Valuation of (Tech) Startups and high growth private companies

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Valuation is done throughout the life cycle of an entity:

**Early stage:**
Angel funding / private placement / fund raising

**Mature Stage:**
Restructuring (e.g. M&As, CDR)
Compliance – Income Tax; Financial Reporting
IPOs, Bank funding
Brand, Goodwill

**Decline stage:**
Winding up Insolvency
Approaches to Valuation

Market Approach
- Market price Method
- Comparable Companies Multiple (CCM) Method
- Comparable Transactions Multiple (CTM) Method

Income Approach
- Discounted Cash Flow Method (DCF)
- Income Capitalisation Approach

Cost Approach
- Replacement Cost Method
- Reproduction Cost Method
- (Adjusted) Net Asset Value Approach
Early stage companies
Early Stage Companies

- Net Asset Value Method
- Comparable Companies Multiple Method
- Comparable Transactions Method
- Venture Capital Method
- Discounted Cash Flow Method
What’s a Start-up

An entity shall be considered as a Startup:

i. Upto a period of 10 years from the date of incorporation/registration, if it is incorporated as a private limited company or registered as a partnership firm or a limited liability partnership in India. In the case of Startups in the biotechnology sector, the period shall be upto 10 years from the date of its incorporation/registration.

ii. Turnover of the entity for any of the financial years since incorporation/registration has not exceeded Rs. 100 crore

iii. Entity is working towards innovation, development or improvement of products or processes or services, or if it is a scalable business model with a high potential of employment generation or wealth creation.

Provided that an entity formed by splitting up or reconstruction of an existing business shall not be considered a ‘Startup’.

Ministry of commerce and industry (department of industrial policy and promotion)
Valuation of Start-ups

The process of valuing private companies is not different from the process of valuing public companies.

- Estimate cash flows
- Attach a discount rate based upon the riskiness of the cash flows and
- Compute a present value.
So what’s different?

Source: Prof Aswath Damodaran
So what’s different?

Some of the standard problems while valuing private companies are:

• There is no market value for either debt or equity.
• There may not be enough comparable companies which could represent the value of the company being valued.

• The financial statements for private firms are likely to:
  • go back fewer years
  • have less detail and
  • may even be less transparent.

• Private company valuation may require the valuation of key managerial person (usually the owner/promoter)
Venture Capital Method of Valuation

Profits of a company are forecast in a future year, when the company can be expected to go public.

The profits are multiplied with the P/E multiple of a comparable publicly traded company to arrive at the value of the company.

This is called the Exit Value or the Terminal Value as this is the time when the venture capitalist would typically exit the investment.

This value is then discounted back to present using a ‘Target Rate of Return’ which is a justifiable discount rate for the venture capitalist based on the risk they are taking.

On the flip side, it’s a shortcut way of valuing a company and may not uncover Real Value.
Example:

A young EdTech company Om Ltd is expected to go public in 10 years from now. The valuer expects that the net profits of the company 10 years from now will be INR 95 crores.

Average PE Multiple of publicly traded EdTech companies is 20. Om Ltd is evaluating fund raising from investors. Investors are expecting 45 percent from the investment until the company goes public.

[Note: VCs expected returns can range from 65-70% returns for an early stage start-up to 25-30% return for a mature start-up looking for an IPO]
Venture Capital Method of Valuation

Example:
A young EdTech company Om Ltd is expected to go public in 10 years from now. The valuer expects that the net profits of the company 10 years from now will be INR 95 crores.

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Solution:
Exit Value = 95 x 20 = INR 1900 Crore
Value of the company today = 1900 / 1.45^10 = INR 46.25 Cr
Comparable Companies Multiple Method

Valuation of Flipkart may be done on the basis of its listed comparable Amazon:

Inputs:
- Amazon's Market Capitalisation
- Number of users on Amazon
- Number of users on Flipkart

Amazon's Value per user = Amazon’s Market Cap / No. of users on Amazon

Flipkart Value (base point) = Number of users on Flipkart x Value per user

Possible adjustments include:
- Less: Discount for lack of Marketability [DLOM]
- Less: Amazon’s global diversity
- Less: Product diversification
- Adjustment for Currency differences
- Adjustment for Country specific factors [US Growth vs India growth]
Valuing using Operating Value Drivers

Valuing Flipkart

Amazon = Market Capitalisation
Number of Users on Amazon.
Value Driver: Value per user (ValuePU) = Market Cap / No. of users.

Flipkart Value = Number of users (given by Flipkart) x ValuePU
Adjustment for:
- Marketability [Listed vs Unlisted]
- Country specific growth factors – US Growth vs India growth
- Global presence
- Product diversification
- Currency differences
Valuing using Operating Value Drivers

Year 2014, Valuation of a Text Messaging App ChatApp with 1.6 million users. The company does not report any revenues.

<table>
<thead>
<tr>
<th>Description</th>
<th>AMOUNT</th>
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<tbody>
<tr>
<td>Enterprise Value of WhatsApp (USD) as part of acquisition</td>
<td>19,000,000,000</td>
</tr>
<tr>
<td>Daily Active Users of WhatsApp</td>
<td>450,000,000</td>
</tr>
<tr>
<td>Value per Daily Active User (USD)</td>
<td>42.22</td>
</tr>
<tr>
<td>Exchange Rate</td>
<td>70.00</td>
</tr>
<tr>
<td>Value per Daily Active User (INR)</td>
<td>2,955.56</td>
</tr>
<tr>
<td>Less: Adjustment for Size (99.64%) [Requires discussion]</td>
<td>2,945.05</td>
</tr>
<tr>
<td>Adjusted value per Daily Active User (A)</td>
<td>10.51</td>
</tr>
<tr>
<td>Daily Active Users of ChatApp (B)</td>
<td>16,00,000</td>
</tr>
<tr>
<td>Value of ChatApp (A) x (B)</td>
<td>1,68,13,852</td>
</tr>
<tr>
<td>Value of ChatApp ( Rounded)</td>
<td>INR 1.68 Cr</td>
</tr>
</tbody>
</table>
DCF Valuation Framework
DCF Framework – Free Cash Flows

The cash flow can be pre-tax or post-tax

Nominal cash flows that include expectations regarding inflation

In the same currency in which the forecast is prepared

Accounting Profit
Add: Non Cash Expenses (e.g. Depreciation and Amortisation)
Less: Outflow towards Capital Expenditure (Change in Gross Fixed Assets)
Less: Outflow towards Working Capital (Change in Non Cash Working Capital)
Equals Cash Flows
DCF Framework – Free cash flows

Free Cash Flows represent the after tax cash generated by the business, available for all the investors (stockholders and banks), excluding any impact of the financial structure.

<table>
<thead>
<tr>
<th>FCFE</th>
<th>FCFF</th>
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<tbody>
<tr>
<td>Profit After Tax</td>
<td>Profit After Tax</td>
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<tr>
<td>Add: Non Cash Charges (E.g. Depreciation)</td>
<td>Add: Non Cash Charges (E.g. Depreciation)</td>
</tr>
<tr>
<td>Less: Capital Expenditure</td>
<td>Less: Capital Expenditure</td>
</tr>
<tr>
<td>Add: Net Borrowings (Long Term)</td>
<td>Add: Interest (post of tax)</td>
</tr>
<tr>
<td>Free Cash flows to Equity (FCFE)</td>
<td>Free Cash flows to the Firm (FCFF)</td>
</tr>
<tr>
<td>Discounted at Cost of Equity</td>
<td>Discounted at WACC</td>
</tr>
<tr>
<td>Value of Equity</td>
<td>Value of the Firm (Company)</td>
</tr>
<tr>
<td></td>
<td>Less: Debt (Current Value)</td>
</tr>
<tr>
<td></td>
<td>Value of Equity</td>
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</tbody>
</table>

NB: We prefer FCFF approach when FCFE is negative or when capital structure is unstable
DCF Framework – Key Issues

Get as close to precise information as possible

- Due Diligence is key
- Check for personal expenses charged to business
- Check for fictitious sales
- Evaluate Revenue Models (Gross vs Net)
- Consider Three Stage Model to factor in multiple stages in life cycle

Factor in the issue of scaling

- Reaching 1000 vs 100,000 vs 10,000,000 Users
- Free vs Paid Users
- Renewals – a big concern
DCF Framework – Key Issues

Multiple Equity Claims
   Multiple rounds of equity dilute stake and complicate valuation

Sustained competitive advantage
   Fly by night companies vs Marathon runners

Revenue vs Profit
   Check for positive contribution or EBITDA

Carefully assess risk parameters and discount rates.
   Assess Beta
   Estimate the probability of default

\[ Value = P_{\text{Going concern}} \times \text{DCFValue}_{\text{Going Concern}} + (1 - P_{\text{Going concern}}) \times \text{Liquidation Value} \]
Discount Rate

Consider:

• The type of asset being valued
• The rates implicit in comparable transactions in the market
• The geographic location of the asset and/or the location of the markets in which it would trade,
• The life/term and/or maturity of the asset and the consistency of inputs.
• The bases of value being applied,
• The currency denomination of the projected cash flows.
DCF Framework - Cost of Capital (WACC or Kc)

Cost of Capital (Kc) represents the cost of funds used for financing the business. It is the rate of return that the suppliers of capital—bondholders and owners—require as compensation for their contributions of capital.

- If business is financed solely through Equity, Kc is the same as Cost of Equity (Ke)
- If business is financed solely through Debt, Kc is the same as Cost of Debt (Kd)
- Usually companies use a mix of Debt and Equity while financing their business, thus the overall cost of capital is derived from a weighted average of cost of all capital sources, known as the Weighted Average Cost of Capital (WACC)

Cost of capital represents a minimum benchmark rate that a company must overcome before it can generate value for its financers.

Discount rate for FCFE: Cost of Equity (Ke)
Discount rate for FCFF: Cost of Capital (WACC)
The Cost of Debt is the interest rate paid by the company on such debt. However, since interest expense is tax-deductible, we use the After-Tax Cost of Debt for Capital budgeting purposes. The after-tax cost of debt is calculated as:

\[ \text{Pre Tax Cost of Debt} \times (1 - \text{Tax rate}) \]

Example:

If the rate at which the company can borrow funds from the financial institutions is 11% and the tax rate applicable to the company is 30%. The Post Tax Cost of Debt would be

\[ 11\% \times (1 - 30\%) = 7.7\% \]

Alternatively, assume the Govt Borrowing Rate + FIMMDA spread for a comparative bond.

**Kd represents Rate of debt at which the company can borrow today, not the historical rate.**
Although the rate of return demanded by equity investors is not as clearly defined as it is by lenders, equity investors do expect a return on their investment. Cost of equity is approximated by the Capital Asset Pricing Model (CAPM).

\[
\text{Cost of Equity} = \text{Risk Free Rate} + \beta \times \text{Market Risk Premium}
\]

**Risk Free Rate:** A return on an investment that has least likelihood of default e.g. 10 Year Government Bond Yield

**Company's Beta:** Sensitivity of stock return with respect to the market return e.g. if beta is 1.8 and the market is expected to move up by 10%, then the stock should move up by 18% (1.8 x 10) \([\text{Cov} / \text{Var}]\)

**Market Risk Premium:** Risk premium is what a particular market (E.g. BSE Sensex) earned over the rate that a risk free asset (e.g. Govt bond) earned. i.e. \([\text{Market Return} - \text{Risk Free Rate of Return}]\)
DCF Framework – Beta

Since the companies are not traded, the ideal approach is to take a proxy beta of a closest listed competitor and adjust the beta for the company being valued. For adjustment, the proxy beta should be “unlevered” using the average debt-to-equity ratio for the proxy company (or the average industry D/E Ratio). The final step is re-levering beta, using private company’s target debt/equity ratio.

Example: Beta of a private company Om Ltd can be assessed based on the following information.

Average Beta of comparable listed companies = 1.64 (Levered Beta)
Average D/E Ratio of comparable listed companies = 0.34
Tax Rate = 30%
Target D/E Ratio of Om Ltd = 0.5

Unlevered Beta = Levered Beta / (1 + (1 - Tax Rate) x D/E ratio)
= 1.64 / (1+(1-0.3) x 0.34) = 1.32

Levered Beta = Unlevered beta x (1 + (1 - tax rate) x Target D/E Ratio)
= 1.32 x (1+(1-.3) x 0.5) = 1.78
DCF Framework – WACC Calculation

Example:
Suppose DM Ltd has a capital structure composed of the following:
Debt 30 million
Equity 45 million
If the before-tax cost of debt is 11% (Pre tax $K_d$), the required rate of return on equity is 16.5% ($K_e$), and the marginal tax rate is 30%, what is DM Ltd’s weighted average cost of capital?

Solution:
Weight of debt ($W_d$) = \(\frac{30}{30 + 45} = 0.40\)
Weight of common equity ($W_e$) = \(\frac{45}{30 + 45} = 0.60\)

\[
\text{WACC} = \left[ W_d \times \text{Post Tax } K_d \right] + \left[ W_e \times K_e \right]
\]

\[
\text{WACC} = \left[ (0.40) \times (0.11)(1 - 0.30) \right] + \left[ (0.60)(0.165) \right]
\]
\[
= 0.0308 + 0.0990 = 0.1298 \text{ or } 12.98\% \sim 13\%
\]
DCF Framework – Beta

What if there is no listed comparable at all?

**Size Risk:** In case assessment of Beta of a private company is difficult due to absence in different capital structure information, an alternative may be to use the industry beta as a proxy and use a Size Risk to enhance the overall cost of Equity. This risk may not be factored into the Beta and thus may be added as an additional risk.
Growth Rate

While growth rates are derived based on detailed estimates and forecasts that are a mix of objective and subjective assessment, growth rate in earnings can be estimated as:

\[
\text{Growth Rate} = \text{Reinvestment Rate} \times \text{Return on Equity}
\]

Reinvestment Rate = Investment in New projects / Current Earnings

Return on Equity (ROE) = Profit After Tax / Book Value of Equity

Alternatively,

\[
\text{Growth Rate} = \frac{\text{Retained Earnings}}{\text{Profit After Tax}} \times \text{ROE}
\]
How to calculate Terminal Value

The terminal growth rates typically range between the historical inflation rate and the average GDP growth rate at this stage.

A terminal growth rate higher than the average GDP growth rate indicates that the company expects its growth to outperform that of the economy forever.

*However, conventionally, Corporate sector outperforms GDP Growth. Plus companies may be expected to diversify beyond domestic borders when they grow big and may scout for high growth countries constantly.*

One simple proxy for the nominal growth rate of the economy is the risk-free rate.
How to calculate Terminal Value

Common methods

- **Gordon growth model/constant growth model** - appropriate only for indefinite-lived assets
- **Market Approach/Exit Value** - appropriate for both deteriorating/finite-lived assets and indefinite-lived assets, and
- **Salvage Value/Disposal Cost** - appropriate only for deteriorating/finite-lived assets.

- **No growth Company Terminal Value** = Cash flow for next Year / Discount rate

- **Stable Growth Company Terminal Value** = Cash flow for next Year / (Discount rate – Growth Rate)
## DCF Calculations

### OmCom Pvt Ltd

<table>
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<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>5 (Terminal)</th>
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</thead>
<tbody>
<tr>
<td><strong>Growth rate for next 5 years</strong></td>
<td>18.00%</td>
<td></td>
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<tr>
<td><strong>Terminal Growth Rate</strong></td>
<td>6.00%</td>
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<tr>
<td><strong>Cost of Equity</strong></td>
<td>16.50%</td>
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<tr>
<td><strong>Additional Risk premium</strong></td>
<td>4.50%</td>
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<tr>
<td><strong>WACC / Discount Rate</strong></td>
<td>21.00%</td>
<td>Since no Debt. Thus Cost of Equity is same as WACC</td>
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</tbody>
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### FCFF (Amount in INR ‘000)

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<tbody>
<tr>
<td><strong>Revenue</strong></td>
<td>353,066.94</td>
<td>To be estimated for each year</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>PAT</strong></td>
<td>32,280.48</td>
<td>To be estimated for each year</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Add: Depreciation and Non-Cash Expenses</strong></td>
<td>14,922.11</td>
<td>To be estimated for each year</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Less: Capital Expenditure</strong></td>
<td>15,810.47</td>
<td>To be estimated for each year</td>
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<tr>
<td><strong>Less: Changes in Non-Cash Working Capital</strong></td>
<td>(12,723.52)</td>
<td>To be estimated for each year</td>
<td></td>
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<tr>
<td><strong>Add: Interest (1 - tax rate)</strong></td>
<td>-</td>
<td>To be estimated for each year</td>
<td></td>
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</tr>
<tr>
<td><strong>Free Cash Flow to the Firm (FCFF)</strong></td>
<td>44,115.64</td>
<td>49,850.67</td>
<td>56,331.26</td>
<td>63,654.32</td>
<td>71,929.39</td>
<td>81,280.21</td>
<td>574,380.13</td>
</tr>
<tr>
<td><strong>Terminal Cash Flows</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>PV of Cash Flows</strong></td>
<td>41,198.90</td>
<td>38,475.01</td>
<td>35,931.21</td>
<td>33,555.59</td>
<td>31,337.04</td>
<td>221,448.40</td>
<td></td>
</tr>
<tr>
<td><strong>Value of the Firm</strong></td>
<td>401,946.15</td>
<td></td>
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<tr>
<td><strong>Less: Value of Debt</strong></td>
<td>0.00</td>
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<tr>
<td><strong>Add: Cash</strong></td>
<td>48,90.56</td>
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<tr>
<td><strong>Value of Equity (Operating Assets)</strong></td>
<td>406,836.72</td>
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</tr>
<tr>
<td><strong>Less: Discount for KMP</strong></td>
<td>14,200.00</td>
<td>The director will resign after takeover; value attributed to such director</td>
<td></td>
<td></td>
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<tr>
<td><strong>Add: Investment Property</strong></td>
<td>54,000.00</td>
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<tr>
<td><strong>Value of Equity</strong></td>
<td>446,636.72</td>
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<tr>
<td><strong>No. of Shares (‘000)</strong></td>
<td>1,319.69</td>
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<tr>
<td><strong>Value per Share (INR)</strong></td>
<td>338.44</td>
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</tbody>
</table>

Numbers used are for academic calculation purposes and are not actuals
Vikash Goel
Omnifin Solutions

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