Intrinsic (DCF) Valuation

Notes:
1) Treat Operating leases as Debt
2) Apply premium to superior voting class for Dual class stocks (5-10%)
3) Three methods for dealing with Equity compensation (Options and RSUs)
   1: Treasury method (include value received from exercise)
   2: Treasury with twist (use proceeds to buyback stock)
   3: Option Value (Value options directly using Black Scholes, add to value)
4) Address any Cross Holdings
5) Leave cash out of valuation until the end. (i.e. no effect on cash flows)
6) T_C: Marginal Tax Rate (21-25%)
7) Check Model for Internal Consistency

Estimating Cash Flows/Growth:
1) Start with Historical Values and update with
   - Economic, management, analyst outlook
   - Your own research
2) Growth requires Investment and Return

$$Growth = Return\ on\ Capital * Reinvestment\ Rate$$

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Forecast Window	Terminal Window (Stable Growth)
(Typically 5-10 years)	Estimate Terminal Value
Project Expected Unlevered Cash Flows (FCFF)	1) Perpetuity Growth
=EBIT(1-T)+DA-Investments	2) Exit Multiple

PV of Unlevered Cash flow =NPV(WACC, Forecast Window Cash Flows)

PV of Terminal Value $= \frac{Terminal\ Value}{(1+WACC)^{Forecast\ Window\ Length}}$

1) $TV = \frac{FCFF_{Last\ year\ of\ Forecast\ Window} * (1+g)}{(WACC-g)}$

2) $TV = EBITDA\ Multiple * EBITDA_{Last\ year\ of\ Forecast\ Window}$

g: Terminal Growth rate (Range for g: Risk free rate to Overall growth rate of economy)

EBITDA Multiple: Use industry average from Damodaran Website

$Enterprise\ Value =$ PV of Unlevered Cash flow + PV of Terminal Value

$$Equity\ Value = Enterprise\ Value - (Net\ Debt + PS + NCI)$$

$$Equity\ Value\ per\ Share = \frac{Equity\ Value}{Diluted\ Share\ Outstanding}$$

Bottom Up Beta
1) Select a peer group (similar in business risk)
2) Gather Data on Equity, Debt, and Equity Beta
3) De-Lever Equity Betas: $Asset\ Beta_i = \frac{Equity\ Beta_i}{(1+\frac{D_i}{E_i}(1-T_C))}$
4) Average Asset Betas
5) Re-Lever Average Asset Beta (using current D/E of firm)

$$Equity\ Beta = Asset\ Beta * (1 + \frac{D}{E}(1 - T_C))$$

Estimating Discount rate: Weighted Average Cost of Capital (WACC)

$$WACC = W_E R_E + W_D R_D (1 - T_c)$$

Capital Structure Weights: Use the market value of equity and the book value of debt

$$W_E = \frac{Share\ Price * Shares\ Outstanding}{V}\ W_D = \frac{Book\ Value\ of\ Debt}{V}$$

Cost of Equity: Estimating using Capital Asset Pricing Model (CAPM): $R_e = R_F + \beta * Equity\ Risk\ Premium$
1) Pure Time Value of Money: Risk free rate is estimated using the 10-Year US Treasury Bond
2) Amount of Systematic Risk: Beta (Use the Bottom-Up Beta Approach)
3) Reward for Systematic Risk: Implied ERP (From Damodaran)

Cost of Debt: 1) Yield (Use YTM on existing bonds with approximately 10 years to maturity)
2) Default Spread approach: $R_D = R_F + Default\ Spread$
Default Spread: Use Damodaran table and either Bond Rating **or** Interest Coverage Ratio