AEM 2240: Finance for Dyson Majors
Financial Assets and Securities Trading

Overview

- **Financial Assets**
- Trading

Types of Financial Assets

- Equity Securities/Stocks/Shares:
  Ownership stake in a publicly traded company.

- Fixed-Income (Debt) Securities/Bonds/Loans:
  Promise to pay a specified cash flow over a specified period.

- Derivative Securities:
  Payoff depends on the value/outcome of some other asset/event.

Equity Securities

Equity securities represent an ownership share in a publicly traded company.

– They give you the right to vote (unless you hold preferred stocks),
– and to receive dividends (=parts of the profits that the corporation decides to pay out to its shareholders).

Equity securities represent a **residual claim**.

There are **preferred stocks** and **common stocks**. Preferred stocks' dividends are usually fixed and have priority over dividends to common stockholders. Preferred stocks do not come with voting rights.

Fixed-Income Securities

Fixed-income securities promise to pay a *specified cash flow* over a *specified period.*

There's wide variety with respect to the timing/nature of payments:

- one-time payment?
- multiple payments?
  - variable payment?
  - fixed payment?

Fixed-Income Securities: Money Market Instruments

Fixed-income securities also vary by their "maturity."

Short-term fixed-income securities:

- Treasury bills (< 1 year); exempt from state and local income tax
- Certificates of deposit
- Commercial paper

Fixed-Income Securities: Bond Market Instruments

Long-term fixed-income securities:

- Treasury notes (1-10 yrs) and bonds (10-30 yrs); exempt from state and local income tax
- Municipal bonds; exempt from federal income tax
- Corporate notes (1-10 yrs) and bonds (10-100 yrs)

Derivative Securities

The most common kinds are:

- Options
- Futures and forwards

We will have a lot more to say about derivatives later in the semester.

For now, know that:

- Their payoff depends on the value/outcome of some other asset/event
- Most common kinds are options, futures, and forwards
- Their uses are primarily for *speculation* and *hedging*

Historical Performance

We will talk about historical performance in more detail later.

To preview some of the discussion, stocks offered higher average rates of return than bonds.

However, we need to keep in mind that this was only on average. In any given year (or any given period), this relationship might be reversed.

Overview

- Financial Assets

- **Trading**
    - **Primary/secondary markets**

Equity Trading*

How do you trade stocks?

- You can buy on the **primary market**:
  These are “new issues” that raise capital for the firm: IPO (Initial Public Offering), SEO (Seasoned Equity Offering).

- You can buy/sell on the **secondary market**:
  Existing owner sells to another party; does not raise capital for the firm (i.e., firm not involved).

*Investing in fixed income/derivative securities is similar.

Primary Market

IPO:
Event in which a privately held company first sells shares to retail and institutional investors.

IPOs are usually executed by underwriters (investment banks such as Goldman Sachs or Morgan Stanley), which are familiar with the complex legal and regulatory process and have access to a pool of investors willing to buy the newly issued shares.

Usually, about a third of the company is sold in the IPO.

SEO:
Event in which a publicly traded company sells additional shares to retail and institutional investors.

Secondary Market

Secondary Markets/Stock Exchanges:

- Securities previously issued are bought/sold
- Examples include the NYSE and Nasdaq
- Importance: provides liquidity, making it easy to buy and sell securities (which aids the primary market)
- Establish a price for securities

Economy	Stock Exchange
United States	New York Stock Exchange
United States	NASDAQ
United Kingdom	London Stock Exchange
Japan	Tokyo Stock Exchange
Europe	Euronext
China	Shanghai Stock Exchange
Hong Kong	Hong Kong Stock Exchange
Canada	Toronto Stock Exchange
India	Bombay Stock Exchange
India	National Stock Exchange of India
Brazil	BM&F Bovespa
Germany	Deutsche Börse
Australia	Australian Securities Exchange
Spain	BME Spanish Exchanges
China	Shenzhen Stock Exchange
Switzerland	SIX Swiss Exchange
South Korea	Korea Exchange

Overview

- Financial Assets
- **Trading**
  - Primary/secondary markets
  - **Transaction costs/order types**

Trading Costs

Costs of Trading:

Commission: Fee paid for making the transaction

Spread: Bid: Price "market maker" will buy from you
Ask: Price "market maker" will sell to you
(also known as the Offer)

Bid < Ask

YOU buy at the ask and sell at the bid.
The difference (also known as the bid-ask spread) is the profit to the "market maker"

Types of Orders: Market Order

Market order = Simple buy/sell

- Customer to broker: "Buy 100 at the market"
  = Buy 100 shares at the best (lowest) ask price and do it quickly.

- Customer to broker: "Sell 100 at the market"
  = Sell 100 shares at the best (highest) bid price and do it quickly.

Types of Orders: Limit Order

Limit order = Buy/sell if the price hits a certain threshold

Limit-buy: buy if the price hits or goes below the limit (if P ≤ limit)

Limit-sell: sell if the price hits or goes above the limit (if P ≥ limit)

		Condition	
		Price below the Limit	Price above the Limit
Action	Buy	Limit-Buy Order	Stop-Buy Order
	Sell	Stop-Loss Order	Limit-Sell Order

- Customer to broker: “Buy 100 at 106.75 limit”
  = *I want to buy 100 shares but I don’t want to pay more than $106.75.*

- Customer to broker: “Sell 100 at 106.75 limit”
  = *I want to sell 100 shares and I don’t want to get less than $106.75.*

Limit orders will get filled only if a counterparty can be found
(i.e., only if the broker can find someone to buy/sell at $106.75).

Limit Order Book

BUY ORDERS					SELL ORDERS				
Time	MPID	Total	Shares	BID	ASK	Shares	Total	MPID	Time
14:20:48.265	NSDQ	10	10	$176.94	$176.99	45	45	NSDQ	14:21:03.978
14:20:43.664	NSDQ	11	1	$176.94	$177.01	60	105	NSDQ	14:20:29.647
14:20:53.538	NSDQ	12	1	$176.94	$177.03	13	118	NSDQ	14:16:10.544
14:18:56.851	NSDQ	13	1	$176.93	$177.04	10	128	NSDQ	14:21:02.140
14:12:01.371	NSDQ	17	4	$176.91	$177.04	6	134	NSDQ	14:16:10.544
14:20:59.387	NSDQ	117	100	$176.90	$177.05	100	234	NSDQ	14:16:21.699
14:20:59.388	NSDQ	217	100	$176.90	$177.06	100	334	NSDQ	14:20:30.842
14:20:59.387	NSDQ	223	6	$176.90	$177.06	10	344	NSDQ	14:20:36.431
14:17:16.327	NSDQ	323	100	$176.85	$177.07	20	364	NSDQ	14:19:30.700
14:17:19.598	NSDQ	423	100	$176.85	$177.08	2	366	NSDQ	14:18:34.701
14:09:00.132	NSDQ	452	29	$176.84	$177.09	8	374	NSDQ	14:14:43.009
14:19:45.606	NSDQ	652	200	$176.83	$177.09	1	375	NSDQ	14:14:40.084
14:01:23.380	NSDQ	752	100	$176.82	$177.10	29	404	NSDQ	14:17:14.173
14:19:51.140	NSDQ	754	2	$176.80	$177.10	2	406	NSDQ	14:14:40.084
14:15:12.899	NSDQ	854	100	$176.78	$177.11	200	606	NSDQ	14:17:53.015
13:57:05.127	NSDQ	879	25	$176.77	$177.12	27	633	NSDQ	14:15:04.723
14:20:43.613	NSDQ	979	100	$176.76	$177.12	10	643	NSDQ	14:14:40.084
14:13:42.132	NSDQ	1,010	31	$176.75	$177.13	20	663	NSDQ	14:14:40.084

Types of Orders: Example

<u>Bid</u> <u>Ask</u>
55.25 55.50

What will happen the instant after…

a. you place a market order to buy 1 share?
=

b. you place a market order to sell 1 share?
=

c. you place a limit order to sell at \$55.38, 1 share?
=

d. you place a limit order to buy at \$55.38, 1 share?
=

Types of Orders: Stop Orders

Related to limit orders and used in combination with existing positions.

Stop-loss:
- Sell if price is at or below the limit
- Assume Wal-Mart is trading at \$56.
  - You place a stop-loss sell order for Wal-Mart at \$48.
    - *If the price drops below \$48, sell Wal-Mart.*
    - *The actual selling price might be lower than \$48.*

		Condition	
		Price below the Limit	Price above the Limit
Action	Buy	Limit-Buy Order	Stop-Buy Order
	Sell	Stop-Loss Order	Limit-Sell Order

Overview

- Financial Assets

- **Trading**
  - Primary/secondary markets
  - Transaction costs/order types
  - **Buying on margin/shorting**

Equity Trading - continued

Investing in Equity:

	go long (+)	go short (-)
directly:	buy buy on margin	sell short-sell
indirectly:*	mutual funds, pension funds, hedge funds	

*We will cover this later in the semester.

Buying on Margin - Basics

Buy on Margin (Margin Purchase):

The investor borrows part of the purchase price of a security from his/her broker. The investor pays interest on the capital borrowed.

Buying on Margin - Basics

Some Terminology with respect to Buying on Margin:

net value = difference between the value of the securities and the loan (incl. interest)

margin = net value/value of securities

initial margin requirement = minimum margin requirement at purchase

maintenance margin requirement = minimum margin requirement thereafter

If your margin falls below the maintenance margin requirement, you receive a margin call. You now either have to increase the margin or close out your position.

Buying on Margin - Example

You are given $10,000.

Let's say one share of IBM is currently trading at $100 (there is no bid-ask spread → Bid = Ask = $100). You put all your money in IBM.

In Scenario A, one year later, the price of IBM jumps to $140.
In Scenario B, one year later, the price of IBM drops to $60.

What are your percentage and dollar returns?

Buying on Margin - Example

You are given $10,000. You borrow another $10,000 from your broker.
The interest rate is 10%/year. → You buy on margin.

Let's say one share of IBM is currently trading at $100 (there is no bid-ask spread → Bid = Ask = $100). You put all your money in IBM (=$20,000).

In Scenario A, one year later, the price of IBM jumps to $140.
In Scenario B, one year later, the price of IBM drops to $60.

What are your percentage and dollar returns?

Shorting - Basics

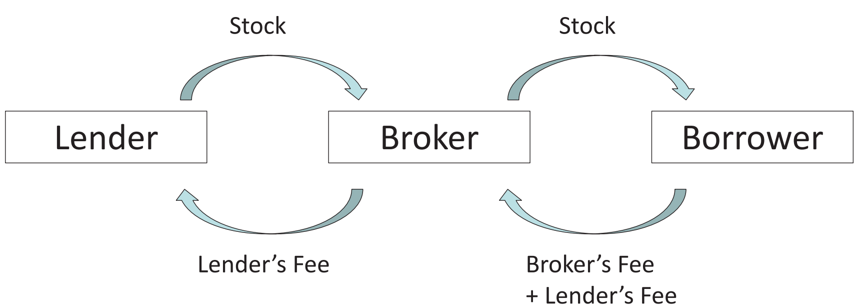
Why?:

- Stock may be overpriced
- Or, stock may be appropriately priced, but we want to hedge out risk from a long position in a similar security (we will discuss later in course)

Mechanics:

- Find an investor in the market who is willing to lend you some shares. Your broker will help you with that (and charge you some fee).
- After you have borrowed the shares, sell them on the market to someone who wants to buy the shares.
  - In a "perfect" market, you would keep the proceeds and earn interest on them.
  - In the real world, your broker may force you to put these proceeds into "safe" bonds. If you are a small retail investor, your brokerage firm may even keep the interest proceeds.
- When you want to "unwind"/"cover" your short, you repurchase the shares and return them to your lender.

Shorting - Basics

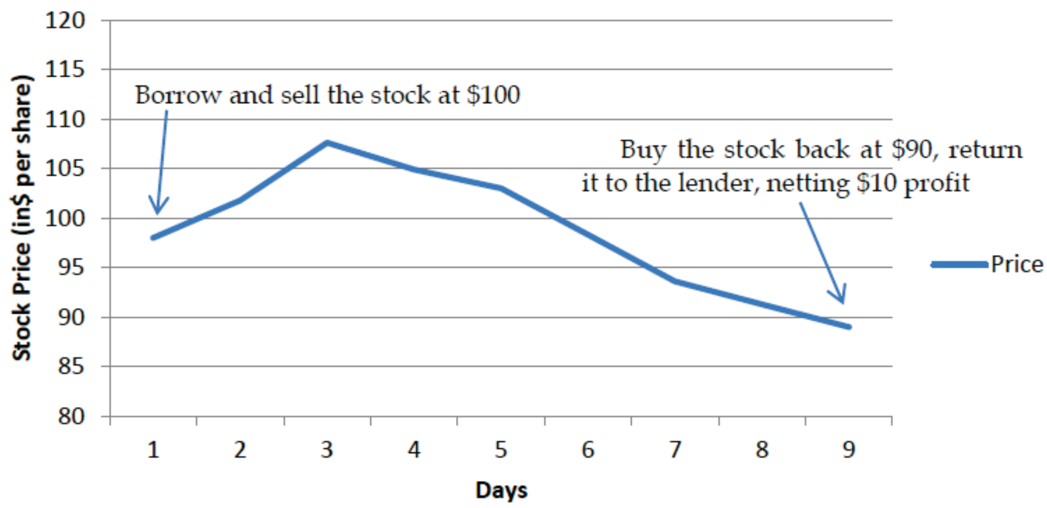


Broker agrees to procure the share from the borrower if the lender wants his/her share back.

→ Broker assumes the risk that prices might move so far against the borrower that the borrower cannot afford the share anymore.

→ Broker requires collateral from borrower to make sure this does not happen.

Shorting - Simplified Example



Shorting - Costs

Explicit Cost:

- Fees

Implicit Costs:

- Recall Risk
  - Lender might ask the borrower to return the share before the borrower intended to.
- Short Squeeze
  - Let's assume the stock price starts to move against you.
    → Brokers want more collateral
    → Other borrowers may be forced to close out their short position
    → More buying pressure…

Shorting - Costs

Implicit Costs:

- Others
  - Firms may fight back.
    - E.g., "*Your activities are mean, shameful and loathsome. They are motivated by appalling avarice and greed, and they will not be permitted to go unanswered*" (Fulman 1998).
  - It is frequently frowned upon by regulators.
    - E.g., in 1995, the Finance Ministry in Malaysia proposed mandatory caning as the punishment for short sellers (the beating "*will be light, similar to the punishment carried out on juveniles*" (Jayasankaran 1995)).
    - During World War I, the NYSE imposed special rules out of fear that Germany would send over special agents to drive down stock prices by shorting.

Shorting - One more Example

Let's return to the IBM example.

Let's assume there are no lending fees and your brokerage firm keeps the interest proceeds altogether.

If you short 1,000 shares and buy them back later, what are your dollar returns?

A:	sell 1,000 shares at \$100	→ +100,000	
	buy them back at \$140	→ -140,000	→ -40,000
B:	sell 1,000 shares at \$100	→ +100,000	
	buy them back at \$60	→ -60,000	→ +40,000

Shorting - Some Details (for completeness)

Dividends (= part of the profits that the company decides to pay out):

- If you are short a stock as of the ex-dividend date, you are liable to pay the dividend to the person whose shares you have borrowed to make your short sale.

Shorting - Some Details (for completeness)

Voting Rights:

The only shares that can be taken from customer accounts are those from margin accounts. When opening margin accounts, investors generally enter into an agreement with the brokerage firm that their shares can be loaned out.*

*Different brokers treat “margin accounts” differently as stated in their margin agreement. Some like Charles Schwab and Scottrade only lend out shares up to a certain balance. Other brokers like Wells Fargo have a policy where if you have shares in a margin account, they can all be lent out.

The best way to prevent borrowing of shares is to have all of one's shares in a “cash account.”

Shorting - Some Details (for completeness)

Voting Rights:
To understand who is the holder of record, and thus who retains the voting rights, you just need to follow the shares. Initially, the shares are held by the “source”. When the shares were used in the short sale transaction, the initial source lost its voting rights as it was no longer the holder of record. That is, the margin account customer who holds the shares will lose his or her voting rights in this situation - this is part of the margin account agreement.

The shares are then sold in the market, and the investor who purchases these shares becomes the holder of record for these shares, thus, controlling the voting rights. The investor going short does not get the voting rights. When this investor closes his or her short position, the shares are returned to the brokerage firm, and the voting rights return to the initial owner whose shares were used in the short sale.

Shorting - Some Details (for completeness)

Most lenders are: Mutual funds, pension funds, insurance companies.

Most borrowers are: Hedge funds, proprietary trading desks.