Valuation

Technical Interview

Questions.

Source: Questions = IB Interview Webinar, Answers = Mine.

Q1. How do you value a company?

A. This question is very much asked in valuation as well as finance interview and the answer should be answered revolving around two methodologies primarily. They are:

A. Intrinsic Valuation (Discounted Cash Flow):

DCF says that the **value of the company** or the productive asset is equal to the **present value of the potential future cash flows** that the asset will generate assuming it as a going concern entity.

1. Future Cash Flows:

We should first **Project the future free cash flows** (FCFF) of the company for 5-20 years (Mostly 5 or 10 years is preferred) depending on the availability and reliability of the data and then **Calculate the terminal value at the last year**.

2. Discounting FCFF and Terminal Cash Flow:

We have to **Bring the FCFF and TV at the present value** terms using a discount rate (PVF).

Use **Weighted Average Cost of Capital (WACC) for Unlevered Cash Flows** (Cash flows before financial payments) and **Cost of Equity for Levered Cash Flows** (Cash Flows after payment of financial obligations).

3. Enterprise Value and Equity Value:

With the **Unlevered Cash Flows you will arrive at the Enterprise Value** (Company's value or Transaction Value) but with **Levered Cash Flow we arrive at Equity value**.

Divide the equity value with the number of diluted equity shares outstanding to get equity value per share.

Basically with **Intrinsic Valuation (DCF) we calculate the value of the firm in today's time** based on its future capability of generating cash flows.

B. Relative Valuation (Multiples Approach):

Here we have to **Find a universe or the industry of the company in which they operate** determining a comparable peer group with companies who are in same sector with similar operations, growth, risk, return, etc.

We have to find not the exact replica but a comparable company with a reasonable similar traits.

Calculate the industry multiples and find the median of the group.

Apply that median on the relevant operating metric of the target company to arrive at a valuation.

Common multiples are Revenue/EBITDA, EV/EBITDA, P/E, P/S, P/B, etc.

Some industries give more weightage to some ratios and some prefer different valuation metric altogether. It depends on the industry and the business in which they are.

The numbers are used to analysis the pros and cons of the valuation of the target and determine whether it is undervalued or overvalued.

Q2. What is the difference between Levered and Unlevered Cash Flows?

The difference between them is the amount of cash to be paid as financial obligations expenses such as Interest.

Levered cash flows shows the investors the amount of money left with business for future capex or expansion after interest payments while **Unlevered cash flows is for the whole firm**.

Levered cash flow is the amount of cash a business has after it has met its financial obligations. Unlevered free cash flow is the money the business has before paying its financial obligations.

The difference between the levered and unlevered free cash flow is an important indicator. The difference shows how many financial obligations the business has and if the business is overextended or operating with a healthy amount of debt.

Investors mostly prefer to check the levered cash flows to gauge the future potential of the company.

Q3. How do calculate Unlevered Free Cash Flows for DCF?

EBIT*(1-T) + Depreciation and Amortization - Capital expenditure - Change in Working Capital = **Free Cash Flow to Firm (FCFF)** - Interest (1-T) - Debt Repayment + Borrowings = **Free Cash Flow to Equity (FCFE).**

Q4. How will you view negative levered cash flows and also can it be negative ?

A. Yes absolutely, It is possible for a company to have a negative levered cash flow **If the financial expenses exceed its earnings.**

Although it shouldn’t have happened in the first place but if it is a short term issue investors should not be worried.

Even if levered FCF is -ve, Then the **company may not be failing.**

A company might have **Substantial capital investments that are soon to positively affect earnings** in future.

Also, The money that the company has borrowed must have been utilized somewhere productive in the business which will generate future cash flows.

Q5. What is the appropriate discount rate to use in an unlevered DCF analysis?

A. To arrive at a valuation through DCF **We use a unlevered cash flows** and the cash flows used are pre debt which means as if the company had no debt therefore paying no interest and also foregoing the tax benefit from that interest (Tax Shield).

The cash flows we use are for both the debt lenders and the equity shareholders, So we will **use a discount rate that represent both the capital providers** and match their respective risk and return expectations according to their share in the capital structure (Weights).

We will **Use Weighted Average Cost of Capital (WACC)**, Which will represent all the capital providers.

Cost of Debt (Kd): The return the lender expects from the company to give debt. The higher the risk the higher the ask.

Kd = 10 Year US Govt Bond Yield (Safest) + Default Spread of that country + Default spread of that company (Add this part only if Emerging Market).

Cost of Equity (Ke): The return the owner or the shareholders expects before investing in your company. Higher than Kd

It is typically calculated using CAPM methodology (Tweaked) which links expected ROE to its sensitivity to the market.

Ke = Risk Free Rate + Equity Risk Premium * Beta

Q6. Which is typically higher - Cost of Debt or Cost of Equity?

A. Cost of equity is higher than the Cost of debt because

Equity shareholders are **taking more risk** by investing in the company and becoming the owners of the company.

Interest payments are fixed for the creditors and the interest amount is tax deductible making the cost on company less.

The return the owner or the shareholders expects is higher than Kd because the **company isn't obligated to pay anything to the shareholders hence they demand more** (Ke).

Shareholders are the last party when the company dissolves.

The higher the risk the higher the ask.

Q7. How do you calculate the Cost of Equity (Ke)?

A. There are several methods to calculate the number but **CAPM is the most dominant one** but there is an adjustment that should be done for MRP but we will stick to CAPM theory.

CAPM links the expected return of the security to its sensitivity to the overall market (S&P500, NIFTY 50, etc).

The formula is as follows:

Ke = Rf + Market Risk Premium (Rm - Rf) * Beta

A) Risk Free Rate (Rf): It theoretically **Reflects the yield to maturity of a default free government** bonds of equivalent maturity to the duration of the cash flows being discounted.

Due to lack of liquidity in other long tenure bonds the 10-Year US Govt Treasury Bond is taken as the preferred proxy for the Rf for US companies. You should deduct the default spread for the specific country from the 10 Year Govt Bond Yield of that country.

B) Market Risk Premium: The MRP (Rm - Rf) **represents the excess returns** of investing in stocks over the risk free rate.

Historical Excess Return method is widely used where we compare the historical spread between market (S&P500/NIFTY50) and the yield on the 10 year govt bond.

C) Beta: It is an methodology to gauge the **estimate the degree of an asset's systematic (non-diversifiable) risk**.

Beta = Covariance between the expected returns on the asset and the stock market overall / Variance of the expected returns on the stock market.

A stock with an **beta of 1 means that the volatility of the stock resembles a lot like the overall market** whereas a number of 2 means if the market falls 1X the stock will fall 2X and vice versa.

Beta shows the volatility of that specific company stock with the overall market.

Q8. How would you calculate Beta for a company?

The number of **Beta tells us how much the company is riskier in comparison with the overall stock market.**

Calculating raw betas from historical returns and even projected betas is an improper calculation of future betas due to:

A. Standard Errors: Estimation errors caused by standard errors creating a large potential range for beta.

B. Issue of Capital Structure: If the company has high leverage > There is more risk to invest > investors will demand high return > Beta will shoot.

C. Business Model: The work that the company used to do in past is in no way predicts what they will do in future. Companies expands, open new divisions, etc.

Historical Beta will be affected by the past without taking account of future changes in the business strategy.

For ex: Reliance Industries was an Oil and Gas company but is it now, No. Now it is a conglomerate with presence everywhere.

As a result Industry Beta is preferred, Since the betas of comparable companies are distorted due to different rates of leverage we should **Un-Lever the betas of the industry** like following

Beta Unlevered (industry)= Beta (levered) / [1 + (Debt/Equity) * (1 - Tax)]

And then **Re-Lever it again with the target** company's capital structure as follows

Beta Levered (Company)= Beta (Un-Levered) X [1 + (Debt/Equity) * (1 - Tax)]

Q9. What is the appropriate numerator for a revenue multiple?

Its is Enterprise Value.

The question tests the difference between the Enterprise Value and Equity Value.

Enterprise value is the one because the **Revenue is for the both the parties** i.e. Creditors and Shareholders and Revenue is an unlevered (Pre-Debt) measure of profitability.

Equity Value = Enterprise Value - Net Debt where Net Debt = Gross Debt and Equivalents - Excess Cash.

Enterprise Value Multiples: Revenue, EBITDA, EBIT, and Unlevered CFs.

Equity Value Multiples: EPS, After Tax CFs, BV of Equity all have equity vale as the numerator since the denominator is levered (Post Debt).

Q10. How would you value a company with negative historical cash flows?

Given that negative profitability will make most multiples analysis meaningless, **A DCF approach should be considered.**

Since DCF considers the cash flows as a going concern and does give a growth to the cash flows going forward so there is a chance **at some point in the future the cash flows will turn positive making the valuation possible.**

Q11. When should you value a company using a Revenue multiple vs EBITDA?

We would use Revenue Multiple instead of the EBITDA when the **target company is pushing out negative EBITDA** and profits number.

If the denominator in the EV/EBITDA is negative, Then it doesn't make sense to go further. Hence revenue multiple should be preferred.

Q12. You are given a 2 Identical Companies in terms of Earnings, Growth, Leverage, ROC, and Risk profile. A is trading at 15 P/E while B is at 10. Where would you investment?

Given everything same, I would go with B (Undervalued in comparison with A). **Why to pay 5 times of earnings more when everything is same**. PE Ratio tells for 1 Rs of Earning (EPS) how much is the market paying (MPS)

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