

CPA(T) & ACCA
MOCK EXAMINATION SOLUTIONS
FINANCIAL MANAGEMENT (B1)
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Prepared By: Godson Mkaro (Jr): MSc Finance & Investment, BSc. Computer Science, ATEC II, CPBE, CPA (T) & Emmanuel Christopher: MBA (Finance), B.Com Accounting (Hons), CPA (T) | Phone1: +255 717 / 769 348 616 | Phone2: +255 714 965 564 | Email us to: info@covenantfinco.com | Visit our Website at: www.covenantfinco.com

SECTION A

Compulsory Question

SUGGESTED SOLUTION TO QUESTION ONE

(a) The central goal of the firm in financial management is wealth maximization. The wealth maximization goal is considered to be the central goal based on the following grounds:

- (It takes into consideration long run survival and growth of the firm.
- It is consistent with the objective of owner's economic welfare.
- It suggests the regular and consistent dividend payments to the shareholders.
- The financial decisions are taken with a view to improve capital appreciation of the share price.
- It considers the risk and time value of money.
- It considers all future cash flows, dividends and earnings per share.
- Maximization of firm's value is reflected in the market price of share, since it depends on shareholders' expectations as regards profitability, long run prospects, timing differences of returns, risk, distribution of returns etc. of the firm.
- Profit maximization partly enables the firm in wealth maximization.
- The shareholders always prefer wealth maximization rather than maximization of inflow of profits.

(b) Solution

(i) Reasons why capital investment decisions are important, and need to be carefully evaluated, include the following:

- Capital investment decisions usually involve the investment of large sums of money.
- They are often discretionary, in a way that current expenditure on labour, materials and operating overheads are not.
- Capital investment means spending money now with the expectation of returns in the future, so that there is greater uncertainty about the consequences of expenditure on capital investments than on routine expenditure on day to day expenses.
- Capital investments often involve expenditure decisions (such as those on fixed assets) that are difficult to reverse.

(ii) Net Present Value

Year	Sales (TZS 000)	Variable Cost (TZS 000)	Avoidable Fixed Cost (TZS 000)	Operating Net Cash Flow (TZS 000)
1	60,000	(30,000)	(8,000)	22,000
2	63,000	(31,500)	(8,000)	23,500
3	66,150	(33,075)	(8,000)	25,075
4	69,458	(34,729)	(12,000)	22,729
5	72,930	(36,465)	(12,000)	24,465

Calculation of NVP of the Project

Year	Equipment (TZS 000)	Working Capital (TZS 000)	Net Operation Cash Flow (TZS 000)	Net Cash Flow (TZS 000)	Discount Factor @ 9%	Present Value (TZS 000)
0	(75,000)	(15,000)	-	(90,000)	1.000	(90,000)
1		(5,000)	22,000	17,000	0.917	15,589
2		-	23,500	23,500	0.842	19,787
3		(5,000)	25,075	20,075	0.772	15,498
4		-	22,729	22,729	0.78	16,092
5	5,000	25,000	24,465	54,465	0.650	35,402
					NPV	12,368

Note that: The working capital to be included in the NPV calculation should be the additional working capital required i.e. $20,000 - 15,000 = 5,000$

Suggestion

The NVP is positive, and on the basis of these figures, the project would appear to be financially worthwhile.

(iii) Capital rationing: This is a situation where a company has profitable projects but capital for investment is limited.

Internal factors

- (1) Board of Directors restrictions
- (2) Company reluctance to raise equity to avoid dilution

External factor

- (1) Recession or poor economy
- (2) Financiers not will to lend funds due to inability to meet borrowing requirement

SECTION B

There are FIVE questions. Answer ANY FOUR questions

SUGGETED SOLUTION TO QUESTION TWO**(a) Suggested solution****(i) Expected Return**

$$\text{Expected Return } (\bar{R}) = \sum RP$$

$$\text{Alpha Stock} = (0.35 \times 0.20) + (0.40 \times 0.15) + (0.25 \times 0.01) = 13.25\%$$

$$\text{Beta Stock} = (0.35 \times 0.35) + (0.40 \times 0.12) + (0.25 \times 0.25) = 23.3\%$$

$$\text{Gamma Stock} = (0.35 \times 0.60) + (0.40 \times 0.05) + (0.25 \times 0.50) = \mathbf{35.5\%}$$

Portfolio Return

$$\begin{aligned} \text{Portfolio Return} &= \sum(\text{Weights} \times \text{Expected Returns}) \\ &= (0.40 \times 0.1325) + (0.4 \times 0.233) + (0.2 \times 0.355) = \mathbf{21.72\%} \end{aligned}$$

(ii) The expected risk premium for the portfolio

$$\begin{aligned} \text{Risk Premium} &= \text{Portfolio Return} - \text{Risk free returns} \\ &= 21.72\% - 3.8\% = \mathbf{17.92\%} \end{aligned}$$

(b) Suggested solution

- (i) Since the risk free rate does not change, the market excess return increases by the same amount as the market return: 2 percent. Similarly, Alpha Company's excess return increases by 3 percent. So Alpha Company's beta value is:

$$\text{Company's beta} = \frac{\text{Change in company's expected return}}{\text{Change in market return}}$$

$$\text{Alpha Company's beta value is} = \frac{19\% - 16\%}{14\% - 12\%} = \frac{3\%}{2\%} = \mathbf{1.5}$$

- (ii) Alpha Company's excess return = $R_f + 1.5 \times \text{market excess return}$ (i.e. $R_s = R_f + \beta (R_m - R_f)$)

$$\text{So before the change: } 16\% = R_f + 1.5 (12\% - R_f)$$

$$16\% = R_f + 18\% - 1.5R_f$$

$$16\% - 18\% = R_f - 1.5R_f$$

$$2\% = 0.5R_f$$

$$\text{Risk free return } (R_f) = \mathbf{4\%}$$

- (c) The expected return of the two(2) securities are as follows:

$$\text{Expected Returns } (R_s) = R_f + \beta (R_m - R_f)$$

$$\text{Chakubanga} = 7\% + 1.5 \times 8.5 = \mathbf{19.75\%}$$

$$\text{Mabombastic} = 7\% + 0.7 \times 8.5 = \mathbf{12.95\%}$$

- (d) Retained funds are not free; since they are part of shareholders' funds, and shareholders expect a return on these funds (they constitute an increased investment by shareholders,

who have foregone dividends in order to allow the company to invest the retained funds on their behalf). Retained funds may appear to have no cost because, unlike new share issues, they do not give rise to increased dividends. If companies do not get an acceptable return on retained profits, shareholders will be more likely to sell their shares, leading to a fall in the share price and a rise in the company's cost of capital.

Managers who understand that shareholders require a return on retained profits may choose this source of capital because the transaction costs (in terms of issue expenses and management time) of new capital issues are high, particularly for equity but also for debt. They could also choose this source because raising new capital from external sources exposes them to annoying inspections and analysis by subscribers of shares or lenders.

SUGGESTED SOLUTION TO QUESTION THREE

(a) Suggested Solutions

- (i) $\text{EPS} = \text{Earnings} / \text{No. of Ordinary shares Outstanding} = 27\text{m} / 160\text{m} = \text{TZS } 168.75 \text{ per share}$

$\text{Dividend Cover} = \text{EPS} / \text{Dividend per share}$

Therefore, $\text{Dividend per share} = \text{EPS} / \text{Dividend Cover} = \text{TZS } 168.75 / 2.5 = \text{TZS } 67.5 \text{ per share}$

Dividend growth rate:

$$38(1+g)^3 = 67.5$$

$$(1+g)^3 = \frac{67.5}{38} = 1.776316$$

$$(1+g) = \sqrt[3]{1.776316} = 1.21108$$

$$g = 0.21108 = 21.108\%$$

By using DGM

$$K_e = \frac{D_0(1+g)}{P_0} + g = \frac{67.5(1+0.21108)}{680} + 0.21108 = 33.1\%$$

- (ii) $\text{Preference dividend per share} = 5\% \text{ of TZS } 500 \text{ per share} = \text{TZS } 25 \text{ per share}$

Note that: If the question is silent about the status of redemption then assume the shares are irredeemable.

$\text{Cost of Irredeemable preference share (Kips)} = \text{Dividend per share} / \text{current market price per share}$

$$\text{Cost of Irredeemable preference share (Kips)} = 25 / 275 = 9.1\%$$

- (iii) Cash flows and present values for TZS 100,000 nominal of 8% loan stock

	Year	Cash Flow	Present value factor (8%)	Present value (8%)	Present value factor (9%)	Present value (9%)
Proceeds of issue	0	99.00	1.000	99.00	1.000	99.00
Interest	1 - 6	(8.00)	4.623	(36.984)	4.486	(35.888)
Capital Redemption	6	(100.0)	0.630	(63)	0.596	(59.6)
NPV				(0.984)		3.512

cost of loan = IRR

$$= \text{Lower Rate} + \frac{NPV_{\text{Lower Rate}}}{NPV_{\text{Lower Rate}} - NPV_{\text{Higher Rate}}} (\text{Higher Rate} - \text{Lower Rate})$$

$$= 8\% + \frac{-0.984}{-0.984 - 3.512} (9\% - 8\%) = 8.2\%$$

Alternatively:

By using Approx formula

$$Kl = \frac{\text{Interest} + \left(\frac{RV - Po}{n}\right)}{\frac{RV + Po}{2}} = \frac{8 + \left(\frac{100 - 99}{6}\right)}{\frac{100 + 99}{2}} = 8.2\%$$

(b) Computation of WACC

	Market Value	Proportion	Cost %	Proportion x Cost
Equity 160 m x TZS 680	TZS 108.8b	57.2%	33.1%	18.93%
Preference shares (TZS 40b/ TZS 500) x TZS 275	TZS 22.0b	11.6%	9.1%	1.06%
Debt 99% of TZS 60b	<u>TZS 59.4b</u>	<u>31.2%</u>	8.2%	<u>2.56%</u>
Total	TZS 190.2b	100.0%	WACC=	22.55%
			WACC=22.6% to 1 d.p	

(c) Circumstances under which it is appropriate to use in appraising an investment project

- WACC can be used as the discount rate in appraising an investment project of the company provided that undertaking the investment project does not change the current levels of business risk and financial risk faced by the company.
- WACC can be used as the discount rate in appraising an investment project of a company in the same business area as current operations, for example, an expansion of current business, as business risk is likely to be unchanged in these circumstances.

- WACC can be used as the discount rate in appraising an investment project of a company if the project is financed in a way that is similar to the current capital structure of the company, as financial risk is then likely to be unchanged.
- The required return of the company's investors is likely to change if the investment project is large compared to the size of the company, so the WACC will to be an appropriate discount rate provided that the investment project is small in size relative to the current existing project

(d) Some investors do not require dividend income for current expenditure, and are happy to defer the receipt of returns, believing that the return that the company makes on retained profits is better than the returns that they can make by reinvesting dividends elsewhere. Such investors are likely to invest in the shares of growth oriented companies that require funds for investment and have corresponding dividend policies of low or even no dividends.

Taxation may be a particular consideration. Dividends are taxed in the year when they are received, and higher rate taxpayers in the Tanzania pay additional tax on their dividends (i.e. Withholding Tax on dividend) while Capital gains on shares are subject to capital gains tax, which is not paid until shares are disposed of. There is an annual allowance for capital gains: up to this figure but no capital gains tax is payable until the day of disposal.

SUGGESTED SOLUTION TO QUESTION FOUR

(a) Organization's Composite Cost of Capital (after tax)

Wd **KdAT** **We** **Ke** **(WACC = Wd Kd_{AT} + We Ke)**

(%) (%) (%) (%)

0 x 5.0 100 12.0 5% x 0 + 12% x 1 = 12.00%

10 x 5.0 90 12.0 5% x .10 + 12% x .90 = 11.30%

20 x 5.0 80 12.5 5% x .20 + 12.5% x .80 = 11%

30 x 5.5 70 13.0 5.5% x .30 + 13% x .70 = 10.8%

40 x 6.0 60 14.0 6% x .40 + 14% x .60 = 10.8%

50 x 6.5 50 14.6 6.5% x .50 + 14.6% x .50 = 10.55%

60 x 7.0 40 20.0 7.0% x .60 + 20% x .40 = 12.20%

Conclusion: As observed above, the minimum WACC is 10.55% as such the optimal debt equity mix (optimal capital structure) is 50% Debt and 50% Equity, since such a structure results to the minimum composite cost of capital (WACC).

- (b) Beta is the measure of systematic (or 'market') risk used by the CAPM model.

An **Asset Beta** measures how volatile the underlying business is without considering capital structure (i.e. debt). Asset beta is computed by removing the capital structure impact on the equity beta. Asset beta is also frequently referred to as unlevered beta.

This beta allows investors to compare the relative volatility of assets removing out the effect of capital structure choices.

This is important as it allows investors to find an optimal capital structure by finding the average asset beta of industry and then taking the average asset beta of the industry and then "re levering" it with the target company's capital structure with the following equation.

The formula for computing Asset Beta (Unlevered beta): Asset β

$$= \frac{\text{Equity Beta}}{\left[1 + (1 - \text{Tax Rate}) \times \frac{\text{Debt}}{\text{Equity}}\right]}$$

Equity Beta is also commonly referred to as levered beta and offers a measure of how volatile a given stock's price movement is relative to the overall market's movement.

Equity Beta accounts for the company's capital structure meaning that if the company has loaded up on debt it will be more volatile than companies that have less debt within the capital structure.

The formula for computing Equity Beta (Levered beta)

$$= \text{Asset Beta} \left[1 + (1 - \text{Tax Rate}) \times \frac{\text{Debt}}{\text{Equity}}\right]$$

(c) **Suggested Solution**

(i) *Degree of operating leverage* = *Contribution* ÷ *EBIT*

Since *Contribution* – *Fixed costs* = *EBIT*

Therefore *Contribution* = *EBIT* + *Fixed costs*

Degree of operating leverage = (5,570,000 + 3,481,250) ÷ 5,570,000 = **1.6**

Interpretation: if sales increase by 10% then operating profit (EBIT) will increase by 16% (1.6 times)

(ii) *Degree of financial leverage* = *EBIT* ÷ *EBT*

Degree of financial leverage = 5,570,000 ÷ 1,591,429 = **3.5 times**

Interpretation: if EBIT increase by 15% then EBT will increase by 52.5% (3.5 times)

- (iii) Degree of combined leverage = Degree of operating leverage × Degree of financial leverage
 Degree of combined leverage = 1.625 times × 3.5 times = **5.6 times**
 If sales increase by 5% then the Earnings per share will increase by 28% (5% × 5.6 times)

(d) Possible sources of information for assessing the creditworthiness of a company include:

- Ratings from credit agencies, which are generally reliable but for which there is a charge.
- Sales force reports and other reports from trade contacts, which may be anecdotal, but may be up-to-date and take account of unpublished information.
- Analysis of financial statements, which by their nature are not up-to-date, though a lender who is entitled to have access to management accounts can get more up-to-date information.
- Press comment, which may be topical but may not be comprehensive.
- Trade associations, which can provide information that has a bearing on a company's reputation, but may not be up-to-date.
- Bankers' references, though bankers may only be willing to provide these if authorized by the potential debtor.
- Suppliers' references, which may be informative but may not give a balanced view if they are provided by a supplier named by the potential debtor, who may have ensured that some suppliers are paid promptly for this purpose.

SUGGESTED SOLUTION TO QUESTION FIVE

- (a) The amount of external 12% long term debt financing is the balancing figure in the forecast statement of financial statement above hence the amount required at the year ending 31st December 2019 is Tshs 3,000,000

$$AFN = \frac{A_o}{S_o}(\Delta S) - \frac{L_o}{S_o}(\Delta S) - mbS_1$$

Whereby:

AFN = Additional Funds Needed (i.e. 12% Long-term debt)

A_o = Spontaneous Assets

S_o = Original Sales

ΔS = Change in Sales

L_o = Spontaneous Liabilities

m = Profit Margin

b = Retention Ratio = (1 - Dividend payout Ratio)

S₁ = Inflated Sales or New sales

Given that:

$$A_0 = \text{Tshs } 99,600,000$$

$$S_0 = \text{Tshs } 120,000,000$$

$$\Delta S = 120,000,000 \times 10\% = \text{Tshs } 12,000,000$$

$$L_0 = \text{Tshs } 18,000,000 + \text{Tshs } 12,000,000 = \text{Tshs } 30,000,000$$

$$m = \text{Profit/sales} = 18,000,000 / 120,000,000 = 15\%$$

$$b = \text{Retention Ratio} = 1 - \text{Dividend payout ratio} = 1 - 0.8 = 0.2 = 20\%$$

$$S_1 = \text{Tshs } 120,000,000 \times 110\% = \text{Tshs } 132,000,000$$

$$AFN = \frac{99,600,000}{120,000,000} \times 12,000,000 - \frac{30,000,000}{120,000,000} \times 12,000,000 - (15\% \times 20\% \times 132,000,000)$$

$$AFN = 9,960,000 - 3,000,000 - 3,960,000$$

$$AFN = \text{Tshs } 3,000,000$$

(b) A forecast statement of financial position of CFC Ltd as at 31 December 2019

	Tshs "000"
Plant and machinery (31,200 x 110%)	34,320
Furniture and fittings (18,720 x 110%)	20,592
Motor vehicles (12,480 x 110%)	13,728
Inventory (19,200 x 110%)	21,120
Account receivables (14,400 x 110%)	15,840
Cash and bank (3,600 x 110%)	3,960
	<u>109,560</u>

Financed by:

Ordinary share capital (unchanged)	42,000
Retained profit (W1)	21,560
14% debenture capital (unchanged)	10,000
12% long term loan (balancing figure)*	3,000
Account payables (18,000 x 110%)	19,800
Accrued expenses (12,000 x 110%)	13,200
	<u>109,560</u>

$$(W1) \text{ Profit Margin} = \text{PAT} / \text{Sales} = 18,000,000 / 120,000,000 = 15\%$$

$$\text{Forecast sales for 2019} = \text{Tshs } 120,000,000 \times 110\% = \text{Tshs } 132,000,000$$

$$\text{PAT for the year 2019} = \text{Tshs } 132,000,000 \times 15\% = \text{Tshs } 19,800,000$$

$$\text{Dividend declared} = \text{PAT} \times \text{Dividend payout ratio} = \text{Tshs } 19,800,000 \times 80\% = \text{Tshs } 15,840,000$$

$$\text{Retained Profit for 2019} = \text{PAT} - \text{Dividend} = \text{Tshs } 19,800,000 - \text{Tshs } 15,840,000 = \text{Tshs } 3,960,000$$

$$\text{Balance of Retained profit as at 31st Dec 2019} = \text{Tshs } 17,600,000 + \text{Tshs } 3,960,000 = \text{Tshs } 21,560,000$$

- (c) Spontaneous finance refers to financing that arises out of regular, day-to-day operations. Unlike with other common sources of financing, such as loans or bonds, obtaining additional spontaneous financing doesn't require any special action by the company; it just "happens," hence the name spontaneous. The two primary sources of spontaneous finance for most businesses are trade credit/account payables and accruals.

Trade Credit/Account payables

Trade credit is an essential source of spontaneous financing for most ongoing businesses. Trade credit is a "buy now, pay later" arrangement. For example, a store orders 100 boxes of chewing gum from a supplier. The supplier delivers the boxes and sends the store a bill. That's trade credit. Until the store pays the bill, the supplier is in effect financing the store's chewing gum inventory. When the store's business volume increases, it will order more inventories, using more trade credit. When business falls off, it orders fewer inventories and uses less credit. Bills owed on trade credit are identified in a company's books as accounts payable, commonly referred to as "payables."

Accrued Expenses

Accrued expenses represent value the company has received but not yet paid for, just like inventory obtained on trade credit. And as the company hires more (or fewer) people or uses more (or less) electricity, these accruals will adjust automatically, or "spontaneously." For example: Employees might not think of themselves as floating their employers a loan, but in effect, that's what they're doing. If they get paid every two weeks, then the company regularly enjoys two weeks of their valuable labour without having to pay for it. Their wages are of course building up, or "accruing," and the company will pay them in due time. But until it does, the workers are helping finance the company. And it's not just them. The company is also continuously running up bills for utilities, taxes and other common expenses.

- (d) (i) The major goal of WC management

Among goals of the firm is to maximize its profits and to ensure sufficient liquidity at the same time. High levels of WC ensures liquidity but at the expense of profitability and too low WC ensures profitability (since funds is not locked in idle assets) at the expense of liquidity. Therefore there is tradeoff between liquidity and profitability. The major goal of Working capital management is to strike balance between liquidity and profitability to attain these twin objectives.

(ii) Measures include:

Current ratio: computes as *current assets/current liabilities* – It helps an analyst to measure the ability of the company to meet its short term maturing obligations by using its current assets (both liquid and illiquid.)

Quick ratio (or acid test ratio or liquid ratio) computes as *Liquid current assets / current liabilities* – It helps an analyst to assess the quick ability of the company to meet its short term maturing obligations by using its liquid current assets.

SUGGESTED SOLUTION TO QUESTION SIX

(a) Computation of ratios

$$(i) \text{ Current ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{125}{70} = \mathbf{1.79 : 1}$$

Interpretation: The value of current assets is two times the value of current liabilities

$$(ii) \text{ Return on Equity (ROE)} = \frac{\text{Profit After Tax}}{\text{Equity}} = \frac{66.6}{490} = \mathbf{13.59\%}$$

Note that: Equity = Equity share capital + Reserves

Interpretation: The percentage of profit earned on each Tsh invested in equity is 13.59%

$$(iii) \text{ Return on Capital Employed (ROCE)} = \frac{\text{PBIT}}{\text{Capital Employed}} = \frac{99.5}{490 + 160} = \mathbf{15.3\%}$$

Note that: Capital Employed = Equity + Long Term Debt (i.e. Non-current liabilities)

Interpretation: The percentage of profit earned on the total Capital employed is 15.3%

$$(iv) \text{ Return on Total Assets (ROA)} = \frac{\text{PBIT}}{\text{Total Assets}} = \frac{99.5}{720} = \mathbf{13.8\%}$$

Interpretation: The percentage of profit earned on the total assets invested is 13.8%

$$(v) \text{ Debt -To- Equity Ratio} = \frac{\text{Long Term Debt}}{\text{Equity}} = \frac{160}{490} = \mathbf{32.7\%} \text{ OR } \frac{\text{Total Debt}}{\text{Equity}} = \frac{160 + 70}{490} = \mathbf{46.9\%}$$

Interpretation: The relative proportion of debt and equity used to finance company's assets is 32.7% or 46.9%

Note that: Any of the above computation of Debt -To- Equity Ratio will earn full marks

$$(vi) \text{ Earnings Retention ratio} = 1 - \text{Dividend Payout ratio}$$

$$\text{Dividend Payout ratio} = \frac{\text{Dividend}}{\text{PAT}} = \frac{40}{66.6} = 0.6 = \mathbf{60\%}$$

$$\text{Earnings Retention ratio} = 1 - 0.6 = 0.4 = \mathbf{40\%}$$

Interpretation: The percentage of earnings retained for future business expansion is 40%

(b) Computation of ratios

(i) Dividend cover = $\frac{\text{PAT and Preferred dividend}}{\text{Ordinary Dividend payable}}$

PAT and Preferred dividend = Chargeable Profit - Tax - Preferred dividend

PAT and Preferred dividend = 40,000,000,000 - (0.25% × 40,000,000,000) - (300 × 18,000,000)

PAT and Preferred dividend = TZS 24,600,000,000

Ordinary Dividend payable = Dividend per share × No. of ordinary shares

Ordinary Dividend payable = 450 × 15,000,000 = TZS 6,750,000,000

Dividend cover = $\frac{24,600,000,000}{6,750,000,000} = 3.64 \text{ times}$

(ii) Earnings per share = $\frac{\text{PAT and Preferred dividend}}{\text{No. of ordinary shares outstanding}} = \frac{24,600,000,000}{15,000,000} = \text{TZS } 1,640$

(iii) Price/Earnings ratio = $\frac{\text{Market price per Share}}{\text{Earnings per share}} = \frac{45,000}{1,640} = 27.4 \text{ times}$

(iv) Dividend yield ratio = $\frac{\text{Dividend per share}}{\text{Market price per share}} = \frac{450}{45,000} = 1\%$

***** AS OBSERVED ABOVE WE WISH YOU ALL THE BEST *****