LESSON EIGHT
THE STOCK MARKET: RISKS AND REWARDS

INTRODUCTION

There are several reasons for including the stock market in a study of economics. First, the stock market is an important institution in the operation of the American economic system. Companies raise a large part of the funds used for investment through the various markets for securities. The markets for *new* issues of stocks and bonds, which are generally referred to as *primary* markets, are critical in this important process.

Second, the stock market plays a critical role in *personal* financial planning activities. Not only do many individuals directly purchase shares of stock as part of their personal financial strategies, the vast majority of Americans have a large stake in the stock market through their participation in public or private retirement programs. Investments in common stocks have proven to be an excellent long-run strategy in retirement planning, compared to alternatives such as savings accounts, government securities, corporate bonds, precious metals, works of art, rare coins and stamps, and even baseball cards.

Third, the stock market provides a dramatic example of virtually instantaneous price determination through the interaction of supply and demand forces in an auction-like environment. The stock market reflects many important characteristics of what economists call efficient and competitive markets.

Finally, people of all ages find the stock market to be an interesting subject for study and discussion. In both fact and fiction, fascinating stories of winning and losing vast fortunes on the stock market abound. Economics teachers can capitalize on the natural interest in this topic by integrating lessons dealing with the stock market into various parts of their courses. So start by teaching students how to read stock price reports and interpret financial information, then use the students' interest in the topic to demonstrate and help teach basic economics.

CONCEPTS

Economic institutions and incentives
Markets and prices

CONTENT STANDARDS

Several kinds of specialized institutions are found in market economies—the stock market is an example of such institutions.

Prices for corporate stocks are largely determined by people's beliefs about a company's future earnings, or profits.

Profit is the difference between revenues and the costs entailed in producing or selling a good or service; it is a return for risk taking.

The hope of earning profit motivates business firms to incur the risks involved in producing goods and services for the market.

OBJECTIVES

- Read and interpret stock market price reports.
- Describe the basic structure of the markets for corporate and government securities.
- Explain the distinction between primary and secondary markets for corporate securities.
- Define profits and explain the role of profits in the American economic system for both firms and individual investors.

LESSON DESCRIPTION

Activities 1 and 3 use information sheets to teach students about reading stock market prices and personal investing. Activity 2 explains the random walk hypothesis of efficient markets, and outlines a procedure for testing the hypothesis. Activity 4 provides historical data on profits in key U.S. industries and asks students to try to predict future profits for different kinds of products and firms.

TIME REQUIRED

Three class periods. Day one—procedure 1 and begin procedure 2. Day two—procedure 3 and begin procedure 4. Day three—complete procedures 2 and 4. In Activity 2, you may decide to have students track the prices of several stocks over a period of several weeks.

MATERIALS

★ One copy of Activity 1 for each student
■ One copy of Activity 2 for each student
★ One copy of Activities 3 and 4 for each student. Activity 2 will require at least one dart, a current list of stock prices, and a suitable backing for a "dartboard" (e.g., a bulletin board, cork tiles, or styrofoam panels).

PROCEDURE

1. Distribute a copy of Activity 1 to each student and discuss it with the class. The explanations are straightforward and generally easy to understand. The measure that is most useful in illustrating basic economic concepts is the price-earnings ratio, because stockholders are buying a claim to the companies' future profits. The price of a share of stock, just like the price of other things, is determined by the interaction of supply and demand factors—i.e., by buyers and sellers. It should be stressed that a stock with a low P-E ratio is not necessarily a "better" investment than one with a high ratio, because the stock price is based on expected *future* prices and earnings (see Appendices 1 and 2 for more information).

The correct answers to questions on the activity sheet are:

A. 963,800

B. 41 ⅞

C. Approximately $1.41 ($40.875 divided by 29)

2. Distribute copies of Activity 2 to all students. Have them read the sheet, and then select three stocks using a dart board or drawing. Have three students contact a broker or bring in "expert" picks from other sources. Track the stock prices for three to six weeks. Be prepared for a wide range of possible results: sometimes the expert opinions will beat the darts and sometimes the darts will win decisively. Explain that the real test is to beat the random choice methods for a large number of stock picks over periods of several months, or even years.

You might want to establish some additional ground rules for the activity. For example, you may want to restrict the choices to common stocks. If a dart hits any security other than a common stock, the rule could be that the nearest common stock has been selected or that the dart will be thrown again. Students throwing the darts might also be blindfolded, to emphasize the randomness of the selection process.

3. Distribute a copy of Activity 3 to each student and discuss the primary market for corporate securities with the class. Explain that in the primary market companies raise investment funds by issuing *new* securities. The distinction between this market and the secondary market, in which previously issued securities are traded every day, should be stressed. An important aspect of the secondary market is that, by maintaining an active market for previously issued securities, it makes the primary market possible. Without such a dynamic market, it would be much more difficult for new issues to be sold through the underwriting process.

Answers to the question on the activity sheet should include:

A. Newly issued shares are initially sold through a negotiation process involving investment bankers. In the secondary market, many buyers and sellers exchange previously issued stock shares and money, usually through stockbrokers.

B. In the primary market, the companies issuing the stock actually receive funds to be used in ways explained in the Prospectus. In the secondary market, the companies whose shares are being traded do not receive the funds; whoever sells the stocks receives the money.

C. Government regulations are important in

both markets, but they are much more strict and formalized in the primary markets.

The statement at the top of the announcement illustrates the role of government in protecting investors. Underwriters must, by law, provide potential investors with a copy of the Prospectus. This regulation was adopted as a result of widespread speculation and some unscrupulous dealings in corporate securities during the 1920s and 1930s.

Each state has a designated Securities Administrator (often in the Secretary of State's office) responsible for enforcing securities laws and protecting the public from fraudulent investment schemes. Regulators are especially concerned about new issues of very low-priced stocks, sometimes called "penny stocks," which are often characterized by a high degree of risk and relatively high commission charges.

The North American Securities Administrators Association and The Council of Better Business Bureaus jointly published a paperback book, *Investor Alert! How to Protect Your Money from Schemes, Scams, and Frauds* in 1988. Copies may be available from state and regional offices of these organizations.

You may want to invite financial advisers or stockbrokers to visit classes as guest speakers. Ask them to bring and explain a current Prospectus for some stock offering.

4. Distribute copies of Activity 4 to each student and discuss the role of profits in the American economy. (Two different measures of profit are explained in Appendix 2.) The profit data in Activity 4 were taken from an annual issue of *Fortune* magazine highlighting the "Fortune 500". The 500 largest U.S. industrial corporations are usually featured in the April issue of *Fortune* and the 500 largest service corporations in the May issue.

Suggested answers to the questions on the Activity Sheet are given below, but students may think of other plausible explanations:

A1. Consistently high profits in this industry are largely due to strong product demand and the patents provided to developers of new products. Patented products are protected from direct competition for a number of years, so that companies and investors have strong financial incentives to develop more new products.

Another possible explanation is that firms in this market are relatively large with high research and development costs. That creates serious barriers to entry into the industry, so the market may not be very competitive. Students may also point out that the demand for drugs tends to be price inelastic ("people will pay any price to get a drug that will be helpful"). This is not, however, a complete answer, because it doesn't explain why other firms would not come into this industry and drive profits rates down.

A2. A major reason for high profits in the tobacco industry is government-imposed supply restrictions, through a system of price controls and production quotas for growers. There are also significant barriers to entry into the industry because of strong brand loyalty—advertising and other expensive marketing strategies make the industry a difficult one for new competitors to enter. Increasing foreign demand for American tobacco products has offset decreasing demand in the United States; and the demand for tobacco is also price inelastic. But once again, demand conditions are not a complete answer. Strong demand contributes to high industry sales levels, but government supply restrictions and barriers to entering the industry are the major reasons for persistently high profit levels.

A3. Profits in the textile industry have been below the long-term average for the industry and below the average for all Fortune 500 firms for quite a few years. As expected, resources have left the industry. Vigorous foreign competition has been a major factor.

A4. Natural monopolies, such as public utilities, are regulated by government agen-

cies. Since direct competition with other firms producing the same product is not feasible, prices and/or profit levels are set by government. Government agencies are generally required to set rates to provide a "fair rate of return" to stockholders. Therefore, profit rates tend to be relatively stable. These firms also usually face fairly steady demand and cost conditions, except in areas with big population changes, or in times when fuel prices are changing rapidly.

A5. The automobile industry is an example of what is sometimes referred to as "heavy industry," characterized by extremely high capital investments. It also faces strong foreign competition and changing consumer tastes for different models and types of vehicles (e.g., 4x4s, minivans, and convertibles). The result has been extremely volatile swings in profitability. From enormous losses in 1992, the industry rebounded with a profit rate slightly above the Fortune 500 average in 1993.

A6. The overall performance of *Fortune* 500 companies reflects economic activity in the entire economy. During the high growth years of 1988 and 1989, average profit levels for these firms were substantially higher than their historical average. The recession year of 1992 resulted in much lower profits.

B. Students should be encouraged to think creatively about the future of the American and world economies. There will obviously be extremely important changes occurring, but the nature and extent of these changes are unknown.

It should be noted that even if an industry grows during the next 15 years, that does not necessarily mean that it will be more profitable, because competition may keep profits close to normal levels. Also, even in an expanding industry, some firms may be highly profitable while others are big losers. Profit levels for the computer industry in Activity 4 are a good example of this.

Some ideas that students might consider include:

1. American firms will almost certainly be more involved in international trade. This is likely to result in the growth of firms that produce products for export, and also in industries concerned with marketing and transporting both exports and imports.

2. Technological changes will lead to the expansion of *some* firms dealing in communications, space exploration, oceanography, health care, and many other areas that we cannot pinpoint today.

3. An aging population will probably result in increased sales in industries dealing with health care and other services important to older consumers, and relative declines in youth-oriented businesses.

4. Industries that produce military hardware and other defense products may be much more or much less important. Forecasts involve a number of assumptions relating to global political and economic issues.

C. Common stock prices tend to rise for firms experiencing strong growth in profits, and fall for companies experiencing losses, because the stockholders own a share of those profits and losses. Point out, however, that today's stock prices are largely determined by the market's assessment of future earnings (or losses), not current earnings.

ACTIVITY 1
HOW TO READ STOCK MARKET REPORTS

Name _____

Many newspapers publish daily reports of stock market transactions. The prices listed below were taken from the April 21, 1994 *Wall Street Journal.* Many newspapers do not list this much information.

52 Weeks Hi	52 Weeks Lo	Stock	Sym	Div	Yld %	PE	Vol (100s)	Hi	Lo	Close	Net Chg
44 1/2	24 1/4	Ashland Oil	ASH	1.00	2.4	15	3226	42 3/8	41 7/8	42	- 1/8
73 1/8	50 3/8	Ashland Oil pf		3.13	4.6	—	209	69 1/4	68 1/4	68 1/4	- 7/8
65	49 1/2	AmT&T	T	1.32	2.5	17	32037	52 1/8	51 1/8	52 1/8	+ 1 1/2
48 5/8	36	Disney	DIS	.30	.7	29	11401	42 3/8	40 1/2	40 7/8	- 3/4
60	40 5/8	IBM	IBM	1.00	1.9	—	22077	53 3/4	51 1/2	52 1/4	- 1 1/8
42 7/8	32 3/8	ToysRUs	TOY	—	—	20	9638	33	32 3/8	33	+ 1/4

The stocks listed are common stocks unless indicated otherwise. For example "**pf**" indicates a preferred stock. The numbers to the left of the name of the corporation show the highest and lowest price at which the stock has traded during the previous 52 weeks. The **symbol** column lists the stock's ticker symbol. These symbols are used by brokers when stock is being traded. The **dividend** column shows the current level of dividends that will be paid over one year to the owner of one share of stock. Some companies pay very little or no dividends. ToysRUs, for example, is paying no dividends, and DISNEY is paying only 30 cents. The next column, **dividend yield**, shows the dividend as a percentage of the stock closing price.

The **PE** column lists the price/earnings ratio, which is the price of a share of stock divided by the company's earnings (profits) per share for the last 12-month period. This is a useful measure for studying the market's evaluation of a particular stock. A high p/e ratio indicates that the market has bid the price of the stock up to a relatively high level with respect to its current earnings. A stock that the market has evaluated as a stable, relatively secure investment will often have a relatively low p/e ratio. Owning stock in a company gives stockholders a claim to part of the firm's future profits, so clearly the price of the stock compared to current profits per share is an important ratio for investors to consider.

The column marked **volume** lists the number of shares sold (in hundreds) on April 20, 1994. There were 322,600 shares of ASHLAND OIL traded and 2,207,700 shares of IBM. The **hi, lo,** and **close** columns show the range of prices at which the stock traded during the day of April 20. For example, the highest price paid for DISNEY common stock was $42.375, and the lowest price was $40.50. The **closing price** is the price for the last transaction of the day. The **net change** column shows the change between this closing price and the closing price of the previous trading day. Note that the price of AmT&T common stock closed $1.50 higher than the closing price of April 19, so the closing price on April 19 was $50.625.

Many listings of stocks have lowercase letters to indicate special circumstances, which are explained in footnotes near the price report.

ACTIVITY 1 (continued)

Use the information above to answer these questions:

A. How many shares of Toys R Us were traded on April 20, 1994? _____

B. What was the closing price on April 19, 1994 for Disney common stock? _____

C. Disney's earnings (profits) per share for the past 12 months were approximately: _____

ACTIVITY 2
A RANDOM WALK DOWN WALL STREET

Name _____

"If you want to really strike it rich in the stock market, you should tape a list of stocks on the wall, throw darts at the list, and buy the stocks your darts hit."

Could this be true? Is it possible that choosing stocks at random could be just as effective as getting advice from financial experts and stockbrokers? If your objective is simply to get rich buying stocks, the answer is quite possibly yes. But that's not because the experts don't know what they're doing, it's because of the special nature of the stock market itself.

The stock market is one of the most competitive markets in the world. Millions of people are trying to identify the best stocks to buy every day, using sophisticated forecasting techniques. Public information about stocks is widely available to anyone who wants it, at a very low cost. Therefore, almost everything that can be known about a stock is known by large numbers of buyers and sellers, and reflected in the market price of the stock. No one has an advantage over anyone else—unless they trade using private, "inside information," which is illegal.

Economists use the term "random walk" to describe purchasing decisions in markets with these characteristics. "Expert" forecasting in such markets isn't effective, because everything known about past performance is already reflected in the stock price, and future prices will only be affected by unknown, future events. In fact, even future events that are systematically predictable from past trends are reflected in the stock price, so only unexpected events will affect the future stock price.

If stock A and stock B are each selling for $20 per share, that is what the buyers and sellers in the market think the stock is worth. If there is unexpected good news about stock A and unexpected bad news about stock B, the price of stock A might rise to $30 while the price of stock B drops to $10. But which stock is the better buy then? Neither! After the prices change to reflect the new information, they will again both be selling for what the market thinks they are worth. Future changes in these prices will be the result of factors that are now unknown and unexpected.

The prices of most stocks rise over time, primarily because most companies reinvest a large part of their profits into their business, and when those investments succeed there are higher future profits for the stockholders to share. But the prices of individual stocks and "indexes" of prices for many different stocks tend to vary randomly around this long-term trend. A great deal of statistical research and a lot of practical experience by millions of people have generally shown this random-walk theory to be accurate. If you can find a way to show it is not true, allowing you to outpredict random choices of stocks, you can become very rich indeed.

ACTIVITY 2 (continued)

To see what is involved in doing that, you can run a simple test of the random walk concept by selecting three stocks based on expert opinion and choosing three other stocks randomly. For expert picks, you might want to ask a stockbroker or check newspaper articles and weekly financial programs on PBS that recommend specific stocks. For random choices, you can use a dart board that lists all stocks on the major stock exchanges or cut up company names on slips of paper and draw three from a hat.

In the table below, list stocks selected on the basis of expert opinion as numbers 1, 2, and 3, and those selected randomly as numbers 4, 5, and 6. Then follow the stock prices and any dividend payments for several weeks, and calculate the return from investing $10,000 in each of the six stocks.

Stock (Company)	Date Selected	Price	Subsequent Dates, Prices, and Dividend Payments
1			
2			
3			
4			
5			
6			

ACTIVITY 3
INVESTMENT BANKING AND THE STOCK MARKET

Name _____

The announcement below is for a new issue of common stock in the First Alert corporation. The 49 other firms listed are investment bankers, which means they specialize in buying and selling new issues of stock. Investment bankers buy the new stock from the company which issues it (in this case, First Alert) at a negotiated price. The investment bankers accept the risk that they can resell these securities to the general public at a profit.

These 49 firms have formed an "underwriting syndicate" to buy First Alert, Inc.'s new issue of 3,600,000 shares of its common stock. The two firms listed at the top in slightly larger print are the lead firms in the syndicate. These two firms probably did most of the research and negotiating that led to this agreement, and they probably have a larger share of the issue. For example, each of these two firms might be responsible for buying 10%-15% of the total issue while the other 47 firms might have subscribed to as little as one-half of one per cent up to 2% or 3%. Note that the investment firms hope to sell these shares for $61.2 million (3.6 million x $17). Since they expect to make a profit, the syndicate clearly paid First Alert less than this. For example, suppose First Alert received $56 million from the syndicate. That means the syndicate will earn a little over $5 million *if* the firms are successful in selling this issue fairly quickly at the expected price of $17 per share. First Alert has already received its investment funds, and knows that its new shares of common stock will be introduced into the market in an orderly fashion involving many brokerage firms.

First Alert can use the funds it receives to undertake projects specified in the Prospectus. A Prospectus includes a detailed description of the company's recent business history, with key data on the company's current operations, and an explanation of how proceeds from the new stock issue will be used.

The Securities and Exchange Commission requires that all purchasers of newly issued stock be provided with a copy of the Prospectus—see the note at the top of the announcement.

What are the main differences between the primary market for new securities, and the secondary market for previously issued securities?

_____

_____

_____

_____

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This announcement constitutes neither an offer to sell nor a solicitation of an offer to buy these securities. The offering is made only by the Prospectus, copies of which may be obtained in any State from such of the undersigned and others as may lawfully offer these securities in such State.

April 5, 1994

3,600,000 Shares

First Alert, Inc.

Common Stock

Price $17 per Share

Smith Barney Shearson Inc.		Morgan Stanley & Co. Incorporated
Bear, Stearns & Co. Inc.	CS First Boston	Alex. Brown & Sons Incorporated
Dean Witter Reynolds Inc.	Donaldson Lufkin & Jenrette Securities Corporation	A.G. Edwards & Sons, Inc.
Hambrecht & Quist Incorporated	Kidder Peabody & Co. Incorporated	Lehman Brothers
Montgomery Securities	Oppenheimer & Co. Inc.	Paine Webber Incorporated
Prudential Securities Incorporated	Robertson, Stephens & Company	Salomon Brothers Inc.
Wasserstein Perella Securities, Inc.	Wertheim Schroder & Co. Incorporated	The Chicago Dearborn Company
William Blair & Company	Dain Bosworth Incorporated	Kemper Securities, Inc.
Piper Jaffray Inc.	Raymond James & Associates, Inc	The Robinson-Humphrey Company, Inc.
Wheat First Butcher Singer	Advest, Inc.	Robert W. Baird & Co. Incorporated
Crowell, Weedon & Co.	Dominick & Dominick Incorporated	First Albany Corporation
First of Michigan Corporation	Interstate/Johnson Lane Corporation	Janney Montgomery Scott Inc.
Ladenburg, Thalmann & Co., Inc.	McDonald & Company Securities Inc.	Tucker Anthony Incorporated
Brean Murray, Foster Securities Inc.		Foley Mufson Howe & Company
Gerard Klauer Mattison & Co., Inc.	Howe Barnes Investments, Inc.	C.L. King & Associates, Inc.
Mesirow Financial, Inc.	Moors & Cabot, Inc.	Pennsylvania Merchant Group Ltd.
Ragen MacKenzie Incorporated	The Seidler Companies Incorporated	Van Kasper & Company

ACTIVITY 4
PROFITS AND PROPHETS

Name _____

The American economic system is described by many different names: the market system, capitalism, the free enterprise system, or a profit system. The last name indicates clearly that profits (and losses) play a crucial role in the operation of the U.S. economy.

The best general measure of profits compares what companies make to what they risked to earn those profits. The table below lists rates of profits as a percentage of stockholders' equity—what the company owners were risking in the firm—for several industries during a recent 10-year period. As you can see, rates of profit vary considerably by industry from year to year, although the median rate of profit for the 500 largest industrial firms was generally between 10% and 15%. (This median rate of profit is the "middle" rate of profits for firms in the industry—half of the firms have profits above this rate, half of the firms have lower profits.)

Examine these data, and answer the following questions:

Profits at Fortune 500 Firms
(as a Percentage of Stockholders' Equity)

Industry	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984
Banks	na*	13.0	11.9	9.9	13.6	14.6	11.1	12.8	13.0	12.6
Motor Vehicles	10.5	-11.1	0.7	7.2	6.9	14.5	11.6	10.1	13.7	15.4
Food	12.7	15.6	19.7	16.5	14.7	15.7	16.1	15.8	15.0	16.2
Pharmaceuticals	22.0	26.7	26.1	26.4	25.5	23.6	22.7	23.6	15.6	18.1
Textiles	10.6	9.8	4.6	2.9	7.7	10.8	12.8	8.1	5.6	8.2
Computers	9.5	4.6	10.2	12.0	12.7	14.7	14.6	10.8	11.0	12.6
Tobacco	16.5	21.9	12.1	14.8	20.1	22.5	23.1	22.1	22.8	23.8
Utilities	na*	10.6	11.5	11.5	12.4	12.7	12.8	13.3	13.0	13.4
Median Profit % for all industries	10.3	9.1	10.2	13.0	15.0	16.2	13.2	11.6	11.6	13.6

* not available