Valuation Questions and Answers – Basic (34 Questions)

68. **What are the 3 major valuation methodologies?**

Comparable Companies, Precedent Transactions and Discounted Cash Flow Analysis

69. **Rank the 3 valuation methodologies from highest to lowest expected value**

Trick question, there is no ranking that always holds. In general, precedent transactions will be higher than comparable companies due to the control premium (price above market valiue an acquirer pays in a transaction) built into acquisitions

Beyond that, a DCF could go either way and it's best to say that it's more variable than other methodologies. It often produces the highest value but can produce the lowest value as well depending on your assumptions

70. **When would you not use a DCF in a valuation?**

You don't use a DCF in a valuation if the company has unstable or unpredictable cash flows (tech or biotech startup) or when debt and working capital serve a fundamentally different role. For example, banks and financial institutions do not re-invest debt and working capital is a huge part of their BSs, so you wouldn't use a DCF for such companies

71. **What other valuation methodologies are there?**

Other methodologies include:

1. Liquidation Valuation: Valuing a company's assets, assuming they are sold off and then subtracting liabilities to determine how much capital, if any, equity investors receive
2. Replacement Value: Valuing a company based on the cost of replacing its assets
3. LBO Analysis: Determining how much a PE firm could pay for a company to hit a target IRR, usually in the 20-25% range
4. Sum of the Parts: Valuing each division of a company separately and adding them together at the end
5. M&A Premiums Analysis: Analyzing M&A deals and figuring out the premium that each buyer paid, and using this to establish what your company is worth. Gets the appropriate percentage paid over the stock price
6. Future Share Price Analysis: Projecting a company's share price based on the P/E multiples of the public company comparables, then discounting it back to its present value

72. **When would you use a Liquidation Valuation?**

This is most common in bankruptcy scenarios and is used to see whether equity shareholders will receive any capital after the company's debts have been paid off. It's often used to advise struggling businesses on whether it's better to sell off assets separately or to try and sell the entire company

73. When would you use Sum of the Parts?

This is most often used when a company has completely different, unrelated divisions – a conglomerate like General Electric, for example

If you have a plastics division, a TV and entertainment division, an energy division, a consumer financing division and a technology division, you should not use the same set of Comparable Companies and Precedent Transactions for the entire company

Instead, you should use different sets for each division, value each one separately, and then add them together to get the Combined Value.

74. When do you use an LBO Analysis as part of your valuation?

Obviously you use this whenever you're looking at a Leveraged Buyout – but it is also used to establish how much a private equity firm could pay, which is usually lower than what companies will pay

It is often used to set a "floor" on a possible Valuation for the company you're looking at

75. What are the most common multiples used in valuation?

The most common multiples are EV/Revenue, EV/EBITDA, EV/EBIT, P/E (Share Price / Earnings per Share), and P/BV (Share Price/Book Value per Share)

76. What are some examples of industry-specific multiples?

Technology (Internet): EV/Unique Visitors, EV/Pageviews

Retail / Airlines: EV / EBITDAX (Earnings before interest, tax, depreciation, amortization and exploration expense), EV / Daily Production, EV / Proved Reserve Quantities

Real Estate Investment Trusts (REITs): Price / FFO (Funds From Operations) per Share, Price / AFFO (Adjusted Funds From Operations) per Share

Technology and Energy should be straightforward – you're looking at traffic and energy reserves as value drivers rather than revenue or profit

For retail / airlines, you add back rent because some companies own their own buildings and capitalize the expense whereas other rent and therefore have a rental expense

For energy, all value is derived from companies' reserves of oil and gas, which explains the last 2 multiples. EBIDTDAX exists bc some companies capitalize (a portion of) their exploration expenses and some expense them. You add back the exploration expense to normalize the numbers

For REITs, Funds From Operations is a common metric that adds back depreciation and subtracts gains on the sale of property. Depreciation is a non cash yet extremely large expense in real estate, and gains on sales of properties are assumed to be non-recurring, so FFO is viewed as a "normalized" picture of the cash flow the REIT is generating

So FFO adds back depreciation (periodic expense) and subtracts gains on sale of property (non-recurring) to get a more standardized figure to compare REIT companies. AFFO is FFO – other periodic expenses

77. **When you're looking at an industry-specific multiple like EV / Scientists or EV / Subscribers, why do you use Enterprise Value rather than Equity Value?**

You use Enterprise Value here because those scientists or subscribers are "available" to all the investors (both debt and equity) in a company. The same logic doesn't apply to everything though – you need to think through the multiple and see which investors the particular metric is "available" to

78. **Would an LBO or DCF give a higher valuation**

Technically it could go either way, but in most cases the LBO will give you a lower valuation.

With an LBO, you don't get any value from the cash flows of a company between year 1 and the final year – you're only valuing it based on its terminal value

With a DCF, by contrast, you're taking into account both the company's cash flows in between and its terminal value, so values tend to be higher

Note: Unlike a DCF, an LBO model by itself does not give a specific valuation. Instead, you set a desired IRR and determine how much you could pay for the company (the valuation) based on that. Rem that an LBO "amount you could pay" is often used as a floor in a valuation since PE firms buy for lower than operational companies do

In an LBO, you get the target's EV, then subtract its net debt to get its equity value. You add fees to the EV to get the total paid by acquirer. You subtract this amount from total debt used to get "sponsor equity at entry", the amount a PE firm contributes out of pocket to finance the deal. You then project cash flows which you use to payoff debt and get the final net debt value. You multiply the EBITDA at exit by the exit multiple to get exit enterprise value. You subtract the calculated net debt from this to get "sponsor equity value at exit".

You calculate the difference between that and the entry value to get MOIC and IRR. Exit could mean a sale to a large firm as a portfolio company, secondary buyout or IPO.

An LBO valuation is the maximum value assigned to the entry EV of the target that still allows the PE firm to achieve their target return (IRR).

79. How would you present these valuation methodologies to a company or its investors?

Usually you use a "football field" chart where you show the valuation range implied by each methodology. You always show a range rather than one specific number

80. How would you value an apple tree?

The same way you would value a company: by looking at what comparable apple trees are worth (relative valuation) and the value of the apple tree's cash flows (intrinsic valuation)

81. Why can't you use Equity Value / EBITDA as a multiple rather than Enterprise Value / EBITDA?

EBITDA is available to all investors in the company, rather than just equity holders. Similarly, Enterprise Value is also available to all shareholders so it makes sense to pair them together

Equity Value /. EBITDA, however, is comparing apples to oranges bc Equity Value doesn't reflect the company's entire capital structure – only the part available to equity investors

82. When would a Liquidation Valuation produce the highest value?

This is highly unusual, but it could happen if a company had substantial hard assets but the market was severely undervaluing it for a specific reason (such as earnings miss or cyclicality)

As a result, the company's comparable companies and precedent transactions would likely produce lower values as well – and if its assets were valued highly enough, liquidation valuation might give a higher value than other methodologies

83. Let's go back to 2004 and look at Facebook when it had no profit and no revenue. How would you value it?

You would use comparable companies and precedent transactions and look at more creative multiples such as EV/Unique Visitors and EV/Pageviews rather than EV/Revenue or EV/EBITDA

You would not use a far in the future DCF because you can't reasonably predict cash flows for a company that is not even making money yet

This is a common question that is answered wrong in interviews. When you can't predict cash flow, use other metrics. Don't try to predict cash flow anyway!

84. What would you use in conjunction with Free Cash Flow multiples – Equity Value or Enterprise Value?

Trick question. For unlevered free cash flow, you would use enterprise value, but for levered free cash flow you would use equity value

Rem that unlevered free cash flow excludes interest and thus represents money available to all investors, whereas levered free cash flow already includes the effects of the interest expense and mandatory debt repayments and the money is therefore only available to equity investors

Debt investors have already been paid with the interest payments and principal repayments they received

UFCF is EBIAT + D&A – change NWC – capex

LFCF is NI + D&A – change NWC – capex – mandatory debt repayments + new debt issued

So LCFC is UFCF but with debt (and interest)

85. You never use equity value / EBITDA, but are there any cases where you might use equity value / revenue?

It's very rare to see this, but sometimes large financial institutions with big cash balances have negative enterprise values, so you might use equity value / revenue instead

You might see Equity Value / Revenue if you've listed a set of financial institutions and non-financial institutions on a slide, you're showing Revenue multiples for the nonfinancial institutions, and you want to show something similar for the financial institutions

Note, however, that in most cases you would be using other multiples such as P/E and P/BV with banks anyway

86. How do you select comparable companies / precedent transactions?

The 3 main ways to select companies and transactions:

1. Industry classification
2. Financial criteria (rev, EBITDA, etc.)
3. Geography

For precedent transaction, you often limit the set based on date and only look at transaction within the past 1-2 years

The most important factor is industry – that is always used to screen for companies/transaction, and the rest may or may not be used depending on how specific you want to be

A few examples:

1. Comparable Company Screen: oil and gas producers with market caps over $5 billion
2. Comparable Company Screen: digital media companies with over $100 million in revenue
3. Precedent Transaction Screen: Airline M&A transactions over the past 2 years involving sellers with over $1 billion in revenue
4. Precedent Transaction Screen: Retail M&A transactions over the past year

87. How do you apply the 3 valuation methodologies to actually get a value for the company you're looking at?

Sometimes this simple fact gets lost in discussion of Valuation methodologies. You take the median multiple of a set of companies or transactions, and then multiply it by the relevant metric from the company you're valuing.

Example: If the median EBITDA multiple (how much the acquirer paid for a target relative to that company's EBITDA) from your set of Precedent Transactions is 8x and your company's EBITDA is $500 million, the implied Enterprise Value would be $4 billion

To get the "football field" valuation graph you often see, you look at the minimum, maximum, 25th percentile and 75th percentile in each set as well and create a range of values based on each methodology

88. What do you actually use a valuation for?

Usually you use it in pitch books and in client presentations when you're providing updates and telling them what they should expect for their own valuation

It's also used right before a deal closes in a fairness opinion, a document a bank creates that proves the value their client is paying or receiving is fair from a financial point of view

Valuations can also be used in defense analyses, merger models, LBO models, DCFs (bc terminal multiples are based off of comps), and pretty much anything else in finance

89. Why would a company with similar growth and profitability to its comparable companies be valued at a premium?

This could happen for a number of reasons:

1. The company has just reported earnings well above expectations and its stock price has risen recently
2. It has some type of competitive advantage not reflected in its financials, such as a key patent or other IP
3. It has just won a favorable ruling in a major lawsuit
4. It's the market leader in an industry and has greater market share than its competitors

90. What are the flaws with public company comparables?

1. No company is 100% comparable to another company
2. The stock market is "emotional", your multiples might be dramatically higher or lower on certain dates depending on the market's movements
3. Share prices for small companies with thinly-traded stocks may not reflect their full value

91. How do you take into account a company's competitive advantage in a valuation?

1. Look at the 75th percentile or higher for the multiples rather than the medians
2. Add in a premium to some of the multiples
3. Use more aggressive projections for the company

In practice you rarely do all of the above – these are just possibilities

92. Do you always use the median multiple of a set of public company comparables or precedent transactions?

There's no rule that you have to do this, but in most cases you do bc you want to use values from the middle range of the set. But if the company you're valuing is distressed, is not performing well, or is at a competitive disadvantage, you might use the 25th or a percentile in the lower range and vice versa if the converse is true

93. You mentioned that precedent transactions usually produce a higher value than comparable companies – can you think of a situation where this is not the case?

Sometimes this happens when there is a substantial mismatch between the M&A market and the public market. For example, no public companies have been acquired recently but there have been a lot of small private companies acquired at extremely low valuations

For the most part this generalization is true but there are exceptions to almost every rule in finance

94. What are some flaws with precedent transactions?

1. Past transactions are rarely 100% comparable – the transaction structure, size of the company, and market sentiment all have huge effects
2. Data on precedent transactions is generally more difficult to find than it is for public company comparables, especially for acquisitions of small private companies

95. Two companies have the exact same financial profiles and are bought by the same acquirer, but the EBITDA multiple for one transaction is twice the multiple of the other transaction – how could this happen?

Possible reasons:

1. One process was more competitive and had a lot more companies bidding on the target
2. One company had recent bad news or a depressed stock price so it was acquired at a discount
3. They were in industries with different median multiples

96. Why does Warren Buffet prefer EBIT multiples to EBITDA multiples?

Warren Buffett once famously said, "Does management think the tooth fairy pays for capital expenditures?"

He dislikes EBITDA bc it hides the capex companies make and disguises how much cash they're actually using to finance their operations

In some industries there is also a large gap between EBIT and EBITDA – anything that is very capital intensive, for example, will show a big disparity

Note that EBIT itself does not include capital expenditures, but it does include depreciation and that is directly linked to capex – that's the link. If a company has a high depreciation expense, chances are it has a high capex

EBIT gives you more information (includes capex) than EBITDA

97. The EV/EBIT, EV/EBITDA and P/E multiples all measure a company's profitability. What's the difference between them, and when do you use each one?

P/E depends on the company's capital structure whereas EV/EBIT and EV/EBITDA are capital structure neutral. Therefore, you use P/E for banks, financial institutions, and other companies where interest payments/expenses are critical

EV/EBIT includes depreciation and amortization whereas EV/EBITDA excludes it. You're more likely to use EV/EBIT in industries where depreciation and amortization is large and where capex and fixed assets are important (like manufacturing) and EV/EBITDA in industries where fixed assets are less important and where depreciation and amortization is comparatively smaller (like internet companies)

98. **If you were buying a vending machine business, would you pay a higher multiple for a business where you owned the machines and they depreciated normally, or one in which you leased the machines? The cost of depreciation and lease are the same dollar amounts and everything else is held constant**

You would pay more for the one where you lease the machines. Enterprise Value would be the same for both companies, but with the depreciated situation the charge is not reflected in EBITDA, so EBITDA is higher, and the EV/EBITDA multiple is lower as a result. For the leased situation, the lease would show up in sg&a so it would be reflected in EBITDA, making EBITDA lower and the EV/EBITDA multiple higher

99. **How do you value a private company?**

You use the same methodologies as with public companies: public company comparables, precedent transactions, and DCF. But there are some differences:

1. You might apply a 10-15% (or more) discount to the public company comparable multiples bc the private company you're valuing is not as "liquid" as the public comparables
2. You can't use a premium analysis or future share price analysis bc a private company doesn't have a share price
3. Your valuation shows the Enterprise Value for the company as opposed to the implied per-share price as with public companies
4. A DCF gets tricky bc a private company doesn't have a market capitalization or Beta – you would probably just estimate WACC based on the public comparables' WACC rather than trying to calculate it

100. **Let's say we're valuing a private company. Why might we discount the public company comparable multiples but not the precedent transaction multiples?**

There's no discount bc with precedent transactions, you're acquiring the entire company – and once it's acquired, the shares immediately become illiquid

But shares – the ability to buy individual "pieces" of a company rather than the whole thing – can be either liquid (if it's public) or illiquid (if it's private)

Since shares of public companies are always more liquid, you would discount public company comparable multiples to account for this

Think that you pay the opposite of a premium for shares to be illiquid, or that you pay a premium for an asset to be liquid. The precedent transactions aren't discounted because at this point the purchased company is illiquid

101. Can you use private companies as part of your valuation?

Only in the context of precedent transactions – it would make no sens to include them for public company comparables or as part of the cost of equity / WACC calculation in a DCF bc they are not public and therefore have no values for market cap or Beta

Only in precedent transactions because the multiples are different