

# 5.6 PRIVATE COMPANY VALUATION

## 5.6.a PUBLIC vs. PRIVATE COMPANY VALUATION

Differences in the valuation between public and private companies may be attributable to the following factors:

### 1. Company Specific Factors

- i) **Stage in the Life Cycle:** Private companies are typically in the earlier stages of their development, whereas public companies are more mature. As a result, private company operations tend to be less diversified and thus their earnings more volatile. This higher inherent risk may cause the valuation for private companies to be lower than their public counterparts. Overall, private companies have a much wider risk/return spectrum.
- ii) **Size:** Since private companies do not have access to public markets, they may not be able to finance all of their profitable projects. This reduced access to capital may then not only impair their growth rate, but it may also increase their risk as well (particularly during periods when immediate liquidity is required).
- iii) **Overlap of Shareholders and Managers:** With private companies, the owners (shareholders) typically manage the firm as well. Consequently, agency costs are much less than those that are associated with the oversight required for public corporations (where ownership and management are separated). Furthermore, the managers of private firms are better able to remain focused on achieving their long term goals (unlike managers of public companies who are under constant pressure to meet short term earnings targets). In this regard, a private firm should have a higher valuation compared to its public counterpart (holding all else constant of course).
- iv) **Quality and Depth of Management:** The managers of privately run companies may be of lower caliber than those of public firms. This lower level of skill and experience may result in an increase in perceived risk and/or a decrease in growth opportunities, both of which should lead to a lower valuation for the private company.
- v) **Quality of Financial Information:** Private companies are not subject to the same reporting requirements as their public counterparts. Consequently, financial information is less forthcoming and less reliable. This increased uncertainty may result in a lower valuation.
- vi) **Tax:** Public companies are more focused on maximizing current earnings, which will invariably cause current taxes to increase as well. However, since private companies do not have to publicize their earnings figures, they may become more focused on minimizing current taxes (rather than maximizing current reported earnings). This reduction in taxes will lead to an increase in cash flow, and thus an increase in valuation.

### 2. Stock Specific Factors

- i) **Liquidity:** Since shareholders of privately held firms cannot easily re-sell their shares, they will pay less for them today (i.e. result in a lower valuation). Even if there is a market for the shares, private firms may impose restriction prohibiting shareholders from reselling the shares for a certain period of time following their issue. This purpose of this restriction is to reduce the drag that would result on stock price if all the original shareholders were permitted to sell their shares immediately following the firm going public.

**ii) Concentration of Control:** Privately held firms are often controlled by one shareholder (typically the founder) or a shareholder group. Consequently, the minority shareholders will be at a disadvantage since they will have very little say in how the company is managed. For example, the controlling shareholder can hire family members and pay them above average wages, thus reducing the amount of earnings that would remain to the minority shareholders. This lack of control will result in a lower valuation for the shares.

While company specific factors (such as growth prospects, management quality, etc.) may result in either a higher or lower valuation, stock specific factors (such as liquidity and lack of control) will almost always lead to a lower valuation for the private company's shares.

### **5.6.b USES OF PRIVATE BUSINESS VALUATION**

There are a number of reasons why the valuation of a private company may be necessary, the most common ones of which are as follows:

#### **1. Transactions**

**a) Private Financing:** Private companies will require financing as they mature. However, investors and/or creditors will need to get a sense of how much the company is worth before determining how much they are willing to invest or lend to the company. Generally, early stage (i.e. venture) companies seek equity capital (as their earnings are too unstable to qualify for loans). This high degree of uncertainty also results in the use of less formal models in order to value the firm. Generally, private equity investors acquire minority stakes in start-ups but rely on leveraged buy outs (LBOs) in order to acquire majority stakes in larger, more mature companies.

**b) Initial Public Offering (IPO):** Before a private company issues its shares to the public for the first time, its underwriter will need to determine a fair value for the firm's shares. Commonly, the underwriter will use the market value of publicly comparable firms as a benchmark in order to estimate a fair value for the private firm's shares.

**c) Acquisitions:** The acquiring firm will need to estimate how much it should offer in order to acquire the private firm.

**d) Bankruptcy:** If the going concern value of the firm is determined to be less than its liquidation value, then it would make more sense to liquidate the firm's assets.

**e) Stock based compensation:** A valuation of the shares may be required in order to determine the fair value of the pay package being given to the firm's employees. This estimate would then serve as a tax deduction for the employer and a taxable income for the employee.

#### **2. Compliance**

**a) Financial Reporting:** Some assets, such as goodwill, will need to be periodically valued in order to determine if their values have become impaired.

**b) Tax Reporting:** A firm's tax liability will be based on the fair value of its assets at the time of the transaction. Similarly, when shareholders of privately held firms bequest their shares to their heirs (i.e. transfer ownership without actually selling the shares), the capital gains tax payable would be a function of the fair value at the time of the transfer.

### **3. Litigation**

During litigations, such as those involving shareholder disputes or the divorce of a major shareholder, the courts may require a valuation estimate for the shares of the private company in order to reach a fair settlement.

It's important to note that the valuation estimates which may be reached under each of their scenarios may be different, even though we may be looking at the same private company. For example, a valuation conducted to determine taxable capital gain on private company shares will be very different from a valuation estimate conducted on behalf of a strategic buyer who is willing to pay a premium in order to fully acquire the private company.

### **5.6.c DEFINING NORMALIZED EARNINGS**

Private companies generally issue 'reviewed' (rather than independently audited) financial statements. This leaves the reader with less assurance that the reported figures reflect economic realities. Similarly, 'compiled' financial statements are those that are issued without an accompanying auditor's opinion. In both cases, analysts will have to make adjustments to the reported figures in order to get a sense what the 'normal' results would be if the private company was run like a public corporation. Therefore, to derive normalized earnings, adjustments would need to be made for the following items:

- i) Cyclicalities: The effects of recessions and expansions.
- ii) Seasonality: Time of the year, such as holidays.
- iii) One time items: Natural disasters, such as fires and floods, may be nonrecurring.
- iv) Distortions: Related (i.e. non-arm's length) transactions that do not occur at fair rates.

To illustrate this last point, suppose that the company's founder pays himself an exuberant salary worth \$800,000 a year. If the analyst deems that a more appropriate amount is \$500,000, then the firm's projected expenses would be lowered by \$300,000 (with a corresponding increase in EBITDA). On the other hand, the owner may pay himself a dividend (rather than realize a salary expense) in order to boost reported earnings (perhaps to receive more favorable loan terms). In this case, the analyst would have to boost expenses by an amount commensurate with the function that the owner performs at the firm. Following these adjustments, the financial statements would be more in line with economic realities.

In many cases, the private company will own the real estate on which it operates its business. Since the firm's business and the real estate are driven by different economic factors, the analyst may want to separate the two and value them independently (rather than collectively as a whole). To illustrate, suppose that a family owns two businesses: ABC Properties and ABC Stores. There are ABC stores located on many of ABC Properties locations. Since the family owns both businesses, ABC stores has never had to pay rent for its ABC Properties locations. Consequently, the analyst will have to determine the market rate for rent, and then levy that as an expense for ABC Stores and as revenue to ABC Properties. The adjusted earnings for both entities may then be used to determine the fair value for each business separately.

## 5.6.d ILLUSTRATION OF NORMALIZED EARNINGS

- Private Co's are not subject to public scrutiny
  - ↳ Reported NI may be distorted.
  - ↳ Majority owner determines own salary package.
- ∴ When acquiring a Private Co., its valuation must incorporate following:

1. Normalized Earnings: what NI would be for a comparable public Co. (ie. without self-pay & perks to the owner).

2. Nature of the Acquisition:

- ↳ (i) Strategic: there's synergy  $\rightarrow [(\text{Combined NI}) > (\text{Sum of NI})]$
- ↳ (ii) Financial: no synergy  $\rightarrow [(\text{Combined NI}) = (\text{Sum of NI})]$

↳ Private Co's reported EBITDA = +10M

↳ (i) Includes +2M salary to owner (but comparable salary for similar services performed in public Co's is +1.3M).

↳ (ii) If acquired by a competitor, potential cost saving (via elimination of duplication) would be +0.9M/yr.

✗ Proforma (projected) EBITDA under the following acquisition scenarios:

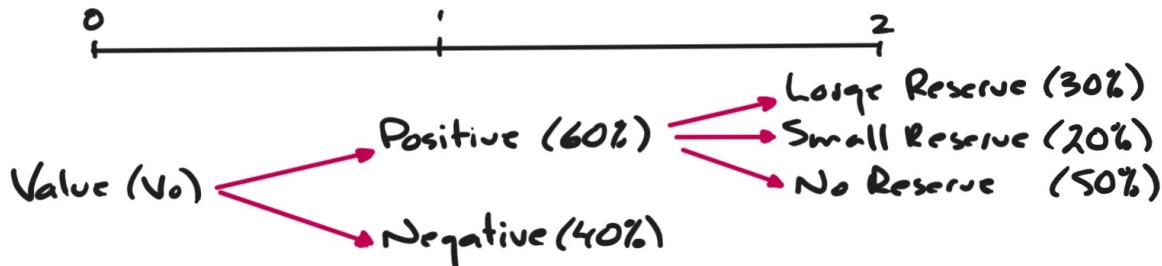
	<u>Strategic</u>	<u>Financial</u>
Reported EBITDA	+10M	+10M
Adjustments:		
↳ Family pay $\rightarrow$ Remove +2M ↳ Include +1.3M }	+0.7M	+0.7M
↳ Synergy	+0.9M	(n.a.)
	<hr/>	<hr/>
Proforma EBITDA:	+11.6M	+10.7M

↳ Used to value Private Co.

**TIP:** Private Co. will be worth more to a Strategic buyer (due to synergy) vs. a Financial buyer (ie. a conglomerate with unrelated businesses).

## 5.6.e ESTIMATION ISSUES FOR PRIVATE COMPANIES

Start-ups have to meet certain milestones along the way if they are to become successful corporations. The analyst would then have to perform scenario analysis to determine potential future outcomes and their likelihoods might be. To illustrate, suppose that a junior mining company expects the following drill results to occur over the next 2 years (with accompanying probabilities in brackets):



Let's also suppose that the discovery of a Large Reserve would result in a FCFF of \$100M in Year 2 with a subsequent perpetual growth of 6% and a Small Reserve discovery would result in a FCFF of \$36M in Year 2 with a subsequent perpetual growth rate of 4%. The firm has a WACC of 13%. The process to valuing this junior mining company today would be as follows:

**Step 1.** Compute the PV for each scenario as of the end of Year 2:

$$V_2 = [ \text{FCFF}_3 / (\text{WACC} - g) ]$$

- i) Large Reserve:  $V_2 = [100(1+.06) / (.13 - .06)] = \$1,514\text{M}$
- ii) Small Reserve:  $V_2 = [36(1+.04) / (.13 - .04)] = \$416\text{M}$
- iii) No Reserve:  $V_2 = 0$

**Step 2.** Probability weighted  $V_2 = [(0.30)(\$1,514\text{M}) + (0.20)(\$416\text{M}) + (0.50)(0)] = \$537.4\text{M}$

**Step 3.**  $V_1$  (Positive Scenario) =  $[\$537.4\text{M} / (1 + .13)] = \$475.6\text{M}$

**Step 4.** Probability weighted  $V_1 = [(0.60)(\$475.6\text{M}) + (0.40)(0)] = \$285.3\text{M}$

**Step 5.**  $V_0 = [\$280.4\text{M} / (1 + .13)] = \$252.5\text{M}$

## 5.6.f ESTIMATING THE REQUIRED RETURN FOR PRIVATE COMPANIES

The assumptions underlying most models do not necessarily hold for private companies. Some of the unique features that need to be considered when estimating the discount rate used for valuation are as follows:

- i) Private companies tend to be smaller and less diversified in their operations. This results in greater risk (and therefore lower valuation). One way to estimate this risk premium is by observing the excess return publicly traded small cap stocks have yielded over their larger counterparts. For example, if in the past 20 years, small caps have yielded 3% more than large caps, then the analyst may incorporate this additional 3% in the discount rate used to value private companies. However, caution may be warranted as the economic drivers of the private company may be different than those influencing the returns on a broad group of small cap stocks.

- ii) Private companies are not required to disclose audited financial statements. This added uncertainty would lead investors to require a higher return.
- iii) Private companies may not generate sufficient cash flows and/or collateral in order to qualify for debt, or if they did issue debt, it would be at a higher cost. As a result, their capital structure tends to have less debt and more equity. Due to this lower degree of financial leverage, holding everything else constant, private companies should exhibit lower betas (i.e. exposure to systemic risks) than their public counterparts. Nevertheless, since equity capital is more expensive than debt, a private company's WACC may be much higher than its publicly traded counterparts.

- iv) When valuing a private company, we generally use its own WACC to discount future cash flows. The firm's WACC would in turn embed its unique capital structure and cost of capital. However, if the firm is being acquired by a third party, then the acquirer may use its WACC and project post-merger cash flows in order to value the private firm. In effect, the acquirer is modelling how much the target firm would be worth if it was run by the acquirer, using the acquirer's own capital structure and capital costs. Since the cash flow projection would also include all synergies derived from the acquisition, the resulting valuation for the private firm would be much higher (relative to its stand-alone pre-merger value).

A good place to start when trying to derive an estimate for the discount rate in order to value a private company is CAPM:

$$R_i = R_f + \beta(R_m - R_f)$$

The issue with CAPM however is that it only measures the firm's  $\beta$  (i.e. its sensitivity to broader, systematic, non-diversifiable factors). In effect, CAPM assumes that all company specific risks (such as gains or losses in market share, etc.) can be eliminated by holding a diversified portfolio. However, most investors in private companies often have the majority of their wealth tied up in the firm, thus leaving them exposed to company specific risk factors. As a result, these investors would require returns that are much higher than what CAPM might stipulate. Following below are some of the ways in which we may incorporate these higher risks:

### 1. Expanded CAPM:

Expanded CAPM starts with CAPM as the base, but then adds two additional risk premiums:

$$R_i = R_f + \beta(R_m - R_f) + (\text{Small Cap Premium}) + (\text{Company Specific Premium})$$

- i) Small Cap Premium: compensates investors for the additional risks that are inherent with smaller firms, such as being more susceptible to financial distress, reduced access to capital, etc.
- ii) Company Specific Premium: compensates investors for the firm's dependency (and therefore risk exposure) to key personnel, pending litigation, etc.

### 2. Build-up Method:

$$R_i = R_f + (R_m - R_f) + (\text{Industry Premium}) + (\text{Small Cap Premium}) + (\text{Company Specific Premium})$$

This approach replaces  $\beta$  with Industry premium. The rationale is that most of the firm's  $\beta$  (i.e. sensitivity to the broader economy) can be explained by the industry in which the firm operates in. For example, firms that operate in cyclical industries will have higher  $\beta$ s. The issue with  $\beta$  however is that it may only be observed for publicly traded securities. Therefore, if there are no publicly traded comparables (and thus  $\beta$  is not observable), the analyst may simply assume that the  $\beta$  is equal to 1, but then add a premium to account for firm's industry.

## 5.6.g PROJECT BETA

Beta ( $\beta$ ): sensitivity of stock Return ( $R_i$ ) to mkt Return ( $R_m$ )  
 Once we estimate  $\beta_i$  (using historical observations)  
 ↳ CAPM:  $[r_e = R_f + \beta_i(R_m - R_f)]$

**Issue:** If the firm (or project) is not publicly traded, then we can't observe  $R_i$  and ∴ can't  $\rightarrow \beta \rightarrow r_e \rightarrow \text{WACC}$ .

**Solution:** Find a Publicly traded Comparable Co. and use its  $\beta$  as the benchmark, after adjusting for differences in:

(i) Leverage } between Private Co. & Public Comparable  
 (ii) Taxation }

**Framework:**

From Balance Sheet: [Assets = Debt + Equity]  
 ↳  $[\beta_A = (w_D \beta_D) + (w_E \beta_E)]$

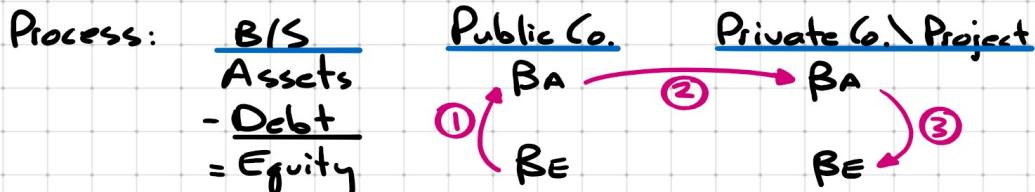
**NOTE:**

(i) Sensitivity of Debt to mkt ( $\beta_D$ ) = 0

(ii)  $w_E = \left[ \frac{E}{A} \right] = \left[ \frac{E}{D+E} \right] \rightarrow \left[ \frac{E}{\underbrace{D(1-t)+E}_{AIT}} \right]$ : Use A/T as debt cost are tax deductible

∴ From:  $\beta_A = w_D \beta_D + w_E \beta_E$

$$\hookrightarrow \beta_A = \left[ \frac{E}{D(1-t)+E} \right] \beta_E$$



Step 1. Public Co:  $\beta_E \rightarrow \beta_A$  (ie. remove effects of Tax\Leverage)

Step 2.  $\beta_A(\text{Public}) = \beta_A(\text{Private})$

Logic: If the 2 Cos are in the same business, then their risk (b/f Tax\Leverage) should be the same.

Step 3. Private Co:  $\beta_A \rightarrow \beta_E$  (ie. includes effects of Tax\Leverage)

<u>Ex.</u>	<u>Company</u>	<u>Tax</u>	<u>Debt/Equity</u>	<u>BE</u>
	Public Co.	40%	3	1.7
	Private Co.	25%	2	(?)

Step 1. Public Co:  $\beta_E \rightarrow \beta_A$

$$\beta_A = \left[ \frac{E}{D(1-t) + E} \right] \beta_E$$

$$\beta_A = \left[ \frac{1}{2(1-0.4) + 1} \right] (1.7)$$

$$\beta_A = 0.607$$

$$\frac{D}{E} = \frac{3}{1}$$

Step 2.  $\beta_A$  (public) =  $\beta_A$  (private) = 0.607

Step 3. Private Co:  $\beta_A \rightarrow \beta_E$

$$\beta_A = \left[ \frac{E}{D(1-t) + E} \right] \beta_E$$

$$0.607 = \left[ \frac{1}{2(1-0.25) + 1} \right] \beta_E$$

$$\therefore \beta_E = 1.5175$$

$$\frac{D}{E} = \frac{2}{1}$$

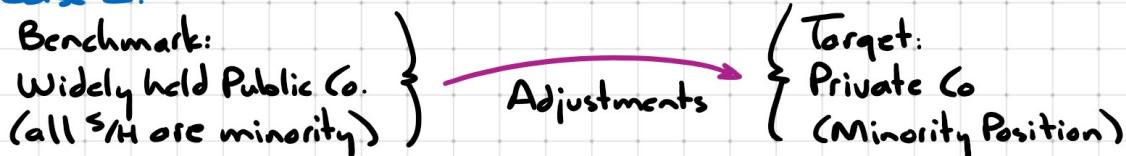
→ CAPM →  $r_e$  → WACC

#### 5.6.h VALUATION ADJUSTMENT FOR CONTROL & MARKETABILITY

Framework:  $V(\text{Target}) = V(\text{Benchmark}) \pm \text{Adjustments}$

**TIP:** The Adjustments will be dependent upon which Benchmark is used.

**Case I.**



Adjustments to Benchmark:

1. Discount for Lack of Marketability (DLOM): Private Co. does not trade.
2. Discount for Lack of Control (DLOC)
  - Even though both Bench & Target are minority positions,
  - ↳ Bench: all S/H are minority
  - ↳ Target: only You are minority (∴ disadvantage)

**Ex.** Suppose there are 100 c/s 0%

You vs. Rest of S/H

(i) 1 c/s vs. 99 S/H with 1 c/s each (i.e. widely held)

(ii) 1 c/s vs. 1 S/H with 99 c/s (i.e. other S/H controls Co.)

∴ You would pay less for the c/s in Scenario (ii)

## Case II.

Benchmark:

Widely held Public Co.  
(all S/H are minority)

Adjustments

Target:  
Private Co  
(Control Position)

Adjustments to Benchmark:

1. Discount for Lack of Marketability (OLOM): Low to Zero

↳ If want to retain control, then not interested in selling the c/s.

**TIP:** Selling the c/s would mean losing control.

2. Control: Add Premium

↳ Bench does not have control priced in, but Private c/s is control position

## Summary:

Private Co. Valuation    Adjustments to Bench (Public P c/s)

Marketability

Control

1. Strategic Acquisition:    (n.a.)    (Large Premium)

2. Financial Acquisition:    (n.a.)    (Low Premium)

3. Minority Position:  
(IPO expected soon)    (Low Disc.)    (Low Disc.)

4. Minority Position:  
(IPO not expected)    (Large Disc.)    (Large Disc.)

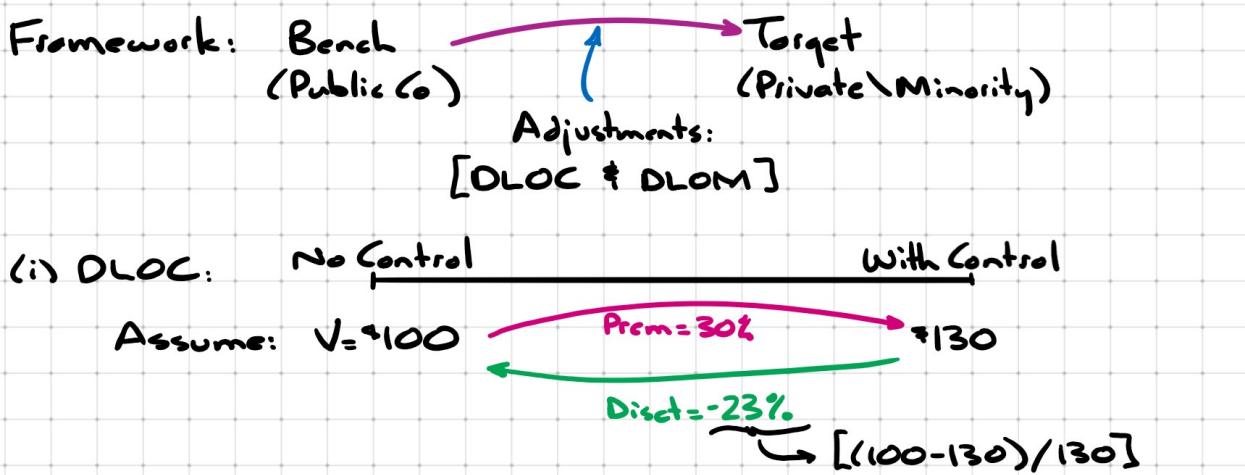
↑ Highest Valuation  
↓ Lowest Valuation

**Ex.** Bench: Widely held Public Co.

Target: Minority Position in Private Co.

. Suppose historically ↗ Control Premium = 30%

Marketability Discount = 20%



(ii) DLOM = 20% (no adjustment required)

TIP: Assume  $V(\text{Bench}) = \$1$

$$\therefore V(\text{Private}) = \left[ \underbrace{\$1}_{\text{Bench}} \underbrace{(1 - .23)}_{\text{DLOC}} \underbrace{(1 - .20)}_{\text{DLOM}} \right] = \$0.616$$

$$\therefore \text{Total Discount: } \frac{\$1}{\text{Bench}} \rightarrow \frac{\$0.616}{\text{Target}} : -38.4\%$$

## 5.6.i FACTORS AFFECTING CONTROL AND MARKETABILITY

The disadvantages associated with lacking control in a privately held firm include the following:

- i) The inability to influence the Board.
- ii) Self-dealings between the firm and its controlling shareholders. For example, the controlling shareholders may charge the firm exuberant consulting fees or employ family members at above market rates in order to transfer wealth at the expense of the minority shareholders.

The magnitude of the discount for lack of control (DLOC) will depend on the liquidity prospects for the firm. For instance, if it is likely that the firm will be sold to another company or issue an IPO itself, then the controlling group is likely to run the firm similarly to a publicly listed company and therefore the DLOC applied by the minority shareholders will be low. On the other hand, if liquidity prospects are low and/or the firm does not regularly pay dividends, then the minority shareholders will be at a real disadvantage and thus DLOC will be quite high (which in turn will result in lower valuations).

The DLOC will also depend on the benchmark to which it is applied to. For instance, if the forecasted cash flows incorporate all synergies and the model assumes that the capital structure will be at its optimum (and thus WACC at a minimum), then the resulting valuation would reflect a control perspective. As a result, to find the value of a minority interest, the DLOC applied to this benchmark valuation would be quite high. On the other hand, if the model does not incorporate synergies and/or does not assume an optimal capital structure, then the resulting valuation would not be from a control perspective and therefore the DLOC adjustment to the benchmark would not be as high.

To illustrate these adjustments, suppose that Mega Co. is a privately held company. If the analyst projects the value from the perspective of a strategic acquirer, then each share might be worth \$100. On the other hand, if Mega Co. is valued from the perspective of a widely held company (i.e. with no controlling group), then the shares might only be estimated to be worth \$70.

Consequently, if we were valuing how much each Mega Co. share would be worth from a minority shareholder point of view, the DLOC applied to the \$100 (control valuation) would be much greater than the DLOC applied to the \$70 (non-control valuation). Note that a DLOC would still apply to the \$70 because even though the benchmark reflects a non-control position, the non-control perspective from a private company position would be far more disadvantageous. Publicly listed companies are run more efficiently and hence the lack of control by minority shareholders is not viewed as big a disadvantage as that for shareholder of private firms.

The other adjustment that's applied to the shares of private company is a discount for lack of marketability (DLOM). Investors must be compensated for the fact that they may not be able to re-sell their shares in a timely manner. Note how the discounts applied to the firm's shares are not related to its earnings. Even if earnings were the same, the shares of the private firm would still trade at a discount to its public counterpart.

The discounts are instead influenced by the liquidity prospects for the firm. For example, if it is likely that the firm will soon be sold or taken public, then investors will not require a high DLOM. On the other hand, if the firm is expected to remain private for the foreseeable future, then the minority shareholders will apply a large DLOM, even while holding earnings constant. There are a few ways in which DLOM may be estimated:

1. The difference in price between benchmark comparable firms' regular shares and their restricted shares. Holders of restricted shares are prohibited from selling their shares. Therefore, the only factor accounting for the difference between the two classes of shares is marketability (i.e. liquidity). To illustrate, suppose that the shares of a publicly listed company are currently trading at \$100. Recently, an executive at the firm was able to sell her restricted shares to a private group for \$85. Consequently, we may conclude that the private group paid a \$15 discount for the shares because they are not marketable.
2. The difference between IPO price and the price at which the shares may have traded just prior to the IPO. To illustrate, suppose that a comparable firm recently issued an IPO at \$24. If that same firm had sold its shares to minority shareholders a year earlier at \$20, then we may estimate that the DLOM is  $[(20-24)/24]$ . In other words, the shares sold before the IPO were not as marketable and thus investors paid 16.7% less for them (relative to their fair value).

When using the IPO approach to estimate DLOM, the analyst must take into account the fact that as the company matures (and thus risks diminish), the DLOM will get smaller. For example, the DLOM incorporated into the share price a month prior to an IPO would be far less than the DLOM applied to the share price 5 years prior to the IPO. With the former, the company is mature and thus less risky, while with the latter, the company's prospects are highly uncertain and thus the DLOM would be high.

3. Perhaps a more objective way to estimate DLOM is by looking at the premium payable on a put option. The logic is that a put option gives the investor the right to sell, which would be the equivalent to being able to sell the privately held shares. To illustrate, suppose that a publicly comparable stock is currently trading at \$80 and that the investor has a 9-month horizon (i.e. she would like to be able to sell her shares in 9 months' time). The risk free interest rate is currently 4%. The steps to estimating DLOM would be as follows:

**Step i)** Estimate what the strike price would be for an at-the-money put maturing in 9 months (i.e. 0.75 years), as that is when she plans to sell her shares. Since the stock is currently trading at \$80, its forward price would therefore be  $\$80e^{(0.75 \times .04)}$ . For the put option to be trading at-the-money at its expiry, the strike price would have to be equal to \$82.44 (its forward price).

**Step ii)** Using an option pricing model (such as Black-Scholes), the investor will then enter the comparable stock's current price (\$80), strike (\$82.44), horizon (0.75yrs), Rf(4%), and an assumed rate of volatility in order to derive a price for the put option, which we will assume to be \$12.80.

**Step iii)** DLOM = [(Put Premium) / (Current Stock Price)] = (\$12.80 / \$80) = 16%.

There are a number of issues associated with using this approach to estimating DLOM:

1. The estimate for DLOM used the volatility that was implied for the comparable stock, which may be very different from that for the underlying private company.
2. The DLOM was based on a specific holding period, in our case, only 9-months. However, privately held shares may remain illiquid indefinitely.
3. The put premium reflects an asymmetric payoff (i.e. potential upside is much greater than potential downside). Therefore, a large part of the premium may have nothing to do with liquidity at all.
4. Discounts applied to privately held shares may include more than just lack of control and/or marketability. For example, if the fate of firm is dependent on just a few key employees and/or the shares have limited voting rights, then further discounts may be warranted.

#### 5.6.j APPROACHES TO PRIVATE COMPANY VALUATION

There are 3 main approaches to Valuation:

##### I. Income Approach

Logic:  $V_{CO} = [PV \text{ of Future Income}]$

Methods:

- (i) Free Cash Flow (FCF)
- (ii) Capitalized CF
- (iii) Excess Earnings

##### II. Market (Comparable) Approach

Logic:  $V_{CO} = [(Current \text{ Income}) \times (Multiple)]$

Benchmark Multiples:

- (i) Guideline Public Co's.
- (ii) Guideline Transaction.
- (iii) Prior Transaction.

##### III. Asset Based

Logic: 
$$\begin{aligned} & \text{Assets} \\ & - \underline{\text{Liabilities}} \\ & = \text{Equity} \end{aligned} \quad \left. \right\} \text{Adjusted for Fair Value}$$

### NOTE:

1. Valuation approach depends on the nature of the Co.

→ (i) Early Stage Co's future earning is uncertain & few comparables exist.  $\therefore$  Use Asset Based approach.

→ (ii) For established/mature Co's, it's easier to base their valuation on Income and/or Comparables.

2. Income based models only capture the value of assets that generate F<sub>t</sub> → (∴ they exclude the value of non-operating assets, such as cash or idle PPE). ∴ The value for these assets added manually:

$$V_{\text{Total}} = \underbrace{V_{\text{operating assets}}}_{\text{via Income Model}} + \underbrace{V_{\text{non-operating assets}}}_{\text{Add Manually}}$$

### 5.6.k VALUATION USING THE INCOME APPROACH

There are 3 variations of the Income Approach

#### I. FCF Method:

$$V_{\text{Co}} = \sum \frac{FCFF_t}{(1+wACC)^t}$$

#### II. Capitalized CF

$$\text{From: } [P_0 = \frac{CF_1}{r-q}] \rightarrow [P_0 = CF_1 \times \underbrace{\left(\frac{1}{r-q}\right)}_{\text{Capitalization Factor}}]$$

e.g.  $FCFE_0$   $\rightarrow$  Reported = ₹5M

Normalized = ₹7M

$$\cdot q(FCFE) = 6\%, r_c = 11\%, wACC = 9\%, V_{\text{Co,alt}} = ₹30M$$

$$\text{Part 1. } V_E = \left[ \frac{FCFE_1}{r-q} \right] = \left[ \frac{7M(1.06)}{.11 - .06} \right] = ₹148.4M$$

$$\text{Part 2. } V_{\text{Co}} = [V_0 + V_E] = [₹30M + ₹148.4M] = ₹178.4M$$

### III. Excess Earnings Method

$$V_{CO} = [V_{(WC)} + V_{(FA)} + V_{(IA)}]$$

where

- $V_{(WC)}$  = Working Capital  $\rightarrow$  ( $A/R + \text{Inventory} - A/P$ ).
- $V_{(FA)}$  = Fixed Assets  $\rightarrow$  Property, Plant, Equipment (PPE).
- $V_{(IA)}$  = Intangible Assets  $\rightarrow$  Reflects Co's excess earnings.

Process:

- $\Delta$  Excess NI =  $[(\text{Total NI}) - (\text{Earnings req'd on } WC + FA)]$
- $\Delta$   $V_{(IA)}$  = PV of Excess NI
- $\Delta$   $V_{CO} = [V_{(WC)} + V_{(FA)} + V_{(IA)}]$

Ex. WC (ir. Inventory) =  $\$5M$ ,  $r_{WC} = 6\%$

FA  $\begin{cases} \text{Book (Historic) Value} = \$20M \\ \text{Current Fair Value} = \$24M \end{cases}$   $\} r_{(FA)} = 10\%$

Normalized NI (for the year just ended) =  $\$4M$

Residual Earnings growth rate =  $7\%$

$r_{(IA)} = 15\% \rightarrow IA$  more uncertain  $\rightarrow$  Require a higher return

WACC =  $11\%$

Step 1. Excess NI =  $[(\text{Total NI}) - (\text{Earnings req'd on } WC + FA)]$

$$\text{Excess NI} = [(\$4M) - (6\% \text{ on } \$5M) - (10\% \text{ on } \$24M)]$$

$$\text{Excess NI} = [ \underbrace{(\$4M)}_{\text{Total}} - \underbrace{(.06 \cdot \$5M)}_{WC} - \underbrace{(.10 \cdot \$24M)}_{FA} ] = \underbrace{\$1.3M}_{IA}$$

$$\text{Step 2. } V_{(IA)} = \left[ \frac{CF_1}{r-g} \right] = \left[ \frac{\$1.3M(1+0.07)}{0.15 - 0.07} \right] = \$17.3875M$$

Step 3.  $V_{CO} = [V_{(WC)} + V_{(FA)} + V_{(IA)}]$

$$V_{CO} = [\$5M + \$24M + \$17.3875M] = \$46.3875M$$

**Caution:** The  $\$46.3875M$  is the value of "Invested Capital" and not  $V_{CO}$ .

$\hookrightarrow$  The model incorporates  $V_{(WC)} = [\text{Current Asset} - (A/P)]$

$\hookrightarrow \therefore \text{Current Assets} = V_{(WC)} + (A/P)$

$\hookrightarrow \therefore V_{CO} = \underbrace{[V_{(WC)} + V_{(FA)} + V_{(IA)}]}_{\text{Invested Capital}} + (A/P)$

**TIP:**  $A/P$  (ie vendor credit) is not considered as a capital investment into the firm.

## 5.6.L ISSUES ASSOCIATED WITH THE INCOME APPROACH

1. The standard approach to estimating FCFF as follows:

$$\text{FCFF} = \text{NI} + \text{Dep} - \Delta\text{WC} - \text{CAPX} + \text{Int}(1-t)$$

By consolidating NI and Int(1-t) into EBIT(1-t) and embedding Depreciation as part of CAPX, so that we are only looking at net CAPX, the above equation may be rewritten as:

$$\text{FCFF} = \text{EBIT}(1-t) - \Delta\text{WC} - \text{CAPX}, \text{ or}$$

$$\text{FCFF} = \text{EBIT}(1-t) - [\Delta\text{WC} + \text{CAPX}]$$

The term  $[\Delta\text{WC} + \text{CAPX}]$  represents reinvestments made back into the firm, such as the purchase of new inventory and/or equipment. Therefore,

$$\text{Reinvestment Rate (RIR)} = [\Delta\text{WC} + \text{CAPX}]$$

We may also estimate RIR as:  $[(\text{FCFF Growth}) / (\text{WACC})]$ . To illustrate, suppose that the firm's WACC is 10%. Therefore, if the firm made no reinvestments, its FCFF would remain constant each year (as the firm would not be expanding). However, if the FCFF was growing at a rate of 6%, it would imply that only 40% of earnings were being distributed to capital providers with the remaining 60% being reinvested back into the firm:

$$\text{RIR} = [(\text{FCFF Growth}) / (\text{WACC})] = [6\% / 10\%] = 60\%$$

Therefore, we may re-write the FCFF expression as follows:

$$\text{From: } \text{FCFF} = \text{EBIT}(1-t) - [\Delta\text{WC} + \text{CAPX}]$$

$$\text{To: } \text{FCFF} = \text{EBIT}(1-t) \times [1 - \text{RIR}]$$

As more is reinvested back into the firm ( $\text{RIR} \uparrow$ ), the less FCFF that would be available in the current period for distribution to capital providers.

2. Once the FCFF has been estimated, we may use the capitalization method in order to estimate the firm's overall value:

$$V_{(\text{Company})} = [\text{FCFF} / (\text{WACC} - g)]$$

This approach assumes that WACC will remain constant indefinitely, which would in turn imply that the firm's capital costs, and its capital structure (i.e. the mix between debt and equity) will remain constant as well. In reality however, these variables are constantly changing.

3. The valuation of debt issued by private companies will also require discretion. If the debt represents a small fraction of the firm's capital structure, then we may simply use the debt's face value (i.e. principal amount) as a proxy for its market value. On the other hand, if there are publicly comparable firms available, we may use the yields from their debt as a proxy for valuing the debt of the private firm.

4. Once the value of the firm and its debt have been estimated, the equity (i.e. residual) value may be derived as follows:

$$V_{(\text{Equity})} = [ V_{(\text{Company})} - V_{(\text{Debt})} ]$$

Alternatively, we may just value equity directly by assuming that FCFE will grow at a constant rate:

$$V_{(\text{Equity})} = [ \text{FCFE} / (\text{Re} - g) ]$$

Where  $(\text{Re} - g)$  is often referred to as the 'cap rate'.

5. The Excess Earnings Method (EEM) is impractical in use because it requires the estimation of three sets of returns, one for working capital, one for fixed assets, and another for intangible assets. All of these required return estimates are very subjective. Instead, EEM is more commonly used to estimate the value of the firm's Intangible Assets. Any part of earnings that is not explained by tangible assets, would be attributed to intangibles (such as brand, customer satisfaction, skilled workers, etc.).

### **5.6.m MARKET (COMPARABLE) APPROACH TO VALUATION**

According to the market based approach, the value for a privately held company may be derived as follows:

$$\text{Target's Value} = [ (\text{Target's Income}) \times (\text{Benchmark Multiple}) ]$$

Since the benchmark multiple is derived from actual transactions, this method is preferred over the income and asset based approaches to valuing private companies. In general, there are 3 benchmarks which may be used in order to estimate a value for a private company.

#### **1. Guideline Public Companies**

With this approach, the multiple is extracted from publicly traded companies that are somewhat comparable to the private company in terms of risk and growth. Ideally, the public comparable should be in the same industry, be similar in size, leverage, and in the same stage of their life cycle. The analyst would then adjust the public comparable multiple to reflect for differences between the private company and its publicly traded comparables.

For instance, if the private company is deemed to be riskier (perhaps due to its smaller size) or its growth prospects are not as high than its public counterparts, then the multiple for the private company would be adjusted lower. Therefore, holding everything else constant, the value for the private company would be less than its public counterparts. Furthermore, if the private company operates in multiple business lines, then it may be necessary to form a composite benchmark multiple that encompasses public comparables from all the businesses in which the private company operates in.

The primary advantage with the guideline public companies approach is that multiples are readily observable. The disadvantage however is that the adjustments made to this benchmark (in order to reflect the differences between the private company and its public comparables) is very subjective. Furthermore, since the publicly traded companies are widely held, the resulting benchmark would reflect valuation from the point of view of minority shareholders. However, if the private company is being valued for the purpose of being taken over, then a premium must be added for control, which in turn would be dependent upon the motivation for the takeover.

For instance, in the case of a 'strategic' acquisition (i.e. where there will be synergy from acquiring the private company), the acquirer would be willing to pay more in order to seize control of the target. On the other hand, in the case of a 'financial' acquisition (i.e. where there is no synergy), the premium paid for control would be far less.

If the industry is currently undergoing a wave of consolidations (i.e. competitors are acquiring each other), then it is quite possible that the multiple for the remaining publicly traded firms has already begun to reflect a premium for the likelihood that they too will be taken over soon. Consequently, the valuation derived for the private company using these publicly available multiples may already include some control premium, thus reducing (or perhaps eliminating) the amount of control premium that would need to be subsequently added to the valuation.

When using the guideline public companies approach to value the stock for a private company, the valuation framework may be written as follows:

**From:** Target's Value = [(Target's Income) x (Benchmark Multiple)]

**To:** Target's Equity Value = [(Target's EPS) x (Benchmark P/E)]

However, if the firm's capital structure is constantly changing and/or is not comparable with its peers, then the analyst may want to value the enterprise as a whole (which would be before the effects of leverage):

**From:** Target's Value = [(Target's Income) x (Benchmark Multiple)]

**To:** Target's Enterprise Value = [(Target's EBITDA) x (Benchmark EV/EBITDA)]

## **2. The Guideline Transaction Method**

With this approach, the benchmark multiple is extracted from the prices that were paid for recent takeover (acquisition) transactions. Consequently, the multiple would already incorporate a control premium. Therefore, the resulting valuation for the private company would be from the point of view of an investor who is acquiring a controlling stake.

The advantage of this approach is that a separate control premium would not have to be estimated in order to form a valuation for the firm. Nevertheless, there are a number of issues associated with the guideline transaction method to valuation:

- i) The control premium paid for the guideline companies would have largely been dependent upon the motivation for the deal (with higher multiples being paid for strategic acquisitions). Therefore, using a benchmark that involved strategic deals to value a financial acquisition would result in an overestimation in value for the target.
- ii) The price paid through stock based acquisitions are less reliable in measuring control premium as the acquirer may be motivated to issue shares (rather than pay cash) if it thinks that its stock is overvalued. Therefore, if the price offered through a stock deal is not as objective as a cash offer, then the resulting valuation would be biased as well.
- iii) The price paid for the benchmark transactions may not be easily determinable. For instance, with some transactions, the ultimate acquisition price paid may be dependent upon the target company meeting some future thresholds (such as earnings targets).
- iv) The transaction data may be outdated. For instance, if the last acquisition in the industry occurred years ago, then it would be faulty to apply that same historic multiple for a current acquisition target (as much could have changed in between these transactions).

## **3. Prior Transaction Method**

With this approach, the benchmark multiple is derived from the prices that were paid for the target firm's own shares in the past. The benchmark multiple would then be dependent upon the nature of the prior trades in the firm's own stock. For instance, if the benchmark represents multiples that were paid in the past for minority stakes in the firm, then the resulting valuation would not incorporate any control premium. Consequently, if currently, a minority stake is being acquired in the firm, then an adjustment to the benchmark valuation for control premium would not be required. On the other hand, if a controlling stake is being acquired, then the benchmark valuation would have to be adjusted upward by an amount equal to the control premium.

Some of the issues associated with using prior transaction multiples for a benchmark are as follows:

- i) Transactions in the private firm's shares may either be infrequent or dated. In either case, the benchmark multiple would become less reliable.
- ii) Even if historic trading data for the private company's shares were available, they may no longer be reflective of the current circumstances for the firm. For example, if the firm's growth rate has significantly slowed and/or risks have increased since the last transaction, then using the prior transaction multiplier approach would overestimate the current value of the firm (as conditions now would be less favorable than before).