| Concepts | Description |
|---|---|
| | **Free cash flow valuation** |
| Free cash flow to firm (FCFF) / Free cash flow to equity (FCFE) | FCFF / FCFE<br>Calculate: Value of firm / Equity value (= Firm value - MV of debt)<br>Discounted rate: WACC / Required return on equity |
| Ownership perspective of FCF | Ownership perspective :<br>- Control perspectove : acquirer who can change firm's dividend policy; or<br>- Minority shareholders that is in-play<br>Application of FCF :<br>- Firms with low to no cash dividend<br>- Dividend are paid at discretion of BOD → might not align with firm's LT profitability<br>- Firm is viewed as an acquisition target<br>- When FCF is more related to LT profitability than dividends |
| FCFF formula | 1. From NI: FCFF = NI + NCC + i × (1-t) - FCInv - WCInv<br>2. From CFO: FCFF = (NI + NCC - WCInv) + i × (1-t) - FCInv = CFO + i × (1-t) - FCInv<br>3. From EBIT: FCFF = EBIT × (1-t) + NCC - FCInv - WCInv<br>4. From EBITDA: FCFF = EBITDA × (1-t) - Depreciation × t - FCInv - WCInv |
| FCFE formula | FCFE = FCFF - i × (1-t) + Net borrowing<br>In which :<br>Net borrowing = Total proceed of LT and ST debt - Total payment of LT and ST debt |
| Approaches to forecast future FCFF / FCFE | 1. Approach 1 : Calculate historical FCF, and applied growth rate<br>2. Approach 2 : Forecast underlying components of FCFm and calculate FCF of each year separately (assume that firm maintain target debt-to-asset ratio) |
| Impact of dividend, share repurchases, share issues and change in leverage on FCFF / FCFE | - Dividend, share repurchases and share issues : no effect on FCFF anf FCFE<br>- Change in leverage : minor impact on FCFE ; No impact on FCFF |
| Use of Net income and EBITDA as proxies for FCFF | - NI is a poor proxy for FCFF, because NI includes NCC; and ignore CF that do not appear on PL (FCInv and WCInv)<br>- EBITDA is a poor proxy for FCFF, because EBITDA ignore CF that do not appear on PL (FCInv and WCInv) |
| Sensitivity analysis in FCFF and FCFE valuations | Sensitivity analysis : how sensitive a valuation results are to changes in each input → to asses the importance of various forecasting errors<br>2 sources of errors in valuation analysis :<br>- Estimating future growth in FCFF and FCFE : depend on firm's future profitability (which depends on sales growth, change in profit margin, position in the life cycle, competitive strategy and overall profitability of the industry)<br>- The chosen base years for FCFF / FCFE growth forecast |
| Approaches for calculating terminal value | 1. Single stage model<br>2. Multiple approach (P/E ratio) |

| Concepts | Description |
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| | **Private Company Valuation** |
| Private company factors | 1. Company-specific factors<br>- Lifecycle : Less mature than public firms (sometimes mature / bankruptcy near liquidation)<br>- Size :<br>+ Less capital, fewer assets, fewer employees than public firms → riskier → value using higher risk premium and required return<br>+ Lack of access to public equity markets → contrain growth<br>- Quality and depth of management : may not attract quality management → reduce depth of management, slow growth and higher risk<br>- Management / shareholder overlap : management has substantia ownership position → less control by external shareholders ; firm may be able to take longer-term perspective<br>- Quality of financial and other information : less available information than public firm → higher uncertainty, higher risk, lower value<br>- Tax : More concern with tax than public firms, due to the impact on owners/managers<br><br>2. Stock-specific factors<br>- Liquidity : Fewer potential owners, less liquid than public firm → liquidity discount<br>- Restriction on marketability : Often have agreements that prevent selling → reducing marketability<br>- Concentration of control : Control is focused in few shareholders → higher benefits for owners/managers at the expense of minority shareholders |
| Uses of private business valuation | 1. Transaction-related valuations : when selling / financing a firm<br>- Venture capital financing<br>- IPO : performed by investment banks, using similar public firms as benchark<br>- Sales in acquisition : to sell private firm at development / mature stage. Valuation is performed by both buyer and seller<br>- Bankruptcy proceedings : to determine whether the firm should be liquidated or reorganised<br>- Performance-based managerial compensation<br>2. Compliance-related valuations : performed for legal / regulatory reasons, focus on FR and tax issues<br>- Financial reporting : often related to goodwill impairment tests<br>- Tax purpose :<br>+ Firm level : transfer pricing, property taxes, corporate restructuring<br>+ Individual equity owners : estates and gift tax issues<br>3. Litigation-related valuations : Required for shareholder suit, damage claims, lost profit claims, divorce settlements |
| Different definitions of value | 1. Fair market value (use for tax purpose in US) :<br>- Hypothetical willing and able seller sells to willing and able buyer<br>- Arm's length transaction, in a free market<br>- Well-informed buyer and seller<br>2. Fair value for FR : current price paid to purchase an asset / transfer a liability<br>- Arm's length transaction<br>- Well-informed buyer and seller<br>3. Fair value for litigation : similar to fair value, but the definition depends on US state statutes and legal precedend in jurisdiction of the litigation<br>4. Market value : frequently used for appraisals of real estate and other real assets. Characterised by:<br>- Willing seller and buyer<br>- Arm's length transaction<br>- An asset that has been marketed<br>- Well-inform and prudent buyer and seller<br>5. Investment value : value to a particular buyer, may vary for different investors, depending on:<br>- Estimates of future CF<br>- Perceived firm risk<br>- Appropriate discount rates<br>- Individual financing costs<br>- Perceived synergies with existing buyer's assets<br>6. Intrinsic value |
| Approaches for private company valuation | 1. Income approach : firm value = PV of expected future income. Most appropriate for firm in high growth phase.<br>2. Market approach : price multiples, based on recent transactions of comparable assets. Most appropriate for mature firm<br>3. Asset- based approach : firm value = MV of assets - MV of liabilities. Most appropriate for early-life firm, when future CF is subjected to so much uncertainty |
| Normalised income | Estimate normalised income :<br>- Exclude non-recurring items / unusual items<br>- Firm does business with its owners / other businesses of its owners → Expenses might be inflated → adjustment<br>- Excessively high owner compensation → inflate expenses → adjustment<br>- Firm performs poorly → below market compensation → overstate earnings → adjustment<br>- Use of company-owned assets → inflate expenses → adjustment<br>- Real estates owned by firm are treated separately from firm operations, due to :<br>+ Real estates may have different risk characteristics<br>+ Real estates may have different growth propects<br>+ Depreciation expense of real estates is based on historical costs → understate current cost |
| Strategic / Financial transactions | Strategic transactions : valuation of firm is based in part of the perceived synergies with acquirer's other assets<br>Financial transactions : assume no synergies |
| FCF method | 1. Capitalised CF method : single-stage FCF model<br>$Value\ of\ firm = \frac{FCFF_1}{WACC - g}$ $Value\ of\ equity = \frac{FCFE_1}{r - g}$<br><br>2. Excess Earnings method :<br>- Excess earnings = Firm earnings - Required return on WC - Required return on FA<br>- Firm value = Sum PV of excess earnings + WC + FA |