Fundamentals Level – Skills Module

Financial Management

Thursday 9 December 2010

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 CJ Co is a profitable company which is financed by equity with a market value of $180 million and by debt with a market value of $45 million. The company is considering two investment projects, as follows.

Project A

This project is an expansion of existing business costing $3·5 million, payable at the start of the project, which will increase annual sales by 750,000 units. Information on unit selling price and costs is as follows:

Selling price:	$2·00 per unit (current price terms)
Selling costs:	$0·04 per unit (current price terms)
Variable costs:	$0·80 per unit (current price terms)

Selling price inflation and selling cost inflation are expected to be 5% per year and variable cost inflation is expected to be 4% per year. Additional initial investment in working capital of $250,000 will also be needed and this is expected to increase in line with general inflation.

Project B

This project is a diversification into a new business area that will cost $4 million. A company that already operates in the new business area, GZ Co, has an equity beta of 1·5. GZ Co is financed 75% by equity with a market value of $90 million and 25% by debt with a market value of $30 million.

Other information

CJ Co has a nominal weighted average after-tax cost of capital of 10% and pays profit tax one year in arrears at an annual rate of 30%. The company can claim capital allowances (tax-allowable depreciation) on a 25% reducing balance basis on the initial investment in both projects.

Risk-free rate of return:	4%
Equity risk premium:	6%
General rate of inflation:	4·5% per year

Directors' views on investment appraisal

The directors of CJ Co require that all investment projects should be evaluated using either payback period or return on capital employed (accounting rate of return). The target payback period of the company is two years and the target return on capital employed is 20%, which is the current return on capital employed of CJ Co. A project is accepted if it satisfies either of these investment criteria.

The directors also require all investment projects to be evaluated over a four-year planning period, ignoring any scrap value or working capital recovery, with a balancing allowance (if any) being claimed at the end of the fourth year of operation.

Required:

(a) Calculate the net present value of Project A and advise on its acceptability if the project were to be appraised using this method. (12 marks)

(b) Critically discuss the directors' views on investment appraisal. (7 marks)

(c) Calculate a project-specific cost of equity for Project B and explain the stages of your calculation. (6 marks)

(25 marks)

2 The following financial position statement as at 30 November 2010 refers to Nugfer Co, a stock exchange-listed company, which wishes to raise $200m in cash in order to acquire a competitor.

	$m	$m	$m
Assets			
Non-current assets			300
Current assets			211
Total assets			511
Equity and liabilities			
Share capital		100	
Retained earnings		121	
Total equity			221
Non-current liabilities			
Long-term borrowings		100	
Current liabilities			
Trade payables	30		
Short-term borrowings	160		
Total current liabilities		190	
Total liabilities			290
Total equity and liabilities			511

The recent performance of Nugfer Co in profitability terms is as follows:

Year ending 30 November	2007 $m	2008 $m	2009 $m	2010 $m
Revenue	122·6	127·3	156·6	189·3
Operating profit	41·7	43·3	50·1	56·7
Finance charges (interest)	6·0	6·2	12·5	18·8
Profit before tax	35·7	37·1	37·6	37·9
Profit after tax	25·0	26·0	26·3	26·5

Notes:

1. The long-term borrowings are 6% bonds that are repayable in 2012
2. The short-term borrowings consist of an overdraft at an annual interest rate of 8%
3. The current assets do not include any cash deposits
4. Nugfer Co has not paid any dividends in the last four years
5. The number of ordinary shares issued by the company has not changed in recent years
6. The target company has no debt finance and its forecast profit before interest and tax for 2011 is $28 million

Required:

(a) Evaluate suitable methods of raising the $200 million required by Nugfer Co, supporting your evaluation with both analysis and critical discussion. (15 marks)

(b) Briefly explain the factors that will influence the rate of interest charged on a new issue of bonds. (4 marks)

(c) Identify and describe the three forms of efficiency that may be found in a capital market. (6 marks)

(25 marks)

3 WQZ Co is considering making the following changes in the area of working capital management:

Inventory management

It has been suggested that the order size for Product KN5 should be determined using the economic order quantity model (EOQ).

WQZ Co forecasts that demand for Product KN5 will be 160,000 units in the coming year and it has traditionally ordered 10% of annual demand per order. The ordering cost is expected to be $400 per order while the holding cost is expected to be $5·12 per unit per year. A buffer inventory of 5,000 units of Product KN5 will be maintained, whether orders are made by the traditional method or using the economic ordering quantity model.

Receivables management

WQZ Co could introduce an early settlement discount of 1% for customers who pay within 30 days and at the same time, through improved operational procedures, maintain a maximum average payment period of 60 days for credit customers who do not take the discount. It is expected that 25% of credit customers will take the discount if it were offered.

It is expected that administration and operating cost savings of $753,000 per year will be made after improving operational procedures and introducing the early settlement discount.

Credit sales of WQZ Co are currently $87·6 million per year and trade receivables are currently $18 million. Credit sales are not expected to change as a result of the changes in receivables management. The company has a cost of short-term finance of 5·5% per year.

Required:

(a) Calculate the cost of the current ordering policy and the change in the costs of inventory management that will arise if the economic order quantity is used to determine the optimum order size for Product KN5. (6 marks)

(b) Briefly describe the benefits of a just-in-time (JIT) procurement policy. (5 marks)

(c) Calculate and comment on whether the proposed changes in receivables management will be acceptable. Assuming that only 25% of customers take the early settlement discount, what is the maximum early settlement discount that could be offered? (6 marks)

(d) Discuss the factors that should be considered in formulating working capital policy on the management of trade receivables. (8 marks)

(25 marks)

4 The following financial information refers to NN Co:

Current statement of financial position

	$m	$m	$m
Assets			
Non-current assets			101
Current assets			
Inventory		11	
Trade receivables		21	
Cash		10	
			42
Total assets			143
Equity and liabilities			
Ordinary share capital		50	
Preference share capital		25	
Retained earnings		19	
Total equity			94
Non-current liabilities			
Long-term borrowings		20	
Current liabilities			
Trade payables	22		
Other payables	7		
Total current liabilities		29	
Total liabilities			49
Total equity and liabilities			143

NN Co has just paid a dividend of 66 cents per share and has a cost of equity of 12%. The dividends of the company have grown in recent years by an average rate of 3% per year. The ordinary shares of the company have a par value of 50 cents per share and an ex div market value of $8·30 per share.

The long-term borrowings of NN Co consist of 7% bonds that are redeemable in six years' time at their par value of $100 per bond. The current ex interest market price of the bonds is $103·50.

The preference shares of NN Co have a nominal value of 50 cents per share and pay an annual dividend of 8%. The ex div market value of the preference shares is 67 cents per share.

NN Co pay profit tax at an annual rate of 25% per year

Required:

(a) Calculate the equity value of NN Co using the following business valuation methods:

(i) the dividend growth model;
(ii) net asset value. (5 marks)

(b) Calculate the after-tax cost of debt of NN Co. (4 marks)

(c) Calculate the weighted average after-tax cost of capital of NN Co. (6 marks)

(d) Discuss the factors to be considered in formulating the dividend policy of a stock-exchange listed company. (10 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