

**CA**



THE INSTITUTE OF  
**CHARTERED** ACCOUNTANTS  
OF SRI LANKA

# **SUGGESTED SOLUTIONS**

**KC2 – Corporate Finance & Risk  
Management**

**June 2017**

## SECTION 1

### Answer 01

Relevant Learning Outcome/s:
5.1.1 Discuss mergers, acquisitions and divestment as business strategies [including reasons, critical success factors and especially different types divestments such as trade sale, spinoff and management buy-outs (MBOs)].
6.2.1 Assess different tools/strategies to mitigate each of the risks identified above.
Study text reference: Pages 487, 489, 655, 693, 695, 698

(a)

(i)

#### 1. SWAP ratio

	A PLC	C PLC
EPS (Rs.)	10	4
PE (times)	10	6
Market price per share (Rs.)	100	24

$$\begin{aligned}\text{SWAP ratio} &= 100:24 \\ &= 25:6\end{aligned}$$

#### 2. EPS of A PLC after acquisition

$$\text{Number of shares given} = \frac{200,000}{25} * 6$$

$$= 48,000$$

$$\text{Earnings (A + C)} = 4,800,000$$

$$\text{Number of shares} = 448,000$$

$$\begin{aligned}\text{EPS of A PLC after acquisition} &= \frac{4,800,000}{448,000} \\ &= \text{Rs. } 10.71\end{aligned}$$

#### 3. Expected market value of A PLC after acquisition

EPS (Rs.)(after acquisition)	10.71
PE (times)	10
Expected market price per share (Rs.)	107.10

#### 4. Value of synergy (Rs.)

Market value after acquisition	>	Market value of A PLC before acquisition	+	Market value of C PLC before acquisition
107.10 * 448,000	>	100 * 400,000	+	24 * 200,000
47,980,800	>	40,000,000	+	4,800,000

Therefore the value of synergy = Rs. 3,180,800

- (ii) The main idea behind a synergy is that by combining two companies, they can expect financial results that are far greater than what each company could have achieved if they did not join forces. Shareholder value is created normally, much higher than its value prior to a merger or acquisition.

When we speak of synergies, it usually comes in two forms:

**Revenue synergies:** pertain to enhanced performance, evidenced by increased revenue.

**Operational synergies:** with greater cost efficiency, costs will be reduced. Operational synergies point to the savings, particularly in operating costs, after two firms have joined their strengths.

Reasons for the benefits that companies entering into M&A transactions hope to achieve include:

➤ **Economies of scale**

In the competitive business world, it is almost always the bigger companies that have greater power. It is a fact that bigger companies have better chances of improving their purchasing power and even finding suppliers that can provide raw materials at low costs. Their opportunities for saving more on costs are generally greater than that available to smaller companies. Bigger companies also have a stronger clout when it comes to negotiations of business transactions.

One other advantage of mergers is having consolidated gains, facilitated by the increased focus on core capabilities and paying more attention to niche areas.

➤ Savings from reduction of people

Layoffs and separations are expected when it comes to M&A. The combination of two companies means that there will only be one leader of the combined company. The resulting organisation will lead to some positions or jobs being made redundant – a sure sign of inefficiencies. It will also result in the streamlining of tasks and responsibilities that would lead to job cuts. This reduction of staff members will result in reduced manpower costs, even after paying the severance packages to those who were let go of.

Aside from the reduction of people, savings can also be obtained by retaining the best people for the tasks at hand, meaning that there is no longer a need for the resulting company to spend money and other resources in training and educating its employees.

➤ Improved market reach

If one company operating in one market combines with another company operating in another market, the resulting company will have access to both markets. Larger economies of scale are also likely result meaning that the resulting company will have greater potential to reach new markets. Further, the resulting company will be able to take advantage of new sales and purchase opportunities due to the expansion of its supply, marketing and distribution chains.

The speed with which a company can enter new markets will also become faster. For example, if a company wants to enter a new market, the whole process requires acquisition of new resources, educating and training people to facilitate entry into that market, and developing business models and plans applicable to that market. Acquiring another company or firm, especially one that already has a foothold in the market you are targeting, or one that has the resources needed, will make entry much faster.

➤ Enhanced industry visibility

A bigger company with a wider market reach can have better performance and enhanced efficiencies, and eventually have an improved ranking in the industry.

➤ Acquisition of new talent and technology

Streamlining of personnel or human resources of the combined company will result in the improvement of people's productivity, mainly due to the discovery of new talent. Combining companies will also mean pooling each

other's technologies together, and even sharing knowledge and technical know-how. This would go a long way in helping the company develop and maintain its competitive edge. It is a fact that being up-to-date with recent developments and advancements in technology is a vital aspect of any business.

➤ Financing

A combined firm will generally have higher profits and a better asset structure. This will tend to reduce the cost of funds as the firm's risk will be lower and thereby increase the confidence of suppliers, financial institutions etc.

- (b) If they wish to hedge the interest rate risk, Alfa will have to sell futures now. They will have to sell 60 contracts in total, each valuing USD 500,000 in the futures market at 96.79 (Note A).

Then, we need to see what happens in the futures market. We currently sell at 96.79. The buying rate is not known yet. In order to find that out, we need to look at what happens in the open market. We will borrow USD 30 million for 3 months at the open market rate, which will be the current available rate plus 0.5%. This is equal to  $3\% + 0.9\% + 0.5\% = 4.4\%$ . With this %, the borrowing cost is calculated to be USD 330,000 (Note C).

However, we need to figure out how much we can benefit from the futures market transaction. In order to do that, we need to figure out the futures buying price. This can be calculated as 96.5 (Note B1.1). It will lead to a net gain of 0.29 in the futures market. The total gain is calculated to be USD 21,750 (Note B).

The net impact can be analysed as the difference between the borrowing cost and the futures market gain, which is equal to USD 308,000 (Note D). The total cost of debt is calculated to be 4.1% (Note E).

Conclusion: the hedging has brought down the expected cost from 4.4% to 4.1%.

**Futures analysis**

We are now in : End June  
Borrowing in three months : End Sep  
Borrowing amount : USD 30 million  
You sell USD 30 million of futures now at 96.79 (September future)  
Our borrowing rate 3.9% (3% LIBOR + 0.9%)

**Note A: Number of contracts to be sold**

Number of contracts = (30 million/0.5 million)  
= 60 contracts

**Note B: Futures market**

Selling at 96.79  
Buying back at 96.5  
Difference 0.29%

Total gain =  $60 * 500,000 * 0.0029 * 3/12 = \text{USD } 21,750$

Basis of calculation

Current Futures vs Open Market

96.79 vs 97 (100% - 3%)

Basis = 0.21

**B1.1: Closing futures price**

Open market rate = 3%  
Increase = 0.5%  
Total = 3.5%  
Price = 96.5 (100 - 3.5)  
Futures rate = 96.5

**Note C: Open market situation**

Today's rate = 3.9%  
Increase = 0.5%  
Increased rate = 4.4%

Borrowed = USD 30 million (in three months)  
Interest cost =  $30 * 4.4% * 3/12$   
Interest = USD 0.330 million

**Note D: Net outcome**

Current estimated interest cost = USD 330,000  
Gain from futures = (USD 22,000)  
Net interest cost = USD 308,000

**Note E: Net cost of interest**

Net cost of interest =  $308 * 4/30,000$   
= 4.1%

**(Total: 25 marks)**

## Answer 02

Relevant Learning Outcome/s:	
1.2.1	Assess the achievement of designated financial objectives using: <ul style="list-style-type: none"> <li>- Returns provided to shareholders</li> <li>- Financial statement forecasts/financial modeling</li> <li>- Outcomes of financial statement analysis (profitability, liquidity, gearing, asset, investor ratios).</li> </ul>
2.2.1	Evaluate working capital requirements and investment decisions using working capital cycle and permanent and temporary working capital estimations
2.3.3	Calculate cost of equity using Dividend Valuation Methods (DVM/DGM) and Capital Asset Pricing Model (CAPM).
5.2.1	Evaluate business valuation techniques (asset based, earnings based, proxy PE based, cash flow based) for a specific merger or acquisition or divestment
1.1.2	Discuss the roles of financial management (financing, investment, dividends), their interconnections and conflicting stakeholder interests including agency theory.
Study text reference: Pages 18, 64, 68, 102, 235, 439	

(a)

	2016/17	2015/16
Net profit margin	$\frac{7.83}{1,535} \times 100$ = 0.51%	$\frac{8.505}{1,250} \times 100$ = 0.68%
Asset turnover	$\frac{1,535}{1,390.6}$ = 1.104	$\frac{1,250}{1,190.35}$ = 1.050
DuPont leverage	$\frac{1,390.6}{337.83}$ = 4.12	$\frac{1,190.35}{330}$ = 3.61
ROE	2.317%	2.575%

The company has been generating a return on equity (ROE) of 2.575% during 2015/16 and 2.317% during 2016/17.

	<u>2016/17</u>	<u>2015/16</u>
Net profit margin $\left( \frac{\text{Profit}}{\text{Sales}} \right)$	0.51%	0.68%
Asset turnover $\left( \frac{\text{Sales}}{\text{Assets}} \right)$	1.104	1.050
DuPont leverage $\left( \frac{\text{Assets}}{\text{Equity}} \right)$	4.12	3.61
ROE	2.317%	2.575%

ROE or the return to shareholders is determined by 3 factors:

- net profit margin
- asset turnover (how many times the assets have been churned out to generate sales)
- the company's financial leverage (assets/equity).

It is a cause for concern that the company has generated a low profit margin of just 0.68% in 2015/16. It further reduced to 0.51% in 2016/17.

In spite of increasing turnover and gross profits, the company has not been able to pass on the derived profits to the shareholders due to high administrative and finance costs. Finance costs have increased from Rs. 99 million to Rs. 140 million.

The company's asset turnover and DuPont leverage indicators seem to be fine. DuPont leverage could be reduced to improve the profit margin.

(b)

#### **Possible options available to raise finance for CPLC**

- One option to consider is the sale of any surplus assets. The company has Rs. 800 million worth of PPE, and the management should identify whether any of this is a surplus to the requirements of the business.
- Even if not a surplus to operational requirements, a sale and leaseback of some PPE may also be considered, which will immediately provide liquidity to the company.
- The company could consider a rights issue to existing shareholders. As long as all shareholders subscribe to this, there will be no dilution to the existing shareholders.

- The company could consider a private placement of its shares to a financial investor, such as a private equity fund. This is called a PIPE transaction (Private Investment in a Public Entity). This kind of transaction will however dilute the ownership of the existing shareholders.
- The company may consider issuing listed debentures. This may be a cheaper option than issuing commercial papers at 20% interest.
- Working capital management via factoring of receivables, selling down of inventory etc.
- Acquire/merge with a low-gearred or cash rich company, so as to use their cash to settle debt.

$$\begin{aligned}
 \text{(c) } r_e &= r_f + \beta (r_m - r_f) \\
 &= 9.5\% + 1.25 (15\% - 9.5\%) \\
 &= 16.375\%
 \end{aligned}$$

∴ investors' return expected for Rs. 10 million worth of shares = Rs. 1,637,500

$$\text{(d) Market capitalisation} = 30 \times 10,000,000 = \text{Rs. } 300,000,000 = \text{Rs. } 300 \text{ million.}$$

Dividend growth model

$$\begin{aligned}
 V &= \frac{D_0 (1 + g)}{K_e - g} = \frac{0.6 (1 + 0.1)}{0.16375 - 0.1} \\
 &= \text{Rs. } 10.353
 \end{aligned}$$

$$\text{No. of shares} = 10 \text{ million}$$

$$\text{Valuation} = \text{Rs. } 103.5$$

$$\text{P/BV} = 337,830,000 \times 1.2 = \text{Rs. } 405.4 \text{ million}$$

However of the three market capitalisation would be the most acceptable as it reflects the "current situation".

**Alternative answer for market capitalisation**

Market price of Rs. 30 less dividend of Rs. 0.60  
Market capitalisation

= Rs. 29.40 per share  
= Rs. 29.40 x 10 million shares  
= Rs. 294 million

(e)

- Shareholders are individuals or institutions that legally own shares or stock in the corporation, while bondholders are the firm's creditors. The two parties have different relationships with the company, accompanied by different rights and financial returns.
- Generally, shareholders have an incentive to undertake riskier projects than bondholders do. Bondholders are more interested in the safety of their investments.
- Shareholders also prefer the company to pay more out in dividends than the bondholders would like. Shareholders have voting rights at general meetings, while bondholders do not.
- If there is no profit, shareholders do not receive a dividend, while interest is paid to bondholders regardless of whether or not a profit is made.
- Other conflicts of interest can stem from the fact that bonds often have a defined term, or maturity, after which the bond is redeemed. Stocks on the other hand may be outstanding indefinitely but can also be sold at any point.
- Bondholders could prohibit the management from undertaking very risky projects. They could raise the interest rate demanded, increasing the cost of capital for the company. In addition, a high risk will require high security from the borrowers.

**(Total: 25 marks)**

## SECTION 2

### Answer 03

<b>Relevant Learning Outcome/s:</b>	
1.1.3	Discuss internal resources and business strategy differences (external legislations, regulations, corporate governance, interest rates/yield curve, inflation rates, exchange rates, capital market activities, constraints to financial management).
6.1.3	Discuss value at risk as a risk measurement tool and control tool and its limitations.
6.1.4	Discuss three different methods of calculating VAR, namely historical, covariance and Monte Carlo simulation method.
4.1.1	Analyse the capital budgeting process (including searching for investments, strategic prioritisation, identifying investment, investment appraisal, authorisation capital budget, monitoring and review).
4.1.2	Evaluate investment projects using discounting factor/non-discounting factor techniques with: <ul style="list-style-type: none"><li>- Tax</li><li>- Inflation (monetary and real method)</li><li>- Unequal life projects (annual equivalent method only)</li><li>- Asset replacement</li><li>- Capital rationing (including multi period capital rationing)</li><li>- Under uncertainty (certainty equivalent, adjusting discounting factors/payback, using probability and sensitivity analysis)</li><li>- Foreign investments (using forward exchange rates or country-specific discounting factors).</li></ul>
2.2	Working capital management
2.6	Capital structure decision making
Study text reference: Pages 37, 114, 269, 272, 329, 595	

- (a) The macroeconomic conditions are such that the foreign reserves position of the country continues to weaken. CBSL's intervention in managing the forex rate in a fixed regime has been a key contributor. CBSL has expressed its plans to relax the intervention; therefore a currency devaluation can be expected to a certain level. Also CBSL has continued to increase the interest rates as a part of its strategy to manage inflation, together with other measures. This would impact the proposed project in various ways including the cost of equity, cost of debt owing to interest costs, and the profitability of the business venture owing to forex.

The above trends could have varying impacts on the project from different aspects. The increasing interest rates would lead to an upward trend in the cost of debt as well as the cost of equity. This is mainly because investors do get the opportunity to earn more interest by investing in the money market. They do need an extra premium to compensate for the additional risk being accepted with risky projects.

Volatile macroeconomic measures also convey the message to investors that the economy is not stable. An investor would not opt to invest under volatile conditions, as the risk attached is greater. For example:

- Varying inflation makes the estimates not true
- Volatile interest rates make it hard to predict the cost of equity, cost of debt and finally WACC.
- Exchange rates impact project cash flows if imports and exports are involved.

Therefore, the concerns raised by the CEO appear valid, and they will have to keep communication open with the foreign investor to manage the situation, as the proposed project is a global project where there is an involvement of:

- FDI and payback
- Imports and exports
- Local debt and equity raising

(b) Volatile market conditions and the instant noodles project

Per the prevailing conditions, the project is exposed to many uncertain factors such as:

- An upward trend in interest rates
- Exchange rate volatility
- An unstable inflationary situation

In addition, project valuations should also consider GSP plus opportunities.

Thereby the following risks are evident:

- Purchases and sales are both exposed to forex fluctuations
- WACC will be impacted by increasing interest rates
- Inflationary effect would impact project estimates

Therefore, it is important to assess the project in terms of sensitivity against key variables such as sales, variable costs and fixed costs. This would indicate how sensitive the project is against each such factor. The importance of the exercise is to pre-decide key variables and make an assessment whether the company could manage such variables or not. If the key variables cannot be managed with some level of confidence, project rejection would be a choice.

The sensitivity analysis run by the strategic planning team makes sense as it provides some valuable information as that mentioned below.

- The project places well under optimistic conditions and expected conditions.

- However the project ends up with a negative NPV of Rs. 75 million for a drop in sales equivalent to 17% (from Rs. 1,200 million to Rs. 1,000 million). This means that the project is heavily sensitive to sales estimates.
- At the same time, the project takes a net movement of Rs. 97 million in NPV (from positive Rs. 60 million to negative Rs. 37 million) for a 2.25% change in variable costs.
- The sensitivity analysis indicates that fixed costs and initial investment values are not key driving factors.

Therefore we call the selling price and variable costs as critical variable factors.

#### Key findings from the sensitivity analysis

Both types of critical variable factors are not within a reasonable level of control of the company, as they are subject to forex exposures as explained above. Therefore, they can be considered as a red alert.

- (c) The basic calculation carried out at the present operating level indicates that cash flows being generated by the fuel & lubricants SBU do not generate a positive NPV. Rather, it generates a large negative balance amounting to Rs. 155 million (W3). This is a very basic calculation done by simplifying all the possible complexities. However, it does give a basic idea.

The second option is to see if the instant noodles project investment could end up with better results. The NPV calculation (W4) has considered 60% of the distributable net cash flows (SSPL's portion) and other incremental costs and revenue. This ends up with a positive NPV of Rs. 27 million.

Therefore, switching funds between the two business segments looks better for SSPL.

However, there are many other factors to be considered before making the decision. The NPV calculation below is just a mathematical exercise but the investment/divestment decision also involves many qualitative factors that could be much more important than numbers. Given below are some of the key elements that SSPL should look at.

- *How will the beta factor be impacted?*  
The proposed discontinuation would narrow down SSPL's product portfolio and it would obviously increase the beta factor for SSPL, leading to a higher cost of equity. The point to note is that the new company is an extension of the existing product segment, which is food and beverage.

- *Large renovation and compensation costs*  
The numbers estimated are fairly high and the successfulness of the project is highly vulnerable as calculated above. Therefore, the switching cost would be a major hit in the event the business does not turn out to be successful due to volatile market conditions.
- *How will employees react to the closure?*  
This is an important point to consider as the employees of the other remaining divisions will certainly have job security issues, which will lead to increasing staff turnover. This would have an adverse impact. The proposed compensation itself will not manage the situation, unless deliberate efforts are taken to control it.

Further, this will have a negative impact on attracting new talent. Search of new talent for business expansion would be a challenging task for SSPL.

- *How will this affect the image of the company?*  
This is a long lasting company with a good track record. The image of the company would have an impact on customers and the general public. Goodwill is a major asset of SSPL and managing the same is equally important as embarking on new business lines.
- *How will this affect the group level profitability?*  
SSPL needs to carefully analyse to see if there are any group level costs and revenue changes with the discontinuation of the fuel & lubricants division.  
E.g.
  - Cost allocations
  - Committed supplies
  - Any revenue loss from the remaining divisions
  - Economies of scale in procurement
- *Will customers lose their confidence?*  
Customers may think about other options in the event they are unsure of the continuity of the product, or they might boycott the product in the event employees are laid off in an unlawful and unfair manner.

**W1: Equity split**

		<b>Rs. million</b>
SLHK total capital requirement	=	350
SSPL share 60%	=	210
SFP(HK) share 40%	=	140
Net operating assets	=	242 (305 – 63)
Realisation loss	=	32
Net investment by SSPL	=	210

**W2: Cost of equity**

Risk free rate	=	11%
Market rate	=	15%
Beta	=	0.68
Cost of equity (SSPL)	=	11% + 0.68 (4%)
	=	14% $\Omega$

Cost of equity in evaluating joint venture investments = 15% (14% + 1%)

**W3: Running the fuel & lubricants SBU without a change**

<b>Based on 2016/17 data</b>		
	<b>Year 0 (Rs. million)</b>	<b>Year 1 (Rs. million)</b>
Annual cash flows		4.92
Opportunity cost	(210.0)	
$D_1/(r - g) \rightarrow (14\% - 5\%) = 9\%$	54.67	
NPV	(155.33)	
<i><b>Assumptions:</b> There are no claimable capital allowances or brought forward tax losses</i>		

**W4: Reinvestment option**

<b>Amounts to be received from SLHK</b>		
	<b>Total cash flows</b>	<b>SSPL's portion (60%)</b>
Year 1 cash flow	81.8	49.08
Year 2 cash flow	81.8	49.08

<b>Instant noodles project</b>	<b>Year 0</b>	<b>Year 1 - 10</b>
Annual cash flow		49.08
Investment	(210)	
Compensation	(10)	
Property alteration cost	(75)	
Incremental revenue		<u>15</u>
	(295)	64.08
64.08 at DF(15%) 5.018	<u>322</u>	
NPV at 15%	<u>27</u>	
SSPL cost of equity	14%	
Risk premium	<u>1%</u>	
	<u>15%</u>	

#### **W5: Free cash flow calculation**

$$\text{EBIT}(1 - t) + \text{Depreciation}$$

$$65 * 0.72 + 35 = 81.8$$

(d)

(i)

Under a Capex model SSPL will buy all the hardware, software and technological resources to run the solution. In the proposed solution, the company will have to purchase servers, routers, switches, PCs and storage together with the cloud facility and connectivity to deploy solutions to customers.

Most importantly, technical staff will be recruited by SSPL and retained in the company to sustain the solution. This is an expensive affair unless there is a major volume to justify the cost.

However, SSPL is not a company with such a large volume to justify the cost, hence the finance director recommends an Opex model where the entire technological aspect is handed over/outsourced to a capable third party player who has the economies of scale to deploy resources to provide the same service.

#### Possible reasons to justify the approach

Initial cost – SSPL has an investment opportunity to deploy their funds to the instant noodles project. Hence there would have been pressure from a funding side if Capex model was to be considered.

- The solution is purely techno driven, hence seeking expert experience is the best way to go about it rather than trying and testing it over and over again. SSPL has been a traditional, conservative company and their hands-on techno capabilities are very low.
- Scalability – in the event the Capex model is selected, once the initial investment is made, due emphasis needs to be placed on how large the SSPL group is planning to grow. Then, adequate provisions need to be reserved to meet future needs (idling capacity). However, the Opex model requires no provisions as the scalability is available upon request.
- Technological updates – a third party player would keep up with future technological advancements in order to make efficiency improvements, and SSPL will be able to take advantage of this. They need to understand that the cognitive era has begun and they will never be able to acquire such advancements in-house.
- Flexibility – SSPL can negotiate the level of service based on the budgets available. The Opex model will have the flexibility to negotiate the level of service depending on budgets available for the solution. In the case of SSPL, they need to decide how much savings they expect from the proposed solution, and then decide the maximum possible payment per month.

(ii)

The current cost in financing working capital stands at Rs. 5.32 million per annum (W1). The proposed solution will bring down the costs to just Rs. 590,000 with its advanced features (W2). Also there will be cost savings from distribution channels and human costs amounting to Rs. 3 million per annum. Total savings would stand at Rs. 7.73 million (W3). This will be equivalent to Rs. 644,000 per month. Hence, the company is able to negotiate with the vendor up to a payment of Rs. 644,000 per month with a speed up of processing features.

When the vendor is capable of enhancing the solutions to speed up the collection process, the benefit will be even bigger. Total savings will stand at Rs. 12 million per annum (W4). This is equivalent to Rs. 1 million per month.

In other words, the company is able to negotiate up to Rs. 1 million per month.

### W1: Current system delay and its cost

Days delayed	Probability	Expected delay in days
6	10%	0.6
7	16%	1.12
8	40%	3.2
9	21%	1.89
10	13%	<u>1.3</u>
		<u>8.11</u>
OD interest rate		20%
Annual credit sales		1,198
<b>Expected loss (Rs. 1,198 million at 20% at 8.11/365)</b>		<b>Rs. 5.32 million</b>

### W2: Revised costs after the system integration

Proposed system delay and costs		
Days delayed	Probability	Expected delay in days
0	40%	0
1	45%	0.45
3	<u>15%</u>	<u>0.45</u>
	<u>100%</u>	<u>0.9</u>
OD interest rate		20%
Annual credit sales		1,198
<b>Expected loss (Rs. 1,198 million at 20% at 0.9/365)</b>		<b>Rs. 0.59 million</b>

### W3: Savings

	Rs. million
Finance costs saving (5.32 - 0.59)	4.73
Other savings	<u>3.00</u>
Total savings	<u>7.73</u>
Maximum monthly cost payable	Rs. 0.644 million

**W4**

<b>If the system can be used to speed up collection from 45 days to 38 days, the savings for 7 days would be:</b>		
Saving in days (45 – 38)	7	
Savings (1,198/365 * 7 * 0.2)	Rs. 4.59 million	

**W5: Re-computation of the maximum installment with both savings**

	<b>Rs. million</b>
Total savings (7.73 + 4.59)	12.32
Monthly saving (12.32/12)	Rs. 1.03 million

**W6: Annual credit sales computation**

	<b>Rs. million</b>
Total annual sales of the food products SBU	1,497
Credit sales: 80%	1,198

**Alternative answer***(d) (ii)*

With the current system 45 days + 8 days (**W1**) = 53 days/365 days x 1,198 = Rs. 174 million

With the ERP system 38 days + 1 day (**W2**) = 39 days/365 days x 1,198 = Rs. 128 million

Savings 7 days + 7 days = 14 days = Rs. 46 million

	<b>Rs. million</b>
Interest saving (46 million x 20%)	9.2
Cost saving	<u>3.0</u>
	<u>12.2</u>

Monthly saving = Rs. 1.02 million

- (e) The key concern made by the finance director is the fact that equity finance is more expensive than debt finance, even though it looks otherwise. One might understand that equity finance is cheaper just because it doesn't demand for a return as much as a debt provider. But in a real sense, they are exposed to more risks hence need a higher return. The debt financing option is cheaper than equity, hence when we mix the two in the structure, the combined cost of funds, known as WACC, will be lower compared to a fully equity- financed capital structure.

Because of this reason some of the projects discounted at the cost of equity may fail the NPV test, whereas the same project would pass the NPV test when discounted at WACC. The calculations carried out for XYZ PLC show the same. Once the project is discounted at the cost of equity (14%), the NPV stands at negative Rs. 10.71 million (W1). However, when debt is introduced to the capital structure, the market valuation of XYZ PLC goes up by Rs. 3.2 million, meaning that the project ends up with a positive NPV (W2). The reason for it is simply the tax shield that debt can provide the company. This is a project selection error due to an incorrect capital structure being used by the company, and it indirectly leads the company to a lower market capitalisation.

When we look at WACC, it is important to observe the above explanation with calculations. The cost of equity is recorded at 14% whereas the WACC is recorded at 12%, which is 2% lower (W3).

Finally, we would disagree with finance director's comment that excessive loans in the capital structures of competitor companies have kept them ahead of the competition.

The theory explains that adding of debt to the capital structure will bring down the WACC to a certain level, and beyond such it will become the opposite. The WACC then tends to incline due to the large bankruptcy risk as shown in W4 .

## W1

	<b>Rs. million</b>
Cost	(50)
PV of cash inflows	39.29
NPV	(10.71)

**W2**

$V_g = V_u + DT$	
$V_g$	Total market value of a geared company
$V_u$	Total market value of an ungeared company
D	Market value of debt
t	Tax rate
D	50,000,000
t	28%
$V_u$	$100,000 * 503 + 39,285,714$ = Rs. 89,585,714
$V_g$	$89,585,714 + (50,000,000 * 28\%)$ = Rs. 103,585,714
D	50,000,000
Geared company value	Rs. 53,585,714
Equity value	Rs. 50,300,000
Value in excess	Rs. 3,285,714

**W3: WACC behaviour**

		<b>Rs.</b>
WACC	<u>Total return on investors</u>	
	Total market value of the firm	
Existing return	$100,000 * 503 * 14\%$	7,042,000
Return from the new project		<u>5,500,000</u>
		<u>12,542,000</u>
Total market value		103,585,714
WACC		12.1%

**Alternative answer**

$K_{adj}$  = Weighted average cost of capital in a geared company

$K_{eu}$  = Cost of equity in an ungeared company

t = Corporate tax rate

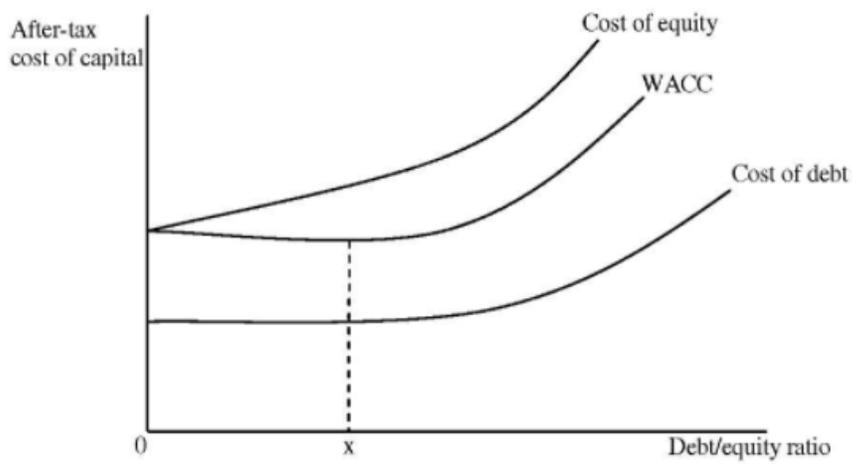
L = Gearing ratio measured by debt/(debt + equity)

$$\begin{aligned}
 K_{adj} &= K_{eu} (1 - tL) \\
 &= 0.14(1 - 0.28 \cdot 50/105.8) \\
 &= 0.1215
 \end{aligned}$$

$$D = 50$$

$$E = 50.3 + 5.5 = 55.8$$

**W4**



**(Total: 50 marks)**



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