Fundamentals Level – Skills Module

Financial Management

Thursday 4 June 2009

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

Paper F9

ACCA

ALL FOUR questions are compulsory and MUST be attempted

1 KFP Co, a company listed on a major stock market, is looking at its cost of capital as it prepares to make a bid to buy a rival unlisted company, NGN. Both companies are in the same business sector. Financial information on KFP Co and NGN is as follows:

	KFP Co		NGN	
	$m	$m	$m	$m
Non-current assets		36		25
Current assets	7		7	
Current liabilities	3		4	
Net current assets		4		3
Total assets less current liabilities		40		28
Ordinary shares, par value 50c	15		5	
Retained earnings	10		3	
Total equity		25		8
7% bonds, redeemable at par in seven years' time		15		
9% bonds, redeemable at par in two years' time				20
Total equity and non-current liabilities		40		28

Other relevant financial information:	
Risk-free rate of return	4·0%
Average return on the market	10·5%
Taxation rate	30%

NGN has a cost of equity of 12% per year and has maintained a dividend payout ratio of 45% for several years. The current earnings per share of the company is 80c per share and its earnings have grown at an average rate of 4·5% per year in recent years.

The ex div share price of KFP Co is $4·20 per share and it has an equity beta of 1·2. The 7% bonds of the company are trading on an ex interest basis at $94·74 per $100 bond. The price/earnings ratio of KFP Co is eight times.

The directors of KFP Co believe a cash offer for the shares of NGN would have the best chance of success. It has been suggested that a cash offer could be financed by debt.

Required:

(a) Calculate the weighted average cost of capital of KFP Co on a market value weighted basis. (10 marks)

(b) Calculate the total value of the target company, NGN, using the following valuation methods:

(i) Price/earnings ratio method, using the price/earnings ratio of KFP Co; and
(ii) Dividend growth model. (6 marks)

(c) Discuss the relationship between capital structure and weighted average cost of capital, and comment on the suggestion that debt could be used to finance a cash offer for NGN. (9 marks)

(25 marks)

2 PV Co is evaluating an investment proposal to manufacture Product W33, which has performed well in test marketing trials conducted recently by the company's research and development division. The following information relating to this investment proposal has now been prepared.

Initial investment	$2 million
Selling price (current price terms)	$20 per unit
Expected selling price inflation	3% per year
Variable operating costs (current price terms)	$8 per unit
Fixed operating costs (current price terms)	$170,000 per year
Expected operating cost inflation	4% per year

The research and development division has prepared the following demand forecast as a result of its test marketing trials. The forecast reflects expected technological change and its effect on the anticipated life-cycle of Product W33.

Year	1	2	3	4
Demand (units)	60,000	70,000	120,000	45,000

It is expected that all units of Product W33 produced will be sold, in line with the company's policy of keeping no inventory of finished goods. No terminal value or machinery scrap value is expected at the end of four years, when production of Product W33 is planned to end. For investment appraisal purposes, PV Co uses a nominal (money) discount rate of 10% per year and a target return on capital employed of 30% per year. Ignore taxation.

Required:

(a) Identify and explain the key stages in the capital investment decision-making process, and the role of investment appraisal in this process. (7 marks)

(b) Calculate the following values for the investment proposal:

(i) net present value;
(ii) internal rate of return;
(iii) return on capital employed (accounting rate of return) based on average investment; and
(iv) discounted payback period. (13 marks)

(c) Discuss your findings in each section of (b) above and advise whether the investment proposal is financially acceptable. (5 marks)

(25 marks)

3 The following financial information relates to HGR Co:

Statement of financial position at the current date (extracts)

	$000	$000	$000
Non-current assets			48,965
Current assets			
Inventory		8,160	
Accounts receivable		8,775	
		16,935	
Current liabilities			
Overdraft	3,800		
Accounts payable	10,200		
		14,000	
Net current assets			2,935
Total assets less current liabilities			51,900

Cash flow forecasts from the current date are as follows:

	Month 1	Month 2	Month 3
Cash operating receipts ($000)	4,220	4,350	3,808
Cash operating payments ($000)	3,950	4,100	3,750
Six-monthly interest on traded bonds ($000)		200	
Capital investment ($000)			2,000

The finance director has completed a review of accounts receivable management and has proposed staff training and operating procedure improvements, which he believes will reduce accounts receivable days to the average sector value of 53 days. This reduction would take six months to achieve from the current date, with an equal reduction in each month. He has also proposed changes to inventory management methods, which he hopes will reduce inventory days by two days per month each month over a three-month period from the current date. He does not expect any change in the current level of accounts payable.

HGR Co has an overdraft limit of $4,000,000. Overdraft interest is payable at an annual rate of 6·17% per year, with payments being made each month based on the opening balance at the start of that month. Credit sales for the year to the current date were $49,275,000 and cost of sales was $37,230,000. These levels of credit sales and cost of sales are expected to be maintained in the coming year. Assume that there are 365 working days in each year.

Required:

(a) Discuss the working capital financing strategy of HGR Co. (7 marks)

(b) For HGR Co, calculate:

(i) the bank balance in three months' time if no action is taken; and
(ii) the bank balance in three months' time if the finance director's proposals are implemented.

Comment on the forecast cash flow position of HGR Co and recommend a suitable course of action.
(10 marks)

(c) Discuss how risks arising from granting credit to foreign customers can be managed and reduced.
(8 marks)

(25 marks)

4 JJG Co is planning to raise $15 million of new finance for a major expansion of existing business and is considering a rights issue, a placing or an issue of bonds. The corporate objectives of JJG Co, as stated in its *Annual Report*, are to maximise the wealth of its shareholders and to achieve continuous growth in earnings per share. Recent financial information on JJG Co is as follows:

	2008	2007	2006	2005
Turnover ($m)	28·0	24·0	19·1	16·8
Profit before interest and tax ($m)	9·8	8·5	7·5	6·8
Earnings ($m)	5·5	4·7	4·1	3·6
Dividends ($m)	2·2	1·9	1·6	1·6
Ordinary shares ($m)	5·5	5·5	5·5	5·5
Reserves ($m)	13·7	10·4	7·6	5·1
8% Bonds, redeemable 2015 ($m)	20	20	20	20
Share price ($)	8·64	5·74	3·35	2·67

The par value of the shares of JJG Co is $1·00 per share. The general level of inflation has averaged 4% per year in the period under consideration. The bonds of JJG Co are currently trading at their par value of $100. The following values for the business sector of JJG Co are available:

Average return on capital employed	25%
Average return on shareholders' funds	20%
Average interest coverage ratio	20 times
Average debt/equity ratio (market value basis)	50%
Return predicted by the capital asset pricing model	14%

Required:

(a) Evaluate the financial performance of JJG Co, and analyse and discuss the extent to which the company has achieved its stated corporate objectives of:

(i) maximising the wealth of its shareholders;
(ii) achieving continuous growth in earnings per share.

Note: up to 7 marks are available for financial analysis.

(12 marks)

(b) If the new finance is raised via a rights issue at $7·50 per share and the major expansion of business has not yet begun, calculate and comment on the effect of the rights issue on:

(i) the share price of JJG Co;
(ii) the earnings per share of the company; and
(iii) the debt/equity ratio. (6 marks)

(c) Analyse and discuss the relative merits of a rights issue, a placing and an issue of bonds as ways of raising the finance for the expansion. (7 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

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

The asset beta formula

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

The Growth Model

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

Gordon's growth approximation

$$g = br_e$$

The weighted average cost of capital

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

The Fisher formula

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

Purchasing power parity and interest rate parity

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

Present Value Table

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

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

Discount rate (r)

Periods (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	0·941	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	0·305	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

[P.T.O.

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

Discount rate (r)

Periods (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	10·37	9·787	9·253	8·760	8·306	7·887	7·499	7·139	6·805	6·495	11
12	11·26	10·58	9·954	9·385	8·863	8·384	7·943	7·536	7·161	6·814	12
13	12·13	11·35	10·63	9·986	9·394	8·853	8·358	7·904	7·487	7·103	13
14	13·00	12·11	11·30	10·56	9·899	9·295	8·745	8·244	7·786	7·367	14
15	13·87	12·85	11·94	11·12	10·38	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