Equity Securities

TOPIC 12: PRIVATE COMPANY VALUATION

(ALL LECTURE SLIDES WITH SOLUTIONS)

LA TROBE UNIVERSITY

Student learning outcomes

12.1 Compare and contrast public and private company valuation;

12.2 Discuss the uses of private business valuation, and explain applications of greatest concern to financial analysts;

12.3 Explain alternative definitions of value, and demonstrate how different definitions can lead to different estimates of value;

12.4 Discuss the income, market, and asset-based approaches to private company valuation and the factors relevant to the selection of each approach;

Student learning outcomes

12.5 Discuss cash flow estimation issues related to private companies and the adjustments required to estimate normalised earnings;

12.6 Compare and contrast models used to estimate the required rate of return to private company equity (for example, the CAPM, the expanded CAPM and the build-up approach);

12.7 Demonstrate the free cash flow, capitalised cash flow and excess earnings methods of private company valuation;

Student learning outcomes

12.8 Describe the market approaches to private company valuation (for example, guideline public company method, guideline transaction method and prior transaction method), and discuss the advantages and disadvantages of each;

12.9 Describe the asset-based approach to private company valuation;

12.10 Discuss the use of discounts and premiums in private company valuation.

References

- **Pinto J.E., E. Henry, T.R. Robinson and D.D. Stowe. (2010).** Equity Asset Valuation. (2nd edition) John Wiley & Sons: New Jersey. Chapter 7.

Outcome 12.1

Why value private companies?

- We have concentrated so far on the valuation of large, public companies, but there is often a need to evaluation private companies
- For example:
  - Many public companies have start-up or other operations that can best be valued as if they were private companies
  - Companies may grow through the acquisition of private companies, and therefore analysts need to evaluate the price paid in such transactions
  - Venture capitalists and private equity funds typically invest in private companies

Outcome 12.1

Private and public company valuation

- There are often differences between private and public company valuation, and there are significant challenges imposed by private company valuation
- These differences and challenges can be classified as company-specific and stock-specific factors
- Company specific factors include:
  - *Stage in life cycle:* Public companies are typically mature companies well advanced in their life cycle, whereas private companies include companies in the earliest stages of development as well as failed companies in the process of liquidation
  - *Size:* Private companies are usually smaller (and more risky)
  - *Overlap of shareholders and management:* Top managers often has a controlling interest in private companies

Outcome 12.1

Private and public company valuation

- Other company-specific factors:
  - *Quality/depth of management:* These are often weaker in private companies, adding to risk
  - *Quality of financial and other information:* Private companies don't have the same reporting requirements, and my not be under as much pressure from analysts, as public companies, leading to lower quality information and hence increased risk
  - *Overlap of shareholders and management:* Top managers often has a controlling interest in private companies
  - *Pressure from short-term investors:* Short-term investors in public companies can exert pressure on those companies to maintain share prices in the short term, whereas private companies without this pressure can take a long-term view
  - *Tax concerns:* There may be more incentive for private owners to reduce taxable income for tax reasons

Outcome 12.1

Private and public company valuation

- Stock-specific factors:
  - *Liquidity of equity interest:* Because there are fewer potential buyers and no public share market in which to trade shares, a lack of liquidity is likely to reduce the value of shares in private companies
  - *Concentration of control:* This can lead to a transfer of value away from the company; e.g. transactions with related parties at above-market prices, or above-market compensation to a controlling shareholder
  - *Potential agreements restricting liquidity:* Private companies may have agreements in place to restrict the sale of shares, further reducing the marketability (and hence value) of shares

Outcome 12.2

Reasons for performing valuations

- Valuations of private businesses fall into three groups:
  - Transaction-related:
    - *Private financing:* Investment by venture capitalists
    - *Initial public offering:* Valuations are part of the IPO process
    - *Acquisition:* Valuations may be needed by the target or buyer
    - *Bankruptcy:* Valuations can help decide whether or not to liquidate, or how to maintain the company as a going concern
    - *Share-based compensation:* Valuations are often required to set up and implement these payments
  - Compliance-related: Valuations are required for financial reporting (required by regulators) and tax reporting (for the tax office)
  - Litigation: Legal proceedings including those related to damages, lost profits, shareholder disputes and divorce often require valuations

Outcome 12.3

Alternative definitions of value

- There are a number of different definitions of value, which often depend on the purposes of the valuations, which could result in different estimates of value
- These include:
  - Fair market value
  - Market value
  - *(These are very similar to each other. The assume an arm's length transaction between a willing buyer and seller.)*
  - Investment value – The value from the point of view of the investor, which may be higher or lower depending on the investor (e.g. because of different financing costs or potential synergies)
  - Intrinsic value – The value an investor expects will become the market value once all information is known to the market
  - Fair value (financial reporting)
  - Fair value (litigation)

Outcome 12.4

Private company valuation approaches

- There are three main approaches to private company valuation
  - The income approach
    - Values an asset as the present value of future cash flows
    - Similar to DCF approaches to valuation of public companies
  - The market approach
    - Based on pricing multiples from sales of similar assets
  - The asset-based approach
    - Values a private company based on the value of its underlying assets
- The income and asset-based approaches are referred to as *absolute* approaches, whereas the market approach is referred to as a *relative* approach

Outcome 12.4

Private company valuation approaches

- Selection of the approach to be used may depend on size – it may be difficult to find comparable multiples for small companies
- Different approaches might be used at different times in a company's life cycle
  - At the development stage, future income is uncertain and an asset-based approach may be used
  - A more developed, fast-growing company might best be valued using an income approach
  - A mature, stable company might call for a market approach
- Before looking detail at the different approaches to private company valuation, there are important issues to be considered

Outcome 12.5

Normalisation of earnings

- Normalising earnings means adjusting for non-recurring, non-economic or other unusual items to eliminate anomalies and/or facilitate comparisons
- The objective is to identify to true, underlying profitability, and therefore the value, of the business
- Reported earnings may different from normalised earnings because of:
  - Discretionary expenses
  - Inclusion of private expenses in reported earnings
  - Transactions with related parties that aren not at arm's length
  - Tax or other motivations causing variance in reported earnings

Outcome 12.5

Cash flow estimation

- These occur because of the uncertain often associated with future cash flows of private companies
- One approach is to derive different valuations for different possible future scenario, such as initial public offering, acquisition, continued operation as a going concern, or bankruptcy
- The discount rate used for each scenario should reflect the risk of the cash flows associated with that scenario
- The probability of each scenario is estimated, and then the value of the company is a probability-weighted average of the company's estimated scenario values

Outcome 12.5

Cash flow estimation

- John Smith is the sole shareholder and CEO of Able Manufacturing, Inc.
- James Duvall is evaluating the purchase of Able, and has obtained the following information
  - Revenue is currently $50m and is expected to grow at 3% p.a.
  - The gross profit margin will remain at 40%
  - Depreciation will remain at 1.8% of sales
  - SG&A expenses will remain at $3.7m
  - Working capital equal to 10% of revenue is required
  - Capital expenditure will be equal to depreciation plus 5% of incremental revenue
  - The tax rate is 40%
- **Forecast FCFF for Able for the upcoming year**

Outcome 12.5

Cash flow estimation

Revenue	50,000,000 x 1.03	51,500,000
Gross profit	0.40 x 51,500,000	20,600,000
SG&A expenses		3,700,000
EBITDA		16,900,000
Depreciation	0.018 x 51,500,000	927,000
EBIT		15,973,000
Tax	0.40 x 15,973,000	6,389,200
Income after tax		9,583,800
Plus: Depreciation		927,000
Less: Capital exp.	927,000 + 0.05 x 51,500,000	1,002,000
Less: Increase in WC	0.10 x 1,500,000	150,000
Free cash flow to firm		9,358,800

Outcome 12.6

Required rate of return models

- The Capital Asset Pricing Model can be used to value private companies, but small private companies may not be comparable to the large public companies for which market-data-based beta estimates are available
- The expanded CAPM is an adaptation of the CAPM which adds a premium for small size and company-specific risk
- The build-up approach is similar to the expanded CAPM but excludes beta, on the assumption that a beta for a small company that is different from 1.0 reflects industry risk, and includes an industry-risk premium instead
- Small companies may have insufficient access to debt, forcing them to use equity and increasing their WACC

Outcome 12.6

Required rate of return models

- Duvall has decided to use the income approach to evaluate Able, and uncovers the following information
  - The risk-free rate is 4.8% and the equity risk premium is 5%
  - A beta of 1.1 has been estimated based on publicly-traded companies in the same industry
  - A small stock premium of 3% is required because of the extra risk associated with Able's small size
  - A 1% company-specific risk premium is required
  - There are no industry-specific risks that require a premium
- **Calculate the required rate of return for Able using:**
  - The CAPM

$$r = R_f + \beta_i \left[E(R_M) - R_f \right]$$
$$= 4.8\% + 1.1 \times 5\% = 10.3\%$$

Outcome 12.6

Required rate of return models

- **Calculate the required rate of return for Able using:**
  - The expanded CAPM

Risk-free rate	4.8%
Equity risk premium adjusted for beta	5.5%
Plus: Small stock premium	3.0%
Plus: Company-specific risk premium	1.0%
Required return on equity	14.3%

Outcome 12.6

Required rate of return models

- **Calculate the required rate of return for Able using:**
  - The build-up approach

Risk-free rate	4.8%
Equity risk premium	5.0%
Plus: Small stock premium	3.0%
Plus: Industry-specific risk premium	0.0%
Plus: Company-specific risk premium	1.0%
Required return on equity	13.8%

Outcome 12.6

Required rate of return models

- Duvall has decided to use the income approach to evaluate Able, and uncovers the following information
  - The pre-tax cost of debt is estimated at 7.5%
  - The ratio of debt to total capital for public companies in the same industry is estimated at 20%
  - The optimal ratio of debt to total capital for Able is estimated to be 10%, but it is not able to achieve this due to limited access to capital markets
  - The actual ratio of debt to total capital for Able is 2%
  - The corporate tax rate is 40%
- **Calculate the WACC for Able using a 14% cost of equity and:**
  - The current capital structure
  - The optimal capital structure

Outcome 12.6

Required rate of return models

- **Calculate the WACC for Able using a 14% cost of equity and:**
  - The current capital structure

Pre-tax cost of debt	7.5%	
Tax rate complement (1 – Tax Rate)	x 0.60	
After tax cost of debt	4.5%	
Weight	x 0.02	
Weighted cost of debt		0.1%
Cost of equity	14.0%	
Weight	x 0.98	
Weighted cost of equity		13.7%
Weighted average cost of capital		13.8%

Outcome 12.6

Required rate of return models

- **Calculate the WACC for Able using a 14% cost of equity and:**
  - The optimal capital structure

Pre-tax cost of debt	7.5%	
Tax rate complement (1 – Tax Rate)	x 0.60	
After tax cost of debt	4.5%	
Weight	x 0.10	
Weighted cost of debt		0.5%
Cost of equity	14.0%	
Weight	x 0.90	
Weighted cost of equity		12.6%
Weighted average cost of capital		13.1%

Outcome 12.7

Free cash flow method

- This is similar to discounted cash flow methods
- It typically consists of determining the present value of a series of discrete cash flows over a forecast horizon, and then adding the present value of a terminal value based on a long-term growth rate
- The theoretically preferred method of estimating the terminal value is the capitalisation method (discussed on the next slide)
- Alternatively, price multiples could be used
  - However, this risks counting the high-growth phase of a new company twice – once in determining the present value of the short-term discrete cash flows, and again in using a price multiple (derived from other growing companies) in the estimation of the terminal value)

Outcome 12.7

Capitalised cash flow method

- This method values a private company by using a single representative estimate of economic benefit and dividing by an appropriate capitalisation rate

$$V_f = FCFF_1 / (WACC - g_f)$$

where

- V_f = the value of the firm
- $FCFF_1$ = the free cash flow to the firm for the next 12 months
- g_f = sustainable growth rate of free cash flow to the firm

- The value of equity is the value of the firm minus the market value of debt
- Alternatively, the value of equity is the capitalised FCFE

$$V_e = FCFE_1 / (r - g_f)$$

Outcome 12.7

Capitalised cash flow method

- Duvall decided to use the capitalised cash flow method to evaluate Able
  - The free cash flow to the firm for the next year is $9,358,800
  - The long-term growth rate is assumed to be 3%
  - The value of debt capital is $2m
- **Calculate the value of Able's equity based on:**
  - The current capital structure
  - The optimal capital structure

Outcome 12.7

Capitalised cash flow method

- **Calculate the value of Able's equity based on:**
  - The current capital structure

Free cash flow to the firm		9,358,800
Weighted average cost of capital	13.1%	
Long-term growth rate	3.0%	
Capitalisation rate		10.1%
Value of invested capital		92,661,386
Less: Value of debt capital		2,000,000
Value of equity		90,661,386

Outcome 12.7

Capitalised cash flow method

- **Calculate the value of Able's equity based on:**
  - The optimal capital structure

Free cash flow to the firm		9,358,800
Weighted average cost of capital	13.8%	
Long-term growth rate	3.0%	
Capitalisation rate		10.8%
Value of invested capital		86,655,556
Less: Value of debt capital		2,000,000
Value of equity		84,655,556

Outcome 12.7

Excess earnings method

- This method estimates the value of intangible assets by determining future earnings in excess of the return requirements associated with working capital and fixed assets
- These excess earnings are capitalised in a similar fashion to the capitalised cash flow method
- This gives the capitalised value of intangibles, and then the value of working capital and fixed assets is added to give the value of the business
- Generally this method is only used for very small businesses when no other method is feasible

Outcome 12.7

Excess earnings method

- The following information is available regarding a firm
  - The value of working capital is $200,000
  - The value of fixed assets is $800,000
  - The normalised earnings for the year just ended are $100,000
  - The required returns on working capital and fixed assets are 5% and 11% respectively
  - The discount rate to be used in capitalising excess earnings is 12%

- **Estimate the value of the company using the excess earnings method**

Outcome 12.7

Excess earnings method

- **Estimate the value of the company using the excess earnings method**

Normalised earnings			100,000
Less: Required return on			
Working capital	(0.05 x 200,000)	10,000	
Fixed assets	(0.11 x 800,000)	88,000	98,000
Excess earnings			2,000

$$\text{Value of intangible assets} = \frac{2{,}000(1.03)}{0.12 - 0.03} = \$22{,}889$$

$$\text{Value of company} = 22{,}889 + 200{,}000 + 800{,}000 = \$1{,}022{,}889$$

Outcome 12.8

Market approach

- There are three forms of the market approach
  - The guided public company method
    - Similar to market valuation for public companies, the multiple (e.g. the P/E ratio) for a comparable public company is used to estimate the value of a private company
  - The guided transaction method\
    - This is similar in practice to the GPCM, but the multiples are derived from the prices established by the acquisition of entire private or public companies
  - The prior transaction method
    - This method is based on multiples established from the actual prices paid for purchases of stock in the subject company
    - In theory this is the most reliable method, but transactions may be infrequent and occur at different points in time

Outcome 12.9

Asset-based approach

- The principle underlying this approach is that the value of ownership of an enterprise is equal to the fair value of its assets less the fair value of its liabilities
- This is generally considered the weakest approach from a conceptual perspective, and is rarely used for the valuation of going concerns
- Some of the reasons for this are:
  - Limited market data available to value intangible assets
  - Difficulties in valuing certain tangible assets (such as special-use plant and equipment)
  - More readily available information to value operating companies as an integrated whole rather than on an asset-by-asset basis

Outcome 12.10

Discounts and premiums

- One of the main differences between the valuation of private and pubic companies is the inclusion of premiums or discounts in the valuation of private companies; e.g.
  - Synergistic premium
    - The highest value will be placed on a company by a purchaser who can extract significant synergies from the purchase
  - Control premium
    - Whether or not there are synergies available, a purchaser gaining a controlling interest is likely to pay a premium for this
  - Marketability discount
    - If a non-controlling interest involves marketable securities, there may not be any premium or discount – this is similar to buying shares in a public company
    - If the securities are not marketable, this may result in a discount