



QQI

BA (HONS) ACCOUNTING & FINANCE

AUTUMN 2024 EXAMINATIONS

Module Code: **B8AF106**
Module Description: **Advanced Financial Management**
Examiner: **Paul Lydon**
Internal Moderator: **Mazlinda Hussin**
External Examiner: **Shane Moran**

INSTRUCTIONS TO CANDIDATES.

Time allowed is THREE (3) Hours

Answer any FOUR (4) Questions

All Questions carry 25 MARKS

Show All Workings.

Answer all theoretical questions in your own word's and using appropriate examples

Formulae and Mathematical Tables Attached

By submitting your answers as part of this exam you certify that all work provided is wholly your own, done without the intervention, help or guidance of any third party

Question 1

Morarts is an established manufacturing business. As operating costs rise as a consequence of global inflation, the company is considering a project to expand their range into the personal protection security market.

Recently undertaken market research for the project predicted the following sales units for the coming years.

The following information is relevant to year 1

Unit sales in year 1	31,075
Selling price per unit in year 1	€17
Components cost per unit in year 1	€1.10
Production cost per unit in year 1	€1.35

The following information is also relevant

Unit sales P.A. growth after year 1	8%
Selling price per unit inflation after year 1	2.5%
Components cost per unit inflation after year 1	6.50%
Production cost per unit inflation after year 1	10%
Incremental fixed cost P.A. and is not subject to inflation	€77,000

Machinery is required for the project will be purchased at the start of the project for €1,005,000.

Additional working capital of €310,000 is required at the start of the project, this will remain constant during the life of the project, and will be released at the end of the project in year 5.

Tax is payable on profits at the rate of 15% and is paid in the year in which cash flows arise. The company has a nominal cost of capital of 9%.

Capital allowances are applied at 25% on a reducing balance basis

Required:

- Assess – on an NPV basis - whether this project should be undertaken.
(17 Marks)
- Calculate the I.R.R. of this project.
(5 Marks)
- Briefly discuss your findings in each section of (a) above and advise whether the investment is financially acceptable.
(3 Marks)

(Total 25 Marks)

Question 2

Lemon plc a eurozone company must make a payment of Auz\$230,000 in 3 months' time.

In your role of finance manager, you have determined the following:

Current spot and forward rates are as follows	Auz\$/1 Euro
Spot rate	1.8250-1.8361
3-months forward	1.8338-1.8452
6-months forward	1.8371-1.8400

Here the rates quoted are in annual rates.	Borrowing	Deposit
Auz\$	5.01%	4.20%
€	5.75%	4.50%

Identify with reasons whether the cost of the payment should be met using a forward contract hedge or a money market hedge by Lemon on this occasion.

Ensure to show all your working clearly

(Total 25 Marks)

Question 3

Ravel Co is considering investing in one of two portfolios of two financial investments.

The company directors are of the opinion that overall risk is not correlated with the return on any other investment but that diversification can help to reduce the overall risk.

The market return is estimated to be 12% and the risk-free rate is 6%. The amount invested, the expected return, the standard deviation and betas are given as follows:

Portfolio 1

Investment	Amounts	Expected	Total	Equity
Company	€53 million	19%	8%	1.3
Company	€58 million	21%	10%	1.1

Portfolio 2

Investme	Amounts	Expected	Total	Equity
Company	€49 million	23%	12%	1.2
Company	€43 million	25%	10%	1.4

Required:

- a) Estimate the expected return of the two portfolios.

(5 Marks)

- b) Calculate the risk of the two portfolios.

(5 Marks)

- c) Estimate the required rate of return on the two portfolios using the capital asset pricing mode.

(5 Marks)

- d) Advise on your calculations above which portfolio should be selected.

(5 Marks)

- e) In your own words discuss who may use portfolio theory and what problems they may encounter.

(5 Marks)

(Total 25 Marks)

Question 4

Luco is a stock market-quoted company which specialises in researching and developing medical equipment. It sells and/or licenses its discoveries to multi-national companies.

The most recent balance sheet for Luco plc is:

Balance Sheet as at 31 December 2023

Asset Employed	€M	€M	€M
Non Current Assets			
Tangible	141		
Intangible	<u>181</u>		322
Current Assets			
Inventory	138		
Receivables	42		
Bank	<u>10</u>	190	
Current Liabilities			
Payables	20		
Bank overdraft	<u>22.5</u>	42.5	
Net Current Assets			147.5
10% Debenture			<u>-57.5</u>
Net Assets			<u>412</u>
Financed by			
Ordinary Share Capital (25C per share)			300
Share premium Account			70
Reserves			<u>42</u>
			<u>412</u>

Further information:

1. In 2023, Luco made sales of €345 million, with a 25% net operating margin (i.e. after depreciation but before tax and interest). The sales value is known to fluctuate between accounting periods.
2. The rate of corporate tax is 33 per cent.
3. The tangible fixed assets have recently been revalued (by the directors) at €172.5 million.
4. The intangible assets include a major patent which is due to expire in April 2020. Its book value is €23 million.

5. Luco plans to pay a dividend of €5.18. Five years ago it paid a dividend of €3.80.
6. The Beta factor of Luco is 1.3.
7. At present, the average return on the market is 13% and risk-free rate is 5%.
8. 50 per cent of stocks and work-in-progress represents development work for which no firm contract has been signed.
9. The average P/E ratio for similar quoted medical research companies at present is 18 and for manufacturers of related hardware is 12. However, Luco's own P/E ratio is 15.
10. The interest charge on the overdraft was 12%.

Required:

- a) You have been asked by the board of Luco to determine the value of the company using each of the following methods:
 - i. Net asset value
(4 Marks)
 - ii. P/E ratio
(4 Marks)
 - iii. Dividend Valuation
(6 Marks)
 - b) Discuss possible reasons for the range of valuations you have calculated.
(5 Marks)
 - c) The CEO would like you to advise the board whether there is a single accurate valuation for a company like Luco.
(6 Marks)
- (Total 25 Marks)**

Question 5

Company A has deliberately paid no dividends for the last five years, Company B always pays a dividend of 50% of earnings after taxation Company C maintains a low but constant dividend per share and offers regular scrip issues.

Each managing director is convinced that their company's policy is maximizing shareholders wealth.

Requirement

- a) Briefly discuss the factors what might influence a company's choice of dividend policy.

(5 Marks)

- b) Critically evaluate each of the policies outlined above and explain the circumstances under which each managing director might be correct in her belief that her company's dividend policy is maximizing shareholders wealth.

State clearly any assumptions made.

(12 Marks)

- c) Critically analyze Modigliani and Miller's theory of dividend policy.

(8 Marks)

(Total 25 Marks)

Question 6

a) Describe the steps to be undertaken in the risk management process

(5 Marks)

b) Discuss the following as they apply to risk management.

1. The 4_T approach to risk management

(4 Marks)

2. Purchasing power parity

(4 Marks)

3. Netting

(4 Marks)

4. Leading and lagging

(4 Marks)

5. The advantages of interest rate swaps

(4 Marks)

(Total 25 Marks)

END OF EXAMINATION

MATHEMATICAL TABLES AND FORMULAE**HOLDING PERIOD RETURN**

$$r = \frac{DV_1 + (PV_1 - PV_0)}{PV_0}$$

INTERNAL RATE OF RETURN

$$IRR = DCF(A) + \left[\frac{NPV(A)}{NPV(A) - NPV(B)} \times (DCF(B) - DCF(A)) \right]$$

PRESENT VALUE OF A SHARE

$$PV_0 = \frac{DV_0 \times (1+g)}{(k_e - g)}$$

CAPITAL ASSET PRICING MODEL

$$K_e = r_f + [E(r_m) - r_f] \times B_j$$

MODIGLIANI AND MILLER PROPOSITION 2 WITH TAX

$$K_{eg} = K_{eu} + [(1-t) \times (K_{eu} - K_d) \times D \div E]$$

COST OF EQUITY CAPITAL

$$K_e = \frac{DV_0 \times (1+g)}{PV_0} + g$$

GORDON'S GROWTH APPROXIMATION

$$g = br_e$$

WEIGHTED AVERAGE COST OF CAPITAL

$$K_o = K_e \times \frac{E}{E + D} + K_d (1-t) \times \frac{D}{E + D}$$

ASSET BETA FORMULA

$$\beta_a = \beta_e \times \frac{E}{E + D(1-t)} + \beta_d \times \frac{D(1-t)}{E + D(1-t)}$$

VALUE OF A GEARED COMPANY

$$V_g = V_u + \text{PV tax shield}$$

TOTAL PRESENT VALUE MODEL

$$PV_0 = \frac{\text{Free cash flows} \times (1+g)}{WACC - g}$$

FREE CASH FLOW

$$\text{PBIT} \times (1-t) + \text{depreciation} - \text{capital spending} +/- \text{working capital}$$

COST OF IRREDEEMABLE DEBT CAPITAL

$$K_d = \frac{\text{Annual interest} (1-t) \times 100\%}{\text{Market value of debt}}$$

PERPETUITY GROWTH FORMULA

$$PV_0 = \frac{C_n}{r - g}$$

STANDARD DEVIATION OF RETURNS OF A TWO ASSET PORTFOLIO

$$\sigma_{AB} = \sqrt{y^2 \sigma_A^2 + (1-y)^2 \sigma_B^2 + 2 \times y \times (1-y) \times \rho_{AB} \times \sigma_A \times \sigma_B}$$

THE FISHER FORMULA

$$1 + r_{\text{nominal}} = (1 + r_{\text{real}}) \times (1 + \text{inflation})$$

INTEREST RATE PARITY FORMULA

$$F_0 = S_0 \times \frac{(1+ic)}{(1+ib)}$$

PURCHASING POWER PARITY FORMULA

$$S_1 = S_0 \times \frac{(1+hc)}{(1+hb)}$$

PRESENT VALUE TABLES

Periods	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
2	0.980	0.961	0.943	0.925	0.907	0.890	0.874	0.857	0.841	0.826
3	0.970	0.942	0.916	0.889	0.864	0.840	0.817	0.794	0.772	0.751
4	0.960	0.924	0.889	0.855	0.823	0.792	0.764	0.735	0.708	0.683
5	0.950	0.906	0.863	0.822	0.784	0.747	0.714	0.681	0.650	0.621
6	0.941	0.888	0.838	0.790	0.747	0.705	0.667	0.631	0.596	0.565
7	0.932	0.871	0.814	0.760	0.711	0.665	0.623	0.584	0.547	0.514
8	0.923	0.854	0.790	0.731	0.677	0.627	0.582	0.541	0.502	0.467
9	0.914	0.837	0.767	0.703	0.645	0.592	0.544	0.501	0.461	0.425
10	0.905	0.821	0.745	0.676	0.614	0.558	0.508	0.464	0.423	0.386
11	0.896	0.805	0.723	0.650	0.585	0.526	0.475	0.430	0.388	0.351
12	0.887	0.789	0.702	0.625	0.557	0.496	0.444	0.398	0.356	0.319
13	0.878	0.774	0.682	0.601	0.530	0.468	0.415	0.369	0.327	0.290
14	0.869	0.759	0.662	0.578	0.505	0.442	0.388	0.342	0.300	0.264
15	0.860	0.744	0.643	0.556	0.481	0.417	0.363	0.317	0.275	0.240
16	0.851	0.729	0.624	0.535	0.458	0.393	0.339	0.294	0.252	0.218
17	0.843	0.715	0.606	0.514	0.436	0.371	0.317	0.272	0.231	0.198
18	0.835	0.701	0.588	0.494	0.415	0.350	0.296	0.252	0.212	0.180
19	0.827	0.687	0.571	0.475	0.395	0.330	0.277	0.233	0.194	0.164
20	0.819	0.674	0.554	0.457	0.376	0.311	0.259	0.216	0.178	0.149
Periods	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
2	0.812	0.797	0.783	0.769	0.757	0.743	0.731	0.718	0.706	0.694
3	0.732	0.712	0.693	0.675	0.658	0.641	0.625	0.608	0.593	0.578
4	0.659	0.636	0.613	0.592	0.572	0.553	0.534	0.515	0.498	0.482
5	0.594	0.568	0.542	0.519	0.497	0.477	0.456	0.436	0.418	0.402
6	0.535	0.507	0.480	0.455	0.432	0.411	0.390	0.369	0.351	0.335
7	0.482	0.453	0.425	0.399	0.376	0.354	0.333	0.313	0.295	0.279
8	0.434	0.404	0.376	0.350	0.327	0.305	0.285	0.265	0.248	0.233
9	0.391	0.361	0.333	0.307	0.284	0.263	0.244	0.225	0.208	0.194
10	0.352	0.322	0.295	0.269	0.247	0.227	0.209	0.191	0.175	0.162
11	0.317	0.288	0.261	0.236	0.215	0.196	0.179	0.162	0.147	0.135
12	0.286	0.257	0.231	0.207	0.187	0.169	0.153	0.137	0.124	0.113
13	0.258	0.229	0.204	0.182	0.163	0.146	0.131	0.116	0.104	0.094
14	0.232	0.204	0.181	0.160	0.142	0.126	0.112	0.098	0.087	0.078
15	0.209	0.182	0.160	0.140	0.123	0.109	0.096	0.083	0.073	0.065
16	0.188	0.163	0.142	0.123	0.107	0.094	0.082	0.070	0.061	0.054
17	0.169	0.146	0.126	0.108	0.093	0.081	0.070	0.059	0.051	0.045
18	0.152	0.130	0.112	0.095	0.081	0.070	0.060	0.050	0.043	0.038
19	0.137	0.116	0.099	0.083	0.070	0.060	0.051	0.042	0.036	0.032
20	0.123	0.104	0.088	0.073	0.061	0.052	0.044	0.036	0.030	0.027

PRESENT VALUE TABLES

Periods	21%	22%	23%	24%	25%	26%	27%	28%	29%	30%
1	0.826	0.820	0.813	0.806	0.800	0.794	0.787	0.781	0.775	0.769
2	0.683	0.672	0.661	0.650	0.640	0.630	0.620	0.610	0.601	0.592
3	0.564	0.551	0.537	0.525	0.512	0.500	0.488	0.477	0.466	0.455
4	0.466	0.451	0.437	0.423	0.410	0.397	0.384	0.373	0.361	0.350
5	0.386	0.370	0.355	0.341	0.328	0.315	0.303	0.291	0.280	0.269
6	0.319	0.303	0.289	0.275	0.262	0.250	0.239	0.227	0.217	0.207
7	0.263	0.249	0.235	0.222	0.210	0.198	0.188	0.178	0.168	0.159
8	0.218	0.204	0.191	0.179	0.168	0.157	0.148	0.139	0.130	0.123
9	0.180	0.167	0.155	0.144	0.134	0.125	0.116	0.108	0.101	0.094
10	0.149	0.137	0.126	0.116	0.107	0.099	0.092	0.085	0.078	0.073
11	0.123	0.112	0.103	0.094	0.086	0.079	0.072	0.066	0.061	0.056
12	0.102	0.092	0.083	0.076	0.069	0.062	0.057	0.052	0.047	0.043
13	0.084	0.075	0.068	0.061	0.055	0.050	0.045	0.040	0.037	0.033
14	0.069	0.062	0.055	0.049	0.044	0.039	0.035	0.032	0.028	0.025
15	0.057	0.051	0.045	0.040	0.035	0.031	0.028	0.025	0.022	0.020
16	0.047	0.042	0.036	0.032	0.028	0.025	0.022	0.019	0.017	0.015
17	0.039	0.034	0.030	0.026	0.023	0.020	0.017	0.015	0.013	0.012
18	0.032	0.028	0.024	0.021	0.018	0.016	0.013	0.012	0.010	0.009
19	0.027	0.023	0.020	0.017	0.014	0.012	0.011	0.009	0.008	0.007
20	0.022	0.019	0.016	0.014	0.012	0.009	0.008	0.007	0.006	0.005

ANNUITY TABLES

Periods	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
2	1.970	1.941	1.914	1.887	1.859	1.833	1.808	1.783	1.759	1.735
3	2.941	2.883	2.829	2.776	2.723	2.673	2.624	2.577	2.531	2.486
4	3.902	3.807	3.717	3.631	3.546	3.465	3.387	3.312	3.239	3.169
5	4.853	4.713	4.580	4.453	4.330	4.212	4.100	3.993	3.889	3.790
6	6.795	5.601	5.417	5.243	5.076	4.917	4.766	4.623	4.485	4.354
7	6.728	6.472	6.230	6.003	5.787	5.582	5.389	5.206	5.032	4.867
8	7.651	7.325	7.019	6.734	6.464	6.209	5.971	5.746	5.534	5.334
9	8.565	8.162	7.785	7.437	7.109	6.801	6.515	6.246	5.994	5.758
10	9.470	8.982	8.529	8.113	7.723	7.359	7.023	6.709	6.416	6.144
11	10.37	9.786	9.251	8.763	8.308	7.886	7.498	7.138	6.804	6.494
12	11.26	10.57	9.952	9.388	8.865	8.383	7.942	7.535	7.160	6.813
13	12.14	11.34	10.63	9.989	9.395	8.852	8.357	7.903	7.486	7.103
14	13.01	12.10	11.29	10.57	9.900	9.294	8.745	8.243	7.785	7.366
15	13.87	12.84	11.93	11.13	10.38	9.711	9.107	8.558	8.060	7.605
16	14.72	13.57	12.55	11.66	10.84	10.10	9.446	8.850	8.312	7.823
17	15.56	14.28	13.16	12.17	11.28	10.47	9.763	9.120	8.543	8.021
18	16.40	14.98	13.75	12.66	11.70	10.82	10.06	9.370	8.755	8.201
19	17.23	15.67	14.32	13.13	12.10	11.15	10.34	9.602	8.949	8.365
20	18.05	16.34	14.87	13.59	12.48	11.46	10.60	9.817	9.127	8.514
Periods	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
2	1.713	1.690	1.668	1.646	1.626	1.605	1.586	1.565	1.546	1.527
3	2.444	2.402	2.361	2.321	2.284	2.246	2.210	2.174	2.139	2.106
4	3.103	3.038	2.974	2.913	2.856	2.798	2.744	2.690	2.638	2.588
5	3.696	3.605	3.517	3.432	3.353	3.274	3.200	3.127	3.057	2.990
6	4.231	4.112	3.997	3.888	3.785	3.684	3.590	3.497	3.409	3.325
7	4.713	4.564	4.422	4.288	4.161	4.038	3.923	3.811	3.705	3.604
8	5.147	4.968	4.798	4.639	4.488	4.343	4.208	4.077	3.954	3.837
9	5.538	5.329	5.131	4.947	4.772	4.606	4.451	4.302	4.163	4.031
10	5.890	5.651	5.426	5.217	5.019	4.833	4.659	4.493	4.339	4.193
11	6.207	5.938	5.687	5.454	5.234	5.028	4.837	4.655	4.487	4.328
12	6.493	6.195	5.918	5.662	5.421	5.196	4.989	4.792	4.611	4.440
13	6.751	6.424	6.122	5.844	5.584	5.341	5.119	4.908	4.715	4.533
14	6.983	6.629	6.303	6.004	5.725	5.466	5.230	5.007	4.803	4.611
15	7.192	6.812	6.463	6.144	5.848	5.574	5.325	5.091	4.877	4.676
16	7.380	6.975	6.604	6.267	5.955	5.667	5.406	5.162	4.939	4.730
17	7.550	7.121	6.729	6.375	6.048	5.747	5.475	5.222	4.991	4.775
18	7.703	7.251	6.840	6.470	6.129	5.816	5.534	5.273	5.035	4.813
19	7.841	7.367	6.938	6.553	6.199	5.876	5.585	5.316	5.072	4.844
20	7.965	7.471	7.025	6.626	6.260	5.927	5.628	5.353	5.103	4.870

ANNUITY TABLES

Periods	21%	22%	23%	24%	25%	26%	27%	28%	29%	30%
1	0.826	0.820	0.813	0.807	0.800	0.794	0.787	0.781	0.775	0.770
2	1.509	1.492	1.474	1.457	1.440	1.424	1.407	1.392	1.376	1.361
3	2.074	2.042	2.011	1.981	1.952	1.923	1.896	1.868	1.842	1.816
4	2.540	2.494	2.448	2.404	2.362	2.320	2.280	2.241	2.203	2.166
5	2.926	2.864	2.804	2.745	2.689	2.635	2.583	2.532	2.483	2.436
6	3.245	3.167	3.092	3.021	2.951	2.885	2.821	2.750	2.700	2.643
7	3.508	3.416	3.327	3.242	3.161	3.083	3.009	2.937	2.868	2.802
8	3.726	3.619	3.518	3.421	3.329	3.241	3.156	3.076	2.999	2.925
9	3.905	3.786	3.673	3.566	3.463	3.366	3.273	3.184	3.099	3.092
10	4.054	3.923	3.800	3.682	3.571	3.465	3.364	3.269	3.178	3.109
11	4.177	4.035	3.902	3.776	3.656	3.544	3.437	3.335	3.239	3.147
12	4.279	4.127	3.985	3.851	3.725	3.606	3.493	3.387	3.286	3.190
13	4.362	4.203	4.053	3.912	3.780	3.656	3.538	3.427	3.322	3.223
14	4.432	4.265	4.108	3.962	3.824	3.695	3.573	3.459	3.351	3.249
15	4.489	4.315	4.153	4.001	3.859	3.726	3.601	3.483	3.373	3.268
16	4.536	4.357	4.189	4.033	3.887	3.751	3.623	3.503	3.390	3.283
17	4.576	4.391	4.219	4.059	3.910	3.771	3.640	3.518	3.403	3.295
18	4.608	4.419	4.243	4.080	3.930	3.786	3.654	3.529	3.413	3.304
19	4.635	4.442	4.263	4.097	3.942	3.799	3.664	3.539	3.421	3.312
20	4.657	4.460	4.279	4.110	3.954	3.808	3.673	3.546	3.427	3.316