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CIFA PART II SECTION 4

EQUITY INVESTMENTS ANALYSIS

WEDNESDAY: 27 November 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) Describe three main categories of securities markets in relation to equity investment analysis. (6 marks)
- (b) An investor buys 1,000 shares of a stock on margin at a price of Sh.50 per share. The initial margin requirement is 40% and the margin lending rate is 3%. The investor's broker charges a commission of Sh.0.01 per share on purchases and sales. The stock pays an annual dividend of Sh.0.30 per share. One year later, the investor sells the 1,000 share at a price of Sh.56 per share.

Required:

The return on the equity investment.

(6 marks)

- (c) A financial analyst has gathered the following information for Rafiki Limited, a high growth firm trading and quoted in your country's securities exchange:

• Dividend payout ratio in the first five years	20%
• Dividend payout ratio after five years	50%
• Dividend growth rate in the first five years	25%
• Dividend growth rate after five years	8%
• Risk free rate	6%
• Beta of the company	1.0
• Risk premium of the company	5.5%

Required:

- (i) Estimate the price to earnings (P/E) ratio of the firm using two-stage dividend discount growth model. (4 marks)
- (ii) Estimate the return on equity (ROE) in the first 5 years. (2 marks)
- (iii) Estimate the return on Equity (ROE) during the stable growth rate period. (2 marks)

(Total: 20 marks)

QUESTION TWO

- (a) In relation to industry analysis:
- (i) Examine five factors that could influence the cash flow prospects of different industries in your country. (5 marks)
- (i) Highlight three characteristics of a shakeout stage of an industry life cycle phase. (3 marks)
- (b) As a financial analyst for an equity income mutual fund, you are evaluating National Water Ltd. for possible inclusion in the approved list of investments.

National Water Ltd. operates in a regulated industry and hence you are confident that its future growth rate should follow its stable historical growth record.

The return on equity (ROE) for the company has consistently been close to the historical median return on equity (ROE) for the country's businesses of 12.2%, reflecting the regulated prices for its product.

Estimated earnings per share (EPS) for the financial years 2019 and 2020 are Sh.1.27 and Sh.1.33 respectively reflecting a 4.7% growth rate.

The company has a current dividend payment rate of Sh.0.81. Although the company's dividend payout ratio has been relatively stable, that is, 73% in the year 2018, 77% in the year 2017, 75% in the year 2016, 77% in the year 2015, and 78% in the year 2014, you conclude that National Water Ltd. has not followed an exact fixed payout dividend policy. This is as a result of the company being conservative in reflecting earnings growth in increased dividend. Your dividends forecast for the year 2019 is Sh.0.83. In addition, the nominal annual Gross Domestic Product (GDP) growth estimate is 4%.

Compared with a mean dividend payout ratio of 76% from year 2014 to year 2017, you expect a long-term average dividend payout ratio of 70% going forward. You also anticipate a 3.7% long-term dividend growth rate.

The current market price per share (MPS) for National Water Ltd. is Sh.30. The estimated cost of equity is 6.2%.

Required:

- (i) Using Gordon growth model, estimate the value of the company's shares. (2 marks)
- (ii) State whether the company's shares are overvalued, fairly valued, or undervalued based on the results obtained in (b) (i) above. (2 marks)
- (iii) Provide three reasons why the Gordon growth model is suitable for valuing the company's shares. (3 marks)
- (iv) National Water Ltd's beta is -0.16.

Calculate the Capital asset pricing model (CAPM) estimate of the cost of equity for the company. (Assume equity risk premium of 5.7% and risk-free rate based on the long-term Treasury Bond was 5.7%).

- (v) The Gordon growth estimate of value of the company's share using the cost of equity obtained in (b) (iv) above. (2 marks)
- (vi) Assuming that a price to earnings ratio (P/E) of 24 based on estimated 2019 financial year earnings per share (EPS) is an appropriate guide to value, evaluate whether the Gordon growth estimate value in (b) (v) above is plausible. (1 mark)

(Total: 20 marks)

QUESTION THREE

(a) In relation to technical analysis:

- (i) Summarise three principles underlying Dow Theory. (3 marks)
- (ii) Explain three uses of oscillator indicators. (3 marks)

(b) Jiji Limited is expected to grow at the rate of 30% for the next five years. After that, competition is expected to lower the company's growth rate to a constant rate of 7% indefinitely. The market risk premium is 6% and the risk-free rate is 5%. The company's beta is 1.5 and it just paid a dividend of sh.2.50.

Required:

The current market value of the company's share. (6 marks)

(c) Jaloz Limited intends to invest Sh.100 million in a project that is being depreciated on a straight line basis to zero over a two year life with no salvage value. The project will generate earnings before interest and taxes (EBIT) of Sh.50 million each year for two years. The company's weighted average cost of capital (WACC) and required rate of return (RRR) for the project are both 12%.

The corporation tax rate is 30%.

Required:

- (i) The economic income for the company in year one and year two. (4 marks)
- (ii) The market value added (MVA) for the company. (4 marks)

(Total: 20 marks)

QUESTION FOUR

- (a) Melissa Atunda, a financial analyst at Beta Capital is undertaking equity valuation of Babito Limited, a big European multinational corporation specialising with electronics. The firm intends to venture in the Africa region to expand its market share.

The Chief Finance Officer has tasked Melissa to prepare a research report to be tabled to the Board of Management for consideration during the next Board meeting scheduled in the month of January 2020.

Required:

- (i) Outline three contents of an equity research report that Melissa should include in her presentation. (3 marks)
- (ii) Discuss four ethical responsibilities that Melissa should observe while undertaking the assignment. (4 marks)
- (b) An equity analyst has gathered the following financial information relating to Emma Elisha Ltd.:

Emma Elisha Ltd.
Income Statement excerpts
for the year ended 31 December:

	2018 Sh. "million"	2017 Sh. "million"
Earnings before interest, taxes and depreciation (EBITD)	275.0	250.0
Depreciation expense	<u>82.5</u>	<u>75.0</u>
Operating profit	192.5	175.0
Interest expense	<u>16.0</u>	<u>14.9</u>
Income before taxes	176.5	160.1
Income taxes	<u>56.5</u>	<u>48.0</u>
Net income	120.0	112.1
Ordinary dividend	48.0	44.8

Emma Elisha Ltd.
Statement of financial position as at 31 December:

	2018 Sh. "million"	2017 Sh. "million"
Assets:		
Current assets:		
Cash	38.0	34.5
Accounts receivable	126.5	115.0
Inventory	<u>189.7</u>	<u>172.5</u>
Current assets	354.2	322.0
Non current assets	1,168.3	1,003.0
Less: Accumulated depreciation	<u>(257.5)</u>	<u>(175.0)</u>
Total assets	<u>1,265.0</u>	<u>1,150.0</u>
Current liabilities:		
Account payable	128.2	97.7
Notes payable	<u>20.0</u>	<u>15.0</u>
Total current liabilities	148.2	112.7
Long term debt	157.5	150.0
50 million ordinary shares	800.0	800.0
Retained earnings	<u>159.3</u>	<u>87.3</u>
Total liabilities and equity	<u>1,265.0</u>	<u>1,150.0</u>

Additional information:

- The tax rate is 30%.
- The required rate of return is 13%.
- The analyst expects a growth rate on the financial year 2018 free cash flow to equity (FCFE) of 20% per year for the next three years and a 6% constant growth rate beyond the three years.

Required:

- (i) The free cash flow to equity (FCFE) per share. (6 marks)
- (ii) Estimate the company's value. (3 marks)

- (c) Boo Limited has Sh.160 million worth of assets, 20 million shares outstanding and a current share price of Sh.6
- Required:**
- (i) Calculate the company's Tobin's Q ratio. (2 marks)
- (ii) Comment on the value obtained in (c) (i) above. (2 marks)
- (Total: 20 marks)**

QUESTION FIVE

- (a) Justify four reasons why private company valuation is necessary in equity investment. (4 marks)
- (b) Sophia Akinyi is valuing a non-controlling interest in a small ornament retailer business. To obtain the appropriate price multiple for the firm's valuation, she has prepared a database of price multiples from the sale of entire public and private companies over the past ten years.

Using historical data, she estimates a control premium of 18.7% and a discount for lack of marketability of 24%.

Required:

- (i) Calculate the total adjustment for control and marketability to be applied in the valuation. (3 marks)
- (ii) Highlight three ways in which financial analyst could use to quantify discount for lack of marketability. (3 marks)
- (c) Rachael Gakii, an equity analyst at Rachel Securities Ltd. has gathered the following data for Ramex Global Bakeries dealing with investments in hypermarkets and supermarkets.

All figures except for the share prices are in Shillings Millions:

	2018	2017	2016
	Sh.	Sh.	Sh.
Total shareholder's equity	55.60	54.10	52.60
Net revenues	77.30	73.60	70.80
Net incomes	3.20	1.10	0.40
Net cash flow from operations	17.90	15.20	12.20
Share price	11.40	14.40	12.05
Shares outstanding	4,476	3,994	3,823

Industry relevant averages for year 2018:

Lagging industry ratios	2018
Price-to-Earnings (P/E)	8.6
Price-to-Cash Flow (P/CF)	4.6
Price-to-Sales (P/S)	1.4
Price-to-Book Value (P/B)	3.6

Required:

- (i) Ramex Ltd.'s trailing P/E, P/CF, P/S and P/B ratios. (4 marks)
- (ii) Explain whether the firm is undervalued or overvalued using the industry averages for 2018. (3 marks)
- (iii) Propose three drawbacks of price-to-sales (P/S) ratio in equity valuation. (3 marks)
- (Total: 20 marks)**
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Present Value of 1 Received at the End of *n* Periods:

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

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	.8573	.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	.0649	.0397	.0247	.0155	.0099
16	.8528	.7284	.6232	.5339	.4581	.3936	.3387	.2919	.2519	.2176	.1631	.1229	.1069	.0930	.0708	.0541	.0320	.0193	.0118	.0073
17	.8444	.7142	.6050	.5134	.4363	.3714	.3166	.2703	.2311	.1978	.1456	.1078	.0929	.0802	.0600	.0451	.0258	.0150	.0089	.0054
18	.8360	.7002	.5874	.4936	.4155	.3503	.2959	.2502	.2120	.1799	.1300	.0946	.0808	.0691	.0508	.0376	.0208	.0118	.0068	.0039
19	.8277	.6864	.5703	.4746	.3957	.3305	.2765	.2317	.1945	.1635	.1161	.0829	.0703	.0596	.0431	.0313	.0168	.0092	.0051	.0029
20	.8195	.6730	.5537	.4564	.3769	.3118	.2584	.2145	.1784	.1486	.1037	.0728	.0611	.0514	.0365	.0261	.0135	.0072	.0039	.0021
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	.0011	.0004	.0002	.0001						

* The factor is zero to four decimal places

Present Value of an Annuity of 1 Per Period for *n* Periods:

$$PVIF_{r,n} = \sum_{t=1}^n \frac{1}{(1+r)^t} = \frac{1 - \frac{1}{(1+r)^n}}{r}$$

Number of Payments	1%	2%	3%	4%	5%	6%	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	0.8333	0.8065	0.7813	0.7576
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.6901	1.6467	1.6257	1.6052	1.5656	1.5278	1.4568	1.3916	1.3315
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313	2.4869	2.4018	2.3216	2.2832	2.2459	2.1743	2.1065	1.9813	1.8684	1.7663
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397	3.1699	3.0373	2.9137	2.8550	2.7982	2.6901	2.5887	2.4043	2.2410	2.0957
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6048	3.4331	3.3522	3.2743	3.1272	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	3.4976	3.3255	3.0205	2.7594	2.5342
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	3.8115	3.6046	3.2423	2.9370	2.6775
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	4.0776	3.8372	3.4212	3.0758	2.7860
9	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952	5.7590	5.3282	4.9464	4.7716	4.6065	4.3030	4.0310	3.5655	3.1842	2.8681
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5.6502	5.2161	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	5.0286	4.6560	4.3271	3.7757	3.3351	2.9776
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	5.4206	5.1971	4.7932	4.4392	3.8514	3.3868	3.0133
13	12.1337	11.3484	10.6350	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034	6.4235	5.8424	5.5831	5.3423	4.9095	4.5327	3.9124	3.4272	3.0404
14	13.0037	12.1062	11.2961	10.5631	9.8986	9.2950	8.7455	8.2442	7.7862	7.3667	6.6282	6.0021	5.7245	5.4675	5.0081	4.6106	3.9616	3.4587	3.0609
15	13.8651	12.8493	11.9379	11.1184	10.3797	9.7122	9.1079	8.5595	8.0607	7.6061	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	8.8514	8.3126	7.8237	6.9740	6.2651	5.9542	5.6685	5.1624	4.7296	4.0333	3.5026	3.0882
17	15.5623	14.2919	13.1661	12.1657	11.2741	10.4773	9.7632	9.1216	8.5436	8.0216	7.1196	6.3729	6.0472	5.7487	5.2223	4.7746	4.0591	3.5177	3.0971
18	16.3983	14.9920	13.7535	12.6593	11.6896	10.8276	10.0591	9.3719	8.7556	8.2014	7.2497	6.4674	6.1280	5.8178	5.2732	4.8122	4.0799	3.5294	3.1039
19	17.2260	15.6785	14.3238	13.1339	12.0853	11.1581	10.3356	9.6036	8.9501	8.3649	7.3658	6.5504	6.1982	5.8775	5.3162	4.8435	4.0967	3.5386	3.1090
20	18.0456	16.3514	14.8775	13.5903	12.4622	11.4699	10.5940	9.8181	9.1285	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	10.6748	9.8226	9.0770	7.8431	6.8729	6.4641	6.0971	5.4669	4.9476	4.1474	3.5640	3.1220
30	25.8077	22.3965	19.6004	17.2920	15.3725	13.7648	12.4090	11.2578	10.2737	9.4269	8.0552	7.0027	6.5660	6.1772	5.5168	4.9789	4.1601	3.5693	3.1242
40	32.8347	27.3555	23.1148	19.7928	17.1591	15.0463	13.3317	11.9246	10.7574	9.7791	8.2438	7.1050	6.6418	6.2335	5.5482	4.9966	4.1659	3.5712	3.1250
50	39.1961	31.4236	25.7298	21.4822	18.2559	15.7619	13.8007	12.2335	10.9617	9.9148	8.3045	7.1327	6.6605	6.2463	5.5541	4.9995	4.1666	3.5714	3.1250
60	44.9550	34.7609	27.6756	22.6235	18.9293	16.1614	14.0392	12.3766	11.0480	9.9672	8.3240	7.1401	6.6651	6.2402	5.5553	4.9999	4.1667	3.5714	3.1250