Financial Management Module 14 June 2012

<mark>Solutions</mark>

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

Section A: All three questions to be attempted

Section A (70 marks in Total)

Question 1 Part a)
3 marks for cash flows A, 2 marks for NPV A, 3 marks for cash flows B and 2 marks for NPV B and 5 marks for report format = 15 marks in total.

<u>Solution:</u>

a) **Investment A**

<u>Statement of Incremental Cashflows</u>

Cashflows €	Years				
	0	1	2	3	4
Sales Receipts		1,500,000.00	1,575,000.00	1,653,750.00	1,736,437.50
Costs		-900,000.00	-945,000.00	-992,250.00	-1,041,862.50
Capital Expenditure	-1,750,000.00				
Asset Scrap Value					800,000.00
Product Rights Value					400,000.00
Working Capital	-1,450,000.00				1,450,000.00
Net Cash Flows €	-3,200,000.00	600,000.00	630,000.00	661,500.00	3,344,575.00

(3 marks)

NPV Method

Years	0	1	2	3	4
Net Cashflows €	-3,200,000.00	600,000.00	630,000.00	661,500.00	3,344,575.00
11% discount factor	1	0.9009	0.8116	0.7312	0.6587
Present Value €	-3,200,000.00	540,540.00	511,308.00	483,688.80	2,203,071.55
Net Present Value	€538,608.35				

(2 marks)

Investment B

Expected Net Cashflows

Exp. Net Cash FlowYear 1 = (900,000×0.3)+(1,100,000×0.15)+(1,500,000×0.4)+(2,600,000×0.15)

€1,425,000.00

Exp. Net Cash FlowYear 2 = (1,350,000×0.3)+(1,650,000×0.15)+(2,250,000×0.4)+(3,900,000×0.15)

€2,137,500.00

Exp. Net Cash FlowYear 3 = (1,215,000×0.3)+(1,485,000×0.15)+(2,025,000×0.4)+(3,510,000×0.15)

€1,923,750.00

(3 marks)

Product 1:	Year 0	Year 1	Year 2	Year 3
Net Cashflows		€1,425,000.00	€2,137,500.00	€1,923,750.00
Capital Cost	-€4,400,000.00			
Residual Value				€800,000.00
Net Cashflows	-€4,400,000.00	€1,425,000.00	€2,137,500.00	€2,723,750.00
11% discount factor	1.0000	0.9009	0.8116	0.7312
Present Value	-€4,400,000.00	€1,283,782.50	€1,734,795.00	€1,991,606.00
Net Present Value	€610,183.50			

(2 marks)

Question 1 Part b)
5 marks for calculating NPVs and 1 mark for comment = 6 marks in total.

As all projects have positive NPV's they should all be undertaken. On the basis of the NPV criteria project B has the greatest positive net present value should be undertaken first

Since the NPV values depend crucially on the discount rate used, students should outline to the board of Futura Technologies Ltd. the appropriateness of their choice of discount rates.

Students should also outline limitations associated with using the NPV method and ways to deal with these limitations. Limitations include how risky are the predicated cash flows and hence what is the appropriate cost of capital. Appropriate methods to deal with these include probability analysis and sensitivity analysis.

Investment A: IRR Method   Discount Factor =   20.00%

Years	0	1	2	3	4
Net Cashflows €	-3,200,000.00	600,000.00	630,000.00	661,500.00	3,344,575.00
Discount Factor	1	0.8333	0.6944	0.5787	0.4823
Present Value €	-3,200,000.00	499,980.00	437,472.00	382,810.05	1,613,088.52
Net Present Value	-€266,649.43				

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

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

By linear interpolation:

$$\text{IRR} = 11\% + \frac{€538,608.35}{€538,608.35 - (€{-}266,649.43)} \times (20 - 11)$$

IRR = 17.01978059%

Thus IRR is probably 17.??%, so try 17%

Discount Factor =   16.00%

Years	0	1	2	3	4
Net Cashflows €	-3,200,000.00	600,000.00	630,000.00	661,500.00	3,344,575.00
Discount Factor	1	0.8621	0.7432	0.6407	0.5523
Present Value €	-3,200,000.00	517,260.00	468,216.00	423,823.05	1,847,208.77
Net Present Value	€56,507.82				

Discount Factor =   17.00%

Years	0	1	2	3	4
Net Cashflows €	-3,200,000.00	600,000.00	630,000.00	661,500.00	3,344,575.00
Discount Factor	1	0.8547	0.7305	0.6244	0.5337
Present Value €	-3,200,000.00	512,820.00	460,215.00	413,040.60	1,784,999.68
Net Present Value	-€28,924.72				

Thus IRR lies between 16% & 17%

By linear interpolation:

$$\text{IRR} = 16\% + \frac{€56,507.82}{€56,507.82 - (€28,924.72)} \times (17 - 16)$$

IRR = 16.66143205%

Thus IRR is 16.66%

Investment B: IRR Method   Discount Factor = 20.00%

Years	0	1	2	3
Net Cashflows €	-4,400,000.00	1,425,000.00	2,137,500.00	2,723,750.00
Discount Factor	1	0.8333	0.6944	0.5787
Present Value €	-4,400,000.00	1,187,452.50	1,484,280.00	1,576,234.13
Net Present Value	-€152,033.38			

By linear interpolation:

$$\text{IRR} = 11\% + \frac{€610,183.50}{€610,183.50 - (€152,033.38)} \times (20 - 11)$$

IRR = 18.20484114%

Thus IRR is probably 18.??%, so try 18%

Discount Factor = 18.00%

Years	0	1	2	3
Net Cashflows €	-4,400,000.00	1,425,000.00	2,137,500.00	2,723,750.00
Discount Factor	1	0.8475	0.7182	0.6086
Present Value €	-4,400,000.00	1,207,687.50	1,535,152.50	1,657,674.25
Net Present Value	€514.25			

Discount Factor = 19.00%

Years	0	1	2	3
Net Cashflows €	-4,400,000.00	1,425,000.00	2,137,500.00	2,723,750.00
Discount Factor	1	0.8403	0.7062	0.5934
Present Value €	-4,400,000.00	1,197,427.50	1,509,502.50	1,616,273.25
Net Present Value	-€76,796.75			

Thus IRR lies between 18% & 19%

By linear interpolation:

$$\text{IRR} = 18\% + \frac{€514.25}{€514.25 - (€76,796.75)} \times (19 - 18)$$

IRR = 18.00665171%

Thus IRR is 18.01%

(6 Marks)

c) Only firms with no debt in their capital structure should use the cost of equity to discount project cash flows, and only those projects that are very similar to a firm's existing assets should be discounted using that rate. Firms with both debt and equity should use the WACC as long as they are evaluating a project that is similar to their existing assets. When a firm is making an investment that is very different from its existing investments, then it should not use the company's cost of equity or its WACC.

The cost of debt or the cost of retained profit is never appropriate for use a discount rate.

In parts (a) & (b) we calculated the NPV using a discount rate as per the company policy, i.e. all projects lasting five years duration or less at a cost of capital of 11%. WACC would be appropriate as a discount rate when appraising these new marginal investment opportunities.

If a project as is in a totally new area and the board is making an investment that is very different from its existing investments, then the WACC would not be appropriate.

(4 Marks)

Question 2

Part a) 2 marks for each ratio = 10 marks in all.

Beta Developments, plc., (Beta)

Net Profit Margin = $\dfrac{€1,606,000}{€8,500,000}$ = 0.188941 = 18.9%

Total Asset Turnover = $\dfrac{8,500,000}{7,250,000}$ = 1.17

Financial Leverage Multiplier = $\dfrac{7,250,000}{3,250,000}$ = 2.23

Return on Total Assets (ROA) = Net Profit Margin ´ Total Asset Turnover
= 0.188941 x 1.17 = 0.221517 = 22.2%

Return on Equity (ROE) = Return on Total Assets ´ Financial Leverage Multiplier
= 0.221517 x 2.23 = 0.494154 = 49.4%

Part b) 1 marks for each ratio and 1 mark for discussion = 6 marks in total

Purchasing new assets =	€3,000,000
Percentage debt financing =	100%
Annual interest rate =	10%
Additional sales generated =	€2,000,000

Beta Developments, plc. Income Statement

Sales					€10,500,000
Expenses (	0.8	x	€10,500,000	)	€7,875,000
PBIT					€2,625,000
Interest (	0.1	x	€6,000,000	)	€600,000
PBT					€2,025,000
Taxes @	12.0%				€243,000
Profit for the year					€1,782,000

Beta Developments, plc. Balance Sheet

Assets		Equity and Liabilities		
Non Current assets	€9,250,000	Equity		€3,250,000
Current assets	€1,000,000	Long-term debt (@	10%)	€6,000,000
		Total Non Current Liabilities		€9,250,000
		Current liabilities		€1,000,000
Total assets	€10,250,000	Total Equity and Liabilities		€10,250,000

Net Profit Margin = $\dfrac{€1,782,000}{€10,500,000}$ = 0.169714 = 17.0%

Total Asset Turnover = $\dfrac{10,500,000}{10,250,000}$ = 1.02

Financial Leverage Multiplier = $\dfrac{10,250,000}{3,250,000}$ = 3.15

Return on Total Assets (ROA) =   Net Profit Margin ´ Total Asset Turnover
= 0.169714 x 1.02 = 0.173854 = 17.4%

Return on Equity (ROE) =   Return on Total Assets ´ Financial Leverage Multiplier
= 0.173854 x 3.15 = 0.548308 = 54.8%

As measured by ROE, which increases from   49.4% to 54.8%
the purchase of the assets is a success

Part c) 1 marks for each ratio and 1 mark for discussion = 6 marks in total.
Assume that the newly purchased assets in part (b) generate only an extra €750,000 in sales. Is the purchase justified in this case?

Purchasing new assets =	€3,000,000
Percentage debt financing =	100%
Annual interest rate =	10%
Additional sales generated =	€1,000,000

Beta Developments, plc. Income Statement

Sales					€9,500,000
Expenses (	0.8	x	€9,500,000	)	€7,125,000
PBIT					€2,375,000
Interest (	0.1	x	€6,000,000	)	€600,000
PBT					€1,775,000
Taxes @	12.0%				€213,000
Profit for the year					€1,562,000

Beta Developments, plc. Balance Sheet

Assets		Equity and Liabilities			
Non Current assets	€9,250,000	Equity			€3,250,000
Current assets	€1,000,000	Long-term debt (@	10%	)	€6,000,000
		Total Non Current Liabilities			€9,250,000
		Current liabilities			€1,000,000
Total assets	€10,250,000	Total Equity and Liabilities			€10,250,000

Net Profit Margin =	€1,562,000	=	0.164421	= 16.4%
	€9,500,000			

Net Profit Margin = $\dfrac{€1,562,000}{€9,500,000}$ = 0.164421 = 16.4%

Total Asset Turnover = $\dfrac{9,500,000}{10,250,000}$ = 0.93

Financial Leverage Multiplier = $\dfrac{10,250,000}{3,250,000}$ = 3.15

Return on Total Assets (ROA) = Net Profit Margin ´ Total Asset Turnover
= 0.164421 x 0.93 = 0.15239 = 15.2%

Return on Equity (ROE) = Return on Total Assets ´ Financial Leverage Multiplier
= 0.15239 x 3.15 = 0.480615 = 48.1%

As measured by ROE, which decreases from 49.4% to 48.1% the purchase of the assets is not a good investment

Summary	Original	Case (b)	Case (c)
Net Profit Margin =	18.9%	17.0%	16.4%
Total Asset Turnover =	1.17	1.02	0.93
Financial Leverage Multiplier =	2.23	3.15	3.15
Return on Total Assets (ROA) =	22.2%	17.4%	15.2%
Return on Equity (ROE) =	49.4%	54.8%	48.1%

Part d) 1 mark for discussion on sensitivity analysis, 1 mark for discussion on scenario analysis and 1 mark for application to Beta, 3 marks in all.

Sensitivity analysis looks at how changes in a single variable affect a project's profitability or NPV. For example, in Beta's case between case (b) and case (c) we allowed sales to change but kept all other factors constant, (or at least no change in their proportions).

Scenario analysis looks at how several changes occurring simultaneously affect a project's profitability or NPV. In Beta's case we could have allowed both sales and interest rates to change as the proportion of debt in the capital structure increased for example.

Scenario analysis is probably more realistic because certain key variables in a project's profitability or NPV calculation are correlated. For example, in Beta's case as sales increased we did not change costs and expenses as a percentage of sales. This limitation of sensitivity analysis that you can only change one variable at a time is its biggest drawback. Scenario analysis, while it can be more involved and may require more computing power, allows for changes in multiple variables simultaneously.

Question 3 Part a:
3*2 marks for workings and 3*1 marks for the risks = 9 marks in all.

a) The Irish Farmed Fish Co. Ltd needs to sell £3,000 x 1,000 = £3,000,000 in 3 months' time. Using forward cover, 3 month rate if you are selling £ = 0.8023 plus discount of 400bp = 0.8423
£3,000,000 / 0.8423 = €3,561,676.36

Using money market, borrow the present value of £3,000,000 at 10% p.a.
(10%/4 = 0.025 or 2.5% over 3 months)
£3,000,000 / 1.025 = £2,926,829.27
Sell this now at 0.8012 = €3,653,057.00
This inflow will go to reduce Irish Farmed Fish Co. Ltd's overdraft account as they have no surplus cash. Thus they will save interest on the overdraft account rather than earn it in a deposit account.

Add the savings from reducing the overdraft account by this amount at 6% p.a.
(6%/4 = 0.015 or 1.5% for 3 months)
€3,653,057.00 x 1.015 = €3,707,852.85

The final alternative would be to do nothing, and to sell £3,000,000 in 3 months' time at the exchange rate then prevailing. This would result in a gain if the Sterling appreciated against the Euro, but a loss if it depreciated. The decision to hedge or not to hedge should be based on its costs and benefits. If the PV of the benefits of hedging outweighs the PV of the costs then it is a positive NPV decision to hedge and vice versa. However while it may be possible to calculate the NPV for using the forward or the money market cover, with the information given it is not possible to estimate the NPV if Irish Farmed Fish Co. Ltd adopts the Wait and See approach.

Often where no definitive information is provided people assume that the value of a variable does not change from current levels. Thus if the current spot rate were to hold in 3 months' time the £3,000,000 would be worth £3,000,000 / 0.8023 = €3,739,249.66.

This is however very unlikely, given that the forward rates are an unbiased estimator of the future spot rates! But as this sum is unhedged, unlike the forward cover or money market cover, we cannot be sure that even if the payment is made that we will achieve this amount. Therefore rather than being less risky than the other two approaches, as the Irish Farmed Fish Co. Ltd's activity is production and not speculation, not hedging is more risky not less risky!

Summary:
Using forward cover, the value of £3,000,000 in 3 months €3,561,676.36
Using money market cover, the value of £3,000,000 in 3 months = €3,707,852.85
Using "Wait and see" approach, the value of £3,000,000 in 3 months = €3,739,249.66

While the "Wait and see" approach may be the most cost effective it is by far the riskiest. Hence the money market cover appears to offer the best combination of cost and risk.

Forward cover's limitations:
- Generally only available for short periods
- Not available for all markets and currencies, and
- Relatively inflexible as you must complete the transaction, (unlike currency options)

Money market cover limitations:
- You take on credit risk
- Involves higher transaction costs.

"Wait and See" limitations:
- No certainty as to what the final value of the currency will be
- Decreases the reliability of future cash projections
- May need to hold larger amounts of liquid assets to cover open positions.

Question 3 Part b:
3*2 mark for each method = 6 marks in all.
If Irish Farmed Fish Co. Ltd had used the forward contract then they would still have a binding contract to sell £3,000,000 on the 31st of September. To offset this transaction, Irish Farmed Fish Co. Ltd would have to buy £3,000,000 at whatever spot rate happens to be prevailing at that time. Given that the forward rates are the best estimator of future spot rates then it is most likely that this will cost Irish Farmed Fish Co. Ltd. £3,000,000 / 0.8312 = €3,609,239.65
(Note: 3 month rate if you are buying £ = 0.8012 plus discount of 300bp = 0.8312)

As the insurance payout will only be €2,500,000, Irish Farmed Fish Co. Ltd will have to add probably €1,109,239.65 to this and then pay to have it converted into £3,000,000. Then the bank will convert this back into Euro. (In actual fact, in this situation banks will usually just make the customer pay the charges without actually demanding receipt of the £3,000,000).

Had they used money market cover they would owe the bank £3,000,000. So similarly they would most likely have to pay €3,609,239.65. Again, as the insurance payout will only be €2,500,000, Irish Farmed Fish Co. Ltd will have to add probably €1,109,239.65 to this and then pay to have it converted into £3,000,000. Since they used the borrowed money to reduce their overdraft Irish Farmed Fish Co. Ltd have no surplus funds. So they would have to borrow probably €1,109,239.65.

Had they adopted the "Wait and See" approach, there would be no liability to pay the £3,000,000. Hence the €2,500,000 insurance payout will be just enough to cover the amount spent on production and shipping. Hence the "Wait and See" would have been the best approach!

Question 3 Parts c:
3 marks for Financial future contracts, 2 marks for how they could be used to hedge the position above = 5 marks in all.

A futures contract is a derivative product that is a type of forward but traded on a futures exchange. It is generally used, like a forward contract to reduce risk. It can though be used to take on risk. This would be speculation! It is as a standardised arrangement between two parties today to buy or sell an asset at a particular time in the future for a particular price agreed today.

The difference between a forward and a future contract is like that between buying a made to measure suit and buying "ready-to-wear" (or "Prêt-à-porter" as they say in France). The advantage of buying "made to measure is a perfect fit. The disadvantage is the price you pay for this. The advantage of a futures contract is that it is comparatively cheaper and this may outweigh the fact that it may not be a perfect fit.

It is not necessary that the underlying asset to a futures contract be a traditional "real" commodity. For financial futures, the underlying asset can be an intangible assets or referenced items such as stock indexes and interest rates. Futures for currencies, securities or financial instruments are all traded on futures exchanges.

Like a forward contract, a futures contract can be used to counterbalance risk exposure. It can limit any adverse change in the value of the underlying asset. In theory a futures contract can be used to hedge a position perfectly and completely remove all risk. In reality this is it is difficult to achieve a perfect hedge. They are therefore used not to completely eliminate but to reduce risk as much as possible. The price of a future contract is determined by the equilibrium between the supply and demand for them. This comes about through the competing buy and sell orders on an exchange at a particular time.

The party agreeing to buy the underlying asset in the future assumes a long position, and the party agreeing to sell the asset in the future assumes a short position. If you know that you will be making a purchase in the future of a certain asset, you should take a long position in a futures contract to hedge your position. For example, suppose that you know that in 3 months time you will have to buy US dollars to pay a supplier.

By buying the futures contract today, you can lock in the price offered on the futures exchange today for dollars in three months time, (or thereabouts if not a perfect hedge). This reduces your risk because you will be able close your futures position and buy the US dollars you will need in three months at the price agreed today.

If you know that in the future you will be selling a certain asset, you should take a short position in a futures contract to hedge your position. For example, in the question above the company knows that in 3 months time they must sell the sterling they will earn from the export sale. By selling the futures contract today, you can lock in the price offered on the futures exchange for the euro-sterling exchange rate in three months time, (or thereabouts if not a perfect hedge). This reduces your risk because you will be able close your futures position and sell the sterling you will receive in three months at the price agreed today.

Thus the uncertainty about the future price of an item is reduced which makes trading easier. Futures contracts can be very useful in limiting the risk exposure that an investor takes on in business. The main advantage of participating in a futures contract is that it removes or reduces risk by locking in the price of whatever you are buying or selling.

Question 4 Part (a): The strategic issues that arise from pursuing growth through mergers and acquisitions.
1 mark for each strategic issue on M & A, max 5, 5 marks in all.

A company pursuing a policy of growth through mergers and acquisitions should take account of the following strategic issues:

- Time - mergers or acquisitions allows a firm to increase its market share or enter a new market more quickly than might be incurred if the firm tried to expand organically. As "time is money", the ability to enter a market or increase market share fast by mergers or acquisitions could be the cheapest way to expand.

- Cost – cost savings could be achieved by mergers or acquisitions due to synergy. Alternatively due to a "premium for control", acquisitions might be the most expensive way to expand. This may be particularly true if it is resisted by the directors of the target company or the government under the terms of competition legislation. However at least acquisitions can be made by means of share exchange unlike organic growth which requires funding in cash.

- Regulation / legislation / culture – mergers or acquisitions can allow for an easy entry into a market, particularly a foreign market where organic growth would be forbidden / restricted / meet local opposition. Alternatively organic growth is unlikely to result in referral to competition authorities while mergers or acquisitions often do. Similarly the customers / government may not appreciate the new (foreign) owners.

- Assimilation - Mergers and acquisitions can lead to quicker entry into a new market but it could also lead to problems of assimilating new employees and new operating systems. Likewise staff need to assimilate an increasing range of products, suppliers, customers and markets. This can lead to a large strain on staff at all levels but particularly management and lead to "corporate indigestion" mentioned earlier.

- Strategy - mergers and acquisitions will be most successful when they allow the strategic objectives of the firm to be achieved at a lower cost and / or faster than would they be by organic growth. Mergers and acquisitions are probably only desirable if organic growth alone cannot achieve the strategic objectives that a company has set itself. However their purpose should be to increase long term shareholder wealth and not just short term profits.

Question 4 Part (b):
The strategic issues that arise from pursuing growth through organic growth.
1 mark for discussion on organic growth, 1 mark for each strategic issue, max 4, 5 marks in all.

Organic growth involves a firm expanding its customer or product base using their own internal resources. Alternatively this can be achieved through acquisitions or mergers. Although both can have a similar result in terms of growth they can each have different strategic effects on the expanding firm. A company which is planning to grow must decide on whether to pursue a policy of organic growth or acquisitions or mergers, or a combination of the two.

This decision is likely to be a function of the:
- Long-term of objectives of the firm
- Current state of the industry and its prospects
- Technological change in the industry
- Size and strength of actual and potential competitors
- Likely reaction of competitors to an acquisition
- Likely reaction of the government to an acquisition

Irrespective of how it is achieved, growth especially when it is achieved by diversifying into new markets or into new products can cause strategic problems and lead to "corporate indigestion". This can be seen in terms of Customer Relation Management, (CRM), problems, an increase in human resources issues, "span of control" and decisions making issues, and in increase in alienation of stakeholders from each other.

A company pursuing a policy of organic growth should take account of the following strategic issues:
- Optimal scale of production - organic growth will allow the firm to choose the level of production it requires. Mergers and acquisitions are "lumpy". The firm must absorb entire firms, with whatever level of production that entails and what ever resources they contain. The firm buys the head office functions of other companies and there will either be fewer economies of scale, or more redundancies.

- Human resources – organic growth will allow the firm to offer its original staff greater opportunities and responsibilities. Similarly where the firm does not have the required expertise within itself, targeted recruitment to select the best people can be used. In mergers and acquisitions the firm has little control over the number and skills of the staff of those businesses it absorbs.

- Capital resources – similar to human resources, capital resources can be used and obtained more efficiently with organic growth. The location of new outlets or offices for example can be most advantageously placed to maximise operational efficiency. In mergers and acquisitions the firm has little control over existing locations. This can lead to duplication and/or gaps in distribution networks for example

- Cost – how will resources to allow for the growth be obtained? Retained profits? New / additional equity? Increase in borrowing? How much can it afford? Is "over trading" a serious risk?

Question 4 Part (c): The advantages to achieving growth by conglomerate diversification.
1 mark for each advantage, Max 5 = 5 marks in all.

- Risk is spread. By entering new products into new markets, the organisation can obtain protection against failure of one or more of the firm's existing range.
- The firm's overall profitability and flexibility might improve through acquisition in industries which have better economic characteristics than those of the acquiring firms. (But shareholders can invest in those industries directly.)
- Management might wish to escape from the present business into another.
- Greater business 'substance' or 'status' might mean better access to capital markets.
- A company pursuing a policy of conglomerate diversification can quickly take advantage of profit opportunities which develop by acquiring a subsidiary company in the new product-market area.
- Conglomerate diversification and concentric diversification offer the chance of growth without creating a monopoly which would attract state regulation. This is an example of system goals overtaking mission.
- The firm can use surplus cash on the questionable assumption that managers are always better judges than shareholders.
- The firm can exploit under-utilised resources.
- Synergistic possibilities include:
    1. A company which needs cash in the short term obtaining a cash-rich company or a company with large cash surpluses in the short term
    2. Using a company's image and reputation in one market to develop into another where corporate image and reputation could be vital ingredients for success

Question 5 Part (a)
5 marks for internal and 5 marks for external sources = 10 marks in all.

Outline how for new businesses, initial funding can be the single most important issue. This is especially true for those with large capital requirements on start up. Obviously the simplest source, is to obtain finance from banks, which is extremely hard in our current economic difficulties.

Essentially there are two kinds of financing possibilities for businesses: internal finance and external. Internal finance comes from within the firm while external finance comes from outside the firm. Each source of finance has strategic issues from an entrepreneur's perspective.

Internal sources: personal capital / 'family and friends' / retained profits.

Personal capital; where the entrepreneur invests his/her own money into the business and/or invests by foregoing his/her salary. This is usually a necessary form of finance from a signalling perspective as it reassures others that the entrepreneur is putting their own money into the venture. To raise this personal finance the entrepreneur might sell or pledge to a bank personal assets such as a house, land, shares etc. E.g., Steve Jobs sold his Volkswagen van to help raise the $1,300 they used to start Apple. The advantage to the entrepreneur is that there are no strings attached to this source. The disadvantage is the risk that all the investment will be lost!

'Family and friends'; usually also start up finance is acquired from 'family and friends'. While individual contributions and even the total may not be large they can again prove crucial at the beginning when all funds are flowing out not in. Often these sources can be obtained on very good terms and not require any security. However there may be a loss of control with this form especially if it is in the form of equity. Also it can be almost worse to have to ask family and friends to bear the burden of losses incurred by you than for just you to bear them yourself.

Retained profits; obviously this is not a source before the start up begins but once it starts. But it is often a very important initial source of funds as the firm begins to trade. By not taking a wage or dividends at the beginning, profits / earnings not paid out can be reinvested back into the firm. Similarly minimising or reducing working capital needs can also be considered a form of finance once the firm has started. The advantage is that there these funds can be obtained at little or no direct costs. However the entrepreneur needs to consider the opportunity costs of these funds, retained earnings are equity and hence are not a "free" source of capital.

However all these sources are often not enough to finance the start up and funding from external sources will be required

External sources: borrowings / public finance / external equity.

Borrowings and other forms of debt can consist of sources such as business loans, mortgages, business overdrafts, trade credit, leasing and hire purchase. It is not unknown for entrepreneurs to use their personal credit cards to secure start up funds but obviously this would not be recommended! Debt factoring (or invoice discounting) like retained profits is obviously not a source before the start up begins but once it starts. While these can have no claim on how profits are distributed they can contain covenants that constrain the firm in its operation and in its attempts to obtain other funding from other sources. Unlike dividends that do not have to be paid interest payments and return of the capital is required. Hence funds from these sources carry financial risk that is not present with equity sources.

Public finance; start up finance from both national and local government sources is still available to appropriate start ups that meet certain criteria. For small scale start ups employing up to 10 people County Enterprise Boards offer feasibility / innovation grants, business priming grants, expansion/development grants, refundable aid and feasibility/innovation grants. Enterprise Ireland provides feasibility study grants and an Innovation Voucher scheme, for assistance in research. There are numerous other support programmes available from public bodies throughout Ireland. While the red tape is not as big a factor today as it was, as these bodies are handing out public monies, it is still a hurdle to overcome. This hurdle can well be worth it though as the monies can be "free" as in a grant or

on very favourable terms. These bodies can also take on the role of business mentor too which can fill in some of the gaps in the experience of an entrepreneur.

External equity; One of the main benefits of equity finance, particularly in comparison to debt, is that investors assume the risk – if the business fails they lose their money. An equity investment is unsecured, fully at risk and usually does not have defined repayment terms. However external equity requires exchanging a portion of ownership for the finance and hence for the entrepreneur it means a lessening of control and the share of future profits.

Equity has become an important source of funding for entrepreneurial start-ups, especially in high-technology industries like biotechnologies, computer hardware and software, e-commerce, information technology and telecommunications. Many of today's most successful companies were financed, in part by equity.

Venture capital is an important source of equity funding. This provides finance for the growth and expansion for start-up companies with underdeveloped or developing products or development capital to more mature companies. Venture capitalists are professional investors who invest capital on behalf of themselves and third parties. Venture capitalists invest funds obtained from third parties such as insurance companies, banks, pension funds and private investors and, in the case of Ireland, capital from government sources (e.g. Enterprise Ireland). Venture capitalists form a fund with the capital raised and during the life of fund make investments in return for equity stakes. Venture capitalists may take an active role in a business they invest in, offering advice, expertise and guidance and other supports.

Corporate equity programmes provide capital to small innovative companies normally at an early stage in their development. Corporate venture capital programmes involve the subsidiary of a large company taking an equity stake in the smaller company.

Question 5 Part (b)
The relationship between working capital and profitability.
1 mark for explanation of Working capital, 4 marks for relationship = 5 marks in all.

It is very possible if not probable that as working capital in a firm increase so does profit. This is because the level of working capital: stocks, debtors and creditors should follow the level of business which in turn should be generating profits. As a business expands in terms of fixed assets it will usually require additional working capital too. Also as profit increases it allows working capital to be increased too.

However it is not working capital per se that generates profits or profits that generates working capital. What is important is how and in what proportions working capital is used. A company needs to exercise control over working capital. Particularly when credit markets are tight, a company's liquidity is as important as its profitability. Changes in working capital will usually change a company's liquidity.

Depending on the nature of a business, its working capital requirements will be different. Unlike a typical service company, a manufacturing company may need substantial levels of stocks. It may also have high levels of debtors and creditors as well. However a decision to use "Just In Time" methods of production, if implemented successfully, could result in lower levels of stocks. Also producing in smaller batches could result in the reduction of finished goods.

Therefore it is not necessary to have higher working capital to have higher profits. In fact in companies with loose financial management that carry high stocks and are too generous with giving credit while not taking advantage of credit available for them will not be as profitable as ones that are more tightly managed.

Question 6 Part a)
Describe the two basic types of leases available and explain the advantages and disadvantages of leasing.
1 mark for basic types, 2 x 2 marks for advantages and disadvantages, = 5 marks in total.

The two basic types of leases available to a business are operating leases and financial leases.

An operating lease is typically a contractual arrangement whereby the lessee agrees to make periodic payments to the lessor, often for five years or less, to obtain an asset's ser vices. The lessee generally receives an option to cancel the lease by paying a cancellation fee.

A financial (or capital) lease is longer term than an operating lease. Financial leases are non-cancellable and therefore obligate the lessee to make payments over a predefined period.

The advantages of leasing are
- the ability of the lessee to depreciate land, which is prohibited if the land were purchased,
- the use of sale-leaseback arrangements may permit the firm to increase its liquidity by converting an asset into cash, which can then be used as working capital,
- leasing provides 100 percent financing,
- the maximum claim of lessors if a lessee becomes bankrupt is three years of lease payments along with reclaiming the asset,
- the lessee may avoid the cost of obsolescence if the lessor fails to accurately anticipate the obsolescence of assets and sets the lease payment too low,
- the lessee avoids many of the restrictive covenants t hat are usually included as part of a long-term loan, and
- in the case of low-cost assets leasing may provide the firm with needed financing flexibility.

The disadvantages of leasing are
- a lease does not have a stated interest cost,
- at the end of the term of the lease agreement, the lessor realises the salvage value,
- the lessee is generally prohibited from making improvements on the leased property or asset without the approval of the lessor, and
- if a lessee leases an asset that subsequently becomes obsolete, it still must make lease payments over the remaining term of the lease.

Question 6 Part (b)
Standard deviation and beta and when each is as an appropriate measure of risk in a portfolio.
2 marks for standard deviation, 2 marks for Beta and 1 mark for appropriate measure = 5 marks in all.

While it is possible for investors to avoid risk by only investing in risk free investments e.g. short term Government paper the expected returns will be low. Generally it is accepted that investors need a higher reward to take on higher levels of risk. Similarly, investors accept that the higher the return they can expect, the higher the level of risk they will have to bear, and vice versa. So it is important that we know what is meant by risk and how we measure it.

Standard deviation, or total risk, is the square root of the weighted average deviation of the returns on the individual stocks in a portfolio from the mean return, E.g. for a two asset portfolio, the Standard Deviation (= "the total risk of the portfolio") $= s_P = Ö \{x_1^2 s_1^2 + x_2^2 s_2^2 + 2\ x_1 x_2\ r_{12}\}$

The standard deviation or total risk of so called 'risky investments' can be broken down into two forms, namely: unsystematic risk which is diversable and systematic risk which is undiversifiable.

For an investor with an undiversified portfolio, it is total risk or standard deviation which is the most appropriate measure of risk.

The risk-return relationship an investor will be willing to accept will be a personal decision, influenced to a great extent by their attitude to risk i.e. their degree of risk aversion. While total risk is composed of unique risk and market risk, the market only compensates for market risk. There is no return for taking on unique risk that is diversifiable.

The systematic risk remaining in a portfolio reveals how that portfolio responds to changes in the value of the market portfolio. Some shares will be more cyclical and hence more responsive to changes in the value of the market portfolio. These are considered inherently more risky than other portfolios. Any investor wishing to invest in such shares must accept the associated level of risk which is undiversifiable.

The systematic risk of a security is incorporated into the beta term of the capital asset pricing model. Beta is the slope of a regression line, and it equals the covariance of the return on a security with the return on the market divided by the variance of the market return:
$\Rightarrow beta_i = cov_{im} / \sigma_m^2$

Beta measures the sensitivity of a stock's return to the return on the market portfolio. The market portfolio is a portfolio of all assets in the economy. In practice a broad stock market index, such as the S&P Composite, is used to represent the market. By definition the Beta of the market portfolio is one and that of the risk free asset is zero. While beta does not directly measure risk, it is a crucial risk indicator, reflecting the extent to which the returns on the single asset move with the market.
CAPM states that $E(ri) = r_f + \{E(r_m).- r_f\}.\beta i$

Unlike standard deviation, Beta is not a measure of total risk but a measure of relative risk, the risk of an asset relative to the market. Beta is also a measure of market risk. Market risk accounts for most of the risk of a well-diversified portfolio.

For an investor with a diversified portfolio, it is the beta not the standard deviation of the portfolio which is the most appropriate measure of risk.

Question 6 Part (c)
The difference between transaction and translation risk in international trade.
2 marks for transactions risk, 2 marks for translation risk and 1 mark for contrast = 5 marks in all.

Transactions risk is that exposure to exchange rate risk faced by a firm that is vulnerable to an adverse change in the value of any of its cash flows as a result of exchange rate movements. Almost every firm is exposed to exchange rate risk to some degree, even if it operates strictly in one country and has cash flows in only one currency. Such a firm will face exchange rate risk if (1) it produces a good or service that competes with imports in the home market, or (2) it uses as a production input an imported product or service. This exchange rate risk cannot be eliminated, but it can be hedged (transferred to a third party) using financial contracts.

Translation and economic risks relate to those additional complexities involved with operating internationally if they have affiliates or subsidiaries on the ground in a foreign country. One such complication arises when MNCs translate costs and revenues denominated in foreign currencies to report on their financial statements, which, of course, are denominated in the home currency. This type of risk is called translation exposure or accounting exposure. In other words, foreign exchange rate fluctuations affect individual accounts in the financial statements.

Question 6 Part (d)
Redeemable, (callable) bonds:
3 mark for explanation, 1 mark each for attractions of call provision to the investor and to the issuer = 5 marks in all.

Redeemable, (callable) bonds are bonds which give the issuer the right but not the obligation to redeem, (call) the bonds before they reach their maturity. As such it gives the issuer the option to take advantage of falling interest rates by replacing previously issued fixed rate bonds at higher rates than are now prevailing. To protect the investor, usually there is a minimum period after the bond is issued before the bond becomes callable. By calling the bond the issuer deprives the investor of the high interest rates they were enjoying before the bond was called. Thus the call provision is a gain to the issuer and the investor must receive compensation. This can be in the form of higher returns on the bond (which would imply a greater incentive to call the bond once it becomes callable) or more likely a premium on the nominal value of the bond should it be called before maturity. This premium usually declines to zero as the bond approaches maturity to reflect the lessening of the opportunity cost to the investor and the reduction in gain to the issuer.

Attractions of call provision to the investor
- It is of no consequence unless interest rates fall.
- Even if bond is called they will usually be given a premium over the nominal value of the bond.
- May receive a higher rate than a similar non callable bond.
- If bond is called they get their money back.

Attractions of call provision to the issuer:
- Will protect the issuer (borrower) against interest rates dropping after the bond is issued.
- Allows for longer dated securities to be issued with less risk to the issuer.
- Gives greater flexibility to the issuer.

Question 6 Part (e)
Speculative bubbles and the Efficient Market Hypothesis:
1 mark for definition of EMH, 2 marks for explaining EMH theory and 2 marks for applying to Speculative bubbles = 5 marks in all.

A market is said to be efficient when security prices reflect all available information instantaneously. The efficiency of a stock market means the ability of the market to price shares quickly and fairly to reflect all the available public information in respect of each share. EMH states, within the bounds of increasingly strong assumptions about the information processing of investors, that all assets are fairly priced.
The three forms of Market efficiency are:
1. Weak form efficiency: a form of the theory that suggests you can't beat the market by knowing past prices.
2. Semi-strong form efficiency: perhaps the most controversial form of the theory, it suggests you can't consistently beat the market using publicly available information. That is, you can't win knowing what everyone else knows.
3. Strong form efficiency: the form of the theory that states no information of any kind can be used to beat the market.

There has been a lot research carried out on the topic of measuring market efficiency, with varying and sometimes contradictory findings. That a few companies can outperform the market over a particular investment horizon does not invalidate the Efficient Market Hypothesis (EMH). Certain companies who do well for a period of time get a lot of attention from the financial press. Similarly the companies who do not do well generally get considerable attention from the financial press too.

A speculative bubble would be an invalidation of the EMH. The dramatic rise and fall of "Dot.com shares," is an example of a speculative bubble. There have been suggestions that the Dot.com stocks were operating under a different valuation paradigm. However the value of a share is the discounted value of all expected future dividends. Even if the investor plans to hold a stock for only 5 years, for example, then, at the time that the investor plans to sell the stock, it will be worth the discounted value of all expected dividends from that point on. In fact, that is the value at which the investor expects to sell the stock. Since all securities in an equivalent risk class must be priced to offer the same expected return, the market capitalisation rate must equal the opportunity cost of capital of investing in a share, even a Dot.com share. An implication of this is that, on average, the typical market participant cannot earn excessive profits from a particular trading strategy.

Financial bubbles are not unknown in history and they are examples of markets participants not behaving rationally. However the fact that shares eventually return to their "true" values could be said to show that markets are efficient in the long run.

Question 6 Part (f)
The key considerations when setting an annual dividend rate
1 mark for obligations of Board of Directors, 1 mark each for considerations, (max 4) = 5 marks in all.

Firstly companies are not obliged to declare an annual dividend at all. The size of a dividend and whether or not to declare one at all is a decision for the Board of Directors. Shareholders voting at the AGM can choose to accept or refuse to take, in part or in whole, the dividend. They cannot choose to have it increased.

The Board of Directors before making the dividend decision each year must consider:
- Legality: put simply they can only pay dividends out of realised gains.
- Profitability level and sustainability: the level and sustainability of profits for the year for which the dividend is to be decided compared to previous years and expected future profits.
- Cash Flow: the cash reserves of the company that will be used to pay dividends.
- Expectations and signalling effect: what shareholders are expecting as a dividend and what the declaration of any size dividend (including a nil declaration) will signal to the investment community.
- Taxation: the tax efficiency of paying a dividend versus capital growth or, some combination of both.
- The residual theory of dividends: the company should only pay a dividend if it cannot use the profits to invest in projects whose return is high enough to increase the capital value of shares by more.