



Valuation in Practice

How to value a company without doing a full DCF

TBC New Member Education 2020 – Week 5

Agenda



- How to Use Multiples



- Cyclicalities



- Operating Leverage



- Unit Economics



- The Importance of Earnings Power

How to Use Multiples

What are Multiples?

Multiples are a way of comparing how expensive different companies are on a normalized basis – We generally use them to do relative valuations

Multiples tell us about the **relative value of a company with respect to a key statistic** (e.g. earnings, cash flow, etc.)

$$\frac{\text{Price}}{\text{Earnings}}$$

$$\frac{\text{EV}}{\text{EBIT}}$$

$$\frac{\text{EV}}{\text{Revenue}}$$

$$\frac{\text{EV}}{\text{FCFF}}$$

- > Driven by the belief that **assets which are similar should trade for similar prices**
 - **Question:** What is meant by similar? We'll come back to this later.
- > Discrepancies in multiples can provide valuable insight into the market's perception of a company versus its peers
 - **Caveat:** Must use multiples correctly to ensure that the discrepancy stems from investors' judgement and not from reasons intrinsic to the company

Key Drivers of Multiples

The same things that cause a company's intrinsic value to be higher should also cause a company to trade at a higher multiple

Three Basic Principles of Valuation

Valuations (and consequently, multiples) increase when...

1. Discount rates are lower
2. Growth is higher
3. Net reinvestment (given a fixed amount of growth) is lower

Every multiples-based valuation is implicitly an intrinsic valuation

- > When you say that a company should trade at a given multiple, you make just as many assumptions as when doing a DCF
- > The only difference is that when using multiples, these **assumptions are implicit and unstated**

Three Key Drivers

These three drivers are central to intrinsic valuation and will affect every multiple

Growth

- > How fast are the company's earnings/cash flows/revenues growing?

Discount Rates

- > What is the opportunity cost of tying up capital in the business?
- > Depends on interest rates (risk-free rate), risk, and market risk aversion (risk premium)
 - Risk is only thing that should differ between companies

Reinvestment (Cash Conversion)

- > How much of a company's earnings needs to be reinvested in the business to achieve a given level of growth?
- > How efficient is the company at turning earnings into cash?

Three Key Drivers

Simplest possible valuation: The value of a company's equity is equal to the present value of the cash the company pays out to shareholders¹, which grows at a constant rate in perpetuity

$$\text{Equity Value} = \frac{\text{Expected Payout Next Year}}{\text{Cost of Equity} - \text{Growth Rate}}$$

$$\Rightarrow \frac{\text{Equity Value}}{\text{Net Income}} = \text{PE Ratio} = \frac{\text{Payout Ratio}}{\text{Cost of Equity} - \text{Growth Rate}}$$

There is a mathematical relationship between the theoretically correct P/E Ratio and the three basic drivers

Key Drivers of Multiples

Some multiples are additionally affected by other factors

Example: The EV/Revenue multiple additionally depends on NOPAT margin

$$\text{Enterprise Value} = \frac{\text{NOPAT} \cdot (1 - \text{Reinvestment Rate})}{\text{Cost of Capital} - \text{Expected Growth Rate}}$$

$$\Rightarrow \frac{\text{Enterprise Value}}{\text{Revenue}} = \frac{\text{NOPAT Margin} \cdot (1 - \text{Reinvestment Rate})}{\text{Cost of Capital} - \text{Expected Growth Rate}}$$

Types of Multiples

EV/EBIT

- > Good default multiple if you're not sure what to use
- > Avoids distortions due to capital structure and non-operating gains and losses
- > Additionally depends on tax rate

EV/EBITDA

- > Similar to EV/EBIT but excludes D&A
 - Accounting for D&A can sometimes be weird, in which case it can be helpful to exclude it when using multiples
- > More sensitive than EV/EBIT to reinvestment requirements
- > Additionally depends on tax rate and ROIC

EV/FCFF

- > The one multiple that doesn't (explicitly) depend on reinvestment
 - Reinvestment requirements are implicit in FCF growth
- > Can be hard to use because FCF is more volatile than earnings
 - Great for companies with stable FCF generation

Types of Multiples

EV/Revenue

- > Good for companies which are growing revenue rapidly but which aren't currently earnings a profit
- > Additionally depends on NOPAT margin
 - Very sensitive to this
- > Always Remember: At some point in the future, the company needs to start making profits

Price/Earnings

- > Widely found due to ease of use
- > Affected by non-operating expenses/income and capital structure
 - Most applicable when considering normalized earnings for companies of similar capital structures

Price/Book

- > Most useful when analyzing companies where tangible assets are the source for the company's value generation
 - Not useful for companies with large intangible assets (FB)
- > Additionally depends on return on equity (ROE)

Multiples for Relative Valuation

Key Idea: Similar assets should trade for similar prices

Relative valuation values an asset based on how the market prices other similar assets

- E.g. The value of an apartment is based on what similar apartments have recently sold for

Key Question: What constitutes a similar asset?

- > Assets should trade at similar multiples if they are similar in the characteristics which drive those multiples
 - Similar growth, risk, reinvestment requirements (plus any additional relevant characteristics, based on the choice of multiple)
- > Generally, when choosing multiples, we look at companies in the same industry/peer group. This is merely a proxy for the above.
 - If two companies are direct competitors but one is expected to grow faster than the other, then we would expect the faster growing one to trade at a higher multiple.

Principles for Using Multiples

- 1. Consistency-** Ensure that the numerator and denominator of the multiple that you're using are either both equity values or both firm values
 - It's technically possible to use multiples that are inconsistently defined, but doing so is confusing and causes hypersensitivity to capital structure
 - E.g. Don't use Price/Sales
- 2. Uniformity-** Ensure that the inputs to your multiple are defined uniformly for the different companies that you're comparing
 - E.g. Earnings can be forward or trailing, differences in accounting standards can lead to differences in earnings, etc.
- 3. Choose the Right Multiple-** Ensure that the multiple you choose to use is representative of the business and lends itself well to comparisons with other businesses
 - Generally use EV/EBIT or EV/EBITDA because they don't depend on capital structure and ignore non-operating gains/losses
 - Other multiples all have situations when they're particularly useful

Principles for Using Multiples (cont.)

- 4. Use Normalized Earnings-** Ensure that the denominator in your multiple is reflective of the company's ability to earn money in the future
 - Generally use measures of forward earnings or normalized earnings power- less variance and better reflection of future expectations
 - Generally adjust the multiple for non-operating items (but be careful because the company may be adding back things they shouldn't be)
- 5. Use the Right Peer Group-** Industry peers are a good place to start, but don't just blindly choose companies in the same industry
 - Similar growth, risk, and reinvestment requirements (+ any other additional characteristics that affect your chosen multiple)
 - If companies in the same industry differ in a characteristic, they should trade at different multiples
- 6. Sum of the Parts (SOTP)-** When valuing a conglomerate/business with multiple segments, apply a separate multiple to each segment
 - Each segment has unique characteristics which demand a unique multiple
 - Typically apply a discount (~15%) to the SOTP valuation
 - Complicated businesses + capital allocation problems -> trading at a discount

Relative Valuation Considerations

Just because a stock is at the bottom of its 52-week range or top of its 52-week range does not necessarily mean that it is over or undervalued

Questions to ask...

- > Does it trade for cheaper than its competitors? Is it a better or worse business than its competitors?
- > How does it trade relative to its own historical levels? Has its business quality changed over that same time period?
- > Based on where we are in the cycle does the multiple make sense?
- > Has anything changed in the industry that should have changed the multiple? If so, has the multiple actually changed?

The more companies you look at the better sense you will get of what multiples are cheap, reasonable, or overpriced for a given company

Multiples - Conclusion

Prudent use of multiples can provide a valuable data point for assessing a potential investment

Pros

- > Useful framework for understanding **relative value**
- > **Much simpler measure of value** without the complexity of doing a DCF or using other valuation techniques
- > Focused on the most relevant statistics (EBITDA, Cash Flows), thereby **providing a quick snapshot of what's most important** for the company

Cons

- > **Overly simplistic** distillation of information into a single number, which can give rise to misinterpretation
- > Easy mistake is the **failure to make apples to apples comparison**
 - This failure will be obvious when doing a DCF, but won't necessarily be obvious when using multiples
- > **Static measure** of company at single point in time, which is subject to change

Key Considerations when Valuing Businesses

> Cyclicity, Operating Leverage, and Unit Economics

Cyclical

*“I think it’s essential to remember that **just about everything is cyclical**. There’s little I’m certain of, these things are true: **Cycles always prevail eventually. Nothing goes in direction forever**. Trees don’t grow to the sky. Few things go to zero. And there’s little that’s as dangerous for investor health as insistence on extrapolating today’s events into the future.”*

— Howard Marks, The Most Important Thing

*“Be **fearful when others are greedy** and **greedy only when others are fearful**.”*

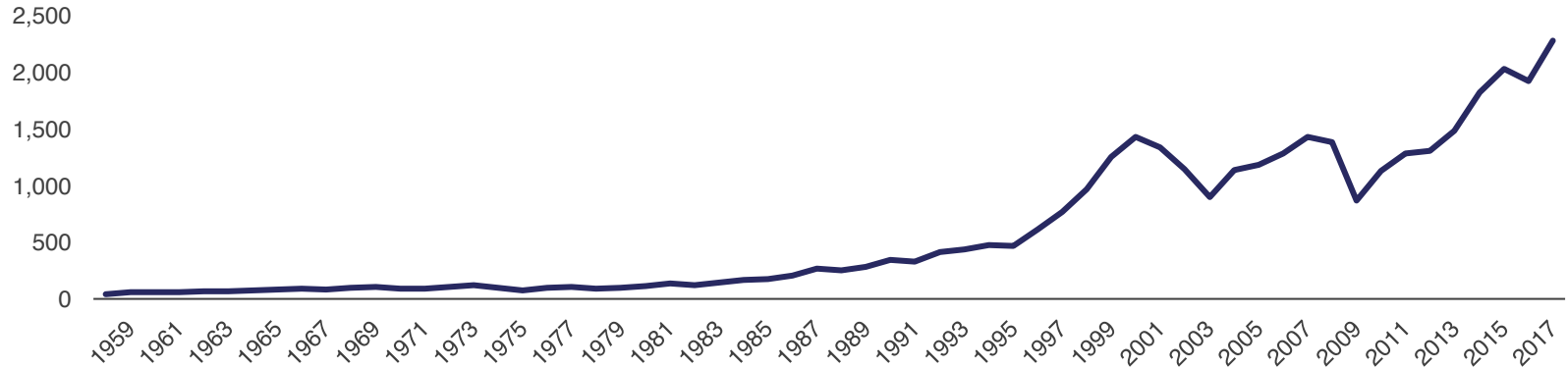
— Warren Buffet, 2004 Annual Shareholder Letter

Some Key Cycles to Consider

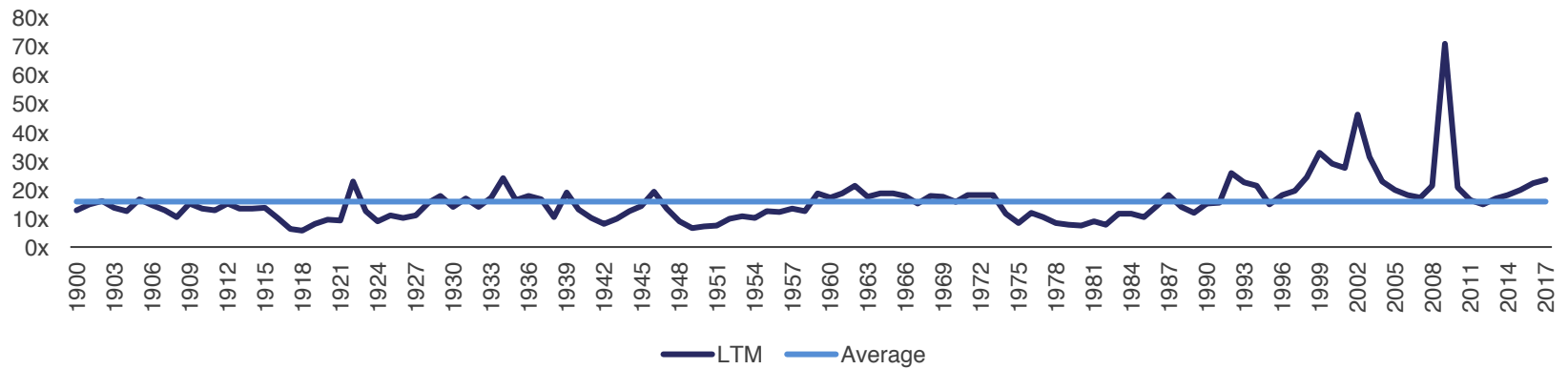
- > Business Cycle
- > Credit Cycle
- > Commodity Cycle
- > And more...

Cyclicality

S&P 500 By Year



Beginning of Year P/E Ratio



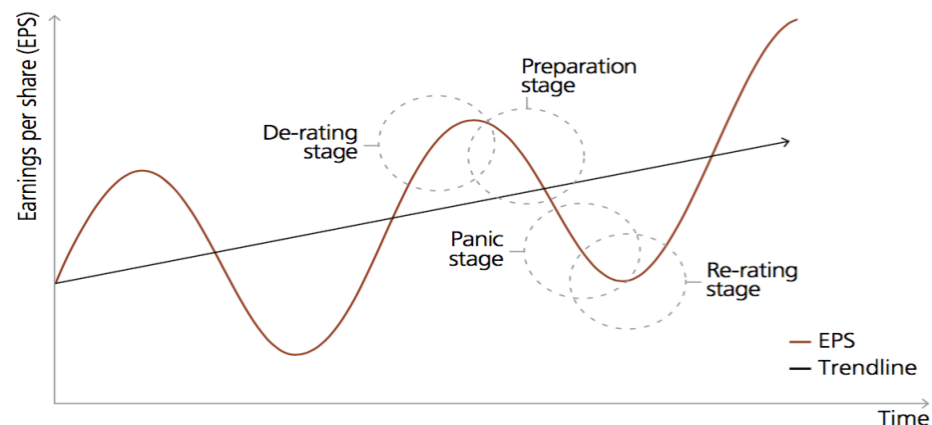
How to Invest in Cyclical Companies

Always be cognizant of where you think you are in the cycle

Mid-Cycle Method

1. Approximate what **mid-cycle revenues** will be
2. Apply a mid-cycle EBIT, EBITDA, or Net Margin to get **normalized mid-cycle earnings**
3. Apply a **mid-cycle multiple** to determine the company's fair value
 - Typically the median or mean of the company's multiple through past cycles
4. Take a **hair-cut to that value**, typically ~25%, to determine your entry price

Peaks and troughs – knowing where you are

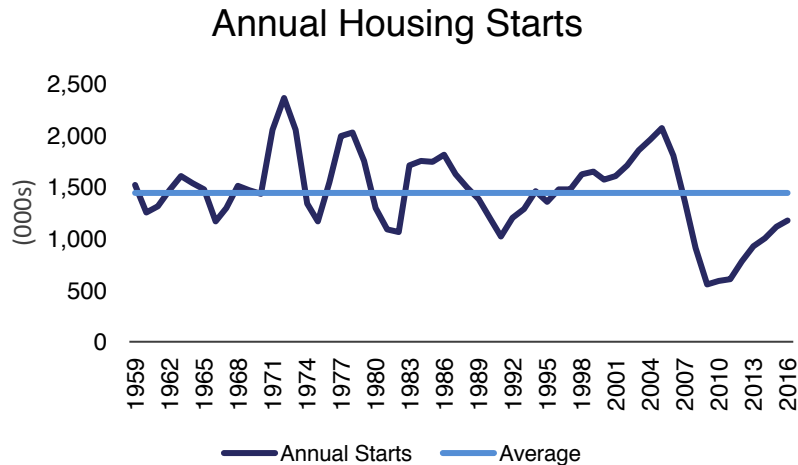


Also consider risks

- > Are there debt covenants?
- > How long will it take to achieve mid-cycle earnings (there could be more attractive places to allocate capital)

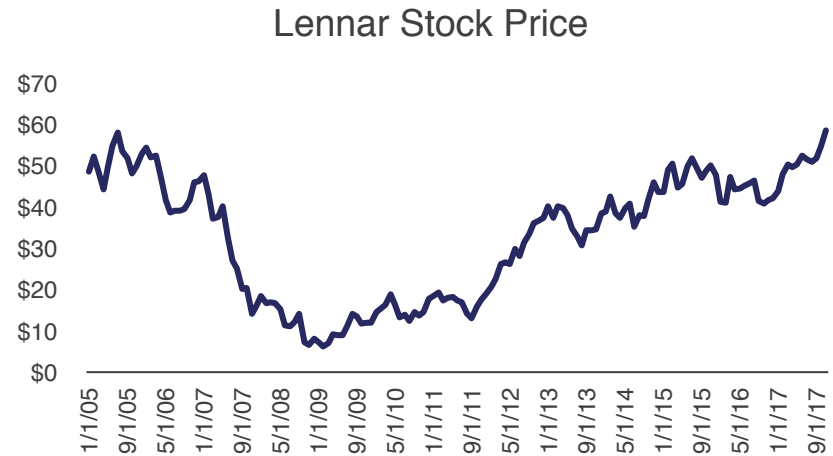
Case Study – Homebuilders

Housing Cycle



- > **Housing is cyclical** but has an approximate long-run average
- > Homebuilding is **driven by population and job growth**
 - Relatively consistent proportion of jobs to household
- > **Troughs** are generally **followed by booms** to make up the deficit (and then sometimes more)

Lennar Corporation (NYSE: LEN)



- > **Earnings went negative during the recession**, so at this point it was the most expensive on a screener
- > Drop in housing led to a housing deficit that in turn **led to an uptick later**
- > Best time to buy cyclical companies is coming out of trough levels and worst is the peak when they seem “cheapest”¹

Operating Leverage

Financial leverage = leverage in a company's financing structure

Operating leverage = leverage in a company's cost structure

Operating leverage is leverage present in a company's cost structure

1. Operating leverage measures the **change in operating profit as a function of the change in sales**
 - High operating leverage -> large change in operating profit for every dollar of change in sales
 - Low operating leverage -> small/no change in operating profits for every dollar of change in sales
2. Operating leverage is the ratio of a company's fixed costs to variable costs
 - Analogous to the fact that financial leverage is the ratio of a company's debt (fixed claims on its business) to its equity (the residual/variable claims on its business)

Like all leverage, operating leverage is a **double-edged sword**

- > High fixed to variable costs results in **higher profit growth when sales are growing**
- > That sounds great but it also means that **companies with high operating leverage see huge drops in profit during down-cycles**

Companies with Operating Leverage

Facebook

- > High costs to set up the infrastructure and hire engineers to create the platform
- > Cost of new users are essentially free, so **incremental revenue is essentially pure incremental profit**

Netflix

- > **Content is essentially a fixed cost** for the business
- > Adding new users allows Netflix to spread its content costs (its largest expense) over a greater number of users, increasing margins
- > Incremental subscription = incremental profit

Hi-Crush Partners

- > **High fixed costs** to operate sand mines
- > **Lost \$70mm** from operations **when price per ton was \$48** but **generated \$40mm** in operating income **at \$62 per ton**
- > Many commodities businesses are like this (earnings are extremely sensitive to the price of the commodity)

Unit Economics

The direct revenues and costs associated with a particular business model expressed on a per-unit basis

- > Examples of Units
 - Individual stores, single customers, single products
- > Unit economics are particularly useful for understanding the **underlying profitability of a business model** as well as ascertaining the **incremental returns on invested capital**
- > For applicable businesses, projecting out unit economics is one of the best ways to build out a valuation model
 - For example, to project Revenue, you can project out Unit Price x Unit Volume
 - E.g. (revenue per store) x (# of stores), (revenue per user) x (# of users), (price per ton) x (# of tons sold), etc.

Example Unit Economics – Shake Shack

Average Sales per Store

- \$2.8 - \$3.2 million

Store-Level Operating Margin

- 18% - 22%

Average Investment per Store

- \$1.5 - \$2.5 million

Pre-Tax Return on Investment per Store

- 30% - 33%

A Few Flaws of Unit Economic Analysis

- 1. Ignores fixed costs**
 - 2. Units aren't always created equal**
 - 3. Considerations of upselling/cross-selling**
-
- 4. Competitive considerations (loss leaders)**
 - Lose money on certain units in order to make more money on others (E.g. gaming consoles)
 - 5. Ignores capital flows**
 - Assumes capital is easy to access
 - If two companies have identical unit economics but one can access more capital/capital for cheaper, the one with greater access to capital will be better off
 - 6. Based on imperfect information/assumptions**
 - Garbage in, garbage out

Flaws – Fixed Costs

Unit economic analysis generally ignores fixed costs, which are nonetheless an important driver of a business' value

Ignores Fixed Costs

- > Unit economic analysis usually only deals with the marginal cost of acquiring or developing a unit
- > Neglects corporate overhead and poor allocation of capital
 - Unit economic analysis can overstate the value of poorly managed companies

How can you tell which costs are fixed?

- > Operating leverage, although conceptually simple, can often be difficult to capture
- > Example – Shake Shack
 - G&A costs are corporate overhead—as such, they should be treated as fixed costs and should be excluded from the unit economic analysis
 - Opening new stores probably requires more corporate managers to oversee them, so you would expect G&A to increase somewhat as the number of units increases
- > Are “fixed” costs truly fixed?

Flaws – Units aren't Created Equal

Future units might be meaningfully different than the average of current units

Three Examples

1. Flagship stores \neq smaller stores

- Barnes & Noble Education bookstores on large college campuses vs community colleges

2. Geographic expansion into locations with lower returns

- Shake Shack's in New York have 90% cash-on-cash returns vs 30% for newer stores
- Walmarts in the south have 30% returns on capital vs 15% in regions where they have a less dominant presence
- Gauging this numerically can be difficult

3. Customer acquisition costs may increase or decrease over time

- Based on the nature of the service/the company's competitive advantage
- Facebook saw **decreasing acquisition costs** as it scaled up because their **network effect compelled more people to join**
- Blue Apron has seen **significant churn** and **has had to offer large incentives to attract additional customers**

Flaws – Upselling/Cross-Selling

Upselling/Cross-Selling opportunities can cause changes in unit economics which are difficult to evaluate

- > Upselling: **upgrading** from the current product **into a higher-end** product
 - Credit cards, watches, freemium businesses
- > Cross-Selling: selling a **complementary product**
 - Razor blade model, airplane engines
- > Can be **difficult to** actually **determine the economics** of upselling and cross-selling, particularly for an earlier stage business which **necessitates more conservative assumptions**

Using Unit Economics to Drive Projections

Shake Shack Today




- > Shake Shack has 100 stores now*
- > Each store generates 3 million in revenue
- > Total Revenue \$300 million
- > 20% EBIT margin per store
- > Total Store Level EBIT = \$300 million x 20% = \$60 million
- > Shake Shack also has 30 million in corporate overhead now (costs not associated with a single store)
- > Total corporate EBIT is \$60 million - 30 million = \$30 million
- > The operating margin is 10%

Shake Shack in 5 Years

- > 200 stores with revenue per store growing 2% annually
- > Therefore, \$200 million x (3 million x 1.02⁵) = \$662 million in revenue
- > 18% store-level EBIT margin (future locations not as good)
- > \$662 million x 18% = \$119 million in store level EBIT
- > Assume overhead grows 2% per year and is there now \$33 million (30 x 1.02⁵)
- > Overall EBIT is now \$86 million and the EBIT margin is 13%

The Importance of Earnings Power

Limitations of Multiples – Near-Term Depression

Situation	Example
<p data-bbox="79 401 1201 475">I. Cyclical Trough</p> <ul data-bbox="79 475 1201 674" style="list-style-type: none"> > Earnings about to rise rapidly > Analyze past cycles to understand trough-to-peak improvement > Consider operating leverage 	 <p data-bbox="1392 496 1837 568">SBERBANK</p>
<p data-bbox="79 708 1201 782">II. Non-Earning Assets</p> <ul data-bbox="79 782 1201 981" style="list-style-type: none"> > Have businesses that are not making a profit but have lots of value (E.g. Youtube) > Possesses assets that the company could sell-off (E.g. Real Estate) 	
<p data-bbox="79 1012 1201 1086">III. Under-Monetization</p> <ul data-bbox="79 1086 1201 1285" style="list-style-type: none"> > Not taking advantage of pricing power > Reinvesting all earnings into the business > Some companies expense immediately whereas others capitalize 	

Earnings Power

Question: What do these three situations have in common?

In each case, the company's current earnings aren't reflective of the true **earnings power** of the business:

- 1. Cyclical Trough-** We need to adjust for the cyclical nature and base our valuation on mid-cycle earnings
- 2. Non-Earning Assets-** We need to adjust for the fact that certain assets will eventually make money, even if they aren't currently
- 3. Under-Monetization-** We need to adjust for the fact that the company will eventually fully monetize, which will lead to a significant (one-time) increase in earnings

We care much more about Earnings Power than about Current Earnings

Earnings Power

Valuations based on current earnings, as opposed to earnings power, will be misleading

DCF

- > Focusing on near-term (forecasted) cash flows during a period of under-earning can lead to a lack of appreciation for the company's true long-term earnings power
- > The terminal value should be based on long-term earnings power and not whatever earnings happen to be in the terminal year

Multiples

- > A company whose current earnings aren't representative of its earnings power will appear to trade at an extremely expensive multiple
- > Example- **Netflix** currently **trades at 100x+ earnings**, but if it charged **\$15 per user instead of \$10** at its current cost structure, the company's **P/E would be ~15x**

Pricing Power

Pricing power is extremely attractive because price increases do not have corresponding increases in costs – Can lead to unexpectedly fast earnings growth and represent a key gap between current earnings and earnings power

Hermes



Hermès' powerful brand allows them to consistently increase prices by 7-8% per year

Apple



Release of the higher-priced iPhone X allowed Apple to continue to grow revenue, even as growth in global smartphone shipments stagnated

Netflix

NETFLIX

Netflix currently trades at 100x+ earnings, but if it charged \$15 per user instead of \$10, at its current cost structure, its P/E would be ~15x

Key Presentation Takeaways

> Multiples

- The same things which drive differences in intrinsic valuation also drive differences in multiples – **Every multiple-based valuation is implicitly an intrinsic valuation**
- **Key Drivers:** growth, discount rates, reinvestment requirements/cash conversion

> Cyclical

- Need to be cognizant **where we are in the cycle** because that can have a big impact on what multiple is reasonable as well as what your downside and upside will be
- When evaluating cyclical businesses, it is often best to **buy them at the trough**, although timing the market is generally not reasonable

> Operating Leverage

- Operating leverage can have a large impact on earnings and corporate strategy

> Unit Economics

- Great way to try to understand the **underlying profitability of a business** and build out your valuation

> Earnings Power

- In the long run, earnings power is what matters
- Valuations (including multiples) should be based on earnings power, not current earnings