

# KASNEB

## CIFA PART II SECTION 4

### EQUITY INVESTMENTS ANALYSIS

THURSDAY: 26 May 2016.

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) Distinguish between the following types of equities returns:
- (i) "Required rate of return" and "expected rate of return". (2 marks)
  - (ii) "Holding period return" and "realised return". (2 marks)
- (b) Examine four factors that should be considered by individual and corporate investors while deciding whether to invest in foreign equity securities. (4 marks)
- (c) Explain how Michael Porter's five competitive forces could affect the financial forecast of a company. (5 marks)
- (d) Joshua Chitema, an equity and investments analyst for an investment bank is reviewing BTP Ltd., a small cap firm whose shares trade thinly on the over the counter (OTC) market. He compiles the data presented below and estimates the forward looking equity risk premium using the Gordon growth model. To the risk premium computed, he adds 1.50% to account for the additional small firm risk premium associated with BTP Ltd. The following data is provided relating to the Gordon growth model:

• Current price level of the market index	1,480.00
• Current year's dividend on the market index	Sh.31.25
• Year ahead forecasted dividend on the market index	Sh.33.60
• Long term earnings growth rate for the market index	6.00%
• Current long-term government bond yield	4.00%
• Current short-term government bond yield	2.75%

Joshua shows his computations to the firm's Chief Investment Officer (CIO) who suggests that the macroeconomic model with supply side analysis using the Ibbotson-Chen Model provides a better estimate for BTP Ltd.'s risk premium. The CIO suggests that BTP Ltd. commands a 0.75% risk premium for its thin trading in addition to the small firm risk premium that Joshua has already considered. The relevant data is presented below:

Expected growth rate in real earnings per share (EPS)	3.00%
Expected growth rate in price to earnings (P/E) ratio	1.50%
Expected income component	2.50%
Expected Treasury Inflation Protected Securities (TIPS) yield	2.15%
Expected inflation	1.81%

#### Required:

- (i) The risk premium for BTP Ltd. share using the Gordon growth model. (3 marks)
- (ii) The risk premium for BTP Ltd. share using the macroeconomic model factoring in the relevant adjustment. (4 marks)

(Total: 20 marks)

## QUESTION TWO

- (a) Highlight three roles that an investment and finance professional might play in the equity valuation process. (3 marks)
- (b) The following information relates to Mimo Ltd:
1. Net profit margin is 22%.
  2. Sales in year zero are Sh.15 million.
  3. Fixed capital investment in year zero is Sh.4 million.
  4. Depreciation in year zero is Sh.5 million.
  5. Working capital investment as a percentage of sales is 8.5 %.
  6. Tax rate is 30%.
  7. Interest expense on Sh.20 million par value debt in year zero is 11.5%.
  8. Weighted average cost of capital (WACC) during the high growth phase is 20%.
  9. Weighted average cost of capital (WACC) during the mature phase is 16%.
  10. Net income, fixed capital investment, depreciation, interest expense and sales are expected to grow at a rate of 12% for the next 5 years and then stabilise at a longer term constant growth rate of 6%.

### Required:

- (i) The value of Mimo Ltd. using free cash flow to the firm (FCFF) approach. (8 marks)
- (ii) Describe two sources of error in the application of the free cash flow model when valuing equity securities. (2 marks)
- (c) A newly employed CIFA graduate has been provided with the following data relating to Teen Ltd. for the year ended 31 December 2015:
- |                                      |                 |
|--------------------------------------|-----------------|
| • Total invested capital             | Sh.10.5 million |
| • Debt to equity ratio               | 0.6             |
| • Cost of equity                     | 8%              |
| • Before tax cost of debt            | 5%              |
| • Tax rate                           | 30%             |
| • Earnings before interest and taxes | Sh.1.3 million. |

**Note:** Research and development expenditure amounting to Sh.270,000 has been deducted to arrive at the earnings before interest and taxes (EBIT).

### Required:

- (i) The company's residual income. (3 marks)
- (ii) The company's economic value added (EVA). (4 marks)
- (Total: 20 marks)**

## QUESTION THREE

- (a) Evaluate three investment situations in which an investment analyst could appropriately use price-to-book (P/B) ratio in valuation. (3 marks)
- (b) Salim Hasan, an equity analyst at Beta Capital, has gathered the following data regarding Patels Limited which is quoted at the securities exchange:
- |                                         |         |
|-----------------------------------------|---------|
| • Current market price per share (MPS)  | Sh.60   |
| • Current year earnings per share (EPS) | Sh.5    |
| • Current year dividend per share (DPS) | Sh.2.25 |
| • Required rate of return on equity     | 10%     |
| • Dividend growth rate                  | 5.5%    |

### Required:

- (i) The justified trailing price-to-earnings (P/E) ratio. (2 marks)
- (ii) The justified leading price-to-earnings (P/E) ratio. (2 marks)
- (iii) Determine whether the company is currently under-valued, fairly-valued or over-valued. (1 mark)
- (iv) Summarise three weaknesses of price-to-earnings (P/E) ratio. (3 marks)

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

**Required:**

The current value of BBL's share.

(7 marks)

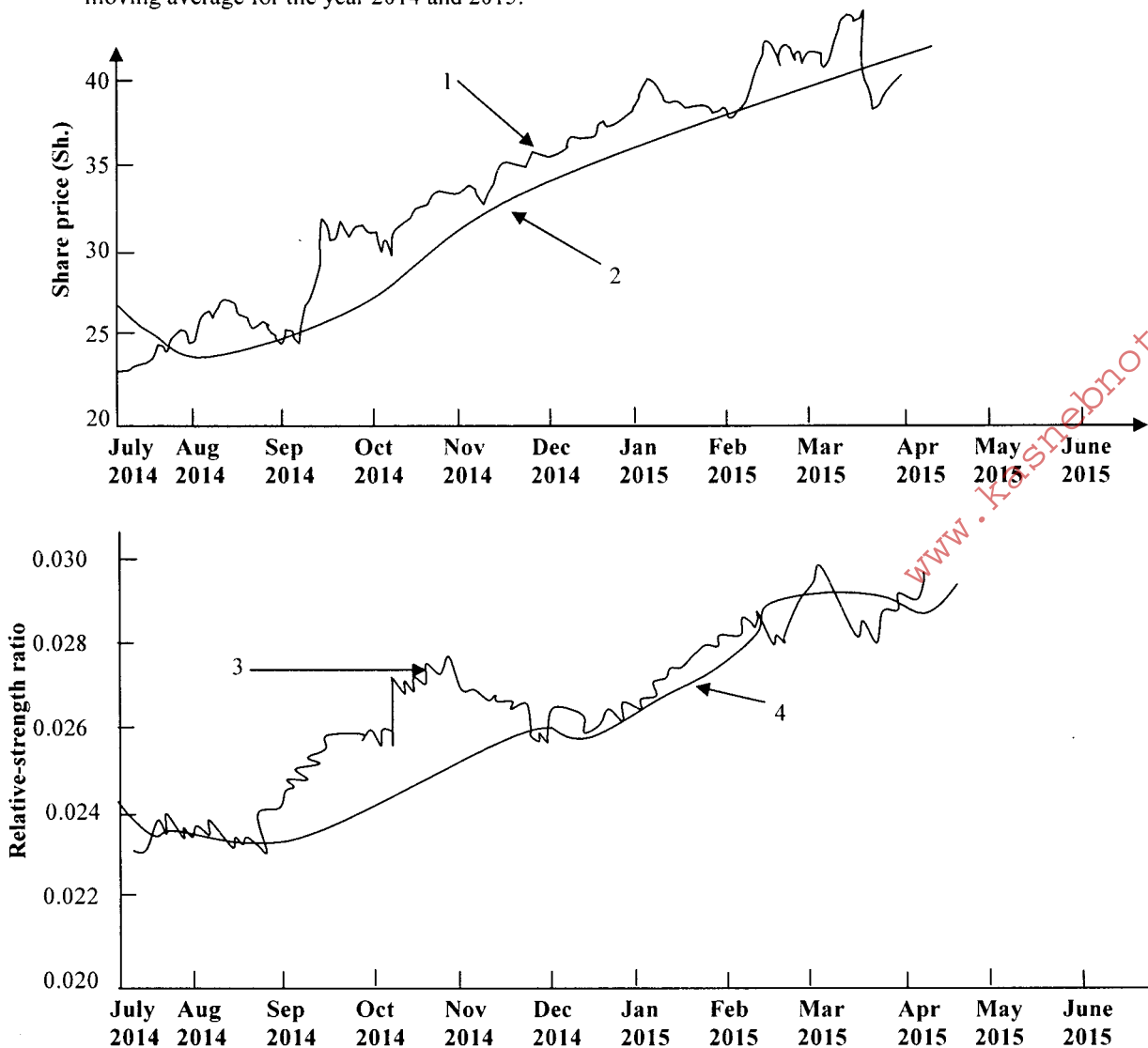
- (d) Differentiate between "growth relative to gross domestic product (GDP) approach" and "market growth and market share approach" as used in industry and company analysis.

(2 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

- (a) (i) Examine four principles of Dow theory in relation to technical analysis. (4 marks)  
 (ii) Explain the reasoning behind "support level" and "resistance level" in relation to technical analysis. (4 marks)  
 (iii) The exhibit below relates to Fairmall Limited, a company quoted at the securities exchange with a 50-day Moving Average and Relative Strength compared to Standard and Poor (S&P) industrials with 50-day moving average for the year 2014 and 2015:



**Required:**

Interpret the chart output lines labelled 1 to 4 in (a)(iii) above.

(4 marks)

- (b) Kendagor Ondigo, an equities analyst at Fiduciary Capital, is analysing Fast Technologies Limited which deals with computer software. The following are the sales data for the existing software and the new software which was launched in the year 2015 and which is expected to catch the attention of the market:

	2015 Sh.million		2015 Sh.million
<b>Existing software:</b>		<b>New software:</b>	
Individual sales	2,640	Individual sales	45
Corporate sales	<u>400</u>	Corporate sales	<u>0</u>
	<u>3,040</u>		<u>45</u>

The equities analyst intends to forecast the year 2016 sales using the following assumptions:

1. Individual sales of the new software will increase by 375% in the year 2016, but the new software will not be adopted by corporate customers.
2. Sales of existing software to corporate customers will remain static.
3. Sales of existing software to individuals will shrink by 25% as a result of the new software.

**Required:**

The total estimated revenue from the software business in the year 2016. (4 marks)

- (c) Evaluate four factors that could affect an industry on a temporary basis but might not determine the industry profitability and structure in the long run. (4 marks)

(Total: 20 marks)

**QUESTION FIVE**

- (a) The following information relates to two manufacturing firms, Hapco Limited and Texlex Limited, and the Standard and Poors' (S&P) industrials average:

	Hapco Limited	Texlex Limited	S & P Industrials average
Price to earnings (P/E) ratio	30	27.00	18.00
Expected annual growth rate	0.18	0.15	0.07
Dividend yield	0.00	0.01	0.02

**Required:**

- (i) The growth duration of each company share relative to the S & P industrials average. (3 marks)
  - (ii) The growth duration of Hapco Limited relative to Texlex Limited. (2 marks)
  - (iii) Comment on your investment decision based on the growth duration obtain in (a)(i) and (a)(ii) above. (2 marks)
- (b) Compare and contrast public company valuation and private company valuation. (3 marks)

- (c) The following information is relevant for valuation of Panha Corporation:

• Working capital balance	Sh.50,000,000
• Fair value of fixed assets	Sh.75,000,000
• Book value of fixed assets	Sh.60,000,000
• Normalised earnings of firm	Sh.25,000,000
• Required return on working capital	10%
• Required return on intangible assets	12%
• Required return on fixed assets	8%
• Weighted average cost of capital	10%
• Long-term growth rate of residual income	6%

**Required:**

Using the excess earnings method, determine the following:

- (i) The value of Panha Corporation's intangible assets. (3 marks)
  - (ii) The market value of invested capital. (2 marks)
- (d) Highlight five steps of the equity valuation process. (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	.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:

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

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	7.8661	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

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