

# NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

## FACULTY OF COMMERCE

### BACHELOR OF COMMERCE HONOURS DEGREE IN FINANCE

#### PART IV 1<sup>ST</sup> SEMESTER SUPPLEMENTARY EXAMINATION – JULY 2007

#### INSTITUTIONAL INVESTMENT ANALYSIS [CFI 4103]

TIME ALLOWED: 3 HOURS 10 MINUTES

### INSTRUCTIONS

- ◆ ATTEMPT ANY FIVE QUESTIONS.
- ◆ ALL QUESTIONS CARRY EQUAL MARKS [20 MARKS]
- ◆ GRAPH PAPER IS PROVIDED

### QUESTION ONE

(20 marks)

The closing, high, and low prices for Biogas Corporation Stock over a ten-day interval are shown below.

**Biogas Corporation**

Day	Closing Price	High	Low
1	20	21	19
2	20 $\frac{1}{4}$	20 $\frac{1}{4}$	18
3	21	22	20 $\frac{1}{2}$
4	21 $\frac{1}{8}$	22 $\frac{7}{8}$	21 $\frac{1}{8}$
5	21	23 $\frac{1}{4}$	20
6	21 $\frac{3}{4}$	22	20 $\frac{3}{4}$
7	22	23 $\frac{1}{2}$	20 $\frac{1}{8}$
8	20 $\frac{1}{8}$	22	19 $\frac{1}{4}$
9	19 $\frac{1}{8}$	21 $\frac{1}{2}$	19
10	18 $\frac{1}{4}$	21 $\frac{7}{8}$	17 $\frac{1}{8}$

- (a) Construct a line chart for Biogas Corporation stock over this period of time. [5 marks]
- (b) Calculate the relative strength of Biogas Corporation versus the Market Index over the 10-day period, given the following closing prices for the index. [5 marks]

	Day									
	1	2	3	4	5	6	7	8	9	10
Market Closing Price	300	302	306	310	320	315	330	325	325	330

- (c) Chart your result in (b) on a line graph. [5 marks]
- (d) What conclusion(s) do you draw from your analysis? [5 marks]

**QUESTION TWO****(20 marks)**

As a firm operating in a mature industry, Checkcheck Industries is expecting to maintain a constant dividend payout ratio and constant growth rate of earnings for the foreseeable future. Earnings were \$450 per share in the recently completed fiscal year. The dividend payout ratio has been a constant 55 percent in recent years and is expected to remain so. Checkcheck's return on equity (ROE) is expected to remain at 10 percent in the future, and investors require an 11 percent return on stock.

- (a) Using the constant-growth dividend discount model, calculate the current value of Checkcheck common stock. **[3 marks]**
- (b) After an aggressive acquisition and marketing program, it now appears that Checkcheck's earnings per share and ROE will grow rapidly over the next two years. Determine the current value of Checkcheck's common stock using the dividend discount model, assuming Checkcheck's dividend will grow at a 15 percent rate for the next two years, return in the third year to the historical growth rate, and continue to grow at the historical rate for the foreseeable future. **[8 marks]**
- (c) Briefly discuss three disadvantages of the constant-growth dividend discount model in its application to investment analysis. **[6 marks]**
- (d) Provide three alternative methods to the dividend discount model for the valuation of companies. **[3 marks]**

**QUESTION THREE****(20 marks)**

- (a) Two investors are considering the addition of stock in Better Best plc, a high-growth chain of franchise operations, to their respective portfolios. Dollarwise Investors own a broadly diversified portfolio of stocks in health related businesses. Access Ltd owns a broadly diversified portfolio of communication stocks. Relevant statistical information is shown below:

	<b>Dollarwise Investors</b>	<b>Access Ltd</b>	<b>Better Best plc</b>
Standard Deviation	11%	16%	20%
<b>Correlations</b>			
Dollarwise Investors	1.0		
Access Ltd	0.7	1.0	
<b>Better Best plc</b>	<b>0.8</b>	<b>0.2</b>	<b>1.0</b>

What is the measure of relative risk of Better Best plc stock (beta) to each of these investors? **[5 marks]**

- (b) Estimates of standard deviations (o) and correlation coefficients for three stocks are:

Stock	$\sigma_i$	Correlation with		
		Apple	Gemini	Leo
Apple	12%	1.0		
Gemini	15%	0.5	1.0	
Leo	18%	0.5	-1.0	1.0

- (i) If equal investments are made in all three stocks, what is the standard deviation of the portfolio? **[5 marks]**
- (ii) What percentage of the investment in Gemini and Leo will minimize portfolio risk? **[4 marks]**
- (c) Examine the reasons why investors “should not put all their eggs in one basket”. **[6 marks]**

**QUESTION FOUR (20 marks)**

With reference to the Zimbabwe Stock Exchange, provide brief explanations of the significance of the following anomalies in market analysis:

- Unexpected earnings, as represented by SUE
- Price Earnings Ratios
- The Size Effect
- The January Effect
- The Neglected Firm Effect. **[20 marks]**

**QUESTION FIVE (20 marks)**

- (a) Three companies have the following results during the recent period

	ABC	DEF	XYZ
Net Profit Margin	.04	.06	.10
Total Asset Turnover	2.20	2.00	1.40
<b>Total assets/equity</b>	<b>2.40</b>	<b>2.20</b>	<b>1.50</b>

- (i) Perform DuPont analysis to derive the return on equity (ROE) for each company. **[6 marks]**
- (ii) Given the following earnings and dividends, compute the sustainable growth rate for each firm.

	ABC	DEF	XYZ
Earnings/Share	2.75	3.00	4.50
Dividends/Share	1.25	1.00	1.00

**[6 marks]**

- (b) Briefly discuss the impact of changes in asset turnover and financial leverage on the change on ROE. **[4 marks]**
- (c) Examine the usefulness of fundamental analysis to an institutional investor. **[4 marks]**

**QUESTION SIX** (20 marks)

Briefly outline ten (10) factors that affect stock prices.