

CA



THE INSTITUTE OF
CHARTERED ACCOUNTANTS
OF SRI LANKA

SUGGESTED SOLUTIONS

21404 – Strategic Financial Management

CA Professional (Strategic Level II) Examination
December 2014

THE INSTITUTE OF CHARTERED ACCOUNTANTS OF SRI LANKA

Answer No. 01

(a) Figures in US\$ millions

Income Statement for the year ended 30 June 2014

	<u>US\$ million</u>
Sales	10.0
Less: Cost of sales	<u>(8.0)</u>
Gross profit	2.0
Less: Admin & selling expenses	<u>(0.5)</u>
EBITDA	1.50
Interest	<u>(0.17)</u>
	1.33
Depreciation	<u>(0.50)</u>
Profit before tax	0.83
Tax @ 40%	<u>(0.33)</u>
Profit after tax	<u>0.50</u>

Statement of financial position as at 30 June 2014

	<u>US \$ million</u>
Tangible fixed assets – Plant & machinery at cost	5.0
Accumulated depreciation	<u>(2.5)</u>
	<u>2.5</u>
Working capital - Inventory	2.0
Debtors	1.67
Cash	<u>0.33</u>
	<u>4.0</u>
Total Assets	<u>6.5</u>
Funded by	
Stated Capital	1.0
Retained Earnings b/f	0.33
Profits during the year	<u>0.50</u>
	1.83
Shareholder Loan	4.00
Creditors	<u>0.67</u>
	<u>6.50</u>

(b)	(i)	<u>Capital Structure</u>			
		Pre	<u>Rs. million</u>		Post
		Equity	1.83		Equity
		Debt	<u>4.00</u>		Debt
			<u>5.83</u>		
		<u>Shareholders Structure</u>			
		David	0.2		David
		Franklyn	0.2		0.2 (200,000 shares)
		David's wife	0.2		Franklyn
		Franklyn's wife	0.2		0.2 (200,000 shares)
		Anne	<u>0.2</u>		Master Craft
			<u>1mn</u>		0.6 (600,000 shares)
					<u>1mn</u>

(ii) Cash outlay = $(3 \times 1.83 + 3 \times 0.5) \times 60\% + 4 \text{ mn}$
= US\$ 8.194 million

(c) In traditional business valuation, attention is mostly towards the quality of the tangible asset base e.g. land & building, plant & machinery, working capital etc.

However, these tangible assets would only provide an indicative valuation; as there are other factors such as brands, staff & management expertise, goodwill, patents, which could sometimes be more valuable, and the ventures ability to earn which has share valuation profits. Therefore, one needs to value both tangible and intangible assets.

(Total: 20 marks)

General Comments

Candidates earned high marks on this question. Some earned 18 - 20 marks.

Specific Comments

Part (a) Most of the candidates earned full marks for this section. However some failed to understand the total share capital as Rs. 1 Mn. They have noted share capital as Rs. 0.2 Mn or Rs 0.4 Mn. Some were unable to calculate EBITDA and interest cost. As the question relates to very basic accounting, this may be due to poor understanding.

Part (b) (i) The Question tests four sub areas. I.e. to prepare pre and post capital and shareholder structures. Candidates were unable to understand the question and as a result answers were very vague. Many candidates failed to include all components of capital and most of them ignore retain earnings. Some ignored the debt component.

Many candidates considered, value arrived under business valuation as post equity value. Considerable numbers of candidates were unable to identify post acquisition shareholders structure.

Part (b)(ii) Most of the candidates ignored 60% and considered, the total business value as the cash outlay.

Part (c) Candidates interpreted this statement mainly in two ways. That is with relevant to valuation methods and on importance of considering intangible assets. Some covered both concerns in their answer.

Answer No. 02

- (a) The Head of Strategic Finance is of the view that the company will not survive due to the fact that the gearing ratio is above the pre-set target. In the event the gearing ratio is above 100% at the end of 4th year, SBC bank has the right to call the loan in full. Obviously, the company has no adequate cash to settle the loan. So the bank will acquire company properties including assets leading to dissolution of the company.

Independent view point – the Head of Strategic Finance’s opinion is simply based on the calculations and the loan agreement, and it can be argued on this basis that the company is in a good position to negotiate with the bank on the solid performance expected for the first 4 years. Year 1 gearing was 650% and the company was able to bring it down to 144% in just 4 years. When we really look at Year 5, the gearing will ideally come down even 100%. Therefore most likely the negotiations should be positive. Thus, the company can negotiate with the bank in advance before signing the loan agreement that says gearing ratio will be met only at the end of the 5th year instead of taking a chance.

<u>Equity composition</u>	<u>Rs. million</u>	
Total selling price of the business	<u>4,500</u>	
Financing methods		
A Initial capital by promoters	300	
B Debentures	60	Note 1
C Loan	2,700	
D VC	<u>1,440</u>	
	<u>4,500</u>	

Note 1 - Amount of debentures

Promoters equity value	300
Debentures (20% of equity)	60

Note 2 - Starting gearing position

Equity	300	
Debt	4,200	
Gearing	1400%	Too high

Note 3 - End of Year 4 Gearing

Rs. '000

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Total sales revenue	2,983,200					
Salaries and wages	686,400					
Consumables	501,600					
OH allocations	-					
Other expenses	462,000					
Interest expenses	-					
PBT	1,333,200	1,433,190	1,540,679	1,656,230	1,780,447	1,913,981
Outsource cost		400,000	400,000	400,000	400,000	400,000
Debenture loan interest		4,800	4,800	4,800 *	-	-
Term loan interest		351,000	351,000	351,000	351,000	351,000
Venture capital loan interest		<u>259,200</u>	<u>207,360</u>	<u>155,520</u>	<u>103,680</u>	<u>51,840</u> *
Profit for the year before tax		418,190	577,519	744,910	925,767	1,111,141
Tax 28%		<u>(117,093)</u>	<u>(161,705)</u>	<u>(208,575)</u>	<u>(259,215)</u>	<u>(311,120)</u>
Profit after tax		301,097	415,813	536,335	666,552	800,021
Dividends		<u>(30,000)</u>	<u>(30,000)</u>	<u>(30,000)</u>	<u>(36,000)</u>	<u>(36,000)</u>
Net earnings		271,097	385,813	506,335	630,552	764,021
Retained earnings			<u>271,097</u>	<u>656,910</u>	<u>1,163,245</u>	<u>1,793,797</u>
C/f		271,097	656,910	1,163,245	1,793,797	2,557,818

* The answer depends on the year of conversion

Rs. '000

Capital and Reserves	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Retained earnings		271,097	656,910	1,163,245	1,793,797	2,557,818
Stated capital - Initial		300,000	300,000	300,000	300,000	300,000
Stated capital - Debenture converted		=	=	=	<u>60,000</u>	<u>60,000</u>
		<u>571,097</u>	<u>956,910</u>	<u>1,463,245</u>	<u>2,153,797</u>	<u>2,917,818</u>
Debt						
Loan		2,700,000	2,700,000	2,700,000	2,700,000	2,700,000
Debentures		60,000	60,000	60,000	-	-
VC		<u>1,152,000</u>	<u>864,000</u>	<u>576,000</u>	<u>288,000</u>	=
		<u>3,912,000</u>	<u>3,624,000</u>	<u>3,336,000</u>	<u>2,988,000</u>	<u>2,700,000</u>
Debt to equity ratio		685%	379%	228%	138%	93%

Rs. '000

Cash Flow	Year 1	Year 2	Year 3	Year 4	Year 5
Net profit	271,097	385,813	506,335	630,552	764,021
Repay loan to VC	<u>(288,000)</u>	<u>(288,000)</u>	<u>(288,000)</u>	<u>(288,000)</u>	<u>(288,000)</u>
Net cash flow	<u>(16,903)</u>	<u>97,813</u>	<u>218,335</u>	<u>342,552</u>	<u>476,021</u>

Assumed tax payable on the current year basis

Answer if the warrants are executed

VCC loan opening balance	1,440
Number of blocks	96
Number of shares to be issues (10 for each block)	960
The total value of convertible shares (Rs. 132 per share)	Rs. 126,720

The head of finance has expressed concerns re:

- (i) Survival of business after Year 4
- (ii) Paying dividends

The income statement indicates net income is positive throughout Y1 – Y5 and the resulting of cash flow statements, assuming tax is paid on current year basis, is also positive from Y1 onwards subject to payment of dividends in Y1.

Furthermore, the cash situation will change depending on the conversion of 8% convertible debentures exercising of warrants.

With regard to payment of dividend, the provision relating to the solvency test in the Companies Act of 2007 needs to be considered.

As regards the going concern basis, the director may have to give recognition to (among other matters) the provisions of corporate governance stated in ICASL/SEC publications.

Note 1:

- (i) It is assumed that the debentures will be converted with ordinary shares at the end of the 3rd year at Rs. 100 per share and if such a conversion takes place SBC requirement 1:1 at the end of the 4th year will not be fulfilled.
- (ii) Conversion of warrants too has an impact on the financial statements of the company. It is noted that the option to convert share warrants rests with the VCC (Y3 – Y5), and the resultant effect depends on the time of option exercising. It is noted that the conversion of warrants even in the Y3, will fail to meet the SBC condition of D/E 1:1 stipulated in the loan agreement.

Note: The above calculated warrant execution option is insignificant to consider for the option and the students may consider to ignore the adjustment. This can be accepted as a reasonable assumption and no marks will be deducted for doing so

- (b) Given below are the areas that the management should consider before signing any agreements with debt providers with reference to the situation.
 - Avoiding undue influence in decision making due to higher leverage through the agreement.
 - Careful assessment of the ability to bring down the leverage to 100% within 4 years and in the event there is uncertainty, negotiate for a feasible target. In the above calculations, 5 years could be a good safe number to negotiate.
 - Repayment schedule - as per the loan above, the total amount should be paid in full at maturity. The possibility of extending the repayment terms should be negotiated at the beginning.
 - The possibility of raising new equity without losing control in the event the debt ratio is higher than expected.
 - The accuracy of revenue/cost projections.
 - The interest rate movement in the future.
 - Possibility of alternative debt providers in the event the current debt providers want to call loans on unfulfilled agreement clauses

(c) (i) **NOPAT**

The total expected results of the 2 de-merged companies viz, Sethsevana Medical Hospital (Pvt) Ltd (SMH) and Sethsevana Diagnostic Services (Pvt.) Ltd (SDS) are less than that of the original parent company Sethsevana Hospitals (Pvt.) Ltd (SH), and this clearly indicates that the synergy of pooling resources will be lost with the proposed demerger.

(ii) **EVA**

The expected results indicate:

(i) $EVA_{SMH} > EVA_{SH}$

(ii) $EVA_{SDS} < EVA_{SH}$

Also EVA_{SMH} is positive whereas EVA_{SDS} is negative (i.e. capital will not be properly used).

The answer should also deal with:

$$EVA = NOPAT - (WACC \times \text{capital employed})$$

Debt equity ratio too has a bearing on EVA.

(iii) **ROCE**

ROCE is a measure of the returns that a business will achieve from capital employed.

$$ROCE = \frac{EBIT}{\text{Capital Employed}}$$

$$ROCE_{SMH} > ROCE_{SH}$$

This clearly indicates that $ROCE_{SDS}$, being low, the potential earnings power of the composite company has eclipsed.

(iv) **WACC**

The WACC of the demerged business units are almost identical to that of the combined business. This is expected as the distribution of shares has been 1:1 and the R_d of the all 3 companies is the same; R_e is also somewhat similar.

(Total: 20 marks)

General comments

The Question is to evaluate two business assignments on business restructuring. A majority of candidates understood the threat on going concern on 1st assignment, due to leverage. But had no idea, how to derive the final solution. Average marks earned around 10.

Specific comments

Assignment 1

Part (a) Candidates were unclear whether year wise calculations are required as solvency test had to be done only in year 4. Therefore they directly calculated 4th year figures. Few students misunderstood, the proposed financial schemes suggested by the promoters as 3 separate proposals.

The Majority of the candidates did not recognise the requirement of profitability and cash flow projections, to calculate equity and debt values. Some completely ignored the impact of retain earnings. Some compared equity and loan balance without projecting financials.

Few candidates considered debenture conversion in year 3, as a cash generating activity. Only few candidates correctly identified venture capital funding requirement as Rupees 1440 M. As a result, they ended up with wrong interest calculation and as well as value of share option after 2nd year. Many candidates calculated interest on VCC loan, on equal installment basis even though it has to be on equal capital installments. Many ignored the share option calculation of VCC.

Part (b) Even though, answer should be based on the financial performance worked on (a) above, most of the answers submitted on general terms. With some specifically linking the answer to part (a).

Part (c) There were candidates, who misunderstood the concept of demerger according to their interpretation. Average number of candidates had not properly evaluated the given scenarios. Some had explained the theory behind each concept.

It was observed that most of the candidates lack of knowledge on the ratios and the factors behind them. Only very few demonstrated their in depth knowledge of the real meaning of the ratios which some been tested requisite option.

Answer No. 03

(a)

There are two ways that the company can raise equity funds.

- ✓ Reinvestment of retained earnings
- ✓ Issue of new shares

Reinvestment

This is the easiest way of raising equity funds. It can avoid the administration hassle of making a share issue. Tax paying investors would prefer this method as it would build up their wealth without additional tax payments which they would have paid on dividends. However, the cost of retained earnings is higher than the cost of debt as owners would need more return for the risk that they undertake. Therefore it is always needed to see whether the return from the project can match the required return of investors. Also bear in mind that retained earnings always would not mean that the RE is available in cash for them to invest. If that is the case, RE method would be a problem.

Issue of shares

If the RE does not meet the requirement as explained above, the issue of shares would be the solution. The share issue price is a matter that they should pay close attention to as there is a current market price for shares. Therefore, a careful assessment of the company's current value and the total benefit from the proposed project should be considered before deciding the price.

Borrowing

If the options discussed above (RE and Equity) would have problems, the next option is to go with borrowings. Some of the factors to consider are as below.

- ✓ The repayment time horizon should match the expected cash flows to avoid any cash deficits
- ✓ This method would not affect the controlling interest of the company
- ✓ The weighted average cost of capital would come down as the debt would be cheaper than cost of equity
- ✓ Interest payment is allowable for tax purposes

Control

The controlling interest would be an issue if all the new shares are bought by outside parties as the business family currently holds 51%. Therefore the new issue needs to be carefully managed with the long term intentions of the company.

(b) **Offer made by GLS**

	Rs. million	
Company's current earnings	600	
Less: tax	<u>(168)</u>	
	432 →	a
Post cost of capital 12% (unlevered)	12% →	b
Present value (a/b)	3,600	
NPV of the new project panned	<u>818</u>	
Total value of the business	<u>4,418</u>	

This assumes a zero growth (100% paid as dividends)

This is much higher than the price offered by GLS. Therefore should not accept the offer.

New issue

The new issue would be insignificant considering the value of equity.

- ✓ The value of the new business would go up by Rs. 818 million and end up at Rs. 4,418 million.
- ✓ The share price should be decided carefully.
- ✓ The share price and the number of shares to be issued would have an impact on the existing shareholders in terms of their wealth.
- ✓ The new share issue will not change the value of business which will remain at Rs. 4,418 million.
- ✓ However the controlling interest of the business would change after the new share issue.

Debt

If debt is introduced the tax shield effect would come in, adding up another approximately Rs. 60 million.

	Rs. million
Additional capital being issued	<u>660.00</u>
Interest 9%	<u>59.40</u>
Tax shield (28%)	<u>16.63</u>

This will last for 5 years

		Discounting factor	12%
Year 1	16.63	0.8929	14.85
Year 2	16.63	0.7972	13.26
Year 3	16.63	0.7118	11.84
Year 4	16.63	0.6355	10.57
Year 5	16.63	0.5674	<u>9.44</u>
			<u><u>59.96</u></u>

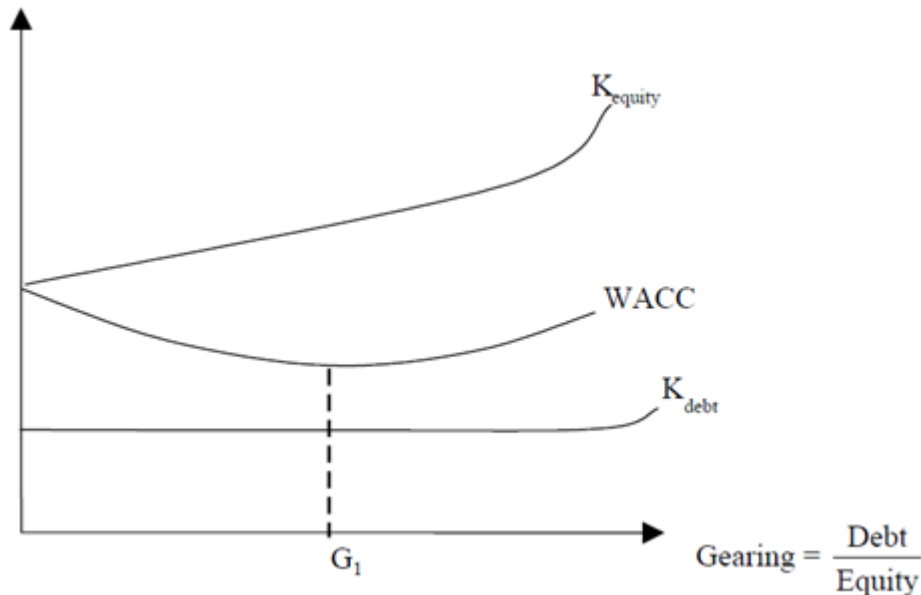
Revised calculation

	Rs. million	
Company's current earnings	600	
Less Tax	(168)	
	432	→ a
Post cost of capital 9% (unlevered)	12%	→ b
Present value (a/b)	3,600	
The NPV of the new project planned	818	
Total Value of the business	<u>4,418.00</u>	
Debt tax shield	<u>59.96</u>	
New business value	<u><u>4,477.96</u></u>	

With the introduction of new debt the total value of the business will go up by Rs. 60 million approximately. (1 mark)

NOTE – If the students have considered the given project as fully debt finance and discounted at cost of debt can also be considered as correct for part (iii) of the question, provided adjusted accordingly for the tax shield benefit.

- (c) The behavior of WACC is “U” shaped as more and more debt is introduced to the capital structure.



The reason behind U shape is:

- Cost of debt remains constant to a certain level and then starts increasing
- The cost of equity keeps on increasing as more and more debt is added

The result of different behavior of cost of debt and cost of equity is a U shape.

The cost of equity keeps on increasing as the company would be exposed to higher financial risks as new debt comes into the structure and increase the scale of business. Similarly, debt providers expect more return to compensate the risk arising from a highly levered situation after a certain point of gearing.

It is important for the management to understand that the current capital structure of the company is not optimal. They would need to introduce debt in order to bring down the WACC. As a result, the total value of business will go up i.e. discounted future cash flows at a lower rate compared to an unlevered position.

Also, the controlling interest of 51% can be maintained as the increasing debt will not have implications on the voting power in the business.

(d) A listed entity on the main board shall maintain:

- a minimum public holding of 20% of its total listed ordinary voting shares in the hands of a minimum of 750 shareholders, **OR**
- a market capitalisation of Rs. 5 billion of its public holding in the hands of a minimum of 500 public shareholders while maintaining a minimum public holding of 10%. (1 mark)

A listed entity on the Dirisavi Board shall maintain a minimum public holding of its total listed shares in the hands of a minimum of 200 public shareholders.

Market capitalisation of Rs. 5 billion will lead to over-capitalisation of JWSL. The ruling set could lead to dilution of EPS, liquidity of shares, pricing of shares etc. when compared with its capital requirement. It needs less than Rs. 3 billion of capital. Even though an IPO leaves room to raise capital for future investments, it is a costly exercise, and susceptible for future take-overs. Holding shares with a large number of investors would lead to threat to privacy.

The chances for a hostile takeover would increase with listing of a company in a stock exchange. The situation here is leading to the same as UK based company is desperate to take the control. This could be done in many ways. E.g. they can go for this indirect way. The point here is to understand is that a listed company is more vulnerable for hostile takeovers than an unlisted company (1 mark). Any decision to go ahead with the proposal/decision also requires the approval of the shareholder at an extra ordinary meeting.

(Total: 20 marks)

Specific comments

Part (a) This part answered to a satisfactory level. However some candidates not understood the fact that the retained earning always would not be available to distribute in cash, for company to reinvest. Some candidates wrote vague factors such as tax implications of issue, concessionary rate of tax etc. Some elaborate the shareholders preference of shares and marketability. Most of the candidates not considered borrowing option.

Part (b) In action 1, most have failed to understand the question, and all three options were not evaluated. As a result answers were very vague. Some have just explained without giving any calculations. Majority has calculated PV of new project without understanding that, it is Rupees 818 Mn. Some rediscounted the estimated increase value of Rupees 818 Mn. Most of the candidate did not consider the Rupees 818Mn as the value increase of the company.

In action 2, most of the candidates not mentioned about the losing of controlling interest and the important fact that the value of the business is not change and remain at Rupees 4,418m. Some considered, buy back option value of Rs 3,300 Mn and Rs 818 Mn as the market value of the company.

In action 3, most of the candidates did not consider the tax effect of the debt infusion of Rupees 660Mn. Majority have not considered the PV of the tax shield of geared company and unable take PV of new project.

Some candidates considered 51% of company value and compared GLS offer. This was due to misunderstanding of the question. Majority had done unnecessary calculations such as preparation of loan schedule, WACC calculation, 51% of PV etc.

Part (c) Most of the candidates explained the typical behaviour of MM theory. However unable to discussed the reason behind “U” shape. Some had calculated WACC without explaining the reasons for the curve shape. Candidates not identify the fact that, current capital structure is not optimal. Only few candidates understood that controlling interest of 51% can be maintained and there is no dilution of ownership.

Part (d) It was evident that the question had been not understood by the candidates. Some have explained method of IPO without understanding what was ask in the question. Lack of knowledge about SEC ruling and impact on it made the question difficult. The question had been tested previously as well clearly indicating that the knowledge of the students on aspects seems to be poor.

Answer No. 04

$$\begin{aligned}
\text{Cost of equity} &= r_f + \beta (r_m - r_f) \\
&= 6\% + 1.5 (12\% - 6\%) \\
&= 15\%
\end{aligned}$$

Project 1 (Wind Power Project)

	USA (5%) – US\$	Sri Lanka (6%) – Rs.	Exchange Rate
	1	130	
Y1	1.05	137.8	131.238
Y2	1.1025	146.068	132.488
Y3	1.1576	154.832	133.753
Y4	1.2155	164.122	135.024
Y5	1.2763	173.969	136.307

Amounts in US\$/Rs millions	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue (US\$)	125		100			
Exchange rate	130		132.488			
Revenue (Rs.)	16,250		13,249	6,000	6,000	6,000
Investment	(15,000)					
Operating costs		(6,500)	(4,500)	(2,750)	(2,750)	(2,750)
Opportunity cost		(5,325)	(4,425)			
	1,250	(11,825)	4,324	3,250	3,250	3,250
Discount factor (20%)	1	0.8333	0.6944			
Discount factor (15%)				0.6575	0.5717	0.4971
Present value	1,250	(9,854)	3,003	2,137	1,858	1,616

Net present value - Rs. 10 million**Project 2 (Hydro Power Project)**

	South Africa (10%) – ZAR	Sri Lanka (6%) – Rs.	Exchange Rate
	1	12	
Y1	1.1	12.72	11.5636
Y2	1.21	13.4832	11.1431
Y3	1.331	14.2921	10.7379
Y4	1.4641	15.1496	10.3474

Amounts in ZAR/ Rs millions	Year 0	Year 1	Year 2	Year 3	Year 4
Revenue (ZAR)		500	500	500	500
Exchange rate		11.5636	11.1431	10.7379	10.3474
Revenue (Rs.)		5,782	5,572	5,369	5,174
Investment	(5,400)				
Operating costs		(3,950)	(3,950)	(3,950)	(3,950)
Transfer					500
	(5,400)	1,832	1,622	1,419	1,724
Discount factor (15%)	1	0.8696	0.7561	0.6575	0.5718
Present value	(5,400)	1,593	1,226	933	986

Net present value – (Rs. 662) million

The NPV calculations above take in to account of exchange rate risks. Based on the calculations, the company should choose Project 1 as it has a positive NPV (when compared to Project 2 which has a negative NPV).

(b) The company has discounted the projects as below:

High risk projects	Cost of equity + 5%
Medium risk projects	Cost of equity + 2.5%
Medium risk projects	Cost of equity

This incorporates different risks into evaluation. For example low risk projects are discounted at 15% whereas high risk projects are discounted at 20%. As a result a risky project would needs higher returns for that to be acceptable.

Alternative methods available:

- Sensitivity analysis
- Certainty equivalent approach
- Probability of estimated cash flows method'
- Simulation methods
- Payback
- Decision tree

General Comment

The candidates, who studied the topic well were able to gain almost all the marks of the question. (20 -24 marks). However many candidate were not able to reach this easily attainable level of performance. On the other hand there were number of candidates who failed to score at least 10 marks for this part (a). Poor performance could be due to lack of theoretical knowledge of the subject matter, failure to apply theoretical knowledge in to a practical situation and also due to the errors made in calculations. Also noted that candidates are answering the questions, without reading it properly.

Specific Comments

Part (a) Most of the candidates calculated cost of equity and forward exchange rate using CAPM and PPP, even though certain calculations were wrong due to the application of inappropriate risk free rate and market rate of return. But some did not know how to calculate cost of equity capital and the forward exchange rate using PPP. They directly used the exchange rate for all forex conversions. Errors made in calculating exchange rates (USA/SL, ZAR/SL).some mixed up numerator and denominator. Some adjusted cost and revenue for inflation. But it is not required as the exchange rate have already been discount for inflation. At least 40% of the candidates have not arrived at the correct revenue figure of USD 100 in the year 2 for the wind project (1st project). Some not considered the opportunity cost. Some candidates used incorrect discount factors without considering risk profile. Certain candidates structured the answer by considering period ranges (ie. Year 1 - 2, year 2 - 5) and then discounting them, using cumulative discount factors. However they could have earned more marks by preparing it in individual years. (by avoiding mistakes). Also candidates were unable to understand the concept of retention. As a result most considered 10% retention in cash flow evaluation. But as per the question, it should be reserved as a provision for quality related claims.

Asset transfer value of LKR 500Mn of the Hydro project (2nd project) had been correctly computed by fair number of scandidates. Even though a retention payment is not required, some candidates considered retention of 10% revenue in this project as well.

Part (b) On an average, performance of the candidates were not good as part (a). Majority of the candidates answered only one section of the question. Though the asswer for the 1st section, given in the question itself, candidates were unable to answer well even for that part. Some candidates were advising the company on what should be done. But the question is on what company has done.

For the 2nd section, most of the candidates have not properly understood the expectation of the examiner. About 50% of the candidates listed the techniques of project evaluations, instead of alternative methods of risk management.

Answer No. 05

(a) **Main factors affecting price of gold**

The price of gold is determined by several factors. It is an important commodity in certain products such as jewellery. However it also seen as an important way to invest wealth, especially in times of economic uncertainty.

The world consumption of new gold produced is about 50% in jewellery, 40% in investments, and 10% in industry (excellent as conductor and resists corrosion).

Demand for consumer goods

Markets like India have strong demand for using gold in jewellery. Economic growth in India increases disposable income and therefore demand for gold. As gold is a luxury good (income elasticity of demand > 1) then a rise in income in India could lead to a bigger % demand for gold.

Investment

Gold is seen as desirable element in an investment portfolio. Gold will hold its value even during inflation. At various times, investment trusts and individuals will have a greater demand for saving their wealth in the form of gold. This can lead to higher demand for gold to store wealth. This investment demand is the primary factor behind the increase in price of gold between 2006 and 2011.

Inflation prospects

With inflation of 0%, money retains its value. However, if inflation increases to 20%, then money (notes and coins) will reduce in value. If inflation is very high, then money can soon lose all its value. Therefore in periods of high inflation, people will seek to switch out of cash and into physical assets which retain their value. The most important inflation proof investment is seen as gold.

Note: it also depends on the real interest rate. If inflation is 6%, but interest rate is 8%, you can still protect the value of your savings in a bank. However, if you get a situation of high and volatile inflation, you are more likely to have negative real interest rates. A key issue is whether market fear inflation could get out of control.

Any prospect of hyperinflation (e.g. Germany, Zimbabwe) would cause people to store as much wealth in physical assets such as gold.

Value of dollar

In the post war period, the dollar has been viewed as the dominant global currency. The dollar plays a key role in storing wealth and as medium of exchange. Many countries keep exchange rate reserves in dollars. US dollar securities (e.g. US government bonds) are one of the most popular forms of global investment. In the past people have been willing to buy US dollar assets because they have confidence that the US dollar will hold its value (e.g. avoid large devaluation). Therefore, if people suspect the dollar may be vulnerable, they may sell US dollar assets and look for something more secure like other currencies or gold.

Gold reserves

Central banks usually keep some of their reserves in gold. Gold doesn't give any interest so central banks may prefer bonds which give some interest. But, if they decide to hold more reserves in gold, demand and price will rise. Recently, China and Russia have indicated they will seek to hold more reserves in gold. Part of this may be due to China becoming more concerned about the value of its dollar assets.

Lack of safe havens

If the dollar is predicted to fall because of inflation or debt fears, investors may seek for other currencies (popular targets have included Swiss Franc and Japanese Yen). However, in times of economic stagnation, countries like Japan and Switzerland are likely to try and prevent their currencies appreciate too much (makes their exports less competitive). At the moment, there are no obvious currencies to invest in. The Eurozone has great problems, the UK is weak. No one really wants a strong currency at the moment. Therefore, as an alternative to investing in a currency, investors may buy gold.

US government borrowing

The level of US government borrowing can have an impact on the price of gold. If markets feel the US debt is projected to get out of control, there is a greater chance that the dollar will devalue and dollar assets will fall. This means people may sell dollar assets (e.g. US treasury bills) and buy gold instead.

Monetary policy/Quantitative easing

Quantitative easing involves increasing the money supply. This raises prospect of higher inflation in the future. As it happens, quantitative easing hasn't caused inflation, the increase in bank reserves have largely been saved. But, if large economies like the US and EU engage in quantitative easing (which to some extent is untried), investors are more likely to favour gold as it gives greater security in times of unorthodox monetary policy.

Gold vs Stock market

Gold is often seen as an alternative to the stock market. Buying shares can give a higher return because investors receive dividends and possible growth in share capital. However, in times of economic turmoil or recession, the value of shares tends to fall. Therefore investors may sell shares and buy gold instead. Thus, fears over a recession tend to increase the value of gold as people move from more risky stock market to gold.

Speculation

Like any commodity, investors can be caught up in the mood and expectations of the moment. Rising gold prices can become self-fulfilling as investors pile into gold to take advantage of rising prices. The price of gold can be highly volatile. Some argue we are in a gold bubble, when the economy returns to normal people may feel gold is highly overvalued and we could see a fall in the price of gold like the early 1980s.

Supply

A change in supply could alter the price of gold. For example, if there was a sharp increase in production, the price is likely to fall. However, the supply of gold is relatively stable. The fluctuations in price tend to occur due to changes in demand.

As given in the answer gold prices depend on a number of underlying factors. The complexity of gold price determination is due to the interplay of these factors, like in any other asset or investment. It is also important to recognise that gold is used for many purposes e.g. ornaments and some are not “pure investments”. Thus, the valuation of gold is complex.

(b) Hedging

A risk management strategy used to limit or offsetting probability of loss from fluctuations in the prices of commodities, currencies, or securities. In effect, hedging is a transfer of risk without buying insurance policies. Hedging employs various techniques. Basically, it involves taking equal and opposite positions in two different markets (such as cash and futures markets). Hedging is also used in protecting one's capital against effects of inflation through investing in high-yield financial instruments (bonds, notes, shares), real estate, or precious metals.

Short position and long position

The sale of a borrowed security, commodity or currency with the expectation that the asset will fall in value. For example, an investor who borrows shares of stock from a broker and sells them on the open market is said to have a short position in the stock. The investor must eventually return the borrowed stock by buying it back from the open market. If the stock falls in price, the investor buys it for less than he or she sold it, thus making a profit.

Long position

On the other side buying of a security such as a stock, commodity or currency, with the expectation that the asset will rise in value is known as long position.

Hedging for gold prices

Gold producers or parties who have stocked gold can hedge against falling gold price by taking up a position in the gold futures market. Gold producers can employ what is known as a short hedge to lock in a future selling price for an ongoing production of gold that is only ready for sale sometime in the future. To implement a short hedge, gold producers sell (short) enough gold futures contracts in the futures market to cover the quantity of gold to be produced/stocked.

(c) Reasons against hedging

- Shareholders are much more capable of diversifying currency risk than management of the firm. If the shareholders do not wish to accept the risk, they can diversify it by themselves i.e. portfolio effect
- Currency risk management does not increase the expected cash flows.
- Management often conducts hedging activities that could benefit the management at the cost of shareholders.
- Managers cannot outguess the market. If and when markets are in equilibrium with respect of parity conditions, the NPV of hedging is zero. But this applies to shareholders as well.
- This could stifle the “Management Initiative” and make managers inefficient by taking a cover from finance cost of the organisation.
- Efficient market theories believe that investors can see through the “accounting veil” i.e. already factored the forex effect into a firm's market valuation

(d)

(i) **Operational self-sufficiency**

$$\begin{aligned} &= \frac{\text{Operating income}}{\text{Operating expenses} + \text{Financing cost} + \text{loan loss provision}} \\ &= \frac{74.40}{54.11 + 6.41 + 6.80} \\ &= 1.16 \text{ times or } 116\% \end{aligned}$$

i.e. operationally self sufficient

(ii) **Financial self-sufficiency**

$$\begin{aligned} &= \frac{\text{Operating income}}{\text{Operating expenses} + \text{financing cost} + \text{loan loss provision} + \text{imputed cost of capital}} \\ &= \frac{74.40}{54.11 + 6.41 + 6.80 + 10.45} \\ &= 95\% \end{aligned}$$

i.e. not financially self-sufficient

(iii) KTS although operationally viable, is financially not self-sufficient. Inflation will also erode the value of KTS loan portfolio. This erosion of value and the non-availability of concessionary finance will affect the long term viability of KTS.

(Total: 16 marks)

General comments

Very poor performance were observed. Average marks were less than 5.

Specific comments

Part (a) Even though the question covered a wide area, answers of the candidates are limited to name the factors such as demand , supply and gold reserves held by banks etc. Question is on world gold prices. But some of the answers explained the bank / country points of view on gold prices.

Part (b) Common explanation on “Hedging” was, “it is a risk mitigating technique”. Most did not have an idea about short and long options. Also no idea on how gold prices hedge in the derivatives market. Most of the answers were on types of hedging such as option, swap and also forward contracts.

Part (c) most of the candidates identified the risk can be due to wrong forecast of gold prices but unable to explain other factors.

Part (d) none of the candidate were able to determine “operational self-sufficiency” and “financial self-sufficiency”. They have also not understood the impact on loan portfolio in an inflationary environment.

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