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CERTIFIED PUBLIC ACCOUNTANT
ADVANCED LEVEL 2 EXAMINATIONS
A2.1: STRATEGIC CORPORATE FINANCE
DATE: WEDNESDAY 29, MAY 2024
MARKING GUDE AND MODEL ANSWERS

SECTION A

QUESTION ONE

(i)

| | Marking scheme | Points | |
|-----|--|--------|----|
| Q1a | Accurate calculation of after tax cash flows for each scenario separately or the average for both years , including terminal value.@ 0.5, maximum of 5 marks | 7.5 | |
| | Accurate calculation of tax benefit from depreciation/capital allowances | 2.5 | |
| | Accurate NPV calculation (based on expected cash flows, 15% rate or 20.75% | 4 | |
| | Correct decision in relation to outcome | 2 | |
| | Sunk cost 1 mark each | 4 | |
| | Total | 20 | 20 |
| | | | |
| | estimation of IRR | | |
| Q1b | Real rate below 15% | | |
| | Nominal rate 20.75% | 3 | 3 |
| | | | |
| | Any 3 methods, 1 mark each | 3 | 3 |
| Q1c | | | |
| | Any 1 advantage and 1 disadvantage. 1 mark each | 2 | 2 |
| Q1d | | | |
| | | | |
| | calculation of expected return each asset, up to 3 marks total | 6 | |
| Q1e | calculation of expected risk of earn each up to 3 marks total | 6 | |
| | Relevant conclusion | 3 | 15 |
| | | | |
| | Any 2 merits and 2 demerits of CAPM, 1 mark each | 4 | 4 |
| Q1f | | | |
| | Description of any 3 process in portfolio management, 1 mark each | 3 | 3 |
| Q1 | Total | | 50 |
| | | | |

QUESTION ONE

a. Net Present Value (NPV):

In arriving at the NPV, the following methodology has been used

1. Since only one rate of inflation was given, it was easier and faster to convert real cost of capital into nominal cost and discount the nominal cash flows at the new nominal discount rate. $(1+r) \times (1+i) = (1+m) - 1$. $(1.15 \times 1.05) = (1.2075) - 1 = 20.75\%$
2. Cash flow from scenario 1 and scenario 2 have equal chance of occurring, so average cash flows has been used taken, e.g. in year 1 cash flow before tax is equal to $(FRW 1.5 + FRW 2.0) / 2 = 1.75$ billion, Discounted given expected NPV
3. Or candidates could have done two NPV calculations and gotten expected NPV
4. Depreciation is on straight line basis for 5 years on the initial investment of FRW10 billion, giving tax allowable depreciation (TAD) savings of FRW 600 million per year $((10 \text{ billion} / 5 \text{ years}) \times 30\%)$
5. Legal cost in year of FRW 300 million is a relevant cost, all the others were sunk costs. (initial legal cost of FRW0.5 billion and market research of FRW1.2 billion)
6. Candidates were to use dividend growth model to calculate terminal values after year 5, $P_0 = \frac{d_0(1+g)}{k_e - g}$
7. Amounts are in FRW millions

8.

| Years | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | After Year 5 |
|-------------------------|----------|--------|--------|---------|---------|--------------|
| Scenario 1 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | |
| Scenario 2 | 2,000 | 2,500 | 3,000 | 5,500 | 4,000 | |
| Average before tax | 1,750 | 2,250 | 2,750 | 4,250 | 3,750 | |
| legal cost | | -300 | | | | |
| Total cash flow | 1,750 | 1,950 | 2,750 | 4,250 | 3,750 | |
| Less tax at 30% | (525) | (585) | (825) | (1,275) | (1,125) | |
| After tax cash flow | 1,225 | 1,365 | 1,925 | 2,975 | 2,625 | |
| Add TAD savings | 600 | 600 | 600 | 600 | 600 | |
| After tax cash flow | 1,825 | 1,965 | 2,525 | 3,575 | 3,225 | 20,024 |
| PVIF at 20.75% | 0.8282 | 0.6858 | 0.5680 | 0.4704 | 0.3896 | 0.3896 |
| PV | 1,511 | 1,348 | 1,434 | 1,682 | 1,256 | 7,800 |
| Total PV | 15,031 | | | | | |
| Less Initial investment | (10,000) | | | | | |
| NPV | 5,031 | | | | | |

b. Internal Rate of Return (IRR):

To calculate the IRR, we need to find the discount rate that makes the project's NPV equal to zero.

Interpretation:

Net Present Value (NPV): The NPV of the project, considering both scenarios and tax implications, is approximately 5.031 billion. Given the NPV positive, it suggests that the project is viable and adds value

At 15% cost of capital with positive NPV, IRR must be greater than the required real rate of return 15%.

Candidates mentioning a rate above 15% or 20.75% were awarded full marks

c. Methods of financing mergers and takeovers

i) Cash transaction

In an all-cash acquisition deal, shares are usually swapped for cash. The equity portion of the balance sheet of the parent company remains the same. Cash transactions during an acquisition often happen in situations where the company being acquired is smaller and with lower cash reserves than the acquirer.

ii) Acquisition through debt

Debt financing is one of the favorite ways of financing acquisitions. Most companies either lack the capacity to pay out of cash or their balance sheets cannot allow it. Debt is also considered the most inexpensive method of financing an acquisition and comes in numerous forms. When providing funds for an acquisition, the bank usually analyzes the target company's projected cash flow, profit margins, and liabilities. Analysis of the financial health of both the acquiring company and the target company is a prep course.

Asset-backed financing is a method of debt financing where banks can lend funds based on the collateral offered by the target company. Collateral may include fixed assets, receivables, intellectual property, and inventory. Debt financing also commonly offers tax advantages.

iii) Stock Swap Transaction

When companies own stock that is traded publicly, the acquirer can exchange its stock with the target company. Stock swaps are common for private companies, whereby the owner of the target company wants to retain a portion of the stake in the combined company since they will likely remain actively involved in the operation of the business. The acquiring company often relies on the proficiency of the owner of the target firm to operate effectively.

iv) Acquisition through Mezzanine or Quasi Debt

Mezzanine or quasi-debt is an integrated form of financing that includes both equity and debt features. It usually comes with an option of being converted to equity. Mezzanine financing is suitable for target companies with a strong balance sheet and steady profitability. Flexibility makes mezzanine financing appealing.

v) Leverage Buyout

A leveraged buyout is a unique mix of both equity and debt that is used to finance an acquisition. It is one of the most popular acquisition finance structures. In an LBO, the assets of both the acquiring company and Target Company are considered as secured collateral.

Companies that involve themselves in LBO transactions are usually mature, possess a strong asset base, generate consistent and strong operating cash flows, and have few capital requirements. The principal idea behind a leveraged buyout is to compel companies to yield steady free cash flows capable of financing the debt taken on to acquire them.

vi) Seller's Financing /Vendor Take – Back Loan (VTB)

Seller's financing is where the acquiring company's source of acquisition financing is internal, within the deal, coming from the target company. Buyers usually resort to the seller's financing method when obtaining capital from outside is difficult. The financing may be through delayed payments, seller note, earn-outs, etc.

d. Question 1

Explain one advantage and one disadvantage of management buy-ins to the Directors of RL (2 Marks)

This answer provided has additional explanation which includes MBOs for learning purposes

(a) A management buy-out

(MBO) is the acquisition of a company by the management group in charge of that company. **The** current management group of the company.

Management buy-in

On the other hand, a management buy-in (MBI) entails the acquisition of a company by a management team that is external to the organization.

Compared to an MBI, an MBO has the advantage that the current management is more likely to have in-depth understanding of the company and its operations. As a result, they won't have to become as familiar with the company's operations as a fresh group of external managers could. Additionally, compared to an MBI, an MBO might result in less employee resistance and interruption. Working with the management team that it is more accustomed to may make it easier for RL to continue doing business with the new firm after it has been disposed of.

The internal management team might be more concentrated and aware of areas where expenses can be cut and income can be raised in order to raise the company's total worth.

The disadvantage of an MBO over an MBI for Co could be that the current management doesn't have fresh concepts to revitalize the company. A new management group may infuse the company with new ideas thanks to their diverse skill set and expertise from previous roles.

The current management team might not yet have the necessary financial arrangements in place, whereas the external management team might already have the necessary level of funding in place to act faster and more decisively. Additionally, there's a chance that the two teams and MBO

management have had conflicts in the past and won't be able to collaborate in the future if necessary. It's possible that the only path to future success for the dismissed company is through an MBI.

e. Question 1e

MP's proposal to invest in Abaho Ltd or Berwa Ltd

Solution

Calculation of rate of return

$$\text{Rate of return} = \frac{\text{Expected Price} - \text{Present price}}{\text{Present price}} \times 100$$

| Economic Condition | AB Ltd.'s rate of return | PQ Ltd. 's rate of return |
|--------------------|---|---|
| Boom | $\frac{150 - 100}{100} \times 100 = 50\%$ | $\frac{140 - 100}{100} \times 100 = 40\%$ |
| Normal | $\frac{110 - 100}{100} \times 100 = 10\%$ | $\frac{100 - 100}{100} \times 100 = 0\%$ |
| Recession | $\frac{120 - 100}{100} \times 100 = 20\%$ | $\frac{130 - 100}{100} \times 100 = 30\%$ |
| Recovery | $\frac{100 - 100}{100} \times 100 = 0\%$ | $\frac{90 - 100}{100} \times 100 = -10\%$ |

Calculation of expected return

| Economic Condition | Rate of return | | Probability | Expected return | |
|--------------------|----------------|-------------|-------------|-----------------|-----------|
| | Abaho Ltd % | Berwa Ltd % | | Abaho Ltd | Berwa Ltd |
| Boom | 50 | 40 | 0.30 | 15 | 12 |
| Normal | 10 | 0 | 0.40 | 4 | 0 |
| Recession | 20 | 30 | 0.20 | 4 | 6 |
| Recovery | 0 | -10 | 0.10 | 0 | -1 |
| | | | | 23 | 17 |

Calculation of standard deviation of Abaho Ltd

| Economic condition | Return (r) | Expected Return (e) | (r – Σe) | (r – Σe) ² | Probability (P) | P(r – Σe) ² | Standard deviation (σ) % |
|--------------------|------------|---------------------|-------------------|--------------------------------|-----------------|---------------------------------|-----------------------------------|
| Boom | 50 | 15 | 27 | 729.00 | 0.30 | 218.70 | |
| Normal | 10 | 4 | -13 | 169.00 | 0.40 | 67.60 | |
| Recession | 20 | 4 | -3 | 9.00 | 0.20 | 1.80 | |
| Recovery | 0 | 0 | -23 | 529.00 | 0.10 | 52.90 | |
| | | 23 | | | | 341 | 18.47 |

Calculation of standard deviation of Berwa Ltd

| Economic condition | Return (r) | Expected Return (e) | (r – Σe) | (r – Σe) ² | Probability (P) | P(r – Σe) ² | Standard deviation (σ) |
|--------------------|------------|---------------------|-------------------|--------------------------------|-----------------|---------------------------------|---------------------------------|
| Boom | 50 | 12 | 33 | 1089.00 | 0.30 | 326.70 | |
| Normal | 10 | 0 | -7 | 49.00 | 0.40 | 19.60 | |
| Recession | 20 | 6 | 3 | 9.00 | 0.20 | 1.80 | |
| Recovery | 0 | -1 | -17 | 289.00 | 0.10 | 28.90 | |
| | | 17 | | | | 377 | 19.42 |

Candidates could have also calculated market price risk as follows

Abaho Ltd

| Economic condition | Probability (P) | Mps | Mean = $\Sigma(\text{Mps} \times P)$ | (Mps – mean) | (Mps – mean) ² | P(Mps – mean) ² | Standard deviation (σ) % |
|--------------------|-----------------|-----|--------------------------------------|--------------|---------------------------|----------------------------|-----------------------------------|
| Boom | 0.3 | 150 | 45 | 27 | 729 | 218.7 | |
| Normal | 0.4 | 110 | 44 | -13 | 169 | 67.6 | |
| Recession | 0.2 | 120 | 24 | -3 | 9 | 1.8 | |
| Recovery | 0.1 | 100 | 10 | -23 | 529 | 52.9 | |
| | | | 123 | | | 341 | 18.47 |

| BERWA | | | | | | | |
|--------------------|-----------------|---------|--------------------------------------|--------------|---------------------------|----------------------------|-----------------------------------|
| Economic condition | Probability (P) | Mps (b) | Mean = $\Sigma(\text{Mps} \times P)$ | (Mps – mean) | (Mps – mean) ² | P(Mps – mean) ² | Standard deviation (σ) % |
| | | | | | | | |

| | | | | | | | |
|-----------|-----|-----|-----|-----|------------|-------|-------|
| | | | | | mean) 2 | | |
| Boom | 0.3 | 140 | 42 | 23 | 529 | 158.7 | |
| Normal | 0.4 | 100 | 40 | -17 | 289 | 115.6 | |
| Recession | 0.2 | 130 | 26 | 13 | 169 | 33.8 | |
| Recovery | 0.1 | 90 | 9 | -27 | 729 | 72.9 | |
| Mean | | | 117 | | | 381 | 19.52 |

The expected return of Abaho Ltd is higher than that of Berwa Ltd. The standard deviation is also lower than that of Berwa Ltd. Hence, investment in Abaho Ltd is preferred because the expected return is reasonable and the risk (standard deviation) is lower

f. Question 1(f)

Merits and limitations of CAPM

Merits

- (i) It proves that diversification can eliminate unsystematic risk, meaning that only systematic risk has to be covered by a risk premium.
- (ii) Probably the most workable technique for figuring out a publicly traded company's cost of equity (K_e).
- (iii) It illustrates how risk and return are related to one another based on stock market performance, gives an estimate of the risk associated with shares held in a well-diversified portfolio, and calculates the needed rate of return given that degree of risk.
- (iv) Assists in offering a risk-adjusted discount rate for use in evaluating investments.

Limitations

- i) Because it only focuses on systematic risk, investors without a well-diversified portfolio will find it to be of limited utility.
- ii) The way in which investors receive their returns is disregarded by CAPM, as it solely takes into account the amount of return to them. As a result, it completely disregards the tax situation of individual investors and portrays capital gains and dividends as equally beneficial to investors.
- iii) Because it is only a one-period model, it is not the best choice for projects spanning several periods.
- iv) The model needs variables that can be challenging to get, such as:
 - The risk-free rate of interest, for which the best proxy measure, such as 90-day Treasury bills, is required
 - The market portfolio's return

- Beta: It is obvious that this should only be based on subjective probabilities of future events, but regression analysis is frequently used to compare the past performance of specific securities with the performance of an appropriate market index over the same time period because this is not feasible in real life.

The needed return of low beta assets is often underestimated whereas the required return of high beta stocks is typically overstated by CAPM. Small business returns, as well as returns on particular days of the week or months of the year, have been seen to deviate from the CAPM expectations in practice.

- vii) CAPM makes the assumption that the stock market—beta—is the only factor that influences a security's needed rate of return.
- viii) Because we are unable to assess investors' expectations, CAPM cannot be experimentally tested.
- ix) It is predicated on certain erroneous presumptions, like:
 - Possession of Assets Free of Risk
 - Everything being completely marketable and divisible (human capital is not divisible)
 - identical expectations on the anticipated returns
 - Returns on assets are allocated properly.

g. Portfolio Management Processes

The investment process undergoes several steps as follows:

i) Determine or specify the investment objectives and constraints:

The typical objectives sought by investors are current income capital appreciation, and safety of principal. The relative importance of each should be determined. The constraints arising from each asset such as its liquidity, time horizon, tax, convenience and special circumstances should be identified beforehand.

ii) Choice of the Asset Mix:

The most important decision in portfolio management is the asset mix. This is concerned with the proportions of stocks (equity shares, mutual fund shares) and bonds (fixed income securities). This can be likened to identifying a “pool” of potential investment assets. The appropriate stock-bond mix depends on the risk-tolerance and investment horizon of a particular investor.

iii) Formulation of Portfolio strategy:

Once a certain asset mix is chosen an appropriate portfolio strategy is formulated. There are two broad avenues:

- The active portfolio strategy: this strives to earn superior risk-adjusted returns through appropriate market timing (buying and selling at right market times), sector rotation

- The passive portfolio strategy: Involves holding a broadly diversified asset mix and maintaining a predetermined level of risk exposure

iv) Selection of securities:

Generally, investors pursue the active portfolio strategy to select the securities. The factors considered to select bonds (fixed income securities) are yield to maturity, credit rating, term to maturity, tax shelter and liquidity.

v) Portfolio execution/ implementation:

This is concerned with actual buying and selling of assets in given amounts.

vi) Portfolio revision:

The value of an asset or portfolio as well as its composition i.e. the relative proportions of stock-bond instruments, may change as stock and bond value fluctuate. In response to such normal and regular changes, especially with stock, it is necessary to review the portfolio mix regularly. This may call for sector rotation or security switching (selling some category assets and investing in a different category of security)

vii) Performance evaluation:

The performance of a portfolio should be evaluated periodically. The key factor in performance evaluation is the Risk-Return assessment. Such assessment may provide useful indicators in order to improve investment/portfolio management.

SECTION B

Marking Guide

Marks

| | |
|--|-----------|
| a) Discuss 6 potential symptoms of corporate failure that deal team will need to consider addressing once they decide to invest in the company. | |
| Award 1 mark for each highlighted symptom and 1 mark for the explanation | 10 |
| Maximum marks | 10 |
| b) (i) Discuss ways in which AHEZA could improve the management of its receivables. | |
| Award 1 mark for general introduction and 1 mark for each step highlighted | 5 |
| (ii) Using the information given, assess whether AHEZA should accept the factoring service offered by Powell. What use should the company make of any finance provided by the factor. | |
| Award 0.5 mark for computing receivables under factor | 0.5 |
| Computing reduction in financing cost award 0.5 mark | 0.5 |
| Computing cost of financing new trade receivables award 0.5 mark | 0.5 |
| Computing cost of financing under factor award 0.5 mark | 0.5 |
| Computing Reduction in trade receivables award 0.5 mark | 0.5 |
| Computing increase in financing cost award 0.5 mark | 0.5 |
| Computing Reduction in financing cost due to lower receivables award 0.5 mark | 0.5 |
| Computing reduction in bad debt award 0.5 mark | 0.5 |
| Computing Increase in financing cost due to advance award 0.5 mark | 0.5 |
| Computing annual factor cost award 0.5 mark | 0.5 |
| Computing net cost award 0.5 mark | 0.5 |
| Providing conclusion award 0.5 mark | 0.5 |
| Maximum marks | 6 |
| c) Describe two Source of finance to the company that directly impact the equity of the company without increasing total liabilities of company. | |
| Award 1 mark for each highlighted point and 1 mark for description | 4 |
| Maximum marks | 4 |
| Total marks | |

a) Discuss 6 potential symptoms of corporate failure that deal team will need to consider addressing once they decide to invest in the company.

Poor corporate governance

The company's Chairman is also the CEO which makes corporate governance an issue in the company, Chairman of the board is expected to be a different person from CEO. Having both positions in one person will create a tyrant in the company

Failure Poor allocation of skills to specific role

Company's allocation of staff that has three charter holders working in logistics, marketing and HR department whereas there is insufficient qualified accountants to work in finance department, raises a risk in having proper books of account, inability to monitor and manage finances in the company that might lead to corporate failure risk.

Failure to carry out decent market research

Absence of R&D department and having new products sourced and analyzed by CFO instead of proper researchers makes it difficult in assessing and ensuring that proper analysis and due diligence has been conducted when launching new projects which will lead to corporate failure risk in the company.

Failure to adapt products to meet customer needs

The company's marketing department has never conducted research/survey from customers they serve to ensure that the company is meeting customer needs. This puts the company into risk of losing customers when they are not satisfied with delivery contributing to corporate failure.

Failure in working capital management

The company's focus on stakeholder management has come at a cost by paying suppliers within 15 days yet collections from customers take 90 days. This has been improper working capital management that might lead to the company filing for bankruptcy due to failure to meet short-term obligations or incurring significant costs to finance working capital whereby both contribute to corporate failure.

Failure to pay taxes

The company has been engaged in tax evasion activities by hiring a tax consultant who has manipulated accounting treatment. However, the practice might lead the company to significant compliance fines and penalties that might make it unable to continue operating leading to corporate failure.

b) (i) Discuss ways in which AHEZA could improve the management of its receivables.

Accounts receivable management is divided into four main areas: policy formulation, credit analysis, credit control, and amount due collection.

Policy formulation

This has to do with creating the structure that allows Aheza to manage its accounts receivable. Establishing conditions of trade, such as the length of credit granted and early payment discounts, are among the factors to be taken into account. selecting whether to

charge interest on past-due accounts; figuring out the protocols to be followed while extending credit to new clients; creating protocols to be followed when past-due accounts are reached, and so forth.

Credit analysis

Evaluation of creditworthiness is contingent upon the examination of data pertaining to the new client. This data, which frequently originates from outside sources, consists of trade, bank, and credit reference agency records. The extent of credit being extended and the likelihood of recurring business determine how in-depth the credit research should be.

Credit control

After credit has been approved, it is crucial to routinely examine outstanding accounts in order to identify past-due accounts. For instance, a study of dated receivables can be used to accomplish this. Ensuring the prompt and reliable execution of administrative procedures is crucial. This includes sending out invoices and statements of account, corresponding via phone or email with clients, and keeping account records. Receipt of outstanding payments All clients should ideally settle within the specified terms of trade. A business must put established protocols in place for handling past-due accounts if this doesn't occur. These might include recorded phone conversations, in-person meetings, adding interest to unpaid debt, declining to extend credit, and, as a last resort, taking legal action.

(ii) Using the information given, assess whether AHEZA should accept the factoring service offered by Powell. **What use should the company make of any finance provided by the factor**

Cost under current policy

| | |
|---------------------------------|---------------|
| Current Policy | Frw' 000 |
| Receivable | 1538 |
| Overdraft cost | 123.04 |
| Bad Debts | <u>60</u> |
| Total cost under current policy | <u>183.04</u> |

Cost with the factor

| | Frw' 000 |
|---|---------------|
| Receivables (40/365 x 12,000) | 1,315.07 |
| Finance cost of receivables from factor (1315 x 10% x 75%) | 98.63 |
| Finance cost of receivables from factor (Normal overdraft (1315 x 8% x 25%)) | 26.30 |
| administration savings | 160.00 |
| factoring fees/charge | <u>240.00</u> |
| Total cost of using a factor | <u>204.93</u> |

| | |
|--------------------------------|---------------|
| Difference | |
| Cost under current policy | 183.04 |
| Cost with the factor | <u>204.93</u> |
| Factor is more expensive by | <u>21.89</u> |

Alternative method of calculation

| Incremental basis | Frw' 000 | Frw' 000 |
|--|----------|-----------------|
| Current receivable (given) | 1538 | |
| New receivable with factor (40 day/365 days) x sales | 1,315 | |
| Decrease in receivables | 223 | |
| Savings in financing (receivables x overdraft (8% x 223)) | | 17.83 |
| Bad Debt reduction to nil | | 60.00 |
| Savings in administration | | 160.00 |
| Increase in financing cost from factor (2% x 1,315 x 75%) | | (19.73) |
| Factor fees (sales x 2%) | | <u>(240.00)</u> |
| Incremental cost of using a factor | | <u>21.89</u> |

The finance offered by the factor is an accelerated cash flow derived from trade receivables. It is therefore, not appropriate to use it for a long-term finance need, such buying non-

current assets. Rather, it should be used for a short-term need, such as paying trade payables or meeting forecast cash needs. In general, matching of assets and liabilities is recommended. That said, permanent current assets should be financed from a long-term source. the factoring services are more expensive therefore should not be accepted

QUESTION 2C

Discuss TWO indicators that may show when a company is in danger of overtrading. (4 Marks)

Overtrading indicators

Definition: Excessive Trading Overtrading, as opposed to over-capitalization, occurs when a company attempts to support an excessive amount of trade with its available capital resources by doing too much too fast with insufficient long-term capital. A company that engages in excessive trading may not always turn a profit due of cash flow issues. Its inability to generate enough capital to pay its debts as they become due is the root cause of these liquidity issues.

Symptoms of overtrading are as follows.

- a) The revenue from sales is increasing quickly.
- b) The volume of current assets, and perhaps non-current assets as well, is increasing quickly. The pace of rise in inventories and accounts receivable would be much higher than the rate of increase in sales if inventory and accounts receivable turnover slowed down.
- c) The equity capital is only slightly increased (perhaps through retained earnings). Credit is used to finance the majority of the expansion in assets, particularly:
 - (i) Trade accounts payable: It is anticipated that the accounts payable payment period would increase.
 - (ii) A bank overdraft, which frequently approaches or even surpasses the maximum amount permitted by the bank
- d) A few debt-to-liquidity ratios drastically change.
 - (i) The percentage of total assets funded by credit increases while the percentage financed by proprietors' capital decreases.
 - (ii) Both the fast ratio and the current ratio decrease.
 - (iii) A liquid deficit, or an imbalance between current obligations and current assets, could exist in the company.

QUESTION THREE

(a)

| Criteria | Marks |
|---|-------|
| Cost of Debt Calculation (IRR) | 2 |
| Correct Result for Cost of Debt (5.58%) | 1 |
| Cost of Equity Calculation | 2 |
| Clear Presentation of Cost of Equity | 1 |
| Correct Result for Cost of Equity (13.4%) | 1 |
| WACC Calculation Steps | 2 |
| Correct Result for WACC (9.95%) | 1 |
| Total Marks | 10 |

(b)

| Criteria | Marks |
|--|-------|
| Calculation of Project-specific cost of equity | 2 |
| Correct calculation of beta ungeared (1.44) | 1 |
| Correct calculation of beta geared (2.211) | 1 |
| Calculation of Cost of Equity | 2 |
| Correct calculation of Cost of Equity (20.48%) | 1 |
| Clarity and Presentation of Calculations | 1 |
| Total Marks | 8 |

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| Points | Marks |
|---|-------|
| Two discussions for each director view (2 mark) | 4 |

(d)

| Points | Marks |
|---|-------|
| Two discussions for each theory view (1.5 mark) | 3 |

a)

Cost of debt

| Year | Cash flow | Discount factor | PV | Discount factor | PV |
|------|-----------------------------|-----------------|-------|-----------------|-------|
| | FRW | 7% | FRW | 5% | FRW |
| 0 | Debenture price (105) | 1 | (105) | 1 | 105 |
| 1-5 | Interest (10 × (1 – 0.3)) 7 | 4.1 | 28.70 | 4.329 | 30.30 |
| 5 | Repayment 100 | 0.713 | 71.30 | 0.784 | 78.40 |
| | | | (5) | | 3.70 |

Calculate the cost of debt using an IRR calculation.

$$\text{IRR} = a + \left(\frac{NPVa}{NPVa - NPVb} \right) * (b - a)$$

$$\text{Cost of debt} = 5 + 3.7 / (3.7 + 5) * (7 - 5) = 5.58\%$$

Cost of equity

Cost of equity

$$K_e = R_f + (R_m - R_f)b$$

$$R_f = 5\%$$

$$R_m = 12\%$$

$$b = 1.2$$

$$k_e = 5\% + (12\% - 5\%)1.2$$

$$\text{Cost of Equity} = 13.400\%$$

Weighted average cost of capital

$$V_E = 450 \times 5 = \text{FRW } 2,250 \text{ billion}$$

$$V_D = 1,800 \times 1.05 = \text{FRW } 1,890\text{m}$$

$$\text{WACC} = K_e (V_e/V_e + v_d) + K_d (V_d/V_d + V_e)$$

$$= 13.40\% * (2250/4140) + 5.85\% * (1890/4140)$$

$$= 7.28\% + 2.67\%$$

$$\text{WACC} = 9.95\%$$

(B) Project-specific cost of equity Ungear Kalisimbi Rwanda Plc. beta

$$b_u = b_g \left(\frac{V_e}{V_e + V_d(1-t)} \right)$$

For Kalisimbi Rwanda Plc:

$$V_E = 600 \times 5.6 = \text{FRW } 3,360\text{bn}$$

$$V_D = \text{FRW } 525\text{m}$$

$$\begin{aligned} b_u &= 1.6 \times (3,360 / (3,360 + (525 \times 0.7))) \\ &= 1.44 \end{aligned}$$

Re-gearing

$$V_E = \text{FRW } 510\text{bn}$$

$$V_D = \text{FRW } 390\text{bn}$$

$$b_g = b_u \frac{v_e + v_d(1-t)}{v_e}$$

$$b_g = 1.44 \frac{510 + 390(0.7)}{510}$$

$$b_g = 2.211$$

Cost of equity

$$k_e = R_f + (R_m - R_f) \square$$

$$= 5\% + (12\% - 5\%) \times 2.211$$

$$K_e = 20.48\%$$

(c) Discuss the views of the two directors

(4 marks)

The project-specific cost of capital exceeds the present WACC due to appropriateness of the discount rates. This is a reflection of the new investment's increased financial and business risk.

Risk to business

Butare is entering a new industry that it has never ventured into before. When this beta is re-gearred to reflect Butare's gearing ratio, it is significantly higher. Kalisimbi Rwanda Plc's equity beta is higher than Butare's. This is probably due to the increased risk associated with the sector in which Kalisimbi Plc works and the likelihood that investors will want a higher return on their investment in Butare. While the beta value is influenced by a variety of factors

Risk to finances

The capital structure and the perceived financial risk of investing in the firm may be significantly altered by the funds raised to finance a new investment. The debt-to-asset ratio for this investment is 43% ($390/900 \times 100\%$), down from 46% ($1,890/4,140 \times 100\%$) in the past. Since the financial risk has not increased all that much, one may argue that the current WACC represents a reasonable discount rate.

Suggestion

The extra business risk that results from making an investment in a novel, hazardous industry is not taken into account by the current WACC. Because it solely considers the cost of equity and overlooks the amount of debt required to finance the investment, 15% is an excessively high rate to utilize. Therefore, it is advised to choose a cost of capital that is specific to the project.

(D) Sources of finance

Source of finance

Bonds and common shares of Butare plc's long-term funding sources, and investors' projected rates of return are based on the relative risks associated with each kind of funding. Since equity carries the most risk, it has the highest cost of capital. With the lowest cost of capital, the bonds are the least risk.

Therefore, if debt were to substitute equity and taxes were to be ignored, the weighted average cost of capital should fall.

Traditional view

According to the conventional understanding of capital structure, the WACC decreases when a business expands since average shareholders don't mind minor debt additions. The impact of less expensive debt will be countered by rising equity costs as debt replaces equity and gearing rises due to increased financial risk. At high gearing levels, the risk of bankruptcy will also raise the before-tax cost of debt. The possibility of bankruptcy will drive up equity costs even further.

Thus, a business can use debt to ramp up and minimize its WACC. The market value of the business, which is equivalent to the present value of its cash flows, will be maximized when the WACC is reduced.

The WACC will rise above this lower bound as a result of rising financial and insolvency risk

Modigliani and Miller

This conventional wisdom is refuted by Modigliani and Miller, who showed that the WACC did not change as a corporation increased its gearing while assuming a perfect market and ignoring tax. They contended that the drop in WACC brought about by the reduced before-tax cost of debt was precisely offset by the rise in the cost of equity owing to financial risk. Since there is no bankruptcy risk in a perfect capital market, the WACC and, consequently, the market value of the business remain constant across all gearing levels. A company's market worth is solely determined by its level of business risk. Butare Plc is therefore unable to modify its WACC.

Nonetheless, there are corporate taxation and debt interest payments lower tax obligations. It can be contended that when gearing increases, WACC decreases. Consequently, Butare Plc could minimize its WACC by accumulating as much debt as possible. It is impractical to expect a flawless capital market. As gearing grows, bankruptcy risk and other debt servicing expenses rise as well, offsetting the tax shield's value.

QUESTION FOUR

(a)

(I)

| Criteria | Marks |
|--|--------------|
| Analysis of Short-Term Liabilities (Debt/Assets) | 2 |
| Explanation of Overtrading and Profit Margin | 2 |
| Discussion of Refinancing and Its Implications | 1 |
| Evaluation of Liquidity Ratios | 2 |
| Assessment of Investment in Non-Current Assets | 1 |
| Examination of Working Capital Ratios | 1 |
| Conclusion and Summary of the Main Problem | 1 |
| Total Marks | 10 |

(II)

| Criteria | Marks |
|---|--------------|
| Consideration of Future Sales and Product Projections | 1 |
| Discussion of Possible Solutions Based on Sales | 1 |
| Suggestions for Improving Working Capital Management | 1 |
| Specific Recommendations for Accounts Receivable | 1 |
| Total Marks | 4 |

(III)

| Points | Marks |
|---------------------|--------------|
| Each point (1 mark) | 3 |

b)

| | |
|---|----------|
| (b) Award 1 mark for each calculation, maximum of 8 marks | 8 |
| Maximum marks | 8 |

(a) (i) The company is more reliant on short-term sources of capital, i.e liabilities. This can be seen by looking at current liabilities in relation to total assets as illustrated below:

| | 2024 | | 2023 | |
|-----------------------|----------------|--------------------|----------------|--------------------|
| | FRW 000 | Debt/assets | FRW 000 | Debt/assets |
| Total Asset | 21,350 | | 14,900 | |
| short- term Liability | 8,900 | 42% | 5,000 | 34% |
| long-term liability | <u>12,650</u> | 59% | <u>9,900</u> | 66% |
| | 21,350 | | 14,900 | |

Overtrading

Above assertion is indicated by a significant increase in sales: sales increased by 50% in one year, whereas operating profit margin as fallen from $9,000/20,000 = 45\%$ in 2023 to $10,000/30,000 = 33\%$ in 2024. Signs of overtrading are further supported by

Refinancing

By the repayment of FRW2.3 billion (66%) of the 8% bonds and replacement with a FRW2 billion bank overdraft and increased trade creditor finance. Although this may be because the interest rate on the overdraft is cheaper than on the bonds, it is generally not advisable in the context of the risk of short-term debt. However, if it is felt that the current sales volume is abnormal and that when the Polly Playtime doll reaches the end of its product life cycle, sales will stabilize at a lower level, the use of shorter-term debt is justified.

Liquidity ratios

As a result of overtrading, the company's current ratio has deteriorated from $13,500/500 = 2.7$ in 2023 to $19,850/8700 = 2.28$ in 2024. The quick assets ratio (or 'acid test') has deteriorated from $10,500/5,000 = 2.1$ to $12,500/8,700 = 1.44$. However, these figures are acceptable and only if they continue to deteriorate is there likely to be a liquidity problem. In the 2024 accounts, the company continues to have a healthy bank balance, although this has been achieved partly by halting dividend growth.

Investment in non-current assets.

The company has not maintained an investment in non-current assets to match its sales growth. Sales/non-current assets have increased from $20,000/1,400 = 14.3$ times to $30,000/1,500 = 20$ times. This may be putting the quality of production at risk but may be justified, however, if sales are expected to decline when the doll loses popularity.

Working capital ratios

Investigation of working capital ratios shows that:

(1) Inventory turnover has decreased from $11,000/3,000 = 3.67$ times to $20,000/7,350 = 2.72$ times. This indicates that there has been a large investment in inventory. The question of whether this is justified again depends on expected future sales, but the strategy appears to be the opposite of that adopted for non-current assets.

(2) The average accounts receivable payment period has increased from $6,000/20,000 \times 365 = 110$ days to $10,000/30,000 \times 365 = 122$ days, indicating a lack of credit control. This has contributed to a weakening of the cash position. There appears to be no evidence of prompt payment discounts to accounts receivable.

(3) The payment period to accounts payable (roughly estimated) has decreased from $2,500/11,000 \times 365 = 83$ days to $4,200/20,000 \times 365 = 77$ days. This result is unexpected, indicating that there has been no increase in delaying payment to accounts payable over the year. Accounts payable are being paid in a significantly shorter period than the period of credit taken by customers.

(4) The sales/net working capital ratio has increased from $20,000/8,500 = 2.35$ times to $30,000/11,150 = 2.69$ times. This indicates that working capital has not increased in line with sales and this may indicate future liquidity problems.

Conclusion

In summary, the main problem facing Tuzamurane Ltd is its increasing overdependence on short term finance, caused in the main by:

- (1) A major investment in inventory to satisfy a rapid increase in sales volumes
- (2) Deteriorating profit margins
- (3) Poor credit control of accounts receivable
- (4) Repayment of bond capital

(ii) Future sales

Possible solutions to the above problems depend on future sales and product projections. If the rapid increase in sales has been a one-product phenomenon, there is little point in over-capitalizing by borrowing long-term and investing in a major expansion of non-current assets. If, however, sales of this and future products are expected to continue increasing, and further investment is needed, the company's growth should be underpinned by an injection of equity capital and an issue of longer-term debt.

Better working capital management

Regardless of the above, various working capital strategies could be improved. Accounts receivable should be encouraged to pay more promptly. This is best done by instituting proper credit control procedures. Longer credit periods could probably be negotiated with accounts payable and quantity discounts should be investigated

(iii)

1. Avail “share option schemes” to business leaders to align their interests with those of the business owners.
2. Introduction of “Performance-related pay” to motivate leaders to achieve the predetermined and agreed upon targets.
3. Introduction of “Corporate governance codes of best practice” which encourage specific behaviour, processes, and reporting guidelines

4. Introduction of “Stock exchange listing regulations” which normally require higher degree of information disclosure and encourage accountability.

5. Regular “Monitoring” of the actions of business leaders through audits, reviews, etc

B(ii)

| | |
|---|-------------|
| Receipts in 3 months | Amounts |
| Forward market | 197,000,000 |
| Forward rate to be used | 1.7063 |
| Net receipts in FRW | 115,454,492 |
| | |
| Money market | Amounts |
| Need to hedge in KES | 197,000,000 |
| Step 1: borrowing now at the rate of $1 + (3/12 \times 9\%)$ | 1.02250 |
| Amounts borrowed $(197,000,000/1.02250)$ | 192,665,037 |
| | |
| | |
| Step 2: Convert amounts borrowed into FRW at spot exchange rate | 1.7140 |
| Amounts in FRW | 112,406,673 |
| | |
| Step 3: Invest amounts in step 2 above for 3 months | |
| Deposit rates $1 + (3/12 \times 9.5\%)$ | 1.02375 |
| | |
| Net receipts in FRW after 3 months | 115,076,331 |
| | |
| Compare with forward contract in above | |
| Conclusion, it was better to get into a forward contract | |

| | |
|--|-------------|
| Payments in 6 months | |
| Forward market | 447,000,000 |
| Forward rate | 1.6967 |
| Net payments | 263,452,584 |
| | |
| Money market | |
| Need to hedge in KES | 447,000,000 |
| Step 1: Deposit in Kenya now for 6 months at the rate of $1 + (6/12 \times 6\%)$ | 1.03000 |
| Amount to deposit $(\text{KES } 447,000,000/1.03)$ | 433,980,583 |
| | |
| Step 2: Convert amounts to deposit into FRW at spot exchange rate | 1.7106 |

| | |
|---|-------------|
| Amounts in FRW | 253,700,797 |
| | |
| Step 3: Borrow amounts in step 2 above for 6 months | |
| Borrowing rates $1 + (6/12 \times 12.5\%)$ | 1.06250 |
| | |
| Net payments in FRW after 6 months | 269,557,096 |
| Compare with forward contract in above | |
| Forward contract gives a better hedge | |
| | |