Fundamentals Level – Skills Module

Financial Management

Thursday 10 June 2010

Paper F9

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.

ACCA

The Association of Chartered Certified Accountants

ALL FOUR questions are compulsory and MUST be attempted

1 ZSE Co is concerned about exceeding its overdraft limit of $2 million in the next two periods. It has been experiencing considerable volatility in cash flows in recent periods because of trading difficulties experienced by its customers, who have often settled their accounts after the agreed credit period of 60 days. ZSE has also experienced an increase in bad debts due to a small number of customers going into liquidation.

The company has prepared the following forecasts of net cash flows for the next two periods, together with their associated probabilities, in an attempt to anticipate liquidity and financing problems. These probabilities have been produced by a computer model which simulates a number of possible future economic scenarios. The computer model has been built with the aid of a firm of financial consultants.

Period 1 cash flow	Probability	Period 2 cash flow	Probability
$000		$000	
8,000	10%	7,000	30%
4,000	60%	3,000	50%
(2,000)	30%	(9,000)	20%

ZSE Co expects to be overdrawn at the start of period 1 by $500,000.

Required:

(a) Calculate the following values:

    (i) the expected value of the period 1 closing balance;
    (ii) the expected value of the period 2 closing balance;
    (iii) the probability of a negative cash balance at the end of period 2;
    (iv) the probability of exceeding the overdraft limit at the end of period 2.

    Discuss whether the above analysis can assist the company in managing its cash flows. (13 marks)

(b) Identify and discuss the factors to be considered in formulating a trade receivables management policy for ZSE Co. (8 marks)

(c) Discuss whether profitability or liquidity is the primary objective of working capital management. (4 marks)

(25 marks)

2 YGV Co is a listed company selling computer software. Its profit before interest and tax has fallen from $5 million to $1 million in the last year and its current financial position is as follows:

	$000	$000
Non-current assets		
Property, plant and equipment	3,000	
Intangible assets	8,500	11,500
Current assets		
Inventory	4,100	
Trade receivables	11,100	15,200
Total assets		26,700
Current liabilities		
Trade payables	5,200	
Overdraft	4,500	9,700
Equity		
Ordinary shares	10,000	
Reserves	7,000	17,000
		26,700

YGV Co has been advised by its bank that the current overdraft limit of $4·5 million will be reduced to $500,000 in two months' time. The finance director of YGV Co has been unable to find another bank willing to offer alternative overdraft facilities and is planning to issue bonds on the stock market in order to finance the reduction of the overdraft. The bonds would be issued at their par value of $100 per bond and would pay interest of 9% per year, payable at the end of each year. The bonds would be redeemable at a 10% premium to their par value after 10 years. The finance director hopes to raise $4 million from the bond issue.

The ordinary shares of YGV Co have a par value of $1·00 per share and a current market value of $4·10 per share. The cost of equity of YGV Co is 12% per year and the current interest rate on the overdraft is 5% per year. Taxation is at an annual rate of 30%.

Other financial information:

Average gearing of sector (debt/equity, market value basis):   10%
Average interest coverage ratio of sector: 8 times

Required:

(a) Calculate the after–tax cost of debt of the 9% bonds.   (4 marks)

(b) Calculate and comment on the effect of the bond issue on the weighted average cost of capital of YGV Co, clearly stating any assumptions that you make.   (5 marks)

(c) Calculate the effect of using the bond issue to finance the reduction in the overdraft on:

    (i) the interest coverage ratio;
    (ii) gearing.   (4 marks)

(d) Evaluate the proposal to use the bond issue to finance the reduction in the overdraft and discuss alternative sources of finance that could be considered by YGV Co, given its current financial position.   (12 marks)

(25 marks)

3 The following draft appraisal of a proposed investment project has been prepared for the finance director of OKM Co by a trainee accountant. The project is consistent with the current business operations of OKM Co.

Year	1	2	3	4	5
Sales (units/yr)	250,000	400,000	500,000	250,000	
	$000	$000	$000	$000	$000
Contribution	1,330	2,128	2,660	1,330	
Fixed costs	(530)	(562)	(596)	(631)	
Depreciation	(438)	(438)	(437)	(437)	
Interest payments	(200)	(200)	(200)	(200)	
Taxable profit	162	928	1,427	62	
Taxation		(49)	(278)	(428)	(19)
Profit after tax	162	879	1,149	(366)	(19)
Scrap value				250	
After–tax cash flows	162	879	1,149	(116)	(19)
Discount at 10%	0·909	0·826	0·751	0·683	0·621
Present values	147	726	863	(79)	(12)

Net present value = 1,645,000 – 2,000,000 = ($355,000) so reject the project.

The following information was included with the draft investment appraisal:

1. The initial investment is $2 million
2. Selling price: $12/unit (current price terms), selling price inflation is 5% per year
3. Variable cost: $7/unit (current price terms), variable cost inflation is 4% per year
4. Fixed overhead costs: $500,000/year (current price terms), fixed cost inflation is 6% per year
5. $200,000/year of the fixed costs are development costs that have already been incurred and are being recovered by an annual charge to the project
6. Investment financing is by a $2 million loan at a fixed interest rate of 10% per year
7. OKM Co can claim 25% reducing balance capital allowances on this investment and pays taxation one year in arrears at a rate of 30% per year
8. The scrap value of machinery at the end of the four-year project is $250,000
9. The real weighted average cost of capital of OKM Co is 7% per year
10. The general rate of inflation is expected to be 4·7% per year

Required:

(a) Identify and comment on any errors in the investment appraisal prepared by the trainee accountant.

(5 marks)

(b) Prepare a revised calculation of the net present value of the proposed investment project and comment on the project's acceptability. (12 marks)

(c) Discuss the problems faced when undertaking investment appraisal in the following areas and comment on how these problems can be overcome:

(i) assets with replacement cycles of different lengths;
(ii) an investment project has several internal rates of return;
(iii) the business risk of an investment project is significantly different from the business risk of current operations. (8 marks)

(25 marks)

4 A shareholder of QSX Co is concerned about the recent performance of the company and has collected the following financial information.

Year to 31 May	2009	2008	2007
Turnover	$6·8m	$6·8m	$6·6m
Earnings per share	58·9c	64·2c	61·7c
Dividend per share	40·0c	38·5c	37·0c
Closing ex dividend share price	$6·48	$8·35	$7·40
Return on equity predicted by CAPM	8%	12%	

One of the items discussed at a recent board meeting of QSX Co was the dividend payment for 2010. The finance director proposed that, in order to conserve cash within the company, no dividend would be paid in 2010, 2011 and 2012. It was expected that improved economic conditions at the end of this three-year period would make it possible to pay a dividend of 70c per share in 2013. The finance director expects that an annual dividend increase of 3% per year in subsequent years could be maintained.

The current cost of equity of QSX Co is 10% per year.

Assume that dividends are paid at the end of each year.

Required:

(a) **Calculate the dividend yield, capital gain and total shareholder return for 2008 and 2009, and briefly discuss your findings with respect to:**

  (i) the returns predicted by the capital asset pricing model (CAPM);
  (ii) the other financial information provided. (10 marks)

(b) **Calculate and comment on the share price of QSX Co using the dividend growth model in the following circumstances:**

  (i) based on the historical information provided;
  (ii) if the proposed change in dividend policy is implemented. (7 marks)

(c) **Discuss the relationship between investment decisions, dividend decisions and financing decisions in the context of financial management, illustrating your discussion with examples where appropriate.** (8 marks)

(25 marks)

Formulae Sheet

Economic order quantity

$$= \sqrt{\frac{2C_0 D}{C_H}}$$

Miller–Orr Model

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

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

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

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

The Fisher formula

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

Purchasing power parity and interest rate parity

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

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. $\dfrac{1-(1+r)^{-n}}{r}$

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