

*FINANCIAL
ANALYSIS &
VALUATION*

ACX3150

Semester 1 - 2018

PREVIEW

The purpose of accounting analysis

- It evaluates the degree to which accounting captures the underlying reality of the business
- Aims to assess the quality of the financial statements

Accrual accounting

- Financial reports are prepared using **accrual accounting** instead of *cash accounting*
 - Indicates the income statement is more important than the cash flow statement
- Examples: credit sales/purchases, estimates of useful lives, provisions, allowances for doubtful debts
- Thus, accrual accounting shows the **financial** picture of a company more accurately than cash accounting which relies on cash transactions
- However, cash transactions have little possibility for manipulation, whilst accruals have a *high possibility*

Earnings management

- Earnings reports reflect the desires of management rather than the underlying financial performance of the company

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- Personal bonuses
- Promotions
- Job retention

Institutional situations where manipulation is more likely

- An auditor change
- Management rewards
- Change in management
- The firm may be taken over

Financial statement indicators that manipulation is more likely

- Change in accounting principles
- Constant/falling sales
- Earnings growing faster than sales
- Drop in profit

Steps in performing accounting analysis

Step 1: Identify principal accounting policies

- Identify and evaluate the key accounting policies and estimates used to measure critical success factors and risks
- Examples include:
 - Interest and credit risk management -banks
 - Inventory management (Weighted average cost method) + provisions - retail
 - Product quality and innovations + research and development + defects after sales - manufacturers.

Step 2: Assess accounting flexibility

- Assess the degree of flexibility managers have in choosing key accounting policies and estimates
- It is more likely to yield insights about business reality if managers have flexibility in choosing policies and estimates
- E.g. Choosing inventory methods + depreciation + R&D
 - The level of flexibility is mainly influenced by the process of management creating **ESTIMATES** about certain policies

Step 3: Evaluate accounting strategy

- Managers can use the flexibility in accounting choices to communicate the underlying reality of the business or to hide true performance
- Issues to consider:
 - Incentives for managers to manage earnings
 - E.g. They want to ensure their earnings remain high in order to keep their

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- Multiple segments
- Hiding bad news?
 - E.g. Why was there a change in CEO?

Step 5: Identify potential red flags

- Indicators that suggest the analyst should gather additional information
- Examples:
 - Unexplained changes in accounting policy
 - Unexplained transactions that boost profits
 - Increases in A/R in relation to sales revenue

1: Σ Present value of finite forecast dividends

$$= \$2 + \left[\frac{\$2}{(1 + 0.1)^1} \right] = \$1.82 + \left[\frac{\$0}{(1 + 0.1)^2} \right] = 0 \dots \Sigma = \$11.36$$

NOTE: Discount factor = $(1 + r)^n$

With r being 10%

$$\text{e.g. Yr 3} = (1 + 0.1)^3 = 1.33$$

2: Present value of terminal value calculation

$$= [d_{tv}/(r-g)] \times [1/(1 + r)^n]$$

$$= \left[\frac{\$3}{(0.10 - 0.03)} \right] \times [1/(1 + 0.1)^8]$$

$$= 42.86 \times 0.4665 = \$19.99$$

$$\text{VALUE} = \$11.36 + \$19.99 = \mathbf{\$31.35}$$

Limitations of dividend discounting:

- Estimating dividend
 - Firm value is INDEPENDENT of dividend policy
 - Dividends can be random and based on choice (arbitrary)
- Estimates of dividends come from:
 - Management or analysts DIRECTLY
 - Estimates of future profits x estimates of future payout ratios INDIRECTLY

FREE CASH FLOW MODEL

There are two versions of the model

1: FCF to Equity

= Net income + Depreciation and deferred taxes – capital expenditures +/- increase/decrease in working capital +/- increase/decrease in debt

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- $\Delta BVND$ = change in BV of net debt (interest bearing debt less excess cash)

- In summary, equity value could be calculated as:

$$= \frac{NI_1 - \Delta BVA_1 + \Delta BVND_1}{(1 + r_e)} + \frac{NI_2 - \Delta BVA_2 + \Delta BVND_2}{(1 + r_e)^2} + \dots$$

NOTE: r_e does equal 'cost of equity'

2: FCF to Capital (Debt + Equity)

= Earnings before interest and taxes x $(1 - \text{tax rate})$ + depreciation and deferred taxes – capital expenditures +/- increase/decrease in working capital

$$= \text{NOPAT} - \Delta BVA$$

- We can recast dividend as FCF to capital using the following relationship:
 - = FCF to net debt and equity claim holders
 - = NOPAT - ΔBVA

$$\text{Debt plus equity value} = \frac{\text{NOPAT}_1 - \Delta BVA_1}{(1 + WACC)} + \frac{\text{NOPAT}_2 - \Delta BVA_2}{(1 + WACC)^2} + \dots$$

Terminal value

Value = Expected Cash Flow Next Period / $(r - g)$

How to determine which cash flow to discount:

Use equity valuation:

- For firms which have stable leverage, whether high or not, and
- If equity (stock) is being valued

Use firm valuation:

- For firms which have leverage which is too high or too low, and expect to change the leverage over time, because debt payments and issues do not have to be factored in the cash flows and the discount rate (cost of capital) does not change dramatically over time.
- For firms for which you have partial information on leverage (e.g. interest expenses are missing..)
- in all other cases, where you are more interested in valuing the firm than the equity. (Value Consulting?)

DISCOUNTED ABNORMAL EARNINGS

Abnormal Earnings = $NI_t - [R_e \times BV_{t-1}]$

Note: It is book value of LAST PERIOD (t - 1)

$$\text{Equity Value} = BVE_0 + \frac{NI_1 - r_e \cdot BVE_0}{(1 + r_e)} + \frac{NI_2 - r_e \cdot BVE_1}{(1 + r_e)^2} + \frac{NI_3 - r_e \cdot BVE_2}{(1 + r_e)^3} + \dots$$

Discount rate = 10%

Disc Ab Earnings Model

Year	Beg BV	Earnings	1. Ab Earn	2. PV Factor	3. PV (Ab Earn)
1	60	20	14	0.91	12.73
2	40	30	26	0.83	21.49
3	20	40	38	0.75	28.55
Cum PV (Ab Earn)					62.76
Beg BV					60.00
Equity Value					4. 122.76

1. Abnormal earnings = Earnings - (BV x r)

$$14 = 20 - (60 \times 10\%)$$

2. PV factor = $1/(1 + r)^t$

$$0.91 = 1/(1 + 0.1)^1$$

3. PV (Ab. Earnings) = Abnormal earnings x PV factor

NOTE: Present factor = $1/(1 + r)^n$
 With r being 10%
 e.g. Yr 3 = $1/(1 + 0.1)^3 = 0.75$
 Keep in mind this is 'dividing',
 compared to discount factor

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1. Use the higher of the two numbers as the DENOMINATOR
 - a. $0.30/0.25 = 120\%$
2. Use the absolute value of earnings in the starting period as the DENOMINATOR
 - a. $0.30/0.05 = 600\%$
3. Use a linear regression model and divide the coefficient by the average earnings