YOUNG INVESTORS SOCIETY

LESSON 7: INTRINSIC VALUE

DESCRIPTION

This lesson will teach you the difference between market value, book value, and intrinsic value, and will discuss different ways to find a company's true value or intrinsic value.

OBJECTIVES

At the conclusion of this lesson, you should be able to:
- Understand the difference between market value, book value, and intrinsic value.
- Understand different metrics that companies use to arrive at a company's true value.
- Recognize that there are differing opinions as to how to determine a company's true value.
- Learn that the market is not 100% efficient, otherwise there would be no such thing as value-investing
- Be able to explain basic valuation techniques.
- Begin to think about investments in relation to their intrinsic.
- Know that value-investing is buying companies at a discount to their intrinsic value.

LENGTH

Approximately 120 minutes, divided up into three (3) Sections and an Activity.

RESOURCES

Access to Computers and Internet is **necessary for this lesson**
- YIS Glossary of Terms (full database at younginvestorssociety.org/glossary)
- YIS Intrinsic Value Spreadsheet (www.younginvestorssociety.org/resources)
- "Show Me the Money" Activity
- Zacks.com – for company research including ratios and screens
- Finvest.com – for stock data, analyst recommendations, and graphs
- Gurufocus.com for company analysis (Login name: yisinvestor, Password: password1)
- Wallstreetsurvivor.com for basic stock concepts
- Yahoo Finance and Yahoo Finance App for stock charts and basic company information
- "The Little Book that Builds Wealth" Pat Dorsey or see Pat Dorsey's presentation at Google https://www.youtube.com/watch?v=YFS5JBgz1Xc
- Guest Speakers (See Guest Speakers Tab at younginvestorssociety.org/mentors
- Seeking Alpha – online portal of stock research reports
- Motley Fool – great daily content and stock picks
- Investopedia.com – the "Wikipedia" of Investing, great online glossary of terms
- Stockcharts.com – for tracking stock market performance and comparison between stocks.

As a value-investor your focus is to buy companies whose stock prices do not actually reflect their true value, known as "intrinsic value". If you can successfully select companies to buy whose stock price is trading below their intrinsic value, then you'll be successful.   Being able to correctly estimate something's intrinsic value is one of the most important skills of a master investor.

"The newer approach to security analysis attempts to value a common stock independently of its market price. If the value found is substantially above or below the current price, the analyst concludes that the issue should be bought or disposed of. This independent value has a variety of names, the most familiar of which is "intrinsic value".

— **Ben Graham**, Security Analysis (1951 Edition)

"With the doubloon, you've got the intrinsic value of the metal plus the numismatic considerations."

Looking at the graph below, when are the times that you want to buy to stock? When are the times that you want to sell the stock? **Why do you think the market price is more volatile than the intrinsic value of a company?**
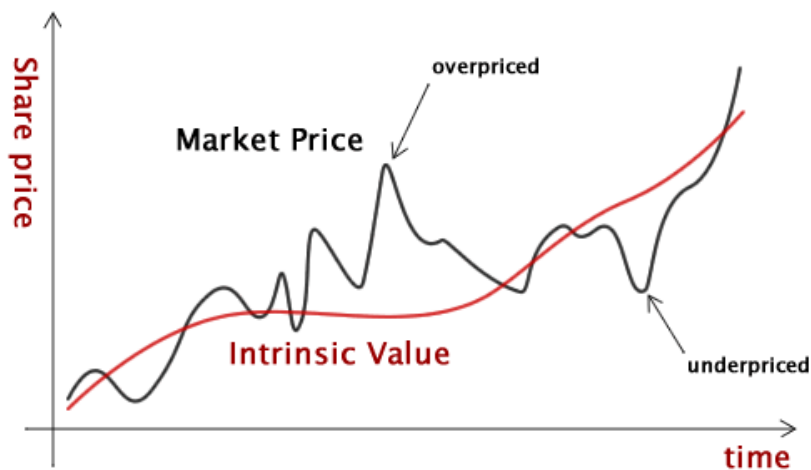
LESSON

SECTION 1

Let's Buy a House

To get your mind working, let's imagine that you are going to buy a house. We will think of buying the house in the context of its book value, market value, and its intrinsic value.

Book Value

When the seller of the house first bought the house, they most likely placed a down payment, and financed the rest of the house with debt. Let's say for example that they bought the house for $200,000 and placed a down payment of $20,000. In essence, they paid $20,000, the bank gave them $180,000. In simple terms, we would say that the book value is the total amount of book equity plus the amount of liabilities. In this case, the book value would be $20,000 + $180,000 = $200,000.

Market Value

Remember that markets determine prices. Let's say we want to buy that very same house in 5 years. By this point, due to a shortage of houses and increased demand, similar houses are selling for $250,000. That same house, even though its book value is still $200,000 now has increased in value and the market has priced that house and similar houses at $250,000. The market value would be $250,000. This is the price that you would have to pay to buy that house. Should you buy that house for the $250,000? Is it actually worth $250,000?

Intrinsic Value

Now, let's take a deeper dive into the $250,000 market value or would-be selling price of the house. You really want to know if that house is worth $250,000. If you determined the house is actually worth $250,000, you would be comfortable buying it. If you determined it was worth less than $250,000, you would not buy it. If you determined it was worth more than $250,000, you would buy it in a heart-beat and consider yourself a value investor.

What are some things you should look at to determine if that house is really worth $250,000? You might look at the future housing market of that area. You might take a deeper look inside the house. You might look at the condition of the following: the kitchen, the roof, the yard, the appliances, the garage, the bathrooms, the rooms, etc. You also would need to take a look at how long that house will be able to support its residents. After you perform a thorough inspection of the housing market, you determine that house prices will increase over the next couple of years and the house will have a much higher resale value. You discover that the appliances of the house are brand new, the roof has recently been replaced, the yard is in great condition, and everything else seems to be in order with the house. You run a few calculations based on the condition of the house and future prospects of the housing market, and ultimately you value the house at $300,000. Because of your inspections and belief on the future condition of the housing market, you have determined that the intrinsic value (true) value is greater than the market value of the house. You should buy the house and consider yourself a value investor.

ESSENTIAL QUESTIONS TO DISCUSS:

1. *Why is determining the "Intrinsic Value" of a house more difficult than the "Book Value"?*
2. *What is the "Market Value" and the "Book Value" of something harder to calculate, like going to college? What is the "Intrinsic Value" of going to college?*

SECTION 2

Determining the Intrinsic Value of a Company

There are many valuation metrics and techniques investors use to try to estimate a company's worth. We will teach you two: The Discounted Cash Flow Method and the Relative Valuation method.

The Discounted Cash Flows method

You want to impress someone you know who works in finance? Tell them that you built a discounted cash flows or "DCF" model in school today! It's like telling a hiker that you've hiked Mount Everest or telling an ice skater that you can do a triple axel. Yeah, doing a DFC is really that cool. And today you're going to create one!

A Discounted Cash Flows model is one of the go-to ways for investors to measure the value of a company. A company's worth is the present value of all net future cash flows, or in simpler terms (I know that's a mouthful), the value of a company today is the sum of all the cash flow they will earn each year in the future, but what that cash flow is worth in today's dollars. A company's value cannot be measured entirely by its total sales, nor buy its net income. We cannot necessarily say that just because a company has more revenue or net income that it is more valuable than its counterpart. A company is only worth the amount of cash it has left over after it has covered all of its expenses. That is what we mean when we say **net cash flow**. Net cash flow is the cash the company receives from its sales minus total expenses minus money spent on equipment or assets to grow the business (called Capital Expenditures). The formula is: Net Cash Flow = Revenue – Expenses – Capital Expenditures. This type of valuation is referred to as a discounted cash flow analysis.

> *Question: You are given the opportunity to choose to invest in either company ABC*
>
> *or company XYZ. ABC has total annual revenue of $100.00 and is selling for*
>
> *$250/share; XYZ has total revenue of $80.00 and is selling for $300/share. Which*
>
> *one would you buy?*
>
> *Answer: It depends. You can't judge whether to buy a company based purely off of its*
>
> *revenue. You would need to know the present value of its future cash flows, and then*
>
> *determine which company to buy.*

Alright, are you ready to rock and roll?

Go to https://www.seedasdan.org/yis/ and download the "Intrinsic Value" Spreadsheet from the academic material. Here you will find a template that will walk you through creating your very own calculation of the intrinsic value of a company. It may seem daunting at first, but it's really not that complicated. And it's a powerful tool once you know how to use it.

Steps to use the Discounted Cash Flow (DCF) Analysis Tool:

1. Chose a company that you would like to estimate the intrinsic value for (e.g. Apple, Google, Netflix, Ford etc.)
2. Use finance.yahoo.com or zacks.com to input the information in the yellow boxes (name, share price, shares outstanding, revenue, net income, free cash flow).
3. Your **two** main assumptions are 1) the future growth rates (Row 15 & 16) and the cash flow margin (Row 26). Look at the trends the company has had in the past, think about if the future will be higher or lower, and make your best guess. Remember that most

companies have flat or declining margins over time because of competition and technologic changes

4. In most cases, leave the discount rate at 12%. Also, in most cases, leave the terminal growth rate at 4 or 5%.
5. Play around with the assumptions. When you do, look at how the cash flow graph and the Intrinsic Value calculation changes.
6. In Row 33, you will see your Intrinsic Value calculated. If the Intrinsic Value is significantly above the Current Share price, then the stock is likely undervalued, and go BUY IT! If the Intrinsic Value is below the current share price, then the stock is likely overvalued.

Below is a snapshot of how your DCF model will look. Be sure to save your sheet to your own drive for future use. And so when your dad's friend that works in finance says "No way, you didn't really do a DCF in high-school!" You can prove it to him. He'll probably offer you an internship on the spot.

	B	C	D	E	F	G	H	I	J	K	L	M
1	**SIMPLE DISCOUNTED CASH FLOW MODEL & RELATIVE VALUATION**											
2												
3	**Company Information:**					*Input in Yellow Cells*						
4	Company Name:		Apple									
5	Company Ticker:		AAPL	=>	Go to finance.yahoo.com and type a company name and the ticker will pull up							
6	Share Price on Valuation Date:		$105.46	=>	Use the Stock Price, that is below the company name							
7	Diluted Shares Outstanding		5,580.0	=>	Click on "Key Statistics" and under the "Share Statistics" Column use the "Shares Outstanding" numbe							
8												
9	**Discounted Cash Flows (DCF) Analysis**											
10					Go to finance.yahoo.com							
11	Most Recent Revenue		233,720.0	=>	On "Key Statistics" page enter "Revenue (ttm)",ttm means trailing-twelve-months, in millions							
12	Most Recent Net Income		53,390.0	=>	On "Key Statistics" page enter "Net Income avl to Common (ttm)', in millions							
13	Most Recent Free Cash Flow		55,860.0	=>	On "Key Statistics" page enter "Levered Free Cash Flow (ttm)", in millions							
14	**Key Assumptions:**	=>			Play Around with different assumptions of growth rates (check out how it changes the Intrinsic Value and the Cash Flow Chart)							
15	Growth rate for next 5 Years		10%	=>	How fast you expect the company's earnings to grow on average each year for the next 5 years							
16	Terminal Growth Rate		4%	=>	How fast you expect the company's earnings to grow after 5 years to perpetuity							
17	Discount Rate		12%	=>	In most cases this is 10-12%, and represents the company's cost of capital. In most cases just leave th							
18												
19						**Projected Annual Forecast**						
20	**Period**	**Actual**	**Future Yr 1**	**Future Yr 2**	**Future Yr 3**	**Future Yr 4**	**Future Yr 5**	**Future Yr 6**	**Future Yr 7**		**=> Terminal Value**	
21	Revenue	$233,720.0	$257,092.0	$282,801.2	$311,081.3	$342,189.5	$376,408.4	$391,464.7	$407,123.3		$423,408.3	
22	*Revenue Growth Rate (%)*		*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*4.0%*	*4.0%*		*4.0%*	
23	Net Income	$53,390.0	$58,729.0	$64,601.9	$71,062.1	$78,168.3	$85,985.1	$89,424.5	$93,001.5		$96,721.6	
24	*Net Margin (%)*	22.8%	*22.8%*	*22.8%*	*22.8%*	*22.8%*	*22.8%*	*22.8%*	*22.8%*		*22.8%*	=>
25	Cash Flow	55,860.0	$61,446.0	$67,590.6	$74,349.7	$81,784.6	$89,963.1	$93,561.6	$97,304.1		$101,196.2	
26	*Cash Flow Margin (%)*	23.9%	*23.9%*	*23.9%*	*23.9%*	*23.9%*	*23.9%*	*23.9%*	*23.9%*		*23.9%*	=>
27												
28	Unlevered Cash Flows	$55,860.0	$61,446.0	$67,590.6	$74,349.7	$81,784.6	$89,963.1	$93,561.6	$97,304.1		$1,264,953	=>
29	*Discount Rate*		*12.0%*	*12.0%*	*12.0%*	*12.0%*	*12.0%*	*12.0%*	*12.0%*		*12.0%*	=>
30	Discounted Cash Flows		$54,862.5	$53,882.8	$52,920.6	$51,975.6	$51,047.5	$47,401.2	$44,015.4		$510,893.3	=>
31	**Sum of present value of cash flows**	$866,999.0										
32	Shares Outstanding	5,580.0										
33	**Intrinsic Value per Share**	**$ 155.4**	=>	This is your estimate of how much the stock is worth using the Discounted Cash Flows method!								
34	Currrent Share Price	105.5										
35	*Upside Potential*	*47.3%*			**Company: Apple**	**Graph of Future Cash Flows**						

ESSENTIAL QUESTIONS TO DISCUSS:

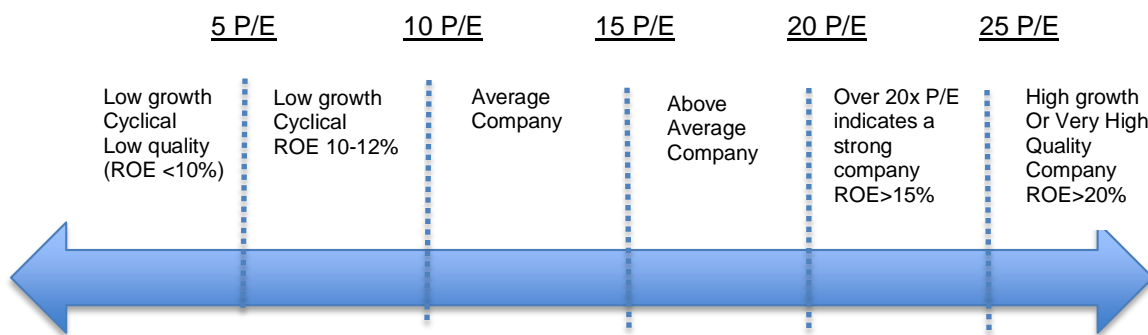1. *The "Intrinsic Value" calculation was most sensitive to changes in which assumption? (5 Yr growth rate, discount rate, terminal growth rate)*
2. *What did you learn while playing around with the model assumptions about the value of a company?*
3. *Would you rather buy a very predictable company that had 20% upside potential or high-growth company that has 50% upside potential?*

SECTION 3
The Relative Valuation Method

A simpler, better known metric, to estimate a company's valuation is its **price-to-earnings (P/E)** ratio. For companies with relatively stable earnings prospects, the P/E provides a reasonable approximation of the discounted value of its future earnings, as it tells the investor how many times one year's earnings the stock price is currently discounting. For example, if a stock is trading at a 15x P/E, this means that at the current years earnings (E) it will take 15 years to get your money back. 30x P/E will take 30 years. Obviously, for an investment, the sooner the better. Thus, the P/E is a reasonable yardstick for a stock's valuation. Everything else being equal, the lower the P/E, the more attractively valued the stock is said to be. However, there are many caveats to this statement. Different industries have different P/E ranges, the more stable the industry (and the company's earnings streams), and the higher the P/E can be without necessarily making the investment "expensive." Very cyclical industries tend to present additional challenges. High growth companies tend to trade at high P/E, and low growth companies tend to trade at low P/Es.

Here is a quick chart to gauge what the "intrinsic" P/E should be:

5 P/E	10 P/E	15 P/E	20 P/E	25 P/E
Low growth Cyclical Low quality (ROE <10%)	Low growth Cyclical ROE 10-12%	Average Company	Above Average Company	Over 20x P/E indicates a strong company ROE>15%	High growth Or Very High Quality Company ROE>20%

As you can see, valuing stocks is like going to a grocery store. You get what you pay for. If you want to buy the best product, you're likely going to have to pay for it. Our job as investors is to buy as quality a product as we can (high ROE, strong economic moat business) at as low a P/E as we can.

There are value investors who prefer to focus more on "balance sheet" related ratios, such as the price-to-book (P/B) value of a firm. The P/B compares the stock price to the value of company's assets minus its liabilities.

Are you ready to calculate Intrinsic Value using the "Relative Valuation" method? In practice, this is the method that most professional portfolio managers and analysts use to estimate the value of a company.

Go back to your "Intrinsic Value" Spreadsheet and scroll down to the second section called "Relative Valuation Analysis".

Steps to use the Relative Valuation Analysis Tool:
1. Chose a company that you would like to estimate the intrinsic value for (e.g. Apple, Google, Netflix, Ford etc.)
2. If you filled in the section above in the DCF assumptions, the P/E of the company should already be calculated in C:56 (for example, 11.0).
3. You then want to think of three or four good comparable companies that operate in similar industries and have similar ROEs and growth expectations. If you are buying a house, this is like going to similar homes in the neighborhood and seeing what they sold for.
4. Look at the comparable average P/E (C:61). Is the average above or below your company? Go to Row 63, Column C and decide whether your company deserves to trade at a premium or discount to their peer average. For example, do they earn a

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premium ROE? Are they growing faster? Are they a more predictable business? If so, then they may warrant a premium.

5. C:64 is where you put in your **Target Multiple**. Use the chart above, and the comparable company table in your model to estimate a P/E ratio. Is it 15 (average), 10 (below average) or 20 (above average) company? What P/E ratio range did it trade at in the past?

6. In F:70, you will see the earnings per share estimated 3 years in the future. Review this number, and decide whether you think this is a good assumption.

7. In Row 72, you will see your Intrinsic Value calculated. If the Intrinsic Value is significantly above the Current Share price, then the stock is likely undervalued, and go BUY IT! If the Intrinsic Value is below the current share price, then the stock is likely overvalued.

Relative Valuation Analysis								
Comparable Companies	P/E Ratio	=>	P/E Ratio is the most common metric to for relative valuation. P/E ratios on average vary between 5 to 30.					
Apple	11.0	=>	P/E Ratio is the Share Price / (Net Income divided by # of Shares Outstanding)					
Google	32.2	=>	On Yahoo Finance, "Competitors" tab pulls up other companies in the industry.					
Samsung Electronics	9.1	=>	Knowing that Samsung is the major smartphone competitor, add them as well					
HP	4.8		Companies with low earnings visibility tend to trade at low P/E					
Microsoft	37.0	=>	Companies with high earnings growth tend to trade at high P/E					
Comparable Average	18.8	=>	The average of the industry					
Deserved Premium / Discount to Avg	0%	=>	Does your company deserve to trade at a discount or premium to their peers? Do they have higher / lower margins?					
Target P/E Multiple	18.8	=>	Your estimate of what you feel the company is "worth" on a P/E basis. A bad company may get only 5, average 15, ar					
			Projected Annual Forecast					
Period	Actual	Future Yr 1	Future Yr 2	Future Yr 3	Future Yr 4	Future Yr 5		
Revenue	$233,720.0	$257,092.0	$282,801.2	$311,081.3	$342,189.5	$376,408.4		
Net Income	$53,390.0	$58,729.0	$64,601.9	$71,062.1	$78,168.3	$85,985.1		
Earnings per Share (EPS)	$9.57	$10.52	$11.58	$12.74	$14.01	$15.41	=>	Use earnings per share 3 Yrs in the future
Intrinsic Value per Share	239.7	=>	This is your estimate of how much the stock is worth using the relative valuation method!					
Currrent Share Price	105.5							
Upside Potential	*127.3%*							

There, now you've done it!

Compare your DCF Intrinsic Value Calculation to the Relative Valuation Calculation. Did they reach the same conclusion?

Student Teacher:

Choose one student to explain the concept of "intrinsic value" to the group. Have the student briefly describe the three ways discussed above, and then choose a company that has a low P/E ratio. Why is the P/E ratio a commonly used way to value a company?

ESSENTIAL QUESTIONS TO DISCUSS:

1. *Referencing your Intrinsic Value calculation, why is it risky to buy a stock that trades at a high P/E ratio?*
2. *Why is it risky to buy a company that trades at a low P/E ratio?*

CONCLUSION

Intrinsic value is the true value of a company. This may or may not be reflected in its stock price. A great investor is one that can find a stock that is trading at a significant discount to it's intrinsic value. Many valuation techniques exist due to different preferences among investors.

Valuation Options

- Find the present value of the net future cash flows
- P/E ratio. (Price to earnings ratio)
- P/B ratio. (Price to book ratio)

When measuring intrinsic value, we have to take into account a lot of random variables; therefore, the intrinsic value is often an estimate. Valuation is not 100 percent precise, but if you are good at it and can continuously find companies that are trading at a discount to their future value, you will be in great shape. Intrinsic value is a necessary lens through which we need to see our investments.

ACTIVITY

Show me the Money!

Groups should have computer access
Divide into groups of 2-3
Assign each group to research one of the industries

Intro:
In this activity we are going to explore the different valuation options, so we can have an understanding for their practical use. You will use the Intrinsic Value Spreadsheet for this group activity.

The Scenario:

You were recently assigned by your Managing Director to research a specific industry and make a recommendation as to what company stock to buy and why. It is a very important task. The firm is relying on your decision so that it can make a profitable investment. You have been assigned to a team to help you decide which stock to invest in. You need to provide a convincing argument, backed by data and recent events. This is your time to shine!

In the table below, you will find different industries (Airlines, Auto, Fast Food) with their corresponding tickers to the column on the right.

Airlines	Ticker	Auto	Ticker	Fast Food	Ticker
United	**UAL**	Ford	**F**	Mcdonalds	**MCD**
Delta	**DAL**	GM	**GM**	Wendys	**WEN**
Jetblue	**JBLU**	Toyota	**TM**	Sonic	**SONC**
Southwest	**LUV**	Honda	**HMC**	Jack in the Box	**JACK**

Record the information found by following these 5 steps:

1. Go to finance.yahoo.com

2. Follow the instructions outlined in the lesson to calculate the DCF value and the Relative Valuation Instrinsic value for each company in your assigned sector (Airlines, Autos, Fast Food).
3. Calculate the Intrinsic Values for each company.
4. Looking at the "Upside Potential" from your calculations, as well as your knowledge of the company's business, decide which stock you would recommend buying.
5. Have one group member present from each group.
6. The teacher or student portfolio manager of the day decides on the most convincing case.

An alternative website where you can find this information is finviz.com (the ratios as well as different analyst's valuations can be found here as well).

PREPARING FOR THE YIS STOCK PITCH COMPETITION

Provide 10-20 minutes each meeting for the students to work on their individual Stock Pitch project for the YIS National Stock Pitch Competition or for Online Stock Idea Competitions.

In preparing for the YIS National Stock Pitch Competition (see Competition Guidelines) you should evaluate companies that you have previously identified with regards to their intrinsic value. What company is most likely to be trading at a discount, or which company has the greatest potential for future earnings?

Ideas to help identify if a company might be overpriced or underpriced:

- Compare the P/E and P/B ratios for each of the companies you have previously identified
- Check analysts reports and recommendations
- Read current news about the company to try and identify recent market events that may have made the stock overpriced or underpriced
- Meet with a stock market professional and ask them to discuss with you how they identify a company's intrinsic value
- Contact a stock market professional and ask them how they determine the intrinsic value of a company

FOLLOW-UP IDEAS

Some ideas to further explore the concepts covered here are:

- Begin analyzing companies for your YIS Stock Pitch Competition and compile a list a companies that could be undervalued.
- Contact a stock market professional and ask them how they determine the intrinsic value of a company. What metrics do they use? What is there preferred valuation method?
- Read about "Intrinsic Value" on Investopedia.com
- What current events may have led to a large shift in the market? Which companies were most largely affected?
- What companies may have strong economic moats, but little demand at the moment?

- **Intrinsic Value-** the true value of a company without regards to its market value or book value

- **Market Value-** the sum of the market cap (shares outstanding times total shares) and the debt

- **Book Value-** The sum of all liabilities and equity on the balance sheet

- **Firm/Enterprise Value-** Intrinsic value of a company taking into account both debt and equity

- **Equity Value-** Intrinsic value of equity that is found by subtracting total debt from firm value

- **Discount Price-** A price that is lower than the true value

- **Dicounted Cash Flow (DCF) Analysis-** Forecasting future cash flows that the business will generate and then discounting them back to the present value at an appropriate discount rate.

- **Discount rate**- Rate of return that investors need to receive in order to be compensated for risk

FOR INSTRUCTORS: LESSON 3 ANSWER KEY

ESSENTIAL QUESTIONS:

Why is determining the "Intrinsic Value" of a house more difficult than the "Book Value"?
The Book Value is easy because it's the exact number that was paid for it. The Intrinsic Value is an estimate based on current sales trends in the area, and what you believe you could sell it at if you sold it today.

What is the "Market Value" and the "Book Value" of something harder to calculate, like going to college? What is the "Intrinsic Value" of going to college?
Take Going to College. The "Book Value" would be the actual cost, so the total cost of tuition,and books. Let's assume it is $20k per year for 4 years, or $80k. That is the Book Value of going to college. The "Market Value" is how much the degree is worth relative to other colleges, let's say that you can go for $20k per year, but a similar education around the country costs $30k per year (i.e. you are getting more bang for your buck). Then the "Market Value" of an education would be $120k ($30k * 4 years). The "Intrinsic Value" would be the worth to you. This is where it get's interesting! You could say the "worth" to you is: the increased earnings you receive from going to college compared to if you didn't go to college. So if you could earn $40k per year without going to college, and earn $80k per year after college, and work for 50 years, then the Market Value of College would be $2 million dollars ($80k - $40k * 50 years).

Book Value: $80k
Market Value: $120k
Intrinsic Value: $2 million

The "Intrinsic Value" calculation was most sensitive to changes in which assumption? (5 Yr growth rate, discount rate, terminal growth rate)
The model is most sensitive to the discount rate (that is why in most cases just leave it constant). Second is the Terminal Growth rate. Less is the 5 Yr Growth Rate

What did you learn while playing around with the model assumptions about the value of a company?
Many answers including how much value comes from the later years assumptions, how much assumptions can change the value of a company, how difficult it is to forecast (no wonder the stock market goes up and down so much!)

Would you rather buy a very predictable company that had 20% upside potential or high-growth company that has 50% upside potential?
This depends on one's risk tolerance, but in most cases you want to buy a very predictable company if it has upside, because estimates are also fraught with errors. But some students may want to buy high growth companies, and that is ok as long as they do their research and give themselves good upside potential to counterbalance the higher risk.

What are some reasons that a company might be trading at a price different to its intrinsic value?
Supply and Demand fluctuations from investors
Strong demand (over valuation), Low demand (under valuation)

Why can't we use a company's revenue or net income as an indicator of its value?
A company's revenue is not consistent with the worth of a company because revenues are not sufficient to detect the health of a company: i.e., a company may have high revenues, but actually have negative returns.

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Net income is not an accurate measure of the cash a company can utilize. Net income is an accounting number and therefore we cannot use it to value a company. This number can (not always) be manipulated and provide false information about a company.

Why is the earnings power of a company important?
A company's valuation is all-inclusive, meaning it account for all expected future growth. Without insight of future earnings potential, our valuation of the company based on the past year or history may not truly reflect the actual value. If we are buying a company today, we are not buying it for the money it has already generated, but for the money it will generate in the future. Therefore, we need to have a good idea of what the future of the company looks like.

Is a company's intrinsic value reflected in it's stock price?
This may or may not be true. (Refer to answers above) Often the market will get things right, but because of the infinite factors that affect a stock's pricing, there will be discrepancies between market prices and intrinsic value.

How can we apply our knowledge of investing with a margin of safety to the concept of intrinsic value?
It's important to recognize that valuation strategies are often subjective and ultimately are estimates. Investing with a margin of safety allows for the investors calculations to be not entirely accurate; i.e., If a stock is currently priced at $12, and your valuate the company at $15, then you give yourself a $3 margin of safety, so if the stock is actually worth $14, you still with be in the positive.

Referencing your Intrinsic Value calculation, why is it risky to buy a stock that trades at a high P/E ratio?
Because if a company is trading too high a P/E Ratio (say 40x) and re-rates down to a more fair 20x then you have just lost half your money. You don't want to overpay. Relative to the Intrinsic Value calculation, it will be hard to get upside on a high P/E, unless you assume high growth and high valuation to remain, which is often not the case.

Why is it risky to buy a company that trades at a low P/E ratio?
A low P/E ratio may look like a bargain, but often can be a signal that investors have very little confidence in the earnings of the company, in other words the "E" may be going down sharply, or may be in permanent decline. A low P/E ratio does not always mean that is worth more, it often means that the company's business is riskier.

ACTIVITY
There will be many answers to this activity. Here are some things to look out for as good responses:
- The students assume a reasonable growth for the next 5 years.
- The students assume a reasonable growth (4-5%) for the terminal growth.
- The students discuss the economic moat of a company or the industry in determining if the margins are sustainable.
- The students pick the company that is the most stable business and high ROE and offers good upside potential on intrinsic value calculation (i.e. best risk return).
- The students looked at the long term performance (10 years or 5 years back) to draw conclusions.
- The students has accurate relative valuation metrics, and assumed a reasonable P/E ratio for the companies.

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