	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	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 the shares they expect to sell over a two-year period and sell them when needed.
	Competitive firm cash offer	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 the securities for at least two years.

19.4 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 Goldman Sachs. 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.

Typically, the underwriter buys the securities for less than the offering price and accepts the risk of not being able to sell them. The difference between the underwriter's buying price and the offering price is called the **spread**, or discount. It is the basic compensation received by the underwriter. Sometimes the underwriter will get noncash compensation in the form of warrants and stock in addition to the spread.[6]

Underwriters 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 the offering. This manager is designated as the lead manager, or principal manager. The lead manager typically has the responsibility of pricing the securities. The other underwriters in the syndicate serve primarily to distribute the issue.

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. In most cases, companies usually do new issues of debt and equity on a *negotiated offer* basis.

There is evidence that competitive underwriting is cheaper to use than negotiated underwriting, and 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 Auctions.

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 most 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.

To determine the offering price, the underwriter will meet with potential buyers, typically large institutional buyers such as mutual funds. Often, the underwriter and company management will do presentations in multiple cities, pitching the stock in what is known as a *road show*. Potential buyers provide information on the price they would be willing to pay and the number of shares they would purchase at a particular price. This process of soliciting information about buyers and the prices and quantities they would demand is known as *bookbuilding*. As we will see, despite the bookbuilding process, underwriters frequently get the price wrong, or so it seems.

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; firm commitments are now the dominant form.

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.

Learn all about Dutch auction IPOs at www.wrhambrecht.com.

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 Green Shoe Provision

Many underwriting contracts contain a **Green Shoe provision** (sometimes called the *over-allotment 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 about 30 days and involve no more than 15 percent of the newly issued shares.

The Aftermarket

The period after a new issue is initially sold to the public is referred to as the *aftermarket*. The lead underwriter frequently will "stabilize," or support, the market price for a relatively short time following the offering. This is done by actually selling 115 percent of the issue. If the price rises in the aftermarket, the underwriter will exercise the Green Shoe option to purchase the extra 15 percent needed. If the price declines, however, the underwriter will step in and buy the stock in the open market, thereby supporting the price. In this second case, the underwriter allows the Green Shoe option to expire.[8] For example, when Facebook went public in May 2012, lead underwriter Morgan Stanley was forced to step in and stabilize the stock price. Even though the stock opened at $42.05, it quickly fell to $38 less than an hour after trading on the stock began. At that point, Morgan Stanley stepped in and began buying shares of the stock to create a floor of $38 per share.

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. page 592

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.

Learn more about investment banks at Merrill Lynch's website: www.ml.com.

The Quiet Period

From the time a company begins to seriously consider an IPO until 40 calendar days following 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 SEC's logic is that all relevant information should be contained in the prospectus. An important result of this requirement is that the underwriters' 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.

Firms that don't stay quiet can have their IPOs delayed. For example, just before Google's IPO, an interview with 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 (by including the article!). However, in May 2004, Salesforce.com's IPO was delayed because an interview with CEO Marc Benioff appeared in *The New York Times*. Salesforce.com finally went public two months later.

19.5 IPOs AND UNDERPRICING

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. For example, consider the Seres Therapeutics IPO on June 26, 2015. Seres, a biological drug company, sold about 7.4 million shares at a price of $18. The stock really moved, jumping to $51.40 by the end of the day, an increase of about 185 percent. On the basis of these numbers, Seres was underpriced by about $33.40 per share, which means the company missed out on an additional $248.2 million, a large sum considering the company only raised $133.7 million.

Dutch auctions are supposed to eliminate this kind of "pop" in first day prices. Google sold 19.6 million shares at a price of $85 in a Dutch auction IPO. However, the stock closed at $100.34 on the first day, an increase of 18 percent, so Google missed out on an additional $300 million.

> IPO information is ubiquitous on the World Wide Web. Two sites of interest are IPO Home at www.renaissancecapital.com, and IPO Central at www.hoovers.com.

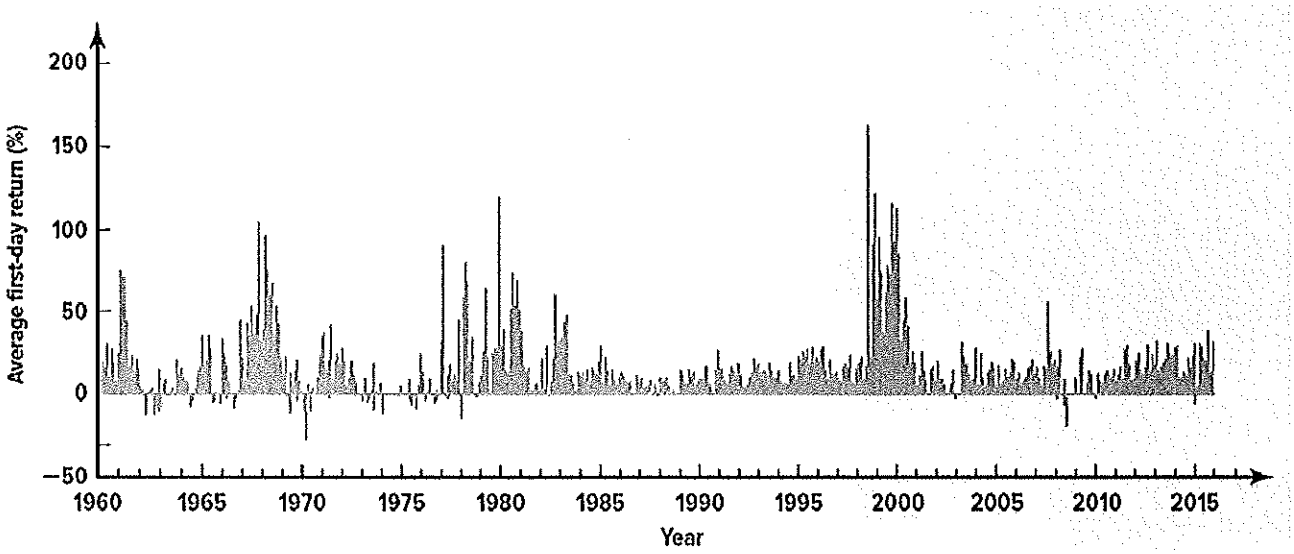
One of the biggest dollar amounts "left on the table" occurred in 1999 when eToys went public, offering 8.2 million shares. The stock jumped $57 dollars above the offer price on the first day, which meant eToys left about half a billion dollars on the table! eToys could have used the money; it filed for bankruptcy less than two years later. In May 2002, the company sued its lead underwriter, claiming the offer price was deliberately set too low.

Of course, not all IPOs increase in price on the first day. On May 24, 2006, Vonage Holdings Corp., provider of Voice over Internet Protocol (VoIP) phone service, went

public. The company sold 31.3 million shares to the public at a price of $17 per share. Unfortunately for the shareholders, the stock price closed the day at $14.85, a loss of almost 13 percent. For Vonage, the problems weren't over. In the IPO, Vonage had taken an unusual step and permitted its customers to buy 4.2 million shares of stock, but following the offering, many customers refused to pay for the shares they had requested. Since Vonage had guaranteed payment to its underwriters for the shares purchased by its customers, the company was liable for the purchase price.

page 593

FIGURE 19.5
Average Initial Returns by Month for SEC-Registered Initial Public Offerings: 1960–2015



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 19.5 provides a more general illustration of the underpricing phenomenon. What is shown is the month-by-month history of underpricing for SEC-registered IPOs.[9] The period covered is 1980 through 2015. Figure 19.6 presents the number of offerings in each month for the same period.

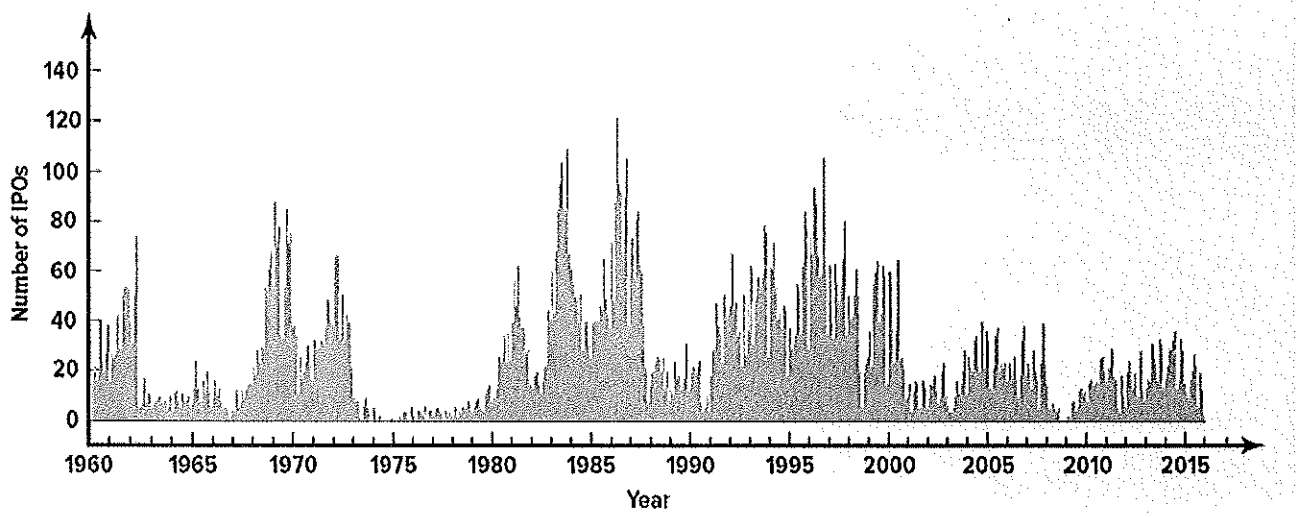
Figure 19.5 shows that underpricing can be quite dramatic, exceeding 100 percent in some months. In such months, the average IPO more than doubled in value, sometimes in a matter of hours. Also, the degree of underpricing varies through time, and periods of severe underpricing ("hot issue" markets) are followed by periods of little underpricing ("cold issue" markets). For example, in the 1980s, the average IPO was underpriced by 7.3 percent. For 1999–2000, IPOs were underpriced by 64.5 percent on average, and for 2001–2015, average underpricing was 21.3 percent.

From Figure 19.6, 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 19.5 and 19.6, we see that increases in the number of new offerings tend to follow periods of significant underpricing by roughly 6 to 12 months. This probably occurs because companies decide to go public when they perceive that the market is highly receptive to new issues.

Table 19.2 contains a year-by-year summary of underpricing for the years 1980 to 2015. As is indicated, a grand total of 8,712 companies were included in this analysis. The degree of underpricing averaged 17.2 percent overall for the 36 years examined. The smallest underpricing during this period was 1984, with a small increase in value of 2.8 percent. At the other extreme, in 1999, the 486 issues were underpriced, on average, by a

remarkable 69.7 percent. The nearby *Finance Matters* box shows that IPO underpricing is not just confined to the United States; instead, it seems to be a global phenomenon. page 594

FIGURE 19.6
Number of Offerings by Month for SEC-Registered Initial Public Offerings: 1960–2015



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.

IPO Underpricing: The 1999–2000 Experience

Table 19.2, along with Figures 19.5 and 19.6, 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 1999, $64.91 billion, was a record, followed closely by another $64.88 billion in 2000. The underpricing was so severe in 1999 that companies left $37 billion "on the table," which was substantially more than in 1990 through 1998 combined, and in 2000, the amount was at about $30 billion. In other words, over the two-year period, companies missed out on $67 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 smackdown as Martha Stewart gained 98 percent on the first day compared to 48 percent for the WWF.

The IPO market cooled off considerably in 2001. Many observers now refer to the 1999–2000 period as the Internet "bubble" period. The word *bubble* in this context refers to a situation in which prices are bid up to irrational, and unsustainable, levels. During 1999, for example, 323 of the companies that went public were considered Internet IPOs, meaning companies that did most (or all) of their business on the Internet, or companies whose products were used for computers or networks.

By April 2001, of the 1999 Internet IPOs, only 12, or 4 percent, were trading above their offer price, and only four, or 1 percent, were trading above their first-day close. Was it really a bubble? Let us say that, at a minimum, there were instances of valuations that are very hard to reconcile with economic reality.

Why Does Underpricing Exist?

Based on the evidence we've examined, an obvious question is why does underpricing continue 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.

TABLE 19.2
Number of Offerings, Average First-Day Returns, and Gross Proceeds of Initial Public Offerings: 1980–2015

YEAR	NUMBER OF OFFERINGS*	AVERAGE FIRST-DAY RETURNS, %†	GROSS PROCEEDS, $ MILLIONS‡
1980	75	13.9	934
1981	196	6.2	2,367
1982	80	10.5	1,014
1983	524	8.9	11,370
1984	218	2.8	2,622
1985	218	6.5	4,964
1986	477	6.1	15,938
1987	336	5.7	12,481
1988	129	5.4	3,922
1989	122	7.8	5,308
1990	116	10.4	4,334
1991	293	11.8	16,431
1992	416	10.2	22,750
1993	527	12.7	31,756
1994	411	9.8	17,493
1995	464	21.1	29,511
1996	690	17.3	42,481
1997	486	13.9	32,559
1998	316	20.3	34,465
1999	486	69.7	64,913
2000	382	56.2	64,876
2001	79	14.2	34,241
2002	70	8.6	22,136
2003	68	11.9	10,075
2004	183	12.3	31,927
2005	168	10.1	28,593

2006	162	11.9	30,648
2007	160	14.0	35,704
2008	21	5.7	22,762
2009	43	10.6	13,307
2010	100	9.2	30,708
2011	82	13.2	27,750
2012	105	17.1	32,074
2013	162	20.9	39,093
2014	225	14.9	47,040
2015	124	17.7	22,157
1980–1989	2,375	6.9	60,380
1990–1999	4,205	21.0	296,693
2000–2015	2,132	21.3	492,923
1980–2015	**8,712**	**17.2**	**849,996**

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

* The number of offerings excludes IPOs with an offer price of less than $5.00, ADRs, best efforts, units, 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 overallotment options but include the international tranche, if any. No adjustments for inflation have been made.

FINANCE MATTERS

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 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 114 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 table below 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
Argentina	26	1991–2013	4.2%	Korea	1,758	1980–2014	58.8
Australia	1,562	1976–2011	21.8	Malaysia	474	1980–2013	56.2
Austria	103	1971–2013	6.4	Mauritius	40	1989–2005	15.2
Belgium	114	1984–2006	13.5	Mexico	123	1987–2012	11.6
Brazil	275	1979–2011	33.1	Netherlands	181	1982–2006	10.2
Bulgaria	9	2004–2007	36.5	New Zealand	242	1979–2013	18.6
Canada	720	1971–2013	6.5	Nigeria	122	1989–2013	13.1
Chile	81	1982–2013	7.4	Norway	209	1984–2013	8.1
China	2,637	1990–2014	113.5	Philippines	155	1987–2013	18.1
Cyprus	73	1997–2012	20.3	Poland	309	1991–2014	12.7
Denmark	164	1984–2011	7.4	Portugal	32	1992–2013	11.9
Egypt	62	1990–2010	10.4	Russia	64	1999–2013	3.3
Finland	168	1971–2013	16.9	Saudi Arabia	80	2003–2011	239.8
France	697	1983–2010	10.5	Singapore	609	1973–2013	25.8
Germany	779	1978–2014	23.0	South Africa	316	1980–2013	17.4
Greece	373	1976–2013	50.8	Spain	143	1986–2013	10.3
Hong Kong	1,486	1980–2013	15.8	Sri Lanka	105	1987–2008	33.5
India	2,983	1990–2014	88.0	Sweden	374	1980–2011	27.2
Indonesia	464	1990–2014	24.9	Switzerland	164	1983–2013	27.3
Iran	279	1991–2004	22.4	Taiwan	1,620	1980–2013	38.1
Ireland	38	1991–2013	21.6	Thailand	500	1987–2012	35.1
Israel	348	1990–2006	13.8	Turkey	404	1990–2014	9.6
Italy	312	1985–2013	15.2	United Kingdom	4,932	1959–2012	16.0
Japan	3,313	1970–2014	42.8	United States	12,702	1960–2014	16.9
Jordan	53	1999–2008	149.0				

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

TABLE 19.3 Average First-Day Returns, Categorized by Sales, for IPOs: 1980–2015*

	1980–1989		1990–1998		1999–2000		2001–2015	
ANNUAL SALES OF ISSUING FIRMS	NUMBER OF FIRMS	FIRST-DAY AVERAGE RETURN	NUMBER OF FIRMS	FIRST-DAY AVERAGE RETURN	NUMBER OF FIRMS	FIRST-DAY AVERAGE RETURN	NUMBER OF FIRMS	FIRST-DAY AVERAGE RETURN
$0 ≤ sales ≤ $10m	420	10.3%	741	17.2%	331	68.9%	316	10.1%
$10m ≤ sales ≤ $20m	243	8.7	393	18.7	138	81.4	71	14.0
$20m ≤ sales ≤ $50m	500	7.8	791	18.8	155	75.0	205	14.6
$50m ≤ sales ≤ $100m	356	6.3	589	12.9	87	61.8	264	20.5
$100m ≤ sales ≤ $200m	234	5.1	454	11.8	56	35.8	224	17.0
$200m ≤ sales	290	3.4	645	8.7	91	25.0	584	11.6
All	2,043	7.3%	3,613	14.8%	858	64.5%	1,664	13.9%

* 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 8,178 IPOs, after excluding IPOs with an offer price of less than $5.00 per share, units, REITs, SPACs, ADRs, closed-end funds, banks and S&Ls, firms not listed on CRSP within six months of the offer date, and natural resources partnerships. The average first-day return is 18.0 percent.

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

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 speculative issues. This point is illustrated in Table 19.3, which shows the extent of underpricing for over 8,700 firms during the period from 1980 through 2015. Here, the firms are grouped based on their total sales in the 12 months prior to the IPO.

As illustrated in Table 19.3, there is a tendency for underpricing to be more pronounced for firms with relatively small pre-IPO sales. 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.

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 IPOs are usually underpriced. 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.

TABLE 19.4
IPO Underpricing and File Price Range

A: PERCENTAGE OF IPOs RELATIVE TO FILE PRICE RANGE

	BELOW	WITHIN	ABOVE
1980–1989	30%	57%	13%
1990–1998	27	49	24
1999–2000	18	38	44
2001–2015	36	42	22
1980–2015	29	48	23

B: AVERAGE FIRST-DAY RETURNS RELATIVE TO FILE PRICE RANGE

	BELOW	WITHIN	ABOVE
1980–1989	0%	6%	20%
1990–1998	4	11	31
1999–2000	8	26	121
2001–2015	3	11	36
1980–2015	3	11	50

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.

A final 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.[10]

The Partial Adjustment Phenomenon

When a company files its registration statement with the SEC, it will at some point in the process indicate a range of stock prices between which it expects to offer shares. This range is called the "file price range" or words to that effect. A file price range of $10 to $12 is common, but many others exist. For example, the Fitbit IPO filings on June 2, 2015, with which we began the chapter, indicated a maximum anticipated price of $16.

Just before a company's shares are sold to investors, the final IPO offer price is determined. As shown in Section A of Table 19.4, that price can be above, within, or below the price range originally

indicated by the company. Over the period 1980–2015, 48 percent of IPOs were within the file range, with 29 percent below and 23 percent above.

Section B of Table 19.4 illustrates an interesting and very clear pattern. IPO underpricing is much more severe when an offer is priced above the file range. Again over the 1980–2015 period, IPOs that priced above the file range were underpriced by 50 percent, on average, compared to only 3 percent for firms priced below it. The 1999–2000 period again stands out. Issues that "went off" above the file range were underpriced by an average of 121 percent!

This pattern is known as the "partial adjustment" phenomenon. The name refers to the fact that when firms raise their IPO offer prices, they only do so partially, meaning that

they don't move the price high enough. In Fitbit's case for example, the final offer price was $20, 25 percent higher than the original maximum price: The stock jumped 48 percent on the first day of trading. page 599

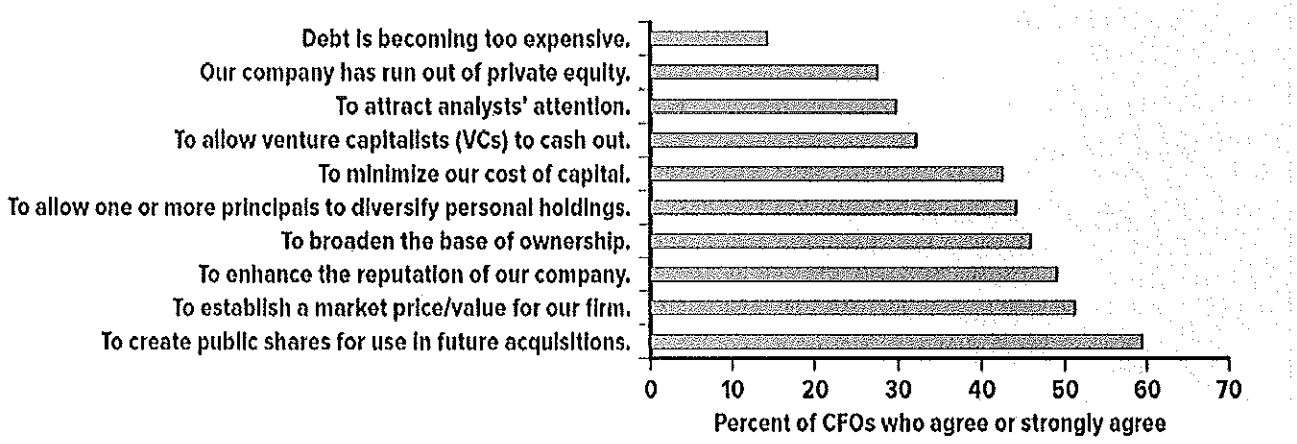
Why does the partial adjustment phenomenon exist? The answer is not known. The question is related to the broader question of why IPO underpricing exists, which we consider next.

19.6 WHAT CFOs SAY ABOUT THE IPO PROCESS

In an IPO, a firm accomplishes two important things: raising capital and becoming a public company. The two major benefits to a firm going public are the better ability to raise capital and better ability of shareholders to diversify. There are substantial costs to being a public company in the United States. We have described the statutory disclosure requirements monitored by the Securities and Exchange Commission. More recently, there are the requirements of the Sarbanes-Oxley Act for more accountability in corporate governance.

In 2000–2002, a large number of CFOs whose firms had recently gone public were asked about their firms' motives. Figure 19.7 describes their responses. The motives that were cited the most for going public were the creation of public shares for use in future acquisitions and establishing a market value for the firm. Diversification was also seen as a benefit.

FIGURE 19.7
Survey Evidence on the Motivations for Going Public



Source: James C. Brau and Stanley E. Fawcett, "Evidence on What CFOs Think about the IPO Process: Practice, Theory and Managerial Implications," *Journal of Applied Corporate Finance* 18 (2006).

The CFOs were also asked to describe their perceptions of IPO underpricing. Figure 19.8 shows the results of the survey. The most cited reason for IPO underpricing was to compensate investors for taking the risk of the IPO, followed by the increase of the post-issue trading volume for the stock. The reasons are consistent with our story of Ms. Smith and Mr. Jones and underwriting risk, but they also show that the quality and liquidity of the aftermarket are important.

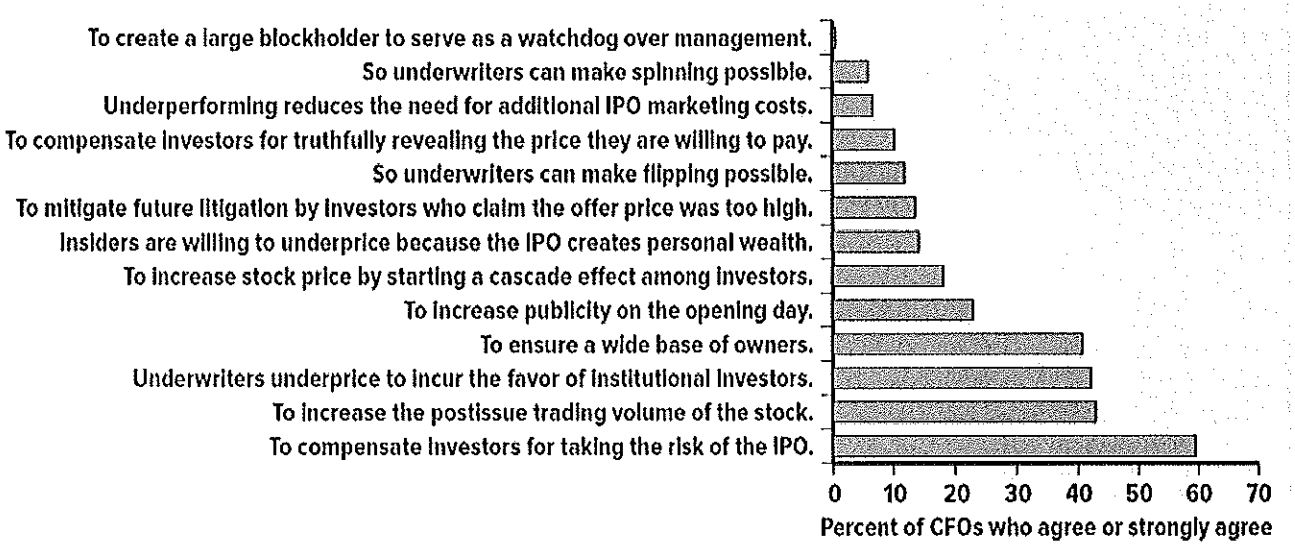
19.7 SEOs AND THE VALUE OF THE FIRM

We now turn to a consideration of seasoned equity offerings (SEOs), 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 not to change much following a debt announcement. A number of researchers have studied this issue. Plausible reasons for this strange result include the following: page 600

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.

FIGURE 19.8
CFO Perceptions of IPO Underpricing



Source: James C. Brau and Stanley E. Fawcett, "Evidence on What CFOs Think about the IPO Process: Practice, Theory and Managerial Implications," *Journal of Applied Corporate Finance* 18 (2006).

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.

19.8 THE COST 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 are classified in the following table and fall into six categories: (1) the 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. Spread	The 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 cost 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 upon 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 19.5 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 19-year period from 1990 through 2008. 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 19.5 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 25.22 percent of the amount raised. This means that if a company sells $10 million in stock, it will only net about $7.5 million; the other $2.5 million goes to cover the underwriter spread and other direct expenses. Typical underwriter spreads on an IPO range from about 5 percent for large offerings to 10 percent for small offerings, but for about half of the IPOs in Table 19.5, the spread is exactly 7 percent, so this is, by far, the most common spread. A nearby *Finance Matters* box provides a detailed example for a particular company.

Overall, four clear patterns emerge from Table 19.5. First of all, 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 19.6 combines the information in Table 19.5 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 tend to be similar in size, so the direct costs are only about half of the total for small issues. Overall, across all size groups, the total direct costs amount to 10 percent of the amount raised and the underpricing amounts to 19 percent.

Finally, with regard to debt offerings, there is a general pattern in issue costs that is somewhat obscured in Table 19.5. Recall from Chapter 5 that bonds carry different credit ratings. Higher-rated bonds are said to be investment grade, whereas lower-rated bonds are noninvestment grade. Table 19.7 contains a breakdown of direct costs for bond issues after the investment and noninvestment grades have been separated.

TABLE 19.5 Direct Costs as a Percentage of Gross Proceeds for Equity (IPOs and SEOs) and Straight and Convertible Bonds Offered by Domestic Operating Companies: 1990-2008

	IPOs				SEOs			
PROCEEDS ($ MILLIONS)	NUMBER OF ISSUES	GROSS SPREAD	OTHER DIRECT EXPENSE	TOTAL DIRECT COST	NUMBER OF ISSUES	GROSS SPREAD	OTHER DIRECT EXPENSE	TOTAL DIRECT COST
2.00–9.99	1,007	9.40%	15.82%	25.22%	515	8.11%	26.99%	35.11%
10.00–19.99	810	7.39	7.30	14.69	726	6.11	7.76	13.86
20.00–39.99	1,422	6.96	7.06	14.03	1,393	5.44	4.10	9.54
40.00–59.99	880	6.89	2.87	9.77	1,129	5.03	8.93	13.96
60.00–79.99	522	6.79	2.16	8.94	841	4.88	1.98	6.85
80.00–99.99	327	6.71	1.84	8.55	536	4.67	2.05	6.72
100.00–199.99	702	6.39	1.57	7.96	1,372	4.34	.89	5.23
200.00–499.99	440	5.81	1.03	6.84	811	3.72	1.22	4.94
500.00 and up	155	5.01	.49	5.50	264	3.10	.27	3.37
Total/Average	**6,265**	**7.19%**	**3.18%**	**10.37%**	**7,587**	**5.02%**	**2.68%**	**7.69%**
	STRAIGHT BONDS				**CONVERTIBLE BONDS**			
2.00–9.99	3,962	1.64	2.40	4.03	14	6.39	3.43	9.82
10.00–19.99	3,400	1.50	1.71	3.20	23	5.52	3.09	8.61
20.00–39.99	2,690	1.25	.92	2.17	30	4.63	1.67	6.30
40.00–59.99	3,345	.81	.79	1.59	35	3.49	1.04	4.54
60.00–79.99	891	1.65	.80	2.44	60	2.79	.62	3.41
80.00–99.99	465	1.41	.57	1.98	16	2.30	.62	2.92
100.00–199.99	4,949	1.61	.52	2.14	82	2.66	.42	3.08
200.00–499.99	3,305	1.38	.33	1.71	46	2.65	.33	2.99
500.00 and up	1,261	.61	.15	.76	7	2.16	.13	2.29
Total/Average	**24,268**	**1.38%**	**.61%**	**2.00%**	**313**	**3.07%**	**.85%**	**3.92%**

Source: Inmoo Lee, Scott Lochhead, Jay Ritter, and Quanshui Zhao, "The Costs of Raising Capital," *Journal of Financial Research* 1 (Spring 1996), calculations and updates by the authors.

FINANCE MATTERS

ANATOMY OF AN IPO

On January 23, 2015, Box, the cloud-based content collaboration platform company, went public via an IPO. Box issued 12.5 million shares of stock at a price of $14 each. The lead underwriters on the IPO were Morgan Stanley, Credit Suisse, and J. P. Morgan, assisted by a syndicate made up of five other investment banks.

Even though the IPO raised a gross sum of $175,000,000, Box got to keep only $157,550,000 after expenses. The biggest expense was the 7 percent underwriter spread, which is ordinary for an offering of this size. Box sold each of the 12.5 million shares to the underwriters for $13.02, and the underwriters in turn sold the shares to the public for $14 each.

But wait—there's more. Box spent $21,715 in SEC registration fees, $28,532 in FINRA filing fees, and $250,000 to be listed on the NYSE. The company also spent $1.85 million in legal fees, $2.173 million on accounting to obtain the necessary audits, $2,500 for a transfer agent to physically transfer the shares and maintain a list of shareholders, $400,000 for printing and engraving expenses, and, finally, $474,253 in miscellaneous expenses.

As Box's outlays show, an IPO can be a costly undertaking! In the end, Box's expenses totaled $17.45 million, of which $12.25 million went to the underwriters and $5.2 million went to other parties. All told, the total cost to Box was about 11 percent of the issue proceeds.

TABLE 19.6
Direct and Indirect Costs, in Percentages, of Equity IPOs: 1990–2008

PROCEEDS ($ MILLIONS)	NUMBER OF ISSUES	GROSS SPREAD	OTHER DIRECT EXPENSE	TOTAL DIRECT COST	UNDERPRICING
2.00–9.99	1,007	9.40%	15.82%	25.22%	20.42%
10.00–19.99	810	7.39	7.30	14.69	10.33
20.00–39.99	1,422	6.96	7.06	14.03	17.03
40.00–59.99	880	6.89	2.87	9.77	28.26
60.00–79.99	522	6.79	2.16	8.94	28.36
80.00–99.99	327	6.71	1.84	8.55	32.92
100.00–199.99	702	6.39	1.57	7.96	21.55
200.00–499.99	440	5.81	1.03	6.84	6.19
500.00 and up	155	5.01	.49	5.50	6.64
Total/Average	**6,265**	**7.19%**	**3.18%**	**10.37%**	**19.34%**

Source: Inmoo Lee, Scott Lochhead, Jay Ritter, and Quanshui Zhao, "The Costs of Raising Capital," *Journal of Financial Research* 1 (Spring 1996), calculations and updates by the authors.

Table 19.7 clarifies three things regarding debt issues. First, there are substantial economies of scale here. 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.

19.9 RIGHTS

When new shares of common stock are offered to the general public in a seasoned new equity issue, the proportionate 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. This assures each owner of his or her proportionate owner's share.

TABLE 19.7 Average Gross Spreads and Total Direct Costs for Domestic Debt Issues: 1990–2008

PROCEEDS ($ MILLIONS)	NUMBER OF ISSUES	GROSS SPREAD	OTHER DIRECT EXPENSE	TOTAL DIRECT COST	NUMBER OF ISSUES	GROSS SPREAD	OTHER DIRECT EXPENSE	TOTAL DIRECT COST
	CONVERTIBLE BONDS							
	INVESTMENT GRADE				JUNK OR NOT RATED			
2.00–9.99	–	–	–	–	14	6.39%	3.43%	9.82%
10.00–19.99	1	14.12%	1.87%	15.98%	23	5.52	3.09	8.61
20.00–39.99	–	–	–	–	30	4.63	1.67	6.30
40.00–59.99	3	1.92	.51	2.43	35	3.49	1.04	4.54
60.00–79.99	6	1.65	.44	2.09	60	2.79	.62	2.92
80.00–99.99	4	.89	.27	1.16	16	2.30	.62	2.92
100.00–199.99	27	2.22	.33	2.55	82	2.66	.42	3.08
200.00–499.99	27	2.03	.19	2.22	46	2.65	.33	2.99
500.00 and up	11	1.94	.13	2.06	7	2.16	.13	2.29
Total/Average	**79**	**2.15%**	**.29%**	**2.44%**	**313**	**3.31%**	**.98%**	**4.29%**
	STRAIGHT BONDS							
	INVESTMENT GRADE				JUNK OR NOT RATED			
2.00–9.99	2,709	.62%	1.28%	1.90%	1,253	2.77%	2.50%	5.27%
10.00–19.99	2,564	.59	1.17	1.76	836	3.15	1.97	5.12
20.00–39.99	2,400	.63	.74	1.37	290	3.07	1.13	4.20
40.00–59.99	3,146	.40	.52	.92	199	2.93	1.20	4.14
60.00–79.99	792	.58	.38	.96	99	3.12	1.16	4.28
80.00–99.99	385	.66	.29	.96	80	2.73	.93	3.66
100.00–199.99	4,427	.54	.25	.79	522	2.73	.68	3.41
200.00–499.99	3,031	.52	.25	.76	274	2.59	.39	2.98
500.00 and up	1,207	.31	.08	.39	54	2.38	.25	2.63
Total/Average	**20,661**	**.52%**	**.35%**	**.87%**	**3,607**	**2.76%**	**.81%**	**3.57%**

Source: Inmoo Lee, Scott Lochhead, Jay Ritter, and Quanshui Zhao, "The Costs of Raising Capital," *Journal of Financial Research* 1 (Spring 1996), calculations and updates by the authors.

TABLE 19.8
Financial Statement before Rights Offering

NATIONAL POWER COMPANY
Balance Sheet and Income Statement

	Balance Sheet	
Assets	Shareholder Equity	
	Common stock	$10,000,000
	Retained earnings	10,000,000
Total $20,000,000	Total	$20,000,000
	Income Statement	
Earnings before taxes	$ 3,030,303	
Taxes (34%)	1,030,303	
Net income	$ 2,000,000	
Earnings per share	$ 2	
Shares outstanding	1,000,000	
Market price per share	$ 20	
Total market value	$20,000,000	

An issue of common stock to existing stockholders is called a *rights offering*. Here each shareholder is issued an *option* to buy a specified number of new shares from the firm at a specified price within a specified time, after which the rights expire. For example, a firm whose stock is selling at $30 may let current stockholders buy a fixed number of shares at $10 per share within two months. The terms of the option are evidenced by certificates known as *share warrants* or *rights*. Such rights are often traded on securities exchanges or over the counter.

The Mechanics of a Rights Offering

The various considerations confronting a financial manager in a rights offering are illustrated by the situation of the National Power Company, whose initial financial statements are given in Table 19.8.

National Power earns $2 million after taxes and has 1 million shares outstanding. Earnings per share are $2, and the stock sells at 10 times earnings (that is, its price–earnings ratio is 10). The market price of each share is therefore $20. The company plans to raise $5 million of new equity funds by a rights offering.

The process of issuing rights differs from the process of issuing shares of stock for cash. Existing stockholders are notified that they have been given one right for each share of stock they own. Exercise occurs when a shareholder sends payment to the firm's subscription agent (usually a bank) and turns in the required number of rights. Shareholders of National Power will have several choices: (1) subscribe for the full number of entitled shares, (2) order all the rights sold, or (3) do nothing and let the rights expire.

The financial management of National Power must answer the following questions:

1. What price should the existing shareholders be allowed to pay for a share of new stock?
2. How many rights will be required to purchase one share of stock?
3. What effect will the rights offering have on the existing price of the stock?

Subscription Price

In a rights offering, the **subscription price** is the price that existing shareholders are allowed to pay for a share of stock. A rational shareholder will subscribe to the rights offering only if the subscription price is below the market price of the stock on the offer's

expiration date. For example, if the stock price at expiration is $13 and the subscription price is $15, no rational shareholder will subscribe. Why pay $15 for something worth $13? National Power chooses a price of $10, which is well below the current market price of $20. As long as the market price does not fall by half before expiration, the rights offering will succeed. page 606

Number of Rights Needed to Purchase a Share

National Power wants to raise $5 million in new equity. With a subscription price of $10, it must issue 500,000 new shares. This can be determined by dividing the total amount to be raised by the subscription price:

$$\text{Number of new shares} = \frac{\text{Funds to be raised}}{\text{Subscription price}} = \frac{\$5{,}000{,}000}{\$10} = 500{,}000 \text{ shares}$$

Because stockholders typically get one right for each share of stock they own, 1 million rights will be issued by National Power. To determine how many rights must be exercised to get one share of stock, we can divide the number of existing outstanding shares of stock by the number of new shares:

$$\text{Number of rights needed to buy a share of stock} = \frac{\text{"Old" shares}}{\text{"New" shares}} = \frac{1{,}000{,}000}{500{,}000} = 2 \text{ rights}$$

Thus a shareholder must 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. If National Power lowers the subscription price, it must issue more new shares to raise $5 million in new equity. Several alternatives appear 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

Effect of Rights Offering on Price of Stock

Rights clearly have value. In the case of National Power, the right to be able to buy a share of stock worth $20 for $10 is valuable.

Suppose a shareholder of National Power owns two shares of stock just before the rights offering. This situation is depicted in Table 19.9. Initially, the price of National Power is $20 per share, so the shareholder's total holding is worth 2 × $20 = $40. The stockholder who has two shares will receive two rights. The National Power rights offer gives shareholders with two rights the opportunity to purchase one additional share for $10. The holding of the shareholder who exercises these rights and

buys the new share would increase to three shares. The value of the new holding would be $40 + 10 = $50 (the $40 initial value plus the $10 paid to the company). Because the stockholder now holds three shares, the price per share would drop to $50/3 = $16.67 (rounded to two decimal places).

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.

TABLE 19.9
The Value to the Individual Shareholder of National Power's Rights

	THE 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 share	2
After offer	
Number of shares	3
Value of holding	$50
Share price	$16.67
Value of a right	
Old price − New price	$20 − 16.67 = $3.33
$\frac{\text{New price − Subscription price}}{\text{Number of rights for a share}}$	($16.67 − 10)/2 = $3.33

Just as we learned of an ex-dividend date in the previous chapter, there is an **ex-rights date** here. An individual buying the stock prior to the ex-rights date will receive the rights when they are distributed. An individual buying the stock on or after the ex-rights date will not receive the rights. In our example, the price of the stock prior to the ex-rights date is $20. An individual buying on or after the ex-rights date is not entitled to the rights. The price on or after the ex-rights date is $16.67.

Table 19.10 shows what happens to National Power. If all shareholders exercise their rights, the number of shares will increase to 1.5 million and the value of the firm will increase to $25 million. After the rights offering the value of each share will drop to $16.67 (= $25 million/1.5 million).

An investor holding no shares of National Power stock who wants to subscribe to the new issue can do so by buying rights. An outside investor buying two rights will pay $3.33 × 2 = $6.67 (to account for previous rounding). If the investor exercises the rights at a subscription cost of $10, the total cost would be $10 + 6.67 = $16.67. In return for this expenditure, the investor will receive a share of the new stock, which is worth $16.67.

TABLE 19.10
National Power Company Rights Offering

	THE COMPANY
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 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
	or ($16.67 − 10)/2 = $3.33

Of course, outside investors can also buy National Power stock directly at $16.67 per share. In an efficient stock market it will make no difference whether new stock is obtained via rights or via direct purchase.

Effects on Shareholders

Shareholders can exercise their rights or sell them. In either case, the stockholder will neither win nor lose by the rights offering. The hypothetical holder of two shares of National Power has a portfolio worth $40. On the one hand, if the shareholder exercises the rights, she ends up with three shares worth a total of $50. In other words, by spending $10, the investor increases the value of the holding by $10, which means that she is neither better nor worse off.

On the other hand, a shareholder who sells the two rights for $3.33 each obtains $3.33 × 2 = $6.67 in cash. Because the two shares are each worth $16.67, the holdings are valued at

$$\begin{aligned} \text{Shares} &= 2 \times \$16.67 = \$33.33 \\ \text{Sold rights} &= 2 \times \$\ 3.33 = \$\ 6.67 \\ \text{Total} &= \$40.00 \end{aligned}$$

The new $33.33 market value plus $6.67 in cash is exactly the same as the original holding of $40. Thus, stockholders can neither lose nor gain from exercising or selling rights.

It is obvious that the new market price of the firm's stock will be lower after the rights offering than it was before the rights offering. The lower the subscription price, the greater the price decline of a rights offering. However, our analysis shows that the stockholders have suffered no loss because of the rights offering.

The Underwriting Arrangements

Undersubscription can occur if investors throw away rights or if bad news causes the market price of the stock to fall below the subscription price. To ensure against these possibilities, rights offerings are typically arranged by **standby underwriting**. Here the underwriter makes a firm commitment to purchase the unsubscribed portion of the issue at the subscription price less a take-up fee. The underwriter usually receives a **standby fee** as compensation for this risk-bearing function.

In practice, the subscription price is usually set well below the current market price, making the probability of a rights failure quite small. Though a small percentage (less than 10 percent) of shareholders fail to exercise valuable rights, shareholders are usually allowed to purchase unsubscribed shares at the subscription price. This **oversubscription privilege** makes it unlikely that the corporate issuer would need to turn to its underwriter for help.

The Rights Puzzle

If corporate executives are rational, they will raise equity in the cheapest manner. However, the evidence on issuance costs suggests that issues of pure rights should dominate. Surprisingly, almost all new equity issues in the United States are sold without rights. On the other hand, rights offerings are

very significant around the world. This is generally viewed as an anomaly in the finance profession, though a few explanations have been advanced.

The arguments include: (a) The proceeds of underwritten issues are available sooner than are the proceeds from a rights offer; (b) underwriters provide a wider distribution of ownership than would be possible with a rights offering; (c) consulting advice from investment bankers may be beneficial; (d) stockholders find exercising rights a nuisance; (e) the risk that the market price might fall below the subscription price is significant and; (f) in direct underwriting, the underwriter "certifies" that the offering price is consistent with the true value of the issue.

19.10 DILUTION

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 19.11, 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.

TABLE 19.11
New Issues and Dilution: The Case of Upper States Manufacturing

		AFTER TAKING ON NEW PROJECT	
	INITIAL	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 (*B*)	$10	$8.57	$8.57
Market value	$5,000,000	$6,000,000	$8,000,000
Market price (P)	$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/*P*	.20	.20	.20
P/EPS	5	5	5
P/*B*	.5	.5	.67
Project cost $2,000,000		NPV = −$1,000,000	NPV = $1,000,000

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).

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%. 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 × 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 × \$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 × \$.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 price decreased is not obvious. We discuss this next.

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 19.11, 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 19.11 (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) rise to \$1.14 per share × 1.4 million shares = \$1.6 million. Finally, ROE will rise to \$1.6 million/12 million = 13.33%. page 611

19.11 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 very similar to term loans except that the maturities are longer.

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

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.
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 often higher than those on an equivalent public issue. This difference may reflect 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.

19.12 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. In February 2016, JPMorgan Chase & Co. announced a shelf registration to sell up to \$125 billion of

debt, preferred stock, common stock, depositary shares, units, and warrants. According to the registration documents filed by the company, the proceeds were to be used for future acquisitions of other businesses, assets, or securities.