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CIFA PART II SECTION 4

EQUITY INVESTMENTS ANALYSIS

THURSDAY: 30 November 2017.   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)   Highlight three challenges of direct investment in securities held by foreign companies.   (3 mark)

(b)   Explain the following terms as used in equity markets:

       (i)   Underwriting an issue of shares.   (1 mark)

       (ii)   Book building.   (1 mark)

       (iii)   Red herring prospectus.   (1 mark)

       (iv)   Class A and Class B shares.   (1 mark)

(c)   Mometrax Limited is expected to pay Sh.1 dividend per share (DPS) at the end of the year and that dividend is expected to grow at a constant rate of 5% per annum in the future. The company's beta is 1.2, the market risk premium is 5% and the risk-free rate is 3%.

       Required:
       The current share price of Mometrax Limited using the Gordon-growth model.   (2 marks)

(d)   James Momanyi, a certified investment and financial analyst (CIFA), is reviewing the valuation of three companies namely; EXE Ltd., WYE Ltd. and ZED Ltd. using the dividend discount model (DDM) and their corresponding current market prices.

       The following information summarises Momanyi's findings:

	EXE Ltd. Shares	WYE Ltd. Shares	ZED Ltd. Shares
Market price (Sh.)	35	40	36
DDM price (Sh.)	40	35	36

       Required:
       Based on the above information, determine the overvalued, undervalued and the fairly valued company.   (3 marks)

(e)   Bamaco Limited paid Sh.0.40 dividend per share (DPS) in the financial year 2016. In that year, the company had generated Sh.1.0 earnings per share (EPS). The firm's earnings and dividends are expected to grow at an annual rate of 5% perpetually. Shareholders require a return of 12% on the investment.

       Required:
       (i)   Justified trailing price-to-earnings (P/E) multiple.   (1 mark)

       (ii)   Justified leading price-to-earnings (P/E) multiple.   (1 mark)

(f)   Tryson Limited's share is currently trading at Sh.472. The company's beta is 0.83. The current dividend per share is Sh.13.80, the risk-free rate is 4.66% and the equity risk premium is 4.92%. Christopher Koech, an equity analyst for the company projects that the dividends will initially grow at a rate of 14% and then decline linearly to 5% over a 10-year period. Thereafter, the dividends are expected to grow at a rate of 5% per annum.

Required:

(i)   The value of Tryson Limited's dividend cash flow streams using the H - Model.   (3 marks)

(ii)   Explain whether the shares of Tryson Limited are correctly priced based on your answer in (f) (i) above.

                                                                                      (1 mark)

(iii)   The expected rate of return assuming that the investor decides to pay the current price of Sh.472 per share and that the company adopts the H – Model in its valuation.   (2 marks)

(Total: 20 marks)

QUESTION TWO

(a)   Analyse five elements that a financial analyst should include in his report while undertaking a thorough industry analysis.   (5 marks)

(b)   The annual revenue for top five airline players are given below:

Company	Revenue (Sh."Billions")
A	38
B	25
C	25
D	23
E	13

The total revenue for all firms in this industry is Sh.250 billion.

Required:

(i)   The concentration ratio for the five firms.   (2 marks)

(ii)   The Herfindahl index for the five firms.   (2 marks)

(c)   Prism Limited has a return on equity (ROE) of 14%. The earnings next year are projected at Sh.100 million and the firm's earnings retention ratio is 0.60. The firm's required rate of return is 12%.

Required:

Compute the following values for Prism Limited:

(i)   Franchise price-to-earnings (P/E) value.   (3 marks)

(ii)   Intrinsic price-to-earnings (P/E) value.   (3 marks)

(d)   Selected information for Nevada Limited and industry is provided below:

Nevada Limited

Estimated earnings growth rate	11%
Current share price	Sh. 25.00
Normalised (underlying) earnings per share for the year 2016	Sh.1.71
Weighted average shares outstanding during the year 2016	16 million

Industry

Estimated earnings growth rate	12%
Median price-to-earnings (P/E) ratio	19.90

Required:

Determine when compared to the industry, whether Nevada Limited equity is overvalued or undervalued on a price-earnings-to-growth (PEG) basis, using normalised earnings per share.   (5 marks)

(Total: 20 marks)

QUESTION THREE

(a)   (i)   In relation to sustainable growth, explain four alternative courses of action that management could take when actual growth rate falls below the sustainable growth rate.   (4 marks)

      (ii)   A bicycle manufacturing company has the following ratios for the years 2015 and 2016:

	2015	2016
Profit margin (%)	11.4	12.3
Retention ratio (%)	91.3	91.9
Asset turnover	1.25	1.14
Asset at the end of year (Sh."million")	2,436	3,118
Equity at the end of the year (Sh."million")	1,406	1,756
Growth rate in sales (%)	17.8	16.4

Required:

The firm's annual sustainable growth rate for the years 2015 and 2016.   (3 marks)

(b)   Harrison Nyongesa is evaluating Reliant Capital Limited using a three-stage growth model. He has gathered the following information:

1.   Current free cash flow to the firm is Sh.745 million.
2.   Outstanding ordinary shares are 309.39 million.
3.   The firm has equity beta of 0.90, risk-free rate of 5.05% and equity risk premium of 5.5%.
4.   The cost of debt is 7.1%.
5.   The capital structure of the company consists of 20% debt and 80% equity.
6.   Long-term debt has a market value of Sh.1,518 million.
7.   The annual growth rate of free cash flow to the firm (FCFF) is 8.8% from first year to fourth year, 7.4% in year 5, 6% in year 6, 4.6% in year 7, and 3.2% in year 8 and thereafter.
8.   The Corporation tax rate is 30%.

Required:

(i)   The required rate of return on equity.   (1 mark)

(ii)   The weighted average cost of capital (WACC).   (2 marks)

(iii)   The total value of the firm.   (4 marks)

(iv)   The total market value of equity.   (1 mark)

(v)   The value of equity per share.   (2 marks)

(c)   Explain the following behavioural biases inherent in technical analysis:

(i)   Extrapolation bias.   (1 mark)

(ii)   Overconfidence bias.   (1 mark)

(iii)   Anchoring bias.   (1 mark)

(Total: 20 marks)

QUESTION FOUR
(a)   An analyst has gathered the following information about Pericap Limited for the year ended 31 October 2017:

1.	Working capital balance	Sh.2,000,000
2.	Fair value of fixed assets	Sh.5,500,000
3.	Book value of fixed assets	Sh.4,000,000
4.	Normalised earnings of the firm	Sh.1,000,000
5.	Required return on working capital	5%
6.	Required return on intangible assets	15%
7.	Required return on fixed assets	8%
8.	Weighted average cost of capital	10%
9.	Long-term growth rate of residual income	5%

Required:
Using excess earnings method, calculate:

(i)   The value of intangible assets.   (3 marks)

(ii)   The value of invested capital.   (1 mark)

(b)   A market has the following limit orders standing on its book for a particular stock:

Buyer	Bid size	Limit price (Sh.)	Offer size	Seller
Nancy	1,000	19.70		
Joan	200	19.84		
John	400	19.89		
Andrew	300	20.02		
		20.03	800	James
		20.11	1,100	Paul
		20.16	400	Peter

Ann Nyabuto submits a day order to sell 1,000 shares with a limit of Sh.19.83.

Required:

(i) The average trade price assuming that no more buy orders are submitted on that day after Nyabuto submits her order. (2 marks)

(ii) Comment on the answer obtained in (b) (i) above. (2 marks)

(c) In relation to private company valuation, explain six factors affecting the discount for lack of marketability. (6 marks)

(d) An analyst gathered the following data to value a private company:

Market value of debt	Sh.6,800,000
Normalised earnings before interest, tax, depreciation and armotisation (EBITDA)	Sh.28,000,000
Average market value of invested capital ÷ EBITDA	9
Control premium from past transactions	20%
Discount for increased risk	18%

Required:
The value of the private company's equity assuming that:

(i) Buyer is strategic. (3 marks)

(ii) Buyer is not strategic. (3 marks)
(Total: 20 marks)

QUESTION FIVE

(a) Assess two circumstances in which a residual income model is most appropriate for valuing the equity of a company. (4 marks)

(b) Isaac Miano expects Warren Ltd. return on equity (ROE) will average 15% in the year 2017 and beyond. Using the capital asset pricing model he estimates the required rate of return for Warren Ltd. equity to be 11%. He believes that Warren Ltd. will grow at a rate of 9% annually for the foreseeable future. The current book value per share for Warren Ltd. is Sh.21.00.

Required:
The value per share of Warren Ltd.'s equity as at 31 December 2016 using single stage residual income model. (3 marks)

(c) Discuss four technical trading rules and indicators that could be followed by an analyst while evaluating equities using technical analysis. (8 marks)

(d) Summarise five differences between "fundamental analysis" and "technical analysis". (5 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	.5674	.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	.0135	.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:

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

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 1242
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	4.1659	3.5712	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