

UNIVERSITY OF BRADFORD

FINANCIAL STATEMENT ANALYSIS AND VALUATION

MAN4270M

14 May 2013

09:15 – 10:45 hours

This is a **CLOSED BOOK** examination

Answer any **TWO** questions
All questions carry equal weighting

A Formula Sheet will be provided and non-programmable calculators are allowed.

Answer any TWO questions only. All questions carry equal weighting.

Question 1

- i. The following latest accounting numbers and market values are available in Feb 2013. They are considered to be comparable companies.

		Sales	Earnings	Book Value	Market Value
IBM - International Business Machines Corp	(USD, M)	104,507	16,604	19,500	223,827
0992.HK - Lenovo Group Ltd	(USD, M)	29,574	473	2,098	11,648
HPQ - Hewlett-Packard Co	(USD, M)	120,357	-12,650	30,533	39,328
DELL.O - Dell Inc	(USD, M)	56,940	2,372	9,798	

- a. Calculate price to sales, price-earnings and price to book ratios for IBM, Lenovo and HP respectively. (5%)
 - b. Apply multiples of the comparable companies to price Dell. (5%)
 - c. In Feb 2013, Dell's founder proposes a leverage buyout (LBO) of the company valuing it at about 24 billion USD which is close to its market values. Discuss if the shareholders should accept the deal based on the above calculation. Critically evaluate the potential problems of using multiples to value a company. (10%)
- ii. Critically evaluate the following statement: historically return to stocks is higher than bond returns in the long run therefore we should hold stocks for the long run. (15%)
- iii. Discuss the potential impacts of passive and active investment strategies on the information efficiency of the market. (15%)
- (Total 50%)**

Question 2

- i. The following actual and forecast numbers (in \$) are given in Feb 2013 for Dell.

	Actual	Forecast	Forecast	Forecast
	Jan-2013	Jan-2014	Jan-2015	Jan-2016
Earnings per share (EPS)	1.35	1.275	1.42	1.47
Dividend per share (DPS)	0	0.14	0.28	0.342
Book Value per share (BPS)	5.06			

- a. Assuming that Dell has a required equity return of 10 per cent per year, calculate the forecasted return on common equity (ROCE) and residual earnings for each year, 2014-2016. (10%)

b. Value Dell at the end of Jan 2013 under two different assumptions regarding the ROCE growth rate after 2016: zero and 2 percent per year. (12%)

c. Dell traded at 13.24 at the end of Jan 2013. Based on your calculations, do you think Dell is reasonably priced? What does your analysis tell you about the long-run growth rate that the market is forecasting for Dell? (8%)

ii. Critically evaluate the advantages and disadvantages of applying the residual earnings model for valuation. (14%)

iii. Discuss the importance of using comprehensive earnings in conducting earnings forecast analysis. (6%)

(Total 50%)

Question 3

i. The following are financial statements for an information technology company that you are required to analyse and value. All amounts are in thousands of pounds.

Income Statement 2012			
Revenues			260,000
Cost of goods sold	19,590		
Research and development expenses	A		
Selling and general expenses	17,200		
Other Operating income /expenses, including taxes	5,100	76,000	
Operating income after tax			B
Net financial expenses after tax			
Interest expense	C		
Interest income	5,900	2,700	
Comprehensive income			D

Balance Sheet					
	Assets		Liabilities and Equity		
	<u>2012</u>	<u>2011</u>		<u>2012</u>	<u>2011</u>
Operating assets	625,000	460,000	Operating liabilities	H	47,000
Financial assets	E	105,000	Financing debt	121,000	123,000
			Common equity	461,200	I
	F	G		756,200	J

Cash Flow Statement 2012

Cash flow from operations		142,000
Cash investment		<u>K</u>
Free cash flow		L
Net dividends		
Cash dividends	1,800	
Share repurchases	900	
Share issues	<u>M</u>	<u>N</u>
Payment to net debt holders		O
Total financing flows		P

Required

- a) Using the accounting relations, supply the missing numbers labelled A to P. Show your workout. (20%)
- b) Prepare a reformulated comparative balance sheet that distinguishes assets and liabilities employed in operations from those employed in financing activities. (5%)
- c) Use two alternative ways to calculate the total new operating accruals in 2012. (5%)
- d) Show that the following financial leverage equation holds for this firm

$$ROCE = RNOA + \left[\frac{NFO}{CSE} \times (RNOA - NBC) \right]$$

Use beginning-of-period balance sheet amounts in the calculations. Briefly discuss the impact of financial leverage on shareholder profitability of this firm. (10%)

- ii. A firm generated a negative free cash flow of £2,600 million, but would like to maintain a dividend of £0.95 per share on the 1,000 million shares outstanding. The firm also paid £51 million in net interest (after tax). What is the rationale of maintaining the dividend while the company is making negative free cash flow? Discuss what options the treasurer has to meet the cash flow requirement.

(10%)
(Total 50%)

Question 4

- i. The following numbers were calculated from the financial statements for a firm for 2012 and 2011

	2012	2011
Core profit margin	4.90%	5.20%
Asset turnover	2.6	2.0
Return on common equity (ROCE)	15.86%	13.80%
Return on net operating assets (RNOA)	13.00%	11.00%
Net borrowing cost (NBC)	2.80%	3.10%
Average net financial obligations (£m)	1,500	1,600
Average common equity (£m)	5,343	4,520

- a) Calculate core return of net operating assets (core RNOA) for 2011 and 2012. (5%)
- b) Show how much of the change in core RNOA from 2011 to 2012 is due to the change in profit margin and the change in asset turnover. (7%)
- c) Explain how much of the change in ROCE from 2011 to 2012 is due to operating activities and how much is due to financing activities. (8%)
- d) Further explain the change of financing by the change in leverage and change in operating and financing spread. (10%)
- ii. Discuss the determinants of growth in equity investment in a firm. (10%)
- iii. Explain under what conditions a firm's return on common equity (ROCE) would be equal to its return on net operating assets (RNOA). (10%)
- (Total 50%)**

Formula Sheet

$$CSE_t = CSE_{t-1} + \text{Earn}_t - \text{Net Div}_t$$

$$NOA_t = NOA_{t-1} + OI_t - (C_t - I_t)$$

$$NFA_t = NFA_{t-1} + NFI_t + (C_t - I_t) - d_t$$

$$CSE_t = NOA_t - NFO_t$$

$$ROCE_t = \frac{\text{Comprehensive Income}}{CSE_0}$$

$$ROCE = RNOA + \left[\frac{NFO}{CSE} \times (RNOA - NBC) \right]$$

$$\Delta ROCE = \Delta RNOA + \Delta [FLEV \times SPRED]$$

$$\Delta ROCE = \Delta RNOA + \Delta FLEV \times SPRED_t + FLEV_{t-1} \times \Delta SPRED$$

$$FLEV = \frac{NFO}{CSE}$$

$$RNOA = \frac{OI}{NOA} = PM \times ATO$$

$$ROOA = \frac{OI + \text{Interest(AfterTax)}}{\text{OperatingAssets}}$$

$$RNOA = ROOA + (OLLEV \times OLSPREAD)$$

$$NBC = NFE/NFO_{AVE}$$

$$\Delta \text{Core RNOA} = \Delta \text{Core PM} \times ATO_{t-1} + \Delta ATO \times \text{Core PM}_t$$

$$RE_t = \text{Earn}_t - (\rho_E - 1)CSE_{t-1} = [ROCE_t - (\rho_E - 1)]CSE_{t-1}$$

$$AEG_t = \text{Earn}_t + (\rho_E - 1)d_{t-1} - \rho_E \text{Earn}_{t-1} = (G_t - \rho_E)\text{Earn}_{t-1}$$

$$\text{Re}OI_t = OI_t - (\rho_F - 1)NOA_{t-1} = [RNOA_t - (\rho_F - 1)]NOA_{t-1}$$

$$AOIG_t = OI_t + (\rho_F - 1)FCF_{t-1} - \rho_F OI_{t-1} = (G_t - \rho_F) \times OI_{t-1}$$

$$\rho_F = \frac{V_0^E}{V_0^{NOA}} \cdot \rho_E + \frac{V_0^D}{V_0^{NOA}} \cdot \rho_D$$

$$\rho_E = \rho_F + \frac{V_0^D}{V_0^E} \cdot (\rho_F - \rho_D)$$

$$\text{Levered P/B ratio} = \frac{V_0^E}{CSE_0}$$

$$\text{Unlevered (or Enterprise) P/B ratio} = \frac{V_0^{NOA}}{NOA_0}$$

$$\frac{V_0^E}{CSE_0} = \frac{V_0^{NOA}}{NOA_0} + FLEV \left[\frac{V_0^{NOA}}{NOA_0} - 1 \right]$$

$$\text{Forward levered P/E ratio} = \frac{V_0^E}{\text{Earn}_1} = \frac{V_0^{NOA}}{OI_1} + ELEV_1 \left[\frac{V_0^{NOA}}{OI_1} - \frac{1}{NBC_1} \right]$$

$$\text{Trailing levered P/E ratio} = \frac{V_0^E + d_0}{\text{Earn}_0} = \frac{V_0^{NOA} + FCF_0}{OI_0} + ELEV_0 \left[\frac{V_0^{NOA} + FCF_0}{OI_0} - \frac{1}{NBC_0} - 1 \right]$$

$$\text{Forward enterprise P/E ratio} = \frac{\text{Value of Operations}}{\text{Forward Operating Income}} = \frac{V_0^{NOA}}{OI_1}$$

$$\text{Trailing enterprise P/E ratio} = \frac{\text{Value of Operations} + FCF}{\text{Current OI}} = \frac{V_0^{NOA} + FCF_0}{OI_0}$$