



Module 3

Markets and trading mechanics

Prepared by Pamela Peterson Drake, Ph.D., CFA
Florida Atlantic University

1. Overview

A **market** is simply a means of bringing buyers and sellers together for the transfer and trade of goods and services. A market facilitates the flow of funds from one party to another. Well-functioning markets are essential in a capitalistic society. The characteristics of a good market include:

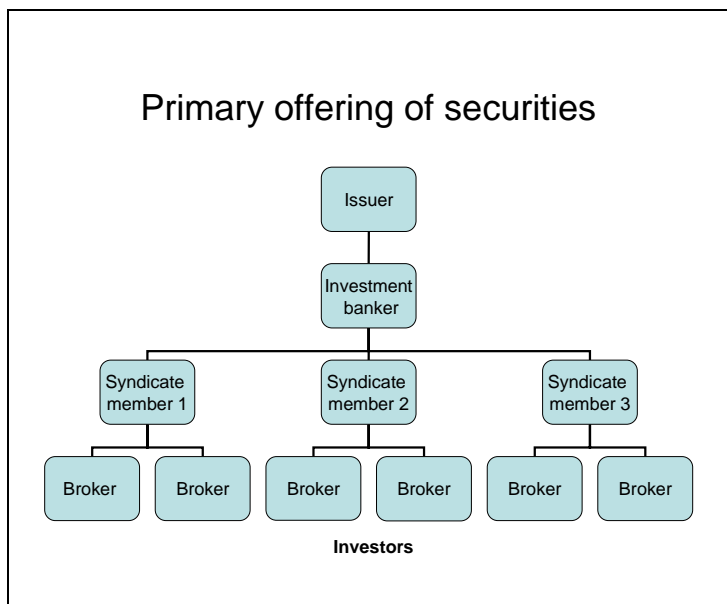
1. The availability of information at no or low costs.
2. Liquidity – the existence of ready buyers and sellers.
3. Price continuity – minimal changes in prices as a result of transactions taking place.
4. Low transactions costs.
5. Informational efficiency – prices of assets in the market reflect all available public information.

Our focus in this course is on the **capital markets** the markets in which debt and equity securities are traded. There are two types of capital markets: primary and secondary. **Primary capital markets** involve new securities, generating new capital to the issuer, whereas **secondary capital markets** involve securities traded among investors.

A. Primary capital markets

Investment bankers are important in the primary market because they are often used to help bring the security issue to investors. The process of bringing securities to the markets is referred to as underwriting. There are different types of underwriting arrangements:

- **Negotiated bid**, in which the issuer and the underwriter negotiate the public offering price.
- **Competitive bid**, in which underwriters submit proposals for the purchase of the securities and the underwriter submitting the best bid is awarded the securities.
- **Best-efforts offering**, in which the investment banks do not commit to a specific number of securities that it will sell, but rather uses their best efforts to sell the security to investors.



In the negotiated and competitive

offerings, the underwriter, or underwriters if several are used in the form of an **underwriting syndicate**, buy the securities from the issuer and then sell these securities to investors. In the case of a best efforts offering, the investment banker does not buy the shares from the issuer.

In addition, a company may file a **shelf registration** for securities, which stays “on the shelf” until the issuer is prepared to offer any number of securities within the registered amount. These registrations provide the issuer with more flexibility in the timing of any issues included in the registration. And in addition to offering securities for sale to the public, an issuer may also sell securities directly to a small number of investors in a **private placement**.

B. Secondary capital markets

i) Types of markets by form of trading

In a **pure auction market**, buyers and sellers submit bids to a central location. These buy and sell orders are matched by broker. In a **dealer market**, the dealers – who are individuals – own securities. They stand ready to buy or sell securities and will quote a bid and an ask price. Brokers, who represent investors who wish to buy or sell, then shop around for dealer with best bid or ask

Bid quote: What a buyer is willing to pay for a specified amount of stock

Ask quote: What a seller is willing to take for a specified amount of stock

In a **call market**, the trading of individual stocks takes place at specified times. One party determines the single price that satisfies the most orders and then all transactions at this price. In a continuous market, trades occur whenever the market is open and the prices are determined by auction or by dealers. In the New York Stock Exchange, for example, the opening price is determined by a call market, but then trading during the trading hours is determined by the continuous market.

ii) Examples of markets

In the U. S., there are nine national exchanges:

- American Stock Exchange (AMEX)
- Boston Stock Exchange
- Chicago Board Options Exchange (CBOE)
- Chicago Stock Exchange
- International Securities Exchange
- National Stock Exchange
- New York Stock Exchange (NYSE)
- Pacific Exchange
- Philadelphia Stock Exchange

The NYSE is the largest stock exchange in the U.S. in terms of the market value of shares traded, whereas the CBOE is the largest options exchange. National exchanges outside the U. S. include the [London Stock Exchange \(LSE\)](#) and the [Tokyo Stock Exchange \(TSE\)](#).

The [Nasdaq](#) is a large U.S. over-the-counter market. An **over-the-counter market** has no physical presence, but rather trading is carried out over computers. The Nasdaq was created in

1971 by the National Association of Securities Dealers (NASD) to become the first electronic market in the U. S.¹ However, the Nasdaq is currently exploring a conversion to an exchange.

The Nasdaq has two markets: the **National Market System**, which are the larger, more actively traded securities, and SmallCap, which are the smaller, newer companies.

One of the distinguishing differences between the NYSE and Nasdaq markets is the listing standards. For example, the NYSE requires that the company be much larger in terms of market value of equity, net income, and share trading volume that is required by the Nasdaq market.

- NYSE listing requirements
- Nasdaq listing requirements

iii) Trading mechanics

Another difference between the markets is the procedure for trading. The NYSE is an **auction market**, whereas the Nasdaq is a **dealer market**. In the Nasdaq, investors buy from and sell to a dealer. In the NYSE, on the other hand, investors are buying and selling between each other, with bidding among investors. In the Nasdaq market, market makers, who are the dealers, manage the process by working with investors. In the NYSE market, the specialist manages the process by matching buyers and sellers.

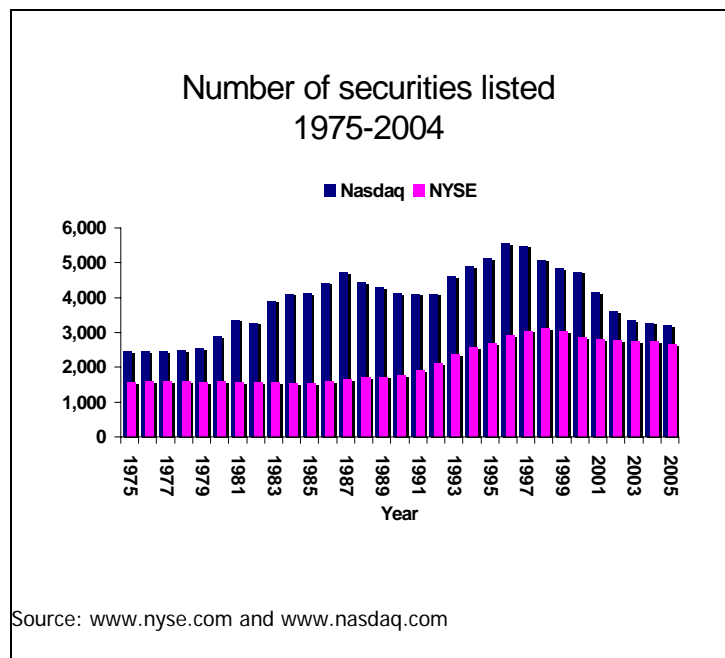
The Pink Sheets

You have likely heard of the **pink sheets**, which is an electronic system that provides quotes of over-the-counter securities. Dealers provide their bid and ask quotes to this system (operated by Pink Sheets LLC) and brokers can then view these quotes.

There are no listing requirements for companies on Pink Sheets. The companies whose stocks are on the Pink Sheets are very small, and the market for their stock is generally quite thin.

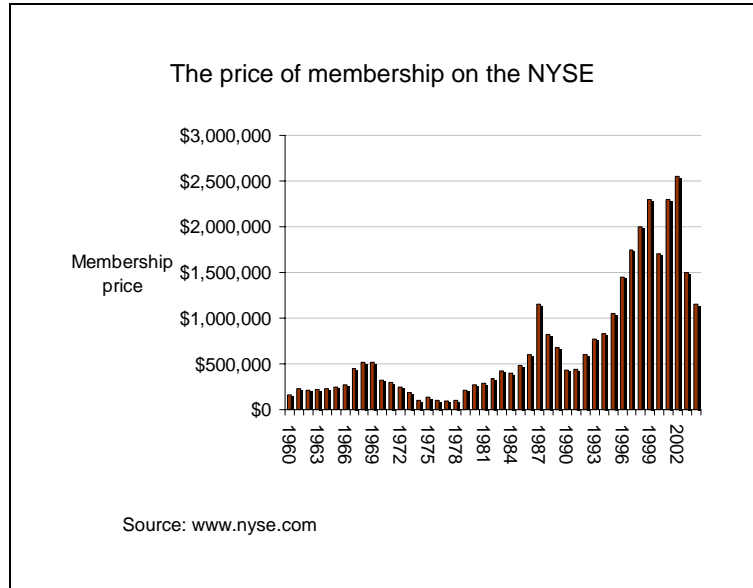
Investors trading Pink Sheet companies should be aware that the companies whose stocks are traded in this market are not required to file financial statements – or any other type of disclosure – with the Securities and Exchange Commission.

Many of the current email scams involve pumping up the price of companies with stocks on pink sheets and then dumping the stocks. These **pump-and-dump** schemes try to take advantage of uninformed investors. The companies whose stock is hyped are most often unaware of these schemes.



¹ Note that the Nasdaq is not an exchange. Though it has applied to become an exchange, it is not one yet.

Up until the NYSE going public in early 2006, members of the NYSE bought seats on the exchange. The last seat on the NYSE sold for \$3.55 million on December 30, 2005. When the NYSE merged with Archipelago Holdings in 2006, seat holders converted their ownership in the exchange to cash and public shares in the new company, with each seat worth \$6.3 million in terms of cash and shares.



Now that the NYSE is a publicly traded company, NYSE LLC, the ability to trade on the floor of the exchange is no longer seat based, but SEAT based: trading licenses, referred to as licenses in the Stock Exchange Auction Trading Systems (SEAT). In other words, a SEAT is required to trade. Only 1,366 SEATS are issued.

There are different types of exchange members:

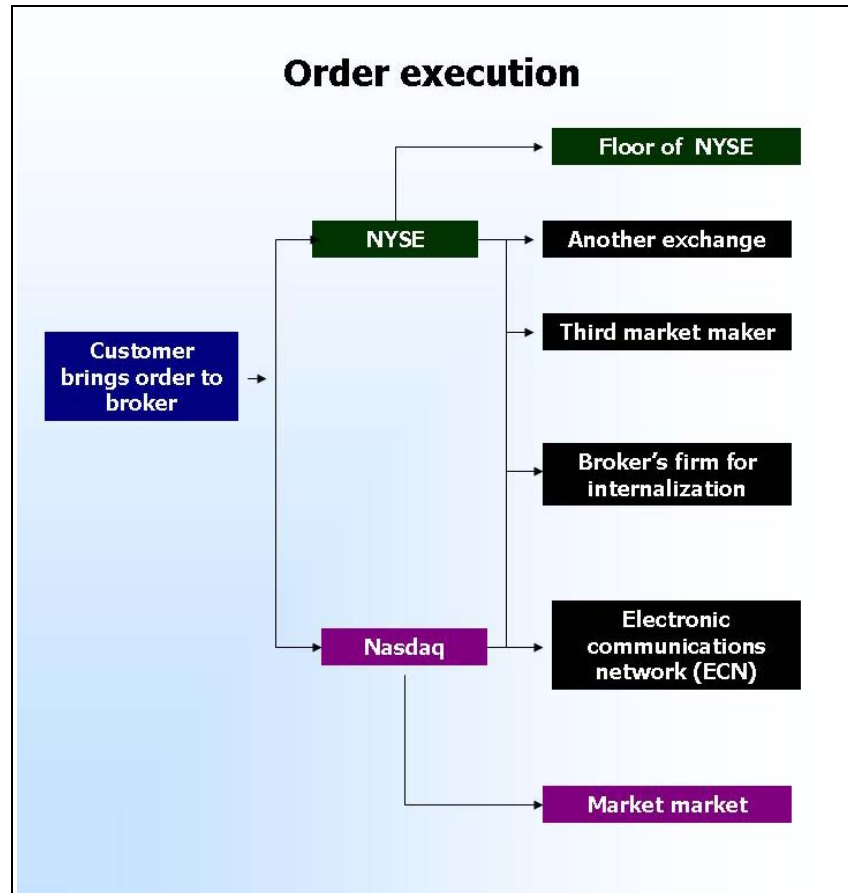
1. **Specialists**, who are members who match buy and sell orders, and also act as dealers, maintaining an orderly market.
2. **Floor brokers**, who are independent members who act as brokers for other members, executing buy and sell orders.
3. **Commission brokers**, who are employees of member firms who buy and sell for customers of firm; also referred to as **house brokers**.
4. **Registered traders**, who are members who buy and sell for their own accounts; also referred to as **independent brokers**.

In the case of trading on the NYSE, the investor contacts a broker to specify the trade and then the broker contacts **floor broker**, who places order with specialist. The **specialist** is a member of the exchange who is responsible for maintaining an orderly market, providing capital and stabilizing prices. The specialist brokers the deal, finding the other side of the transaction. There is only one specialist for a given stock and a specialist may perform this function for any number of stocks.

The Nasdaq, on the other hand, operates as a **dealer market**. In a dealer market, there are any number of competing dealers, or **market makers**, for a stock. These market makers facilitate trading of shares by maintaining an inventory in a stock and posting bid and ask prices for that stock that they will honor.

In the Nasdaq system, Individual investors, through their brokers, therefore can “shop around” electronically for the best price for a given transaction.

Though the market mechanisms differ between the NYSE and the Nasdaq, there is not much difference, in effect, between a market maker on Nasdaq and a specialist on the NYSE.



iv) Types of orders

Investors may submit orders that specify buying or selling at whatever is the current price, or they can specify a price. The different types of orders are as follows:

- **Market order:** buy or sell at current price
- **Limit order:** buy or sell at specified price
- **Stop loss order:** sell if price below a specified price.
- **Stop buy order:** buy if price above a specified price.

Investors may also buy on margin. Buying “on margin” is the purchase of stock by borrowing portion of purchase price. The investor pays interest to the brokerage at the **call money rate**. The initial margin requirements are set by the Federal Reserve (currently 50%). After the initial purchase, an investor must have equity in the account that meets the maintenance margin. The equity in the account is:

$$\text{Investor's equity} = \text{Market value of stock} - \text{amount borrowed}$$

The **maintenance margin** is a specified minimum equity as a percentage of the value of the account. The maintenance margin set by the Federal Reserve is currently 25%, but brokerages may require more (say, 30%). If the maintenance margin is not met, the broker will make a margin call, which requires the investor to put more equity into the account. In the event that more equity is not placed in the account, the broker will sell the stock to satisfy the call.

Example: Buying on margin

Suppose you buy 100 shares of ABC stock at \$50 per share: total cost = \$5,000, borrowing 50%, or \$2,500. And suppose that the maintenance margin is 30%.

- If the stock's price goes to \$60/sh, your equity is \$6,000-2,500 = \$3,500
 - In terms of the equity percentage, \$3,500 / \$6,000 = 58.333%
- If the stock's price goes to \$40/sh, your equity is \$4,000-2,500 = \$1,500
 - In terms of the equity percentage, \$1,500 / \$4,000 = 37.5%
- What would the stock's price have to be before there is a margin call?

$$\frac{\text{Equity}}{\text{Value of shares}} = \frac{\text{Value of shares} - \$2,500}{\text{Value of shares}} = 0.3$$

The stock's price would have to decline to \$35.71 per share before there is a call.

The profit or loss on buying stocks on margin must factor in the commissions on the purchase and sale, as well as any interest on the loan.

$$\text{Profit or loss from buying on margin} = \text{proceeds from sale} - \text{commission on sale} - \text{cost of shares} - \text{commission on purchase} - \text{interest on loan}$$

The return on the margin transaction is therefore:

$$\text{Return on margin account} = \frac{\text{profit or loss}}{\text{initial equity}}$$

Compared to the return from buying and selling stocks without margin loans, any profits or losses are exaggerated from using margin loans.

Example: Effect of margin loans on returns

Problem

Suppose you buy 100 shares of stock at \$50 per share and you borrow \$2,000 at the call money rate of 8%. This means that your initial equity investment is \$3,000. If transactions costs are 1% for buying and for selling, what is the return on this one-year transaction if the stock price in one year is:

1. \$40?
2. \$70?

Solution

1. At \$40 per share, your loss is \$4,000 - 40 - 2,000 - 3,000 - 50 - 160 = -\$1,250, or a return of - \$1,250 / \$3,000 = 41.67%. [If there was no borrowing, the loss would have been -\$1,090 or \$1,090 / \$5,000 = -21.8%]
2. At \$60 per share, your profit is \$7,000 - 70 - 2,000 - 3,000 - 50 - 160 = \$1,720, or a return of \$1,720 / \$3,000 = 57.33%. [If there was no borrowing, the profit would have been \$1,880 / \$5,000 = 37.6%.]

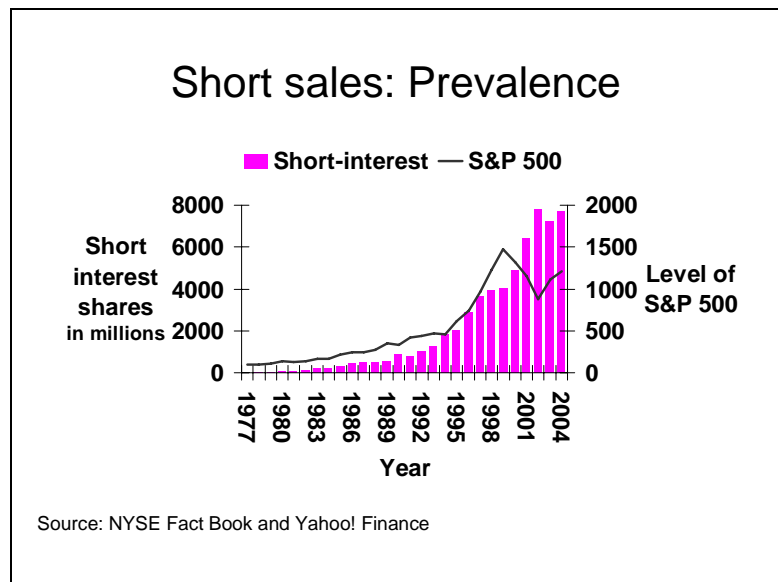
v) Short sales

A **short sale** (or “**shorting**”) is the sale of stock you don’t own. There are restrictions to short sales, which affect the profitability of these transactions. The primary restriction is the **uptick rule**. This rule requires that the price of short sale must be higher than last trade price and is intended to prevent downward manipulation of stock prices through shorting. Another restriction is that short sellers must pay any cash dividends to the party who lent the stock. Because the shorting investor is selling stock he/she does not own, the “lending” shareowner must be compensated for any dividends not received from the stock.

A trader earns a profit from short selling when the price goes down by *more* than the commission and any cash dividends:

$$\text{Profit or loss} = \text{proceeds from sale of shares} - \text{commission on sale of shares} - \text{dividends on shares} - \text{cost of buying shares} - \text{commission on purchase of shares}$$

When you buy a stock, the most you can lose is the value of the stock. However, when you sell stock short, you face, potentially, an unlimited downside risk. And this is what makes short selling so risky.² Combining this risk with the fact that there are other short sellers out there of the same security, if the market price of the stock rises, there may be a **short squeeze** in which many traders are clamoring for the stock, resulting in upward pressure on the stock’s price – not what short sellers would like to see.



In general, the **short interest** (that is, the number of shares sold short) increases as the level of the market increases, but this pattern has changed in recent years.

C. Recent innovations and changes in markets

Technology and global competition are changing the way markets operate and are affecting the spirit of cooperation among markets. In addition, the trading scandals in recent history have resulted in tightened regulator scrutiny of these self-regulated markets:

- In the 1990s, the SEC fined Nasdaq companies and required the NASD to increase self-policing when it was found that dealers fixed spreads (that difference between the bid and the ask, which is the profit the dealer makes on the transactions). [Check out the [SEC’s report on these issues](#)]

² On June 23, 2004, the SEC adopted Regulation SHO (Securities Exchange Act Release No. 50103, 69 FR 48008) which is a pilot program in which the SEC is examining the effects of short selling on prices and trading.

- In 2003, the NYSE was embroiled in a scandal involving the [compensation for its chairman, Richard A. Grasso](#). These scandals and other events have led to changes in the markets and governing of the markets.
- In 2004, [five of the specialist firms on the NYSE](#) reached a settlement with the SEC regarding charges of trading ahead of public limit orders.
- In 2004, [the SEC focused attention on abuses in mutual fund shares trading](#), such as late-trading trading, in which trading for some investors was allowed after 4 p.m. at the 4 p.m. pricing, and market timing, and late-trading that violated the funds' prospectuses.
- In 2005, the [SEC focused attention on trading abuses by specialists on the NYSE](#). The SEC found that specialists were "trading ahead" of customers, hence benefiting personally from the inside information that they possess regarding customer buy and sell orders.

Innovations that affect the trading of securities include:

- **Super-Dot**. Electronic order routing system used by the NYSE for trades of less than 2,100 shares for market orders and less than 30,100 shares for limit orders.
- **Intermarket Trading System (ITS)**. Connects NYSE, AMEX, Nasdaq, and other markets.
- **Electronic communications networks (ECNs)**, including Instinet, Archipelago, and Brut, were introduced in 1997 to assist with order handling, acting as electronic brokers to match buying and selling orders. ECNs provide competition for market makers in bringing orders to the market.
- **SuperMontage**. Nasdaq's order-display and execution network, which is an extremely fast computerized trading system.
- **Increasing off-hours trading**, e.g., NYSE's Crossing Sessions I and II

In addition, changes in laws and regulations have had a significant impact on markets and trading, including:

- [Financial Services Modernization Act of 1999](#), which allows banks, brokerages, and insurance companies to offer investment services.
- **New rules under Regulation NMS**, adopted by the Securities and Exchange Commission, June 2005
 - ⇒ Requires trading centers to have procedures to prevent execution of trades at inferior prices.
 - ⇒ Fair and non-discriminatory access to quotations.
 - ⇒ Prohibits sub-penny quotations.
 - ⇒ Requirements for consolidating, distributing and displaying market information.

We also see a movement toward mergers of markets across borders, creating more global trading markets. Much of this is ongoing in 2006.³

2. Learning outcomes

- LO3-1 Define a market and list and describe the characteristics of a well-functioning market.
- LO3-2 Distinguish between primary and secondary markets.
- LO3-3 Compare auction and dealer markets.
- LO3-4 Compare call and continuous markets.
- LO3-5 List and briefly describe the different stock and bond markets in the U.S.
- LO3-6 Distinguish U.S. markets in terms of listing requirements, trading, and membership.
- LO3-7 Calculate the returns available on buying stocks on margin.

³ The Nasdaq made an offer for the London Stock Exchange (LSE) in early 2006 that was rejected. However, the Nasdaq continues to increase its ownership stake in the exchange such that in May 2006 this interest was 23% of outstanding shares in LSE. The NYSE made an offer in May 2006 for Euronext, which is still under consideration.

LO3-8 Diagram and calculate the profit or loss on a short sale transaction.

3. Module Tasks

A. Required readings

- Chapter 4, "Securities Markets," *Investments: Analysis and Management*, by Charles P. Jones, 9th edition.
- Chapter 5, "How Securities are Traded," *Investments: Analysis and Management*, by Charles P. Jones, 9th edition.
- [Margin: Borrowing Money to Pay for Stocks](#), provided by the SEC

B. Optional readings

- [Short Sale Restrictions](#), provided by the SEC
- [Investor Alert: Stock Market Fraud "Survivor" Checklist](#), provided by the SEC

C. Practice problems sets

- [Trading on margin](#), prepared by Pamela Peterson Drake
- [Short selling](#), prepared by Pamela Peterson Drake
- [StudyMate activity](#)

D. Project Progress

- At this point, you should have gathered the general descriptive information about your company and the industry in which it operates.
- You should have contacted your group members and developed a plan for acquiring and communicating the necessary information for the project's industry tasks.
- You should be following event pertaining to your company and its industry.

E. Module quiz

See the schedule for the Module quiz dates.

4. What's next?

In this module, we focus on trading mechanics and the rules and regulations that affect trading strategies. In Module 4, we will take a look at market indices, focusing on the differences among the indices: the calculations behind these indices, and the securities that make up these indices.