CERTIFIED PUBLIC ACCOUNTANTS

ADVANCED LEVEL 2 EXAMINATIONS

A2.1: STRATEGIC CORPORATE FINANCE

DATE: WEDNESDAY 27, NOVEMBER 2024

MARKING GUIDE AND MODEL ANSWERS

SECTION A

QUESTION ONE

MARKING GUIDE

Question 1	Description	Marks per point	Total
a)	**Net assets valuation**		
	Realizable value of Non-current asset	0.5	
	Realizable value of current asset	0.5	
	Net Assets	1	
	Market capitalization		
	Market price per share	0.5	
	Number of shares	0.5	
	Market Value	1	
	Price Earnings Valuation Method		
	Use of PE ratio of competitor	0.5	
	Earnings	0.5	
	Total Value	1	
	Discounted cash flows		
	Ungearing	1	
	Re-gearing	1	
	Cost of equity	1	
	Cost of debt	1	
	WACC	2	
	Contribution	1	
	Taxation	1	
	Perpetual growth use of Dividend growth model	1	
	Net value	1	
	Comment on each valuation model	4	20
b)	**Sensitivity Analysis**		
	Sales price		
	Contribution (0.5 Marks each, 1 Mark Max)	1	
	Present Values (0.5 Marks each, 1 Mark Max)	1	
	NPV (0.5 Marks each, 1 Mark Max)	1	**3.0**

	Sales volume		
	Contribution (0.5 Marks each, 1 Mark Max)	1	
	Present Values (0.5 Marks each, 1 Mark Max)	1	
	NPV (0.5 Marks each, 1 Mark Max)	1	**3.0**
	Discounting rate		
	Present Values (0.5 Marks each, 1 Mark Max)	1	
	NPV (0.5 Marks each, 1 Mark Max)	1	
	IRR	1	
	Comment (1 Mark for each, 3 Marks Max)	3	**6.0**
c)	Calculation of Expected NPV	1	
	Calculation of variance	4	
	Calculation of Standard Deviation	2	
	Interpretation	1	**8.0**
d)	Monte Carlo simulation		
	Cumulative Probabilities (0.5 Marks each, Max 3 Marks)	3	
	Random Numbers (0.5 Marks each, Max 3 Marks)	3	
	Present values (0.5 Marks each, Max 3 Marks)	3	
	Average NPV	1	**10**
Total			**50**

a) Calculation of the price or a range of prices

1. Net asset valuation	**Market values FRW Millions**
Tangible asset (20%*4,800+4,800)	**5,760**
Current assets less by bad debts of (2,600-200)	**2,400**
Total Assets	8,160
Less total liabilities	(5,000)
Net Assets	**3,160**

Note that goodwill given has not been included in NAV. The method only takes into account realisable tangible assets. (Internally generated intangible asset are not considered in NAV).

2. Market Capitalization using Dividend growth model	
Dividend per share	FRW 189
Growth (assumed to be same as for growth in sales revenues	5%
Ke using CAPM (6+(4.82 x 2.4)	17.57
Po = do(1+g)/Ke-g – Market Per Share	**1,579**
	FRW 'Million'
Number of shares (5,200 M/1,000)	**5.20**
Market Value = MPS x No. of shares (5.20*1,579)	**8,211**

3. Price Earnings Valuation Method	**FRW 'Million'**
P/E of competitors (Industrial P/E)	**25**
Earnings = EPS x No. of shares (85 x 5.2M)	**442**
Total value	**11,050**

4. Cash flow model

MG is acquiring a company in a different sector so there is change in business risk

Step 1, identify a company in that sector, in this case, it is the target company, NYABUGOGO Limited. Ungeared its equity beta to arrive at business risk beta only

Beta of equity (be)	2.4
Market value of Equity (above using dividend valuation model) (ve)	8,211
Market value of debt (vd)	5,000
Tax rate	30%
$\boldsymbol{\beta_a}$	1.68

Ungearing is done as follows $\beta_a = \frac{Ve}{Ve+Vd(1-t)}\ x\ \beta_e$

$$\textbf{Ungeared Beta } (\boldsymbol{\beta_a}) = \frac{8{,}211}{8{,}211 + (5000x0.7)}\ x\ 2.4 = 1.68$$

Step2. Re -gear the Ba calculated in step 1 above using the capital structure of MG

MPS x Number of shares, (825 x 10)	8,250
Debt	7,200
Tax rate	30%
Ba	1.68
Be	2.71

Re-gear as follows $\boldsymbol{\beta_e = \frac{Ve+Vd(1-t)}{Ve}\ x\ \beta_a}$

$$\textbf{Regeared Beta } = \frac{8{,}250 + (7{,}200\ x\ 0.7)}{8{,}250}\ x\ 1.68 = 2.706 \approx 2.71$$

Step 3; Use the re-geared Beta to calculate the cost of equity using CAPM

Cost of equity, ke

$$\textbf{Ke } = rf + (rm - rf)\ x\ \boldsymbol{\beta_e}$$

$$\textbf{Ke } = 6\% + (4.82\%)x2.71 = 19.07\%$$

Cost of debt is taken be the risk free rate because debt was assumed to have a beta of zero which means it is risk – free.

Calculate WACC

Capital structure of MG	
Equity (Ve)	8,250
Debt (Vd)	7,200
Ke	19.07%
Kd	6.00%
Tax	30.00%

$$\textbf{WACC } = \frac{Ve}{Ve + Vd}\ x\ Ke + \frac{Vd}{Ve + Vd} x\ Kd(1 - t)$$

$$= \frac{8{,}250}{8{,}250 + 7{,}200}\ x\ 19.07\% + \frac{7{,}200}{8{,}250 + 7{,}200} x\ 6\%(1 - 0.3) = 12.14\%$$

Using WACC calculated above, discount the cash flows and deduct Debt to arrive at the value of the company

Using cash flow to perpetuity	
Cash flows	**FRW 'Million'**
Sales Revenues	6,500
Contribution at 30% (0.3*6,500)	1,950
Less tax 30% (0.3*1,950)	(585)
Net cash flow	1,365
Present value of the cash, see below	20,073.529
Less Debt	(5,000)
Equity	15,073.529

PV of Cash flow in the unforeseeable future (discount for year 1) = $\frac{Cashflow\,(1+g)}{WACC-g}$

PV of Cash flow in the unforeseeable future with growth= $\frac{1{,}365(1.05)}{12.14\%-5\%}$ **= 20,073.529 ≈20,074**

Range of values	**FRW in Millions**
Net Asset valuation (W1)	3,160
Dividend Valuation Model (W2)	8,211
Price Earnings Ratio (W3)	11,050
Discounted Cash flow(W4)	15,074

Comment on each valuation model

Net Asset Valuation (NAV)

While the Net Asset Valuation (NAV) method provides a straightforward approach to valuing companies based on their tangible assets, it does have several drawbacks and limitations. In the case of NYABUGOGO Limited, the Net Asset Value has failed to account for intangible assets such as the best engineers (human capital) and large Research and development, intellectual property, (NYABUGOGO Limited may have patented some of its chemical formulae as well), its brand the name and goodwill which NYABUGOGO Limited seems to be enjoying now that is it the only company with untainted image on pollution matters. The above factors when taken into account can be significant contributors to a company's overall value.

Price earnings ratio

The Price-to-Earnings (PE) allows for easy comparison of valuations within the same industry or sector, indicating investor expectations and market sentiment. However, the price-to-earnings ratio has limitations including over dependence on financial statements which are subject to manipulation and differences in growth rates among companies. Therefore, it should be used in conjunction with other financial metrics and qualitative analysis for a comprehensive evaluation of an investment opportunity.

Dividend valuation model

The Dividend Valuation Model (DVM) is a method used to value a company's stock based on its Expected future dividends. It is useful for income-oriented investors who prioritize income generation. Dividend Valuation Model is simple and transparent, especially for stable or predictable dividend policies. It aligns with investor goals, allowing investors to assess the total return from dividends over time. It also allows for benchmarking, comparing intrinsic value with market prices, and predicting future dividend growth. Dividend Valuation Model is useful for companies to evaluate and adjust their dividend policies. However, it assumes dividends are the primary source of value, which may not be suitable for companies with volatile policies or capital gains or loss, it is also difficult to estimate future dividend growth as well as its inaccurate assumption that growth will be constant.

Cash valuation

The Cash Valuation Method (CVM) involves discounting future cash flows to their present value. It provides a pragmatic view of the business's ability to generate funds, aligning with market value perceptions. The method can be adapted to different business scenarios and industries, considering inherent risks and future orientation. It is a more robust and realistic valuation than methods based solely on book value or historical metrics.

In the case on NYABUGOGO Limited, the assumptions of perpetual growth rate should be reviewed, the following factor should be considered, has the market reached maturity or it Is still a growing market, level of competition, government regulations and changes in environmental laws etc.

b) Sensitivity analysis

Changes in sales price

Details	**5% increase**	**0% increase**
Sales Price per unit	1276.281563	1000
Variable Cost per unit	700	700
Contribution per unit	576.2815625	300
Total contribution	**3745.830156**	**1950**
PV of total contribution	**13503.71771**	**7029.75**
Capital Outlay	8500	8500
NPV	**5003.717713**	**-1470.25**
% Change in NPV	**(440.33)%**	

Changes in sales volume

Details	**Cash flows at 0% growth**	**Cash flows at 5% growth**
Sales revenues	6,500.000	8,295.830
Variable cost	-4,550.000	-5,807.081
Contribution	**1,950.000**	**2,488.749**
PVIF(12%, 5years)	3.605	3.605
PVs	**7,029.750**	**8,971.940**
Capital outlay	8,500	8,500
NPV	**-1,470.25**	**471.94**
% Change in NPV	**(411.53)%**	

Changes in the discounting rate using IRR

Variable	**Cash flows**
Sales revenues	6,500
Variable cost (100% - 30%) = 70%*6,500	(4,550)
Contribution	1,950
PVAF at (12%, 5)	3.605
PV	**7,030**
Less initial investment	(8,500)
NPV	**(1,470)**

In order to calculate the sensitivity of discounting factor, we need to calculate IRR

So a second NPV is required

Discounting at 4% to get a positive NPV

Variable	**Cash flows**
Sales revenues	6,500
Variable cost (100% - 30%) = 70%*6,500	(4,550)
Contribution	1,950
PVAF at (4%, 5)	4.452
PV	**8,686**
Less initial investment	(8,500)
NPV	**186**

IRR= $4 + \left(\frac{186}{186+1,470)}\right) x(12 - 4)$ = 4.9%

% Change in discount rate (4.9-12)/12	**(59)%**

Comments: When there is no growth in sales revenue;

i) The sales price will reduce FRW 5,003.72 Million to (1,470.25) Million which is 440% decrease.
ii) The sales volume will reduce FRW 471.94 Million to (1,470.25) Million which is 441% decrease.
iii) There will be a reduction in the discounting rate from 12% to 4.9%.

c) Computation of risk

Key variable	**NPV (a)**	**Probability (p)**	**Expected NPV (b)**	**a-b**	**$(a-b)^2$**	**$(a-b)^2$x p**
Growth in sales by 5%	11,434	15%	1876.25	9,558	91,350,585	13,702,588
No or zero growth in sales	987	65%	1876.25	-889	790,766	513,998
Increase in cost of capital by 6%	-2,402	20%	1876.25	-4,278	18,303,423	3,660,685
					Variance	17,877,270

Expected Return= ∑(Return x Probability)

Expected NPV	(11,343*0.15)+(987*0.65)+(-2402*0.20)	1876.25

Risk as measured by standard deviation is

$(\partial) = \sqrt{17{,}877{,}270} = FRW\ 4{,}228\ Million$

Comment

Standard deviation in monetary value is huge, indicating the variability or riskiness of the projects, this supports the CFO's concern about the risk associated with the project

d) Analysis of risk inherent by simulation

Simulation = NPV RFW 5.77Million

Year	**Cash flows**	**Probability**	**Cumulative probability**	**Random Numbers**
1	10	0.3	0.3	00-29
	15	0.4	0.7	30-69
	20	0.3	1	70-99
2				
	10	0.1	0.1	00-09
	20	0.2	0.3	10-29
	30	0.4	0.7	30-69
	40	0.3	1	70-99
3				
	10	0.3	0.3	00-29
	20	0.5	0.8	30-79
	30	0.2	1	80-99

Simulation

	Year 1		**Year 2**		**Year 3**			
Trials	**R/no**	**Cash flows**	**R/no**	**Cash flows**	**R/no**	**Cash flows**	**Capital**	**NPV**
1	43	15	23	20	67	20	(40)	3.5735
2	76	20	24	20	78	20	(40)	8.038
3	98	20	7	10	45	20	(40)	0.066

4	28	10	46	30	39	20	(40)	7.081
5	19	10	72	40	83	30	(40)	22.171
6	58	15	49	30	2	10	(40)	4.4275
7	19	10	20	20	39	20	(40)	-0.891
8	18	10	37	30	46	20	(40)	7.081
9	17	10	28	20	37	20	(40)	-0.891
10	26	10	48	30	35	20	(40)	7.081
Total NPV								57.737

Calculation of NPV trial 1 at 12%
(15 x 0.8929) + (20 x 0.7972) + (0.7118 x 20) – 40

Average NPV = $\frac{Total\ NPV}{Number\ of\ trials} = \frac{57.737}{10} = 5.77$

SECTION B

QUESTION TWO

Marking scheme

Q2	Criteria	Marks
a)	Award 1 **Mark** for each of 4 correctly computed minimum return Award 0.5 **Marks** for any 2 correct remarks **Maximum marks**	4 1 **5**
b)	Award: **1 Mark** for cost of forward contract **1 Mark** for consignment cost **1 Mark** for the number of futures **1 Mark** for transactional cost of future **1 Mark** for amount spent on futures **1 Mark** for calculating total cost of futures **2 Marks** for calculating gain /loss **Maximum marks**	1 1 1 1 1 1 2 **8**
c)	Award :**0.5 Marks** each for 20 correct entries made **1 Mark** for calculating discounting rate **1 Mark** for correct advice **Maximum marks**	10 1 1 **12**
	Total marks	**25**

Modal answers

a) Determination of portfolio's efficiency

Companies	Minimum return =Rf + Beta (Rm-Rf)	Expected return	Alpha values =Exacted return-minimum return	Remarks
Abba motors	10%+1.04*(17-10)=17.28	17.55	0.27	Super-efficient
Bobby textiles	10%+1.15*(17-10)=18.05	21.6	3.55	Super-efficient
Coby computers	10%+0.80 * (17-10)=15.6	15.57	-0.03	Inefficient
Dawood medics	10%+1.53 *(17-10)=20.71	20.71	0	Efficient
Market return	17			
Risk-free rate	10			

b) Determination of the Net gain/loss of using future contract

Gain/loss=cost of forward-cost of futures	
Forward contracts	
Cost of consignments	FRW 120,000
Exchange rates	USD1= FRW 795
Cost of forward contract =120,000*795	FRW 95,400,000
Cost of futures	
Spot rate	USD1=FRW 765
Cost per future	FRW 10,000
Cost per block of futures	FRW 1,000,000
Current cost of consignment (765*120,000)	FRW 91,800,000
Number of futures to buy (91,800,000/1,000,000)	92 *
Transaction cost of futures (92*10,000)	FRW 920,000
Amount spent on futures when it matures (775*120,000)	FRW 93,000,000
Total cost of futures (FRW 93,000,000+ FRW 920,000)	FRW 93,920,000
Gain on futures (FRW 95,400,000-FRW 93,920,000)	FRW1,480,000

*future contracts are in whole numbers

c) Calculation of NPV

Incremental initial outlay	**FRW**
Call premium (10%*100M)	10,000,000
Add Overlapping interest (20%*100M*2/12)	3,333,333
Add Discount on issue of bond(3%*100M)	3,000,000
Add Issue cost new bond(5%*100M)	5,000,000
Total Gross cash outlay	**21,333,333**
Less tax shield benefits (**working 1)**	(4,600,000)
Net cash outlay	**16,733,333**
Old bond	
Interest expense (20%*100M)	20,000,000
Less tax shield benefit (**Working 2)**	(6,120,000)
Net annual cost old bond	**13,880,000**
New bond	
Interest expense (12%*100M)	12,000,000
Less Interest tax shield (**Working 2)**	(4,080,000)
Net cost new bond	**7,920,000**
Annual savings	
Saving on old bond/Net annual cost	13,880,000.00
Less cost of new bond	(7,920,000)
Net savings	5,960,000
P.V.I.F.A.8%5 years	3.9927
Discounted total savings cash flows	23,796,492
Less capital outlay	(16,733,333)

NPV	7,063,159

Computation of Discounting rate 5 years = 12(1-0.3)	8.4≈8%

Advice: Replace the old bond with issuing a new bond because there will be a savings of 7,063,159

Workings 1

Tax shield benefit	
Call premium	10,000,000
Overlapping interest	3,333,333.33
Amortized discount (2%*100*5/10)	1,000,000
Amortized issue cost old bond (2,000,000*5/10)	1,000,000
Total	15,333,333
Tax shield	**4,600,000.00**
Working 2	
Tax shield old bond	
Interest	20,000,000.00
Unamortized discount (2000000/10)	200,000.00
Unamortized issue cost (2000000/10)	200,000.00
Total	20,400,000.00
Tax shield old bond	**6,120,000.00**
Tax shield new bond	
Interest expense	12,000,000.00
Amortized issue cost (5000000/5)	1,000,000.00
Amortized discount (3000000/5)	600,000.00
Total	13,600,000.00
Tax shield new bond	**4,080,000.00**

QUESTION THREE

Marking scheme

Q3	Criteria	Marks
a)	Award **1 Mark** for each of 4 benefits of foreign intermediaries	**4**
b)	Award **1 Marks** for each of 5 portfolio management strategies	**5**
c)	Award **1 Mark** for each of 3 causes and 4 solutions to financial distress	**7**
d) (i)	Award :**1 Mark for each correct Net present value (3*1)** **1 Mark for the advice**	3 1 **4**
(ii)	**1 Mark** for new capital **1 Mark** for percentage change in capital **1 Mark** for new scrap value **1 Mark** for percentage change in capital **1 Mark** for the interpret (0.5 Marks each, 1 Mark Max)	1 1 1 1 1 **5**
	Total marks	**25**

Modal answers

a) **Benefits of using foreign financial intermediaries**

i) Access to diverse funding

It provides access to wide range of funding option including international loans equity investments and credit facilities at more competitive rates than domestic options

ii) Risk diversification

Engaging with international intermediaries can help to diversify its financial risk reducing dependence on the local financial market and mitigate exposure to countries specific economic fluctuation

iii) Expertise and advisory services

It brings experiences and expertise in the global market offering valuable advisory services on complex financial transactions like risk management

iv) Improved financial stability by leveraging financial strength and stability of established international market

v) Currency hedging solutions

Foreign financial intermediaries can provide good currency hedging solution to manage exchange rate risk which is crucial for companies engaging in cross border transactions

vi).Enhance credit rating

Working with good international financial institution, can improve belt ltd credit rating, making it easier to secure future funding and negotiate better terms with suppliers and creditors

b) **Strategies of managing portfolio**

i) Diversification.

By diversifying its investment across various sectors, asset classes and geographical region it can mitigate risk and reduces impact of one style underperformance investment on overall portfolio

ii) Regular portfolio review and rebalancing.

It ensures that it remain aligned with belt ltd investment goals and risk tolerances. This involved adjusting portfolio to maintain the desired asset allocation and responding to market

iii) Risk management.

Implementing robust risk management and setting stop-loss order can protect portfolio from significant losses due to market volatility

iv) Performance monitoring and analysis

Continuously monitoring the performance of individual investment and overall portfolio allow belt ltd to make informed decision

v) Strategic asset allocation.

Adopting strategic asset allocation approach ensures that belt ltd portfolio is structured to achieve long term investment objectives. This involved determining optimal mix of bassets based on company's financial goals risk tolerances and investment horizon and making adjustment as needed to maintain balance.

c) Causes of Corporate Failure

i) Inefficient utilisation of economic resources at the disposal of the management characterized by underutilization of assets, over-extension of credit or long-term periods of collection of accounts from customers and Excessive stock piling of inventories

ii) Inefficient financial management leading to poor portfolio management marked by overinvestment in fixed assets, excessive borrowing, inability of the business to pay its long-term debts as they fall due without having to sell some assets and deficiency in working capital

iii) Inefficient human resources management leading to under-utilization of human resource at the disposal of the business and personality conflicts in management

iv) Inefficient marketing, selling and distribution strategies leading to loss of markets to competitors or yielding to pressure of competitors.

v) Severe austerity of government economic, taxation and regulatory policies leading to un availability of raw material and contraction of market outlets.

vi) Continued operating losses or inadequacy of the profits of the business to cover the cost of sales and operating expenses and leave some surplus to the owners/shareholders.

vii) Extraneous factors such as fire, world economic melt-down, burglaries, theft, sophisticated internet fraud.

Solutions to the challenges faced by Belt Ltd

i) Restructuring of business operation and finances like capital reconstruction.

ii) Selling off unproductive assets

iii) Discarding projects which are no longer financially viable

iv) Implementing cost reduction program e.g layoffs

v) Develop a strategy to revive the business

vi) Having effective working controls

d) i) Expected NPV

	Worst case NPV	**Base case NPV**	**Best case**
Annuity cash flows	20,000,000	30,000,000	40,000,000
PVIFA (13%, 5 years)	3.517	3.517	3.517
Discounted cash flow	70,340,000	105,510,000	140,680,000
Add scrap value	2,715,000	10,860,000	16,290,000
Total cash flows	73,055,000	116,370,000	156,970,000
Less capital outlay	(100,000,000)	(100,000,000)	(100,000,000)
Net Present Value	**(26,945,000)**	**16,370,000**	**56,970,000**

Scrap value

Worst case 5 M x 0.543 = 2,715,000

Base case (20 M x 0.543) =10,860,000

Best case (30 M x 0.543) =16,290,000

Advice: Accept the project using the Base Case NPV because it has a positive NPV

ii) **Sensitivity Analysis**

Sensitivity analysis	
Base case scenario	
% change in capital	**FRW**
Current capital	100,000,000
Total present value	116,370,000

Total present value - new capital = 0 (for rejection)	
New capital = total NPV + old capital	**116,370,00,000**
% change in capital = new capital - current capital/current capital*100	
% change in capital = (116.370M-100M)/100M *100	**16.37%**

% change in scrap value		
New scrap value-current scrap value/current scrap value*100		
Current scrap value		30,000,000
Total annual cash flows+ new scrap value=current capital		
= 105,516,000+(scrap value*0.5428) = 100,000,000		
Scrap value =(100,000,000-105,516,000)/0.5428		
Scrap value	**(10,162,122.33)**	
% **change in scrap value**	**(-10,162,122.33 – 20,000,000)/ 20,000,000)*100 = (150.81)%**	

Comments

1 Capital should increase by more than 16.37% for project to be rejected

2 Scrap value should reduce by more than 150.81% for the project to be rejected.

QUESTION FOUR

Marking guide:

(a)	Description	Marks	Total
	Translated cash flows (0.5 Marks each, 4 Max)		**4.0**
	Tamu Co		
	Expected receipts (0.5 Marks each, 1.5 Max)	1.5	
	Expected payment (0.5 Marks each, 1 Max)	1.0	
	Jinja Co		
	Expected receipts (0.5 Marks each, 1.0 Max)	1.0	
	Expected payment (0.5 Marks each, 1 Max)	1.0	
	Buju Co		
	Expected receipts (0.5 Marks each, 0.5 Max)	0.5	
	Expected payment (0.5 Marks each, 1 Max)	1.0	
	Kabisa Co		
	Expected receipts (0.5 Marks each, 1.0 Max)	1.0	
	Expected payment (0.5 Marks each, 1 Max)	1.0	**8.0**
(b)	Description	Marks	
	FRA at 10%		
	Interest on borrowing	1.0	
	Interest on payment	1.0	
	Total Interest	0.5	**2.5**
	FRA at 14%		
	Interest on borrowing	1.0	
	Interest on payment	1.0	
	Total Interest	0.5	**2.5**
(c)	Description		
	Make a deposit	1.0	
	Borrow	1.0	
	Invest	1.0	
	Repay	1.0	**4.0**
(d)	Description	Marks	
	Computation for premium/discount	2.0	
	Computation for forward rate for year 1	1.0	
	Computation for forward rate for year 2	1.0	**4.0**
	Total		**25**

a) Presentation of translated cash flows

Owed by	Owed to	Amount in Millions	Translated Cash flows (FRW Millions)
Kabisa Co	Tamu Co	KSH 8.3/0.13	**63.8**
Kabisa Co	Jinja Co	USH 4.5/3	**1.5**
Buju Co	Jinja Co	USH 9.2/3	**3.1**
Buju Co	Tamu Co	KSH 5.1/0.13	**39.2**
Jinja	Tamu Co	KSH 3.2/0.13	**24.6**
Jinja	Kabisa Co	FRW 6.8	**6.8**
Tamu	Buju Co	TSH 400/14.3	**28.0**
Tamu	Kabisa Co	FRW 7.2	**7.2**

Netting of receipts and payments

Kabisa Co		**FRW Millions**
Expected receipt from		
	Jinja	6.8
	Tamu	7.2
Expected payment to		
	Tamu	63.8
	Jinja	1.5
Net payment		-51.3
Jinja Co		
Expected receipts from		
	Kabisa	1.5
	Buju	3.1
Expected payment to		
	Tamu	24.6
	Kabisa	6.8
Net payment		-26.8
Buju Co		
Expected receipts from		
	Tamu	28

Expected payment to		
	Jinja	3.1
	Tamu	39.2
Net payment		-14.3
Tamu Co		
Expected receipts		
	Kabisa	63.8
	Jinja	6.8
	Buju	39.2
Expected payment to		
	Buju	28
	Kabisa	7.2
Net receipt		130.6

b) Forward Rate Arrangement (FRA)

If interest are down to 10%

Borrow at market rate paying interest of 10% x 9/12 x 4,000 = FRW300 Million
Pay to bank the difference (12.5% -10%) =2.5% x 9/12 x 4,000 = FRW75 Million
Total interest payments = (75+300) = FRW 375 Million

If interest are up to 14%

Borrow at market rate paying interest of 14% x 9/12 x 4,000 = FRW420 Million
Receipts from bank the difference (12.5% -10%) =2.5% x 9/12 x 4000 = FRW45 Million
Total interest payments = (420-45) = FRW 375 Million

Conclusion: FRA simply fixes the interest rates

c) Steps involved in money market hedging

Money market
This utilizes financial institution to minimize its exposure

Steps involved are
For example a payment by Kabisa to Tamu,

1. **Make a deposit:** Kabisa Co. would have to make a deposit in Tamu's country of equivalent amount payable to Tamu in three months' time at an interest rate of 15% for 3 months.
2. **Borrow:** Assuming that Kabisa Co does not have funds, it will have to borrow immediately from its local bank at the rate of 12% for three months.

3. **Invest:** Convert the borrowed amount at the spot rate into the currency of Tamu and invest in Kenya (Tamu's country) for a period of three months, on maturity.
4. **Repay:** Use the invested amount to settle Tamu Co.'s liabilities

d) Estimation of excahange rates

To compute future exchange rates, we use forward rates
And to compute forward rates, we have to first compute premium
$F = S_o (1+P)$
$P = \frac{1+ i_h}{1+ i_f} - 1$
Where i_h is the interest in the home country = 8%
i_f is the interest in the foreign country = 15%
P is premium on interest rate parity =?
S_o is the spot rate = 0.12
F is the forward rate =?

$$P = \frac{1+ i_h}{1+ i_f} - 1$$

$$P = \frac{1+ 0.08}{1+ 0.15} - 1$$

$$P = \frac{1.08}{1.15} - 1$$

$P = 0.94 - 1 = -0.06$
This means it is a discount because it is negative. A positive value indicates a premium

We then use the discount obtained to get the forward rate for year 1
$F = S_o (1+P)$

$F = 0.12 (1 – 0.06)$
$F = 0.12 * 0.94 = 0.1128$

Forward rate for year 2 assuming the interest did not change for year 2

$F = 0.1128 (1 – 0.06)$
$F = 0.1128 * 0.94 = 0.1060$