

Fundamentals Level – Skills Module

Financial Management

Friday 6 June 2014



Time allowed

Reading and planning: 15 minutes

Writing: 3 hours

ALL FOUR questions are compulsory and MUST be attempted.

Formulae Sheet, Present Value and Annuity Tables are on pages 6, 7 and 8.

Do NOT open this paper until instructed by the supervisor.

During reading and planning time only the question paper may be annotated. You must NOT write in your answer booklet until instructed by the supervisor.

This question paper must not be removed from the examination hall.

The Association of Chartered Certified Accountants

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ALL FOUR questions are compulsory and MUST be attempted

- 1 The Board of OAP Co has decided to limit investment funds to \$10 million for the next year and is preparing its capital budget. The company is considering five projects, as follows:

	Initial investment	Net present value
Project A	\$2,500,000	\$1,000,000
Project B	\$2,200,000	\$1,550,000
Project C	\$2,600,000	\$1,350,000
Project D	\$1,900,000	\$1,500,000
Project E	\$5,000,000	To be calculated

All five projects have a project life of four years. Projects A, B, C and D are divisible, and Projects B and D are mutually exclusive. All net present values are in nominal, after-tax terms.

Project E

This is a strategically important project which the Board of OAP Co have decided must be undertaken in order for the company to remain competitive, regardless of its financial acceptability. Information relating to the future cash flows of this project is as follows:

Year	1	2	3	4
Sales volume (units)	12,000	13,000	10,000	10,000
Selling price (\$/unit)	450	475	500	570
Variable cost (\$/unit)	260	280	295	320
Fixed costs (\$000)	750	750	750	750

These forecasts are before taking account of selling price inflation of 5.0% per year, variable cost inflation of 6.0% per year and fixed cost inflation of 3.5% per year. The fixed costs are incremental fixed costs which are associated with Project E. At the end of four years, machinery from the project will be sold for scrap with a value of \$400,000. Tax allowable depreciation on the initial investment cost of Project E is available on a 25% reducing balance basis and OAP Co pays corporation tax of 28% per year, one year in arrears. A balancing charge or allowance is available at the end of the fourth year of operation.

OAP Co has a nominal after-tax cost of capital of 13% per year.

Required:

- (a) Calculate the nominal after-tax net present value of Project E and comment on the financial acceptability of this project. (14 marks)
- (b) Calculate the maximum net present value which can be obtained from investing the fund of \$10 million, assuming here that the nominal after-tax NPV of Project E is zero. (5 marks)
- (c) Discuss the reasons why the Board of OAP Co may have decided to limit investment funds for the next year. (6 marks)

(25 marks)

2 The current assets and current liabilities of CSZ Co at the end of March 2014 are as follows:

	\$000	\$000
Inventory	5,700	
Trade receivables	6,575	12,275
Trade payables	2,137	
Overdraft	4,682	6,819
Net current assets		5,456

For the year to end of March 2014, CSZ Co had domestic and foreign sales of \$40 million, all on credit, while cost of sales was \$26 million. Trade payables related to both domestic and foreign suppliers.

For the year to end of March 2015, CSZ Co has forecast that credit sales will remain at \$40 million while cost of sales will fall to 60% of sales. The company expects current assets to consist of inventory and trade receivables, and current liabilities to consist of trade payables and the company's overdraft.

CSZ Co also plans to achieve the following target working capital ratio values for the year to the end of March 2015:

Inventory days:	60 days
Trade receivables days:	75 days
Trade payables days:	55 days
Current ratio:	1.4 times

Required:

- (a) Calculate the working capital cycle (cash collection cycle) of CSZ Co at the end of March 2014 and discuss whether a working capital cycle should be positive or negative. (6 marks)
- (b) Calculate the target quick ratio (acid test ratio) and the target ratio of sales to net working capital of CSZ Co at the end of March 2015. (5 marks)
- (c) Analyse and compare the current asset and current liability positions for March 2014 and March 2015, and discuss how the working capital financing policy of CSZ Co would have changed. (8 marks)
- (d) Briefly discuss THREE internal methods which could be used by CSZ Co to manage foreign currency transaction risk arising from its continuing business activities. (6 marks)

(25 marks)

- 3** The equity beta of Fence Co is 0.9 and the company has issued 10 million ordinary shares. The market value of each ordinary share is \$7.50. The company is also financed by 7% bonds with a nominal value of \$100 per bond, which will be redeemed in seven years' time at nominal value. The bonds have a total nominal value of \$14 million. Interest on the bonds has just been paid and the current market value of each bond is \$107.14.

Fence Co plans to invest in a project which is different to its existing business operations and has identified a company in the same business area as the project, Hex Co. The equity beta of Hex Co is 1.2 and the company has an equity market value of \$54 million. The market value of the debt of Hex Co is \$12 million.

The risk-free rate of return is 4% per year and the average return on the stock market is 11% per year. Both companies pay corporation tax at a rate of 20% per year.

Required:

- (a) Calculate the current weighted average cost of capital of Fence Co.** (7 marks)
- (b) Calculate a cost of equity which could be used in appraising the new project.** (4 marks)
- (c) Explain the difference between systematic and unsystematic risk in relation to portfolio theory and the capital asset pricing model.** (6 marks)
- (d) Discuss the differences between weak form, semi-strong form and strong form capital market efficiency, and discuss the significance of the efficient market hypothesis (EMH) for the financial manager.** (8 marks)

(25 marks)

4 The following financial information relates to MFZ Co, a listed company:

Year	2014	2013	2012
Profit before interest and tax (\$m)	18.3	17.7	17.1
Profit after tax (\$m)	12.8	12.4	12.0
Dividends (\$m)	5.1	5.1	4.8
Equity market value (\$m)	56.4	55.2	54.0

MFZ Co has 12 million ordinary shares in issue and has not issued any new shares in the period under review. The company is financed entirely by equity, and is considering investing \$9.2 million of new finance in order to expand existing business operations. This new finance could be either long-term debt finance or new equity via a rights issue. The rights issue price would be at a 20% discount to the current share price. Issue costs of \$200,000 would have to be met from the cash raised, whether the new finance was equity or debt.

The annual report of MFZ Co states that the company has three financial objectives:

Objective 1: To achieve growth in profit before interest and tax of 4% per year

Objective 2: To achieve growth in earnings per share of 3.5% per year

Objective 3: To achieve total shareholder return of 5% per year

MFZ Co has a cost of equity of 12% per year.

Required:

- (a) Analyse and discuss the extent to which MFZ Co has achieved each of its stated objectives. (7 marks)
- (b) Calculate the total equity market value of MFZ Co for 2014 using the dividend growth model and briefly discuss why the dividend growth model value may differ from the current equity market value. (5 marks)
- (c) Calculate the theoretical ex rights price per share for the proposed rights issue. (5 marks)
- (d) Discuss the sources and characteristics of long-term debt finance which may be available to MFZ Co. (8 marks)

(25 marks)

Formulae Sheet

Economic order quantity

$$= \sqrt{\frac{2C_0D}{C_h}}$$

Miller–Orr Model

$$\text{Return point} = \text{Lower limit} + \left(\frac{1}{3} \times \text{spread}\right)$$

$$\text{Spread} = 3 \left[\frac{\frac{3}{4} \times \text{transaction cost} \times \text{variance of cash flows}}{\text{interest rate}} \right]^{\frac{1}{3}}$$

The Capital Asset Pricing Model

$$E(r_i) = R_f + \beta_i (E(r_m) - R_f)$$

The asset beta formula

$$\beta_a = \left[\frac{V_e}{(V_e + V_d(1 - T))} \beta_e \right] + \left[\frac{V_d(1 - T)}{(V_e + V_d(1 - T))} \beta_d \right]$$

The Growth Model

$$P_0 = \frac{D_0(1 + g)}{(r_e - g)}$$

Gordon's growth approximation

$$g = br_e$$

The weighted average cost of capital

$$\text{WACC} = \left[\frac{V_e}{V_e + V_d} \right] k_e + \left[\frac{V_d}{V_e + V_d} \right] k_d (1 - T)$$

The Fisher formula

$$(1 + i) = (1 + r)(1 + h)$$

Purchasing power parity and interest rate parity

$$S_1 = S_0 \times \frac{(1 + h_c)}{(1 + h_b)} \quad F_0 = S_0 \times \frac{(1 + i_c)}{(1 + i_b)}$$

Present Value Table

Present value of 1 i.e. $(1 + r)^{-n}$

Where r = discount rate
 n = number of periods until payment

<i>Discount rate (r)</i>											
<i>Periods</i>											
(n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	1
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	2
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	3
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683	4
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	5
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564	6
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	7
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	8
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	9
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	10
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	11
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	12
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	13
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	14
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	15
(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	1
2	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694	2
3	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579	3
4	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482	4
5	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402	5
6	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335	6
7	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279	7
8	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233	8
9	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194	9
10	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162	10
11	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135	11
12	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112	12
13	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093	13
14	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078	14
15	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065	15

Annuity Table

Present value of an annuity of 1 i.e. $\frac{1 - (1 + r)^{-n}}{r}$

Where r = discount rate
 n = number of periods

		<i>Discount rate (r)</i>									
<i>Periods</i>											
(n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	1
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736	2
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487	3
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170	4
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791	5
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355	6
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868	7
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335	8
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759	9
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145	10
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495	11
12	11.255	10.575	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814	12
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103	13
14	13.004	12.106	11.296	10.563	9.899	9.295	8.745	8.244	7.786	7.367	14
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.559	8.061	7.606	15
(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	1
2	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528	2
3	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106	3
4	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589	4
5	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991	5
6	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326	6
7	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605	7
8	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837	8
9	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031	9
10	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192	10
11	6.207	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327	11
12	6.492	6.194	5.918	5.660	5.421	5.197	4.988	4.793	4.611	4.439	12
13	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533	13
14	6.982	6.628	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611	14
15	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675	15

End of Question Paper