Answers

1   Up to 4 professional marks are available for the presentation of the answer, which should be in a report style.

(i)   Initial Evaluation
The information provided has been used to assess whether the production of the *X-IT* should be moved to Gamala from the USA. Initially a base case net present value calculation is conducted to assess the impact of the production in Gamala. This is then adjusted to show the impact of cash flows in the USA as a result of the move, the immediate impact of ceasing production and the impact of the subsidy and the tax shield benefits from the loan borrowing.

The calculations presented in the appendix show that the move will result in a positive adjusted present value of just over $2·4 million. On this basis, the production of *X-IT* should cease in the USA and the production moved to Gamala instead.

Assumptions
It is assumed that the borrowing rate of 5% is used to calculate the benefits from the tax shield. It could be argued that the risk free rate of 3% could be used as the discount rate instead of 5% to calculate the present value of benefits from the tax shields and the subsidies.

In adjusted present value calculations, the tax shield benefit is normally related to the debt capacity of the investment, not the actual amount of debt finance used. Since this is not given, it is assumed that the increase in debt capacity is equal to the debt finance used.

It has been assumed that many of the input variables, such as for example the tax and capital allowances rates, the various costs and prices, units produced and sold, the rate of inflation and the prediction of future exchange rates based on the purchasing power parity, are accurate and will change as stated over the four-year period of the project. In reality any of these estimates could be subject to change to a greater or lesser degree and it would be appropriate for Tramont Co to conduct uncertainty assessments like sensitivity analysis to assess the impact of the changes to the initial predictions.

(Note: credit will be given for alternative relevant assumptions)

(ii)   Government Change
From the preamble it would seem that a change of government could have a significant impact on whether or not the project is beneficial to Tramont Co. The threat to raise taxes may not be too significant as the tax rates would need to increase to more than 30% before Tramont Co would lose money. However, the threat by the opposition party to review 'commercial benefits' may be more significant.

Just over 40% of the present value comes from the tax shield and subsidy benefits. If these were reneged then Tramont Co would lose a significant amount of the value attached to the project. Also the new government may not allow remittances every year, as is assumed in part (i). However, this may not be significant since the largest present value amount comes from the final year of operation.

Other Business Factors
Tramont Co should consider the possibility of becoming established in Gamala, and this may lead to follow-on projects. The real options linked to this should be included in the analysis.

Tramont Co's overall corporate strategy should be considered. Does the project fit within this strategy? Even if the decision is made to close the operation in the USA, there may be other alternatives and these need to be assessed.

The amount of experience Tramont Co has in international ventures needs to be considered. For example, will it be able to match its systems to the Gamalan culture? It will need to develop strategies to deal with cultural differences. This may include additional costs such as training which may not have been taken into account.

Tramont Co needs to consider if the project can be delayed at all. From part (i), it can be seen that a large proportion of the opportunity cost relates to lost contribution in years 1 and 2. A delay in the commencement of the project may increase the overall value of the project.

Tramont Co needs to consider the impact on its reputation due to possible redundancies. Since the production of the *X-IT* is probably going to be stopped in any case, Tramont Co needs to communicate its strategy to the employees and possibly other stakeholders clearly so as to retain its reputation. This may make the need to consider alternatives even more important.

(Note: credit will be given for alternative relevant comments)

Appendix
Gamalan Project Operating Cash Flows
(All amounts in GR/$ 000's)

Year	Now	1	2	3	4
Sales revenue (w2)		48,888	94,849	214,442	289,716
Local variable costs (w3)		(16,200)	(32,373)	(75,385)	(104,897)
Imported component (w4)		(4,889)	(9,769)	(22,750)	(31,658)
Fixed costs		(30,000)	(32,700)	(35,643)	(38,851)
Profits before tax		(2,201)	20,007	80,664	114,310
Taxation (w5)		0	0	(7,694)	(18,862)
Investment	(230,000)				450,000
Working capital	(40,000)	(3,600)	(3,924)	(4,277)	51,801
Cash flows (GR)	(270,000)	(5,801)	16,083	68,693	597,249
Exchange rate (w1)	55·00	58·20	61·59	65·18	68·98
Cash flows ($)	(4,909)	(100)	261	1,054	8,658
Discount factor for 9·6% (w6)		0·912	0·832	0·760	0·693
(Full credit given if 10% is used as the discount rate)					
Present values ($)	(4,909)	(91)	217	801	6,000

Net present value (NPV) of the cash flows from the project is approx. $2,018,000.

Adjusted present value (APV)	$000's
NPV of cash flows	2,018
Additional USA tax	
Opportunity cost (revenues foregone from current operations)	
Additional contribution from component exported to project (net of tax) (w7)	(1,237)
Closure revenues and costs ($2,300,000 – $1,700,000)	600
Tax shield	
Benefit of subsidy (w8)	1,033
Total APV	2,414

Workings

1.   Exchange rates

Year	1	2	3	4
GR/$1	55 x 1·09/1·03 = 58·20	58·20 x 1·09/1·03 = 61·59	61·59 x 1·09/1·03 = 65·18	65·18 x 1·09/1·03 = 68·98

2.   Sales revenue (GR 000's)

Year	1	2	3	4
Price x units x exchange rate	70 x 12,000 x 58·20 = 48,888	70 x 22,000 x 61·59 = 94,849	70 x 47,000 x 65·18 = 214,442	70 x 60,000 x 68·98 = 289,716

3.   Local variable costs (GR 000's)

Year	1	2	3	4
Cost x units x inflation after yr 1	1,350 x 12,000 = 16,200	1,350 x 22,000 x 1·09 = 32,373	1,350 x 47,000 x $1·09^2$ = 75,385	1,350 x 60,000 x $1·09^3$ = 104,897

4.   Imported Component (GR 000's)

Year	1	2	3	4
Price x units x inflation after year 1 x exchange rate	7 x 12,000 x 58·20 = 4,889	7 x 22,000 x 1·03 x 61·59 = 9,769	7 x 47,000 x $1·03^2$ x 65·18 = 22,750	7 x 60,000 x $1·03^3$ x 68·98 = 31,658

5.   Taxation

Year	1	2	3	4
Profits before tax	(2,201)	20,007	80,664	114,310
Tax allowable depreciation	(20,000)	(20,000)	(20,000)	(20,000)
Profit/(loss) after depreciation	(22,201)	7	60,664	94,310
Taxable profits	0	0	38,470	94,310
Taxation (20%)	0	0	(7,694)	(18,862)

6. **Gamala project all-equity financed discount rate**
   Tramont Co equity beta = 1·17
   MVe = $2·40 x 25m shares = $60m
   MVd = $40m x $1,428/$1,000 = $57·12m

   Tramont Co asset beta (assuming debt is risk free)
   1·17 x 60m/(60m + 57·12m x 0·7) = 0·70

   Project asset beta = 0·70 + 0·40 = 1·10
   Project all-equity financed discount rate = 3% + 6% x 1·1 = 9·6%

7. **Additional tax, additional contribution and opportunity cost ($000's)**

Year	1	2	3	4
Additional tax				
Taxable profits x 1/exchange rate x 10%	0	0	38,470 x 1/65·18 x 10% = (59)	94,310 x 1/68·98 x 10% = (137)
Opportunity cost				
Units x contribution x (1 – tax)	40 x $20 x 0·7 = (560)	32 x $20 x 0·7 = (448)	25·6 x $20 x 0·7 = (358)	20·48 x $20 x 0·7 = (287)
Additional Contribution				
Units x contribution x inflation x (1 – tax)	12 x $4 x 0·7 = 34	22 x $4 x 1·03 x 0·7 = 63	47 x $4 x 1·03^2 x 0·7= 140	60 x $4 x 1·03^3 x 0·7 = 184
Total cash flows	**(526)**	**(385)**	**(277)**	**(240)**
PV of cash flows				
Discount at 7%	**(492)**	**(336)**	**(226)**	**(183)**

   NPV is approx. $(1,237,000)

8. **Tax shield and subsidy benefits ($/GR 000's)**

Year	1	2	3	4
Annual tax shield (GR)				
Interest x loan x tax rate	6% x 270m x 20% = 3,240	3,240	3,240	3,240
Annual subsidy benefit (GR)				
Interest gain x loan x (1 – tax rate)	7% x 270m x 0·8 = 15,120	15,120	15,120	15,120
Total tax shield + subsidy benefits (GR)	18,360	18,360	18,360	18,360
Exchange rate (GR/$1)	58·20	61·59	65·18	68·98
Cash flows ($)	**315**	**298**	**282**	**266**
PV of cash flows				
Discount at 5%	**300**	**270**	**244**	**219**

   NPV of tax shield and subsidy benefit is approx. $1,033,000

2 (a) The main advantage of using a collar instead of options to hedge interest rate risk is lower cost. A collar involves the simultaneous purchase and sale of both call and put options at different exercise prices. The option purchased has a higher premium when compared to the premium of the option sold, but the lower premium income will reduce the higher premium payable. With a normal uncovered option, the full premium is payable.

However, the main disadvantage is that, whereas with a hedge using options the buyer can get full benefit of any upside movement in the price of the underlying asset, with a collar hedge the benefit of the upside movement is limited or capped as well.

(b) Using Futures

Need to hedge against a rise in interest rates, therefore go short in the futures market. Alecto Co needs June contracts as the loan will be required on 1 May.

No. of contracts needed = €22,000,000/€1,000,000 x 5 months/3 months = 36·67 say 37 contracts.

Basis
Current price (on 1/1) – futures price = total basis
(100 – 3·3) – 96·16 = 0·54
Unexpired basis = 2/6 x 0·54 = 0·18

If interest rates increase by 0·5% to 3·8%

Cost of borrowing funds = 4·6% x 5/12 x €22,000,000 =	€421,667	
Expected futures price = 100 – 3·8 – 0·18 = 96·02		
Gain on the futures market = (9,616 – 9,602) x €25 x 37 =	€12,950	
Net cost =	€408,717	
Effective interest rate = 408,717/22,000,000 x 12/5 =	4·46%	

If interest rates decrease by 0·5% to 2·8%

Cost of borrowing funds = 3·6% x 5/12 x €22,000,000 =	€330,000	
Expected futures price = 100 – 2·8 – 0·18 = 97·02		
Loss on the futures market = (9,616 – 9,702) x €25 x 37 =	€79,550	
Net cost =	€409,550	
Effective interest rate = 409,550/22,000,000 x 12/5 =	4·47%	

(Note: Net cost should be the same. Difference is due to rounding the number of contracts)

Using Options on Futures

Need to hedge against a rise in interest rates, therefore buy put options. As before, Alecto Co needs 37 June put option contracts (€22,000,000/€1,000,000 x 5 months/3 months).

If interest rates increase by 0·5% to 3·8%

Exercise Price	96·00	96·50
Futures Price	96·02	96·02
Exercise ?	No	Yes
Gain in basis points	0	48
Underlying cost of borrowing (from above)	€421,667	€421,667
Gain on options (0 and €25 x 48 x 37)	€0	€44,400
Premium		
16·3 x €25 x 37	€15,078	
58·1 x €25 x 37		€53,743
Net cost	€436,745	€431,010
Effective interest rate	4·76%	4·70%

If interest rates decrease by 0·5% to 2·8%

Exercise Price	96·00	96·50
Futures Price	97·02	97·02
Exercise ?	No	No
Gain in basis points	0	0
Underlying cost of borrowing (from above)	€330,000	€330,000
Gain on options	€0	€0
Premium		
16·3 x €25 x 37	€15,078	
58·1 x €25 x 37		€53,743
Net cost	€345,078	€383,743
Effective interest rate	3·76%	4·19%

Using a collar

Buy June put at 96·00 for 0·163 and sell June call at 96·50 for 0·090.
Premium payable = 0·073

If interest rates increase by 0·5% to 3·8%

	Buy put	Sell Call
Exercise Price	96·00	96·50
Futures Price	96·02	96·02
Exercise ?	No	No
Underlying cost of borrowing (from above)	€421,667	
Premium		
7·3 x €25 x 37	€6,753	
Net cost	€428,420	
Effective interest rate	4·67%	

If interest rates decrease by 0·5% to 2·8%

	Buy put	Sell Call
Exercise Price	96·00	96·50
Futures Price	97·02	97·02
Exercise ?	No	Yes
Underlying cost of borrowing (from above)	€330,000	
Premium		
7·3 x €25 x 37	€6,753	
Loss on exercise (52 x €25 x 37)	€48,100	
Net cost	€384,853	
Effective interest rate	4·20%	

Hedging using the interest rate futures market fixes the rate at 4·47%, whereas with options on futures or a collar hedge, the net cost changes. If interest rates fall in the future then a hedge using options gives the most favourable rate. However, if interest rates increase then a hedge using futures gives the lowest interest payment cost and hedging with options give the highest cost, with the cost of the collar hedge being in between the two. If Alecto Co's aim is to fix its interest rate whatever happens to future rates then the preferred instrument would be futures.

This recommendation is made without considering margin and other transactional costs, and basis risk, which is discussed below. These need to be taken into account before a final decision is made.

(Note: credit will be given for alternative approaches to the calculations in part (b))

(c) Basis risk occurs when the basis does not diminish at a constant rate. In this case, if a futures contract is held until it matures then there is no basis risk because at maturity the derivative price will equal the underlying asset's price. However, if a contract is closed out before maturity (here the June futures contracts will be closed two months prior to expiry) there is no guarantee that the price of the futures contract will equal the predicted price based on basis at that date. For example, in part (b) above, the predicted futures price in four months assumes that the basis remaining is 0·18, but it could be more or less. Therefore the actual price of the futures contract could be more or less.

This creates a problem in that the effective interest rate for the futures contract above may not be fixed at 4·47%, but may vary and therefore the amount of interest that Alecto Co pays may not be fixed or predictable. On the other hand, it could be argued that the basis risk will probably be smaller than the risk exposure to interest rates without hedging and therefore, although some risk will exist, its impact will be smaller.

3 (a) Spot yield rates applicable to Levante Co (based on A credit rating)

1 year	3·85%
2 year	4·46%
3 year	5·07%
4 year	5·80%
5 year	6·12%

Bond value based on A rating =
$4 x $1·0385^{-1}$ + $4 x $1·0446^{-2}$ + $104 x $1·0507^{-3}$ = $97·18 per $100

Current price based on AA rating = $98·71

Fall in value = (97·18 – 98·71)/98·71 x 100% = 1·55%

(b) Spot rates applicable to Levante Co (based on A credit rating) [from above]

1 year	3·85%
2 year	4·46%
3 year	5·07%
4 year	5·80%
5 year	6·12%

(i) Value of 5% coupon bond
$5 x $1·0385^{-1}$ + $5 x $1·0446^{-2}$ + $5 x $1·0507^{-3}$ + $5 x $1·0580^{-4}$ + $105 x $1·0612^{-5}$ = $95·72
Hence the bond will need to be issued at a discount if only a 5% coupon is offered.

(ii) New coupon rate for bond valued at $100 by the markets
Since the 5% coupon bond is only valued at $95·72, a higher coupon needs to be offered. This coupon amount can be calculated by finding the yield to maturity of the 5% coupon bond discounted at the above yield curve. This yield to maturity will be the coupon amount for the new bond such that its face value will be $100.

Therefore, if the yield to maturity is denoted by YTM then
$5 x (1 + YTM)^{-1}$ + $5 x (1 + YTM)^{-2}$ + $5 x (1 + YTM)^{-3}$ + $5 x (1 + YTM)^{-4}$ + $105 x (1 + YTM)^{-5}$ = $95·72

Solve by trial and error, assume YTM is 5·5%. This gives the bond value as $97·86.

Assume YTM is 6%; this gives the bond value as $95·78, which is close enough to $95·72

$$\$5 \times (1·06)^{-1} + \$5 \times (1·06)^{-2} + \$5 \times (1·06)^{-3} + \$5 \times (1·06)^{-4} + \$105 \times (1·06)^{-5} = \$95·78$$

Hence if the coupon payment is 6% or $6 per $100 bond unit then the bond market value will equal the par value at $100.

$$\$6 \times (1·06)^{-1} + \$6 \times (1·06)^{-2} + \$6 \times (1·06)^{-3} + \$6 \times (1·06)^{-4} + \$106 \times (1·06)^{-5} = \$100$$

Alternatively:

Take R as the coupon rate, such that:

$$(R \times 1·0385^{-1}) + (R \times 1·0446^{-2}) + (R \times 1·0507^{-3}) + (R \times 1·0580^{-4}) + (R \times 1·0612^{-5}) + (100 \times 1·0612^{-5}) = \$100$$

$$4·2826R + 74·30 = \$100$$

$$R = 6\% \text{ or } \$6 \text{ per } \$100$$

Advice:

If only a 5% coupon is offered, the bonds will have to be issued at just under a 4·3% discount. To raise the full $150 million, if the bonds are issued at a 4·3% discount, then 1,567,398 $100 bond units need to be issued, as opposed to 1,500,000. This is an extra 67,398 bond units for which Levante Co will need to pay an extra $6,739,800 when the bonds are redeemed in five years.

On the other hand, paying a higher coupon every year of 6% instead of 5% will mean that an extra $1,500,000 is needed for each of the next five years.

If the directors feel that the drain in resources of $1,500,000 every year is substantial and that the project's profits will cover the extra $6,739,800 in five years' time, then they should issue the bond at a discount and at a lower coupon rate. On the other hand, if the directors feel that they would like to spread the amount payable then they should opt for the higher coupon alternative.

(c) Industry risk measures the resilience of the company's industrial sector to changes in the economy. In order to measure or assess this, the following factors could be used:

Impact of economic changes on the industry in terms of how successfully the firms in the industry operate under differing economic outcomes;
How cyclical the industry is and how large the peaks and troughs are;
How the demand shifts in the industry as the economy changes.

Earnings protection measures how well the company will be able to maintain or protect its earnings in changing circumstances. In order to assess this, the following factors could be used:

Differing range of sources of earnings growth;
Diversity of customer base;
Profit margins and return on capital.

Financial flexibility measures how easily the company is able to raise the finance it needs to pursue its investment goals. In order to assess this, the following factors could be used:

Evaluation of plans for financing needs and range of alternatives available;
Relationships with finance providers, e.g. banks;
Operating restrictions that currently exist as debt covenants.

Evaluation of the company's management considers how well the managers are managing and planning for the future of the company. In order to assess this, the following factors could be used:

The company's planning and control policies, and its financial strategies;
Management succession planning;
The qualifications and experience of the managers;
Performance in achieving financial and non-financial targets.

(Note: credit will be given for alternative relevant comments and suggestions)

4 (a) Possible benefits of disposing Tyche Co through a management buy-out may include:

Management buy-out costs may be less for Proteus Co compared with other forms of disposal such as selling the assets of the company or selling the company to a third party.

It may be the quickest method in raising funds for Proteus Co compared to the other methods.

There would be less resistance from the managers and employees, making the process smoother and easier to accomplish.

Proteus Co may retain a better relationship and beneficial links with Tyche Co and may be able to purchase or sell goods and services to it, as seems to have happened with the management service.

It may be able to get a better price for the company. The current management and employees possibly have the best knowledge of the company and are able to make it successful. Therefore they may be willing to pay more for it.

It may increase Proteus Co's reputation among its internal stakeholders such as the management and employees. It may also increase its reputation with external stakeholders and the markets if it manages the disposal successfully and efficiently.

(Note: credit will be given for alternative relevant comments)

(b) In order to calculate whether or not the covenant is breached every year, the proportion of debt to equity needs to be calculated each year. The debt will reduce by $3 million every year and the equity will increase by reserves every year. In order to calculate the increase in reserves every year, the forecast income statements need to be determined.

Forecast Income Statement ($000's)

Year	1	2	3	4	5
Operating income before mgmt. fee (W1)	23,760	25,661	27,714	29,931	32,325
Management service fee	12,000	12,960	13,997	15,116	16,326
Interest payable (W2)	5,850	5,580	5,310	5,040	4,770
Profit before tax	5,910	7,121	8,407	9,775	11,229
Tax payable (25%)	1,478	1,780	2,102	2,444	2,807
Profit after tax	4,432	5,341	6,305	7,331	8,422
Dividend payable (25%)	1,108	1,335	1,576	1,833	2,106
Balance transferred to reserves	3,324	4,006	4,729	5,498	6,316

Book value of equity

Year	1	2	3	4	5
Opening equity	16,000	19,324	23,330	28,059	33,557
Reserves	3,324	4,006	4,729	5,498	6,316
Closing equity	19,324	23,330	28,059	33,557	39,873

Debt/Equity Computations

Year	1	2	3	4	5
Debt Outstanding at year end ($000's)	62,000	59,000	56,000	53,000	50,000
Equity value at year end	19,324	23,330	28,059	33,557	39,873
Debt/Equity	321%	253%	200%	158%	125%
Restrictive Condition	350%	250%	200%	150%	125%
Restriction Breached?	No	Yes	No	Yes	No

Workings

W1
Current operating profit before management service charge = $60,000,000 – ($12,000,000 + 22,000,000 + 4,000,000) = $22,000,000. This amount will grow by 8% every year.

W2

Year	1	2	3	4	5
Outstanding loan at the start of the year ($000's)	65,000	62,000	59,000	56,000	53,000
Interest ($000's)	5,850	5,580	5,310	5,040	4,770

(c) Implications
Based on the calculations in part (b) above, the restrictive covenant is due to be breached in years two and four. In years three and five, it has just been met, and only in year one will Tyche Co be operating well within the conditions of the restrictive covenant. This raises two main issues: firstly, Tyche Co needs to establish how the bank will react to the conditions not being met and will it put Tyche Co's business in jeopardy? Secondly, because the conditions are nearly breached in years three and five, Tyche Co needs to determine the likelihood of the revenues and costs figures being achieved. A very small deviation from the figures may cause the conditions to be breached. Sensitivity analysis and other forms of risk analysis may need to be undertaken and provisions put into place to deal with unexpected breaches in the covenant.

Possible Actions
Tyche Co can consider the following possible actions in the years where it is likely that the covenant may be breached:

(i) The directors may decide to award themselves and the other shareholders lower or no dividends. This would probably need to be negotiated and agreed.

(ii) The directors may want to ask the venture capitalist to take a higher equity stake for more funds at the outset. Both parties would need to agree to this.

(iii) Tyche Co may want to try and negotiate less onerous terms with the bank or ask it for more flexibility when applying the restrictive covenant. Given that the restrictive covenant is not likely to be breached by a significant amount, the bank will probably not want to undertake legal proceedings to close Tyche Co and would probably be open to negotiations.

(iv) Tyche Co may decide to pay off more of the loan each year from its cash reserves, if it has enough funds, in order to reduce the year-end outstanding debt.

(Note: only two actions needed)

5 (Solution note: Question 5 can be answered in a variety of ways and the suggested answer below is indicative. Credit will be given for reasonable answers considering alternatives or additions to the explanations and discussion below)

(a) A triple bottom line (TBL) report provides a quantitative summary of a corporation's performance in terms of its economic or financial impact, its impact on environmental quality and its impact on social performance. The principle of TBL reporting is that a corporation's true performance must be measured in terms of a balance between economic (profits), environmental (planet) and social (people) factors; with no one factor growing at the expense of the others.

A corporation's sustainable development is about how these three factors can grow and be combined so that a corporation is building a reputation as being a good citizen. The contention is that a corporation that accommodates the pressures of all the three factors will enhance shareholder value by addressing the needs of its stakeholders.

Whereas TBL reporting is a quantitative summary of the corporation performance in the three factors over a previous time period, say a year, sustainable development tends to be forward looking and qualitative. Therefore TBL provides the measurement tool to assess a corporation's performance against its stated aims.

Each factor can be assessed or measured using a number of proxies. The economic impact can be measured by considering proxies such as operating profits, dependence on imports and the extent to which the local economy is supported by purchasing locally produced goods and services. Social impact can be measured by considering proxies such as working conditions, fair pay, using appropriate labour force (not child labour), ethical investments, and maintenance of appropriate food standards. Environmental impact can be measured by considering proxies such as ecological footprint, emissions to air, water and soil, use of energy and water, investments in renewable resources.

(b) An assessment by the management of a corporation's performance in the three factors – economic, environmental and social, that make up the TBL report will result in an improvement in the financial position, if long-term shareholder value is increased as a result of the report being produced. In this case, the benefits that accrue from the assessment and production of a TBL report must exceed the costs of undertaking the report. It is likely to be the case that the costs of producing the report are relatively easy to measure but the financial benefits may be more difficult to measure and may take place over a longer time period. Some examples of the ways in which Kengai Co may benefit financially are explained below.

Focusing on and reporting the company's environmental and social impact may build and enhance its reputation. Increasing reputation may increase the long-term revenue of Kengai Co. On the other hand, if Kengai Co does not follow (or even try to lead) its competitors in this area then the loss of reputation may damage its revenues stream and lower its corporate value.

Consideration and improvement of working standards and consulting employees as part of this process, when assessing social factors, may help in retaining and attracting high performing, high calibre employees. This will benefit Kengai Co in the long term because of increased employee motivation and performance. Employee involvement may also help reduce the costs related to the company's risk management activity and thus have a direct cost reduction impact.

Improvement of due diligence procedures as part of the economic factor assessment may help limit direct legal costs and indirect costs incurred in maintaining stakeholder relationships. Communication with stakeholders and thus improving the quality of reporting may result in improvements in governance procedures. This in turn would lead to a reduction of the costs related to risk management.

Assessing and improving the environmental factor impact in the TBL report may result in Kengai Co making efforts to reduce its carbon footprint by placing less reliance on exports and developing local expertise in producing the inputs it needs. This may reduce the risk of supplier related problems and alleviate problems related to possible inventory shortfalls. It may also improve Kengai Co's reputation, leading to long-term financial benefits.

Monitoring and reporting on the performance of employees and managers as part of the assessment of economic and social factors may help identify areas where work can be done more effectively and efficiently. It may help managers reconsider business processes and question areas where improvements can be made.

In all the above examples, the result of the assessment required in producing the TBL report and comparing the corporation's progress in relation to its aim of becoming a sustainable organisation will create opportunities which senior managers can develop into financial benefits. The extent to which these opportunities are successfully developed depends on the quality of assessment and the organisation's ability to enable change to happen.

Professional Level – Skills Module, Paper P4
Advanced Financial Management

December 2011 Marking Scheme

				Marks
1	**(i)**	Estimated future rates based on purchasing power parity		1
		Sales revenue, variable costs, component cost and fixed costs (in GR)		4
		Taxable profits and taxation		2
		Investment, terminal value and working capital		2
		Cash flows in GR		1
		Cash flows in $		1
		Discount rate of all-equity financed project		2
		Base case PVs and NPV		2
		PV of additional contribution, additional tax and opportunity cost		4
		PV of tax shield and subsidy benefits		4
		Closure costs and benefits		1
		Initial comments and conclusion		1–2
		Assumptions and sensitivity analysis		2–3
			Max	**27**
	(ii)	Implications of change of government		2–3
		Other business factors (1 to 2 marks per factor)		5–6
			Max	**8**
		Professional Marks		
		Report format		1
		Layout, presentation and structure		3
			Total	**4**
			Total	**39**
2	**(a)**	Discussion of the main advantage		2
		Discussion of the main disadvantage		2
				4
	(b)	Recommendation to go short if futures are used and purchase puts if options are used		1
		Calculation of number of contracts and remaining basis		2
		Futures contracts calculations		4
		Options contracts calculations		4
		Collar approach and calculations		4
		Supporting comments and conclusion		2–3
			Max	**17**
	(c)	Explanation of basis risk		2–3
		Effect of basis risk on recommendation made		2–3
			Max	**4**
			Total	**25**

				Marks

3 **(a)** Calculation of company specific yield curve — 1
Calculation bond value based on credit rating of A — 1
Calculation of percentage fall in the value of the bond — 1

     3

(b) Calculation of bond value based on 5% coupon — 1
Calculation of new coupon rate — 4
Advice on which type of bond to issue — 2–3

    Max   **7**

(c) For each of the four criteria –
2 marks for explanation and suggestion of factors — **8**

    Total   **18**

4 **(a)** 1–2 marks for each point discussed   **Max**   **4**

(b) Calculations to get to profit before tax for the five years — 3
Calculations to get to the reserves figures for each year — 2
Calculation of the equity amount each year — 1
Calculation of debt to equity ratio for year and
Conclusion when the covenant is breached and when it is not — 3

    9

(c) 3 marks for discussion of implications
2 marks for actions Tyche Co may take — **5**

    Total   **18**

5 **(a)** Explaining TBL and relation to sustainability — 4–5
Examples of proxies   (up to 2 marks for proxies per TBL factor) — 4–5

    Max   **8**

(b) Discussion of long-term shareholder wealth maximisation and benefits exceeding costs — 2
2–3 marks per well-discussed example focusing on financial impact — 8–9

    Max   **10**

    Total   **18**