

SOLUTION 1

- (a) Value maximisation is a way of giving returns to the shareholders on their investment. The return is derived from the regular dividend payments they receive and the capital appreciation of their share prices.

Meeting this objective must be in tandem with meeting the expectations of the community. A company once established belongs to the community. It provides employment to the people, produces quality goods and services to meet the safety standards of the consumers.

A company as a going concern must not be hostile towards the community since such an action may compel the community to boycott the consumption of the company's product. This may lead to profit decline and consequently results in no-payment of dividends and share price reduction which may force the company into bankruptcy.

- (b) Various factors influence a firm's dividend payout decisions:

1. Investment opportunities
2. Cashflow/liquidity situation
3. Legal requirement
4. Taxation
5. Interest payment obligations
6. The effect of paying dividend on shareholders wealth
7. Transaction cost of raising funds.

(c) Existing WACC = $(250/300 \times 12.5\%) + (50/300 \times 6\%)$
 = 11.42%

	Cost	Option (A) GHS'm	Option (B) GHS.m
Ordinary share capital	12.5%	300	270
Debentures	6	<u>100</u>	<u>130</u>
		<u>400</u>	<u>400</u>

New WACC:

$$\text{Option (A)} \quad (300/400 \times 13\%) + (100/400 \times 6\%) = 11.25\%$$

$$\text{Option (B)} \quad (270/400 \times 14.5\%) + (130/400 \times 6\%) = 11.74\%$$

Under Option (A)

This option results in a moderate increase in gearing ratio, the WACC decreases, whilst the cost of equity did rise by a small amount, the effect of the increased tranche of cheap debt out weighted this.

Under Option (B)

This option results in a much more significant rise in gearing-nearly doubling the percentage of debt – and is therefore accompanied by a far greater rise in the cost of equity. This now dominates, and the WACC rises.

SOLUTION 2

- (a) There are a number of factors that should be considered by Obuo Limited, including the following:
1. Gearing and Financial Risk
Equity finance will decrease gearing and financial risk whilst debt finance will increase them.
 2. Availability of Security
Debt usually needs to be secured on assets by either a fixed charge or a floating charge. Equity finance is normally security free source of funds.
 3. Control Issues
A right issue will not dilute existing pattern of ownership and control unlike an issue of shares to new investors. Therefore new issue of shares has control implications in the existing shareholder. Issuing traded debt usually do not affect the control and ownership pattern since debt holders are not owners.
 4. Economic Expectation
If Obuo Limited expects buoyant economic condition and increasing profitability in future, it will be more prepared to take on fixed interest debt commitment than if it believes difficult trade conditions lie ahead.
 5. Taxation
Debt finance is usually considered to be cheaper as compared to equity finance since interest on debt at tax deductible whilst dividends are not.

6. Target Capital Structure

If the primary objective of Obuo Limited is to maximise the wealth of shareholders, it should seek to minimise its WACC. In practical terms, this can be achieved by having some debt in its capital structure, since debt is relatively cheaper than equity whilst avoiding the extremes of too little gearing or too much gearing.

i. Market price per share

$$\text{DPS} = 0.5 \times 0.80 = \text{GHS}0.40 \text{ per share}$$

$$\text{Po} = \frac{\text{Do} (1 + g)}{r - g}$$

$$\text{Po} = \frac{0.40 (1.05)}{0.12 - 0.05} = \text{GHS}600$$

ii. Capitalisation

$$\text{Market Capitalisation} = \text{GHS}6 \times 3\text{m shares} = \underline{\underline{\text{GHS}18\text{m}}}$$

(b) i. Right issue price at 10% discount of the current market share price

$$= 0.9 \times \text{GHS}6.00 = \text{GHS}5.40$$

ii. Cash raised

$$\text{New shares issued} = 3\text{m}/3 = 1 \text{ million shares}$$

$$\text{Cash raised} = 1 \text{ million shares} \times \text{GHS}5.4 = \text{GHS}5,400,000$$

iii. Theoretical ex-right price = 3 shares @ 6.0 = 18

$$\frac{1 \text{ share} @ 5.40}{4} = \frac{5.4}{23.4}$$

$$\text{Ex-right price} = \frac{\text{GHS}23.4}{4} = \underline{\underline{\text{GHS}5.85}}$$

iv. Market capitalization after the right Issue GHS

$$\text{Value before R1} = 18\text{m}$$

$$\text{Cash raised from R1} = \underline{5.4\text{m}}$$

$$23.4\text{m}$$

$$\text{Less issue cost} \underline{(0.30)}$$

$$\underline{\underline{23.4\text{m}}}$$

NB: The issue cost result is a decrease – the market value of the company and therefore a decrease – wealth of shareholders equivalent to GHS0.60 (6.0 – 5.4).

(c) Cost of Debt

$$\text{After tax interest} = 6(1 - 0.30) = 4.2\%$$

$$\text{Capital gain} = \frac{\text{GHS}102 - 79}{79} \div 6 \text{ years} = \underline{4.85}$$

$$\underline{\underline{9.05\% \text{ per year}}}$$

Estimating

$$PV = (\dots\dots \times \text{Interest}) + \left[\frac{R}{(1+r)^n} \right]$$

NVP at 10%

$$(79) = (\text{GHS}4.20 \times 4.355) + \left[\frac{102}{(1.10)^6} \right]$$

$$\text{NVP} - \frac{75.87}{\text{GHS}3.13} = \text{GHS}18.29 + \text{GHS}57.58$$

NVP at 8%

$$(79) = (4.2 \times 4.623) + \left[\frac{102}{(1.08)^6} \right]$$

$$\text{NRI} \frac{83.70}{4.7} = 19.42 + 64.28$$

$$\text{IRR} = a + \frac{\text{NPva}}{\text{NPva} + \text{NPvb}} (b - a)$$

$$\text{IRR} = 8 + \frac{4.7}{7.83} (10 - 8) = 9.2$$

$$\text{Cost of redeemable Debt} = \underline{9.2\%}$$

SOLUTION 3

(a)

8%, 30-year Bond

$$PV = C \left[\frac{1 - \frac{1}{(1+r)^t}}{r} \right] + \frac{FV}{(1+r)^t}$$

$$C = 0.08 \times 30,000,000$$

$$= \underline{2,400,000}$$

$$\therefore PV = 2.4 (11.2575) + 30/10.0626$$

$$= 27.018 + 2.981$$

$$= \underline{\text{GHS}29.99\text{m}}$$

30-year Bond with increase in rate from 8% to 9%

$$2.4m \left[1 - \frac{1}{(1.09)^{30}} \right] + \frac{30m}{(1.09)^{30}}$$

$$2.4 (10.2733) + 30/13.26767$$

$$24.65592 + 2.261$$

$$= \underline{\underline{\text{GHS26.92m}}}$$

% change in Present Value

$$\left[\frac{29.99 - 26.92}{29.99} \right] \times 100$$

$$= 10.27\%$$

Zero coupon Bond, when rate = 8%

$$PV = \frac{FV}{(1+r)^t} = \frac{30m}{(1.08)^{30}}$$

$$= \underline{\underline{\text{GHS2.981m}}}$$

Zero coupon Bond, when rate = 9%

$$PV = \frac{FV}{(1+r)^t} = \frac{30m}{(1.09)^{30}}$$

$$= \underline{\underline{\text{GHS2.261m}}}$$

% change in Present Value

$$\frac{2.981 - 2.261}{2.981} \times 100$$

$$= 24.16\%$$

The bond with the Zero coupon will have the greatest decline in price.

(b) $PV = C \left[\frac{1 - \frac{1}{(1+r)^t}}{R} \right]$

$$PV = 200,000, r = 0.06/12 = 0.005, t = 25 \times 12 = 300$$

$$200,000 = C \left(1 - \frac{1}{\frac{(1.005)^{300}}{0.005}} \right)$$

$$200,000 = C \left(\frac{1 - 0.22396}{0.005} \right)$$

$$200,000 = C (155.208)$$

$$\begin{aligned} \therefore C &= 200,000/155.208 \\ &= \underline{\underline{\text{GHS1,285.59}}} \text{ per month} \end{aligned}$$

Workings

<u>Year</u>	<u>Sales</u>	<u>Variable Cost</u>	<u>Avoidable Fixed Cost</u>	<u>Operating Net Cash Flow</u>
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

(c) Calculation of NVP of the Project

<u>Year</u>	<u>Equipment</u>	<u>Working Capital</u>	<u>Net Op. Cash Flow</u>	<u>Net Cash Flow</u>	<u>Df @ 9%</u>	<u>Present Value</u>
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	<u>35,402</u>
						<u>12,368</u>

Suggestion

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

SOLUTION 4

(a)

$$(b) \left(\frac{\text{Total Assets}}{\text{Previous Sales}} - \frac{\text{Payables}}{\text{Previous Sales}} \right) \times \text{Increase in Sales} - \left(\frac{\text{Profit Margin} \times \text{New Sales Level}}{\text{Payout Ratio}} \right)$$

$$= \left(\frac{1,100}{600} - \frac{200}{600} \right) \times 120 - (0.04 \times 720 \times 0.35)$$

$$1.5 \times 120 - (10.08)$$

$$180 - 10.08 = 169.92$$

External capital required 169.92

(c) The amount of GHS30,000 cash outflow may be treated as a principal which the company deposit into an account that pays an unknown rate of interest but returns a compound amount of GHS35,800 after 3 years.

$$\text{Now, } FV = PV (1 + r)^n$$

$$\text{Or } 35,800 = 30,000 (1 + r)^3$$

$$\text{Or } 35,800/30,000 = (1 + r)^3$$

$$\text{Or } 1.193 = (1 + r)^3$$

$$11.93\%$$

- (d) i. Systematic risk is the degree of uncertainty of an asset's returns that cannot be eliminated through diversification.
- ii. Unsystematic risk is the degree of uncertainty of an asset's returns that can be eliminated through diversification.
- iii. Weak form efficient market is a market efficiency whereby all past prices of an asset are reflected in its current price.

Strong form efficient market states that current share prices reflect not only historical share price patterns and current public knowledge, but also all possible information about the company.

- iv. Securities market line shows the relation between the expected return on an asset and the asset's beta.

Capital market line shows the possible portfolios that can be formed by combining the risk-free asset and the market portfolio in different proportions.

SOLUTION 5

(a) (i) Market value based on Assets Valuation

	GHS
Shareholders fund	300,000
Fixed assets revaluation (120,000 – 80,000)	40,000
Bad debts written off	(10,000)
Expired stocks write off	(5,000)
Incinerating cost	<u>(8,000)</u>
Market value	<u>317,000</u>

Dividend Growth Model

Expected returns (k)	=	25%
Growth Rate (g)	=	5%
Dividend per share (D)	=	GP50 .. GHS50.50
Dividend per share after 9 year (D ₁)	=	0.50 x 1.05 = 0.525

$$\begin{aligned}
 \text{Market value} &= \left(\frac{D_1}{k - g} \right) \times 120,000 \\
 &= \left(\frac{0.525}{0.25 - 0.05} \right) \times 120,000 \\
 &= \text{GHS}2.625 \times 120,000 \\
 &= \underline{\underline{\text{GHS}315,000}}
 \end{aligned}$$

(ii) Possible steps to thwart the takeover
Use Different Accounting Methods to Value Assets.

- (1) Management may use different accounting methods to value the assets of the company to render the bid inadequate.
Publish Future Profits of Long Term Contracts
- (2) Management may release information about profits of future contracts to provide evidence that the offer is inadequate.

Dispute Competency of Predator Company Management

Management may compare dividend and share price of Onyameaseman Bank to leading banks in the industry with the view to proof that management of Onyameaseman Bank management is not that competent as their performance fall short of others in the industry.

Increased Dividend Payment

Management of Graceland bank may increase dividend payment as part of their defensive ploy.

Lobbying

Management may lobby authorities such as the Securities and Exchange Commission and Bank of Ghana arguing that the takeover may result in a monopoly and will not be in the interest of society.

Merger

Management may also look for a friendly bidder and merge with them with the view of frustrating the bid.

Asset Disposal

Management may also sell major assets of the bank to make the company unattractive to Onyameaseman.

Management Buyout

Management may also buy the share of the company and go private.

Press Releases

Management may also use press releases or send email to shareholders explain why the bid is inadequate.

(b) Option One Cost of Trade Discount:

$$\frac{\text{Discount}}{\text{Net}} \times \frac{365}{50 - 20}$$

$$\text{Discount} = \frac{2}{100} \times 200,000 = 4,000$$

$$\text{Net} = 200,000 - 4,000 = 196,000$$

$$\text{Cost} = \frac{4,000}{196,000} \times \frac{365}{50 - 20} \times 100 = 24.83\%$$

Option Two Cost of Bank Loan:

$$\frac{\text{Interest}}{\text{Net}} \times 100$$

$$\text{Interest} = 25\% \times 200,000 = 50,000$$

$$\text{Net} = 200,000 - 4,000 = 196,000$$

$$\text{Cost} = \frac{50,000}{196,000} \times 100 = 25.51\%$$

Take the trade credit ie Option One

(c) a. A derivative is an instrument whose value is derived from the value of one or more underlying, which can be commodities, precious metals, currency, bonds, stocks, stocks indices, etc. Four most common examples of derivative instruments are Forwards, futures, Options and Swaps.

b. A forward contract is customized contract between two parties, where settlement take place on a specific date in future at a price agreed today.

Futures are exchange traded contracts to sell or buy financial instruments or physical commodities for future delivery at an agreed price. There is an agreement to buy or sell a specified quantity of financial instrument/commodity in a designated future month at a price agreed upon by the buyer and seller. The contracts have certain standardized specifications.

❖ Options are the right to buy (a call) or sell (a put) a financial asset at a price negotiated today.

❖ The buyer of a call is protected against an unexpected price increase in the spot market.

❖ The buyer of a put is protected against an unexpected fall in the price of an asset in the spot market.