Chapter 3, How Securities Are Traded

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Chapter Overview

- Security Issuance
  - Privately Held Firms
  - Publicly Traded Companies
  - Initial Public Offerings
- Security Trading
  - Types of Markets
  - Bid and Ask
  - Types of Orders
  - Trading Mechanizms
  - U.S. Markets
- Margin Trading
  - Buying on Margin
  - Maintenance Margin
  - Returns
  - Short Sales
  - Margin call
- Regulation

Learning Objectives

LO3-1 Describe how firms issue securities to the public.

LO3-2 Identify various types of orders investors can submit to their brokers.

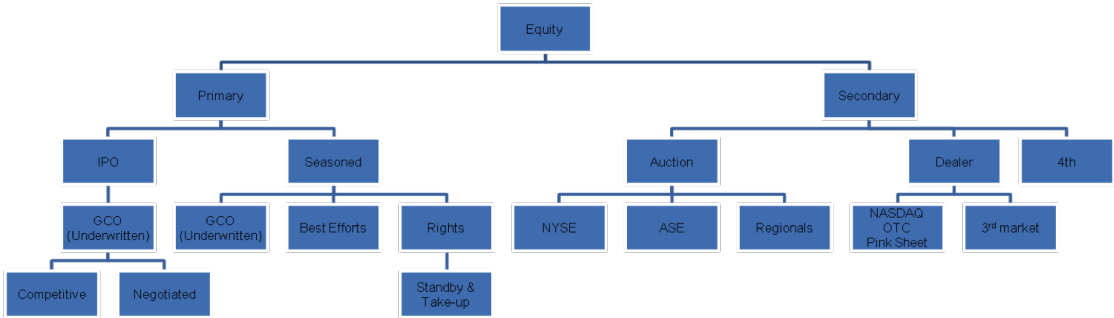
LO3-3 Describe trading practices in dealer markets, specialist-directed stock exchanges, and electronic communication networks.

LO3-4 Compare the mechanics and investment implications of buying on margin and short-selling.

How Firms Issue Securities

- Primary Market
  - Market for newly-issued securities
  - Firms issue new securities through underwriter (investment banker) to public
  - Key factor: issuer receives the proceeds from the sale
  - Public offerings: registered with the SEC and sale is made to the investing public
  - Private offerings: not registered, and sold to only a limited number of investors, with restrictions on resale
- Secondary Market
  - Investors trade previously issued securities among themselves
  - Issuing firm doesn't receive proceeds and is not directly involved

Figure Primary vs. Secondary Security Sales



How Firms Issue Securities

Privately Held Firms

- Up to 499 shareholders
  - Middlemen have formed partnerships to buy shares and get around the 499-investor restrictions
- Raise funds through private placement
- Lower liquidity of shares
- Have fewer obligations to release financial statements and other information

How Firms Issue Securities

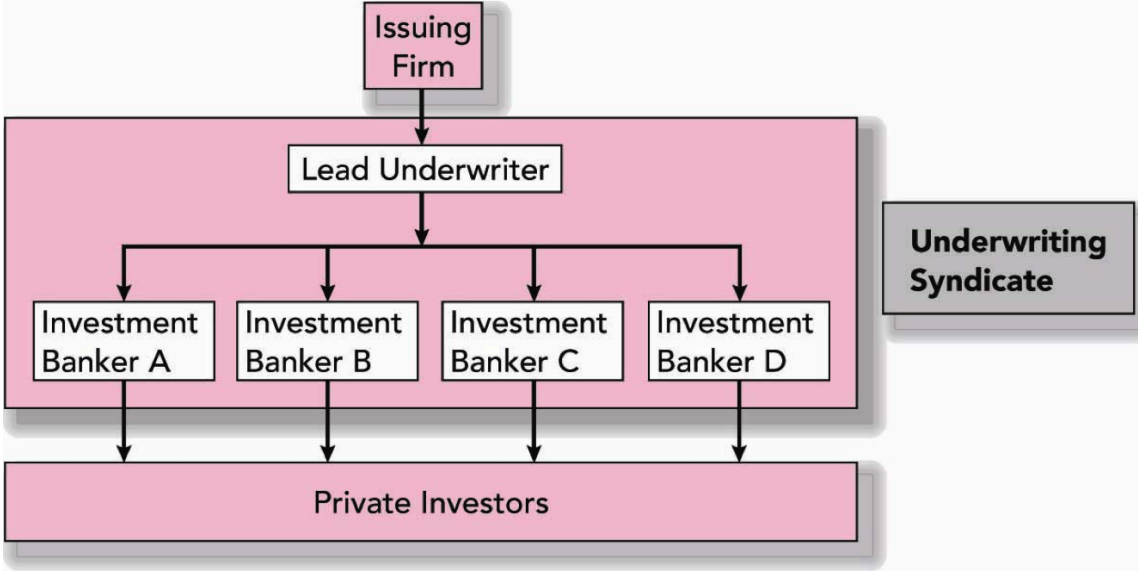
Publicly Traded Companies

- Raise capital from a wider range of investors through initial public offering, IPO
  - Seasoned equity offering: The sale of additional shares in firms that already are publicly traded
- Public offerings are marketed by investment bankers or underwriters
- Registration must be filed with the SEC

Investment Banking Arrangements

- Underwritten vs. "Best Efforts"
  - Underwritten: banker makes a firm commitment on proceeds to the issuing firm
  - Best Efforts: banker(s) helps sell but makes no firm commitment
- Underwriters advise the company
  - File prospectus
  - In the case of firm commitment, buy shares of the issuing firm, then sell to the public
- Example: Facebook's recent IPO

Figure 3.1. Issuers, Underwriters, and Ivestors



How Firms Issue Securities

- Shelf Registration
  - SEC Rule 415: Allows firms to register securities and gradually sell them to the public for two years
    - Shares can be sold on short notice and in small amounts without incurring high floatation costs
- Introduced in 1982
- Allows timing of the issues

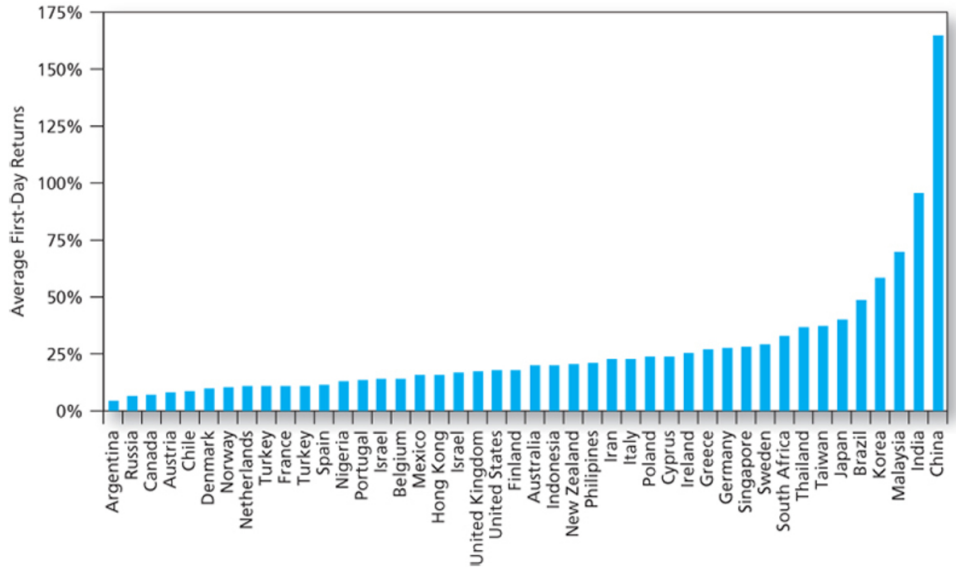
Private Placements

- Banks sell securities (bonds) directly to big investors
  - Saves on costs of offering to the public (regulations)
- Private placement: sale to a limited number of sophisticated investors not requiring the protection of registration
  - Allowed under SEC Rule 144A
  - Dominated by institutions
  - Very active market for debt securities
  - Not active for stock offerings

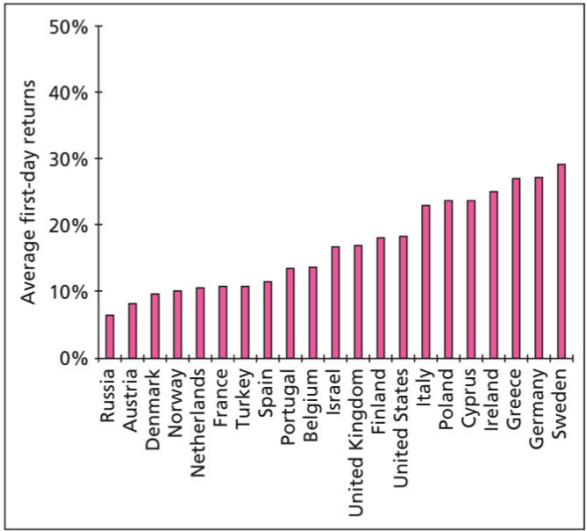
Initial Public Offerings

- Road shows to publicize new offering
- Bookbuilding to determine demand for the new issue
- Degree of investor interest in the new offering provides valuable pricing information
- Underwriter bears price risk associated with placement of securities:
  - IPOs are commonly underpriced compared to the price they could be marketed (ex.: Groupon)
  - Some IPOs, however, are well overpriced (ex.: Facebook); others cannot even fully be sold

Figure Ipo Underpricing



Average First Day Returns for European and Non-European IPOs



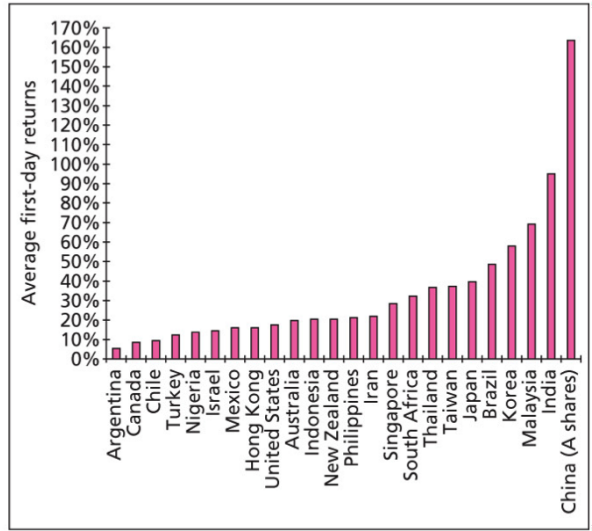
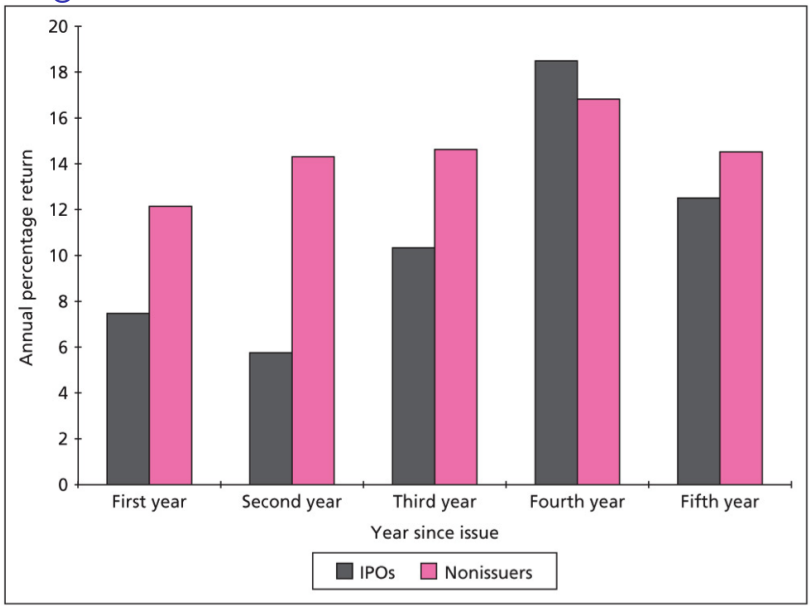


Figure Ipo Long Term Performance



Functions of Financial Markets

- Overall purpose: facilitate low cost investment
  - Bring together buyers and sellers at low cost
  - Provide adequate liquidity by minimizing time and cost to trade and promoting price continuity.
  - Set & update prices of financial assets
- Reduces information costs associated with investing

Types of Markets

- Direct search
  - Buyers and sellers seek each other
  - Least organized
- Brokered markets
  - Brokers search out buyers and sellers
- Dealer markets
  - Dealers have inventories of assets from which they buy and sell
- Auction markets
  - Traders converge at one place to trade

Bid and Ask Prices

- Bid Price
  - Bids are offers to buy.
  - In dealer markets, the bid price is the price at which the dealer is willing to buy.
  - Investors "sell to the bid."
  - Bid-asked spread is the profit for making a market in a security.
  - Buyers and sellers seek each other
- Ask Price
  - Asked prices represent offers to sell.
  - In dealer markets, the asked price is the price at which the dealer is willing to sell.
  - Investors must pay the asked price to buy the security.

Concept Check

CONCEPT CHECK 3.2

Many assets trade in more than one type of market. What types of markets do the following trade in?

a. Used cars

b. Paintings

c. Rare coins

Types of Orders

- Market Order:
  - Executed immediately
  - Trader receives current market price
- Price-Contingent Order:
  - Traders specify buying or selling price
- A large order may be filled at multiple prices

Price Contingent Orders

- Limit order: Order to buy or sell at a specified price or better
  - On the exchange the limit order is placed in a limit order book kept by an exchange official or computer
  - E.G.: Stock trading at \$50, could place a buy limit at \$49.90 or a sell limit order at \$50.25.
- Stop loss order: Becomes a market sell order when the trigger price is encountered.
  - E.G.: You own stock trading at \$40. You could place a stop loss at \$38. The stop loss would become a market order to sell if the price of the stock hits \$38.
- Stop buy order: Becomes a market buy order when the trigger price is encountered.
  - E.G.: You shorted stock trading at \$40. You could place a stop buy at \$42. The stop buy would become a market order to buy if the price of the stock hits \$42.

Figure 3.3 Market Depth

FIGURE 3.3

Average market depth for large (S&P 500) and small (Russell 2000) firms

Source: Adapted from James J. Angel, Lawrence E. Harris, and Chester Spatt, "Equity Trading in the 21st Century," *Quarterly Journal of Finance* 1 (2011), pp. 1–53; Knight Capital Group.

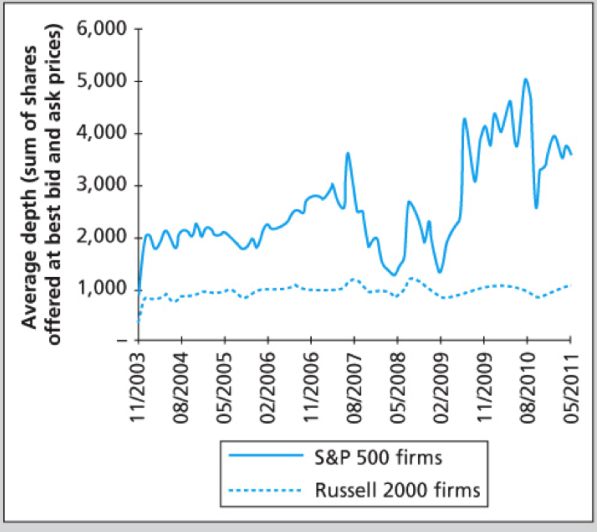


Figure 3.4 Limit Order Book

FIGURE 3.4

The limit order book for Intel on the NYSE Arca market, July 22, 2011

Source: NYSE Euronext.

INTC Intel Corp

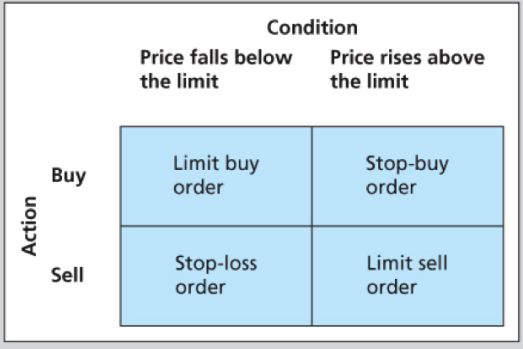
NYSE Arca. INTC Go>>

Bid				Ask			
ID	Price	Size	Time	ID	Price	Size	Time
ARCA	23.16	17200	14:42:11	ARCA	23.17	10900	14:42:08
ARCA	23.15	27800	14:42:06	ARCA	23.18	31643	14:42:04
ARCA	23.14	26000	14:42:11	ARCA	23.19	29445	14:42:05
ARCA	23.13	31100	14:42:06	ARCA	23.20	27946	14:42:08
ARCA	23.12	18900	14:42:04	ARCA	23.21	14628	14:42:04
ARCA	23.11	17925	14:42:03	ARCA	23.22	19725	14:42:02
ARCA	23.10	12250	14:42:02	ARCA	23.23	14290	14:42:02
ARCA	23.09	7800	14:40:41	ARCA	23.24	11100	14:37:02
ARCA	23.08	4900	14:42:03	ARCA	23.25	40694	14:41:56

Figure 3.5 Price-Contingent Orders

FIGURE 3.5

Price-contingent orders



Concept Check

CONCEPT CHECK 3.3

What type of trading order might you give to your broker in each of the following circumstances?

a. You want to buy shares of FedEx, to diversify your portfolio. You believe the share price is approximately at the "fair" value, and you want the trade done quickly and cheaply.

b. You want to buy shares of FedEx, but believe that the current stock price is too high given the firm's prospects. If the shares could be obtained at a price 5% lower than the current value, you would like to purchase shares for your portfolio.

c. You plan to purchase a condominium sometime in the next month or so and will sell your shares of Intel to provide the funds for your down payment. While you believe that the Intel share price is going to rise over the next few weeks, if you are wrong and the share price drops suddenly, you will not be able to afford the purchase. Therefore, you want to hold on to the shares for as long as possible, but still protect yourself against the risk of a big loss.

Problem

Consider the following limit-order book for a share of stock. The last trade in the stock occurred at a price of $50.

Limit Buy Orders		Limit Sell Orders	
Price	Shares	Price	Shares
$49.75	500	$50.25	100
49.50	800	51.50	100
49.25	500	54.75	300
49.00	200	58.25	100
48.50	600		

a. If a market buy order for 100 shares comes in, at what price will it be filled?
b. At what price would the next market buy order be filled?
c. If you were a security dealer, would you want to increase or decrease your inventory of this stock?

Trading Mechanizms

- Dealer markets
- Electronic communication networks (ECNs)
  - True trading systems that can automatically execute orders
- Specialists markets
  - Maintain a “fair and orderly market”
  - Have been largely replaced by ECNs

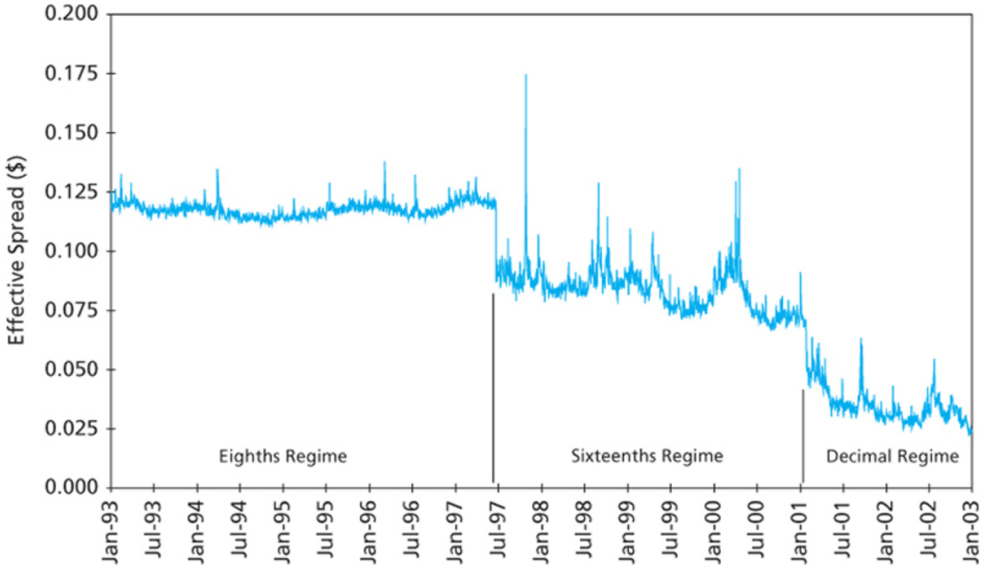
The Rise of Electronic Trading

- In the US, the share of electronic trading rose from 16% to 80% in 2000s and was triggered by an interaction of new technologies and new regulations
- 1975: Elimination of fixed commissions on the NYSE
- 1994: New order-handling rules on NASDAQ, leading to narrower bid-ask spreads

The Rise of Electronic Trading

- 1997 and 2001: Reduction of minimum tick size from one-eighth to one-sixteenth, and 1 cent, respectively
- 2000: Emergence of NASDAQ Stock Market
- 2006: NYSE is renamed to NYSE Arca after acquiring the electronic Archipelago Exchange
- 2007: Creation of National Market System

Figure 3.6 Effective Spread and Minimum Tick Size



U.S. Markets–NASDAQ

- Lists about 3,000 firms
- Originally, NASDAQ was primarily a dealer market with a price quotation system
- Today, NASDAQ's Market Center offers a sophisticated electronic trading platform with automatic trade execution
- Large orders may still be negotiated through brokers and dealers

Table: Partial Requirements for Listing on NASDAQ Markets

	NASDAQ Global Market	NASDAQ Capital Market
Shareholders' equity	$15 million	$5 million
Shares in public hands	1.1 million	1 million
Market value of publicly traded shares	$8 million	$5 million
Minimum price of stock	$5	$4
Pretax income	$1 million	$750,000
Shareholders	400	300

Source: The NASDAQ Stock Market, **www.nasdaq.com**, October 2008.

Organized Exchanges

- Auction markets are markets with centralized order flow
- Dealership function: can be competitive or assigned by the exchange (Specialists)
- Securities: stocks, futures contracts, options, and to a lesser extent bonds
- Examples: NYSE, ASE, Regionals, CBOE, CME

The New York Stock Exchange

- The largest U.S. stock exchange as measured by the value of the stocks listed on the exchange
- Automatic electronic trading runs side-by-side with traditional broker/specialist system
  - SuperDot : Electronic order-routing system
  - DirectPlus: Fully automated execution for small orders
  - Specialists: Handle large orders and maintain orderly trading

Table: Partial Requirements for Listing on NYSE Markets

Minimum annual pretax income in previous two years	$ 2,000,000
Revenue	$100,000,000
Market value of publicly held stock	$100,000,000
Shares publicly held	1,100,000
Number of holders of 100 shares or more	2,200

Source: Data from the New York Stock Exchange–Euronext, **www.nyse.com**, October 2008.

Specialists

- Appointed by exchange to serve as "market maker" for one or more stocks.
- Specialist acts as a broker:
  - Facilitating trades for certain types public orders (limit orders)
- Specialist acts as a dealer: Charged with maintaining a "continuous, orderly market."
  - Must at times trade against the market
  - Can petition exchange to halt trading
  - Incur inventory costs/risks of holding stock
  - Specialists monitor and limit the bid-ask spread

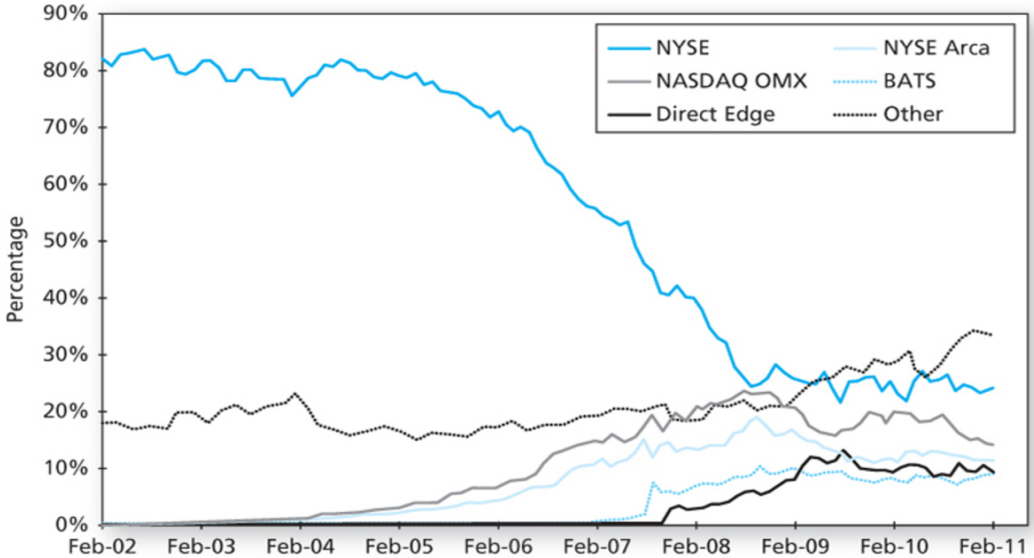
Electronic Trading on the NYSE

- SuperDot
  - Electronic order routing system allows brokers to electronically send orders directly to specialist.
    - Useful for program trading
- DirectPlus
  - Fully automated trade execution system
  - Execution time $< \frac{1}{2}$ second
- Electronic order placement is growing, large orders still require human intervention.

Electronic Communications Newtorks–ECNs

- Private computer networks that directly link buyers with sellers for automated order execution over multiple exchanges
- Compete in terms of the speed they can offer
  - Latency: The time it takes to accept, process, and deliver a trading order
- Major ECNs include Direct Edge, BATS, and NYSE Arca

Figure 3.7 Comparative trading volume of NYSE-listed shares



New Trading Strategies

- Algorithmic Trading
  - The use of computer programs to make trading decisions
- High-Frequency Trading
  - Special class of algorithmic with very short order execution time
- Dark Pools
  - Trading venues that preserve anonymity, mainly relevant in block trading

HFT and Block Transactions

- Block Trades = trades over 10,000 shares

Year	Shares (millions)	% Reported Volume	Average Number of Block Transactions per Day
1965	48	03.1%	9
1970	451	15.4	68
1975	779	16.6	136
1980	3,311	29.2	528
1985	14,222	51.7	2,139
1990	19,682	49.6	3,333
1995	49,737	57.0	7,793
2000	135,772	51.7	21,941
2002	161,075	44.4	25,300
2004	116,926	31.9	17,000
2005	112,027	27.7	17,445
2006	97,576	21.3	14,360
2007	57,079	10.7	7,332

Source: Data from the New York Stock Exchange–Euronext, **www.nyse.com,** October 2008.

- Liquidity provided by high frequency trading v flash crashes

New Trading Strategies

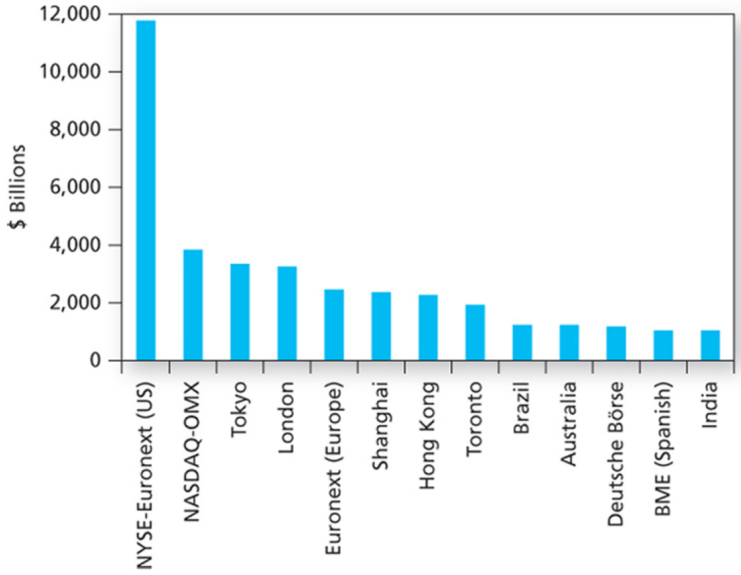
Bond Trading

- Most bond trading takes place in the OTC market among bond dealers
- NYSE Bonds is the largest centralized bond market of any U.S. exchange
- Market for many bond issues is “thin and is subject to liquidity risk

Globalization of Stock Markets

- Widespread trend to form international and local alliances and mergers
  - NYSE acquired Archipelago (ECN), American Stock Exchange, and merged with Euronext
  - NASDAQ acquired Instinet/INET (ECN), Boston Stock Exchange, and merged with OMX to form NASDAQ OMX Group
  - Chicago Mercantile Exchange acquired Chicago Board of Trade and New York Mercantile Exchange

Figure Biggest Stock Markets



Trading Costs

- Brokerage Commission: Fee paid to broker for making the transaction
  - Explicit cost of trading
  - Full service vs. discount brokerage
- Spread: Difference between the bid and asked prices
  - Implicit cost of trading
- Combination: on some trades both are paid

Characteristics of Well-functioning Markets

- Low cost transfer of funds (competition among market makers and brokers)
  - Operational or internal efficiency
- Adequate trading activity to ensure purchases and sales occur in timely fashion without affecting price. (Trading volume)
  - Operational or internal efficiency
- Prices speedily reflect public information
  - Informational Efficiency—are price changes predictable so that you can earn more than you should for the risk level you are taking
  - Allocational Efficiency—are prices accurately reflecting the prospects of firm/issuer's cash flows?

Buying on Margin

- Definition: borrowing money to purchase stock.
- Initial margin is set by the Fed
- Currently 50%
- Maintenance margin
  - Minimum equity that must be kept in the margin account
  - Margin call if value of securities falls too much
  - Margin call: notification from broker you must put up additional funds or have your position liquidated

Example 3.1 Initial Conditions

Share price	\$100
Initial Margin	60%
Maintenance Margin	40%
Shares Purchased	100

Initial Position

Stock	\$10,000	Borrowed	\$4,000
		Equity	\$6,000

Example 3.1 Margin Call

Stock price falls to \$70 per share.

Stock	\$7,000	Borrowed	\$4,000
		Equity	\$3,000

$$Margin\% = \$3,000/\$7,000 = 43\%$$

Example 3.2 Maintenance Margin

How far can the stock price fall before a margin call?

Let maintenance margin = 30%

$$\begin{aligned} \textit{Equity} &= 100P - \$4,000 \\ \textit{Percentage margin} &= \frac{(100P - \$4,000)}{100P} \\ &= 0.30 \end{aligned}$$

Solve to find:

$$P = \$57.14$$

Table 3.1 Returns and Buying on Margin

Assume the investor borrows \$10,000 from the broker and invests it along his own \$10,000 in FinCorp. The total investment is \$20,000 (200 shares). Assuming an interest rate on the margin loan of 9% per year, what will the investor's rate of return be?

Table 3.1

Illustration of buying stock on margin

Change in Stock Price	End-of-Year Value of Shares	Repayment of Principal and Interest*	Investor's Rate of Return
30% increase	\$26,000	\$10,900	51%
No change	20,000	10,900	−9
30% decrease	14,000	10,900	−69

* Assuming the investor buys \$20,000 worth of stock, borrowing \$10,000 of the purchase price at an interest rate of 9% per year.

Concept Check

CONCEPT CHECK 3.5

Suppose that in this margin example, the investor borrows only $5,000 at the same interest rate of 9% per year. What will the rate of return be if the price of FinCorp goes up by 30%? If it goes down by 30%? If it remains unchanged?

Problem

Suppose that Intel currently is selling at $20 per share. You buy 1,000 shares using $15,000 of your own money, borrowing the remainder from your broker. The rate on the margin loan is 8%.

a. What is the percentage increase in the net worth of your brokerage account if the price of Intel immediately changes to: (i) $22; (ii) $20; (iii) $18? What is the relationship between your percentage return and the percentage change in the price of Intel?

b. If the maintenance margin is 25%, how low can Intel's price fall before you get a margin call?

c. If the maintenance margin is 25%, how low can Intel's price fall before you get a margin call?

d. What is the rate of return on your margined position (assuming again that you invest $15,000 of your own money) if Intel is selling after 1 year at: (i) $22; (ii) $20; (iii) $18? What is the relationship between your percentage return and the percentage change in the price of Intel? Assume that Intel pays no dividends.

e. Continue to assume that a year has passed. How low can Intel's price fall before you get a margin call?

Excel Questions

- Use the Excel template: click here to download

1. Suppose you buy 100 shares share of stock initially selling for \$50, borrowing 25% of the necessary funds from your broker, i.e., the initial margin on your purchase is 25%. You pay an interest rate of 8% on margin loans.
   - a.1 How much of your own money do you invest? How much do you borrow from your broker?
   - a.2 What will be your rate of return for the following stock prices at the end of a 1-year holding period? (1) \$40, (2) \$50, (3) \$60.
2. Repeat Question 1 assuming your initial margin was 50%. How does margin affect the risk and return of your position?

Excel Table Buying on Margin

	A	B	C	D	E	F	G	H
1								
2			Action or Formula	Ending	Return on		Ending	Return with
3			for Column B	St Price	Investment		St Price	No Margin
4	Initial Equity Investment	$10,000.00	Enter data		–41.60%			–18.80%
5	Amount Borrowed	$10,000.00	(B4/B10)–B4	$20.00	–121.60%		$20.00	–58.80%
6	Initial Stock Price	$50.00	Enter data	25.00	–101.60%		25.00	–48.80%
7	Shares Purchased	400	(B4/B10)/B6	30.00	–81.60%		30.00	–38.80%
8	Ending Stock Price	$40.00	Enter data	35.00	–61.60%		35.00	–28.80%
9	Cash Dividends During Hold Per.	$0.60	Enter data	40.00	–41.60%		40.00	–18.80%
10	Initial Margin Percentage	50.00%	Enter data	45.00	–21.60%		45.00	–8.80%
11	Maintenance Margin Percentage	30.00%	Enter data	50.00	–1.60%		50.00	1.20%
12				55.00	18.40%		55.00	11.20%
13	Rate on Margin Loan	8.00%	Enter data	60.00	38.40%		60.00	21.20%
14	Holding Period in Months	6	Enter data	65.00	58.40%		65.00	31.20%
15				70.00	78.40%		70.00	41.20%
16	Return on Investment			75.00	98.40%		75.00	51.20%
17	Capital Gain on Stock	–$4,000.00	B7*(B8–B6)	80.00	118.40%		80.00	61.20%
18	Dividends	$240.00	B7*B9					
19	Interest on Margin Loan	$400.00	B5*(B14/12)*B13					
20	Net Income	–$4,160.00	B17+B18–B19			LEGEND:		
21	Initial Investment	$10,000.00	B4			Enter data		
22	Return on Investment	–41.60%	B20/B21			Value calculated		

Short Sales

- Purpose
  - To profit from a decline in the price of a stock or security
- Mechanics
  - Borrow stock through a dealer
  - Sell it and deposit proceeds and margin in an account
  - Closing out the position: Buy the stock and return to the party from which it was borrowed

Example 3.3 Short Sale: Initial Conditions

Dot Bomb 1,000 shares

Initial Margin	50%
Maintenance Margin	30%
Initial Price	$100
Sale Proceeds	$100,000
Margin and Equity	$ 50,000
Stock Owed	1,000 shares

Assets	Liabilities
$100,000 (Sale Proceeds) $ 50,000 (Initial Margin)	$100,000 (stock owed) Equity $50,000

Example 3.3 Price falls to $70 per share

Assets	Liabilities
$100,000 (Sale Proceeds) $ 50,000 (Initial Margin)	$70,000 (Buy shares) Equity $80,000

$$
\begin{aligned}
\textit{Profit} &= \textit{Ending Equity} - \textit{Beginning Equity} \\
&= \$80,000 - \$50,000 \\
&= \$30,000 \\
&= \textit{Price decline} \times \#\ \textit{of shares sold short}
\end{aligned}
$$

Example 3.4 Short Sale: Margin Call

How much can the stock price rise before a margin call?

$$\frac{(\$150,000^{1} - 1000P)}{1000P} = 30\%$$

$$P = \$115.38$$

[1] Initial margin plus sale proceeds

Excel Questions on Short Sale

- Use the Excel template: click here to download

1. Suppose you sell short 100 shares of stock initially selling for \$100 a share. Your initial margin requirement is 50% of the value of the stock sold. You receive no interest on the funds placed in your margin account.
   1.1 How much do you need to contribute to your margin account?
   1.2 What will be your rate of return for the following stock prices at the end of a 1-year holding period? Assume the stock pays no dividends. (1) \$90, (2) \$100, (3) \$110.
2. Repeat Question 1 (b) but now assume that the stock pays dividends of \$2 per share at year-end. What is the relationship between the total rate of return on the stock and the return to your short position?

Table 3.4 Excel Table Short Sale

	A	B	C	D	E
1					
2			**Action or Formula**	**Ending**	**Return on**
3			**for Column B**	**St Price**	**Investment**
4	Initial Investment	$50,000.00	Enter data		60.00%
5	Initial Stock Price	$100.00	Enter data	$170.00	–140.00%
6	Number of Shares Sold Short	1,000	(B4/B9)/B5	160.00	–120.00%
7	Ending Stock Price	$70.00	Enter data	150.00	–100.00%
8	Cash Dividends Per Share	$0.00	Enter data	140.00	–80.00%
9	Initial Margin Percentage	50.00%	Enter data	130.00	–60.00%
10	Maintenance Margin Percentage	30.00%	Enter data	120.00	–40.00%
11				110.00	–20.00%
12	**Return on Short Sale**			100.00	0.00%
13	Capital Gain on Stock	$30,000.00	B6*(B5−B7)	90.00	20.00%
14	Dividends Paid	$0.00	B8*B6	80.00	40.00%
15	Net Income	$30,000.00	B13−B14	70.00	60.00%
16	Initial Investment	$50,000.00	B4	60.00	80.00%
17	Return on Investment	60.00%	B15/B16	50.00	100.00%
18				40.00	120.00%
19	**Margin Positions**			30.00	140.00%
20	Margin Based on Ending Price	114.29%	(B4+(B5*B6)−B14−(B6*B7))/(B6*B7)	20.00	160.00%
21				10.00	180.00%
22	Price for Margin Call	$115.38	(B4+(B5*B6)−B14)/(B6*(1+B10))		
23				**LEGEND:**	
24				**Enter data**	
25				**Value calculated**	

Table 3.2 Buy vs Short Sale

Purchase of Stock		
Time	**Action**	**Cash Flow***
0	Buy share	− Initial price
1	Receive dividend, sell share	Ending price + Dividend
Profit = (Ending price + Dividend) − Initial price		

Short Sale of Stock		
Time	**Action**	**Cash Flow***
0	Borrow share; sell it	+ Initial price
1	Repay dividend and buy share to replace the share originally borrowed	− (Ending price + Dividend)
Profit = Initial price − (Ending price + Dividend)		

*A negative cash flow implies a cash *outflow*.

Table 3.2

Cash flows from purchasing versus short-selling shares of stock

Problem

Suppose that you sell short 1,000 shares of Intel, currently selling for $20 per share, and give your broker $15,000 to establish your margin account.

a. If you earn no interest on the funds in your margin account, what will be your rate of return after 1 year if Intel stock is selling at: (i) $22; (ii) $20; (iii) $18? Assume that Intel pays no dividends.
b. If the maintenance margin is 25%, how high can Intel's price rise before you get a margin call?
c. Redo parts (a) and (b), but now assume that Intel also has paid a year-end dividend of $1 per share. The prices in part (a) should be interpreted as ex-dividend, that is, prices after the dividend has been paid.

Regulation of Securities Markets

- Major regulations:
  - Securities Act of 1933 – full disclosure
  - Securities Act of 1934 – establishes SEC
  - Securities Investor Protection Act of 1970 – ensures investors get securities if brokerage fails (up to $500K)
- Self-Regulation
  - Financial Industry Regulatory Authority
  - CFA Institute standards of professional conduct

Regulation of Securities Markets

- Sarbanes-Oxley Act
  - Establishes Public Company Accounting Oversight Board
  - Requires Independent financial experts to serve on audit committees of boards of directors
  - CEOs and CFOs personally certify firms' financial reports
  - Boards must have independent directors

Dodd-Frank Wall Street Reform and Consumer Protection Act. Signed June 2009—a sweeping overhall of the financial regulatory system

1. Consolidation of regulatory agencies
2. New oversight council to evaluate systematic risk
3. More transparency of derivatives, brining them onto exchanges
4. New Consumer Protection Agency: uniform standards, stronger investor protection
5. A "resolution regime" for orderly winding down of bankrupt firms
6. Fed can extend credit in "unusual or exigent circumstances"
7. Improved international cooperation, accounting, & regulation of credit rating agencies
8. The Volcker Rule, added in Jan 2010, prohibits banks from proprietary trading.

Insider Trading

- Officers, directors, major stockholders must report all transactions in firm's stock
- Insiders do exploit their knowledge
  - Jaffe study:
    - Inside buyers $>$ Inside sellers $=$ Stock does well
    - Inside sellers $>$ Inside buyers $=$ Stock does poorly