Financial Management
Module 14

Monday
22nd November 2010
10am – 1pm

Section A: All three questions to be attempted.
Section B: Two of the following three questions to be attempted.

Present Value tables are attached at the end of this paper.

Section A: All three questions to be attempted, (70 marks in Total).

Question 1

The Board of Peartek Plc. are considering the company's capital investment options for the coming year, and are evaluating the following potential investments:

Investment A

This investment is similar to its current investments and requires an investment of €60,000 now, €40,000 for new capital equipment and €20,000 for increases in working capital. This will be financed from Shareholders Funds. Sales next year would be 10,000 units next year, variable costs would be €6 and the product would be sold for €10. But due to entry of new competitors and technological improvements the sales price would decline by 20% per annum thereafter, sales volume would fall by 10% and variable costs would fall by 20% per annum. Overheads attributed to the project would be €15,000 per annum.

In year three the project would be wound up, working capital investment would be recovered and capital equipment sold off for 25% of its purchase costs the following year. Fixed costs include an annual charge of €4,000 for depreciation.

Investment B

This is a long–term project in a totally new area, involving an immediate outlay of €90,000, which they intend to borrow from their lenders at 6%. They expect net profits of €12,000 next year, rising thereafter by 3% per annum in perpetuity.

Investment C

This is another long-term investment in a totally new area, involving an immediate outlay of €25,000 which they intend financing by retained profits.

Expected annual net cash profits are as follows:

Years 1 to 4: €3,000
Years 5 to 7: €5,000
Year 8 onwards forever: €7,000

The company discounts all projects lasting ten years duration or less at a cost of capital of 10% and all other projects at a cost of 13%. You may ignore taxation.

REQUIREMENT:

a) You, as a financial management analyst, have been asked to advise the board of Peartek Plc. (in the form of a briefing report) which investment 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 may use 25% as the upper limit if you wish) and comment accordingly. **(5 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. **(5 marks)**

(25 marks in Total)

P.T.O.

Question 2

Orycultures Ltd. is a leading Irish supplier of organic yogurt cultures to the catering and chilled food retail industry. Despite trying to reduce costs Orycultures expects to be in a negative cash position in the coming year with weekly sales to be only €100,000 per week. Not coincidently its bankers have increased its overdraft rate to 12%.

The financial director has noted that cash is generally received evenly each day of the week, Monday through Friday, with the 8am post and recorded by 9am. Cash recorded and lodged on bank opening (10am) can be credited with interest from that day.

Current procedures in Orycultures are to make bank lodgements twice a week every Monday and Thursday. However the sales director feels that as each lodgement costs €10 per lodgement Orycultures could save by making just one lodgement per week, each Thursday. The managing director suggested that Orycultures should lodge every Tuesday and Friday. Finally the head of security has suggested that Orycultures should lodge cash every day as she was nervous holding large amounts of cash on the premises.

Alternatively Orycultures Ltd. could obtain the services of a factor.
The factor has said that they could reduce the current collection period from 10 weeks to 4 weeks. The basic fee for the debtor collection service would be 1.75% of Orycultures' annual turnover, payable annually in arrears. However this would be offset by (i) an annual saving in back office and collection expenses of €35,000 and (ii) the reduction in the collection period.

In addition the factor could advance Orycultures up to 80% of invoice value of the factored debts. However should Orycultures choose to take up the offer of the advance there would be a commission of 2% charged on the gross amount advanced, plus interest of 5% p.a., to be applied on a simple weekly basis. Both the interest and the commission would be deducted from the sum advanced to Orycultures. On receipt of cash from Orycultures' invoiced debtors, the factor will immediately pay to Orycultures all sums outstanding concerning that invoice.

For simplicity, you may assume:

- a 364 day year made up of 52 weeks each of 7 days,
- that banks remain open for only five days a week for lodgements , (ignore bank holidays etc.)
- but that you may receive / pay interest seven days a week,
- Finally you may ignore taxation issues such as DIRT tax etc.

Summary of details

(i) Weekly sales: €100,000 hence annual sales: €5,200,000
Cost to make a lodgement: €10
The companys overdraft rate: 12%
Current collection period: 10 weeks

(ii) Factoring services
Basic collection fee: 1.75%
Administration saving: €35,000

(iii) Finance/Lending services
Advance: 80%
Commission: 2%
Interest simple: 5% per annum

(iv) Factoring selling points
New collection period: 4 weeks
Assume that there are 364 days in year

P.T.O.

REQUIREMENT:

a) Ignoring the option of obtaining the services of a factor, calculate the annual cost of each of the four alternative lodgement options; the current situation, Thursday only, Tuesday and Friday or daily and based solely on costs recommend the best option lodgement option. **(10 marks)**

b) Calculate the annual factoring costs as a percentage of funds improvement for a full year under each of the following separate conditions:

i) Only avail of the collection service, average collection period falls to 4 weeks.

ii) The average collection period falls to 4 weeks and Orycultures use the finance facilities.

(10 marks)

c) Given your answers in part (b) discuss the use of debt factoring and the appropriateness of Orycultures using the services outlined. **(5 marks)**

(25 marks in Total)

P.T.O.

Question 3

Quickheat Ltd. distribute energy efficient solar panels in Munster. On average 1,000 solar panels are imported by Quickheat each quarter, equalling 4,000 per year. An order takes two weeks to arrive on average. For the 50 weeks of the year the company is open there is little seasonal variation in demand for its products. While day-to-day demand is unpredictable it does not vary greatly from week to week.

The wholesale cost to Quickheat per solar panel is €300. Administrative charges, including a fixed delivery and transport charge is €6,000 per order, irrespective of size. In addition there is an annual inventory holding charge, this is equivalent to 10% of the cost of a solar panel.

A local supplier of similar items has now offered to supply Quickheat but at 1% higher wholesale prices, i.e. €303 per solar panel. However as they are local, the administrative charges per order would fall to just €2,000 per order, and they could fulfil an order in just one week. The annual inventory holding charge would remain unchanged.

Having appraised your current suppliers of this offer, they have responded with the following suggestion, to outsource the ordering process to them. At their own cost they would fully integrate their order processing I.T. system with yours, such as to allow for a "Just In Time" delivery system. As such there would be no ordering or holding costs for you. However they would require a wholesale price increase of 2% to pay for this, i.e. €306 per solar panel.

Mr Kyne, the managing director of Quickheat has decided to use this new development to reassess the current inventory ordering system. He has heard of Economic Order Quantity, (EOQ), "Just In Time", (JIT) and "Outsourcing" and has asked you as the Finance director to prepare a report on the current inventory ordering system and any proposals for change.

REQUIREMENT:

This report should include:

1. Arguments for and against adopting EOQ over the current system.
2. Arguments for and against using the new local supplier over the current supplier.
3. Arguments for and against adopting EOQ over JIT system involving outsourcing.
4. Describe some of the issues that might arise in a changeover to a new supplier or a new inventory control system or to outsourcing it.
5. Finally, make recommendations as to the appropriateness of using the EOQ model here and whether to change suppliers and / or the inventory control system.

All discussions should be supported by appropriate calculations.

Note: please use the following notation (or, if you use an alternative, please explain all components clearly):

The Economic Order Quantity, $Q^* = \sqrt{\frac{2SD}{IV}}$

Annual Ordering Costs = SD / Q

Annual Holding costs = IVQ / 2

Where: S = Forecast annual usage

D = Ordering cost per order

I = Annual inventory holding charge as a proportion of V

V = Cost per unit in stock

(20 marks in Total)

P.T.O.

Section B: Two of the following three questions to be attempted, (30 marks in Total).

Question 4

"*Directors usually want to focus on factual matters and concrete actions. They deal with rules, regulations, and compliance standards to ensure adherence to the law. They mostly measure company performance in financial terms with secondary consideration of other metrics.*" Alan McDonnell, Principal, Empeira Corporate Governance Advisors, in "Business & Finance" magazine, 31 August 2010.

a) Briefly explain and give examples of, non-financial objectives of private companies. **(7 marks)**

b) Discuss and give examples of the effect of these non-financial objectives on the achievement of the financial objectives of companies. **(8 marks)**

(15 marks in Total)

Question 5

"Like other big banks, Deutsche Bank felt the effects of slumping stock markets earlier this year", Jack Ewing, in the "International Herald Tribune" 28 October 2010.

a) Explain with the aid of a diagram why diversification can reduce but not eliminate risk in a portfolio. **(9 marks)**

b) Explain the difference between standard deviation and beta and when each is as an appropriate measure of risk in a portfolio. **(6 marks)**

Question 6

From the perspective of a corporate financial manager, explain and write short notes on **three** (3) of the following **six** (6) topics:

a) A bond selling at a premium is a good investment.

b) Describe the two basic types of leases available and explain the advantages and disadvantages of leasing.

c) Why the combining of the roles of the Chairman and the Chief Executive is considered undesirable.

d) The relationship between working capital and profitability.

e) Overtrading, give three of its symptoms and explain how it can be resolved.

f) Describe the main features of and explain what are the main attractions to the investor and to the issuer of convertible bonds.

(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