

CIFA PART II SECTION 4

EQUITY INVESTMENTS ANALYSIS

THURSDAY: 23 May 2019.

Time Allowed: 3 hours.

Answer ALL questions. Marks allocated to each question are shown at the end of the question. Show ALL your workings.

QUESTION ONE

(a) Irene Kanini believes that the shares of Rafiki Limited are currently overvalued. However, she recognises that share prices often continue to increase above their intrinsic values for sometime before correcting.

Required:

With reference to the above statement:

- (i) Explain to Irene Karini three types of validity instructions used in securities exchange market which specify when an order should be executed. (3 marks)
- (ii) Advise Irene on the type of order that she should place assuming that she intends to sell her shares when the share prices begin to fall by a significant amount. (2 marks)
- (b) Better App Limited has come up with a new mobile application software that is expected to enable the company grow at a rate of 20% per annum for the next four years. By the end of four years, Better App Limited forecast that other firms will have copied the mobile application and competition will drive down profit margin and the sustainable growth rate will fall to 5%.

The company's most recent dividend was \$\frac{1}{2}.00\$ per share. The cost of capital is 10%.

Required:

The expected rate of return to an investor who buys the company's shares now and sells them in a year. (4 marks)

Dee Limited uses bonds, preference shares and ordinary shares modes of financing. The market value of each of these sources of financing and the before-tax required rates of return for each source are given below:

	Market value Sh. "million"	Required rate of return (%)
Bonds	400	8.0
Preference shares	100	8.0
Ordinary shares	500	12.0
Total	1,000	

Additional information:

- 1. Net income available to ordinary shareholders is Sh.110 million.
- 2. Interest expense is Sh.32 million.
- 3. Preference dividends are Sh.48 million.
- 4. Depreciations expense is Sh.40 million.
- 5. Investment in fixed capital is Sh.70 million.
- 6. Investment in working capital is Sh.20 million.
- 7. Net borrowing is Sh.25 million.
- 8. Corporate tax rate is at 30%.
- 9. Stable growth rate of free cash flow to the firm (FCFF) is 4%.
- 10. Stable growth rate of free cash flow to equity (FCFE) is 5.4%.

Required:

(i) The weighted average cost of capital (WACC) for the firm.

(2 marks)

(ii) The current value of free cash flow to the firm (FCFF).

(2 marks)

(iii) The total value of the firm.

(2 marks)

(iv) The value of equity for the firm.

(1 mark)

(v) The current value of free cash flow to equity (FCFE).

(2 marks)

(vi) The value of equity based on forecasted year 1 FCFE.

(2 marks)

(Total: 20 marks)

QUESTION TWO

(a) In relation to industry and company analysis and equity valuation:

(i) Explain the term "peer group".

(2 marks)

(ii) Summarise any four steps that an equity analyst should follow in forming a peer group.

(4 marks)

(b) In relation to technical analysis:

(i) Explain the term "change in polarity principle".

(2 marks)

(ii) Describe two chart patterns.

(4 marks)

Jeremy Owuor is valuing Delta Railways. During the last two years (year ended 31 March 2015 to year ended 31 March 2019), the company has paid dividends per share (DPS) of Sh.5.50, Sh.6.50, Sh.7.00, Sh.8.00 and Sh.9.00 respectively. These dividends suggest an average annual growth rate in DPS of just above 13%. Jeremy has decided to use a three-stage dividend discount model (DDM) with a linearly declining growth rate in Stage 2. He considers Delta Railways to be an average growth company, and estimates stage 1 (the growth stage) to be 6 years and stage 2 (the transition stage) to be 10 years. He estimates the growth rate to be 14% in stage 1 and 10% in stage 2. His estimated required return on equity is 16%.

Required:

The current value of Delta Railways share.

(8 marks)

(Total: 20 marks)

QUESTION THREE

You are presented with the following two scenarios about two companies, Alpha Ltd. and Beta Ltd. The real rate of return on shares for both companies is 3% per annum.

Scenario 1:

Suppose both Alpha Ltd. and Beta Ltd. can pass through 75% of cost increase. Cost inflation is 6% for Alpha Ltd. but only 2% for Beta Ltd.

Required:

(i) Estimate the Justified price to earnings (P/E) ratio for each company and interpret the results.

(3 marks)

Scenario 2:

Suppose both Alpha Ltd. and Beta Ltd. face 6% annual inflation. Alpha Ltd. can pass through 90% of cost increases, but Beta Ltd. can pass through only 70%.

Required:

(ii) Estimate the justified P/E ratio for each company and interpret the results.

(3 marks)

(b) Naheshon Marwa is a junior financial analyst at Cleverinvest, a fund management company specialising in equity investment. His supervisor requested him to perform a couple of valuation tasks on some private companies.

Required:

Advise Naheshon on two factors that he should consider when selecting the approach to value a private company.

(4 marks)

CF41 Page 2 Out of 4 (c) Linus Wambua owns 10% of Applex Limited shares while the remaining 90% is held by Kelvin Mukuna who is the Chief Executive Officer of the company. Kelvin is interested in selling Applex Limited to a third party. He advises Linus that if Applex Limited is not sold, he has no reason to purchase his 10% interest.

Additional information:

- 1. Valuation discounts assuming imminent sale of Applex Limited.
 - Lack of control discount 0%.
 - Lack of marketability discounts 5%.
- 2. Valuation discount assuming continued operation as a private company:
 - Lack of control discount: incorporated through use of reported earnings rather than normalised earnings.
 - Lack of marketability discount 25%.
- 3. Indicated value of equity operations:
 - In sale scenario Sh.9,600,000,000.
 - In stay-private scenario No., Sh.8,000,000,000

Required:

(i) Discuss the relevance of valuation discount assuming imminent sale of Applex Limited.

(2 marks)

- (ii) Explain which estimate of equity value should be used and calculate the value of Linus equity interest in Applex Limited assuming sale is likely. (3 marks)
- (iii) Evaluate relevance of valuation discount assuming Applex Limited continues as a private company.

(2 marks)

(iv) Assuming Applex Limited continues as a private company, explain which estimate of equity value should be used and calculate the value of Linus equity interest. (3 marks)

(Total: 20 marks)

OUESTION FOUR

(a) An equity analyst at SmartInvest Asset Management firm prepares a market forecast for his firm which uses the Grinold-Kroner Model to forecast the expected rate of return on equities for the next 10 years. He uses the data provided below to prepare his forecast:

Factor	
ractor	

10 years forecast (annualised)

Dividend yield	1.80%
Dividend growth rate	4.00%
Changes in price to earnings (P/E) matiple	0.50%
Inflation rate	1.20%
Change in number of shares outstanding	-0.30%
Real total earnings growth rate	2.50%

Required:

Determine the following sources of return for equities according to the Grinold-Kroner Model, using the analyst's forecasts:

(i) Expected nominal earnings growth return.

(2 marks)

(ii) Expected repricing return.

(2 marks)

(iii) Expected income return.

(2 marks)

- (b) The following data relate to a firm listed on the Naxsi Securities Exchange (NSE):
 - 1. The firm will earn Sh.1.00 per share in perpetuity.
 - 2. The firm pays all earnings as dividends.
 - 3. Book value per share (BVPS) is Sh.6.00.
 - 4. The required rate of return on equity is 10%.

Required:

(i) The value of the company's shares using the dividend discount model (DDM).

(2 marks)

(ii) The value of the share using the residual income valuation model.

(2 marks)

			1, 1						
		litional information:				11			
		The expected market rate of return is 7%.							
		The risk-free rate is 2%.				• 1.			
		The current ex-dividend market price per share (MPS) is Sh.20.80. The company's shares have a beta of 1.2.	9 Y			5. 4.			
	₹.	The company's shares have a beta of 1.2.				111		1111	
	Reg	uired:				44.6			
	(i)	The market implied dividend growth rate (g _{IMPL}) for Amlex Limited	d using	the cor	stant	divid	end gr	owth i	nodel.
				e	•				(3 marks)
	(ii)	The implied dividend growth rate assuming that the company will	inct he	able to	retain	ite av	erage.	nact v	ears' return
	(11)	on equity (ROE) of 10% while maintaining its current payout ratio.		able to	ctani	ns av	crage	разі у	(3 marks)
	(iii)	The value of Amlex Limited's share assuming a sustainable growth	n rate, g	, of 2.5	%.			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(2 marks)
	(iv)	Advise an investor on whether to buy the company's shares based of	on your	results	in (c)	Gili)			(2 marks) 20 marks)
			1 10 10 10 10 10 10 10 10 10 10 10 10 10	· ·	0,5.		•		20 1111113)
QUE		ON FIVE		305	?		9.8 1441	, la	
(a)	Desc	cribe two instances when the following equity valuation measures are	e appro	prime:	1.50				
	(i)	Dividends.	CSEC SEC				14 T		(2 marks)
	(ii)	Free cash flows (FCFs).	SKO					. 41	(2 marks)
									(2 1)
(b)		Dividends. Free cash flows (FCFs). Residual income. es Koech. a Certified Investment and Financial Analyst (CIFA), is	conside	ering u	sing e	cono	nic va	lue ac	(2 marks) Ided (EVA)
(b)	Jam and	market value added (MVA) to measure the performance of Surmation for the year ended 31 December 2018:	ıkari Li	imited.	He	has	gather		lded (EVA)
(b)	Jam and	market value added (MVA) to measure the performance of Surmation for the year ended 31 December 2018: Adjusted net operating profit before tax for the year 2018 is Sh.142 Total capital is Sh.700 million (no debt).	ıkari Li	imited.	He	has	gather		lded (EVA)
(b)	Jame and information 1. 2. 3.	market value added (MVA) to measure the performance of Surmation for the year ended 31 December 2018: Adjusted net operating profit before tax for the year 2018 is Sh.142 Total capital is Sh.700 million (no debt). Closing market price per share (MPS) is Sh.26.	ıkari Li	imited.	He	has	gather		lded (EVA)
(b)	Jame and information 1. 2. 3. 4.	market value added (MVA) to measure the performance of Surmation for the year ended 31 December 2018: Adjusted net operating profit before tax for the year 2018 is Sh.142 Total capital is Sh.700 million (no debt). Closing market price per share (MPS) is Sh.26. Sukari Limited has 84 million outsending ordinary shares.	ıkari Li	imited.	He	has	gather		lded (EVA)
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(c)	Jama and info: 1. 2. 3. 4. 5. 6. Req (i) (ii) Mw	market value added (MVA) to measure the performance of Surmation for the year ended 31 December 2018: Adjusted net operating profit before tax for the year 2018 is Sh.142 Total capital is Sh.700 million (no debt). Closing market price per share (MPS) is Sh.26. Sukari Limited has 84 million outpanding ordinary shares. Total cost of equity is 14%. Corporation tax rate is 30%. uired: EVA for the year ended 31 December 2018. MVA for the year ended 31 December 2018. i Ltd. expects earnings of Sh.1.25 per share next year out of which dividends are expected to grow at a constant rate each year afterward.	2,857,14	imited.	He e pai	has d out	gather	ed the	(3 marks) (3 marks)
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Present Value of 1 Received at the End of *n* Periods: $PVIF_{r,n} = 1/(1+r)^n = (1+r)^{-n}$

$$PVIF_{r,r} = 1/(1+r)^{r} = (1+r)^{r}$$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%	36%
1	.9901	.9804	.9709	.9615	.9524	.9434	.9346	.9259	.9174	.9091	.8929	8772	.8696	.8621	.8475	.8333	.8065	.7813	.7576	.7353
2	.9803	.9612	.9426	.9246	.9070	.8900	.8734	.6573	.8417	.8264	.7972	.7695	.7561	.7432	.7182	.6944	.6504	.6104	5739	.5407
3	.9706	.9423	.9151	.8890	.8638	.8396	.8163	.7938	.7722	.7513	.7118	.6750	6575	.6407	.6086	.5787	.5245	.4768	4348	3975
4	.9610	.9238	.8885	.8548	.8227	7921	.7629	.7350	.7084	.6830	.6355	.5921	.5718	.5523	.5158	.4823	.4230	.3725	.3294	2923
5	.9515	.9057	.8626	.8219	.7835	.7473	.7130	.6806	.6499	.6209	.5674	5194	.4972	.4761	.4371	.4019	.3411	.2910	.2495	.2149
6	.9420	.8880	.8375	.7903	.7462	.7050	:6663	.6302	.5963	.5645	.5066	.4556	.4323	.4104	.3704	.3349	.2751	.2274	.1890	.1580
7	.9327	.8706	.8131	.7599	.7107	.6651	.6227	.5835	.5470	.5132	4523	.3996	.3759	.3538	.3139	.2791	.2218	:1776	.1432	.1162
8	.9235	.8535	.7894	.7307	.6768	.6274	.5820	.5403	.5019	.4665	.4039	.3506	.3269	.3050	.2660	.2326	.1789	.1388	.1085	.0854
9	.9143	.8368	.7664	.7026	.6446	.5919	.5439	.5002	.4604	.4241	.3606	3075	.2843	.2630	.2255	.1938	.1443	.1084	.0822	.0628
10	.9053	.8203	.7441	.6756	.6139	.5584	.5083	.4632	.4224	.3855	.3220	.2697	.2472	.2267	.1911	.1615	.1164	0847	.0623	.0462
. 11	.8963	8043	.7224	.6496	.5847	.5268	.4751	.4289	.3875	.3505	.2875	.2366	.2149	.1954	.1619	.1346	.0938	.0662	.0472	.0340
12	.8874	.7885	.7014	.6246	.5568	.4970	.4440	.3971	.3555	.3186	.2567	.2076	.1869	1685	.1372	.1122	.0757	.0517	.0357	.0250
13	.8787	.7730	.6810	.6006	.5303	.4688	.4150	.3677	.3262	.2897	.2292	.1821	.1625	.1452	.1163	.0935	.0610	.0404	.0271	.0184
14	.8700	.7579	.6611	.5775	.5051	.4423	.3878	.3405	.2992	.2633	.2046	.1597	.1413	.1252	.0985	.0779	.0492	.0316	.0205	.0135
15	.8613	.7430	.6419	.5553	.4810	.4173	.3624	3152	.2745	.2394	.1827	.1401	.1229	.1079	.0835	0. 0649	.0397	.0247	.0155	0099
16	.8528	.7284	.6232	.5339	.4581	.3936	.3387	.2919	.2519	.2176	.1631	.1229	1069	.0930	079B	.0541	.0320	.0193	.0118	.0073
17	8444	7142	.6050	.5134	.4363	.3714	.3166	.2703	.2311	.1978	.1456	.1078	.0929	.0802	3600	.0341	.0320	.0150	.0089	.0073
18	.8360	.7002	.5674	.4936	.4155	.3503	.2959	.2502	.2120	.1799	.1300	.0946	.0808	.0602	.0508	.0376	.0208	.0130	.0068	.0039
19	.8277	.6864	.5703	.4746	.3957	.3305	.2765	2317	.1945	.1635	.1161	.0829	.0703	.0336	.0431	.0313	.0168	.0092	.0051	.0029
20	.8195	.6730	.5537	.4564	.3769	.3118	.2584	.2145	.1784	1486	1037	.0728	.0611	2514	.0365	.0261	.0135	.0032	.0039	.0023
26	7700	COOF	4770	3764	2052	2220	4040	4400	4400		2522	2272	20.5							
25	.7798	.6095	.4776	.3751	.2953	.2330	.1842	.1460	.1160	.0923	.0588	.0378	0304	.0245	.0160	.0105	.0046	.0021	.0010	0005
30	.7419	.5521	.4120	.3083	.2314	.1741	.1314	.0994	.0754	.0573	.0334	.0196	.0151	.0116	.0070	.0042	.0016	.0006	.0002	.0001
40	.6717	.4529	.3066	.2083	.1420	.0972	.0668	.0460	.0318	.0221	.0107	.0053	.0037	.0026	.0013	.0007	.0002	.0001		
50	.6080	.3715	.2281	.1407	.0872	.0543	.0339	.0213	.0134	.0085	.0035	0014	.0009	.0006	.0003	.0001				
60	.5504	.3048	.1697	.0951	.0535	.0303	.0173	.0099	.0057	.0033	.001/1	-0004	.0002	.0001		•	• •	•	•	•

* The factor is zero to four decimal places

Present Value of an Annuity of Per Period for n Periods:

$$PVIF_{r1} = \sum_{i=1}^{n} \frac{1}{(1+r)^{i}} = \frac{1-\frac{1}{(k+r)^{i}}}{r}$$

THUMBER 30						50													
payments	1%	2%	3%	4%	5%	06%	7%	8%	9%	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.8929	0.8772	0.8696	0.8621	0.8475	0.0333			
2	1.9704	1.9416	1.9135	1.8861	1.6594	1.8334	1.8080	1,7833		1.7355		1.6467	1.6257	1.6052	1.5656		0.8065	0.7813	0.7576
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243			2.4869	2.4018	2.3216	2.2832	2.2459			1.4568	1.3916	1.3315
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872			3,1699		2.9137	2.8550	2.7982	2.1743	2.1065	1.9813	1.8684	1.7663
5	4.8534	4.7135	4.5797	4.4518	4.3295			3.9927		3.7908					2.6901	2.5887	2.4043	2.2410	
					•			0,5521	0.0001	0.1500	3.00-40	3.4331	3.3322	3.2743	3.12/2	2.9906	2.7454	2.5320	2.3452
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859	4 3553	4.1114	3.8887	3.7845	3.6847	2 4070	3.3255			
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.5638	4.2883	4.1604	4.0386			3.0205	2.7594	
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5348	5.3349	4.9676	4.6389	4.4873	4.3436	3.8115		3.2423	2.9370	2.6775
9	8.5660	8.1622	7.7861	7.4353	7,1078	6.8017	6.5152	6.2469	5.9952	5.7590			4.7716		4.0776	3.8372	3.4212	3.0758	2.7860
10	9.4713	8.9826	8.5302	8.1109	7,7217			6.7101		6.1446		5.2161		4.6065	4.3030	4.0310	3.5655	3.1842	2.8681
								0.1101	0.4111	0,1440	3.0302	3.2101	5.0188	4.8332	4.4941	4.1925	3.6819	3.2689	2.9304
11	10.3676	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6 8052	6.4951	5.9377	5.4527	5.2337	E 000C	4 6560				
12	11.2551	10.5753	9,9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.1944	5.6603		5.0286	4.6560	4.3271	3.7757	3.3351	2.9776
13	12,1337	11.3484	10.6350	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034			5.4206	5.1971	4.7932	4.4392	3.8514	3.3868	3.0133
14				10.5631		9.2950	8.7455		7.7862	7.1034	6.4235	5.8424	5.5831	5.3423	4.9095	4.5327	3.9124	3.4272	3.0404
15						9.7122			8.0607		6.6282		5.7245	5.4675	5.0081	4.6106	3.9616	3.4587	3.0609,
						3.7122	3.1073	0.5555	0.0607	1.6061	6.8109	6.1422	5.8474	5.5755	5.0916	4.6755	4.0013	3.4834	3.0764
16	14.7179	13.5777	12,5611	11.6523	10.8378	10.1059	9 4466	R 8514	R 3126	7 0227	6.9740	C 2054	6.05.40						
17	15.5623	14.2919	13,1661	12.1657	11.2741	10.4773	9 7632	9.1216	8.5436	8.0216	7.1196		5.9542	5.6685	5.1624	4.7296	4.0333	3.5026	3.0882
18						10.8276			8.7556	8.2014		6.3729	6.0472	5.7487	5.2223	4.7746	4.0591	3.5177	3.0971
19						11.1581			8.9501		7.2497	6.4674	6.1280	5.8178	5.2732	4.8122	4.0799	3.5294	3 1039
						11.4699				8.3649	7.3658	6.5504	6.1982	5.8775	5.3162	4.8435	4.0967	3.5386	3.1090
						11.4033	10.5540	3.0101	9.1203	8.5136	7.4694	6.6231	6.2593	5.9288	5.3527	4.8696	4.1103	3.5458	3 1129
25	22.0232	19.5235	17.4131	15.6221	14 0939	12.7834	11 6536	10 6749	0 0226	0.0770	7.0434	6.0300							
30	25.8077	22.3965	19 6004	17 2920	15 3725	13.7648	12 4090	11 2570	7.0225	9.0770		6.8729	6.4641	6.0971	5.4669	4.9476	4.1474	3.5640	3 1220
40	32.8347	27.3555	23 1148	19.7928	17 1591	15.0463	13 3317	11.2376	10.2/3/	9.4269	8.0552	7.0027	6,5660	6.1772	5.5168	4.9789	4.1601	3.5693	3 1242
50	39,1961	31.4236	25 7298	21.4822	18 2559	15.7619	13.8007	12 2225	10.7374	9 1 1 9 1	0.2438	7.1050	6.6418	6.2335	5.5482	4.9966	4.1659	3.5712	3.1250
	44.9550	34 7609	27 6756	22 6235	18 9293	16.1614	14.0303	12.2333	10.9617	9.9148	8.3045	7.1327	6.6605	6.2463	3.5541	4.9995	4.1666	3.5714	3.1250
		005	27.3130	11.5255	10.3233	10.1014	14.0392	12.3766	11.0480	9.9672	€.3240	7,1401	6.6651	6.2402	5 5553	4.9999	4.1667	3.5714	3 1250