

Financial Markets

Overview

- We will consider 3 areas
 1. **The general investment environment**
 2. **Types of financial instruments**
 3. **Markets and participants**

This covers chapters 1, 2, and 3 in the text.

Investments & Financial Assets

- Essential nature of investment
 - * **Reduced current consumption**
 - * **Planned later consumption**

Why do financial markets actually exist?

1) **Nature of Investing / Investment**: what I am doing when I invest in financial assets is I am reducing my current consumption in order that I may increase my consumption sometime in the future.

(this is one of the reasons, we will discuss 3 in all)

Investments & Financial Assets

- **Real Assets**
 - * **Assets used to produce goods and services**
 - * **Real assets generate income**
- **Financial Assets**
 - * **Claims on real assets**
 - **Financial assets determine how this income (assets or cash flow) is shared**

Real Assets : Identifiable assets, such as land and buildings, equipment, patents, trademarks, plant, workforce, customer list, employees technology. Things they do to generate profits and cash flows. (Generate Income)

EXAM

Financial Assets: stocks (preferred, common), debt. These are financial assets, they decide how the income / cash flow is shared, options. (Share Income)

□ Consider how and when each type of asset is destroyed

Destroying a real asset can be difficult. Destroying a real asset can be very simple, such as paying a debt or awarding dividends.

Role of Financial Assets and Markets

□ Consumption Timing

- * **Already discussed (deferring consumption today so I may consume in the future)**

□ Allocation of Risk

Financial assets and markets allow an individual or firm to adjust consumption to achieve the highest level of satisfaction or utility.

Markets and financial assets allow participants to shift risk to the parties that are most will to bear that risk.

Financial markets also allow the separation of ownership from management and increase the utilization of the assets of the economy.

Diversifying is another example, spreading risk.

Role of Financial Assets and Markets

□ Separation of Ownership and Management

- * **What do we mean by separation?**
- * **How does management ensure that the needs of stakeholders are met?**
- * **Why is this separation necessary?**
- * **What are the pros and cons of this separation?**

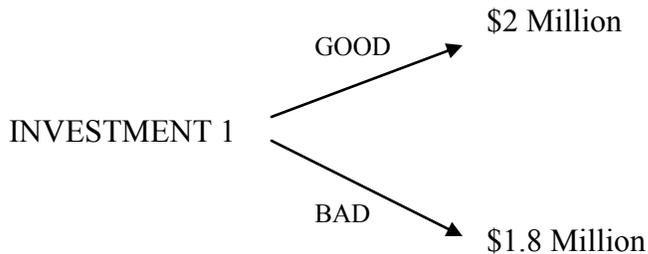
□ Foster Innovation?

By “separation” we mean that the shareholders are usually different from the management. Certainly management will hold some shares but for a public company it is not inconceivable that most of the share holders are not in management.

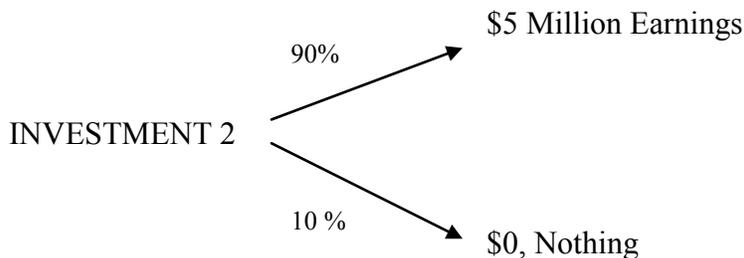
Managers are stewards of the shareholders (who are the owners). What goals should the management have. Maximize shareholder wealth. Grow the company. Avoid bankruptcy. Cut costs. A conflict example may be when managers have to take on debt to grow the company. Act responsibly while being able to take on risk to grow the company.

The only real goal management should have is to maximize shareholder wealth, maximize the stock price. The pursuit of this goal will strike a proper balance among the other items we listed above.

Consider a case where the company has two choices:



Say that the company has debt obligations of \$1.6 million. The bond holders will like project 1 because there is a very high chance the company will have enough money to pay the bond interest. Stock holders do not see much potential for share value growth in this project.



Bond holders will hate this project because there is a chance the company will not have money to pay the interest on the bond. But share holders will see a 90% chance of large earnings which can be paid in dividends.

Usually the goal of management is to satisfy shareholders. But in order to do that they will sometimes have to barrow money. The debt holders know there will be these conflicts, so how do the debt holders secure their position? They know management has the primary responsibility to share holders. Debt holders know they will always be second in line. So how are bond holders protected? By covendents. A debt / bond agreement is full of covendents explaining what the company can and cannot do.

There will always be a conflict. Management represents shareholders. Companies barrow money to maximize shareholder wealth. Management has no obligation to creditors other than what is specified by law and what is in the contract.

What are the Pros and Cons of this separation between ownership and management?

It is particularly difficult for a company to grow if management has to own all the shares. In the late 80's there were companies which were almost entirely owned by management. These companies were created by transactions called MDO's and LDO's. These were management buyouts, very popular in the late 80's. It went like this. Management would find a public company. They would find someone to lend them money which they would use to buy all of the other share holders out. They would end up with a company that was mostly debt and very few shareholders. All the shares were held by company management and the people who lent them money.

There was some kind of a theory behind this. It goes that when management is controlled by a very diverse group of shareholders, their interest were never perfectly aligned. Management was worried about itself, corporate jets, offices, it's options and such things. The idea was if you make management the shareholders then they will be focused on the job. That was the theory.

But in reality these transfers happened because there were unrealized assets on the books. Things like huge pension funds and business units. These businesses borrowed a lot of money, sold off the assets, and paid off the debt. Refocused the business. This was not a terrible thing but it was not the theoretical reason they had suggested.

Separation of Ownership & Management

Pros

- Allows the company to grow.
- Allows diversification.

Cons

- Agency problem, management will want to maximize their own wealth.

To have an agency conflict you have to have separation of control and ownership and asymmetrical information. A fog which prevents you from seeing what's going on. A mechanism for management to say "we didn't do so well because of the economy" when the real problem was incompetence or outright stealing.

The interest of management and shareholders can never be perfectly aligned. Management will work for it's own interest which can be bad for the companies shareholders.

The other role of financial markets is to foster innovation.

Anglo-Saxon economies, English and USA markets, are different from the classic European type markets. Instead of going to financial markets to raise capital, European companies generally will go to their bank. A German company is more likely to go to the bank, companies had close relationships with banks.

Asian economies are very similar but also include the influence of very large family empires. The interesting thing is that high growth companies, start up companies, venture capital funded companies, you tend not to see these types of businesses in these types of economies. These types of companies tended to be focused in the US and Britain. One of the main reasons for this is that it is easier for companies to list on financial markets without much history of profitability, if any, or any track record at all. The financial markets allow an exit strategy for people who want to found start up companies. This is a very important factor when you are trying to foster innovation.

An investor is less likely to fund a business if there is no way for the investor to part company with the business.

There is innovation within these other economies but it tends to be done within the larger companies. This is kind of like an internal market, not quite as efficient.

In short: ***Financial markets allow for risk capital to be invested and for the investors to have an exit strategy.*** This is the important reason for financial markets to exist.

Crisis in Corporate Governance

Accounting Scandals

* Enron

* Global Crossing:

Analyst Scandals

* Merrill Lynch

What motivated these scandals? GREED !!!

What checks or mechanisms reduced or perversely increased the problems?

Consider the various ways of compensating management; what are the pos and cons?

Enron: front companies called Special Purpose Entity set up to defraud investors.

Goes like this. I've got a particular company which needs to invest in real estate. I don't want the real estate on my books and I don't want the debt on my books. So I get the board of directors or CFO or others and set up a little private company. The company lends us money which we use to buy the land. We then lease this land back to the dummy company. In this way the land is off the book, the debt is off the books, company lowers its debt profile, makes its return on assets increase, makes its return on equity increase as well.

For example, the company has something that is going to look like a loss were the owners to see it. Before that can happen I'll sell it to somebody who is connected with the company. Sell it to them and they keep it through an agreement for 10 years and then sell it back at a fixed price. This is really just hiding a cost, this is a Special Purpose Entity.

Backdated options is another illegal scam. The big problem the SEC has with this is the lack of transparency.

Global Crossing: they were selling network capacity to another telecommunication company (Quest). They would sell each other services and then sell them right back. Inflated their top line, made them look bigger than they actually were. No profit to these transactions, just round trip transactions. Allowed them to make money off of this deception.

Merrill Lynch: issuing favorable analyst reports on their own client companies.

What motivated these scandals? Ability to generate income for management. The desire to control bigger businesses. Wanting to be the biggest company in the marketplace.

What checks should have been in place to prevent or reduce the impact of these problems?

One solution would have been proper accounting and reporting. But how should the irregularities have been picked up? Board of Directors probably should have been paying more attention. Often with companies like this the board of directors just don't have the expertise to understand what is going on. They also needed strong independent auditors.

How can management be controlled? Given this agency problem how can shareholders attempt to control management, make sure they are doing what they are paid to?

3 Categories of how management can be motivated to do what they should for shareholders.

1) **Compensation.** The goal is to align the interest of management with the interest of shareholders. How can we use compensation to do this?

1. Options
2. Performance bonuses
3. Have management own stock. Make them a shareholder.

Of course, if the company is worth \$100 billion and I own 10% of it I'm still better off if I steal the whole \$100 billion. Still it is an incentive to steward the company. The performance possibility is subjected to manipulation by management in the short term. Options based on share price, also subjected to manipulation. They can exercise them just before the company goes under. Options are like a free ride on the stock, no investment of your money. One thing management has been doing along these lines is something called "repricing options." When CEO joins business he is issued options. The stock price is currently \$20 per share, the company makes the exercise price on the options \$25 per share because it wants the manager to have a goal.

At the end of the 5 years he has done a terrible job, the stock price is at \$10 per share, no motivation. Company tears up old option agreement and reissues new options with the same terms but the exercise price is \$12 per share. This kind of kills the incentive.

Roulette Wheel Game. Say the stock price right now is \$10 per share. The exercise price is \$20 per share. Options are worthless unless the stock price goes over \$20 per share. A project comes along, there is a 5% chance that if the project is successful the stock price will rise to \$30 per share. There is a 95% chance that the project will fail and the company will go bust. This is not a project the share holders would like. Which one will the manager want? They'll going to love the long shoot. Their options are worth nothing now, if the project fails their options are still worth nothing. If the project comes off they have made a fortune. **Options encourage risk taking.**

A professor did a study and wrote a paper on this type of behavior. Analyzed public gold companies. Found that if management held shares in the company they were more likely to hedge future gold prices. They would try and reduce risk in the company. If the management held options they were more likely to leave the company's business unhedged. Why? Because the company would be more volatile because it would be subject to changes in gold prices. Therefore there is a good chance they are going to win and if they lose who cares?

The author found that companies that compensated their management with high levels of options, the company would not only be unhedged, the managers would increase their exposure by speculating. So they wouldn't use derivatives to reduce the volatility, they would actually use derivatives to increase the volatility of the business.

Hedging Reduces Risk. Speculation Increases Risk.

So options encourage risky behavior. Not necessarily bad, just something to be aware of.

Overview of Financial Markets

- A market is a venue where goods and services are exchanged.
- A financial market is a place where individuals and organizations wanting to borrow funds (**deficit units**) are brought together with those having a surplus of funds (**surplus units**).
- In a broad sense, who are the three participants in financial markets?
 - * **The next four slides discuss these participants**
 - **Are they providers (surplus) / suppliers (deficit) or users of capital?**
 - **How do they participate, or what products do they offer or use?**

Companies need money, households have excess money they need to invest. A government is going to need capital therefore it has deficit units. It needs to borrow money. Usually borrows from households, foreign countries.

Financial System Clients and Their Needs

□ Household Sector

- * **Primary Need: Invest Funds**
- * **The household sector will be interested in a wide array of financial assets, what factors will drive these differing preferences?**
- * **Other than financial assets, what real assets can play a substitute role to the financial assets?**

Households look to the financial markets primarily for investment opportunities.

At times the households will need funds, they can be a deficit. That barrowing is usually not done through a financial market. Usually done through a financial intermediary. Households usually use financial markets to invest funds, rarely barrow directly from financial markets. However, through securitization of funds such a mortgages and auto loans these barrowing activities do make it to the financial markets. Those loans are sold off to financial markets.

Households invest in stocks, bonds. What factors are involved in deciding what types of financial products to use? Risk tolerance for one. Bonds are less risky than stocks. Life situation may also play a role, may be nearing retirement. Taxes are another motivating factor. Municipal bonds are exempt from federal taxes.

A persons affiliation with a particular company may influence how they invest, may invest in the company you work for. There is always a home basis in investing. People will tend to invest more in the businesses which are stationed in the state or nation in which they live.

A persons general feeling of the health of the economy may also influence their decision. If you think there is a recession coming you may adjust your portfolio.

What real assets might people use as substitutes for financial assets? Gold may be one. Real Estate. The investment in a house is a savings for retirement. If the markets have been stagnant for a time people may be putting more money into home repair and improvement because they feel that they can get a better return. This is a form of substitution, real estate versus stocks and bonds.

Financial System Clients and Their Needs

□ Business Sector

- * **Primary Need: Raise Funds**
- * **Using what mechanisms/types of obligations do companies use to raise funds?**
- * **Why will companies use different forms of financial assets to raise funds?**
- * **Do companies invest in financial assets?**

Businesses and government look to the financial markets to provide an efficient means of securing financing for investment projects.

Businesses do not, as a matter of course, invest in financial markets. If a business has surplus funds it is more likely to pay down debt, pay dividends, buy back shares, reinvest, acquire other companies, and there is a very good chance that it will just be squandered by management to line their own pockets. **The truth is that if you give management too much money they will steal it, that's what happens.**

Contrary to this rule, what company do we know that has a substantial investment in financial markets? MICROSOFT has 40 or 50 billion dollars worth of cash and short term cash equivalents on their books. Why? Probably so Bill Gates doesn't have to pay a lot of taxes if it is paid out in dividends. This is the rare exception.

Bonds and stocks are the types of obligations that companies use to raise funds. These are the two main types of financial obligations a company will have. Stock may be common or preferred.

Why do companies use a mixture of obligations to raise funds? Why not just one of the other?

There has to be a balance. Debt is nice because the company can deduct interest expense for tax purposes. Too much debt and the company risk going bust. So debt is nice because it is a relatively cheap form of finance.

Stock is expensive. Investors expect a very high rate of return. So therefore it's a trade off. They are not perfect substitutes, debt (bonds) and stock. But there is some substitute effect, I can use both to raise finance. Therefore the trade off between the two is going to be the cost of each. The more debt I have the more costly it becomes, the more stock becomes the preferred method.

Financial System Clients and Their Needs

□ Government Sector

- * **Primary Need: Raise Funds**
- * **The government does not have to issue financial assets but what are the pitfalls of using other methods?**
- * **Why do governments issue bonds of different maturities and coupons?**

It would be very unusual for a government to invest in financial markets. Some of the agencies of governments may do but in general the gov is going to raise funds, not invest. If the gov does have too much money it's a surplus and they will pay back debt and once that's done they will lower taxes or spend it on social needs.

Governments have a special situation, it does not have to sell debt to raise funds. Could print money. But why not do this? Will cause inflation and pressure on the currency. Sometimes governments don't care about inflation.

Governments issue different types of debt. They will issue T-Bills which is debt with a maturity date of less than 270 days. They will issue T-Notes which is anything with a maturity of less than 5 years. Or they will issue T-Bonds which mature between 5 and 30 years.

Why does the government issue bonds with longer maturity? Why not just issue short term notes? The answer is investor demand, back to supply and demand. The government is the major borrower in the financial markets. If all the government did was borrow 1 year maturity debt the price of that debt would increase drastically. They borrow along the yield curve so that they can borrow at the cheapest rate possible. That's one reason. The other reason is the economy requires government debt at different maturities of debt for various investment purposes. Therefore the government is satisfying that demand and is also giving liquidity along the yield curve. So that different types of investment vehicles can invest in the government products (such as pension funds).

Meeting the Needs of Participants

□ Financial Intermediation

- * Give examples of FIs
- * What roles do FIs play in this context?
- * Is there an issue with a “pass through” of the agency problem, if so how is it resolved?
- * What is **securitization**, and does it impact FIs? (does it hurt or help?)

Financial intermediaries meet the needs of investors by *pooling small amounts of investment funds and investing those funds in an efficient fashion*. They provide valuable services of diversification expertise to their clients. Investment bankers provide valuable services to businesses and government making it more efficient for these firms to raise funds in the market.

Examples of **Financial intermediaries**: depository institutions, savings and loans are a classic example. Insurance companies are another. Investment banks. Brokerage firms. Mutual Funds are another example. Finance companies.

What roles do these financial institutions play? Couple, they are asset transformers or brokers in some sense.

Pass through issue? Issue is this, one of the reasons F.I.'s exist is to take care of something called the “free life bond” (?). If a company has many shareholders an important aspect of controlling management is through monitoring. Auditing, look at operations, study company, understand whether or not management has made good choices. When a company has many small investors it is not worth while for each individual investor to spend time and money monitoring the management. Therefore, one role that the F.I. play is to concentrate ownership so that they can monitor those companies. A mutual fund has the ability to monitor general actions where a small investor would not be able to.

Problem is this does not resolve the agency problem. This scenario solves the agency problem at the company level but who is to say that the management of the F.I. does not have an agency problem and how are the shareholders protected against it?

GOVERNMENT REGULATION is the answer in this case. All of these F.I.'s have a far higher level of regulation. One of the reasons these regulations exist is to try and reduce this agency problem.

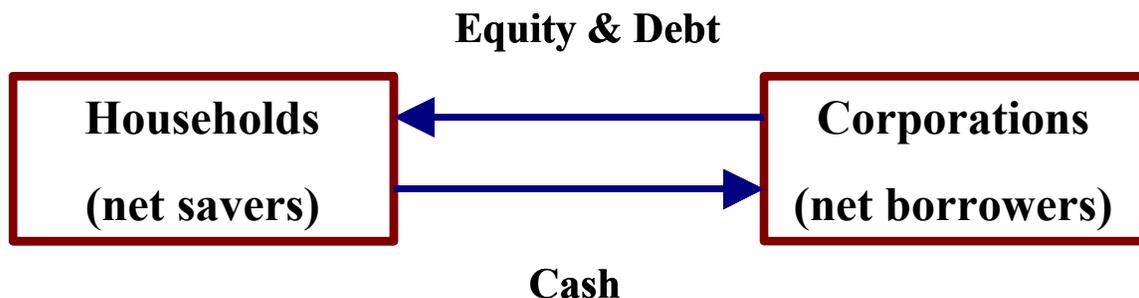
What is **securitization**, and does it impact FIs? Securitization: if you have a mortgage on your house the bank may have sold off that mortgage to another investor. They package a group of mortgages together and sold pieces (units) to investors. Any individual mortgage may be trading on the financial markets. This is the idea behind securitization. Finance companies do the same thing. Another example: trust to hold the DOW 30 stocks and sell units of that trust to investors then I allow investors to buy small diversified investments. Spiders are an example. This is a form of securitization. This

will erode the business of the mutual funds. Flip side is that banks sometimes some times like securitization because it allows them to lend to more people because they can sell all those mortgages on the markets.

So it is not clear weather Securitization is going to hurt or help F.I.s. They become more of a seller of a service rather than direct investors. But it is possible that it could hurt them as well.

Financial Intermediation

□ Without Financial Intermediaries



- * Costly for individuals to monitor borrowers
- * Less liquidity
- * Price risk

Liquidity Risk: The risk that arises from the difficulty of selling an asset in a timely manner. It can be thought of as the difference between the "true value" of the asset and the likely price, less commissions. (Bloomberg)

Surplus units and Deficit units. The net savers have money to invest (used to always be true, these days not necessarily true). Without F.I.'s households would have to invest directly and corp's would receive that cash and sell back shares. Households need this service to save for retirement, insurance purposes, pension, etc. is this a legitimate model? Probably not!

For one thing it is going to be costly for individuals to monitor their investments. They have a small stake in these businesses. There is another problem called Liquidity Risk which is when I want to **sell** something I see that asset is trading at a certain price. I place an order to sell. Because the market is not liquid a couple of things can happen. First my sell order may actually depress the price so I may not receive the price I had hoped to sell at. Second, this asset is traded so infrequently I may have to wait a period of time for it to go on the market. Between the time I decide to sell and the point in the future when that sale is actually transacted the price could change in either direction. This is **Liquidity Risk**.

So how is this Liquidity Risk important to financial institutions? Suppose a corporation is very small and it has issued bonds but the bonds are not actively traded so it is very difficult for an investor to sell if he invests directly. An alternative may be for a mutual fund company to invest in that companies bonds and I invest in the mutual fund. If I want to sell I sell my mutual fund share, but the mutual fund does not have to sell the bond. The mutual fund keeps a store of cash in order to satisfy my (the investors) order. Therefore the company does not have to sell when an investor wishes, they do not suffer the liquidity risk.

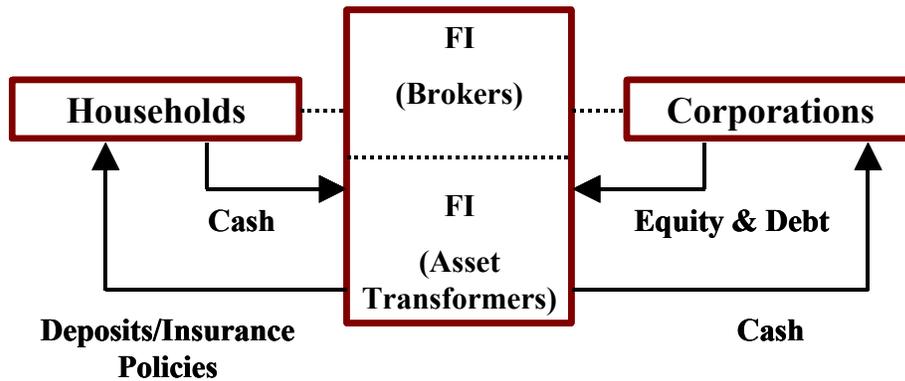
Price Risk: this is the risk that the price of the asset goes up or down. The difference to liquidity risk is that I know the price today and it takes a while to sell. Price risk says I've bought something and the price has dropped.

How does a financial institution reduce price risk? If it's a mutual fund it doesn't! It suffers the price ups and downs. Lets say I wanted to invest in a mortgage, would be very hard to do, if the price fell I could be harmed. But if I put my money in the bank in a deposit or CD they will reinvest that money in mortgages. Therefore if the value of mortgages declines they suffer that price risk, I don't!

So this is what the world would look like without F.I.'s.

Financial Intermediation

- With financial intermediaries



Acting as an **Agent for Investors**:

Acts as an agent by providing information and transaction services.

For example carry out investment research, conduct the sale and purchase of assets, identify the best services for the household's needs such as insurance policies.

e.g. Merrill Lynch, Charles Schwab

Asset Transformer:

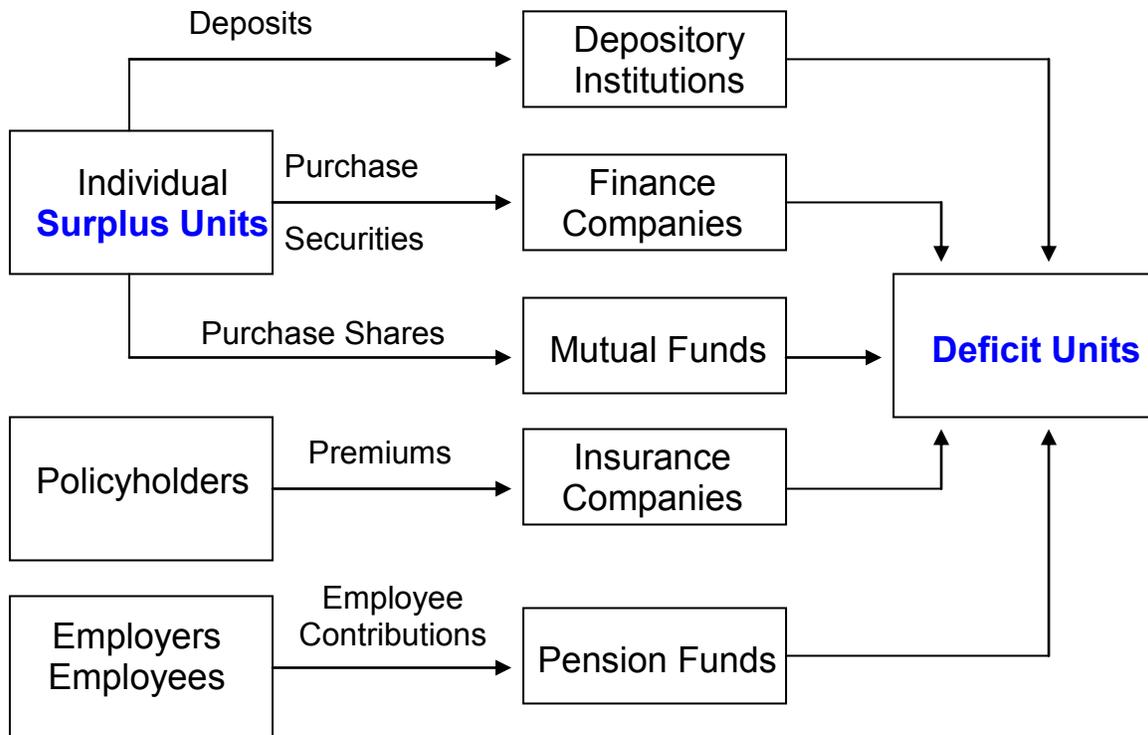
Purchase primary securities by selling financial claims to households.

The FI would purchase "Primary Securities" issued and backed by the real assets of corporations, and repackage these for the buy/sell claims.

"Secondary Securities" are issued by FIs and are backed by the primary securities owned by the FIs. These secondary securities are often more marketable

FI's stand between those who have money and those who need money. They concentrate monitoring resources, reduce liquidity risk, and reduce price risk. The FI is better able to take on price risk than an individual. They also fill the broker role by offering the best product for my needs and buying and selling when needed.

Comparison of Roles among Financial Institutions (from Financial Markets and Institutions, Madura)



This chart shows the different types of financial institutions you might see.

Depository institutions accept deposits from surplus units and provide credit to deficit units

Depository institutions are popular because: Deposits are liquid, they customize loans, they accept the risk of loans, they have expertise in evaluating creditworthiness, they diversify their loans.

Finance companies: Obtain funds by issuing securities, Lend funds to individuals and small businesses.

Commercial Finance Companies are the companies that make many car loans. They take on higher risk commercial loans than banks and can handle commercial loans.

Mutual funds: Sell shares to surplus units. Use funds to purchase a portfolio of securities. Some focus on capital market securities (e.g., stocks or bonds). Money market mutual funds concentrate on money market securities.

Insurance companies: Provide insurance policies to individuals and firms for death, illness, and damage to property, charge premiums, invest in stocks or bonds issued by corporations.

Pension funds: Offered by most corporations and government agencies, manage funds until they are withdrawn from the retirement account, invest in stocks or bonds issued by corporations or in bonds issued by the government.

Meeting the Needs of Participants

- Financial Innovation & Derivatives
 - * **Notice the distinction between primitive as opposed to derivative securities**
- Responding to Regulation & Taxes
 - * **What are examples of situations where taxes or regulations have effected markets or investments**

Significant innovation has taken place in the last few decades with the development of derivative securities. **Derivative Securities** make it possible for firms to secure capital at the lowest possible cost and make it more efficient for firms to manage risk. *The financial system constantly innovates to minimize the costs associated with taxes and regulation.* Examples of such innovation include the zero coupon bond and development of the Eurodollar market.

Derivatives can be used for hedging or speculative purposes. This is another reason why financial markets exist. Another reason is to respond to regulation and taxes.

Use to be a thing called a **Zero Coupon Bond**. With these bonds you bought them for a price today and they paid a lump sum in the future, no interest paid between those two periods. Use to be heavily used by companies because they would not have to pay taxes on the income until they received the lump sum at the end (could be 5 or 10 years). At the same time the company use to be allowed to deduct a nominal interest each year for it's tax purposes. This was a win-win situation. This loop hole has been closed!

Euro-Dollar funds were driven by regulation. Banks are required to deposit a certain amount of funds with the federal reserve for every dollar of deposits they hold, unless those deposits are held outside the country. The **EuroDollar** market arose to avoid this deposit regulation. (book said something about maximum interest rates in US too).

This is an example of a financial market arising to beat regulation.

Key Trends - Globalization

▫ Developments in Global Markets

- * **Why do businesses or individuals need to concern themselves with globalization?**
- * **If I manufacture and sell bikes in the US am I impacted by globalization?**

The globalization that has taken place in the last several decades has increased the risk associated with foreign exchange. The discussion of foreign exchange is related to both domestic and international investments. Since more of most firms' sales are now international, foreign exchange has implications for performance of US investments.

When diversification is expanded to international stocks, performance depends not only on performance of the stock but also performance of the currency. Improved information has played and continues to play an important role in the expansion of international investing.

To meet global demand how will businesses interact with financial markets?

Foreign Exchange for one.

Raise Capital from foreign markets. McDonalds stock is listed on many markets around the world. Why bother to do this. Most investors around the world can access US stock exchanges.

Cost of Capital (COC) is one reason. This is the cost of the funds I use to invest in my business. The lower the cost of capital the better for the business. Lower cost of capital means more projects are profitable in NPV terms. Lower COC also increases the value of the business if you consider the business as a present value of future cash flows. Anything a company can do to lower COC is a good thing.

Issuing stock around the world is likely to lower the COC. Why? More investors are exposed. Even though an investor may be able to access the NYSE he or she is more likely to invest in stock listed on their home market. More investors means more demand for my stock which lowers my COC.

What is the risk of doing this? One issue is that the company must abide by the rules and regulations of the foreign governments and markets. Listing requirements, typically they will be less strict than the US. The local economy might have an effect on your stock price. But this may actually be a benefit because of the diversification, not so exposed to one country.

Liquidity is another issue. If I have all my stock trading on the NYSE isn't it more liquid than if I have percentages scattered all over the world? Investors will want higher returns in exchange for lower liquidity. This is an issue if the company spreads its shares too thinly in foreign markets.

Why else would a company raise capital in other markets? Public exposure to the investors in their home market is another reason. News reports and such will encourage investors. Also a good way to curry favor with the local government.

The Future

- Globalization continues and offers more opportunities.
- Securitization continues to develop, assets repackaged and extended to other types of assets.
- Continued development of derivatives and exotics. Easier to hedge risk, there are derivative markets these days to hedge against many things, weather, credit risk, etc. These markets continue to develop.

In the future investors will have even larger capabilities to invest in a broader range of investment vehicles. Understanding valuation principles for common stock and the portfolio concepts covered in the text are the basis for valuation of many of the more exotic derivatives. Instruments such as the principal - interest strips are available in the current market to reduce portfolio risk.

The innovation that has taken place in this area has served to make the principles related to investments more important in the corporate finance arena. Corporate managers potentially lower overall capital costs by using the derivative markets. They also have opportunity for investing short-term funds in derivatives.

Why is Globalization an issue for companies? If I manufacture a product in the US why do I care about Globalization, am I impacted? Inputs from other countries, more competition. The companies inputs are most likely effected by globalization, therefore it cannot be escaped as an issue. Even the smallest companies are likely to be exposed to globalization.

Stock Exchanges: The Battle For Efficient Markets (from readings) talks about alliances so that stocks can be traded 24 hours a day. Why should this be of interest to the investment. For one thing the market can change while your asleep, new information could come out.

Though It probably means I can purchase foreign stocks a little easier. Liquidity, if the markets are linked there is likely to be deeper liquidity. **[Something for us to think about.]**

Markets and Instruments

❑ Money Market (mature in less than 1 year)

- * Debt Instruments (maturity date)
- * Derivatives (on debt instruments)

Generally more liquid

❑ Capital Market

- * Bonds (maturity in more than 1 year)
- * Equity (no maturity date but longer than 1 year)
- * Derivatives (on these instruments)
- * The distinction between money and capital markets?
- * We will consider each of these securities in turn

We could say that markets are split into capital markets and money markets. The difference being that assets in money markets will mature in less than one year. This is a way of differentiating between the two (maturity). Debt instruments generally have a maturity, a point where your money is going to be paid back.

So this is one way of classifying a market, whether it's a money market or a capital market. Generally, short term instruments tend to be more liquid than long term instruments.

Money Market Instruments

- ❑ Treasury bills
 - How do investors earn a return on these investments?
 - What are the common maturities?
 - Any tax advantage?
- ❑ Certificates of deposit
 - Liquidity?
 - FDIC coverage?
- ❑ Commercial Paper
 - * Maturity of less than 270 days, why?
- ❑ Bankers Acceptances

Treasury bills Short-term obligations issued by the U.S. Treasury. Bills are issued for maturities of one year or less. They do not pay interest but are issued on a discount basis instead. Largest category. Treasury bills are issued for terms of 4, 13, and 26 weeks. Interest income is exempt from state- and local income taxes. Interest income is subject to federal income tax. They are **zero coupon bonds**, lump sum payback at maturity with no interest payments in between. Will never buy a T-bill for more than its face value, it does not have the possibility to exceed that value. Therefore the price of a t-bill will always be less than what I am going to receive at maturity. For this reason it is described as a discount bond. Do not have to hold a T-bill, there is a fairly liquid market. Can buy and sell to/from a broker before maturity. Quoted at a discount or yield to maturity.

Certificate of deposit (CD) A deposit of funds in a bank or savings and loan association, for a specified term that earns interest at a specified rate or rate formula. CDs may be secured or unsecured. CDs may be for terms as short as one week or for terms of 10 years or longer. CDs may have fixed or floating rates. CDs may be issued in either non-negotiable or negotiable form and in either physical or book-entry form. CDs may be issued by domestic offices of U.S. banks, by foreign branches of U.S. banks, and by foreign banks at either domestic U.S. or foreign locations. Locked in, must pay penalty for early withdrawal, not liquid. The exception is the Negotiable CD usually sold in large blocks (\$100,000 or more) for which there is a secondary market meaning the certificate can be traded. FDIC protection.

Commercial paper is a short-term unsecured promissory note issued by corporations and foreign governments. For many large, creditworthy issuers, commercial paper is a low-cost alternative to bank loans. Issuers are able to efficiently raise large amounts of funds quickly and without expensive Securities and Exchange Commission (SEC) registration by selling paper, either directly or through independent dealers, to a large and varied pool of institutional buyers. Maturity is always less than 270 days (due to SEC regulation which does not require certain types of filings if maturity of debt is less than 270 days). This is also a discount bond, there is no interest paid in between. Buy today, receive a lump sum in the future. Tend to be in very large denominations because issued by companies. This is an ongoing rollover type of financing for companies.

Banker's acceptance A short-term credit investment created by a non-financial firm and guaranteed by a bank as to payment. Acceptances are traded at discounts to face value in the secondary market. These instruments have been a popular investment for money market funds. They are commonly used in international transactions, to finance overseas purchases. If a company wants credit extended in another country they will need a partner who can vouch for their credit worthiness. The (well known) bank is used to guarantee the companies debt. This is a type of off balance sheet liability fund. There is a fairly active market for this debt.

[Now the Capital Markets]

Bond Markets

- US Treasury Bonds and Notes ← very large market
- Agency Issues (Fed Gov) ← coupons, interest payment every 6 months, lump @ end
- International Bonds
 - * **What are Euro bonds and Yankee bonds?**
- Municipal Bonds ← local gov issues, not local or state taxes

Debt instruments are issued by both public and private entities. The Treasury and Agency issues have the direct or implied guaranty of the federal government. Since state and local entities issue municipal bonds, performance on these bonds does not have the same degree of safety. International bonds can be issued by foreign governments or by corporations.

Treasury notes, sometimes called T-Notes, earn a fixed rate of interest every six months until maturity. Notes are issued in terms of 2, 3, 5, and 10 years.

Eurobond

A **bond** that is (1) **underwritten** by an international **syndicate**, (2) **issued** simultaneously to **investors** in a number of countries, and (3) issued outside the jurisdiction of any single country. Eurobonds are often bearer bonds. Issued by US company in foreign market in US dollars. Payments and principle repayment is in dollars. A liability in another country but denominated in your own currency.

Yankee bonds

Foreign **bonds** denominated in U.S. dollars and **issued** in the United States by foreign banks and corporations. These bonds are usually registered with the **SEC**. The foreign company has a dollar liability.

Municipal Bonds

State or local governments offer muni **bonds** or municipals, as they are **called**, to pay for special projects such as highways or sewers. The **interest** that **investors** receive is **exempt** from some **income taxes**. There is an active market for these stocks and bonds.

Bond Markets (cont.)

Corporate Bonds

- * **Similar to Treasury issues but differ in certain key aspects, what are they?** There is a credit risk with these types of bonds. Company could go under, default.

Mortgage-Backed Securities

- * **What is interest rate risk and can it occur on fixed rate mortgages?** Can invest in bonds which are tracked by a pool of mortgages. Active market for these types of bonds.

International bonds can be issued by foreign governments or by corporations. Mortgage-backed securities can be issued by government sponsored agencies or they can also be issued privately.

Interest Rate Risk

The risk that the value of an asset changes when the underlying interest rates change. If I have a pool of mortgages that are all fixed rate, can I suffer interest rate risk? Can the value of my portfolio decline or increase because interest rates change? It may seem that they wouldn't because the mortgages are fixed rate. But what could happen to fixed rate mortgages if market interest rates change? **People will refinance!** So even a fixed rate mortgage has an interest rate risk. An 11% return can turn into a 5% return after refinancing.

Municipal Bond Yields

- Interest income on most municipals is not subject to tax
- **To compare the yields on municipals to other bonds must use equivalent taxable yield:**

$$\frac{\text{municiple return}}{1 - \text{tax rate}}$$

- Or solve for **the tax rate that equates the two yields**

$$\text{tax rate} = 1 - \frac{\text{municiple rate}}{\text{taxable rate}}$$

Since the interest income on municipal bonds is not subject to federal taxes, the taxable equivalent yield is used for comparison. Alternatively, the tax rate that makes you equivalent between a taxable and a nontaxable instrument are used for comparison. Some difference in yields on municipals may be attributed to lower liquidity of municipals and default risk differences.

Municipal bonds are particularly useful for people in a high tax bracket.

Capital Market - Equity

- **Common stock**
 - * Residual claim, last to be paid if company goes bust
 - * Limited liability
- **Preferred stock**
 - * Residual claim, last to be paid if company goes bust, **but paid before common**
 - * Fixed dividends - limited
 - * Priority over common
 - * Tax treatment

Two key points are relevant in the discussion of equity instruments. First, the issue of common stock owners having a residual claim to the earnings of the firm should be emphasized. The priorities of debt holders and preferred stockholders are contrasted with common shareholders. *Both preferred stock and common stock holders are the last paid in bankruptcy proceedings. Debt must be paid first. If, after debt, dividends are paid in bankruptcy proceedings, the preferred stockholders will be paid first, then common stockholders. (This is usually also true in terms of dividends without bankruptcy).* Second, the differences in preferred stock and common stock dividends should be emphasized. Preferred shareholders have a priority claim to income in the form of dividends. Ordinary preferred stockholders are limited to the fixed dividend while common shareholders do not have limits. The partial tax exemption on dividends of one corporation being received by another corporation is important in discussing preferred stock.

Primary vs. Secondary Security Sales

□ Primary

- * **New issue**
- * **Key factor: issuer (company) receives the proceeds from the sale.**
- * **These take two forms, what are they?**

□ Secondary

- * **Existing owner sells to another party.**
- * **Issuing firm doesn't receive proceeds and is not directly involved.**

Talking about sales of common stock or debt, this is a security sale.

ASK THE QUESTION, WHO RECEIVES THE CASH? COMPANY OR SOMEONE ELSE? THAT'S HOW YOU CAN TELL THE TYPE.

What are two different ways that primary sales can take place? Can have **Initial Public Offering (IPO)**, that type of security is issued for the first time. New issue, never offered before.

The opposite is called a **Seasoned Equity Offer (SEO)**. The company already has stock issued and is issuing more stock. It is still a primary transaction, the company is getting the money, but there is an existing market for the stock.

Secondary, any exchange of debt where the company does not get the proceeds.

Investment Banking Arrangements

□ Underwritten vs. Best Efforts

- * **Underwritten: firm commitment on proceeds to the issuing firm.**
- * **Best Efforts: no firm commitment.**
- * **Which method leaves the bank/company open to the most risk?**

Investment banking involves the sale of new issues of securities to investors. There are two ways an investment banker will structure this type of sale.

1) **Underwritten Offer:** In this case the investment banker buys the security from the issuing company. The investment bank will then sell those securities off to investors. If the value of the stock goes down the risk is bore by the investment banker. The issue of whether the issuing firm or the investment banker bears the risk that the issue will be sold at the offering price. Tends to be for very large offerings.

2) **Best Effort:** The investment banker is just marketing the offer, just trying to find buyers for the security. If they can't find enough interest the deal goes away. Issues can be arranged on either a competitive or negotiated offering. While virtually all stock offerings and corporate bond offerings are done on a negotiated basis, many municipal offerings are completed on a competitive bid basis. Tends to be for very small companies. Some best effort sales might not reach target volume.

Which method leaves the bank open to the most risk? It would appear that underwritten does. Best effort does not suffer as much, just less commission. Keep in mind the price of an offering, even an underwritten, is usually set by the investment bank. So the investment bank is really not taking on very much risk. They will not price the offering so that they will suffer. Also, even though they purchase the offering they only hold it for a very short time. And they already have the investors lined up when they do. The securities are almost immediately resold.

So the underwriters really do not suffer too much, very rare that an offering goes bad and the underwriter is the one taking the loss.

Public Offerings (Can be bond but we will focus on stock for the moment.)

❑ Initial Public Offerings (IPOs)

- * **Evidence of underpricing:** spreadsheet in public folder contains data from about 14 IPO which occurred in the last month. Stock was priced by the underwriters at a certain level. By the end of the first day (the closing price after the first days worth of trading) we see 4 stocks coming up negative out of the 14 which means that most IPO's showed a positive jump in price the first day. Some of the jump are very high. Even 40% in one day. And there are a lot of large positive returns. This will usually be the case, most IPO issues see a leap in stock price. Typically 15% on average, worldwide. This is what we mean by evidence of under pricing.

Company	Symbol	Offer Date	Offer Price	Recent Close	% Gain/Loss
Aventine Renewable	AVR	28-Jun-06	\$43.00	\$39.27	-8.7%
J Crew Group Inc	JCG	27-Jun-06	\$20.00	\$27.49	37.5%
Home Bancshares	HOMB	22-Jun-06	\$18.00	\$20.00	11.1%
Houston Wire & Cable	HWCC	14-Jun-06	\$13.00	\$15.21	17.0%
Verasun Energy Corp	VSE	13-Jun-06	\$23.00	\$30.00	30.4%
LoopNet Inc	LOOP	6-Jun-06	\$12.00	\$15.47	28.9%
Alphatec Holdings Inc	ATEC	2-Jun-06	\$9.00	\$8.50	-5.6%
CTC Media Inc	CTCM	1-Jun-06	\$14.00	\$17.00	21.4%
MasterCard Inc	MA	24-May-06	\$39.00	\$46.00	17.9%
Vonage Hldgs Corp	VG	23-May-06	\$17.00	\$14.85	-12.6%
Darwin Professional	DR	18-May-06	\$16.00	\$19.95	24.7%
Basin Water Inc	BWTR	11-May-06	\$12.00	\$16.57	38.1%
Novacea Inc	NOVC	9-May-06	\$6.50	\$6.51	0.2%
Alliance Holdings GP	AHGP	9-May-06	\$25.00	\$24.01	-4.0%
Northstar	NSTR	4-May-06	\$15.00	\$15.92	6.1%

- * **Why are IPOs underpriced?** One argument is that the pricing is done by the underwriters who artificially set the price low. Argument against this is there are a lot of underwriters, they must be in a conspiracy to all set the prices low. It's a competitive market. Another argument says that since these are small unknown companies they must be priced favorable in order to sell. Counter this with the absence of a track record so there must be an incentive for investors.

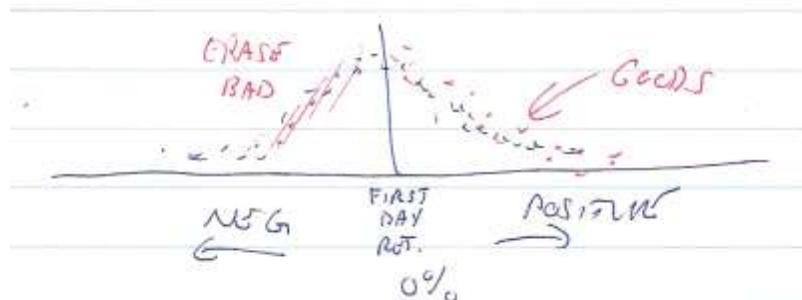
Is a CEO of a company that just issued its IPO happy that the stock price jumped so high on the first day? Not really, this would be an indication that the stock could have been offered at a higher price, sold less stock, fewer owners, less SH equity.

There is a theory called the **GOOD TASTE THEORY**. This theory says I want to make investors happy so that when I go back and ask for more money (another stock issue) they will buy more stock. Keep in mind when a company goes public they usually don't sell too much stock, maybe only 5% or 10% of what they ultimately plan to offer. So the dilution is limited. The stock price doubles but they have raised such a small amount compared to their market cap plan that it really doesn't matter. But since they have left the investor with this good taste, they can now go back to the market 9 months later and raise double that. There is no link between the amount of money subsequently raised and the IPO leap which counters this theory.

There is also the **WINNERS CURSE** theory. Says the smart investors know a good stock from a bad stock. The smart investors are not investing in the bad stocks. There are a lot of dumb investors. Smart investors do not invest in the bad companies but dumb investors invest in good and bad. Reason it's called the winners curse is the dumb investors get only a small share of the good companies shares because other smart investors wanted it too. At the same time the dumb investor is getting all the shares they like in the bad companies which are making them no money. This is going to discourage the bad investor from investing further. So therefore, in order for the companies to go public they have to under price to make even the soured dumb investors want to get involved. May well be true.

There is another consideration. Underwriters perform another service called **After Market Support**. What they will do is buy shares in the company after they have sold them off if the price of the stock falls below a certain level. They are propping up the price so that no one is too badly hurt.

Now imagine a spectrum of IPO and their first day returns distributed along a normal curve with the good above the mean and the bad below the mean. What is happening in the "after market support" is that the underwriters are erasing the bad by propping up the prices of any stock that crashes the first day. The bad ones are hidden!



- * **Five-year performance:** test this in various ways. Take a stock that just went public, then find a competitor who is currently traded, track what happens to them over the next 5 years. The stock price of the new company tends to under perform the stock price of the existing company. In fact, the returns are often half, if the existing company stock average return is 15 %, then for the startup it average return will be around 7%.

Knowing all this why would anyone invest in an IPO the first day? There is really no answer to this question!

- * **Suggestions on the reasons for underperformance**

Market Structure (can classify markets according to their structure)

- Direct Search
- Brokered
- Dealer
- Auction
 - * **How is each type of market differentiated?**
 - * **Give examples of each**

Direct search market

Buyers and sellers seek each other directly and transact directly. If I want to buy I physically go out and find a seller, and visa-versa.

Brokered market

A market in which an intermediary offers search services to buyers and sellers. Real Estate is a classic example. Real Estate broker does not own any houses, just brings together buyers and sellers. No Inventory!

Dealer market

Where traders specializing in particular commodities buy and sell assets for their own accounts. Such as used cars, there is an inventory.

Auction markets

Markets in which the prevailing price is determined through the free interaction of prospective buyers and sellers, as on the floor of the stock exchange. One place where the asset is bought or sold. Classic example is antique auction.

Organization of Secondary Markets

- Organized exchanges
- OTC market, over the counter
- Third market
- Fourth market
- We will discuss each of these forms in turn

Organized Exchanges

- Auction markets with centralized order flow. (NYSE)
- Dealership function: can be competitive or assigned by the exchange (Specialists).
Different parties can hold inventory in different assets, compete for buyers and sellers.
Or can be assigned by the exchange, in NYSE this would be the role of the Specialist.
They are the only dealers who maintain the stock. Has all the inventory.
 - * **More about specialists later**
- Securities:
 - * **stock,**
 - * **futures contracts,**
 - * **options,**
 - * **and to a lesser extent, bonds** (not usually traded on organized exchanges).
- Examples: NYSE, AMEX, Regionals, CBOE.

OTC Market (over the counter)

- Dealer market **without centralized order flow.**
- NASDAQ: largest organized stock market for OTC trading; information system for individuals, brokers and dealers.
- Securities Traded: stocks, bonds and **some derivatives.**
 - * **Most secondary bonds transactions**
- It may be interesting to consider the listing requirements (initial and ongoing) and fees of the NYSE compared to the NASDAQ!

No centralized location for trade of t-bills and t-bonds, just a network of dealers.
Majority of derivatives are often organized directly between customers and banks. ***Most secondary bond transactions are almost always over the counter. No centralized order flow.***

Third Market

- Trading of listed securities away from the exchange.
- Institutional market: to facilitate trades of larger blocks of securities.

*** Why was this important?**

- Involves services of dealers and brokers
- Why did this market become less important on May 1 1975?

This market grew up to avoid fixed commissions. Back in the old days on the NYSE a specialist would charge a fixed commission rate (%) per trade. There was no discount for large trades. This was not good for institutional investors. So the third market grew up with brokers who would bring together institutional investors. Trading away from the exchange to avoid the commission. Not as important these days because the whole commission schedule has changed since 1972 (1975 fixed commissions abolished). But still done, brokers still exist for this purpose.

Fourth Market

- Institutions trading directly with institutions, no brokers in between.**
- No middleman involved in the transaction
- Organized information and trading systems

Bonds, stocks, whatever they want to trade. Also done away from the exchange. Refers to the practice of institutional investors trading large blocks of securities directly to avoid brokerage commissions.

One rule is that the specialist at the NYSE have to be informed in some timely fashion so that they can change their bid card (?).

Specialists

- A type of market maker who lives on the NYSE.
- The specialist is required to:
 - * **hold an inventory of the stock specialized to one particular specialist,**
 - * **post bid and ask prices for the stock,**
 - * **manage limit orders** (an order placed with a broker that says “if price falls to a certain level I want to buy it or sell it), **and**
- They will trade out of their own inventory to manage any large market movements.
- What factors drive the spread? Uncertainty. The bid-ask spread will vary throughout the day. Will be largest when exchange opens in morning because they want to avoid being blindsided or taking positions. Keeping spread wide creates a cushion in case they are mis-priced in the stock. At the end of the day the spread will widen as well. At the end of the day they do want to take positions in the stock if they can help it. So they widen the spread which kind of kills the activity. The liquidity of the stock will change the bid-ask spread, more liquid a stock the higher the spread is likely to go.
- How do the specialists make profits? Make profit between the bid and the ask, and they also charge commissions.

No specialist competing for stocks. A specialist can hold many different kinds of stocks. They are dealers in stocks. It is not “one specialist per stock” but specialist do not share stocks. The specialist can see limit orders outstanding so they can gauge the depth of the market, how much interest there is above or below the current price.

If there is an imbalance between buyers and sellers the specialist is met to stand in and correct the imbalance by buying or selling from their own inventory (at a profit). But by holding inventory they do take on risk, if they are holding and the price falls then they will suffer that loss. If they see pressure in either direction they can adjust the price. They can see the current volume above and below the current price. So they have a pretty good idea where they are going to be safe. They have a lot of information which is specially valuable since they can trade on their own account.

They are not met to trade in front of other trades.

Can contrast specialist on the NYSE with the NASDAQ. NYSE has been fighting globalization and technology for a long time because they want to keep the specialist system in place. Specialist make a lot of money and the NYSE is in effect owned by the specialist. They have a reason to maintain the status quos. But stocks trades being driven away from the exchange is forcing them to invest in technology and to globalize as well.

Contrast this to trading on an OTC market such as NASDAQ. In this there are many dealers, many holders. Dealers maintain a bid-ask price and sell from their inventory (as does a specialist). No centralized trading. Problem: if I am an investor I have no guarantee that I can see all the current quotes for a particular stock. I may be selling at a price that is too high or low.

Bid-Ask Spread: difference between the price I can buy and the price I can sell.

Trading on the OTC Market

- Trades on OTC markets (such as the Nasdaq) are negotiated directed with dealers
 - * **Dealers maintain bid-ask prices and sell from inventory**
 - * **There is no centralized trading floor**
- This can lead to problems if quotes from all dealers are not known

Types of Brokers

- Contrast the difference between
 - * **Full service**
 - * **Discount**
- In this context what is a discretionary account?

Types of Orders

- Market; Trading at the current market price
 - * **Buy at the asked and sell at the bid**
 - * **What complication or improvement can occur?**
- Limit orders
 - * **For instance, buy if the ask falls below a set level, or**
 - * **Sell if the bid rises above a certain level**
- Stop-loss or stop-buy orders
 - * **Symmetrical idea to limit orders**
 - * **execute trades on the exchange.**

Costs of Trading

- Commission: fee paid to broker for making the transaction (is it dependent on the type of order?)
- Spread: cost of trading with dealer**
 - * **Bid: price dealer will buy from you**
 - * **Ask: price dealer will sell to you**
 - * **Spread: ask - bid**
- Combination: on most trades both are paid (when is it not?)
- Are trades at the NYSE cheaper, why?

Margin Trading

- Borrow part of the purchase price from a broker
- Margin arrangements differ for stocks and futures.

Stock Margin Trading

- Maximum margin
 - * **Currently 50%**
 - * **Set by the Fed**
- Maintenance margin
 - * **Minimum level the equity margin can be**
- Margin call
 - * **Call for more equity funds**

Margin Trading - Initial Conditions

X Corp \$70
 50% Initial Margin
 40% Maintenance Margin
 1000 Shares Purchased

Initial Position

Stock	\$70,000	Borrowed	\$35,000
		Equity	\$35,000

Margin Trading - Maintenance Margin

Stock price falls to \$60 per share

New Position

Stock	\$60,000	Borrowed	\$35,000
		Equity	\$25,000

Margin% = $\$25,000 / \$60,000 = 41.67\%$

Margin Trading - Margin Call

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

$$(1000P - \$35,000) / 1000P = 40\%$$

$$P = \$58.33$$

$$* 1000P - \text{Amount Borrowed} = \text{Equity}$$

Margin Questions

- What can an investor do if faced with a margin call?
- Why do investors trade on margin?
- What are the risks?

Example of Margin Rate

Margin Interest Rates	
Debit Balance	Rate*
\$1,000,000 and above	Base rate + 0.75% =6.50%
\$ 250,000 – \$999,999	Base rate + 1.25% =7.00%
\$ 50,000 – \$249,999	Base rate + 1.75% =7.50%
\$ 25,000 – \$49,999	Base rate + 2.25% =8.00%
\$ 10,000 – \$24,999	Base rate + 2.75% =8.50%
\$ 1 – \$9,999	Base rate + 3.25% =9.00%

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.**
- Subject to margin requirements

Short Sale - Initial Conditions

Z Corp 100 Shares
 50% Initial Margin
 30% Maintenance Margin
 \$100 Initial Price

Sale Proceeds \$10,000
 Margin & Equity 5,000
 Stock Owed 10,000

Short Sale - Maintenance Margin

Stock Price Rises to \$110

Sale Proceeds	\$10,000	
Initial Margin	5,000	
Stock Owed	11,000	
Net Equity		4,000
Margin % (4000/11000)	36%	

Short Sale - Margin Call

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

$$(\$15,000^* - 100P) / (100P) = 30\%$$
$$P = \$115.38$$

* Initial margin plus sale proceeds

Short Sales

- Where are stocks borrowed from?
- What is the time period?
- What effect do dividends have?