



CIFA PART II SECTION 4

EQUITY INVESTMENTS ANALYSIS

FRIDAY: 27 November 2020.

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) Explain the meaning of the following terms as used in equity markets:
- (i) Circuit breaker. (2 marks)
 - (ii) Trading halt. (2 marks)
 - (iii) Program trading. (2 marks)
 - (iv) Short selling. (2 marks)
- (b) Discuss two forms of abuse that could be found in the initial public offering (IPO) market. (4 marks)
- (c) As a member of the Institute of Certified Investment and Financial Analysts (ICIFA), you have been invited to give a talk to a graduate class of a local university on investment styles that portfolio managers could use in stock picking.

Required:

With reference to above statement, discuss four types of investment styles that you would include in your presentation.

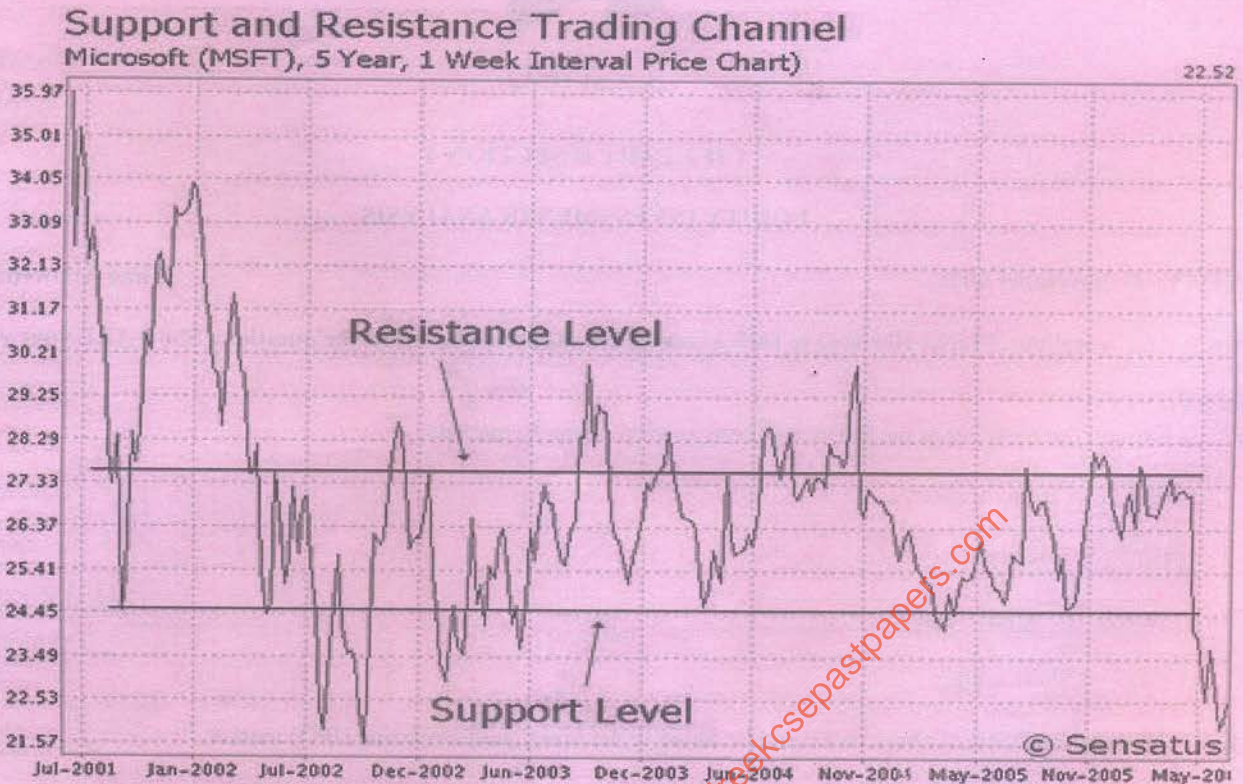
(8 marks)

(Total: 20 marks)

QUESTION TWO

- (a) Explain the following terms in relation to technical analysis:
- (i) Uptrend in market. (2 marks)
 - (ii) Downward trend in market. (2 marks)

- (b) The following technical analysis chart was obtained from a trading channel in one of the leading Securities Exchanges in the world:



Required:

Using the chart above, interpret the following:

- (i) Resistance level. (2 marks)
- (ii) Support level. (2 marks)
- (iii) Describe the investment strategy that an investor should apply at resistance level and support level in (b) (i) and (b) (ii) above. (2 marks)

- (c) An equity analyst has gathered the following data for Pioneer Manufacturing Ltd.:

- Beta 1.15
- Market price per share Sh.30
- Risk-free rate 4.50%
- Expected market return 14.50%
- Recent year dividend per share Sh.1.72
- Earnings per share (EPS) and dividend growth rate:
 - First 3 years 12% per annum
 - Years thereafter 9% per annum

The analyst seeks to use a two-stage dividend discount model (DDM) and the capital asset pricing model (CAPM) to value the company's shares.

Required:

- (i) Estimate the intrinsic value of the company's share. (5 marks)
- (ii) Advise an investor on whether the share should be purchased by comparing the intrinsic value in (c) (i) above with the current market price per share of the company. (2 marks)
- (iii) Describe one strength of the two-stage dividend discount model (DDM) in comparison with constant growth DDM. (2 marks)
- (iv) Describe one weakness inherent in all dividend discount models. (1 mark)

(Total: 20 marks)

QUESTION THREE

(a) You are a financial analyst at Fedha Financial Consultancies Limited. The Chief Investment Officer (CIO) has presented you with the following information regarding Zanplom Limited, a leading soft drinks manufacturer in the East Africa Region:

1. In the current financial year (year 0) Zanplom Limited is expected to generate net income of Sh.25 million. Depreciation is expected to be Sh.18 million, gross investments in tangible assets will be Sh.26 million and net working capital is expected to increase by Sh.4 million.
2. In the next three years, Zanplom's free cash flows to the firm (FCFF) are expected to grow by 8% per annum.
3. After year 4, FCFF is expected to grow in perpetuity at 6% per annum.
4. The company is financed with 40% debt and 60% equity which is expected to be maintained in foreseeable future.
5. Two years ago, Zanplom Limited had issued a bond with a notional value of Sh.250 million. The bond is currently trading at 80% of its par value. Annual interest expenses on the bond are Sh.15 million. The company has no other interest-bearing debts.
6. The corporate tax rate is 30%.
7. The cost of debt is 7% while the cost of equity is 11%.
8. The company has 21.5 million ordinary shares issued and outstanding.

Required:

Using two-stage FCFF, determine:

- (i) The total value of the firm. (7 marks)
- (ii) The market value of equity. (2 marks)
- (iii) The equity value per share. (2 marks)
- (iv) Advise an investor whether to buy the company's share assuming that they are trading at Sh.28.50 at the Securities Exchange. (1 mark)

(b) The following information relates to two companies quoted at the Securities Exchange of your country:

Company	Return on asset (ROA)	Dividend retention rate	Equity multiplier
Solaiz Limited	12%	40%	1.65
Talino Limited	12%	66.7%	2.00

Required:

- (i) Sustainable dividend growth rates for both Solaiz Limited and Talino Limited. (3 marks)
 - (ii) Explain your results in (b)(i) above. (1 mark)
- (c) The yield on a 10-year A rated corporate bond is 7.5%. The long-term sustainable earnings growth rate is 5% and the weighting factor for the importance of earnings growth is 0.15. The current trailing price to earnings (P/E) ratio for the equity market is 15.

Required:

- (i) Determine whether the equity market is properly valued using the Yardeni model. (3 marks)
- (ii) Outline one limitation of the Yardeni model. (1 mark)

(Total: 20 marks)

QUESTION FOUR

(a) In the context of residual income model:

- (i) Examine three circumstances in which it is appropriate to use the residual income model in equity valuation. (3 marks)
- (ii) Highlight three weaknesses of residual income model in equity valuation. (3 marks)

(b) Kangaloo Ltd.'s shares are currently selling for Sh.38.50, with trailing twelve month (TTM) earnings per share (EPS) and dividends per share (DPS) of Sh.1.36 and Sh.0.91 respectively. The company's price to earnings (P/E) ratio is 28.3, price to book (P/B) is 7.1 and price to sales (P/S) is 2.9. The return on equity (ROE) is 27% and the profit margin on sales is 10.24%. The risk free rate is 4.9%, the equity risk premium is 5.5 and company's beta is 1.2. The dividend and earnings growth rate is 9%.

Required:

Calculate the following multiples:

- (i) Justified trailing price to earnings (P/E). (3 marks)
- (ii) Justified price to book (P/B). (3 marks)
- (iii) Justified price to sales (P/S). (3 marks)
- (iv) Determine, based on fundamentals, whether Kangaloo Limited is fairly valued, overvalued or undervalued. (1 mark)

- (c) An analyst notes that for the year just ended, Bingwa Ltd. cost of goods sold was 30% of sales. To forecast the firm's income statement for the current financial year, the analyst assumes that all companies in the same industry will experience an inflation rate of 8% on the cost of goods sold.

The analyst also forecast on the price and volume changes as follows:

- Average price increase per unit 5.00%
- Volume growth -3.00%

Required:

The firm's forecasted gross profit margin for the current financial year. (4 marks)

(Total: 20 marks)

QUESTION FIVE

- (a) HQ Limited has invested Sh.100 million in assets. The after tax operating income on the assets in place is Sh.15 million. The return on capital of 15% is expected to continue in the future. The company's cost of capital is 10%. At the beginning of each of the next five years, the company is expected to make an investment of Sh.10 million each year. These investments are also expected to earn 15% as a return on capital and the cost of capital is expected to remain at 10%. After year 5, the company will continue to make investments and earnings will grow at a rate of 5% per annum, but the new investments will have a return on capital of only 10% which is also the cost of capital. All assets and investments are expected to have infinite lives.

Required:

The value of the company using the economic value added (EVA) valuation approach. (8 marks)

- (b) The following information has been extracted by Hiza Securities Limited from Panda Food Processors Limited:

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

Required:

Using an Excess Earnings Method:

- (i) Determine the value of Panda Food Processors Limited's intangible assets. (2 marks)
 - (ii) Determine the market value of invested capital. (2 marks)
- (c) Lately, ABC Limited has experienced financial difficulties due to prolonged Corona Virus Pandemic in the country. As a result, dividends are expected to grow at a reduced rate of 2% for the next 2 years and return to its historical rate of 5% there after. The last dividend paid was Sh.2 per share and the cost of equity capital is 15%.

Required:

The market value of ABC Limited's share today. (4 marks)

- (d) HornBill Limited just reported earnings of Sh.11 per share, giving the company a book value of Sh.91.50 per share. The required rate of return on the share is 11%. The company's dividend payout ratio is 40%. The company adopts a constant dividend growth rate.

Required:

The company's intrinsic value. (4 marks)

(Total: 20 marks)

Present Value Interest factor of 1 Received at the End of n Periods at r Percent:

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

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	25%	30%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8333	0.8065	0.8000	0.7692
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264	0.8116	0.7972	0.7831	0.7695	0.7561	0.7432	0.6944	0.6504	0.6400	0.5917
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513	0.7312	0.7118	0.6931	0.6750	0.6575	0.6407	0.5787	0.5245	0.5120	0.4552
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830	0.6587	0.6355	0.6133	0.5921	0.5718	0.5523	0.4823	0.4230	0.4096	0.3501
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209	0.5935	0.5674	0.5428	0.5194	0.4972	0.4761	0.4019	0.3411	0.3277	0.2693
6	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5963	0.5645	0.5346	0.5066	0.4803	0.4556	0.4323	0.4104	0.3349	0.2751	0.2621	0.2072
7	0.9327	0.8706	0.8131	0.7599	0.7107	0.6651	0.6227	0.5835	0.5470	0.5132	0.4817	0.4523	0.4251	0.3996	0.3759	0.3538	0.2791	0.2218	0.2097	0.1594
8	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0.5403	0.5019	0.4665	0.4339	0.4039	0.3762	0.3506	0.3269	0.3050	0.2326	0.1789	0.1678	0.1226
9	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4604	0.4241	0.3909	0.3606	0.3329	0.3075	0.2843	0.2630	0.1938	0.1443	0.1342	0.0943
10	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3522	0.3220	0.2946	0.2697	0.2472	0.2267	0.1615	0.1164	0.1074	0.0725
11	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3875	0.3505	0.3173	0.2875	0.2607	0.2366	0.2149	0.1954	0.1346	0.0938	0.0859	0.0558
12	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3555	0.3186	0.2858	0.2567	0.2307	0.2076	0.1869	0.1685	0.1122	0.0757	0.0687	0.0429
13	0.8787	0.7730	0.6810	0.6006	0.5303	0.4688	0.4150	0.3677	0.3262	0.2897	0.2575	0.2292	0.2042	0.1821	0.1625	0.1452	0.0935	0.0610	0.0550	0.0330
14	0.8700	0.7579	0.6611	0.5775	0.5051	0.4423	0.3878	0.3405	0.2992	0.2633	0.2320	0.2046	0.1807	0.1597	0.1413	0.1252	0.0779	0.0492	0.0440	0.0254
15	0.8613	0.7430	0.6419	0.5553	0.4810	0.4173	0.3624	0.3152	0.2745	0.2394	0.2090	0.1827	0.1599	0.1401	0.1229	0.1079	0.0649	0.0397	0.0352	0.0195
16	0.8528	0.7284	0.6232	0.5339	0.4581	0.3936	0.3387	0.2919	0.2519	0.2176	0.1883	0.1631	0.1415	0.1229	0.1069	0.0930	0.0541	0.0320	0.0281	0.0150
17	0.8444	0.7142	0.6050	0.5134	0.4363	0.3714	0.3166	0.2703	0.2311	0.1978	0.1696	0.1456	0.1252	0.1078	0.0929	0.0802	0.0451	0.0258	0.0225	0.0116
18	0.8360	0.7002	0.5874	0.4936	0.4155	0.3503	0.2959	0.2502	0.2120	0.1799	0.1528	0.1300	0.1108	0.0946	0.0808	0.0691	0.0376	0.0208	0.0180	0.0089
19	0.8277	0.6864	0.5703	0.4746	0.3957	0.3305	0.2765	0.2317	0.1945	0.1635	0.1377	0.1161	0.0981	0.0829	0.0703	0.0596	0.0313	0.0168	0.0144	0.0068
20	0.8195	0.6730	0.5537	0.4564	0.3769	0.3118	0.2584	0.2145	0.1784	0.1486	0.1240	0.1037	0.0868	0.0728	0.0611	0.0514	0.0261	0.0135	0.0115	0.0053
21	0.8114	0.6598	0.5375	0.4388	0.3589	0.2942	0.2415	0.1987	0.1637	0.1351	0.1117	0.0926	0.0768	0.0638	0.0531	0.0443	0.0217	0.0109	0.0092	0.0040
22	0.8034	0.6468	0.5219	0.4220	0.3418	0.2775	0.2257	0.1839	0.1502	0.1228	0.1007	0.0826	0.0680	0.0560	0.0462	0.0382	0.0181	0.0088	0.0074	0.0031
23	0.7954	0.6342	0.5067	0.4057	0.3256	0.2618	0.2109	0.1703	0.1378	0.1117	0.0907	0.0738	0.0601	0.0499	0.0402	0.0329	0.0151	0.0071	0.0059	0.0024
24	0.7876	0.6217	0.4919	0.3901	0.3101	0.2470	0.1971	0.1577	0.1264	0.1015	0.0817	0.0659	0.0532	0.0431	0.0349	0.0284	0.0126	0.0057	0.0047	0.0018
25	0.7798	0.6095	0.4776	0.3751	0.2953	0.2330	0.1842	0.1460	0.1160	0.0923	0.0736	0.0588	0.0471	0.0378	0.0304	0.0245	0.0105	0.0046	0.0038	0.0014
30	0.7419	0.5521	0.4120	0.3083	0.2314	0.1741	0.1314	0.0994	0.0754	0.0573	0.0437	0.0334	0.0256	0.0196	0.0151	0.0116	0.0042	0.0016	0.0012	*
35	0.7059	0.5000	0.3554	0.2534	0.1813	0.1301	0.0937	0.0676	0.0490	0.0356	0.0259	0.0189	0.0139	0.0102	0.0075	0.0055	0.0017	0.0005	*	*
36	0.6989	0.4902	0.3450	0.2437	0.1727	0.1227	0.0875	0.0626	0.0449	0.0323	0.0234	0.0166	0.0123	0.0089	0.0065	0.0048	0.0014	*	*	*
40	0.6717	0.4529	0.3066	0.2083	0.1420	0.0972	0.0668	0.0460	0.0318	0.0221	0.0154	0.0107	0.0075	0.0053	0.0037	0.0026	0.0007	*	*	*
50	0.6080	0.3715	0.2281	0.1407	0.0872	0.0543	0.0339	0.0213	0.0134	0.0085	0.0054	0.0035	0.0022	0.0014	0.0009	0.0006	*	*	*	*

Present Value Interest factors for Annuity of 1 Discounted at r Percent for n Periods:

$$PVIFA_{r,n} = [1 - 1 / (1+r)^n] / r$$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	25%	30%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8333	0.8065	0.8000	0.7692
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.7125	1.6901	1.6681	1.6467	1.6257	1.6052	1.5278	1.4568	1.4400	1.3699
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6245	2.5771	2.5313	2.4869	2.4437	2.4018	2.3612	2.3219	2.2837	2.2465	2.1065	1.9813	1.9520	1.8161
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397	3.1699	3.1024	3.0373	2.9745	2.9137	2.8550	2.7982	2.5887	2.4043	2.3616	2.1662
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6959	3.6048	3.5172	3.4331	3.3522	3.2743	2.9906	2.7454	2.6893	2.4356
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7655	4.6229	4.4859	4.3533	4.2305	4.1114	3.9975	3.8887	3.7845	3.6847	3.3255	3.0205	2.9514	2.6427
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.7122	4.5638	4.4226	4.2883	4.1604	4.0386	3.6046	3.2423	3.1611	2.8021
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5348	5.3349	5.1461	4.9676	4.7988	4.6389	4.4873	4.3436	3.8372	3.4212	3.3289	2.9247
9	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952	5.7590	5.5370	5.3282	5.1317	4.9464	4.7716	4.6065	4.0310	3.5655	3.4631	3.0190
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5.8892	5.6502	5.4262	5.2161	5.0188	4.8332	4.1925	3.6819	3.5705	3.0915
11	10.368	9.7888	9.2526	8.7505	8.3064	7.8869	7.4987	7.1390	6.8052	6.4951	6.2065	5.9377	5.6869	5.4527	5.2337	5.0286	4.3271	3.7757	3.6564	3.1473
12	11.255	10.575	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.4924	6.1944	5.9176	5.6603	5.4206	5.1971	4.4392	3.8514	3.7251	3.1903
13	12.134	11.348	10.635	9.9856	9.3936	8.8527	8.3577	7.9038	7.4889	7.1034	6.7499	6.4235	6.1218	5.8424	5.5831	5.3423	4.5327	3.9124	3.7801	3.2233
14	13.004	12.106	11.296	10.563	9.8986	9.2950	8.7455	8.2442	7.7862	7.3667	6.9919	6.6282	6.3025	6.0021	5.7245	5.4675	4.6106	3.9616	3.8241	3.2487
15	13.865	12.849	11.938	11.118	10.380	9.7122	9.1079	8.5595	8.0607	7.6061	7.1909	6.8109	6.4624	6.1422	5.8474	5.5755	4.6755	4.0013	3.8593	3.2882
16	14.718	13.578	12.561	11.652	10.838	10.106	9.4466	8.8514	8.3126	7.8237	7.3792	6.9740	6.6039	6.2651	5.9542	5.6685	4.7296	4.0333	3.8874	3.2832
17	15.562	14.292	13.166	12.166	11.274	10.477	9.7632	9.1216	8.5436	8.0216	7.5488	7.1196	6.7291	6.3729	6.0472	5.7487	4.7746	4.0591	3.9099	3.2948
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.3719	8.7556	8.2014	7.7016	7.2497	6.8399	6.4674	6.1280	5.8178	4.8122	4.0799	3.9279	3.3037
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.6036	8.9501	8.3649	7.8393	7.3658	6.9380	6.5504	6.1982	5.8775	4.8435	4.0967	3.9424	3.3105
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.8181	9.1285	8.5136	7.9633	7.4694	7.0248	6.6231	6.2893	5.9288	4.8696	4.1103	3.9539	3.3158
21	18.857	17.011	15.415	14.029	12.821	11.764	10.836	10.017	9.2922	8.6487	8.0751	7.5620	7.1016	6.6870	6.3225	5.9371	4.8913			