

CA



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

# **SUGGESTED SOLUTIONS**

**KC2 – Corporate Finance Risk Management**

**June 2015**

## Section 1

### Answer 01

#### Relevant Learning Outcome/s:

4.1.2 Evaluate investment projects using discounting factor/ non-discounting factor techniques with:

- Tax
- Inflation (monetary and real method)
- Unequal life projects (annual equivalent method only)
- Asset replacement
- Capital rationing ( including multi period capital rationing)
- Under uncertainty (certainty equivalent, adjusting discounting factors/ payback, using probability and sensitivity analysis)
- Foreign investments (using forward exchange rates or country- specific discounting factors).

4.1.5 Analyse the importance of post completion audit and real options in capital budgeting.

- (a) The NPV for both projects is summarized below.  
Investing in brother's new line of business - LKR 146.9 million  
Investing in Malaysian operation - LKR 505.3 million

It shows that investing in Malaysian operations has comparatively a higher NPV over the local investment. Hence, the same is recommended.

However, the following factors are important and should be considered.

The accuracy of selling price (SP) and variable cost (VC) as the slightest change in their values will have a major impact on the final result.

The exchange rates have been calculated based on the interest rate parity. However, there are many other factors that determine the exchange rate.

It is also important to recognize that his brother's business is also involved in refrigerators. Therefore, it is worthwhile to consider the application of the theory of "comparative advantage" in the context of manufacture of at least some basic components in Sri Lanka rather than in Malaysia and thereby NPV of the Malaysian project could be improved and this will also make his brother happy (a behavioural perspective).

The question of maximizing Charith's wealth also matters. Any project with + NPV would create wealth, but Charith should not blindly follow NPV as the decision criterion. Qualitative factors, and other underlying factors enunciated in the Balanced Score Card and Porters 5 forces model, need due consideration in maximizing wealth .e.g. Entry barriers, industry attractiveness, etc... and if market believes that the project is not worthwhile, risks and costs will be higher. In essence, any project of this nature or magnitude requires recognition of features beyond the projects mere NPV.

<b>Option 01</b>								
	<b>In Rs. Millions</b>							
	<b>Y0</b>	<b>Y1</b>	<b>Y2</b>	<b>Y3</b>	<b>Y4</b>	<b>Y5</b>	<b>Y6</b>	
Investment	(1,200.00)							
Return		192.00	192.00	192.00	192.00	192.00	192.00	
At maturity							1,200.00	
Return at the end of 6th year							120.00	
<b>NCF</b>	<b>(1,200.00)</b>	<b>192.00</b>	<b>192.00</b>	<b>192.00</b>	<b>192.00</b>	<b>192.00</b>	<b>1,512.00</b>	
DCF 14%	1.000	0.877	0.769	0.675	0.592	0.519	0.455	
PV	(1,200.00)	168.38	147.65	129.60	113.66	99.65	687.96	
<b>NPV</b>	<b>146.90</b>							
<b>Option 02</b>								
Malaysian Operations (MLC)								
	<b>Y0</b>	<b>Y1</b>	<b>Y2</b>	<b>Y3</b>	<b>Y4</b>	<b>Y5</b>	<b>Y6</b>	<b>Y7</b>
Units	-	-	6,000.00	10,000.00	12,500.00	12,500.00	12,500.00	
Contribution per unit 1150 (MYR)			1,150.00	1,150.00	1,150.00	1,150.00	1,150.00	
Inflation at 4% p.a	1.00	1.04	1.08	1.12	1.17	1.22	1.27	1.32
	<b>In Millions</b>							
<b>Total Contribution (MYR)</b>	-	-	<b>7.46</b>	<b>12.94</b>	<b>16.82</b>	<b>17.49</b>	<b>18.19</b>	-
Adm,S&D 5%of Tot.Cont			0.37	0.65	0.84	0.87	0.91	
Royalty US \$ 10000p.a (MYR)			0.04	0.04	0.04	0.04	0.04	
Depreciation (MYR)			1.98	1.48	1.11	0.83	0.62	
<b>Total Cost (MYR)</b>			<b>2.39</b>	<b>2.17</b>	<b>1.99</b>	<b>1.74</b>	<b>1.57</b>	-
EBIT (MYR)			5.08	10.77	14.83	15.75	16.62	-
Income tax @ 25% (Working 04)				(1.76)	(3.06)	(3.98)	(4.14)	(4.31)
<b>Profit After Tax (accounting profit)(MYR)</b>			<b>5.08</b>	<b>9.01</b>	<b>11.76</b>	<b>11.76</b>	<b>12.47</b>	<b>(4.31)</b>
<b>Cash profit after tax (Working 04)</b>			<b>7.05</b>	<b>10.49</b>	<b>12.88</b>	<b>12.59</b>	<b>13.10</b>	<b>(4.31)</b>
Cash Outflow: Investments								
Land	(4.40)							
Buildings	(2.65)	(6.70)						
Machinery		(7.90)						
Working Capital (Working 06)		(11.50)	(0.46)	(0.48)	(0.50)	(0.52)	(0.54)	13.99
Realizable Value (Purchase consideration) (Working 05)		-					<b>10.03</b>	
Tax benefit from Machinery (Working 07)			0.49	0.37	0.28	0.21	0.16	0.12
<b>Net Cash Flow (in MYR)</b>	<b>(7.05)</b>	<b>(26.10)</b>	<b>7.09</b>	<b>10.38</b>	<b>12.66</b>	<b>12.28</b>	<b>22.74</b>	<b>9.80</b>
Exchange Rate	36.00	37.04	38.11	39.21	40.34	41.50	42.70	43.93
<b>Net Cash Flows remitted to Sri Lanka</b>	<b>(253.80)</b>	<b>(966.74)</b>	<b>270.07</b>	<b>407.01</b>	<b>510.52</b>	<b>509.75</b>	<b>971.16</b>	<b>430.45</b>

				Sri Lanka In Rs. Millions				
	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Royalty income (Working 02)	-	-	1.42	1.48	1.54	1.60	1.66	-
Operational expenses (Working 03)	-	-	(0.48)	(0.75)	(0.98)	(1.05)	(1.13)	-
Net Cash flow	-	-	0.94	0.73	0.55	0.54	0.53	-
Tax expense (28%)			-	(0.26)	(0.21)	(0.16)	(0.15)	(0.15)
Net Cash flows after tax			0.94	0.47	0.35	0.39	0.38	(0.15)
<b>Cash remitted to SL</b>	<b>(253.80)</b>	<b>(966.74)</b>	<b>270.07</b>	<b>407.01</b>	<b>510.52</b>	<b>509.75</b>	<b>971.16</b>	<b>430.45</b>
Total cash flows	(253.80)	(966.74)	271.01	407.48	510.86	510.14	971.54	430.30
DCF at 15% (Working 08)	1.000	0.870	0.756	0.658	0.572	0.497	0.432	0.376
PV	(253.80)	(841.07)	204.88	268.12	292.21	253.54	419.70	161.79
<b>NPV</b>	<b>505.39</b>							

Basic data & preliminary workings									
		Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Royalty payable	USD	-	-	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	
Exchange rate	MR/US	3.64							
	SLR/US	132.00							
Inflation rate	USA -3%	Malaysia- 4%	SL- 7%						
<b>Working 01</b>									
Royalty cost USD 10,000 p.a									
Ex.rate adjustment		3.64							
Inflation rate 3%	USA	1.00	1.03	1.06	1.09	1.13	1.16	1.19	
Inflation rate 4%	Malaysia	1.00	1.04	1.08	1.12	1.17	1.22	1.27	
			1.01	1.02	1.03	1.04	1.05	1.06	
Ex.rate & Inflation rate adjustment			3.68	3.71	3.75	3.78	3.82	3.86	
<b>Royalty cost(10,000) (In Millions)(MYR)</b>				<b>0.04</b>	<b>0.04</b>	<b>0.04</b>	<b>0.04</b>	<b>0.04</b>	
<b>Working 02</b>									
Year		Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Royalty received (USD) in Sri Lanka				10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	
Inflation- US 3%		1.00	1.03	1.06	1.09	1.13	1.16	1.19	1.23
Inflation- SL 7%		132.00	141.24	151.13	161.71	173.03	185.14	198.10	211.96
Exchange rate		132.00	137.13	142.45	147.98	153.73	159.70	165.90	172.35
<b>Royalty income (Rs. Millions)</b>		-	-	<b>1.42</b>	<b>1.48</b>	<b>1.54</b>	<b>1.60</b>	<b>1.66</b>	-
<b>Working 03</b>									
Administrative & other expenses									
Inflation effect (7%)		1.00	1.07	1.15	1.23	1.31	1.40	1.50	
Administrative expenses at current prices (In Millions)		-	-	0.42	0.61	0.75	0.75	0.75	0.75
<b>Administrative expenses (In Rs. Millions)</b>		-	-	<b>0.48</b>	<b>0.75</b>	<b>0.98</b>	<b>1.05</b>	<b>1.13</b>	-
<b>Working 04 - (In Millions)</b>									
Malaysian operations -(MYR)									
Contribution		-	-	7.46	12.94	16.82	17.49	18.19	-
Administration,selling & distribution				(0.37)	(0.65)	(0.84)	(0.87)	(0.91)	
Royalty cost				(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	
Cash profit before tax				7.05	12.25	15.94	16.58	17.24	-
Income tax at 25%					(1.76)	(3.06)	(3.98)	(4.14)	(4.31)
<b>Cash profit after tax (MYR)</b>				<b>7.05</b>	<b>10.49</b>	<b>12.88</b>	<b>12.59</b>	<b>13.10</b>	<b>(4.31)</b>

<b>Working 05</b>									
Inflation USA		1.00	1.03	1.06	1.09	1.13	1.16	1.19	1.23
Malaysia		3.64	3.79	3.94	4.09	4.26	4.43	4.61	4.79
Exchange rate		3.64	3.68	3.71	3.75	3.78	3.82	3.86	3.89
<b>Purchase consideration (2,600,000*3.86) (MYR)</b>								<b>10.03</b>	<b>Million</b>
<b>Working 06- (In Millions)(MYR)</b>									
Working capital			11.50	11.96	12.44	12.94	13.45	13.99	
Incremental working capital				0.46	0.48	0.50	0.52	0.54	13.99
<b>Working 07- ( In Millions) (MYR)</b>									
Tax allowable depreciation on Machinery									
Machinery			7.90	5.93	4.44	3.33	2.50	1.87	1.41
Depreciation on reducing balance method			1.98	1.48	1.11	0.83	0.62	0.47	0.35
Tax savings 25%				0.49	0.37	0.28	0.21	0.16	0.12
<b>Working 08</b>									
<b>Calculating the Cost of equity</b>									
Rf	0.08								
Risk premium	0.04								
Beta	0.01								
Local investments	0.02								
<b>Ke (For local investments)</b>	<b>0.14</b>								
Foreign investments	0.01								
<b>Ke (For foreign investments)</b>	<b>0.15</b>								

(b) Carrying out a post- completion audit (PCA) could bring many benefits.

1. Feedback on project implementation
2. Identifying lessons to be learned for the future -These lessons may not only help to improve the planning and execution of future investment projects, but may also feed into the strategic planning process.
3. Identifying problems and appropriate solutions so that corrective action may be taken - If the audit is carried out during the outcome mapping period, it may be possible to make changes to the ongoing investment project, and to similar ongoing projects, to improve matters. Where things have gone seriously awry, it may also be possible to abandon an investment project in order to cut future losses. In the given scenario, Charith can replicate his learning even in his brother's business while his project is under way.
4. Exerting discipline in the investment planning and control process - If managers are aware that post-completion audits are to be undertaken, they may take more care when developing initial assumptions and estimates and when making investment decisions. They may also take more care when managing an investment project through to completion.
5. Improving decision-making abilities to successfully modify/ correct project lapses.
6. Comparison of ex-ante and ex- post outcomes. If, for example, it is found that an investment project did not prove to be as profitable as imagined, it may prompt a re-assessment of the plan.
7. If the project in a particular state is found to be “worthless”, consideration to abandon/wait or postpone the project will be worthwhile (real options).
8. Enhancement of organizational learning.

## Answer 02

### Relevant Learning Outcome/s:

2.4.1 Discuss debt-financing methods available (including bank loans, bonds, debentures, securitisation, commercial papers, debt sweeteners (convertibles and warrants), senior vs junior debt and international bonds.

2.4.2 Assess the value (interest yield) of undated bond/irredeemable debt and the value (yield to maturity) of dated bond/ redeemable debt.

(a)

Zero Coupon bond	Redeemable bond
- Issued at discount	- Issued at par/premium
- No coupons	- Regular coupon payments
- Gain is the redemption value at maturity less issue cost	- Gain is the redemption value at maturity less issue cost + coupon.
- Fixed maturity revenue	- Fixed maturity revenue
- Advantages for the issuer	- Advantages for the holder

(b)	Cheques	2.5 billion	75 applications (Rs. 10,000 – Rs. 9.9 million)
	Bank guarantees	<u>0.5 billion</u>	5 applications (Rs. 100 million each)
		<u>3 billion</u>	

Excess cash = (5 – 3) billion = Rs. 2 billion (400 million each among the 5 large institutions.)

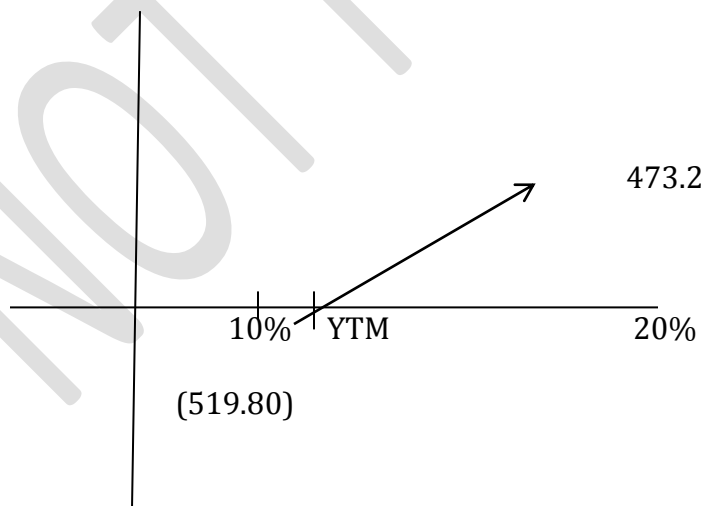
However, since there were only bank institutions guarantees, Viva PLC accepted only 100 million each from the 5 institutions. Thus, there were no physical refunds.

(c)

	In Rs. Million					
	Y0	Y1	Y2	Y3	Y4	Y5
Debenture	3000					(3000)
Placement fee	(15)					
Marketing expenses	(50)					
Interest	-	(420)	(420)	(420)	(420)	(420)
Net cash flows	2935	(420)	(420)	(420)	(420)	(3420)
DCF 10%	1.000	0.909	0.826	0.751	0.683	0.621
PV	2935.00	(381.78)	(346.92)	(315.42)	(286.86)	(2123.82)
<b>NPV</b>	<b>(519.80)</b>					
DCF 20%	1.000	0.833	0.694	0.579	0.482	0.402
PV	2935	(349.86)	(291.48)	(243.18)	(202.44)	(1374.84)
<b>NPV</b>	<b>473.20</b>					

$$\text{IRR} = 0.1 + \frac{(519.80)}{(993.00)} * (20\% - 10\%)$$

$$\text{YTM} = 15.23\%$$



## Commercial paper

**In Rs. Million**

Effective present value

### Method 1

	Y0	Y1	Y2	Y3	Y4	Y5
	3000					(3000)
		(540)	(540)	(540)	(540)	(540)
NCF	3000	(540)	(540)	(540)	(540)	(3540)
DCF 20%	1.000	0.833	0.694	0.579	0.482	0.402
PV	3000.00	(449.82)	(374.76)	(312.66)	(260.28)	(1423.08)
<b>NPV</b>	<b>179.40</b>					

**Effective present value = 293.8 (473.2-179.4)**

### Alternative Method

( By considering the net benefit)

	Y0	Y1	Y2	Y3	Y4	Y5
Debenture	3000					
Placement fee	(15)					
Marketing expenses	(50)					
Settling comm.pa	(3000)					
Interest payment on the debenture		(420)	(420)	(420)	(420)	(420)
Interest savings		540	540	540	540	540
NCF	(65)	120	120	120	120	120
DCF 20%	1.000	0.833	0.694	0.579	0.482	0.402
PV	(65)	99.96	83.28	69.48	57.84	48.24
<b>NPV</b>	<b>293.8</b>					

(d) Rs. 1,000 bond = 40 shares

Conversion value = 40 x 35 = 1,400

Conversion premium = 1,250 - 1,400 = Rs. 150 or (150/1250 x 100%) 12%

Thus, the bondholder of the contracts would get higher value of shares than the bond value Rs. 150 per Rs. 1000 bond. Hence, opt for the conversion of shares.

(e) Investors are always on the lookout for good investment opportunities. Saman feels that an investment in one year fixed deposits in a bank would have been better than investing in the debentures of Viva.

The validity or otherwise of Saman's statement would depend on the following factors or parameters.

Parameter	Bank FD	Unsecured Debentures In Viva	Remarks
Interest	Low	High	But Bank FD for Senior Citizens up to 1 million at 15%
Interest Payment Frequency	3 Months 6 Months 12 Months	12 Months	
Risk/Safety	Less-Depends on Bank's standing	High- being unsecured	
Liquidity	High	Low	
Taxation/WHT	2.5% withholding tax is charged on interest income from any individual.	Commencing from 1 April 2013, Interest income on investments in debentures listed in the Sri Lanka stock exchange are exempt from income tax in Sri Lanka.	But exemptions for Senior Citizens
Maturity	1Year	5Years	
Sensitivity	Low	High	
Bank Borrowing against Security	Yes	Not so easy	

Value at risk (VaR) is a financial tool for measuring the financial risk of an asset, portfolio, or exposure over some specified period of time, measuring in three variables: the potential loss: the probability of loss occurring, and the time frame. It is used to measure and control the level of risk, a firm should undertake in order that risks are not taken beyond the level at which the firm can absorb the losses of a probable worst outcome. However, VaR has limitations and it could result in serious problems when improperly used.

Be that as it may, Saman is a retail individual investor. Retail investor trading is largely driven by sentiment, as opposed to institutional trading which usually relies on professional analyses, tools, and expert opinion, retail investors are said to “trade on noise”, i.e. information that is not based on fundamental facts but on historical information, or attention-grabbing news. Retail investors, like Saman, are especially prone to biases and do not adopt VaR as a tool unlike in the case of the institutional investors, due to insufficient knowledge of VaR analysis, lack of resources to calculate VaR on a regular basis and ignorance in statistical measures.

In essence, Saman will not adopt VaR to reduce risks, as in the case of an institutional investor. He may be right when we consider VaR shocks in the recent past. "The best way to minimize risk is to think.", as Warren Buffett says.

## Answer 03

### Relevant Learning Outcome/s:

1.2.3 Analyse operational leverage, financial leverage, total leverage, and how the impact of business risk (volatility of turnover) can be augmented on profits, EPS and ROE due to leverage.

5.2.6 Advise on regulatory implications and procedures on mergers and acquisitions (Companies Act, Securities Exchange Control regulations and other regulatory bodies).

2.6.3 Assess the impact on WACC from different capital structures (ungeared to geared: impact on WACC and value of the business using the above capital structure theory arguments).

2.6.4 Demonstrate how to derive project specific cost of capital in making investments with different business and financial risk (proxy company- based beta ungears for business risk and re-gears based on proposed capital structure for financial risk is expected).

2.6.2 Calculate “Weighted Average Cost of Capital” (WACC).

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.

5.2.3 Recommend appropriate valuation and terms, taking into account financial and strategic implications for a specific merger or acquisition or divestment.

5.2.4 Evaluate financing methods (including cash offer, share exchange and use of debt financing and earn-out arrangements, merger, acquisition or divestment).

(a)

(i)

#### CALCULATION OF LEVERAGE MEASURES

DFL = Change in EPS/Change in EBIT

	2012	2013	2014	2015
EBIT	241	269	359	470
% of change in EBIT		12%	33%	31%
Profit for EPS calculation (PPE disposal gain removed)	147.57	170.00	242	337
EPS	11.81	13.60	19.35	26.97
% of change in EPS		15%	42%	39%
<b>DFL</b>		<b>1.29</b>	<b>1.27</b>	<b>1.27</b>
<b>DOL = Change in EBIT/Change in Sales</b>				
EBIT	241	269	359	470
%EBIT		12%	33%	31%
%SALES		20%	18%	15%
<b>DOL</b>		<b>0.59</b>	<b>1.85</b>	<b>2.07</b>
<b>DCL = DOL X DFL</b>		<b>0.76</b>	<b>2.35</b>	<b>2.62</b>
Alternatively				
<b>DCL = Change in EPS/Change in Sales</b>		<b>0.76</b>	<b>2.35</b>	<b>2.62</b>

	2012	2013	2014	2015
<b>INCOME STATEMENT</b>				Unaudited
Turnover	2,688	3,225	3,806	4,377
Cost of sales	1,989	2,258	2,626	3,064
<b>Gross Profit</b>	<b>699</b>	<b>967</b>	<b>1,180</b>	<b>1,313</b>
Other income /gains	220	252	8	10
Investment income	4	11	14	32
Distribution Expenses	212	376	456	482
Administrative Expenses	255	335	387	403
<b>EBIT - Simple</b>	<b>456</b>	<b>519</b>	<b>359</b>	<b>470</b>
<b>EBIT - without disposal gains</b>	<b>241</b>	<b>269</b>	<b>359</b>	<b>470</b>
Finance Cost	59	56	52	50
<b>Profit Before Tax</b>	<b>397</b>	<b>463</b>	<b>307</b>	<b>420</b>
Income tax expense	34	43	65	83
<b>Net profit for the Year</b>	<b>363</b>	<b>420</b>	<b>242</b>	<b>337</b>

## CURRENT TREND

Finance leverage is somewhat stable in the last three years irrespective of level of operation as given below.

	2013	2014	2015
<b>DFL</b>	<b>1.29</b>	<b>1.27</b>	<b>1.27</b>

The reason for such stability is given as below.

Average debt maintained for the last couple of years is about 30% of total equity and remained stable. Also the average interest expense for such loan is not significant due to higher profitability levels maintained. In other words the interest cover was satisfactory.

However, the DOL is quite volatile as shown below.

	2012	2013	2014	2015
<b>DOL</b>	<b>0.59</b>	<b>1.85</b>	<b>2.07</b>	

The possible reason for high DOL is the heavy burden on fixed costs incurred by the organisation. As a result when the sales are increased the percentage at which the profitability changes tend to be higher. The reason for higher fixed costs:

- Increase in nonoperational administrative type work force into many areas at higher levels – skilled staff cost is higher
- Investments made in IT infrastructure and ERP systems
- Investments made in PPE
- Increased sales staff including consultants

All these tend to increase the fixed cost. As a result of increasing DOL the DCL has also increased as shown below.

<b>DCL = Change in EPS/Change in Sales</b>	<b>0.76</b>	<b>2.35</b>	<b>2.62</b>
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- (ii) As we can see above, when the sales are increased, the DOL is also increased at a higher rate. In the same manner if sales are decreased the profitability will reduce at a higher rate than sales which will result in a significant “loss situation”. We need to bear in mind that political instability, if at all, will tend to reduce, among other matters, revenue levels as empirical evidences suggest. In other words, the profitability of this company is highly volatile under the current circumstances, and that is why the finance director is concerned in investing in such a company. Thus, the stability of operation is a major concern for them before deciding to invest in the company (reasons already discussed).

If the new investment is used to increase, the plant and machinery to automate the process depreciation will also be another FC factor on top of other fixed costs. Thus, there is logic behind the finance director's statement.

- (b) **The research report finding is incomplete as the retail business is restricted only if the investment value is less than 1 million USD.** The details of the provision are given below.

Permission has been granted by the Controller of Exchange for the issuance of shares by companies incorporated in Sri Lanka to persons resident outside Sri Lanka (non-residents) by notices published in the Government Gazette Notification No. 1232/14 of 19.04.2002 which was subsequently amended by Gazette Notification No 1248/19 of 08.08.2002, Gazette Notification No 1685/2 of 21.12.2010 and Gazette Notification No 1737/9 of 20.12.2011, subject to certain exclusions, limitations and conditions.

A summary of the consolidated Gazette Notifications is given below.

Permission has been granted for the issue and transfer of shares in a company up to 100% of the issued capital of such company, to approved country funds, approved regional funds, corporate bodies incorporated outside Sri Lanka and individuals resident outside Sri Lanka (inclusive of Sri Lankans resident outside Sri Lanka subject to the exclusions, limitations and conditions hereinafter set out).

The Gazette deals with exclusions and limitations under which the permission granted as above shall NOT apply in respect of shares of a company proposing to carry on or carrying on any business where **Retail trade with capital is less than one million US Dollars.**

### **LIMITATIONS**

The permission granted shall be in respect of shares in a company carrying on or proposing to carry on any of the stipulated businesses in the gazette only up to 40% of the issued capital of such company , or if approval has been granted by the Board of Investment in any company , only up to such higher percentage.

- (c)

- (i) WACC is the overall required return on the firm as a whole and, as such, it is often used internally by business enterprises to determine the economic feasibility of opportunities. It is the appropriate discount rate to use for cash flows with risk that is similar to that of the overall firm. When a company wants to finance a project with a risk level that is lower or higher than that of the overall firm divisional and project costs of capital, it should use the relevant cost of capital for the divisions and projects based on the appropriate levels of risks.

Accordingly, the management must determine the project risk as compared to the overall risk of the firm and the discount rate is adjusted based on the riskiness of the project e.g. high risk projects will carry high discount rates

Capital budgeting for a foreign project is more complex than capital budgeting for a domestic project. Some of the reasons for the complexity are:

- Differing inflation rates,
- Foreign exchange rate/risks and
- Intangible factors like political climate.

In conducting capital budgeting for foreign projects, it is important to take into account the **national inflation rate of the foreign country**. This is important because the inflation rate of the country might affect the interest rates, cost of the project and any potential cash inflows/outflows. **Foreign exchange rates** also make capital budgeting for foreign projects complex. When the cost of a project is calculated, it is usually done in the currency of the parent company, which is located in the "home" or domestic country. The numbers are then converted to the currency of the foreign country. Since exchange rates fluctuate and are usually not the same at any given time, calculating the cost and benefits of a project can be very complex.

Intangible factors, like the political and economic climate of the foreign country, add to the complexity of capital budgeting for foreign projects. If the political or economic climate is unstable, it might affect both the cost and cash inflows of the project. Domestic factors are more easily determined since the firm will have a better understanding of the political structure and monetary policy to ensure accurate forecasts;

(ii)

$$\text{Asset beta} = 1.3 * \frac{2}{2+1(1-0.3)}$$

$$\text{Asset beta} = 0.96$$

$$0.96 = \beta_{\text{geared}} * \frac{3.5}{3.5+1(1-0.3)}$$

$$0.96 = \beta_{\text{geared}} * 0.8333333$$

$$\text{Equity beta} = 1.152$$

Ke of LFPL

$$\begin{aligned} K_e &= R_f + \beta (R_m - R_f) \\ K_e &= 0.08 + 1.152(0.15 - 0.08) \\ K_e &= 0.1604 \end{aligned}$$

$$\begin{aligned} WACC &= 0.1604 \times 0.71 + 0.09(1 - 0.3) \times 0.29 \\ \mathbf{WACC} &= \mathbf{13.21\%} \end{aligned}$$

(iii)

PSP's domestic cost of equity

CAPM Model

$$6\% + 1.5(13\% - 6\%) = 16.5\%$$

PSP Cost of equity = 16.5%

$$WACC = 16.5\% \times 60\% + 8\% \times (1 - 35\%) \times 40\% = 11.98\%$$

Add - Additional margin as per company policy 6%

$$\mathbf{Final\ WACC = 11.98\% + 6\% = 17.98\%}$$

(d)

- (i) The balance sheet at any given point even after making adjustments for fair value differences will not display the earning possibilities into the future. For example there will be two similar entities with the same balance sheet structure but the growth rate of these two businesses could be significantly different. In that event the business valuation would be different.

There are various methods for business valuation. e.g.

- Asset approach
- Income approach
- Market approach

#### Asset approach to valuing a business

The Asset approach method seeks to determine the "business value" based on the value of its assets. The idea is to determine the business value of the business entities based on the fair market value of its assets less its liabilities.

**Net Asset Value:** The value is based on fair market value (FMV) of the firm's assets on a going concern basis.

- Strengths
  - Data required to perform the valuation are usually easily available.
  - Allows for adjustments (up and down) in estimating FMV.
  - Suitable for firms with heavy tangible investments (e.g. equipment, land).
  - Helpful when the firm's future is in question or where the firm has a brief or volatile earnings record.
- Weaknesses
  - Can understate the value of intangible assets such as copyrights or goodwill.
  - Does not take into account future changes (up or down) in sales or income. i.e. business potential.
  - Balance sheet may not accurately reflect all assets.

#### Income approach to valuing a business

The Income Approach is one of the three approaches (along with the Market Approach and Asset Approach) used to estimate enterprise and equity value. The income approach seeks to identify the future economic benefits to be generated by an entity and to compare them with a required rate of return. This numerator/denominator relationship can be applied through a number of different methods such as:

1. Discounted Cash Flows
2. Capitalized Cash Flows
3. Excess Cash Flows

- Strengths
  - Takes into account both tangible and intangible assets.
  - Includes projected future values of income resulting from goodwill.
- Weaknesses
  - Relies on estimate of period for which goodwill is expected to last, which is often difficult to assess.
  - Projections based on this value can be unreliable.
  - May understate future revenues or value of intangible assets.

#### Market-based business valuation

The Market approach based valuation methods establish the business value in comparison to historic sales involving similar businesses. The business valuation methods under the market approach are typically used in professional business appraisals.

- Strengths
  - Easy to compute and understand – These measures (P/E, P/B, and E/P) are some of the most widely used metrics. The math is easy to compute and the concept is intuitive. There is a risk that these measures are overly simplistic though.
- Weaknesses
  - May be difficult to compare companies across multiples without significant adjustments – Companies in different sectors and industries may vary greatly in their fundamentals, i.e. debt burden, payout ratio, growth and margin characteristics. This makes it inappropriate to compare many companies directly without some kind of adjustment.

- Biggest disadvantage is multiples build in systematic errors- Even if one stock is extremely under-valued compared to another, if the general market or the sector is in an over-valued state then the asset may not truly be a good investment.
- (ii) Agree with his statement that the valuation should recognize future prospects more than just looking at past track records because good past track records will not necessarily mean that future will also be successful. Therefore, more focus should be placed on future earnings that would be a factor in the goodwill as well.

The value placed by Sureka is Rs. 3150 million. While agreeing with Mr. Partha Sarathi's view point that "the investor of today does not profit from yesterday's growth", we are not in a position to comment on the value placed by Ms. Sureka's as the balance sheet value does not correctly represent future earnings.

In order to assess the future earnings, we may have to evaluate the value of business based on market based or revenue based valuation methods as well as DCF method, P/E based valuation and then compare with Ms. Sureka's value given. The given information is not adequate for this matter.

(iii)

Rs. Mn

**Historic basis**

Total Assets	2981
Less: Total liabilities	(1251)
<b>Value</b>	<b>1730</b>

**Replacement basis**

Net book value	1730
Add:	
PPE	920
RM,FG	375
	1295
Less:	
PPE (NBV)	754
RM,FG (NBV)	337
	(1091)
<b>Value</b>	<b>1934</b>

<b>Realisable basis</b>	<b>Rs. Mn</b>
Net book value	1730

Add:

PPE	590	
RM,FG	400	990

Less:

PPE (NBV)	754	
RM,FG (NBV)	337	(1091)

Bad debts	(114)
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<b>Value</b>	<b>1515</b>
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100%

Maximum price for all equity shares (Rs.mn)	1934
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Minimum price for all equity shares (Rs.mn)	1515
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Maximum price for 40% equity = Rs. 773.6 million

Minimum price for 40% equity = Rs. 606 million

(e)

- Settling in cash

**Rs.mn**

Total assets	541
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Total liabilities	(379)
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Net assets	162
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Net assets	162
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GW	250
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Value of NFPL	412
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<b>Settling in cash (60%)</b>	<b>247.2</b>
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	Rs. mn
<b>Alternate method</b>	
Total assets	541
Debt 70%	378.7
Equity 30%	162.3
Equity 30%	162.3
GW	250
Value of NFPL	412.3
<b>Settling in cash</b>	<b>247.4</b>

$$\text{Therefore, Value per share} = \frac{412.3}{10\text{mn}} = \text{Rs. 41.23 per share}$$

Value of LFPL based on the valuation in d (iii)	1934
Mr. Partha - cash	500
	2434
Mr. Partha % equity	20.54
Sureka's stake	79.46
Cash remaining (Rs. 500 mn- Rs. 247.2 mn)	252.8

- **Share swap**

$$\begin{aligned} \text{Shares to be issued to Mr. Partha} &= \frac{125 \text{ mn shares}}{0.7946} * 0.2054 \\ &= 32.3119 \text{ mn shares} \end{aligned}$$

Value ( Rs. 1934 mn + Rs. 500 mn)	Rs. 2,434 million
No. of shares ( 125 mn + 32.3119 mn)	157.31 million
Value per share of LFPL	Rs. 15.47
Shares to be issued to NFPL ( 247.2 mn/Rs.15.47)	15.98 million

For 6 million shares (10mn shares \* 0.6) of NFPL 15.98 million shares of LFPL should be issued.

<b>Cash remaining</b>	<b>Rs.500mn</b>
No. of shares ( 125 mn+ 32.31 mn + 15.98 mn)	173.29

<b>Stake is now diluted ( 125mn/173.29mn)</b>	<b>0.72</b>
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- **Combination of cash and share swap**

Cash ( Rs. 247.2 mn * 0.5)	= Rs.123.6 mn
No. of shares to be issued by LFPL ( Rs. 123.6mn/Rs. 15.47)	= 7.9884 mn
No. of shares to be issued by NFPL (6mn shares * 0.5)	= 3 mn

Cash remaining ( Rs. 500mn- Rs. 123.6mn)	= Rs. 376.4 mn
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Total number of shares (125mn + 32.31mn + 7.99mn)	=165.3mn
Sureka's stake ( 125mn/165.3 mn)	= 0.76

Hybrid option remains feasible, and has high cash and less dilution of ownership for Sureka.

E.g. If cash only; what is the balance available and is it adequate to implement the original plan?

Furthermore, in a cash deal, the roles of the two parties are clear-cut, and the exchange of money for shares completes a simple transfer of ownership. But in an exchange of shares, it becomes far less clear “who the buyer is” and “who is the seller”. In some cases, the shareholders of the acquired company can end up owning most of the company that bought their shares. Companies that pay for their acquisitions with “stocks” share both the value and the risks of the transaction with the shareholders of the company they acquire. The decision to use “stocks” instead of cash can also affect shareholder returns. In studies covering more than 1,200 major deals, researchers have consistently found that, at the time of announcement, shareholders of acquiring companies fare worse in stock transactions than they do in cash transactions. Furthermore, the findings show that early performance differences between cash and stock transactions become greater—much greater—over time.

It is also important to recognize the effects of dilution in share swaps.

Another factor that needs to be considered is the project correlation, co-variance, etc. When funds are invested in Northern Foods (Pvt) Ltd, Sureka's business invests on the same line of business. There are advantages and disadvantages of such a scheme and evaluation of the outcomes of any selected option needs should be considered.

(Total: 50 marks)

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