



## Department of Finance and Investment Management

# Financial Management 2A/ Investment Management 2A

BSR2A01/BLB2A01/IVM2A01

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### SOLUTION LAST ASSESSMENT OPPORTUNITY

11 JUNE 2015

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#### GENERAL NOTES TO MARKERS

- Please COUNT and RECONCILE the number of scripts you TAKE and RETURN
- Please familiarise yourself with the question paper and memo and ensure you understand it. It's good to refer back to question paper sometimes
- Please initial on front page on the paper you have marked
- Please ensure that you indicate whether an answer is correct ✓ or incorrect ✗
- The amount of ticks ✓ **HAS** to reconcile to the total marks allocated
- Write "NR" on front page if student has not crossed off empty pages
- Please ensure you write the number of questions and the respective mark on the first script
- Do **NOT** calculate or write the percentage down on the script. This shall be done at a later stage
- Please ensure you communicate with Buntu/Kira if you are unclear about anything

**SECTION A**  
**QUESTION 1**

**[25 MARKS]**  
**(15 marks)**

**\*There was no 1.8 in question paper, please just follow sequence whilst marking\***

1.1	C	✓	1
1.2	C	✓	1
1.3	C	✓	1
1.4	B	✓✓	2
1.5	B	✓✓	2
1.7	B	✓✓	2
1.8 or 1.9	D	✓✓	2
1.9 or 1.10	B	✓✓	2
1.10 or 1.11	C	✓✓	2

**QUESTION 2**

**(10 marks)**

	<b><u>True/False?</u></b>	<b><u>Motivation</u></b>	
2.1	FALSE ✓	Ordinary shareholders are the owners of the firm ✓	<b>(2)</b>
2.2	TRUE ✓	IRR > WACC The expected return must be greater than the cost of the project in order to maximize shareholders wealth on the long term ✓	<b>(2)</b>
2.3	TRUE ✓	Accounts payable period decrease which will result in an increase in the cash conversion cycle ✓	<b>(2)</b>
2.4	FALSE ✓	The advantage of the DuPont system is that allows the firm to break its ROE into a profit-on-sales ✓ component, an efficient-of-asset use component and a use-of-financial leverage component.	<b>(2)</b>
2.5	FALSE ✓	A firms risk and expected return does <b>directly</b> ✓ affect its share price.	<b>(2)</b>

## SECTION B

[50 MARKS]

### QUESTION 3

(10 marks)

3.1 [3 marks]

P/Y = 12  
N = 6✓  
I = 20✓  
PV = 50 000✓  
FV = 55 213.02

3.2 [4 marks]

P/Y = 12  
PV = 55 213.02✓P  
N = 30✓  
I = 20✓  
PMT = 2 353.71✓P

3.3 [1 mark]

NOM = 20  
P/Y = 12  
EFF = 21.94✓

3.4 [2 marks]

Monthly payments would be lower✓ if Ross decided not to use the grace period.  
This is because there would be no 6 months' worth of interest accumulated✓ from the grace period

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## QUESTION 4

(10 marks)

### 4.1 [4 marks]

$$P/Y = 2$$

$$FV = 100 \checkmark$$

$$I/YR = 8\% \checkmark$$

$$N = 20 \checkmark$$

$$PV = 45.64 \checkmark$$

### 4.2 [4 marks]

$$P/Y = 4$$

$$FV = 100 \checkmark$$

$$PMT = 2.5(10/4) \checkmark$$

$$I/YR = 8\%$$

$$N = 40 (10 \times 4) \checkmark$$

$$PV = 113.68 \checkmark$$

### 4.3 [2 marks]

There is an inverse  $\checkmark$  relationship between market interest rates and bond prices. When market interest rates go up, bond prices go down  $\checkmark$

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## QUESTION 5

(15 marks)

5.1 [2 marks]

Constant growth model/ Gordon growth model✓

$$P_0 = \frac{D_0 \times (1+g)}{R-g} \quad \text{OR} \quad P_0 = \frac{D_1}{R-g}$$

5.2 [2 marks]  $Re = \frac{D_0 \times (1+g)}{P_0} + g$ ✓✓ OR  $Re = \frac{D_1}{P_0} + g$

5.3 [4 marks]  $Re = \frac{0.90}{15} \times 1.06 + 0.06$ ✓✓  
 $= 12.36\%$

5.4 [1 mark] Current dividend yield = Current dividend/ current share price✓

5.5 [2 marks] Current dividend yield =  $0.90/15 = 6\%$ ✓

5.6 [3 marks] P/E =  $P_0/EPS = 15/1.25 = 12$  times✓

## QUESTION 6

(15 marks)

### PART A

6.1

Companies with high business risk will not be motivated to issue debt instruments, in order not to increase their overall risk to unacceptable levels. Companies with low business risk will be more motivated to issue debt instruments, because they can afford to increase their overall risk. ✓✓

6.2

- That the asset will move in the same direction as the market ✓
- And that it will be twice as responsive in its reaction ✓

### PART B

6.3 [2 marks]

- Standard deviation is not ✓ the appropriate measure of risk since the projects have different expected returns ✓

6.4 [2 marks]

Coefficient of variation = standard deviation/return ✓

Coefficient of variation is probably the best measure in this instance since it provides a standardized means of measuring the risk/return tradeoff for investments with differing returns ✓

**\*There is no 6.5\***

### PART C

6.6 [5 MARKS]

- A = 0.4 ✓
  - B = -1% ✓
  - C = -2% ✓
  - D = 0% ✓
  - E = 3.83% ✓
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**SECTION C**  
**QUESTION 7**

**[75 MARKS]**  
**(25 marks)**

7.1 [2 marks] Any TWO

- Valuing a company with no dividend history✓
- Valuing a start-up company✓
- Valuing an operating unit or division of a larger public company✓

7.2 [13 marks]

**STEP 1: Calculate PV (FCF from beg 2021 to infinity)**

$$\begin{aligned}
 \text{Value of } FCF(2021 - \infty) &= \frac{FCF(2021)}{WACC - r_{\infty}} \\
 &= \frac{600\,000 \times 1.03}{0.09 - 0.03} \\
 &= \frac{618\,000}{0.06} \\
 &= 10\,300\,000
 \end{aligned}$$

**STEP 2: Add PV of FCF from 2021 to infinity to the 2020 FCF**

$$\text{Total } FCF_{2020} = 600\,000 + 10\,300\,000 = 10\,900\,000$$

**STEP 3: Find the sum of PV (FCF<sub>2016 – 2020</sub>)**

FCF <sub>2016</sub>	=	CF <sub>1</sub>	= 400 000✓
FCF <sub>2017</sub>	=	CF <sub>2</sub>	= 450 000✓
FCF <sub>2018</sub>	=	CF <sub>3</sub>	= 520 000
FCF <sub>2019</sub>	=	CF <sub>4</sub>	= 560 000✓
FCF <sub>2020</sub>	=	CF <sub>5</sub>	= 10 900 000
I/YR			= 9%✓
NPV	=	Value of entire company	= 8 626 426

#### **STEP 4: Calculate value of ordinary shares**

Value of ordinary shares ( $V_s$ ) = Value of firm ( $V_f$ ) – Value of debt ( $V_d$ ) – Value of preference shares ( $V_p$ )

$$\begin{aligned} V_s &= 8\,628\,620 - 3\,100\,000 - 800\,000 \\ &= 4\,728\,620 \end{aligned}$$

#### **7.3 [5 marks]**

	Current structure	Target structure	Cost	WACC
Preference shares	800 000	35%	8%	4.8%✓
Ordinary shares		25%	5%	1.25%✓
Debt	3 100 000	40%	13%	5.2%✓
		✓		<b>10%✓P</b>

#### **7.4 [5 marks]**

<u>Financial institution</u>	<u>Amount</u>	<u>Cost</u>	Weighted average cost
• Loan BABA Bank	1 500 000	16%	7,74✓
• Loan SAMBA Bank	700 000	11%	2.48✓
• Loan PAMPA Bank	900 000	9.6%	2.79✓
			<b>13.01✓</b>

No, they should not take the opportunity offered by Capita Bank as the cost of the debt will be higher ✓



## SECTION C

[75 MARKS]

8.1

### Change in Gross Profit

$$5\% \times 800 = 40 \text{ units more} \checkmark$$

$$= (R8\,500 - R3\,400 \text{ mil}) = R5\,100 \text{ profit} \checkmark$$

$$= R5\,100 \times 40 = R204\,000 \text{ increase}$$

### Change in Bad debt losses

$$(1\% \times 840 \times R8\,500) \checkmark - (1\% \times 800 \times R8\,500) \checkmark$$

$$= 71\,400 - 68\,000$$

$$= 3\,400 \text{ increase}$$

$$\text{Change in Cost of discount} = 3\% (R8\,500 \times 840 \times 15\%) \checkmark - 3\% (R8\,500 \times 800 \times 10\%) \checkmark$$

$$= 32\,130 - 20\,400$$

$$= 11\,730 \text{ increase}$$

### Change in opportunity cost of accounts receivable

GIVEN R82 425 (increase)

### Increase in opportunity cost

$$= R82\,425 \checkmark P \times 15\% \checkmark$$

$$= R12\,364 \text{ (increase)}$$

Net

Change in Gross Profit	204 000
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Change in Bad debt losses	(3 400)
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Change in Cost of discount	(11 730)
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increase in opportunity cost	(12 364)
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Change in net income	176 506 $\checkmark P$
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There is an increase of R176 506 in net income under the new policy. Therefore they should implement the new policy.  $\checkmark P$

8.2

June credit sales	R 240 000 ✓
Uncollectable debt	(R 12 000) ✓
Total credit sales to be collected	<b>R228 000</b>
Collected in July (R 228 000 ✓P x 40%✓)	R91 200

		<b>AUGUST</b>
Cash sales	GIVEN	R60 000
June credit sales	Already collected	-
July credit sales	(R360 000 – R18 000) x 40%	R136 800
August credit sales	(R180 000 – R9 000) x 60%	R102 600
		<b>R299 400</b>

	<b>JUNE</b>	<b>JULY</b>	<b>AUGUST</b>
Total sales	R320 000	R460 000✓	R240 000
Cost of goods sold	R224 000 ✓	R322 000 ✓	R168 000
Payment of June purchases	(R224 000 x 75%✓)	R168 000	
Payment of July purchases	(R322 000 x 25%✓)	R 80 500	
Total cash payment in July		<b>R248 500✓P</b>	

Cost of goods sold = 70% of sales

R320 000 x 70% = R 224 000

8.4 Operating cycle = 60+55  
= 105 days✓

8.5 Cash conversion cycle = 105 – 45  
= 60 days✓

8.5 cash conversion cycle will increase by 7 days✓  
cash conversion cycle will decrease by 2 days✓  
cash conversion cycle will decrease by 15 days✓

**SECTION C**  
**QUESTION 9**

**[75 MARKS]**  
**(25 marks)**

Report ✓P

TO: Mr Pin

FROM: Financial Accountant

RE: Proposed expansion

DATE: 5 July 2015

<b>Liquidity Ratios</b>		
	<b>2014</b>	<b>2013</b>
<b>Current ratio:</b>		
Current assets	697 700	662 100
Current liabilities	128 700	129 600
	<b>5.42 OR 5.42:1</b> ✓	<b>5.11 OR 5.11:1</b>
<b>Quick Ratio:</b>		
Current assets – inventory	697 700 – 86 700	662 100 – 82 600
Current liabilities	128 700	129 600
	<b>4.75 OR 4.75:1</b> ✓	<b>4.47 OR 4.47:1</b>

**Comment:**

- Both the current and quick ratios are extremely conservative (high) and increasingly so. ✓
- This may indicate that that XARA is using long term financing to finance there working capital. ✓
- However, at investigation their trade receivable are extremely high and represent 5/8 of their assets. ✓
- This represents a major opportunity cost to XARA as they will have to fund that large amount of sales that have not been received in cash ✓

<b>Activity Ratios</b>		
	<b>2014</b>	<b>2013</b>
<b>Inventory turnover:</b>		
Cost of goods sold	353 200	340 900
Inventory	86 700	82 600
	<b>4.07 Times</b> ✓	<b>4.13 Times</b>
<b>Average collection period:</b>		
Trade receivables	527 800	501 800
Annual Sales/365	784 700/365	753 200/365
	<b>245.50 Days</b> ✓	<b>243.17 Days</b>
<b>Average payment period:</b>		
Trade payables	63 500	61 500
Annual Purchases/365	353 200/365	340 900/365
	<b>65.62 Days</b> ✓	<b>65.85 Days</b>
<b>Total asset turnover:</b>		

Sales	784 700	753 200
Total assets	837 100	794 000
	<b>0.94 or 0.94 Times</b> ✓	<b>0.95 or 0.95 Times</b>

**Comment:**

- Inventory turnover is quite low, considering that the company operates in the retail sector that may be seasonal. 4 times may be suited. Preferably this should be higher. ✓
- The collection period is extremely high; XARA must review its credit policies. This could be one of the main contributing factors to the high level of trade receivables. Customers are not paying. ✓
- The payables period seems to be consistent; however there is no indication of the supplier's credit terms. If suppliers are providing a 60 day credit policy, XARA must pay within 60 days or there will be adverse effect on their supplier relations. ✓
- Their asset turnover is very low – not even covering its self once. This may be due to the high level of receivables that are stagnant in their books. If the trade receivables are reduced there will be a higher assets turnover, which will also be more accurate representation of what operations in the company. ✓

<b>Debt Ratios</b>		
	<b>2014</b>	<b>2013</b>
<b>Debt ratio:</b>		
Total liabilities	391 100	391 700
Total assets	837 100	794 000
	<b>46.72%</b> ✓	<b>49.33%</b>
<b>Times interest earned ratio:</b>		
Earnings before interest and tax	97 600	99 100
Interest	10 000	9 000
	<b>9.76 OR 9.76 Times</b> ✓	<b>11.01 OR 11.01 Times</b>

**Comment:**

- SARA has a high level of financial leverage; this may be acceptable as the business risk profile of XARA (Retail Company) is fairly low. ✓
- Despite the high level of debt, XARA does show supporting earnings to meet the obligations of debt providers ✓

<b>Profitability Ratios</b>		
	<b>2014</b>	<b>2013</b>
<b>Gross profit margin:</b>		
Gross profit	431 500	412 300
Sales	784 700	753 200
	<b>54.99%</b> ✓	<b>54.74%</b>
<b>Operating profit margin:</b>		
Operating profits	97 600	99 100

Sales	784 700	753 200
	<b>12.44%</b> ✓	<b>13.16%</b>
<b>Net profit margin:</b>		
Profit (Less pref. div.)	66 100	67 575
Sales	784 700	753 200
	<b>8.42%</b> ✓	<b>8.97%</b>
<b>Earnings per share:</b>		
Profit (Less pref. div.)	66 100	67 575
WANOS	31 300	31 300
	<b>R2.11</b> ✓	<b>R2.16</b>
<b>Returns on total assets (ROA):</b>		
Profit (Less pref. div.)	66 100	67 575
Total assets	837 100	794 000
	<b>7.90%</b> ✓	<b>8.51%</b>
<b>Returns on common equity (ROE):</b>		
Profit (Less pref. div.)	66 100	67 575
Total equity (Less pref. capital)	446 000	402 300
	<b>14.82%</b> ✓	<b>16.80%</b>

**Comment:**

- Among the 3 profitability ratios the reduction in the gross margin to the operating margin is a major concern, almost a 40% reduction. Operation expensive may be too high and there demand an investigation as to the cause there of. ✓
- Return on assets may also be improved if the receivables are reduced ✓
- Return on equity is quite low considering the amount of financial leverage, shareholder may be unhappy with this returns mainly due to the high operation inefficiencies ✓

<b>Market Ratios</b>		
	<b>2013</b>	<b>2012</b>
<b>Price earning (P/E) ratio:</b>		
MPS	3,97	3,05
EPS	R2.11	R2.16
	<b>1.88</b> ✓CE	<b>1.41</b> ✓CE

**Comment:**

- The PE ratio alone with the company share price has increase showing high investor confidence. ✓

**Recommendation:**

Due to the high levels of trade receivables, the high operational inefficiencies XARA Ltd. should not✓ expand in the US market. The current situation has increased the business

risk of XARA to a point where they might be forced in to liquidation. This is confirmed by the low investor confidence. ✓

XARA should thus consider reviewing the credit standards or factoring off the trade receivables. Also, a must operational investigation must take place in order to review the operation inefficiency in the company. ✓

Therefore, we should not invest in XARA. ✓

**(MAX 15 for calculations + MAX 10 (19 available) for discussion = MAX 25)**

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