CHAPTER 5

The Stock Market

On May 17, 1792, a group of commodity brokers met and signed the now famous Buttonwood Tree Agreement, thereby establishing the forerunner of what soon became the New York Stock Exchange. Today, the NYSE is the world's largest and best known stock exchange. In 1998, the NYSE transacted more than $7 trillion in stock trades representing over 150 billion shares. Established in 1971, and less well known, Nasdaq executes trades for a similar number of stock shares. Together, the NYSE and Nasdaq account for the majority of stock trading in the United States.

With this chapter, we begin in earnest our study of stock markets. This chapter presents a "big picture" overview of who owns stocks, how a stock exchange works, and how to read and understand stock market information reported in the financial press. A good place to start out is by looking at stock ownership.

5.1 Who Owns Stocks?

If you invest in common stock, you will find yourself in generally good company. More than one in every three adult Americans owns stock shares directly, or owns them indirectly through a defined contribution pension fund or stock mutual fund. Interestingly, only about 38 percent of all stockholders in 1992 had brokerage accounts, attesting to the importance of mutual funds and defined contribution pension funds. Stock ownership has become increasingly democratic in recent decades. For example, in 1962 the wealthiest 2.5 percent of American households owned 75 percent of all

publicly traded stock. In contrast, by 1992 the wealthiest 18 percent of households owned less than 50 percent of all publicly traded stock.[1]

While the number of individual investors owning stock has increased in recent decades, the proportion of all outstanding stock shares held directly by all individuals has actually declined. For example, individual investors held about 50 percent of the then $3.2 trillion total value of all publicly traded U.S. stocks in 1992, down from 84 percent in 1965. However, these percentages exclude mutual funds, which in 1992 held almost 9 percent of all U.S. stocks.

Since most (but not all) stock mutual fund shares are owned by individual investors, it is appropriate to add in mutual fund shares held by individuals. With this adjustment, individuals held about 56 percent of all U.S. stocks in 1992. The remaining 44 percent of all stock shares was held predominantly by institutional investors, like pension funds or insurance companies, along with a relatively small portion held by foreign investors.

Many individuals also hold a substantial investment in the stock market indirectly through one or more financial institutions, such as pension funds and insurance companies. It is very likely that now, or in the near future, you will participate in a pension plan sponsored by your employer. Indeed, pension funds are the dominant type of institutional investor. In 1992, pension funds held $4.4 trillion of funds invested in stocks, bonds, real estate, and other assets. The next three largest categories of institutional investors were insurance companies with $1.6 trillion, investment firms such as mutual funds with $1.4 trillion, and bank trusts with $.9 trillion. While most of this total of over $8 trillion of institutional funds was invested in real estate, bonds, and other assets, about $1.5 trillion was invested in common stocks. As we said, you are in generally good company.

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[1] *Shareownership 1995*, New York Stock Exchange

CHECK THIS

5.1a Do individuals own a significant portion of publicly traded common stocks in the United States?

5.1b Has the proportion of publicly traded common stocks in the U.S. held by individuals changed through time?

5.1c Has ownership of publicly traded common stocks in the U.S. become more or less concentrated among wealthy individuals in recent decades?

5.2 The Primary and Secondary Stock Markets

The stock market consists of a **primary market** and a **secondary market**. In the primary, or new issue market, shares of stock are first brought to the market and sold to investors. In the secondary market, existing shares are traded among investors.

(*marg. def.* **primary market** The market in which new securities are originally sold to investors)

(*marg. def.* **secondary market** The market in which previously issued securities trade among investors.)

In the primary market, companies issue new securities to raise money. In the secondary market, investors are constantly appraising the values of companies by buying and selling shares previously issued by these companies. We next discuss the operation of the primary market for common stocks, and then we turn our attention to the secondary market for stocks.

The Primary Market for Common Stock

The primary market for common stock is how new securities are first brought to market. It is best known as the market for **initial public offerings** (**IPO**s). An IPO occurs when a company offers stock for sale to the public for the first time. Typically, the company is small and growing, and it needs to raise capital for further expansion.

> (*marg. def.* **initial public offering** (**IPO**) An initial public offer occurs when a company offers stock for sale to the public for the first time.)

To illustrate how an IPO occurs, suppose that several years ago you started a software company. Your company was initially set up as a privately held corporation with 100,000 shares of stock, all sold for one dollar per share. The reason your company is privately held is that shares were not offered for sale to the general public. Instead, you bought 50,000 shares for yourself and sold the remaining 50,000 shares to a few supportive friends and relatives.

Fortunately, your company has prospered beyond all expectations. However, company growth is now hampered by a lack of capital. At an informal stockholders' meeting, it is agreed to take the company public. Not really knowing how to do this, you consult your accountant, who recommends an investment banking firm. An **investment banking firm**, among other things, specializes in arranging financing for companies by finding investors to buy newly issued securities.

> (*marg. def.* **investment banking firm** A firm specializing in arranging financing for companies.)

After lengthy negotiations, including an examination of your company's current financial condition and plans for future growth, your investment banker suggests an issue of 4 million shares of common stock. Two million shares will be distributed to the original stockholders (you and your

original investors) in exchange for their old shares. These 2 million shares distributed to the original stockholders assure that effective control of the corporation will remain in their hands.

After much haggling, your investment banker agrees to **underwrite** the stock issue by purchasing the other 2 million shares from your company for $10 per share. The net effect of this transaction is that you have sold half the company to the underwriter for $20 million. The proceeds from the sale will allow your company to construct its own headquarters building and double its staff of programmers and sales consultants.

> (*marg. def.* **underwrite** To assume the risk of buying newly issued securities from a company and reselling them to investors.)

Your investment banker will not keep the 2 million shares but instead will resell them in the primary market. She thinks the stock can probably be sold for $12 per share in an IPO. The difference between the $12 the underwriter sells the stock for and the $10 per share you received is called the underwriter spread and is a basic part of the underwriter's compensation.

> (*marg. def.* **fixed commitment** Underwriting arrangement in which the investment banker guarantees the firm a fixed amount for its securities.)

> (*marg. def.* **best effort** Arrangement in which the investment banker does not guarantee the firm a fixed amount for its securities.)

This agreement, under which the underwriter pays the firm a fixed amount, is called a **fixed commitment**. With a fixed (or firm) commitment, the underwriter assumes the risk that investors cannot be persuaded to buy the stock at a price above $10 per share. The other major type of arrangement, called a **best effort**, is just that: Here, the investment banker promises to get the best price possible, but does not guarantee the company a specific amount. Strictly speaking, a best-effort

arrangement is therefore *not* underwritten, but the phrase “best-effort underwriting” is often used nonetheless.

As is common with an IPO, some restrictions are imposed on you as part of the underwriting contract. Most important, you and the other original stockholders agree not to sell any of your personal stockholdings for one year after the underwriting. This ties most of your wealth to the company's success and makes selling the stock to investors a more credible undertaking by the underwriter. Essentially, investors are assured that you will be working hard to expand the company and increase its earnings.

> (*marg. def.* **Securities and Exchange Commission (SEC)** Federal regulatory agency charged with enforcing U.S. securities laws and regulations.)

After the underwriting terms are decided, much of your time will be devoted to the mechanics of the offering. In particular, before shares can be sold to the public, the issue must obtain an approved registration with the **Securities and Exchange Commission** (**SEC**). The SEC is the federal regulatory agency charged with regulating U.S. securities markets.

> (*marg. def.* **prospectus** Document prepared as part of a security offering detailing information about a company's financial position, its operations, and investment plans for the future.)

SEC regulations governing IPOs are especially strict. To gain SEC approval, you must prepare a **prospectus**, normally with the help of outside accounting, auditing, and legal experts. The prospectus contains a detailed account of your company's financial position, its operations, and investment plans for the future. Once the prospectus is prepared, it is submitted to the SEC for approval. The SEC makes no judgment about the quality of your company or the value of your stock.

Instead, it only checks to make sure that various rules regarding full disclosure and other issues have been satisfied.

(*marg. def.* **red herring** A preliminary prospectus not yet approved by the SEC.)

While awaiting SEC approval, your investment banker will circulate a preliminary prospectus among investors to generate interest in the stock offering. This document is commonly called a **red herring** because the cover page is stamped in red ink indicating that final approval for the stock issue has not yet been obtained. The preliminary prospectus is essentially complete except for the final offering price and a few other pieces of information. These are not set because market conditions might change while SEC approval is being sought. Upon obtaining SEC approval, the prospectus will be updated and completed, and your underwriter can begin selling your company's shares to investors.

Along the way, the underwriter will usually place announcements in newspapers indicating how to obtain a prospectus. Because of their appearance, these announcements are known as tombstones, and they are a familiar sight in the financial press. A sample tombstone as it appeared in the *Wall Street Journal* is shown in Figure 5.1.

Figure 5.1 about here

As Figure 5.1 shows, a typical tombstone states the name of the company, some information about the stock issue being sold, and the underwriters for the issue. All but very small issues generally involve more than one underwriter and the names of the participating underwriters are usually listed at the bottom of the tombstone. Those listed first are the “lead” underwriters, who are primarily responsible for managing the issue process.

Initial public stock offerings vary in size a great deal. The 2 million share issue for your hypothetical software company discussed above is a fairly small issue. The largest public offering in the United States was the 1998 sale of shares in Conoco, an oil subsidiary of DuPont. The new shares were offered at $23 per share to create a $4.4 billion public offering. The nearby Investment Updates box contains the *Wall Street Journal* news story for the issue announcement, which includes a list of the largest IPOs in recent years.

Investment Updates: Largest IPOs

The Secondary Market for Common Stock

In the secondary market for common stock, investors buy and sell shares with other investors. If you think of the primary market as the new-car showroom at an automotive dealer, where cars are first sold to the public, then the secondary market is just the used-car lot.

Secondary market stock trading among investors is directed through three channels. An investor made trade:

1. directly with other investors,
2. indirectly through a broker who arranges transactions for others, or
3. directly with a dealer who buys and sells securities from inventory.

As we discussed in Chapter 2, for individual investors, almost all common stock transactions are made through a broker. However, large institutional investors, such as pension funds and mutual funds, trade through both brokers and dealers, and also trade directly with other institutional investors.

Dealers and Brokers

Since most securities transactions involve dealers and brokers, it is important that you understand exactly what the terms mean. A **dealer** maintains an inventory and stands ready to buy and sell at any time. By contrast, a **broker** brings buyers and sellers together but does not maintain an inventory. Thus, when we speak of used-car dealers and real estate brokers, we recognize that the used-car dealer maintains an inventory, whereas the real estate broker normally does not.

(*marg. def.* **broker** An intermediary who arranges security transactions among investors.)

(*marg. def.* **dealer** A trader who buys and sells securities from inventory.)

In the securities markets, a dealer stands ready to buy securities from investors wishing to sell them and sell securities to investors wishing to buy them. An important part of the dealer function involves maintaining an inventory to accommodate temporary buy and sell order imbalances. The price a dealer is willing to pay is called the **bid price**. The price at which a dealer will sell is called the **ask price** (sometimes called the offered or offering price). The difference between the bid and ask prices is called the **spread**.

(*marg. def.* **bid price** The price a dealer is willing to pay.)

(*marg. def.* **ask price** The price at which a dealer is willing to sell. Also called the *offer* or *offering* price.)

(*marg. def.* **spread** The difference between the bid and ask prices.)

A dealer attempts to profit by selling securities at a higher price than the average price paid for them. Of course, this is a goal for all investors, but the distinguishing characteristic of securities dealers is that they hold securities in inventory only until the first opportunity to resell them. Essentially, trading from inventory is their business.

Dealers exist in all areas of the economy of course, not just in the stock markets. For example, your local university bookstore is both a primary- and secondary-market textbook dealer. If you buy a new book, then this is a primary-market transaction. If you buy a used book, this is a secondary-market transaction, and you pay the store's ask price. If you sell the book back, you receive the store's bid price, typically half the ask price. The bookstore's spread is the difference between the bid and ask prices.

In contrast, a securities broker arranges transactions between investors, matching investors wishing to buy securities with investors wishing to sell securities. Brokers may match investors with other investors, investors with dealers, and sometimes even dealers with dealers. The distinctive characteristic of security brokers is that they do not buy or sell securities for their own account. Facilitating trades by others is their business.

Most common stock trading is directed through an organized stock exchange or a trading network. Whether a stock exchange or a trading network, the goal is to match investors wishing to buy stocks with investors wishing to sell stocks. The largest, most active organized stock exchange in the United States is the New York Stock Exchange (NYSE). Second and third in size are the Chicago Stock Exchange (CHX) and the American Stock Exchange (AMEX), respectively. These are followed by four regional exchanges: the Boston Stock Exchange (BSE), the Cincinnati Stock Exchange (CSE, which is actually located in Chicago!), the Pacific Stock Exchange (PSE) in Los Angeles, and the Philadelphia Stock Exchange (PHLX). The major competitor to the organized stock exchanges is the vast trading network known as Nasdaq. In 1998, Nasdaq and the AMEX merged to form a single company, but the two organizations retained their original features. We next discuss the organization of the NYSE, and then we turn to a discussion of Nasdaq.

CHECK THIS

5.2a Is an IPO a primary- or secondary-market transaction?

5.2b Which is bigger, the bid price or the ask price? Why?

5.2c What is the difference between a securities broker and a securities dealer?

5.3 The New York Stock Exchange

The New York Stock Exchange (NYSE, pronounced "Ny-see"), popularly known as the Big Board, celebrated its bicentennial in 1992. It has occupied its current building on Wall Street since the turn of the century, and today it is a not-for-profit New York State corporation. You may be surprised to read that a stock exchange could be a not-for-profit corporation. Actually, this is not unusual since a stock exchange is owned by its members and exists only to provide facilities for exchange members to conduct business. In this capacity, the NYSE operates as a cooperative on a not-for-profit basis. However, NYSE members conducting business on the exchange generally represent securities firms and brokerage companies that all most definitely operate on a for-profit basis.

NYSE Membership

The NYSE has 1,366 exchange **members**, who are said to own "seats" on the exchange. Technically, a seat is the personal property of the individual purchasing it. Typically, however, the individual who is the registered owner of a seat is an employee of a securities firm such as Merrill Lynch. The securities firm has actually paid for the seat and is effectively the owner. The firm is said

to be a member organization (or member firm), and some member organizations own numerous seats on the exchange in this way.

(*marg. def.* **NYSE member** The owner of a seat on the NYSE.)

Exchange seat owners can buy and sell securities on the exchange floor without paying commissions. For this and other reasons, exchange seats are valuable assets and are regularly bought and sold. Interestingly, prior to 1986, the highest seat price paid was $625,000 just before the 1929 market crash. Since then, the lowest seat price paid was $55,000 in 1977. As it turns out, that was a very good price for the buyer. In 1999, the price of a seat on the NYSE was about $2 million. It could be even higher by the time you read this.

In addition to paying the price of a seat, a prospective NYSE member must be sponsored by two current members and possess a clean record with regard to security laws violations or felony convictions of any kind. However, it is not necessary to actually own a seat to trade commission-free on the exchange floor, since seats can be leased. Leasing is common and about half of all NYSE seats are leased. Even if you only wish to lease a seat on the exchange, you must pass the same close scrutiny as someone wishing to buy a seat.

Exchange members elect 24 members of a 27-member board of directors. The three additional board members — the chairman of the board, the executive vice chairman, and the president, are ex officio members selected by the board. “Ex officio” means that they are members of the board of directors by virtue of their positions as appointed professional managers of the exchange. While the board sets exchange policy, actual management is performed by a professional staff. Technically, NYSE members collectively own the exchange, but the NYSE is organized to insulate professional staff from undue pressure from exchange members.

Types of Members

The largest number of NYSE members are registered as **commission brokers**. The business of a commission broker is to execute customer orders to buy and sell stocks. A commission broker's primary responsibility to customers is to get the best possible prices for their orders. Their number varies, but about 500 NYSE members are commission brokers.

> (*marg. def.* **commission brokers** Agents who execute customer orders to buy and sell stock transmitted to the exchange floor. Typically, they are employees of NYSE member firms.)

NYSE commission brokers typically are employees of brokerage companies that are NYSE member firms. Member firms operating as brokerage companies accept customer orders to buy and sell securities and relay these orders to their commission brokers for execution. Member firm activities represent the most vital functions of the NYSE, simply because their business is the original reason the exchange exists.

> (*mar. def.* **specialist** NYSE member acting as a dealer on the exchange floor, often called a market maker.)

Second in number of NYSE members are **specialists**, so named because each acts as an assigned dealer for a small set of securities. With a few exceptions, each security listed for trading on the NYSE is assigned to a single specialist. Specialists are also called market makers because they are obligated to maintain a fair and orderly market for the securities assigned to them.

As market makers, specialists post bid prices and ask prices for securities assigned to them. The bid price is the price at which a specialist is obligated to buy a security from a seller, and an ask price is the price at which a specialist is obligated to sell a security to a buyer. As we have discussed

elsewhere, the difference between the bid price and the ask price is called the bid-ask spread, or simply the spread.

Specialists make a market by standing ready to buy at bid prices and sell at ask prices when there is a temporary disparity between the flow of buy and sell orders for a security. In this capacity, they act as dealers for their own accounts. In so doing, they provide liquidity to the market. Their function is vital, since the work of commission brokers would be quite difficult without the specialists. As we discuss in the next section, specialists also act as brokers.

About 400 NYSE members are specialists. In 1998, all NYSE specialists belonged to one of 30 specialist firms. However, almost half of all NYSE trading is concentrated in stocks managed by the three largest specialist firms. These three largest specialist firms, the number of stocks for which they act as specialists, and their percentage of NYSE trading volume are shown immediately below.

Specialist Firm	Number. of Stocks	Dollar Volume (%)
LaBranche/Wagner Stott	442	21.8
JJC Spec./Merrill Lynch	340	13.2
Spear, Leeds, & Kellogg	286	13.6

(*marg. def.* **floor brokers** NYSE members who execute orders for commission brokers on a fee basis; sometimes called two-dollar brokers.)

Third in number of exchange members are **floor brokers**. Floor brokers are often used by commission brokers when they are too busy to handle certain orders themselves. Instead, they will delegate some orders to floor brokers for execution. Floor brokers are sometimes called two-dollar brokers, a name earned at a time when the standard fee for their service was only two dollars.

Today the fee is variable, and certainly higher than two dollars. Floor brokers do well when stock trading volume is high, but with low volume they may be inactive for lengthy periods.

In recent years, floor brokers have become less important on the exchange floor because of the efficient **SuperDOT** system (the "DOT" stands for designated order turnaround), which allows orders to be transmitted electronically directly to the specialist. SuperDOT trading now accounts for a substantial percentage of all trading on the NYSE, particularly on small orders.

> (*marg. def.* **SuperDOT** Electronic NYSE system allowing orders to be transmitted directly to specialists for immediate execution.)

Finally, a small number of NYSE members are **floor traders** who independently trade for their own accounts. Floor traders try to anticipate temporary price fluctuations and profit from them by buying low and selling high. In recent decades, the number of floor traders has declined substantially, suggesting that it has become increasingly difficult to profit from short-term trading on the exchange floor.

> (*marg. def.* **floor traders** NYSE members who trade for their own accounts, trying to anticipate and profit from temporary price fluctuations.)

NYSE-Listed Stocks

A company is said to be "listed" on the NYSE if its stock is traded there. In late 1998, stocks from 3,090 companies were listed on the "Big Board," as the NYSE is sometimes called, representing 237 billion shares with a market value of $9 trillion. This total includes many large companies so well known that we easily recognize them by their initials; for example, IBM, AT&T, GE, and GM. This total also includes many companies that are not so readily recognized. For

example, relatively few would instantly recognize AEP as American Electric Power, but AEX might be recognized as American Express.

Companies that wish to have their stock listed for trading on the Big Board must apply for the privilege. If the application is approved, the company must pay an initial listing fee. In 1998, this fee was $36,800, plus a per-share charge that ranged from $14,750 per million shares for the first 2 million shares, to $1,900 for each million shares above 300 million. In addition to an initial listing fee, the NYSE assesses an annual listing fee. In 1998, the annual listing fee was $1,650 per million for the first two million shares and $830 for each additional million shares. Thus, a small company with 2 million shares outstanding would pay an initial listing fee of $66,300, plus annual listing fees of $3,300.

The NYSE has minimum requirements for companies wishing to apply for listing on the Big Board. Although the requirements might change from time to time, the normal minimum requirements in effect in 1998 included:

1. The company's total number of shareholders must be at least 2,200, and stock trading in the previous months must have been at least 100,000 shares a month on average.

2. At least 1.1 million stock shares must be held in public hands.

3. Publicly held shares must have at least $40 million in market value.

4. The company must have annual earnings of $2.5 million before taxes in the most recent year and $2 million pretax earnings in each of the preceding two years.

5. The company must have net tangible assets of $40 million.

In practice, most companies with stock listed on the NYSE easily exceed these minimum listing requirements.

CHECK THIS

5.3a What are the four types of members of the New York Stock Exchange?

5.3b Which NYSE member type is the most numerous? Which type is the second most numerous?

5.3c NYSE provides more details on listing requirements at its website (www.nyse.com).

5.4 Operation of the New York Stock Exchange

Now that we have a basic idea of how the NYSE is organized and who the major players are, we turn to the question of how trading actually takes place. Fundamentally, the business of the NYSE is to attract and process *order flow* — the flow of customer orders to buy and sell stocks. Customers of the NYSE are the millions of individual investors and tens of thousands of institutional investors who place their orders to buy and sell NYSE-listed stock shares with member-firm brokerage operations.

The NYSE has been quite successful in attracting order flow. In 1998, the average stock trading volume on the NYSE was close to 700 million shares per day. About one-third of all NYSE stock trading volume is attributable to individual investors, and almost half is derived from institutional investors. The remainder represents NYSE-member trading, which is largely attributed to specialists acting as market makers.

NYSE Floor Activity

Quite likely you have seen film footage of the NYSE trading floor on television, or you may have visited the NYSE and viewed exchange floor activity from the visitors's gallery (it's worth the trip). Either way, you saw a big room, about the size of a small basketball gym. This big room is called "the big room." There are two other, smaller rooms that you normally don't see. One is called "the garage" because that is literally what it was before it was taken over for securities trading, and the other is called the "blue room" because, well, the room is painted blue.

On the floor of the exchange are a number of stations, each with a roughly figure-eight shape. These stations have multiple counters with numerous computer terminal screens above and on the sides. People operate behind and in front of the counters in relatively stationary positions.

Other people move around on the exchange floor, frequently returning to the many telephone booths positioned along exchange walls. In all, you may have been reminded of worker ants moving around an ant colony. It is natural to wonder: What are all those people doing down there (and why are so many wearing funny-looking coats)?

> (*marg. def.* **specialist's post** Fixed place on the exchange floor where the specialist operates.)

As an overview of exchange floor activity, here is a quick look at what goes on. Each of the counters at the figure-eight shaped stations is a **specialist's post**. Specialists normally operate in front of their posts to monitor and manage trading in the stocks assigned to them. Clerical employees working for the specialists operate behind the counters. Moving from the many telephone booths out to the exchange floor and back again are swarms of commission brokers, receiving relayed customer

orders, walking out to specialist posts where the orders can be executed, and returning to confirm order executions and receive new customer orders.

To better understand activity on the NYSE trading floor, imagine yourself as a commission broker. Your phone clerk has just handed you an order to sell 3,000 shares of VO (the ticker symbol for Seagrams common stock) for a customer of the brokerage company that employs you. The order is a **market order**, meaning that the customer wants to sell the stock at the best possible price as soon as possible. You immediately walk (running violates exchange rules) to the specialist's post where VO stock is traded.

> (*marg. def.* **market order** A customer order to buy or sell securities marked for immediate execution at the current market price.)

Upon approaching the specialist's post where VO is traded, you check the terminal screen for information on the current market price for VO stock. The screen reveals that the last executed trade for VO was at 70-5/8, and that the specialist is bidding 70-1/2 per share. You could immediately sell to the specialist at 70-1/2, but that would be too easy.

Instead, as the customer's representative, you are obligated to get the best possible price. It is your job to “work” the order, and your job depends on providing satisfactory order execution service. So you look around for another broker who represents a customer who wants to buy VO stock. Luckily, you quickly find another broker at the specialist's post with a market order to buy 3,000 shares of VO. Noticing that the dealer is asking 70-3/4 per share, you both agree to execute your orders with each other at a price of 70-5/8. This price, exactly halfway between the specialist's bid and ask prices, saves each of your customers $\$1/8 \times 3{,}000 = \$375$ compared to the specialist’s prices.

In a trade of this type, in which one commission broker buys from another, the specialist acts only as a broker assisting in matching buy orders and sell orders. On an actively traded stock, there can be many commission brokers buying and selling. In such cases, trading is said to occur "in the crowd." Thus, the specialist functions as a broker as long as there are buyers and sellers available. The specialist steps in as a dealer only when necessary to fill an order that would otherwise go unfilled.

In reality, not all orders are executed so easily. For example, suppose you are unable to quickly find another broker with an order to buy 3,000 shares of VO. Since you have a market order, you may have no choice but to sell to the specialist at the bid price of 70-1/2. In this case, the need to execute an order quickly takes priority, and the specialist provides the necessary liquidity to allow immediate order execution.

In this situation, the specialist is often able to help commission brokers by agreeing to “stop” the stock. By stopping stock for a sell order, the specialist agrees to try to help you get a better price, while also guaranteeing a minimum price. For your sell order, the specialist might guarantee a minimum price of 70-1/2 but try to get a better price, say, 70-5/8. So agreed, you leave the order with the specialist. If the next offer to buy VO is at a price of 70-5/8, the specialist will fill your order at that price. But if no better offer appears forthcoming, the specialist will execute the order at the guaranteed price of 70-1/2 — if necessary, from the specialist's own inventory.

Stopping stock is also a goodwill gesture. The NYSE places great emphasis on the quality of performance by specialists, which is evaluated regularly through surveys of commission brokers's satisfaction. Specialists are expected to assist brokers in getting the best prices for customer orders, to provide liquidity to the market, and to maintain an orderly market for all securities assigned to them. Stopping stock helps accomplish these objectives.

Special Order Types

Many orders are transmitted to the NYSE floor as **limit orders**. A limit order is an order to buy or sell stock, where the customer specifies a maximum price he is willing to pay in the case of a buy order, or a minimum price he will accept in the case of a sell order. For example, suppose that as a NYSE commission broker, you receive a limit order to sell 3,000 shares of VO stock at 70-3/4. This means that the customer is not willing to accept any price below 70-3/4 per share, even if it means missing the trade.

> (*marg. def.* **limit order** Customer order to buy or sell securities with a specified "limit" price. The order can be executed only at the limit price or a better price.)

One strategy for handling limit orders is to hold onto the order and frequently check for potential buyers at the specialist post for VO stock. However, this is unnecessary because you can leave a limit order with the specialist. As a service to brokers, NYSE specialists display unfilled limit orders on the terminal screens at their posts for all approaching brokers to see. If another broker wants to buy VO at 70-3/4, the specialist will execute the sale for you. This service saves considerable time and energy for busy commission brokers. Indeed, monitoring and executing unfilled limit orders is a very important function of the NYSE specialist.

> (*marg. def.* **stop order** Customer order to buy or sell securities when a preset "stop" price is reached.)

A **stop order** may appear similar to a limit order, but there is an important difference. With a stop order, the customer specifies a "stop" price. This stop price serves as a trigger point. No trade can occur until the stock price reaches this stop price. When the stock price reaches the stop price, the stop order is immediately converted into a market order. Since the order is now a market order, the customer may get a price that is better or worse than the stop price. Thus, the stop price only

serves as a trigger point for conversion into a market order. Unlike a limit price, the stop price places no limit on the price at which a trade can occur. Once converted to a market order, the trade is executed just like any other market order.

As an example of a stop order, suppose that you receive a customer's stop order to sell 3,000 shares of VO stock at a stop price of 71-1/2. This means that the customer does not want the order executed until the stock price reaches 71-1/2 per share, at which time the order is immediately converted to a market order. As a market order, the broker may then execute at the best price available, which may or may not be 71-1/2 per share. The stop order in this example is called a stop-gain order, because the stop price that triggers a market order to sell is *above* the current stock price.

Another, and more common type of stop order, is the stop-loss order. A stop-loss order is an order to sell shares if the stock price reaches a stop price *below* the current stock price. For example, suppose that you receive a customer's stop order to sell 3,000 shares of VO stock at a stop price of 69-1/2. This means that the customer does not want the order executed until the stock price reaches 69-1/2 per share, at which time the order is immediately converted into a market order. As a market order, you may then execute at the best price available, which may or may not be 69-1/2 per share. Notice that a stop order is completely different from the specialist's stopping the stock discussed earlier.

In addition to the stop-loss and stop-gain orders just described, there are two more basic stop order types. These are start-gain and start-loss orders, which are stop orders to *buy* stock shares when the stock price reaches the preset stop price. For example, suppose you receive a customer's stop order to buy 2,500 shares of VO stock at a stop price of 72. Since the market is at 70-1/2 bid

and 70-3/4 ask, this is a start-gain order because the stop price is *above* the current market price. Likewise, if you receive a stop order to buy VO stock at a stop price of 68, this is a start-loss order because the stop price is *below* the current market price. Table 5.1 summarizes the characteristics of limit and stop orders.

Table 5.1 Stock Market Order Types

Order type	Buy	Sell
Market order	Buy at best price available for immediate execution.	Sell at best price available for immediate execution.
Limit order	Buy at best price available, but not more than the preset limit price. Forgo purchase if limit is not met.	Sell at best price available, but not less than the preset limit price. Forgo sale if limit is not met.
Stop orders	Start-gain: convert to a market order to buy when the stock price crosses the stop price from below.	Stop-gain: convert to a market order to sell when the stock price crosses the stop price from below.
	Start-loss: convert to a market order to buy when the stock price crosses the stop price from above.	Stop-loss: convert to a market order to sell when the stock price crosses the stop price from above.
Stop-limit orders	Start-limit gain: convert to a limit order to buy when the stock price crosses the stop price from below.	Stop-limit gain: convert to a limit order to sell when the stock price crosses the stop price from below.
	Start-limit loss: convert to a limit order to buy when the stock price crosses the stop price from above.	Stop-limit loss: convert to a limit order to sell when the stock price crosses the stop price from above.

A limit price can be attached to a stop order to create a stop-limit order. This is different from a simple stop order in that once the stock price reaches the preset stop price the order is converted

into a limit order. By contrast, a simple stop order is converted into a market order. For example, suppose you receive a customer's stop order to buy 2,500 shares of VO stock at a stop price of 71-1/2 with a limit of 72. When the stock price reaches 71-1/2, the order is converted into a limit order with a limit price of 72. At this point, the limit order is just like any other limit order.

Another type of order that requires special attention is the short-sale order. As explained in Chapter 2, a short sale involves borrowing stock shares and then selling the borrowed shares in the hope of buying them back later at a lower price. Short-sale loans are normally arranged through the customer's broker. New York Stock Exchange rules require that when shares are sold as part of a short-sale transaction, the order must be marked as a short sale transaction when it is transmitted to the NYSE floor.

Sell orders marked as short sales are subject to the **NYSE uptick rule.** According to the NYSE uptick rule, a short sale can be executed only if the last price change was an uptick. For example, suppose the last two trades were executed at 55-1/2 and then 55-5/8. The last price change was an uptick of 1/8, and a short sale can be executed at a price of 55-5/8 or higher. Alternatively, suppose the last two trades were executed at 55-1/2 and 55-1/4, where the last price change was two downticks of 1/8. In this case, a short sale can be executed only at a price of 55-3/8 or higher. For this latter case, the short sale can itself generate the uptick and be the next trade at 55-3/8 or higher.

(*margin def.* **NYSE uptick rule** Rule for short sales requiring that before a short sale can be executed, the last price change must be an uptick.)

The NYSE enacted the uptick rule to make it more difficult for speculators to drive down a stock's price by repeated short sales. Interestingly, the uptick rule is a NYSE rule only, and does not necessarily apply to short-sale transactions executed elsewhere. Since many NYSE-listed stocks are

now traded elsewhere, the uptick rule is less of a constraint than it once was. The Nasdaq has recently instituted a similar rule.

Finally, colored coats are worn by many of the people on the floor of the exchange. The color of the coat indicates the person's job or position. Clerks, runners, visitors, exchange officials, and so on, wear particular colors to identify themselves. Also, since things can get a little hectic on a busy day with the result that good clothing may not last long; the cheap coats offer some protection. Nevertheless, many specialists and floor brokers wear a good business suit every day simply out of habit and pride.

CHECK THIS

5.4a What are the four main types of orders to buy and sell common stocks?

5.4b What do specialists do?

5.4c What is a limit order? How do limit and stop orders differ?

5.5 Nasdaq

In terms of total dollar volume of trading, the second largest stock market in the United States is Nasdaq (say "Naz-dak"). In fact, in terms of companies listed and, on many days recently, number of shares traded, Nasdaq is bigger than the NYSE. The somewhat odd name is derived from the acronym NASDAQ, which stands for National Association of Securities Dealers Automated Quotations system. But Nasdaq is now a name in its own right and the all-capitals acronym should no longer be used.

Nasdaq Operations

Introduced in 1971, the Nasdaq market is a computer network of securities dealers who disseminate timely security price quotes to Nasdaq subscribers. These dealers act as market makers for securities listed on Nasdaq. As market makers, Nasdaq dealers post bid and ask prices at which they accept sell and buy orders, respectively. With each price quote, they also post the number of stock shares that they obligate themselves to trade at their quoted prices.

Like NYSE specialists, Nasdaq market makers trade on an inventory basis, that is, using their inventory as a buffer to absorb buy and sell order imbalances. Unlike the NYSE specialist system, Nasdaq features multiple market makers for actively traded stocks. Thus, there are two key differences between the NYSE and Nasdaq:

1. Nasdaq is a computer network and has no physical location where trading takes place.

2. Nasdaq has a multiple market maker system rather than a specialist system.

Traditionally, a securities market largely characterized by dealers who buy and sell securities from their own inventories is called an **over-the-counter market (OTC)**. Consequently, Nasdaq is often referred to as an OTC market. However, in their efforts to promote a distinct image, Nasdaq officials prefer that the term OTC not be used when referring to the Nasdaq market. Nevertheless, old habits die hard, and many people still refer to Nasdaq as an OTC market.

(*marg. def.* **over-the-counter (OTC) market** Securities market in which trading is almost exclusively done through dealers who buy and sell for their own inventories.)

In July 1998, more than 5,983 security issues from 5,354 companies were listed on the Nasdaq system, with an average of about a dozen market makers for each security. Through the years, the Nasdaq multiple-dealer system has experienced strong growth. In the first six months of

1994, Nasdaq trading volume averaged 299 million shares per day—an amount that exceeded daily average NYSE share volume for the first time. Only three years later, in 1997, Nasdaq trading volume averaged 646 million shares per day. However, because Nasdaq predominantly handles smaller-stock transactions, its dollar volume of trading is less than NYSE dollar volume. In 1997, the dollar value of all Nasdaq securities trading was $4.5 trillion versus $5.8 trillion for the NYSE. Nevertheless, Nasdaq is a growing and formidable competitor to the NYSE.

Nasdaq is managed by the National Association of Securities Dealers (NASD). Currently, every broker or dealer in the United States that conducts a securities business with the public is required by law to be a member of the NASD. In 1997, the NASD had 534,989 registered representatives associated with 5,553 member firms operating through 60,151 branch offices around the world. To become an NASD-registered representative, you must be sponsored by an NASD member firm, pass a thorough background investigation, and pass an examination demonstrating that you have a comprehensive knowledge of the rules and regulations of NASD, as well as a general knowledge of securities matters. As a registered representative, you are allowed to act as a securities broker with customers—a position that normally requires frequent access to Nasdaq.

The Nasdaq System

The Nasdaq network operates with three levels of information access. Level 1 terminals are designed to provide registered representatives with a timely, accurate source of price quotations for their clients. Bid and ask prices available on Level 1 terminals are median quotes from all registered market makers for a particular security.

Level 2 terminals connect market makers with brokers and other dealers and allow subscribers to view price quotes from all Nasdaq market makers. In particular, they have access to **inside quotes**, which are the highest bid quotes and the lowest asked quotes for a Nasdaq-listed security. Access to inside quotes is necessary to get the best prices for member firm customers. Level 3 terminals are for the use of market makers only. These terminals allow Nasdaq dealers to enter or change their price quote information.

(*marg. def.* **inside quotes** Highest bid quotes and the lowest ask quotes offered by dealers for a security.)

The Nasdaq National Market (NNM) was introduced by NASD in 1982 as a further enhancement to an already successful Nasdaq system. When introduced, it was called the National Market System (NMS). Only the most actively traded securities are listed on the Nasdaq National Market. An important feature of the NNM is its last-trade reporting system, which allows Nasdaq subscribers to check the price and size of the last transaction for any security listed on the NNM. This last-trade information is listed in addition to dealer price quotes. In 1997, more than 4,300 Nasdaq securities were listed on the Nasdaq National Market, with an average of over 12 market makers per NNM security.

The success of the Nasdaq National Market as a competitor to NYSE and other organized exchanges can be judged by its ability to attract stock listings by companies that traditionally might have chosen to be listed on the NYSE. Such well-known companies as Microsoft, MCI Worldcom, Apple Computer, Intel, Liz Claiborne, Yahoo!, and Starbucks list their securities on Nasdaq.

CHECK THIS

5.5a How does Nasdaq differ from the NYSE?

5.5b What are the different levels of access to the Nasdaq network?

5.5c The Nasdaq website (www.nasdaq.com) provides a wealth of information about Nasdaq's activities.

5.6 NYSE and Nasdaq Competitors

The NYSE and Nasdaq face strong competition in the market for order execution services from securities trading firms operating in the **third market**. The phrase "third market" refers to trading in exchange-listed securities that occur off the exchange on which the security is listed. For example, a substantial volume of NYSE-listed stock trading is executed through independent securities trading firms.

(*marg. def.* **third market** Off-exchange market for securities listed on an organized exchange.)

One well-known example of third-market trading is the securities trading firm of Bernard L. Madoff Investment Securities. In 1992, Madoff Securities executed a daily average of $740 million in trading volume of NYSE-listed stocks, which then represented about 9 percent of all NYSE trading volume. Independent trading firms like Madoff Securities lure a large volume of trades away from the New York Stock Exchange by paying a small commission, say, a penny a share, to brokerage firms that direct customer orders to them for execution. This practice is called "paying for order flow" and is controversial. Nevertheless, the SEC permits it.

Nasdaq and NYSE also face substantial competition from the **fourth market**. The term "fourth market" refers to direct trading of exchange-listed securities among investors. A good example of fourth-market trading activity is Instinet, an electronic trading network that facilitates trading among its subscribers.

(*marg. def.* **fourth market** Market for exchange-listed securities in which investors trade directly with other investors, usually through a computer network.)

Instinet subscribers are typically institutional investors and securities trading firms that wish to bypass Nasdaq and NYSE and trade directly with each other. Essentially, Instinet allows subscribers to trade securities at prices inside dealer bid-ask spreads. This means that they can buy securities at prices lower than dealer-asked prices and sell securities at prices higher than dealer-bid prices.

In recent years, Instinet has grown to account for about one-fifth of all trading in Nasdaq-listed stocks. The chief advantage of Instinet is a significant reduction in trading costs. A secondary advantage of Instinet is that it allows institutions to trade with anonymity. Nasdaq has a similar system called SelectNet. However, SelectNet has not been as popular as Instinet, largely because only Nasdaq brokers and dealers can subscribe to SelectNet, and because SelectNet does not ensure trader anonymity.

The third and fourth markets are not the only NYSE and Nasdaq competitors. Regional exchanges also attract substantial trading volume away from NYSE and Nasdaq. For example, over 2,000 stock issues are dually listed on NYSE and either on Nasdaq or at least one regional exchange.

CHECK THIS

5.6a What is the third market for securities?

5.6b What is the fourth market for securities?

5.7 Stock Market Information

Many newspapers publish current price information for a selection of stocks. In the United States, the newspaper best known for reporting stock price information is the *Wall Street Journal*. Investors interested in an overview of stock market activity refer to daily summaries. Among other things, these summaries contain information regarding several stock market indexes. Immediately below, we describe the most important stock market indexes.

The Dow Jones Industrial Average

The most widely followed barometer of day-to-day stock market activity is the Dow Jones Industrial Average (DJIA), often called the "Dow" for short. The DJIA is an index of the stock prices of 30 large companies representative of American industry. There are two more specialized Dow Jones averages, a utilities average and a transportation average. We will focus on the industrial average. Figure 5.2 reproduces a chart of the DJIA from "THE DOW JONES AVERAGES "column, which is published every day in the *Wall Street Journal*.

Figure 5.2 about here

Figure 5.2 shows daily high, low, and closing prices for the DJIA from July through December 1998. As indicated in the upper right-hand corner, the vertical bars in the chart indicate the range of

index high and low values on each trading day. The dot on the right side of each day's bar marks the closing value of the index on that day. We therefore see that, based on closing prices, the Dow reached a high of about 9,350 in mid-July and then fell to about 7500 in late August, for a substantial decrease. (This was a scary time to be in the market!) Later the market recovered to reach a new high in late November, followed by another dip and rise before year's end.

Although the Dow is the most familiar stock market index, there are a number of other widely followed indexes. In fact, as we will begin to discuss next, the Dow is not the most representative index by any means, and the way it is computed presents various problems that can make it difficult to interpret.

Stock Market Indexes

The "Dow Jones Averages" column is informative, but a serious market watcher may be interested in more detail regarding recent stock market activity. A more comprehensive view of stock market trading is contained in the "Stock Market Data Bank." Figure 5.3 is an excerpt from a "Stock Market Data Bank" column, which is published daily in the *Wall Street Journal*.

Figure 5.3 about here

The excerpt we examine here, "Major Indexes," reports information about a variety of stock market indexes. The first two columns report high and low index values observed during the previous 365 days. The third column lists the names of all reported indexes. Columns four through six report the daily high, low, and close of each index.

Columns seven and eight, labeled “Net Chg” and “%Chg,” report daily numerical and percentage changes for each index. The next two columns, labeled “12-Mo Chg” and “% Chg,” list numerical and percentage changes for each index over the previous 365 days. The last two columns, labeled “From 12/31" and “% Chg,” list numerical and percentage changes for each index since the end of the last calendar year.

As shown in Figure 5.3, in addition to the Dow Jones averages, the Stock Market Data Bank also reports information for a number of other stock market indexes. Of the non-Dow Jones indexes shown, by far the best known and most widely followed is the Standard and Poor's Index of 500 stocks, commonly abbreviated as the S&P 500, or often just the S&P. We have seen this index before. In Chapter 1, we used it as a benchmark to track the performance of large common stocks for the last seven decades.

If you were to scrutinize the various indexes in Figure 5.3, you would quickly find that there are essentially four differences between them: (1) the market covered; (2) the types of stocks included; (3) how many stocks are included; and (4) how the index is calculated.

The first three of these differences are straightforward. Some indexes listed in Figure 5.3, such as the Dow Jones Utilities, focus on specific industries. Others, such as the Nasdaq Composite, focus on particular markets. Some have a small number of stocks; others, such as the Wilshire 5000, have a huge number (5,000 in this case).

How stock market indexes are computed is not quite so straightforward, but it is important to understand. There are two major types of stock market index: price-weighted and value-weighted. With a **price-weighted index**, stocks are held in the index in proportion to their share prices. With a **value-weighted index**, stocks are held in proportion to their total company market values.

(*marg. def.* **price-weighted index** Stock market index in which stocks are held in proportion to their share price.)

(*marg. def.* **value-weighted index** Stock market index in which stocks are held in proportion to their total company market value.)

The best way to understand the difference between price and value weighting is to consider an example. To keep things relatively simple, we suppose that there are only two companies in the entire market. We have the following information about their shares outstanding, share prices, and total market values:

	Shares Outstanding	Price per share		Total market value	
		Beg. of Year	End of Year	Beg. of Year	End of Year
Company A	50 million	$10	$14	$500 million	$700 million
Company B	1 million	$50	$40	$50 million	$40 million

As shown, Company A has a lower share price but many more shares outstanding. Ignoring dividends, notice that Company A's stock price rose by 40 percent ($10 to $14) while Company B's stock price fell by 20 percent ($50 to $40).

The question we want to answer here is simply: How did the market do for the year? There are several ways we could answer this question. We could first focus on what happened to the average share price. The average share price was ($10 + $50)/2 = $30 at the beginning of the year, and ($14 +$40)/2 = $27 at the end, so the average share price fell. If we take the average share price as our index, then our index fell from 30 to 27, for a change of -3 points. Since the index began at 30, this is a -3/30 = -10% decrease. We might therefore say that the market was "off" by 10 percent.

This is an example of a price-weighted index. Because Company B's stock price is five times bigger than Company A's, it carries five times as much weight in the index. This explains why the

index was down even though Company A's stock gained 40 percent whereas Company B's stock only lost 20 percent. The Dow-Jones indexes are priced weighted.

Alternatively, instead of focusing on the price of a typical share, we could look at what happened to the total value of a typical company. Here we notice that the average total value, in millions, rose from ($500 + $50)/2 = $275 to ($700 + $40)/2 = $370. If we take average total company value as our index, then our index rose from 275 to 370, a 35 percent *increase*.

This is an example of a value-weighted index. The influence a company has in this case depends on its overall change in total market value, not just its stock price change. Because Company A has a much larger total value, it carries a much larger weight in the index. With the exception of the Dow-Jones indexes, most of the other indexes in Figure 5.3, including the Standard and Poors, are value weighted.

Now we have a problem. One index tells us the market was down by 10 percent, while the other tells us it was up by 35 percent. Which one is correct? The answer seems fairly obvious. The total value of the market as a whole grew from $550 million to $740 billion, so the market as a whole increased in value. Put differently, investors as a whole owned stock worth $550 million at the beginning of the year and $740 million at the end of the year. So, on the whole, stock market investors earned 35 percent, even though the average share price went down.

This example shows that a price-weighted index is often misleading as an indicator of total market value. The basic flaw of a price-weighted index is that the effect a company has on the index depends on the price of a single share. However, the price of a single share is only part of the story. Unless the number of shares is also considered, the true impact on the overall market isn't known, and a distorted picture can emerge.

Example 5.1: Caution Indexes Under Construction. Suppose there are only two stocks in the market and the following information is given:

	Shares Outstanding	Price per share	
		Beginning of Year	End of Year
Quark Co.	10 million	$10	$11
Bashir, Inc.	20 million	$20	$25

Construct price- and value-weighted indexes and calculate the percentage changes in each.

The average share price rose from $15 to $18, or $3, so the price-weighted index would be up by 3/15 = 20 percent. Average total market value, in millions, rose from $250 to $305, so the value-weighted index rose by 55/250 = 22 percent.

More On Price Weighted Indexes

Earlier we indicated that the Dow Jones averages are price weighted. Given this, you may wonder why the Dow Jones Industrial Average has such a high value when the stock prices used to calculate the average are much smaller. To answer this question, we must explain one last detail about price-weighted indexes.

The extra detail concerns the effects of stock splits on price-weighted indexes. For example, in a 2-for-1 stock split, all current shareholders receive two new shares in exchange for each old share that they own. However, the total value of the company does not change because it is still the same company after the stock split. There are just twice as many shares, each worth half as much.

A stock split has no effect on a value-weighted index since the total value of the company does not change. But it can have a dramatic effect on a price weighted index. To see this, consider what happens to the price-weighted and value-weighted indexes we created above when Company B enacts a 2-for-1 stock split. Based on beginning prices, with a 2-for-1 split, Company B's shares fall

to $25. The price-weighted index falls to (10 + 25)/2 = 17.50 from 30, even though nothing really happened.

For a price-weighted index, the problem of stock splits can be addressed by adjusting the divisor each time a split occurs. Once again, an example is the best way to illustrate. In the case stated just above, suppose we wanted the index value to stay at 30 even though B's price per share fell to $25 as a result of the split. The only way to accomplish this is to add together the new stock prices and divide by something less than 2.

This new number is called the index divisor, and it is adjusted as needed to remove the effect of stock splits. To find the new divisor in our case, the stock prices are $25 and $10, and we want the index to equal 30. We solve for the new divisor, *d*, as follows:

$$\begin{aligned} \text{Index level} &= \text{Sum of stock prices / Divisor} \\ 30 &= (25 + 10) / d \\ d &= 35 / 30 \\ &= 1.16666 \ldots\ldots \end{aligned}$$

The new divisor is thus approximately 1.17.

Adjusting the divisor takes care of the problem in one sense, but it creates another problem. Since we are no longer dividing the sum of the share prices by the number of companies in the index, we can no longer interpret the change in the index as the change in price of an average share.

Example 5.2 Adjusting the divisor Take a look back at Example 5.1. Suppose that Bashir splits 5-for-1. Based on beginning information, what is the new divisor?

Following a 5-for-1 split, Bashir's share price will fall from $20 to $4. With no adjustment to the divisor, the price-weighted index would drop from 15 to (10 + 4)/2 = 7. To keep the index at its old level of 15, we need to solve for a new divisor such that (10 + 4)/*d* = 15. In this case, the new divisor would be 14/15 = .93333 .. ., illustrating that the divisor can drop below 1.0.

The Dow Jones Divisors

The method we described of adjusting the divisor on a price-weighted index for stock splits is the method used to adjust the Dow Jones averages. Through time, with repeated adjustments for stock splits, the divisor becomes smaller and smaller. For example, in October 1998 the divisor on the DJIA was a nice, precise .24275214. Since there are 30 stocks in the index, the divisor on the DJIA would be 30 if it were never adjusted, so it has declined substantially. The other Dow Jones averages have similarly odd values.

Figure 5.4 is an example of the "Dow Jones Averages Hour by Hour" table appearing in the *Wall Street Journal*. This table reports hourly changes in the Dow Jones averages during the five most recent trading days. It also reports current divisors for the Dow Jones averages — Industrials, Transportation, Utilities, and Composite. In Figure 5.4, the actual high (and low) values are exactly what the name suggests — the highest (and lowest) values observed. The theoretical high (low) is computed using the highest (lowest) stock prices reached during the day for each of the stocks in the index. If all stocks in an index reached their highest (lowest) prices at the same time, the actual and theoretical index values would be the same.

Figure 5.4 about here

Given its shortcomings, you might wonder why the financial press continues to report the Dow Jones averages. The reason is tradition; the Dow Jones averages have been around for more than 100 years, and each new generation of investors becomes accustomed to its quirks.

So which index is the best? The most popular alternative to the DJIA is the value-weighted S&P 500. You might further wonder, however, why this popular index limits itself to 500 stocks. The

answer is timeliness and accuracy. Almost all stocks in the S&P 500 index trade every day, and therefore accurate daily updates of market prices are available each day. Stocks that do not trade every day can cause **index staleness**. Index staleness occurs when an index does not reflect all current price information because some of the stocks in the index have not traded recently. Also, as a practical matter, the largest 500 companies account for an overwhelming portion of the value of the overall stock market.

> (*marg. def.* **index staleness** Condition that occurs when an index does not reflect all current price information because some of the stocks in the index have not traded recently.

CHECK THIS

5.7a What is the difference between price- and value-weighting in the construction of stock market indexes? Give an example of a well-known index of each type.

5.7b Which is better, price- or value-weighting? Why?

5.7c Which stock market index is likely to contain the greater degree of index staleness, the S&P 500 or the Wilshire 5000 index?

5.8 Summary and Conclusions

This chapter introduced you to stock markets. We discussed who owns stocks, how the stock exchanges operate, and how stock market indexes are constructed and interpreted. Along the way we saw that:

1. Individual investors, directly or through mutual funds, own over half of all traded stocks. The rest are owned mostly by financial institutions such as pension funds and insurance companies.

2. The stock market is composed of a primary market, where stock shares are first sold, and a secondary market, where investors trade shares among themselves. In the primary market, companies raise money for investment projects. Investment bankers specialize in arranging financing for companies in the primary market. Investment bankers often act as underwriters, buying newly issued stock from the company and then reselling the stock to the public. The primary market is best known as the market for initial public offerings (IPOs).

3. In the secondary market, investors trade securities with other investors. Secondary market transactions are directed through three channels: directly with other investors, indirectly through a broker, or directly with a dealer. We saw that a broker matches buyers and sellers; a dealer buys and sells out of inventory.

4. Most common stock trading is directed through an organized stock exchange or through a trading network. The largest organized stock exchange in the United States is the New York Stock Exchange (NYSE). Popularly known as the Big Board, the NYSE is owned by its members. There are four major types of NYSE members, commission brokers, specialists, floor brokers, and floor traders. We discussed the role of each in the functioning of the exchange.

5. The second largest stock market in the United States is Nasdaq. Nasdaq is a computer network of securities dealers, who act as market makers for securities listed on Nasdaq.

6. The NYSE and Nasdaq face strong competition from securities trading firms operating in the third and fourth markets. The third market refers to off-exchange trading of exchange-listed securities by securities firms. The fourth market refers to direct trading among investors. The regional stock exchanges also attract substantial trading volume away from NYSE and Nasdaq.

7. The most widely followed barometer of day-to-day stock market activity is the Dow Jones Industrial Average (DJIA). The DJIA is an index of the stock prices of 30 large companies representative of American industry. Other indexes are also common. Among these, the best known is the Standard and Poor's Index of 500 stocks, abbreviated as the S&P 500. We described how these indexes are computed, with particular attention to some of the problems encountered.

Key Terms

primary market
secondary market
initial public offering (IPO)
investment banking firm
underwrite
fixed commitment
best effort
Securities and Exchange Commission (SEC)
prospectus
red herring
dealer
broker
floor traders
SuperDOT system
specialist's post
market order
stop order
NYSE firms
NYSE members
commission brokers
specialist
floor brokers
NYSE uptick rule
over-the-counter (OTC) market
inside quotes
third market
fourth market
price-weighted index
value-weighted index
index staleness
bid price
ask price
spread
limit order

Get Real!

This chapter covered the operations and organization of the major stock markets. It also covered some of the most important order types and the construction of stock market indexes. How should you, as an investor or investment manager, put this information to work?

First, as in some previous chapters, you need to submit as many as possible of the different order types suggested by this chapter in a simulated brokerage account (note that not all simulated brokerage accounts allow all trade types). Your goal is to gain experience with the different order types and what they mean and accomplish for you as an investor or investment manager.

In each case, once you have placed the order, be sure to monitor the price of the stock in question to see if any of your orders should be executed. When an order is executed, compare the result to the stop or limit price to see how you did.

The second thing to do is to start observing the different indexes and learning how they are computed, what's in them, and what they are intended to cover. For example, the Nasdaq 100 is made up of the largest Nasdaq stocks. Is this index broadly representative of big stocks in general? Of Nasdaq stocks in general? Why is the Russell 2000 index widely followed (note that:it *doesn't* contain 2,000 big stocks)?

STOCK-TRAK FAST TRACK

STOCK MARKET DAY TRADING WITH STOCK-TRAK

The internet has given rise to a new breed of stock market investors - day traders. Day traders buy and sell common stocks intra-day and typically close out their positions before the end of the day to avoid carrying a stock position overnight. The most popular trading strategy among day traders is "momentum trading," whereby the day trader tries to identify stocks that have started moving up and will continue to move up through the day. Once such a stock is identified the day trader then buys the stock and tracks its progress through the day. Sometime later - perhaps a few minutes, perhaps a few hours - the day trader sells the stock to close out the position before the end of trading that day.

How do you identify stocks with sustainable momentum? Day traders often use sophisticated computer programs to assist their decision processes, but must ultimately depend on gut instincts. While most day traders have a difficult time recouping their trading expenses, there are often spectacular successes to inspire the would-be day trader. The beauty of a Stock-Trak account is that you can try your hand at day trading without risking your own capital.

To try your hand at day trading using your Stock-Trak account, simultaneously log on to an internet stock quote server and the Stock-Trak website sometime in the morning, ideally about an hour or two after NYSE trading has started. Remember that web browsers support several different sessions at one time and many stock quote servers also provide stock price charts. Next, identify several stocks that are up since the opening of trading that day. Most stock quote servers report intra-day stock price statistics, including high and low prices along with an opening price and change in price. Pick 2 or 3 stocks and submit an order to Stock-Trak to buy these stocks. Stock-Trak will return a trade confirmation indicating the trade prices for your order. Print the trade confirmation so

you don’t forget your trade prices. Later in the day, log onto Stock-Trak to close out your position and calculate your profits and losses. Remember, a real day trader will not hold a position overnight. It’s easier to sleep that way.

STOCK-TRAK EXERCISES

1. If it’s a rainy day and you’re bored, log onto Stock-Trak and a stock quote server and stay logged on for several hours. Indulge yourself with frequent buying and selling based on your instincts. Try to set a pace of executing at least 5 or 6 trades an hour. Be careful, day trading can be addictive and you might forget to go to your investments class.

Chapter 5
The Stock Market

End of Chapter Questions and Problems

Review Problems and Self-Test

1. **Index Construction** Suppose there are only two stocks in the market and the following information is given:

	Shares Outstanding	Price per share	
		Beginning of Year	End of Year
Ally Co.	100 million	$60	$66
McBeal, Inc.	400 million	$120	$100

Construct price- and value-weighted indexes and calculate the percentage changes in each.

2. **Stock Splits** In the previous problem, suppose that McBeal splits 3-for-1. Based on beginning information, what is the new divisor?

Answers to Self-Test Problems

1. The average share price at the beginning of the year is ($60 + $120)/2 = $90. At the end of the year, the average price is $83. Thus, the average price declined by $7 from $90, a percentage drop of -$7/$90 = -7.78%. Total market cap at the beginning of the year is $60 × 100 million + $120 × 400 million = $54 billion. It falls to $46.6 billion, a decline of $7.4 billion. The percentage decline is -$7.4/$54 = -13.7%, or almost twice as much as the price-weighted index.

2. Following a 3-for-1 split, McBeal's share price falls from $120 to $40. To keep the price-weighted index at its old level of 90, we need a new divisor such that (60 + 40)/d = 90. In this case, the new divisor would be 100/90 = 1.1111.

Test Your IQ (Investment Quotient)

1. **Securities Regulation** Which of the following is not a function of the SEC in approving an IPO of a company's common stock shares?

a. ensuring that the company is high quality and the stock offering price is fair
b. ensuring full disclosure of the company's financial position
c. ensuring that a prospectus is made available to all interested investors
d. ensuring that the offering does not violate Federal securities laws

2. **New York Stock Exchange** The largest number of NYSE members are registered as:

a. stockholders
b. commission brokers
c. specialists
d. floor traders

3. **New York Stock Exchange** The second largest number of NYSE members are registered as:

a. stockholders
b. commission brokers
c. specialists
d. floor traders

4. **New York Stock Exchange** Specialists on the NYSE typically are:

a. independent dealers
b. representatives of the major stock brokerage firms
c. appointed by the SEC
d. associated with one of about 40 specialist firms

5. **New York Stock Exchange** Which of the following activities are not conducted by specialists on the NYSE?: (*1991 CFA exam*)

a. act as dealers for their own accounts
b. monitor compliance with margin requirements
c. provide liquidity to the market
d. monitor and execute unfilled limit orders

6. **Stock Markets** Which of the following is a common feature of both the Nasdaq National Market and the New York Stock Exchange?

a. the New York City location for operations
b. the reliance on commission brokers for efficient order execution
c. the use of dealers to ensure liquidity
d. the number of market makers per individual stock issue

7. **Stock Markets** What is a securities market characterized by dealers who buy and sell securities for their own inventories called? (*1991 CFA exam*)

a. a primary market
b. a secondary market
c. an over-the-counter market
d. an institutional market

8. **Stock Markets** What is the over-the-counter market for exchange-listed securities called?: (*1991 CFA exam*)

a. third market
b. fourth market
c. after-market
d. block market

9. **Stock Trading** An institutional investor wishing to sell a very large block of stock, say, 10,000 shares or more, is most likely to get the best price in which market?

a. the primary market
b. the secondary market
c. the third market
d. the fourth market

10. **Stock Trading** You wish to sell short shares of GM common stock traded on NYSE. If the last two transactions were at 43-1/8 followed by 43-1/4, the next transaction can be a short sale only at a price of:

a. 43 1/8 or higher
b. 43 1/4 or higher
c. 43 1/4 or lower
d. 43 1/8 or lower

11. **Stock Indexes** Which one of the following statements regarding the Dow Jones Industrial Average is false?

a. the DJIA contains 30 well-known large-company stocks
b. the DJIA is affected equally by dollar changes in low- and high-priced stocks
c. the DJIA is affected equally by percentage changes in low- and high-priced stocks
d. the DJIA divisor must be adjusted for stock splits

12. **Stock Indexes** If the market prices of each of the 30 stocks in the Dow Jones Industrial Average all change by the same percentage amount during a given day, which stock will have the greatest impact on the DJIA? (*1991 CFA exam*)

a. the one whose stock trades at the highest dollar price per share
b. the one whose total equity has the highest market value
c. the one having the greatest amount of equity in its capital structure
d. the one having the lowest volatility

13. **Stock Indexes** In calculating the Standard and Poor's stock price indexes, how are adjustments for stock splits made? (*1990 CFA exam*)

a. by adjusting the divisor
b. automatically, due to the manner in which the index is calculated
c. by adjusting the numerator
d. quarterly, on the last trading day of each quarter

14. **Stock Indexes** Which of the following indexes includes the largest number of actively traded stocks? (*1990 CFA exam*)

a. the Nasdaq Composite Index
b. the NYSE Composite Index
c. the Wilshire 5000 Index
d. the Value Line Composite Index

Questions and Problems

Core Questions

1. **Primary and Secondary Markets** If you were to visit your local Chevrolet retailer, there is both a primary and a secondary market in action. Explain. Is the Chevy retailer a dealer or a broker?

2. **Specialists** On the NYSE, does a specialist act as a dealer or a broker? Or both?

3. **Stops and Limits** If an investor wants to buy a stock at a price that is less than its current price, what are the relative advantages and disadvantage of a stop order as compared to a limit order?

4. **Stop That!** What is a stop-loss order? Why might it be used? Is it sure to stop a loss?

5. **Order Types** Suppose Microsoft is currently trading at $100. You want to buy it if it reaches $120. What type of order should you submit?

6. **Order Types** Suppose Dell is currently trading at $65. You think that if it reaches $70, it will continue to climb, so you want to buy it if and when it gets there. Should you submit a limit order to buy at $70?

7. **Stop-limit Orders** What is a stop-limit order? How many prices do you have to specify?

8. **Upticks** What is the uptick rule? Where does it apply? Why does it exist?

9. **Nasdaq Quotes** With regard to the Nasdaq, what are inside quotes?

10. **Index Composition** There are basically four factors that differentiate stock market indexes. What are they? Comment on each.

11. **Index Composition** Is it necessarily true that, all else the same, an index with more stocks is better? What is the issue here?

Intermediate Questions

12. Index Construction Suppose there are only two stocks in the market and the following information is given:

	Shares Outstanding	Price per share	
		Beginning of Year	End of Year
Black Co.	200 million	$30	$39
Scholes, Inc.	50 million	$80	$140

Construct price- and value-weighted indexes and calculate the percentage changes in each.

13. Price-Weighted Indexes We have seen that the Dow indexes are adjusted for stock splits by changing the divisor. Why is this necessary? Can you think of another way to adjust for splits?

14. Price-Weighted Indexes Suppose the following three defense stocks are to be combined into a stock index in January 1998 (perhaps a portfolio manager believes these stocks are an appropriate benchmark for his or her performance).

a. Calculate the initial value of the index if a price-weighting scheme is used.

b. What is the rate of return on this index for the year ending December 31, 1998? For the year ending December 31, 1999?

c. What is the total return on this index over the two-year period 1998 and 1999?

	Shares (mil.)	1/1/98 Price	1/1/99 Price	1/1/00 Price
Douglas McDonnell	150	60	75	60
Dynamics General	750	20	25	40
International Rockwell	300	40	35	35

15. Price-Weighted Indices In the previous problem, suppose that Douglas McDonnell shareholders approve a 5-for-1 stock split on January 1, 1999. What is the new divisor for the index? Calculate the rate of return on the index for the year ending December 31, 1999 if Douglas McDonnell's share price on January 1, 2000 is $12 per share. What is the total two-year return on the index now?

16. Equally Weighted Indexes In addition to price-weighted and value-weighted indexes, an equally weighted index is one in which the index value is computed from the average rate of return of the stocks comprising the index. Equally weighted indexes are frequently used by financial researchers to measure portfolio performance.

a. Using the information in Problem 14, compute the rate of return on an equally weighted index of the three defense stocks for the year ending December 31, 1998.

b. If the index value is set to 100 on January 1, 1998, what will the index value be on January 1, 2000? What is the rate of return on the index for 1999?

c. Compute the total two-year return on this index.

17. Value-Weighted Indexes Repeat Problem 13 if a value-weighted index is used. Assume the index is scaled by a factor of 10 million; that is, if the average firm's market value is $5 billion, the index would be quoted as 500.

18. Value-Weighted Indexes In the previous problem, will your answers change if Douglas McDonnell stock splits? Why or why not?

19. Interpreting Index Values Suppose you want to replicate the performance of several stock indexes, some of which are price-weighted, others value-weighted, and still others equally weighted. Describe the investment strategy you need for each of the index types. Are any of the three strategies passive, in that no portfolio rebalancing need be performed to perfectly replicate the index (assuming no stock splits or cash distributions)? Which of the three strategies do you think is most often followed by small investors? Which strategy is the most difficult to implement?

Chapter 5
The Stock Market
Answers and solutions

Answers to Multiple Choice Questions

1. A
2. B
3. C
4. D
5. B
6. C
7. C
8. A
9. D
10. B
11. C
12. A
13. B
14. C

Answers to Chapter Questions and Problems

Core Questions

1. The new car lot is a primary market; every new car sold is an IPO. The used car lot is a secondary market. The Chevy retailer is a dealer, buying and selling out of inventory.

2. Both. When trading occurs in the crowd, the specialist acts as a broker. When necessary to fulfill an order, the specialist will buy or sell out of inventory.

3. A stop order converts to a market order if the stop price is reached. Thus, the advantage of a stop order is that it will be executed if the prespecificed price is reached. However, the actual price an investor pays or gets may be better or worse than the stop price. With a limit order, there is the risk that the order cannot be executed, but, if it is, the price will be the limit price or better. The tradeoff is between certainty of execution with a stop versus a potentially better price with a limit order.

4. A stop loss order is an order to sell at market if the price declines to the stop price. As the name suggests, it is a tool to limit losses. As with any stop order, however, the price received may be worse than the stop price, so it may not work as well as the investor hopes. For example, suppose a stock is selling for $50. An investor has a stop loss on at $45, thereby limiting the potential loss to $5, or so the naive investor thinks. However, after the market closes, the company announces a disaster. Next morning, the stock opens at $30. The investor's sell order will be executed, but the loss suffered will far exceed $5 per share.

5. You should submit a stop order; more specifically, a start-gain order with a stop price of $120.

6. No, you should submit a stop order to buy at $70, also called a start-gain. A limit buy would be executed immediately at the current price (why?).

7. A stop limit order is a stop order that converts to a limit order once the stop price is reached. Two prices must be specified, the stop and the limit. You might use it to, for example, buy a stock but control what you pay. You could submit a buy order as "stop $100 limit $110". This means if the price hits $100, you want to buy it, but only at a price of $110 or better (i.e., $110 or less).

8. The uptick rule prohibits short selling unless the last stock price change was positive, i.e., an uptick. It applies primary to the NYSE. It exists to prevent "bear raids," i.e., an illegal market manipulation involving large-scale short selling intended to force down the stock price.

9. With a multiple market maker system, there are, in general, multiple bid and ask prices. The inside quotes are the best ones, the highest bid and the lowest ask.

10. What market is covered; what types of stocks are included; how many stocks are included; and how the index is calculated.

11. The issue is index staleness. As more stocks are added, we generally start moving into less frequently traded issues. Thus, the tradeoff is between comprehensiveness and currentness.

Intermediate Questions

12. The average share price at the beginning of the year is ($30 + 80)/2 = $55. At the end of the year, the average price is $89.5. Thus, the average price increased by $34.5 from $55, a percentage gain of $34.5/$55 = 62.73%. Total market cap at the beginning of the year is $30 × 200 + $80 × 50 = $10 billion. It rises to $14.8 billion, a gain of $4.8 billion. The percentage gain is thus 48%.

13. If no adjustment were made, the index would fall whenever there was a split even though nothing real has actually happened in the market. Another, and much simpler, way to adjust

would be to increase the number of shares in the index. In other words, following a 3-for-1 split, we just put 3 shares in the index, thereby effectively "unsplitting" the stock.

14. *a.* 1/1/98: Index value = (60 + 20 + 40)/3 = 40

b. 1/1/99: Index value = (75 + 25 + 35)/3 = 45
1998 return = (45 – 40)/40 = 12.5%
1/1/00: Index value = (60 + 40 + 35)/3 = 45
1999 return = (45 – 45)/45 = 0%

c. Total two-year index return = (45 – 40)/40 = 12.5%

15. Share price after the stock split is $15.
Index value on 1/1/99 without the split is 45 (see above).
(15 + 25 + 35)/d = 45 ; d = 75/45 = 1.667.
1/1/00: Index value = (12 + 40 + 35)/1.667 = 52.2.
1999 return = (52.2 – 45)/45 = 16%.
Notice without the split the index return for 1999 is 0%.
Total two-year index return = (52.2 – 40)/40 = 30.5%.

16. *a.* 1/1/98: Index value = [60(150) + 20(750) + 40(300)] / 30 = 1200

b. 1/1/99: Index value = [75(150) + 25(750) + 35(300)] / 30 = 1350
1998 return = (1350 – 1200)/1200 = 12.5%
1/1/00: Index value = [60(150) + 40(750) + 35(300)] /30 = 1650
1999 return = (1650 – 1350)/1350 = 22.2%

c. Total two-year index return = (1650 – 1200)/1200 = 37.5%

17. The index values and returns will be unchanged; the stock split changes the share price, but not the total value of the firm.

18. 1998: Douglas McDonnell return = (75 – 60)/60 = 25%
Dynamics General return = (25 – 20)/20 = 25%
International Rockwell return = (35 – 40)/40 = –12.5%

1998: Index return = (.25 + .25 – .125)/3 = 12.5%
1/1/99: Index value = 100(1.125) = 112.5

1998: Douglas McDonnell return = (60 – 75)/75 = –20%
Dynamics General return = (40 – 25)/25 = 60%
International Rockwell return = (35 – 35)/35 = 0%

1999: Index return = (–.20 + .60 + 0)/3 = 13.33%
1/1/00: Index value = 112.5(1.1333) = 127.50

Total two-year index return = (127.50 – 100)/100 = 27.5%

19. For price-weighted indices, purchase equal numbers of shares for each firm in the index. For value-weighted indices, purchase shares (perhaps in fractional amounts) so that the investment in each stock, relative to your total portfolio value, is equal to that stock's proportional market value relative to all firms in the index. In other words, if one company is twice as big as the other, put twice as much in that company. Finally, for equally weighted indices, purchase equal dollar amounts of each stock in the index.

Assuming no cash dividends or stock splits, both the price-weighted and value-weighted replication strategies require no additional rebalancing. However, an equally weighted index will not stay equally weighted through time, so it will have to be rebalanced by selling off investments that have gone up and buying investments that have gone down in value.

A typical small investor would most likely use something like the equally weighted index replication strategy, i.e., buying more-or-less equal dollar amounts of a basket of stocks, but the portfolio probably would not stay equally weighted. The value-weighted and equally-weighted index replication strategies are difficult to implement than the price-weighted strategy, because they would likely involve the purchase of odd lots and fractional shares, raising transactions costs. The value-weighted strategy is the most difficult because of the extra computation needed to determine the amounts to invest.

Figure 5.1. IPO Tombstone

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

3,450,000 Shares

BROADCOM

Class A Common Stock

Price $69 a Share

Copies of the Prospectus may be obtained in any State from only such of the undersigned as may legally offer these Securities in compliance with the securities laws of such State.

MORGAN STANLEY DEAN WITTER

BT ALEX. BROWN
Incorporated

CREDIT SUISSE FIRST BOSTON

HAMBRECHT & QUIST

MERRILL LYNCH & CO.

October 23, 1998

NTT DoCoMo, Conoco Enliven Market for IPOs

By Aaron Lucchetti
Staff Reporter of The Wall Street Journal

Huge initial public offerings for a Japanese telecommunications giant and for **Conoco** Inc. have drawn investors back into the battered market for new stocks. But analysts expect demand for most IPOs to remain spotty.

Japanese mobile-telecommunications company **NTT Mobile Communications Network** Inc., known as NTT DoCoMo, started trading on the Tokyo Stock Exchange last night after completing the largest IPO in world history, an $18 billion initial global offering led by **Goldman, Sachs** & Co. and **Nikko Securities.**

And this morning, **DuPont** Co.'s oil subsidiary Conoco is scheduled to start *trading as the largest U.S. IPO. The offer*ing for the Houston company was priced at $23 a share last night; about $4.4 billion in Conoco shares were sold in the IPO led by **Morgan Stanley Dean Witter** & Co., eclipsing the previous U.S. IPO record set by **Lucent Technologies** Inc. in 1996.

But while the large deals show investors still have an appetite for stocks, analysts warn that buyers aren't eager to throw money at any new public company, most of which are small and young. Both Conoco and DoCoMo developed profitable businesses over years as subsidiaries of larger, established companies, and therefore they were seen differently. Indeed, if the IPO market is open, it is only "for big-cap, relatively prosaic companies," says Richard L. Kauffman, head of global-equity capital markets for Morgan *Stanley Dean Witter.*

Some analysts maintain that IPOs are shifting in the current market environment from a tool for small "growth" companies to the domain of large-cap conglomerates looking to shed businesses. Since June, more than 80% of the money raised through IPOs went to larger companies, up substantially from 29% in the first five months of the year, says New York data provider CommScan.

The Largest IPOs

U.S. only (excluding closed-end funds), by global proceeds raised at the time of offering

COMPANY	DATE	VALUE (billions)
Conoco	Today	$4.40*
Lucent Technologies	April '96	3.03
Allstate	June '93	2.12
Assoc. First Capital	May '96	1.94
Consolidated Rail	March '87	1.65
USEC	July '98	1.43
Pacific Telesis	Dec. '93	1.38
Republic Services	June '98	1.32
Henley Group	May '86	1.28
Lyondell Petrochem.	Jan. '89	1.20
Coca-Cola Ent.	Nov. '86	1.18
Nabisco Holdings	Jan. '95	1.10

*Yesterday's pricing

Source: Securities Data Co.

Figure 5.2. Stock Market Major Indexes

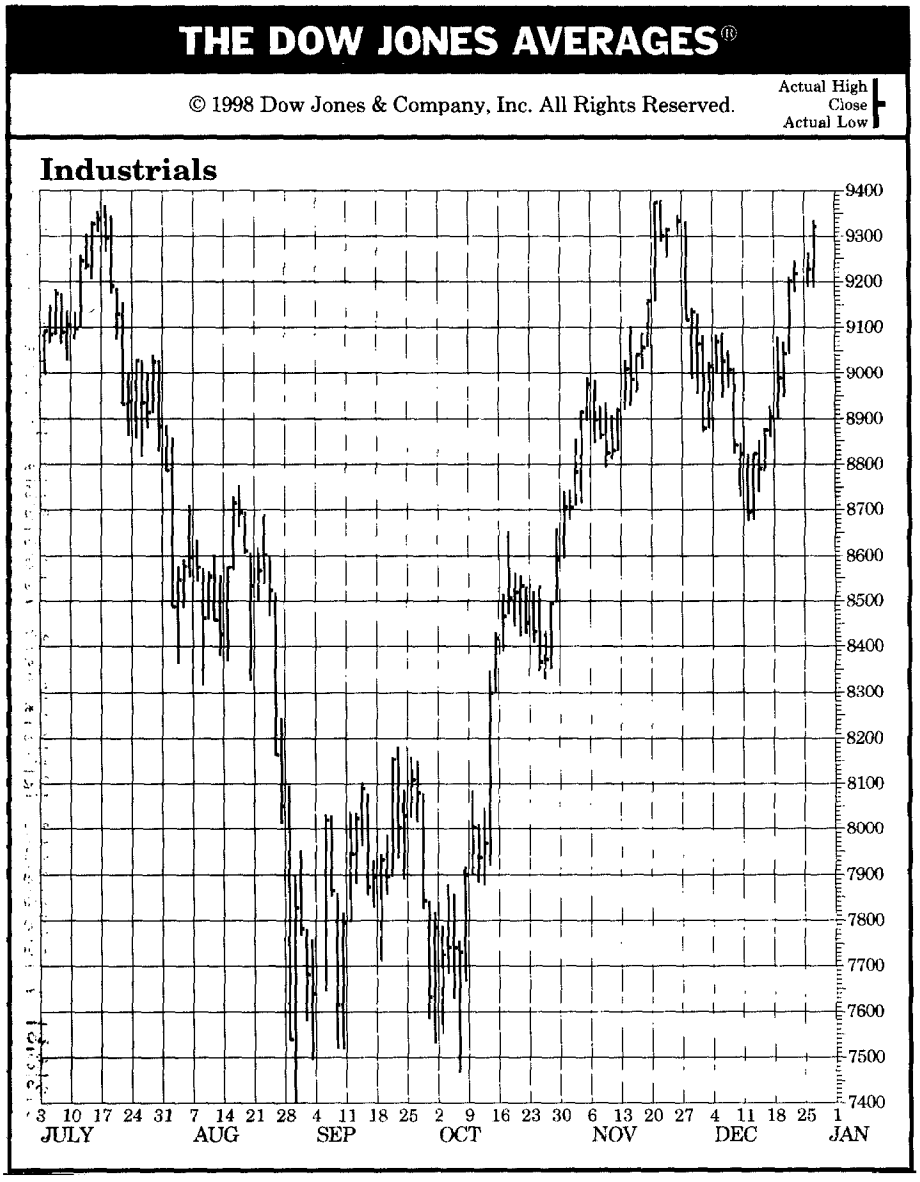

Figure 5.3. Stock Market Major Indexes

STOCK MARKET DATA BANK 10/13/98

MAJOR INDEXES

†12-MO HIGH	†12-MO LOW		DAILY HIGH	DAILY LOW	DAILY CLOSE	NET CHG	NET % CHG	†12-MO CHG	†12-MO % CHG	FROM 12/31	FROM 12/31 % CHG
DOW JONES AVERAGES											
9337.97	7161.15	**30 Industrials**	8009.97	7884.59	7938.14	− 63.33	− 0.79	− 158.15	− 1.95	+ 29.89	+ 0.38
3686.02	2345.00	**20 Transportation**	2469.31	2417.22	2420.60	− 48.23	− 1.95	− 897.09	− 27.04	− 835.90	− 25.67
320.51	237.44	**15 Utilities**	305.59	300.32	x305.56	+ 5.04	+ 1.68	+ 63.46	+ 26.21	+ 32.49	+ 11.90
2960.79	2358.51	**65 Composite**	2501.16	2464.88	x2480.61	− 13.51	− 0.54	− 125.24	− 4.81	− 126.76	− 4.86
1123.85	833.91	**DJ Global-US**	940.54	927.92	934.42	− 4.19	− 0.45	+ 15.42	+ 1.68	+ 12.08	+ 1.31
NEW YORK STOCK EXCHANGE											
600.75	463.21	**Composite**	494.53	488.90	492.14	− 0.81	− 0.16	− 16.43	− 3.23	− 19.05	− 3.73
736.35	576.81	**Industrials**	617.60	609.16	612.92	− 3.38	− 0.55	− 24.10	− 3.78	− 17.46	− 2.77
398.77	288.27	**Utilities**	381.29	375.56	381.26	+ 5.70	+ 1.52	+ 74.67	+ 24.36	+ 46.07	+ 13.74
537.19	351.13	**Transportation**	375.78	364.23	366.33	− 8.78	− 2.34	− 108.32	− 22.82	− 99.92	− 21.43
599.15	399.19	**Finance**	431.70	423.70	427.21	+ 1.82	+ 0.43	− 59.51	− 12.23	− 68.75	− 13.86
STANDARD & POOR'S INDEXES											
1186.75	876.99	**500 Index**	1000.78	987.55	994.80	− 2.91	− 0.29	+ 24.52	+ 2.53	+ 24.37	+ 2.51
1380.57	1019.09	**Industrials**	1198.15	1180.71	1189.70	− 6.97	− 0.58	+ 57.72	+ 5.10	+ 68.32	+ 6.09
267.38	202.07	**Utilities**	254.36	249.83	254.36	+ 4.53	+ 1.81	+ 47.01	+ 22.67	+ 18.55	+ 7.87
380.67	275.93	**400 MidCap**	290.51	286.18	287.14	− 3.37	− 1.16	− 51.56	− 15.22	− 46.23	− 13.87
206.18	128.70	**600 SmallCap**	135.36	133.51	133.61	− 1.75	− 1.29	− 58.47	− 30.44	− 47.55	− 26.25
251.95	189.63	**1500 Index**	209.56	206.84	208.24	− 0.82	− 0.39	− 1.38	− 0.66	− 0.56	− 0.27
NASDAQ STOCK MARKET											
2014.25	1419.12	**Composite**	1547.05	1504.70	1509.45	− 36.63	− 2.37	− 223.34	− 12.89	− 60.90	− 3.88
1465.89	938.99	**Nasdaq 100**	1244.84	1198.55	1206.90	− 36.50	− 2.94	+ 75.47	+ 6.67	+ 216.10	+ 21.81
1408.56	882.40	**Industrials**	941.06	927.34	927.53	− 14.84	− 1.57	− 475.58	− 33.89	− 293.50	− 24.04
1945.34	1346.58	**Insurance**	1425.11	1410.70	1414.23	− 8.68	− 0.61	− 426.16	− 23.16	− 383.72	− 21.34
2297.71	1486.32	**Banks**	1614.95	1590.36	1592.97	− 16.08	− 1.00	− 358.48	− 18.37	− 490.25	− 23.53
921.60	584.92	**Computer**	759.87	732.40	738.27	− 24.86	− 3.26	+ 17.62	+ 2.45	+ 119.61	+ 19.33
460.92	279.66	**Telecommunications**	339.72	332.50	332.50	− 7.71	− 2.27	+ 24.92	+ 8.10	+ 25.90	+ 8.45
OTHERS											
753.67	563.75	**Amex Composite**	581.61	576.70	577.86	− 3.15	− 0.54	− 136.93	− 19.16	− 106.75	− 15.59
620.15	465.43	**Russell 1000**	516.40	509.88	513.40	− 1.91	− 0.37	+ 0.26	+ 0.05	− 0.39	− 0.08
491.41	310.28	**Russell 2000**	325.69	320.33	320.33	− 5.29	− 1.62	− 143.64	− 30.96	− 116.69	− 26.70
647.54	494.91	**Russell 3000**	531.92	525.16	528.49	− 2.46	− 0.46	− 17.25	− 3.16	− 14.56	− 2.68
508.39	346.66	**Value-Line(geom.)**	360.56	356.20	357.32	− 3.24	− 0.90	− 118.10	− 24.84	− 97.03	− 21.36
11106.10	8537.05	**Wilshire 5000**	...	...	8960.41	− 52.94	− 0.59	− 442.81	− 4.71	− 337.78	− 3.63

†-Based on comparable trading day in preceding year.

Figure 5.4. Hourly Dow Jones Averages

The Dow Jones Averages Hour by Hour

Following are the Dow Jones averages of INDUSTRIAL, TRANSPORTATION and UTILITY stocks with the total sales of each group for the period included in the chart.

DATE		OPEN	10 AM	11 AM	12 NOON	1 PM	2 PM	3 PM	CLOSE	CHG	%	HIGH* (THEORETICAL)	LOW* (THEORETICAL)	HIGH[q] (ACTUAL)	LOW[q] (ACTUAL)
30 INDUSTRIALS: (divisor: 0.24275214)															
Oct	13	8002.50	7996.58	7981.91	7970.32	7972.90	7937.62	7905.18	7938.14	– 63.33	– 0.79	8093.90	7805.29	8009.97	7884.59
Oct	12	7900.55	8015.63	8056.57	8074.85	8040.87	8013.32	8042.67	8001.47	+ 101.95	+ 1.29	8162.65	7931.19	8084.64	a7900.55
Oct	9	7734.74	7774.39	7670.38	7746.84	7809.66	7819.19	7884.84	7899.52	+ 167.61	+ 2.17	7976.76	7628.15	7917.28	7666.51
Oct	8	7734.48	7629.18	7621.46	7492.98	7530.06	7500.96	7647.98	7731.91	– 9.78	– 0.13	7822.02	7399.78	7756.37	7467.49
Oct	7	7745.18	7782.63	7791.13	7749.93	7782.89	7766.92	7683.25	7741.69	– 1.29	– 0.02	7913.94	7558.89	7858.32	7629.18
20 TRANSPORTATION COS.: (divisor: 0.25918163)															
Oct	13	2466.42	2447.85	2446.40	2451.23	2447.37	2441.58	2420.12	2420.60	– 48.23	– 1.95	2493.18	2385.15	2469.31	2417.22
Oct	12	2430.73	2481.37	2488.36	2484.86	2483.06	2465.81	2463.89	2468.83	+ 39.31	+ 1.62	2530.56	2429.28	2502.11	2430.73
Oct	9	2348.14	2380.33	2345.12	2361.76	2397.57	2405.65	2415.29	2429.52	+ 84.52	+ 3.60	2469.55	2319.80	2436.03	2344.04
Oct	8	2447.85	2330.89	2338.25	2286.04	2293.52	2298.10	2336.68	2345.00	– 102.85	– 4.20	2395.04	2260.24	a2447.85	2282.18
Oct	7	2533.46	2519.23	2519.59	2491.01	2493.79	2488.84	2459.18	2447.85	– 85.61	– 3.38	2555.40	2410.95	2536.59	2433.74
15 UTILITIES: (divisor: 2.0859524)															
Oct	13	300.38	304.21	302.98	302.32	302.20	302.89	302.62	305.56	+ 5.04	+ 1.68	307.83	299.44	305.59	300.32
Oct	12	311.64	306.54	302.95	303.19	301.57	300.76	300.85	300.52	– 10.94	– 3.51	311.37	298.04	a311.79	299.92
Oct	9	320.51	316.97	313.11	312.36	311.76	311.34	311.10	311.46	– 9.05	– 2.82	320.45	308.25	320.57	310.59
Oct	8	319.25	316.40	318.71	315.83	318.56	317.75	318.65	320.51	+ 1.38	+ 0.43	322.60	312.93	320.51	315.74
Oct	7	317.48	321.53	319.07	318.14	318.98	317.21	317.06	319.13	+ 1.65	+ 0.52	323.65	313.86	322.21	315.23
65 STOCKS COMPOSITE AVERAGE: (divisor: 1.2866769)															
Oct	13	2493.26	2494.85	2489.94	2487.61	2487.12	2480.71	2469.54	2480.61	– 13.51	– 0.54	2528.32	2438.50	2501.16	2464.88
Oct	12	2484.94	2508.93	2512.29	2515.42	2506.07	2496.23	2501.43	2494.12	+ 9.42	+ 0.38	2554.55	2468.86	2519.33	2484.94
Oct	9	2451.35	2460.02	2426.89	2443.94	2461.79	2464.49	2478.57	2484.70	+ 33.98	+ 1.39	2521.90	2406.20	2488.48	2426.16
Oct	8	2471.05	2421.26	2425.70	2386.14	2399.16	2393.28	2430.29	2450.72	– 20.33	– 0.82	2481.20	2358.69	2471.05	2383.76
Oct	7	2485.65	2497.13	2494.68	2479.89	2487.68	2480.91	2459.10	2471.05	– 14.81	– 0.60	2532.54	2420.58	2512.92	2443.87

*a-Actual high or low exceeds theoretical value due to computational method. q-Actual. r-Revised.