



Institute of Incorporated Public Accountants

Module 14:

Financial Management

Thursday 31st. May 2012

2pm – 5pm

Instructions: Answer five questions

Section A

All three questions to be attempted

Section B

Two of the three questions to be attempted

Present Value Tables are attached at the end of the paper.

Time Allowed: 3 Hours

Section A: All three questions to be attempted

Section A (70 marks in Total)

Question 1

The Board of Futura Technologies Ltd. are considering the company's capital investment options for the coming year and are evaluating the following two potential investment opportunities.

Investment A:

This investment would involve Futura Technologies Ltd. setting up a subsidiary in the principality of Taxhavenia at a cost of €3,200,000. This investment would consist of €1,750,000 fixed assets and working capital of €1,450,000. The subsidiary would produce a product which is expected to achieve annual sales of €1,500,000 and incur cash expenditures of €900,000 in year one. The company expects that sales revenues and cash expenditures would increase by 5% a year after that.

The life of the product is planned to be four years, at the end of which the company expects the realisable value of the subsidiary's fixed assets to be €800,000. It also expects to be able to sell the rights to make the product for €400,000 at the end of the four years.

To persuade Futura Technologies Ltd. to locate the subsidiary in Taxhavenia, the Government of Taxhavenia has offered the company an effective corporate tax rate of zero on all profits earned by the subsidiary.

Investment B:

The directors of Futura Technologies Ltd. are also currently considering launching a new product. The production of the new product will require the purchase of new machinery. The following information is available for the project:

Probabilities	0.3	0.15	0.4	0.15
Net Cash Flow Year 1	€900,000	€1,100,000	€1,500,000	€2,600,000
Net Cash Flow Year 2	€1,350,000	€1,650,000	€2,250,000	€3,900,000
Net Cash Flow Year 3	€1,215,000	€1,485,000	€2,025,000	€3,510,000
Cost (Immediate Outlay)	€4,400,000			
Residual/Scrap Value	€800,000			

i.e. probability the year 1 Net Cash Flow is €900,000 is 30%; that it is €1,100,000 is 15% etc.

The company discounts all projects lasting five years duration or less at a cost of capital of 11% and employs the straight-line method of depreciation for all fixed assets. The company has sufficient funds to meet all capital expenditure requirements.

Required:

- a) You, as a financial management analyst, have been asked to advise the board of Futura Technologies Ltd. (in the form of a briefing report) which of the two investments should be undertaken. In your report you are to make use of the NPV method, as the members of the board believe this is the best to use and have asked you to use it.

(15 marks)

- b) A minority of board members feel that the Internal Rate of Return (IRR) should also be used as either an alternative or a complementary method of investment appraisal.

Calculate the IRR of investments A and B (you should use the company's cost of capital and an interest rate of 20% to start your calculation of the IRR) and comment accordingly.

(6 marks)

- c) Explain when or if firms should discount projects using (i) the cost of equity, (ii) the cost of debt, (iii) the cost of retained profits or (iv) the cost of the WACC? You should use the information and your results in parts (a) and (b) as examples.

(4 marks)

(25 marks in total)

Formulas:

**Expected Value for year n = (Outcome 1 in year n x Probability of Outcome 1)
+ (Outcome 2 in year n x Probability of Outcome 2)
+ (Outcome 3 in year n x Probability of Outcome 3).**

$$\text{IRR (Approximate)} = a + \frac{A}{A + B} \times (b - a)$$

**Where: a = Lower discount rate
A = NPV at lower discount rate
B = Higher discount rate
B = NPV at higher discount rate**

Question 2

Beta Developments, plc., (Beta) wish to determine the financial impact of using additional debt financing to purchase additional assets. The following represents the current financial data for Beta Developments, plc.:

Beta Developments, plc. Income Statement

For the Year Ended December 31, 2012

Turnover		€8,500,000
– Costs and expenses @ 75%		<u>€6,375,000</u>
Profit before interest & taxes		€2,125,000
– Interest (0.1 x €3,000,000)		<u>€300,000</u>
Profit before taxes		€1,825,000
Taxes @ 12.0%		<u>€219,000</u>
Profit for the year		€1,606,000

Beta Developments, plc. Balance Sheet

As of December 31, 2012

Assets		Equity and Liabilities	
Non Current assets	<u>€6,250,000</u>	Equity	€3,250,000
Current assets	€1,000,000	Long-term debt @ 10%	<u>€3,000,000</u>
		Total Non Current Liabilities	€6,250,000
		Current liabilities	<u>€1,000,000</u>
Total assets	<u>€7,250,000</u>	Total Equity and Liabilities	<u>€7,250,000</u>

Assume that Beta plc. intends to purchase an additional €3 million of assets by issuing €3 million in new bonds that pay 10 percent annual interest rate. Also assume that the costs and expenses for Beta plc. remains at 75 percent of sales and the tax rate remains at 12.0 percent.

Required:

- Calculate the current (2012) financial ratios for Beta Developments, plc. before the purchase of the additional assets :
 - net profit margin,
 - total asset turnover,
 - assets-to-equity ratio, (also called the Financial Leverage Multiplier)
 - return on total assets, and
 - return on Shareholders' Funds (also called Return on Equity) **(10 marks)**
- Now, assuming no other changes, determine the impact on Beta of purchasing the additional €3 million of assets if the newly purchased assets generate an additional €2 million in sales. What is the effect on the ratios calculated in part (a)? Is the purchase of these assets justified on the basis of the return on common equity? **(6 marks)**
- Assume that the newly purchased assets in part (b) generate only an extra €1,000,000 in sales. Is the purchase justified in this case? **(6 marks)**
- Explain the difference between sensitivity analysis and scenario analysis. Apply your answer to Beta. **(3 marks)**

(25 marks in total)

Question 3

The Irish Farmed Fish Co. Ltd, (IFFCO), has had difficulties and dropping margins in its main export market, the UK, due to the appreciation of the Euro. However it is just about to export 1,000 units of farmed fish to the UK at a price of £3,000 per unit this year. The sale is on credit and payment is expected on the 31st of September, (3 months' time). IFFCO has no spare cash to finance the credit period and its overdraft account is fully drawn. For short-term funds the company can borrow or deposit at the following rates:

Home currency	Euro	Foreign Currency	Sterling
Borrow €	6.0%	Borrow £	10.0%
Deposit €	0.5%	Deposit £	1.0%

New to exporting, the new Finance Director of Irish Farmed Fish Co. Ltd is wary of both the possibility of non-payment and of adverse currency movements. To protect the company against non-payment he has taken out short-term export credit insurance. He is however unsure as to how best to protect the company from adverse currency movements. He is considering covering the currency risk through the forward foreign exchange market or the money market.

Assume exchange rates for the Euro / Sterling are as below:			
€ / £			
Spot:	0.8012	0.8023	
1 months forward:	100	200	basis points discount
3 months forward:	300	400	basis points discount

The Finance Director has heard of other companies, which have suffered horrendous losses due to speculating in the foreign exchange market. He has ruled out getting involved with currency options or futures and is tempted to "to do nothing and simply wait and see what the rate will be in three months time".

Required:

- a) Advise the Finance Director whether the forward market, the money market or simply the wait and see approach would offer the best combination of cost and risk. Support your recommendations by appropriate calculations where possible. State the main limitations / risks of each of these three strategies and any assumptions you make. **(9 marks)**
- b) Assume that when the farmed fish arrive in the UK they are spoilt due to a faulty refrigerator. After examination it is found necessary for the entire consignment to be all destroyed and the buyer in the UK is not obliged to pay. Luckily the consignment was insured and the policy will pay the production and shipping costs only of €2,500,000 on the 31st of September. With hindsight which of the three approaches outlined in part (a) above would have offered the best combination of cost and risk. **(6 marks)**
- c) Discuss the nature of financial future contracts and outline how Irish Farmed Fish Co. Ltd above could have used them to hedge their foreign exchange position. **(5 marks)**

(20 Marks in total)

Section B: two (2) of the following three (3) questions to be attempted

Section B (30 marks in Total)

Question 4

“Takeover rumours help to propel Oxford Instruments to record high”, Financial Times, February 10th, 2012.

- a) Discuss the strategic issues that arise from pursuing growth through mergers and acquisitions. **(5 marks)**
- b) Discuss the strategic issues that arise from pursuing growth through organic growth. **(5 marks)**
- c) Discuss the advantages to achieving growth by conglomerate diversification. **(5 marks)**

(15 marks in total)

Question 5

“Fortunately, for the many Irish start-ups who are rearing to trade, but short on cash, there is help out there”, Sunday Business Post January 29th, 2012.

- a) Outline and give practical examples of the many sources of finance that would be potentially available to a start-up firm in Ireland today. In your discussion outline from an entrepreneur’s perspective, the strategic issues that arise with these sources of finance. **(10 marks)**
- b) Outline the relationship between working capital and profitability. **(5 marks)**

(15 marks in total)

Question 6

Write short notes on **three (3)** of the following **six (6)** topics:

- a) Describe the two basic types of leases available and explain the advantages and disadvantages of leasing.
- b) Standard deviation and beta and when each is as an appropriate measure of risk in a portfolio.
- c) The difference between transaction and translation risk in international trade.
- d) Investing in redeemable, (callable) bonds.
- e) Speculative bubbles and the Efficient Market Hypothesis.
- f) The key considerations when setting an annual dividend rate.

(3 x 5 marks)

(15 marks in total)

Table 1: Present Value of €1 to be received after t periods = $1 / (1+r)^n$

Period	Interest rate per period or "r" or Discount rate, (in % terms)																			
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252	0.218	0.188	0.163	0.141	0.123	0.107	0.093	0.081	0.071	0.062	0.054
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231	0.198	0.170	0.146	0.125	0.108	0.093	0.080	0.069	0.060	0.052	0.045
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180	0.153	0.130	0.111	0.095	0.081	0.069	0.059	0.051	0.044	0.038
19	0.828	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.194	0.164	0.138	0.116	0.098	0.083	0.070	0.060	0.051	0.043	0.037	0.031
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.178	0.149	0.124	0.104	0.087	0.073	0.061	0.051	0.043	0.037	0.031	0.026
30	0.742	0.552	0.412	0.308	0.231	0.174	0.131	0.099	0.075	0.057	0.044	0.033	0.026	0.020	0.015	0.012	0.009	0.007	0.005	0.004
40	0.672	0.453	0.307	0.208	0.142	0.097	0.067	0.046	0.032	0.022	0.015	0.011	0.008	0.005	0.004	0.003	0.002	0.001	0.001	0.001
50	0.608	0.372	0.228	0.141	0.087	0.054	0.034	0.021	0.013	0.009	0.005	0.003	0.002	0.001	0.001	0.001	0.000	0.000	0.000	0.000

**Table 2: Present Value of an ANNUITY of €1 per period
to be received for t periods = $\{1 - (1+r)^{-n}\} / r$**

Period	Interest rate per period or "r" or Discount rate, (in % terms)																			
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495	6.207	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327
12	11.255	10.575	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814	6.492	6.194	5.918	5.660	5.421	5.197	4.988	4.793	4.611	4.439
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533
14	13.004	12.106	11.296	10.563	9.899	9.295	8.745	8.244	7.786	7.367	6.982	6.628	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.559	8.061	7.606	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675
16	14.718	13.578	12.561	11.652	10.838	10.106	9.447	8.851	8.313	7.824	7.379	6.974	6.604	6.265	5.954	5.668	5.405	5.162	4.938	4.730
17	15.562	14.292	13.166	12.166	11.274	10.477	9.763	9.122	8.544	8.022	7.549	7.120	6.729	6.373	6.047	5.749	5.475	5.222	4.990	4.775
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.372	8.756	8.201	7.702	7.250	6.840	6.467	6.128	5.818	5.534	5.273	5.033	4.812
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365	7.839	7.366	6.938	6.550	6.198	5.877	5.584	5.316	5.070	4.843
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.818	9.129	8.514	7.963	7.469	7.025	6.623	6.259	5.929	5.628	5.353	5.101	4.870
30	25.808	22.396	19.600	17.292	15.372	13.765	12.409	11.258	10.274	9.427	8.694	8.055	7.496	7.003	6.566	6.177	5.829	5.517	5.235	4.979
40	32.835	27.355	23.115	19.793	17.159	15.046	13.332	11.925	10.757	9.779	8.951	8.244	7.634	7.105	6.642	6.233	5.871	5.548	5.258	4.997
50	39.196	31.424	25.730	21.482	18.256	15.762	13.801	12.233	10.962	9.915	9.042	8.304	7.675	7.133	6.661	6.246	5.880	5.554	5.262	4.999
Infinity	100.0	50.00	33.33	25.00	20.00	16.67	14.29	12.50	11.11	10.00	9.091	8.333	7.692	7.143	6.667	6.250	5.882	5.556	5.263	5.000