NWU®

UNIVERSITEITSNOMMER
UNIVERSITY NUMBER 1 0 4 0 2 3 4 9

FINALE %
FINAL % 89

Hierdie gedeelte moet **volledig** deur die student voltooi word.
This section must be completed **in full** by the student.

Dosent
Lecturer: Prof Ines Nel

Van
Surname: Swart

Voorletters
Initials: HS

Titel
Title: Mev

Handtekening
Signature: HSwart

Kontaknommer
Contact number: 0834094685

Modulekode
Module code: MBAC 813

Datum van eksamen
Date of examination: 10/06/2019.

Kwalifikasie
Qualification: MBA

Eksamenlokaal
Exam venue: C5 G05

Aantal antwoordskrifte ingehandig
Number of answer scripts handed in: 1

Nommer van hierdie skrif
Number of this script: 1

Vul asb. die vraagnr. van die vrae wat u beantwoord het hieronder in.
Fill in the number of the questions you have answered.

Vraagnommer Question number	Punte: Eksaminator Marks: Examiner	Punte: Moderator Marks: Moderator
TOTAAL / TOTAL		
Parafeer/Sign:		

Eksamenvoorskrifte / Examination Instructions

1. Studente mag in die eerste halfuur van 'n sessie tot die lokaal toegelaat word, maar geen ekstra tyd word toegestaan nie.
2. Geen student word toegelaat om die lokaal te verlaat binne die eerste halfuur van 'n eksamensessie nie.
3. Studente bring sakke na lokaal op **eie risiko**, en moet dit voor in die lokaal neersit.
4. Studente mag nie selfone/elektroniese toestelle by hulle hê en/of hanteer nie.
5. Geen verversings word in 'n eksamenlokaal toegelaat nie.
6. Studente mag nie die lokaal verlaat om te gaan rook nie.
7. Skryf op beide kante van die bladsye.
8. Skryf slegs in swart of blou ink.
9. Geen bladsye mag uit die antwoordskrif verwyder word nie.
10. Studente mag nie ontoelaatbare materiaal by hulle hê tydens 'n sessie nie, bv. notas en/of objekte wat notas bevat nie.
11. Geen items mag tydens die sessie geleen word nie.
12. Studente mag nie 'n ander student probeer help of probeer om hulp te kry nie.
13. Studente **moet** hul antwoordskrifte aan toesighouers oorhandig voordat hulle die lokaal verlaat.
14. Die presensiestrokie op die agterblad, wat ook as onderneming geld, **moet** voltooi en ingegee word.

1. Students are allowed into the venue in the first half hour of a session, but no extra time is granted.
2. No student is allowed to leave the venue before half an hour of the examination session has elapsed.
3. Students bring bags to the venue at **own risk**, and must put them in front of the room.
4. Students may not have cell phones/electronic devices with them and/or handle them.
5. No refreshments are allowed in the examination venue.
6. Students may not leave the room for a smoke break.
7. Write on both sides of each page.
8. Write in black or blue ink only.
9. No pages may be removed from the answer scripts.
10. Students may not have unauthorised material with them during a session, e.g. notes and/or objects that contain notes.
11. No items may be borrowed during the session.
12. Students may not attempt to assist another student, or attempt to obtain assistance.
13. Students **must** hand in their answer scrips to invigilators before they leave the venue.
14. The attendance slip on the back cover that also serves as an undertaking, must be completed and handed in.

Question 1.

Equilibrium is where expected return = required return.
The stock market determines prices by constantly shifting movements in the supply and demand of stock. The price and quantity where supply are equal is called Market equilibrium.

Required Rate of Return.
The required rate of return is the minimum return an investor expects to achieve by investing in a project.

$CAPM_{rr} = r_f + \beta(r_m - r_f)$
r_f = Risk free rate (8%)
r_m = Market risk (5,61%)
β = Beta. (0,54)

Risk-free rate (r_f) is the rate of an investment with no risk of financial loss. In this calculations I use 8% as risk free rate.

Market risk (r_m) is the risk of losses arising from movements in the market prices.

	JSE/CRI	Capital Gains	
2018	56709.50	(56709.50/55828.58) − 1	0,0158 ↑
2017	55828.58	(55828.58/52380.45) − 1	0,0658 ↑
2016	52380.45	(52380.45/49839.64) − 1	0,0510 ↑
2015	49839.64	(49839.64/50973.86) − 1	−0,0223 ↑
2014	50973.86	(50973.86/43560.22) − 1	0,1702 ↑
2013	43560.22		0,2805/5 ↑
		Average	0,0561
			5,61%. ✓

Share Price of Class Case

	Share Price	Gains	
2018	338,06	(338,06/348,93)-1	-0,0306 ↑
2017	348,93	(348,93/349,69)-1	-0,0022 ↑
2016	349,69	(349,69/291,66)-1	0,1990 ↑
2015	291,66	(291,66/132,78)-1	1,1966 ↑
2014	132,78	(132,78/122,62)-1	0,0829 ↑
2013	122,62.		1,4457/5 ↑
		Average	0,2891
			28,91 % ✓

(4)

Calculate Beta.

The beta of an investment indicates whether the investment is more or less volatile than the market as a whole.

	JSE	Class Case.
2018	1,58	-3,06
2017	6,58	-0,22
2016	5,10	19,90
2015	-2,23	119,66
2014	17,02.	8,29.

(2)

$$\text{Beta} = (Y_1 - Y_0)/(X_1 - X_0)$$
$$= (8 - 4)/(13,5 - 6,0)(6,2 - 13,5)$$
$$= 4/7,3$$
$$= 0,54.$$

Calculate Required Rate of Return

$$E(r) = CAPM = r_f + \beta(r_m - r_f)$$
$$= 8 + (0,54)(8 5,61 - 8)$$
$$= 8 + (-0,54)(-2,4)$$
$$= 8 + (+1,29)$$
$$= 9,29$$ ✓

(5)

The Beta < 1 is an indication that the required return is less than the market return.

Calculate Expected Rate of Return E(r)

$E(r) = (D_1/P_0) + g$

P_0 (Share Price) = R338,26

D_1 (Dividend) $= D_0(1+g)$

$g = rr \times ROE$

Calculate $g = rr \times ROE$

(2) ROE = Net Income / Equity

= 425248 / 1921484

= 0,22

retention rate = (Net Income - Div) / Net Income

= 425248 - (6,736 * 22780) / 425248

= 425248 - 153 109 / 425248

= 0,64

(2) $g = rr \times ROE$

= 0,64 x 0,22

= 0,1408

= 14,08%. ✓

(3) $ER = (D_1/(P_0) + g)$

$= ((D_0 * (1+g)) / P_0) + g$

= 6736 673,6 * (1 + 0,147)) / 33826 + 0,147 ✓

= 772,62 / 33826 + 0,147

= 0,1698

= 16,98%. ✓

Expected Return : 16,98%.
Required Return : 9,29%.
Current Share Price : R338,26.

Equilibrium Share price.
= Expected Return / Req return * share price.
= 16,98 / 9,29 * 338,26
= R618,26.

The shareprice is thus underpriced.

We can test for equilibrium using the SML approach: SML graph on graphic paper.

Rf	Rm	Assumed Beta	CAPM.
8	5,61	-1	10,39
8	5,61	-0,5	9,29.
8	5,61	0	8
8	5,61.	1.	5,61.

The share price is not in equalibrum - the share price is underpriced. The expected return is not in line with the ability.
It is important to manage gearing.
The negative beta can be because of the 2015 year where the share price nearly doubled from R130 to R291
The share price average gains is much higher than the market gains
This can also be because of new competitors into the market that influenced the share price.
The beta < 1 is an indication that the required return is less than the market return.

2

Question 2:

- Calculate Average growth in Sales.

	Sales		
2018	10 207 603	(10 207 603 / 9729 640) − 1	0,0491 ↑
2017	9729 640	(9729 640 / 8669 643) − 1	0,1223 ↑
2016	8 669 643	(8669 643 / 7692 646) − 1	0,1270 ↑
2015	7692 646		0,2984 / 3
		Average	0,0995 ↑
			9,95%

(2)

Possible Grow in Sales.

(1)

Year 1: (9,95 + 5) = 14,95 ✓
Year 2: (9,95 + 5) = 14,95
Year 3: (9,95 + 5) = 14,95
Year 4 ~~and~~ after. = 8.

Calculate FCF.

Operating Current Assets 2609111. 2232120.
Operating Current Liabilities:
Cur Liab (2018) − Tax − Short-term.
= 2145 798 − 74174 − 936.
= 2070 688.
Cur Liab (2017)
= 1831 797 − 61 664 − 1191
= ~~1765 942~~. 1768 942.

	2018	2017
Oper Cur Assets	2609 111	2232 120.
Oper Cur Liabilities	2070 688	~~1765 942~~ 1768 942.
NoWC	538 423	463 178
Change in NoWC.	−75 245 (463 178 − 538 423)	
Non current Assets.	1663 396 ↑	1481 122.
Change in NonCurA.	−182 274 ↑ ↑	

NOPAT = EBIT(1 − TAX)
= 543 326(1 − 0,28)
= 543 326 × 0,72
= 391 194 ✓

TAX = TAX paid / Profit BT
= 169 063 / 594 311
= 0,2845
= 28%.

(1)

Calculate FCF.

FCF = ΔNWC + ΔNon Cur Assets + NOPAT
= (−75 245) + (−182 274) + 391 194
= 133 675 ✓ (1)

(1)

FCF to start 133 675 ✓
Year 1 (133 675 × (1 + 0,1495)) = 153 659
Year 2 (153 659 × (1,1495)) = 176 631
Year 3 (176 631 × 1,1495) = 203 037.
Year 4 (203 037 × 1,08) ^ = 219 280

Required Rate of Return 9,29 as calculated in Question 1:

Present Value of FCF.
Year 1: (153 659 / (1 + 0,929)) = 140 597
Year 2: (176 631 / 1,0929) ^ = 161 617
Year 3: (203 037 / 1,0929) ^ = 185 778
Year 4: ~~((219 280 / (0,929 − 0,08)) / (1,0929)³~~ = 1302 171.
1790 163.

(2)

(4)

~~219 280 / (0,0929 − 0,08)~~

1) Value of Company R 1 790 163

2) Share price:
Number of shares 22730.
1790 163 / 22730 = 78,76. ✓
The share price will be R 78,76 after year 3

(1)

3) To dubblet the share price

PV = 78,76 ✓

FV = 157,52 ✓

r = 0,08 ✓

n = 9 ✓

(4)

It will take 9 years to dubble the share price

Question 3

Sustainable Growth rate

$g = (m(1-d)A/E)/(A/S) - m(1-d)A/E$

m - net profit margin

Net profit margin = Net Profit / Sales

d - Dividend Payout Rate.

Dividend Payout Rate = Dividends P Share / Earn P Share.

Earn per Share = Net Income / Number of Shares.

	2018	2017	2016	2015	2014	2013
Net Profit	425 268	449 486	442 002	363 379	269 658	248 551
Sales	10 207 603	9 729 640	8 669 643	7 692 646	6 781 274	6 376 945
Net Profit mgn	0,042	0,0483	0,0510	0,047	0,0397	0,039
Average	0,0445	4,45%				
Div per share	6,73,60	7,71,00	8,50,85	6,05,20	4,48,80	4,39,95
Earn per shar	18,71	20,65	19,45	15,99	11,85	10,93
Div payout r	0,36	0,38	0,44	0,38	0,38	0,38
Average	0,39	39%				

m = 0,0445

d = 0,39

Assets = 4 272 507

Equity = 1 921 484

Sales = 10 207 603

$g = (m(1-d)A/E) / (A/S - m(1-d)A/E)$

$= \frac{0{,}0445(1-0{,}39)(4272507/1921684)}{(4272507/1920760) - 0{,}0445(1-0{,}39)(4272507/1921684)}$

(10) $= 0{,}1685$
$= 16{,}85\%$

The sustainable growth rate of Class Case company is 16,85%.

Current Sales growth rate as calculated in question 2 is 9,95% on average for the past 6 years. The sales growth rate for 2018 from 2017 is 9,5%.
To grow at the current growth rate of 9,95 + additional 8% will be 17,95%.
This is not far from the sustainable growth rate of 16,85%. I think it is possible for the company to achieve that if they change a few things such as:

(3)
- Increase their sales.
- Better handling of fixed cost and assets.

Possible actions.
- Increase the net Profit margin by
  + Decreasing fixed cost
  + Increase the Sales.
- Increase the asset to equity Ratio.
- Decrease the assets to sales ratio, this can be done by using the assets more efficiently.
- Decrease the dividend payout by keeping more money (equity) in the business to possibly invest in something

(1)

When considering the sales growth 2017 - 2018 it is a bit lower than the average and a decrease from 2016 - 2017. The best sales growth was 2015 - 2016 and after that it was a decline in sales growth. The company will have to look at some of the possible actions discussed above to increase the sales growth again - only then will it be achievable for them to grow with 17,95%. Class Case operates in an economic environment where it is perhaps not achievable. Competitors also makes it more diffic

Question 4:

Operating profit and share price risk relationship on a stand-alone basis.
Share price risk is related to either
- change in rates of return of share price
- change in the share price.

To assess the relationship between share price risk and profit margin
- Calculate the standard deviation of the operating profit margin
- Calculate the standard deviation of the share price
- Evaluate the discrepancies

Operating Profit Margin = EBIT / Sales

	EBIT	Sales	Operating Profit Margin.
2018	543 326	10 207 603	(543 326 / 10 207 603) = 0,0532
2017	619 997	9 729 646	(619 997 / 9 729 646) = 0,0637
2016	548 524	8 669 643	(548 524 / 8 669 643) = 0,0632
2015	464 503	7 692 646	(464 503 / 7 692 646) = 0,0604
2014	357 566	6 781 274	(357 566 / 6 781 274) = 0,0527
2013	322 540	6 376 945	(322 540 / 6 376 945) = 0,0506
			Average 0,0573

3

5,73%.

(3)

Operating Profit margin

	Margin (A)	Average (B)	(A−B)	(A−B)²
2018	0,0532	0,0573 ✓	−0,0041 ✓	0,1681 ✓
2017	0,0637	0,0573	0,0064 ✓	0,4096 ✓
2016	0,0633	0,0573	0,0060 ✓	0,3600 ✓
2015	0,0604	0,0573	0,0031 ✓	0,0961 ✓
2014	0,0527	0,0573	−0,0046 ✓	0,2116 ✓
2013	0,0506	0,0573	−0,0067 ✓	0,4489 ✓
				1,6943 ✓

(3) (1,6943 / 5) = 0,3389 ✓

(3) Standard Deviation (√0,3389) = 0,5822 ✓

(3) Coefficient of Variance

0,5822 / 5,73 = 0,1016. ✓

Share Price Standard Deviation Calculation.

	Share Price	Return (A)	Average (B)	(A−B)	(A−B)²
2018	338,26	(338,26 / 348,93) − 1 = 3,0%	28,91	31,97 ✓	1022,08 ✓
2017	348,93	(348,93 / 319,69) − 1 = −0,09%	28,91	29,13 ✓	848,54 ✓
2016	319,69	(319,69 / 291,66) − 1 = 19,9%	28,91	−9,01 ✓	81,18 ✓
2015	291,66	(291,66 / 132,78) − 1 = 119,6%	28,91	90,75 ✓	8235,56 ✓
2014	132,78	(132,78 / 122,62) − 1 = 8,29%	28,91	−20,62 ✓	425,18 ✓
2013	122,62				(10612,57 / 4) ✓
			28,91 ✓		2651,89 ✓

(12)

(√2651,89) Standard Dev 51,50 ✓

(51,50 / 28,91) Coefficient of Var 1,781 ✓

Van en voorletters
Surname and initials: Swart HS

Universiteitsnommer
University Number: 10402349

Kwalifikasie
Qualification: MBA

Modulekode
Module code: MBAC813

Ek verklaar hiermee dat ek myself vergewis het van die eksamenvoorskrifte en dat ek die inhoud en gevolge van die nie-nakoming daarvan verstaan en begryp.

I hereby declare that I have familiarised myself with the examination instructions and that I understand and comprehend the content of and the consequences of the non-compliance thereof.

Handtekening
Signature: [signature] Datum
Date: 10/06/2019

WAARSKUWING / WARNING

Die Universiteit beskou akademiese oneerlikheid van watter aard ook al in 'n baie ernstige lig. Die Statuut van die Noordwes-Universiteit maak in paragraaf 80 daarvan voorsiening dat 'n persoon wat nie die reëls en regulasies van die Universiteit nakom nie, dissiplinêr aangekla kan word.

The University regards academic dishonesty of any nature whatsoever in a very serious light. The Statute of the North-West University makes provision in paragraph 80 for disciplinary charges to be brought against any person who does not comply with the rules and regulations of the University.

The above calculations indicate that the operating profit standard deviation is much lower than the standard deviation of the share price.
This is an indication that the share price is ~~more~~ volatile. The share price was up from 2015 to 2016 but then down again in 2018. Despite the ups and down the average return are way above the market return. The Class Case company have shown a positive operating Profit margin throughout the ~~last~~ past five years with an annual return of 5,44% which is a good sign.
The share price differ from the market return and can be seen from the higher stand deviation of Class Case Company. This is an indication that the risk is higher in the Class Case investment than in the market.
Class Case management must look at the utilization of their assets and must avoid "lazy" assets. ~~They can open.~~ They can acquire funds to buy fixed and current assets to support their sales activities.
The share price is not in equilibrium with the market share price
The EBIT was down from 2017 while Sales are up. This can be a result of fixed cost, cost of sales or other cost. The gross profit was not so much down so this can be an indication that there is a problem with the fixed cost

Beta. Question 1. 10402349.