

ACCA FINAL ASSESSMENT

Financial Management

December 2011

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 3, 4 and 5.

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.

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Paper F9

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Formulae Sheet**Economic order quantity**

$$= \sqrt{\frac{2C_oD}{C_H}}$$

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

$$E(r)_j = R_f + \beta_j (E(r_m) - R_f)$$

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

Periods (n)	Discount rates (r)										
	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

Periods (n)	Discount rates (r)										
	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

ALL FOUR questions are compulsory and MUST be attempted

- 1 The directors of XQ Co formally disclosed their overriding objective at a recent annual general meeting when the chairman announced:

“We aim for growth in our equity value in the stock markets without taking undue risks.”

This announcement displeased the employee representatives on the Works Council. They have argued that the company’s management should favour growth both of profits and of turnover, so providing additional employment opportunities.

The company disclosed the following five-year summary of results in its recently published annual report:

	20X1	20X2	20X3	20X4	20X5
	\$000	\$000	\$000	\$000	\$000
Turnover	156,826	164,220	167,844	176,408	180,913
Interest charges	5,100	5,100	5,100	7,650	7,650
Profit after taxation	27,251	30,458	28,650	30,612	32,193
Dividend/share	50 cents	60 cents	70 cents	70 cents	80 cents
PE ratio*	5.7	5.3	6.0	5.5	6.5
Number of employees at year end	1,960	1,723	1,587	1,432	1,157

* based on market prices immediately after the preliminary announcement of annual results.

There were 30 million shares in issue throughout the above five-year period.

Required

- (a) Assess whether the directors have, thus far, met their stated objective; (10 marks)
- (b) Analyse the apparently conflicting views held by the directors and by the employee representatives and consider how they could be reconciled; (8 marks)
- (c) Explain and compare the public sector objective of ‘value for money’ and the private sector objective of ‘maximisation of shareholder wealth’ (7 marks)

(Total: 25 marks)

- 2 Countrylife Co is a listed company that owns and operates a large number of farms throughout Europe. A variety of crops are grown.

The following is an extract from the statement of financial position of Countrylife Co at 30 June 20X8:

	€ million
Ordinary shares of €1 each	300
Reserves	150
9% irredeemable €1 preference shares	100
8% loan stock 20X9	400
	—
	950
	—

The ordinary shares were quoted at €2.50 per share ex div on 30 June 20X8. The beta of Countrylife Co's equity shares is 0.85, the annual yield on treasury bills is 5.5% and the financial markets expect an average return of 17% on the market index.

The market price per preference share was €0.80 ex div on 30 June 20X8.

Loan stock interest is paid annually in arrears and is allowable for tax at a corporation tax rate of 30%. The loan stock was priced at €98.62 ex interest per €100 nominal on 30 June 20X8. Loan stock is redeemable at par on 30 June 20X9.

Assume that taxation is payable at the end of the year in which taxable profits arise.

Difficult trading conditions in European farming have caused Countrylife Co to decide to convert a number of its farms in Southern Europe into camping sites with effect from the 20X9 holiday season. Providing the necessary facilities for campers will require major investment, and this will be financed by a new issue of loan stock. The returns on the new campsite business are likely to have a very low correlation with those of the existing farming business.

Required:

- (a) Using the capital asset pricing model, calculate the required rate of return on equity of Countrylife Co at 30 June 20X8. Ignore any impact from the new campsite project.
Briefly explain the implications of a beta of less than 1, such as that for Countrylife Co. (5 marks)
- (b) Calculate the weighted average cost of capital of Countrylife Co at 30 June 20X8 (use your calculation in answer to requirement (a) above for the cost of equity). Ignore any impact from the new campsite project. (10 marks)
- (c) Discuss the limitations of the using the WACC calculated as a discount rate for appraising the project. (5 marks)
- (d) Without further calculations, identify and explain the factors that may change Countrylife Co's equity beta during the year ending 30 June 20X9. (5 marks)

(Total: 25 marks)

- 3** Benland Co manufacture and fit a variety of children's playground equipment. The company at present purchases the rubber particles used in the playground surfacing from an outside supplier, but is considering investing in equipment that would process and shred used vehicle tyres to produce equivalent rubber particles. One tonne of purchased particles is saved per tonne of tyres processed. Disposal of used tyres is becoming an environmental problem, and Benland believes that it could charge \$40 per tonne to garages/tyre distributors wishing to dispose of their old tyres. This price would be 20 per cent lower than the cost of the landfill sites currently being used, and so Benland believes that it would face no risk or shortage of supply of what would be a key raw material for the business. The price charged by Benland for tyre disposal (\$40 per tonne) remains fixed for the next five years.

The cost to Benland of purchased particles is \$3.50 per tonne for each of the next five years, and the price has been contractually guaranteed. If the contract is terminated within the next two years, Benland will be charged an immediate termination penalty of \$100,000 which will not be allowed as a tax deductible expense.

The machine required to process the tyres will cost \$1.06 million, and it is estimated that at the end of year five the machine will have a second-hand value of \$120,000 before selling costs of \$5,000.

Sales of the playground surfacing which uses rubber particles are forecast to be \$1.2 million in year one, rising by 10% per year until year five but prices will remain constant. The new equipment will result in Benland incurring additional maintenance costs of \$43,000 per year.

80,000 tonnes of tyres need to be processed in order to meet the raw material requirement for the forecast sales in year one. Processing costs are estimated at \$37 per tonne (excluding additional depreciation and maintenance).

Benland is subject to corporation tax at a rate of 30%, payable one year in arrears. Capital expenditure is eligible for 25% allowances on a reducing balance basis, and sales proceeds of assets are subject to tax. Benland has sufficient profits to fully utilise all available capital allowances.

Required:

- (a) Using 12% as the after-tax discount rate, advise Benland on the desirability of purchasing the tyre processing equipment. (12 marks)
- (b) Discuss which cash flows are most important in determining the outcome of the proposed investment and how Benland might seek to minimise the risk of large changes in predicted cash flows. (8 marks)
- (c) Comment on how the project would affect the different stakeholders of Benland. (5 marks)

(Total: 25 marks)

- 4 The current managing director John Grant formed Grant and Co 12 years ago. He is now thinking about retirement and would like to release part of his investment in the company. Some of the other board members are also reaching retirement age and they would like to convert at least part of their shareholdings into cash. The company also needs to raise approximately \$1 million to finance a major new investment opportunity, which the board believes could contribute further to the long-term success of the company. The board is now considering flotation on the Alternative Investment Market (AIM) as a way of achieving the twin objectives of raising additional finance and releasing part of the board's equity investment. The intention is that the directors will sell 25% of their existing shareholding and issue new shares to raise the \$1 million of new finance required. The plans are still very much at a preliminary stage.

The following summarised financial data applies to Grant and Co:

	20X7	20X8
Profit after tax	\$000 427	\$000 538
Non-current assets:		
Land and buildings	850	850
Plant and equipment (net)	1,450	1,350
	<hr/> 2,300	<hr/> 2,200
Current assets:		
Inventory	1,025	1,400
Total net assets	2,325	2,575
Ordinary shares (25 cents)	750	750

Additional information

- (i) Profit before tax is expected to grow at approximately 10% per year. Dividend growth is expected to be in line with this growth in earnings.
- (ii) The existing directors, who own 95% of the shares, declared dividends of \$288,000 in the latest financial year.
- (iii) The average price earnings ratio of AIM listed companies in the same industry as Grant is 8.33, and average earnings per share is 20 cents.
- (iv) The value of freehold land and buildings (never revalued) has fallen by 25% since purchased due to a recession.
- (v) Grant's cost of equity is estimated to be 18%.
- (vi) The replacement cost of plant and equipment is \$1,500,000 but its current realisable value is \$1,125,000.
- (vii) \$180,000 of inventory is obsolete and could only be sold for \$10,000 as scrap.

Required:

(a) Estimate the value of a share in Grant and Co using:

- (i) the dividend valuation model**
- (ii) a suitable PE ratio**
- (iii) an asset based value.**

Comment on the reliability of your estimates. (14 marks)

(b) Explain briefly the potential strategies a company could adopt when it is faced with foreign exchange risk. Distinguish between those strategies which offer protection against the risk and those which do not. For those strategies offering protection distinguish between those that will enable the company to benefit from favourable exchange rate movements and those that will not.

(11 marks)

(Total: 25 marks)

