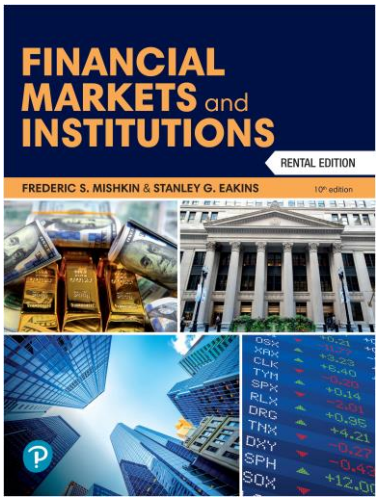
Financial Markets and Institutions

Tenth Edition



Chapter 13

The Stock Market

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Chapter Preview (1 of 2)

In August of 2004, Google went public, auctioning its shares in an unusual IPO format. The shares originally sold for $85 / share, and closed at over $100 on the first day. At the end of 2012, shares are trading on Nasdaq at over $707 / share.

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Chapter Preview (2 of 2)

- Topics Addressed
  - Stock Market Indexes
  - Buying Foreign Stocks
  - Regulation of the Stock Market
  - Investing in Stocks
  - Computing the Price of Common Stock
  - How the Market Sets Security Prices
  - Errors in Valuation

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Investing in Stocks

1. Represents ownership in a firm
2. Earn a return in two ways
   - Price of the stock rises over time
   - Dividends are paid to the stockholder
3. Stockholders have claim on all assets
4. Right to vote for directors and on certain issues
5. Two types
   - Common stock
     - Right to vote
     - Receive dividends
   - Preferred stock
     - Receive a fixed dividend
     - Do not usually vote

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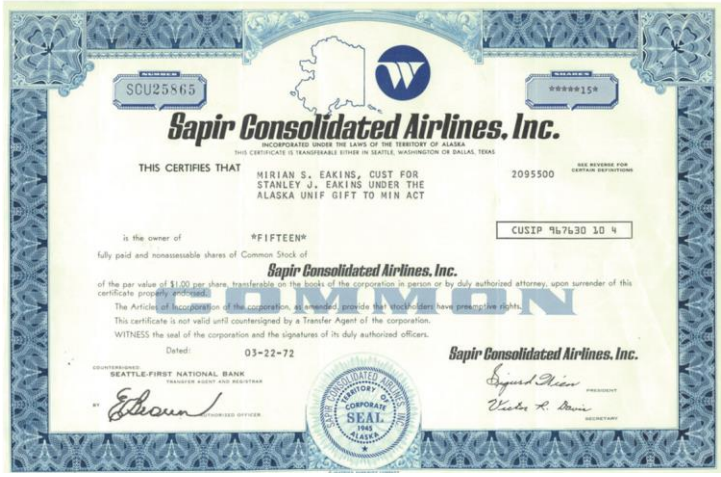
Figure 13.1

Sapir Consolidated Airlines Stock



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Investing in Stocks: How Stocks Are Sold (1 of 2)

- Organized exchanges
  - NYSE is best known, with daily volume around 4 billion shares, with peaks at 10 billion.
  - "Organized" used to imply a specific trading location. But computer systems (ECNs) have replaced this idea.
  - Others include the ASE (US), and Nikkei, LSE, DAX (international)
  - Listing requirements exclude small firms

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Investing in Stocks: How Stocks Are Sold (2 of 2)

- Over-the-counter markets
  - Best example is NASDAQ
  - Dealers stand ready to make a market
  - Today, about 3,000 different securities are listed on NASDAQ.
  - Important market for thinly-traded securities—securities that don't trade very often. Without a dealer ready to make a market, the equity would be difficult to trade.

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Investing in Stocks: Organized Versus OTC

- Organized exchanges (e.g., NYSE)
  - Auction markets with floor specialists
  - 25% of trades are filled directly by specialist
  - Remaining trades are filled through SuperDOT
- Over-the-counter markets (e.g., NASDAQ)
  - Multiple market makers set bid and ask prices
  - Multiple dealers for any given security

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Investing in Stocks: ATSs and MTFs

ATSs (alternative trading systems) and MTFs (multilateral trading facilities) allow buyers and sellers of securities to dead directly with each other.

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Investing in Stocks: ECNs (1 of 2)

ECNs (electronic communication networks) are a subset of ATSs/MTFs that allow brokers and traders to trade without the need of the middleman. They provide:

- Transparency: everyone can see unfilled orders
- Cost reduction: smaller spreads
- Faster execution
- After-hours trading

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Investing in Stocks: ECNs (2 of 2)

However, ECNs are not without their drawbacks:

- Don't work as well with thinly-traded stocks
- Many ECNs competing for volume, which can be confusing
- Major exchanges are fighting ECNs, with an uncertain outcome

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Investing in Stocks: ETFs

Exchange Traded Funds are a recent innovation to help keep transaction costs down while offering diversification.

- Represent a basket of securities
- Traded on a major exchange
- Index to a specific portfolio (e.g., the S&P 500), so management fees are low (although commissions still apply)
- Exact content of basket is known, so valuation is certain

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Computing the Price of Common Stock

- Valuing common stock is, in theory, no different from valuing debt securities:
  - determine the cash flows
  - discount them to the present
- We will review four different methods for valuing stock, each with its advantages and drawbacks.

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Computing the Price of Common Stock: The One-Period Valuation Model (1 of 2)

- Simplest model, just taking using the expected dividend and price over the next year
- Price = $Div_1 / (1 + k_e) + P / (1 + k_e)$

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Computing the Price of Common Stock: The One-Period Valuation Model (2 of 2)

What is the price for a stock with an expected dividend and price next year of $0.16 and $60, respectively? Use a 12% discount rate

Answer: Price = $(0.16 + 60) / (1 + 0.12) = 53.71$

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Computing the Price of Common Stock: The Generalized Dividend Valuation Model (1 of 2)

- Most general model, but the infinite sum may not converge.
- Price = Sum of the present value of all dividends.
- Rather than worry about computational problems, we use a simpler version, known as the **Gordon growth model**.

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Computing the Price of Common Stock: The Gordon Growth Model (1 of 2)

- Same as the previous model, but it assumes that dividend grow at a constant rate, g. That is,
  - $DIV_{t+1} = DIV_t \times (1+g)$
- With that, the price is simply:
  - Price = $DIV_1 / (k_e - g)$

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Computing the Price of Common Stock: The Gordon Growth Model (2 of 2)

The model is useful, with the following assumptions:

- Dividends do, indeed, grow at a constant rate forever
- The growth rate of dividends, g, is less than the required return on the equity, k_e.

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Computing the Price of Common Stock: The Generalized Dividend Valuation Model (2 of 2)

- The **price earnings ratio (PE)** is a widely watched measure of much the market is willing to pay for $1.00 of earnings from the firms.
- Price = $P/E \times \text{Earnings}$

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Computing the Price of Common Stock: The Price Earnings Valuation Method

If the industry PE ratio for a firm is 16, what is the current stock price for a firm with earnings for $1.13 / share?

Answer: $\text{Price} = 16 \times \$1.13 = \$18.08$

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How the Market Sets Security Prices
(1 of 3)

- Generally speaking, prices are set in competitive markets as the price set by the buyer willing to pay the most for an item.
- The buyer willing to pay the most for an asset is usually the buyer who can make the best use of the asset.
- Superior information can play an important role.

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How the Market Sets Security Prices
(2 of 3)

- Consider the following three valuations for a stock with certain dividends but different perceived risk:

Investor	Discount Rate	Stock Price
You	15%	$16.67
Jennifer	12%	$22.22
Bud	7%	$50.00

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How the Market Sets Security Prices (3 of 3)

- Bud, who perceives the lowest risk, is willing to pay the most and will determine the “market” price.

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Errors in Valuation (1 of 2)

Although the pricing models are useful, market participants frequently encounter problems in using them. Any of these can have a significant impact on price in the Gordon model.

- Problems with Estimating Growth
- Problems with Estimating Risk
- Problems with Forecasting Dividends

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Table 13.1

Stock Prices for a Security with $D_0 = \$2.00,\ k_e = 15\%,$ and Constant Growth Rates as Listed

Growth (%)	Price ($)
1	14.43
3	17.17
5	21.00
10	44.00
11	55.50
12	74.67
13	113.00
14	228.00

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Table 13.2

Stock Prices for a Security with $D_0 = \$2.00,\ g = 5\%,$ and Required Returns as Listed

Required Return (%)	Price ($)
10	42.00
11	35.00
12	30.00
13	26.25
14	23.33
15	21.00

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Errors in Valuation (2 of 2)

Security valuation is not an exact science!

Considering different growth rates, required rates, etc., is important in determining if a stock is a good value as an investment.

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Case: The 2007–2009 Financial Crisis and the Stock Market

- The financial crisis, which started in August 2007, was the start of one of the worst bear markets.
- The crisis lowered “g” in the Gordon Growth model—driving down prices.
- Also impacts k_e —higher uncertainty increases this value, again lowering prices.
- The expectations were still optimistic at the start of the crisis. But, as the reality of the severity of the crisis was understood, prices plummeted.

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Case: 9 / 11, Enron and the Market

- Both 9/11 and the Enron scandal were events in 2001.
- Both should lower "g" in the Gordon Growth model—driving down prices.
- Also impacts k_e –higher uncertainty increases this value, again lowering prices.
- We did observe in both cases that prices in the market fell. And subsequently rebounded as confidence in U.S. markets returned.

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Stock Market Indexes

- Stock market indexes are frequently used to monitor the behavior of a groups of stocks.
- Major indexes include the Dow Jones Industrial Average, the S&P 500, and the NASDAQ composite.
- The securities that make up the (current) DJIA are included on the next several slides.

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Table 13.3 (1 of 3)

The Thirty Companies That Make Up the Dow Jones Industrial Average

Company	Stock Symbol
3M Co.	MMM
Apple Inc.	AAPL
American Express Co.	AXP
Boeing Co.	BA
Caterpillar Inc.	CAT
Chevron	CVX
Cisco Systems	CSCO
Coca-Cola Co.	KO
E.I. DuPont de Nemours	DD
Exxon Mobil Corp.	XOM

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Table 13.3 (2 of 3)

The Thirty Companies That Make Up the Dow Jones Industrial Average

Company	Stock Symbol
General Electric Co.	GE
Goldman Sachs	GS
Home Depot Inc.	HD
International Business Machines	IBM
Intel Corp.	INTC
Johnson & Johnson	JNJ
JP Morgan Chase & Co.	JPM
McDonald's Corp.	MCD
Merck & Co. Inc.	MRK
Microsoft Corp.	MSFT

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Table 13.3 (3 of 3)

The Thirty Companies That Make Up the Dow Jones Industrial Average

Company	Stock Symbol
Nike	NKE
Pfizer Inc.	PFE
Procter & Gamble Co.	PG
Travelers Corp.	TRV
United Technologies Corp.	UTX
United Health Group	UNH
Verizon Communications Inc.	VZ
Visa International	V
Wal-Mart Stores Inc.	WMT
Walt Disney Co.	DIS

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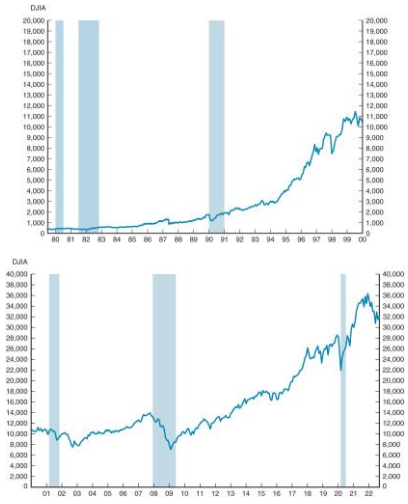
Figure 13.2

Dow Jones Industrial Averages, 1980–2022



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Buying Foreign Stocks

- Buying foreign stocks is useful from a diversification perspective. However, the purchase may be complicated if the shares are not traded in the United States
- American depository receipts (ADRs) allow foreign firms to trade on U.S. exchanges, facilitating their purchase. U.S. banks buy foreign shares and issue receipts against the shares in U.S. markets.

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Regulation of the Stock Market

- The primary mission of the SEC is "…to protect investors and maintain the integrity of the securities markets."
- The SEC brings around 500 actions against individuals and firms each year toward this effort. This is accomplished through the joint efforts of four divisions.

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Regulation of the Stock Market: Divisions of the SEC (1 of 2)

- Division of Corporate Finance: responsible for collecting, reviewing, and making available all of the documents corporations and individuals are required to file
- Division of Market Regulation: establishes and maintains rules for orderly and efficient markets.

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Regulation of the Stock Market: Divisions of the SEC (2 of 2)

- Division of Investment Management: oversees and regulates the investment management industry
- Division of Enforcement: investigates violations of the rules and regulations established by the other divisions.

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Chapter Summary (1 of 3)

- Investing in Stocks: we developed an understanding the structure of the various trading systems, including exchanges and OTC markets
- Computing the Price of Common Stock: various techniques for valuing dividends and earnings were presented

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Chapter Summary (2 of 3)

- How the Market Sets Security Prices: the basic idea that prices are set by the “highest bidder” was reviewed
- Errors in Valuation: difficulties in determining dividends, growth rates, and/or required returns can have a significant impact in the pricing models

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Chapter Summary (3 of 3)

- Stock Market Indexes: a way to track changes in valuation for a broad group of stocks
- Buying Foreign Stocks: potential benefits for diversifications, simplified by the use of ADRs.
- Regulation of the Stock Market: the primary function of the Securities and Exchange Commission

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