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# Answers

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- 1 (a) Director A's focus is on reducing the risk in the business through diversification and thereby increasing its value. A strategy of risk diversification resulting in greater value can work in situations where the equity holders are exposed to both unsystematic and systematic risks, for example, when their investment is concentrated in one company. In such situations, the shareholders would be subject to unsystematic risk and diversification would reduce this risk.

In the case of Chikepe Co, this is unlikely to be the case as a large proportion of shares are owned by institutional shareholders and it is likely that their investment portfolios are already well-diversified and therefore they are not exposed to unsystematic risk. Further diversification will be of no value to them. In fact, it may be construed that managers are only taking this action for their own benefit, as they may be closely tied to the company and therefore be exposed to total risk (both unsystematic and systematic risks). This may then become a source of agency related conflict between the management and the shareholders.

However, diversification overseas into markets which have some barriers to entry might reduce both systematic and unsystematic risks as well.

Director B, on the other hand, seems to be suggesting that Chikepe Co should focus on its core business and increase value through identifying areas of synergy benefits. It may be the case that Chikepe Co's management and directors are well placed to identify areas where the company can gain value by acquiring companies with potential synergy benefits.

The types of synergy benefits, which may arise in established pharmaceutical companies, can include:

Identifying undervalued companies, where the management is not effective in unlocking the true value of company. By replacing the existing management, Chikepe Co may be able to unlock the value of the company.

Acquiring companies which have strategic assets or product pipelines. Chikepe Co may be well placed to identify companies which have a number of product pipelines, which those companies are not exploiting fully. By acquiring such companies, Chikepe Co may be able to exploit the product pipelines.

Through acquisitions, Chikepe Co may be able to exploit economies of scope by eliminating process duplication or economies of scale where its size may enable it to negotiate favourable terms.

Foshoro Co may benefit if Chikepe Co acquires it because it is struggling to raise funding for its innovative products. Chikepe Co is an established company but has few new product innovations coming in the future. Therefore, it may have spare cash resources which Foshoro Co may be able to utilise.

*(Note: Credit will be given for alternative valid discussion)*

- (b) Traditional investment appraisal methods such as net present value assume that an investment needs to be taken on a now or never basis, and once undertaken, it cannot be reversed. Real options take into account the fact that in reality, most investments have within them certain amounts of flexibility, such as whether or not to undertake the investment immediately or to delay the decision; to pursue follow-on opportunities; and to cancel an investment opportunity after it has been undertaken. Where there is increasing uncertainty and risk, and where a decision can be changed or delayed, this flexibility has value, known as the time value of an option.

Net present value captures just the intrinsic value of an investment opportunity, whereas real options capture both the intrinsic value and the time value, to give an overall value for an opportunity. When a company still has time available to it before a decision needs to be made, it may have opportunities to increase the intrinsic value of the investment through the strategic decisions it makes.

Investing in new companies with numerous potential innovative product pipelines may provide opportunities for flexibility where decisions can be delayed and the intrinsic value can be increased through strategic decisions and actions taken by the company. Real options try to capture the value of this flexibility within companies with innovative product pipelines, whereas net present value does not.

- (c) Report to the board of directors (BoD), Chikepe Co

#### Introduction

This report evaluates whether the acquisition of Foshoro Co would be beneficial to Chikepe Co's shareholders by estimating the additional equity value created from the synergies resulting when the two companies are combined. The market values of equity of the two companies as separate entities are considered initially and then compared with the equity value of the two companies together. The free cash flow to firm valuation method is used to estimate the values of the companies and the limitations of this method are discussed.

The market value of equity of Chikepe Co is given as \$12,600 million.

Based on the free cash flow to firm valuation method:

The current market value of equity of Foshoro Co is estimated at \$986 million (appendix 1), and

The market value of equity of the combined company is estimated at \$14,993 million (appendix 2).

Therefore, the additional market value of equity arising from synergy benefits when the two companies are combined is estimated at \$1,407 million (appendix 3), which is then split between Foshoro Co's shareholders receiving \$296 million (a

30% premium) and Chikepe Co's shareholders receiving the balance of \$1,111 million, which is approximately 8.8% excess over the original equity value (appendix 3).

However, the valuation method used has a number of limitations, as follows:

- The values of both Foshoro Co and the combined company are based on estimations and assumptions, for example,
  - Foshoro Co's future growth rate of free cash flows is based on past growth rates and it is assumed that this will not change in the future;
  - It is not explained how Foshoro Co's cost of capital is estimated/calculated. Such an estimate may be more difficult to make for private companies;
  - The assumption of perpetuity is made when estimating the values of Foshoro Co and the combined company, and this may not be valid.
- The basis for the synergy benefits such as higher growth rates of sales revenue and profit margins needs to be explained and justified. It is not clear how these estimates have been made.
- Whereas it may be possible to estimate the asset beta of a listed company such as Chikepe Co, it may be more difficult to provide a reasonable estimate for the asset beta of Foshoro Co. Therefore, the estimate of the cost of capital of the combined company may not be accurate.
- The costs related to the acquisition process would need to be factored in.

Therefore, whereas the free cash flow method of estimating corporate values is theoretically sound, using it in practice to estimate values is open to errors and judgements.

### Conclusion

The valuations indicate that Chikepe Co's shareholders would benefit from the acquisition of Foshoro Co and the value of their shares should increase by 8.8%. However, the method used to estimate the value created makes a number of estimates and assumptions. It is therefore recommended that a range of valuations is made under different assumptions and estimates, through a process of sensitivity analysis, before a final decision is made. As well as this, the limitations of the valuation method used should be well understood and taken into account.

**Report compiled by:**

**Date**

### APPENDICES:

#### Appendix 1 (Part (c) (i)): Foshoro Co, estimate of current value

Cost of capital = 10%

Growth rate of profits and free cash flows =  $(\$91.0m/\$83.3m)^{1/3} - 1 = 0.03 = 3\%$

Free cash flow to firm (FCFF) = PBIT + non-cash expenses – additional cash investment – tax

FCFF = \$192.3m + \$112.0m – \$98.2m – (20% x \$192.3m) = \$167.6m

Foshoro Co, estimated value =  $(\$167.6m \times 1.03)/(0.10 - 0.03) = \$2,466.1m$

Current estimated market value of equity of Foshoro Co = \$2,466.1m x 40% = \$986.4m, say \$986m approximately.

#### Appendix 2 (Part (c) (ii)): Estimate of value created from combining Chikepe Co and Foshoro Co

Asset beta of combined company =  $(0.800 \times \$12,600m + 0.950 \times \$986.4m)/(\$12,600m + \$986.4m) = 0.811$

Equity beta of combined company =  $0.811 \times (0.70 + 0.30 \times 0.80)/0.70 = 1.089$

Cost of equity, combined company =  $2\% + 1.089 \times 7\% = 9.6\%$  approx.

Cost of capital, combined company =  $9.6\% \times 0.7 + 5.3\% \times 0.3 \times 0.8 = 8\%$  approx.

#### Combined company, free cash flows and value computation (\$ millions)

Sales growth rate, years 2 to 4 = 7% per annum; operating profit margin = 20%

| Year                                 | 1     | 2     | 3     | 4     |
|--------------------------------------|-------|-------|-------|-------|
| Sales revenue                        | 4,200 | 4,494 | 4,809 | 5,146 |
| Operating profit                     | 840   | 899   | 962   | 1,029 |
| Less tax (20%)                       | (168) | (180) | (192) | (206) |
| Less additional investment in assets | (200) | (188) | (202) | (216) |
| Free cash flows                      | 472   | 531   | 568   | 607   |
| PV of free cash flows (8%)           | 437   | 455   | 451   | 446   |

|  |                    |
|--|--------------------|
|  | <b>\$ millions</b> |
| Present value (first four years)                 | 1,789              |
| Present value (after four years)                 |                    |
| $607 \times 1.056 / (0.08 - 0.056) \times 0.735$ | <u>19,630</u>      |
| Estimated market value of the combined company   | <u>21,419</u>      |

Market value of equity of the combined company = 70% x \$21,419m = \$14,993m

### Appendix 3: Synergy benefits and their distribution

Additional market equity value created by combining the two companies

$\$14,993\text{m} - (\$12,600\text{m} + \$986\text{m}) = \$1,407\text{m}$

Therefore, synergy benefits resulting from combining the two companies: \$1,407m

Premium payable to Foshoro Co shareholders: 30% x \$986m = \$296m

Balance of synergy benefits going to Chikepe Co's shareholders: \$1,111m

As a percentage of current value:  $\$1,111\text{m} / \$12,600\text{m} \times 100\% = 8.8\%$

- (d) Both the mandatory bid rule and the principle of equal treatment are designed to protect minority shareholders, where an acquirer has obtained a controlling interest of the target company. The mandatory bid rule provides minority shareholders with the opportunity to sell their shares and exit the target company at a specified fair share price. This price should not be lower than the highest price paid for shares, which have already been acquired within a specified period. The principle of equal treatment requires the acquiring company to offer the same terms to minority shareholders as were offered to the earlier shareholders from whom the controlling interest was acquired. Both these regulatory devices are designed to ensure that the minority shareholders are protected financially and are not exploited by the acquirer.

The purpose of both poison pills and disposal of crown jewels is to make the target company unattractive to the acquirer. Poison pills give existing shareholders in the target company the right to buy additional shares in their company at a discount once the acquiring company has bought a certain number of shares in the target company. The aim is to make the target company more expensive to purchase, as the acquirer needs to buy more shares. Disposal of crown jewels involves selling the target company's most valuable assets, and therefore making the target company less attractive to the acquirer. The effectiveness of either defence tactic can be limited, as the company's management would need its shareholders to authorise such moves (although there are ways in which poison pills can be incorporated without gaining prior authorisation from shareholders). Shareholders may not be willing to do this as they normally get premiums on their shares during takeover battles. Additionally, disposing of key strategic assets could substantially weaken a company's competitive advantage and therefore its future potential. Such action may be detrimental to the company and therefore shareholders would probably not approve that course of action.

| 2 (a) Year                                    | 0<br>\$000 | 1<br>\$000 | 2<br>\$000 | 3<br>\$000 | 4<br>\$000 | 5<br>\$000 |
|---|------------|------------|------------|------------|------------|------------|
| Operating cash flow excluding marketing costs |            | 2,000      | 14,500     | 15,225     | 15,834     |            |
| Marketing costs                               |            | (9,000)    | (2,000)    | (2,000)    | (2,000)    |            |
| Cash flow before tax                          |            | (7,000)    | 12,500     | 13,225     | 13,834     |            |
| Taxation (W1)                                 |            |            |            |            | (310)      | (4,328)    |
| Investment                                    | (30,600)   |            |            |            | 13,500     |            |
| Working capital (W2)                          | (3,000)    | (240)      | (194)      | (172)      | 3,606      |            |
| Cash flows                                    | (33,600)   | (7,240)    | 12,306     | 13,053     | 30,630     | (4,328)    |
| Discount factor 9% (W3)                       | 1.000      | 0.917      | 0.842      | 0.772      | 0.708      | 0.650      |
| Discounted cash flows                         | (33,600)   | (6,639)    | 10,362     | 10,077     | 21,686     | (2,813)    |
| Base case NPV                                 |            | (927)      |            |            |            |            |

1 Taxation

| Year | TAD = Tax-allowable depreciation       | Balance<br>\$000  |
|------|--|-------------------|
| 1    | Investment<br>TAD 25% reducing balance | 30,600<br>(7,650) |
|      |  | 22,950            |
| 2    | TAD 25% reducing balance               | (5,738)           |
|      |  | 17,212            |
| 3    | TAD 25% reducing balance               | (4,303)           |
|      |  | 12,909            |
| 4    | Balancing charge                       | 591               |
|      |  | 13,500            |

| Year                           | 1<br>\$000 | 2<br>\$000 | 3<br>\$000 | 4<br>\$000 |
|--------------------------------|------------|------------|------------|------------|
| Cash flow before tax           | (7,000)    | 12,500     | 13,225     | 13,834     |
| Tax-allowable depreciation     | (7,650)    | (5,738)    | (4,303)    | 591        |
| Adjusted cash flow             | (14,650)   | 6,762      | 8,922      | 14,425     |
| Offset against previous losses |            | (14,650)   | (7,888)    |            |
| Losses carried forward         | (14,650)   | (7,888)    |            |            |
| Taxable cash flow              |            |            | 1,034      | 14,425     |
| Taxation at 30%                |            |            | 310        | 4,328      |
| Year                           |            |            | 4          | 5          |

2 Working capital

| Year | 1<br>\$000                   | 2<br>\$000                             | 3<br>\$000                                      | 4<br>\$000                                |
|------|------------------------------|--|---|---|
|      | $3,000 \times 0.08$<br>= 240 | $(3,000 + 240)$<br>$\times 0.06 = 194$ | $(3,000 + 240 +$<br>$194) \times 0.05 =$<br>172 | $3,000 + 240 +$<br>$194 + 172$<br>= 3,606 |

3 Ungeared cost of equity

Humabuz Co

MV debt = \$225 million  $\times$  1.07 = \$240.8 million

MV equity = 125 million  $\times$  \$3.20 = \$400 million

Ungeared cost of equity

$$k_e = k_e^i + (1 - t) (k_e^i - k_d) V_d/V_e$$

$$10.5\% = k_e^i + (1 - 0.3) (k_e^i - 5.4\%) (240.8/400)$$

$$10.5\% + 2.28\% = 1.42 k_e^i$$

$$k_e^i = 9\%$$

4 Issue costs

Debt:  $(\$30,600,000/0.96) = \$31,875,000$

Debt issue costs:  $\$31,875,000 \times 0.04 = \$1,275,000$

5 Tax shield on loan

Use PV of an annuity (PVA) for years 2 – 5 at 5% (assume 5% is cost of debt).

(Note: The risk-free rate of 2.5% could also be used for discounting.)

Subsidised loan:  $\$30,600,000 \times (0.025 - 0.003) \times 0.3 \times (4.329 - 0.952) = \$682,000$

6 Subsidy

Benefit =  $\$30,600,000 \times (0.05 - 0.022) \times 3.546 = \$3,038,000$

Tax relief lost =  $\$30,600,000 \times (0.05 - 0.022) \times 0.3 \times (4.329 - 0.952) = \$868,000$

## 7 Financing side effects

|   | \$000        |
|---|--------------|
| Issue costs (W4)                        | (1,275)      |
| Tax shield on loan (W5)                 | 682          |
| Subsidy benefit (W6)                    | 3,038        |
| Tax relief lost on subsidy benefit (W6) | <u>(868)</u> |
| Total benefit of financing side effects | <u>1,577</u> |

### Conclusion

If base case net present value is used, the project has a negative net present value of \$927,000 and on that basis should be rejected. However, the financing side effects add \$1,577,000 to the value of the project, giving a positive adjusted present value of \$650,000. On that basis the project should be accepted. The revenues from the project appear to be uncertain and the realisable value at the end of the project may be optimistic. It would be useful to have an indication of the range of outcomes and an idea of the probability that the project will have a negative APV.

### (b) Advantages of convertible loan notes

The investors may be happy that directors are demonstrating their commitment to the company by subscribing to convertible loan notes. The conversion rights mean that these directors will benefit if the share price increases, aligning their interests with shareholders.

The conversion terms also mean that the loan notes will not necessarily have to be repaid in a few years' time. This may be significant if Tippetine Co does not have the cash available for redemption then.

### Drawbacks of convertible loan notes

The convertible loan notes would be treated as debt, increasing Tippetine Co's gearing, which may concern the other shareholders. The interest on the convertible loan notes will be payable before dividends and may leave less money for distribution to shareholders. Shareholders may doubt whether the higher interest burden on the convertible loan notes compared with the subsidised loan is compensated for by the lower costs of Tippetine Co not having to fulfil the government's requirements.

The other shareholders may be concerned by the interest rate on the convertible notes being Tippetine Co's normal cost of borrowing. The option to convert is an advantage for convertible loan note holders. They would often effectively pay for this option by receiving a lower rate of interest on the loan notes.

Shareholders would want to assess how likely conversion would be, that is how likely it would be the share price will rise above \$2.75. The option to convert may also change the balance of shareholdings, giving the directors who held the notes a greater percentage of share capital and possibly more influence over Tippetine Co. The other shareholders may be unhappy with this.

The shareholders may also have reservations about the loan note holders having the option to redeem if Tippetine Co's share price is low. This reduces the risk of providing the finance from the loan note holders' viewpoint. However, if the share price is low, Tippetine Co's financial results and cash flows may be poor and it may struggle to redeem the loan notes. Shareholders may also be concerned that there is no cap the other way, allowing Tippetine Co to force conversion if the share price reaches a high enough level.

*(Note: Credit will be given for alternative relevant discussion)*

### 3 (a) (i) Forecast dividend capacity is as follows:

|  | \$000         |
|--|---------------|
| Operating profit (20% x 1.04 x \$520 million)                        | 108,160       |
| Less: Interest (8% x \$135 million)                                  | (10,800)      |
| Less: Taxation (30% x (\$108.16 million – \$10.8 million))           | (29,208)      |
| Add: Depreciation  | 30,000        |
| Less: Profit on disposal of NCA                                      | (5,900)       |
| Add: Cash received on disposal of NCA (W1)                           | 16,300        |
| Less: Investment in new NCA (W2)                                     | (44,800)      |
| Less: Investment in working capital (15% x 0.04 x \$520 million)     | (3,120)       |
| Add: Dividend remittance from Bowerscots Co (W3)                     | 20,520        |
| Less: Additional tax on Bowerscots Co's profits (10% x \$45 million) | (4,500)       |
| Forecast dividend capacity   | <u>76,652</u> |

## Workings

### 1 Disposal of non-current assets

|                           | \$000         |
|---------------------------|---------------|
| Profit on disposal        | 5,900         |
| Cost                      | 35,000        |
| Less: Depreciation        | (24,600)      |
| Cash received on disposal | <u>16,300</u> |

### 2 Investment in non-current assets

|   | \$000         |
|---|---------------|
| Net book value at end of most recent year (start of 'normal' year)      | 110,000       |
| Less: Depreciation in 'normal' year                                     | (30,000)      |
| Less: Net book value of assets disposed (\$35 million – \$24.6 million) | (10,400)      |
| Net book value before investment in non-current assets                  | <u>69,600</u> |
| Required level of non-current assets (\$110 million x 1.04)             | 114,400       |
| Investment in non-current assets  | <u>44,800</u> |

### 3 Dividend remittance from Bowerscots

|   | \$000         |
|---|---------------|
| Profit before tax                           | 45,000        |
| Less: Tax at 20%                            | (9,000)       |
| Profit after tax                            | <u>36,000</u> |
| Remitted to Arturo Co (36,000 x 60% x 0.95) | <u>20,520</u> |

(ii) Dividend capacity required =  $(90 \times 4/3)$  million x \$0.74 = \$88.8 million

Increase in dividend remittances required = \$88.8 million – \$76.652 million = \$12.148 million

Total dividend remittance required =  $(\$20.52 \text{ million} + \$12.148 \text{ million})/0.95 = \$34.387 \text{ million}$

Distribution % required =  $(\$34.387 \text{ million}/\$36 \text{ million}) \times 100\% = 95.5\%$

#### (b) (i) Benefits of policy

The change of policy appears to be viable. Arturo Co would have had some slack if it had not undertaken the rights issue. The new policy takes up this slack and effectively tops up the amount required with an increase in dividends.

The new policy appears to ensure that Arturo Co will have sufficient funds to pay the required level of dividends and fulfil its own investment requirements. It will mean that Bowerscots Co has less retained funds available for investment, but Arturo Co's investment opportunities may be more profitable.

#### Problems with policy

Arturo Co is now close to taking all of Bowerscots Co's post-tax earnings as dividends. Only a limited fall in Bowerscots Co's earnings would be needed for its dividends not to be enough to sustain Arturo Co's dividend level. A fall could easily happen given the highly competitive environment in which Bowerscots Co operates. If Arturo Co wanted to increase its dividends over time, it could not do so by receiving extra dividends from Bowerscots Co.

As mentioned, an increase in dividend will leave Bowerscots Co's management with less retained earnings to invest. The amount of investment they can undertake with the reduced funds available may be insufficient to sustain earnings levels and hence dividends for Arturo Co.

The tax regime between the two countries means that the group will suffer more tax. The amount of additional tax payable by Arturo Co on Bowerscots Co's profits will remain unchanged, but the increase in dividends will mean an increase in withholding tax, for which Arturo Co will receive no credit. Given the lower tax rate in Owlia, for tax purposes higher retained earnings for Bowerscots Co would be preferable, possibly with funds loaned to Arturo Co rather than paid as dividends.

#### (ii) Agency problems

An agency situation arises between Arturo Co's board (the principal) and Bowerscots Co's management (the agent). The proposals are likely to involve agency costs.

The policy limits the discretion of Bowerscots Co's management by restricting the amounts of retained funds available. However, this seems an inefficient way of exercising closer control, with agency costs including the increased liability for withholding tax. If Arturo Co's board has concerns about Bowerscots Co's management, it would be better to make changes in the management team.

Even if Arturo Co's board has confidence in Bowerscots Co's management team, it may nevertheless wish to oversee Bowerscots Co more closely, given the dependence of its dividend capacity on the amount received from the subsidiary. Again, increased supervision will involve increased agency costs in terms of time spent by Arturo Co's management.

Bowerscots Co's management may feel that the new policy threatens their remuneration, as the limited funds available for investment will adversely affect the company's ability to maintain its profit levels. The managers may seek to join competitors, disrupting Bowerscots Co's management, jeopardising its ability to achieve its profit forecasts.

#### Resolving agency problems

Ways of motivating Bowerscots Co's management include making their remuneration less dependent on Bowerscots Co's results, for example, allowing them share options in Arthuro Co. If more of their remuneration depends on the group's results, Bowerscots Co's management may be happier with the suggested arrangement if they feel it will benefit the group. However, this motivational effect will be limited if Bowerscots Co's management feels that the group results are not influenced much by what they do.

Alternatively, a greater proportion of Bowerscots Co's management's remuneration could be by methods which are not dependent on its results, for example, increased salary or better benefits. However, by weakening the link between results and remuneration, it lessens their incentive to strive to produce the results needed to maintain the required level of dividend.

The decision-making on investments at group level may also have to change. Bowerscots Co will, under the new policy, have insufficient funds for major investments. Its management team should have the opportunity to make a case for retaining a greater percentage of funds, as they may have better investment opportunities than those available to the parent.

- 4 (a) Net receipt = \$10,150,000 – \$3,700,000 = \$6,450,000

Adverane Co will have a net dollar receipt in four months' time and needs to hedge against the Swiss Franc strengthening.

#### Money market

Borrow US\$:  $US\$6,450,000 / (1 + [0.037/3]) = US\$6,371,419$

Convert into CHF at spot rate:  $US\$6,371,419 / 1.1222 = CHF5,677,615$

Invest in CHF:  $CHF5,677,615 \times (1 + [0.027/3]) = CHF5,728,714$

#### Futures

Buy Swiss Franc futures and use six-month futures contracts.

#### Basis

Assume that basis reduces to zero at contract maturity in a linear fashion.

Using spot rate, predicted futures rate =  $1.1222 - ((1.1222 - 1.1204) \times 4/6) = 1.1210$

Alternatively, predicted futures rate =  $1.1213 - ((1.1213 - 1.1204) \times 1/3) = 1.1210$

Expected receipt =  $\$6,450,000 / 1.1210 = CHF5,753,791$

Number of contracts =  $CHF5,753,791 / 125,000 = 46.03$  contracts, approximately 46 contracts

On the basis that futures give the higher expected receipt, they should be chosen, but Adverane Co should assess whether basis risk is likely to be significant. Adverane Co should also consider, as regards money market hedging, that CHF receipts could be used to pay off any existing CHF loans, or for other investment purposes, in which case the benefit to Adverane Co could be greater than hedging using futures.

- (b) (i) Use mid-spot rates to translate amounts.

| Owed by                | Owed to                | Local currency<br>m | CHF<br>m |
|------------------------|------------------------|---------------------|----------|
| Adverane (Switzerland) | Bosha (Eurozone)       | CHF15.90            | 15.90    |
| Adverane (Switzerland) | Diling (Brazil)        | CHF4.46             | 4.46     |
| Bosha (Eurozone)       | Cogate (USA)           | €24.89              | 26.60    |
| Bosha (Eurozone)       | Diling (Brazil)        | €18.57              | 19.84    |
| Cogate (USA)           | Adverane (Switzerland) | US\$27.08           | 24.16    |
| Cogate (USA)           | Diling (Brazil)        | US\$5.68            | 5.07     |
| Diling (Brazil)        | Adverane (Switzerland) | BRL38.80            | 12.29    |
| Diling (Brazil)        | Bosha (Eurozone)       | BRL51.20            | 16.22    |

| Owed to       | Owed by               |                    |                     |                     | Total<br>CHFm |
|---------------|-----------------------|--------------------|---------------------|---------------------|---------------|
|               | Adverane (Sw)<br>CHFm | Bosha (Eu)<br>CHFm | Cogate (US)<br>CHFm | Diling (Br)<br>CHFm |               |
| Adverane (Sw) |                       |                    | 24·16               | 12·29               | 36·45         |
| Bosha (Eu)    | 15·90                 |                    |                     | 16·22               | 32·12         |
| Cogate (US)   |                       | 26·60              |                     |                     | 26·60         |
| Diling (Br)   | 4·46                  | 19·84              | 5·07                |                     | 29·37         |
| Owed by       | (20·36)               | (46·44)            | (29·23)             | (28·51)             |               |
| Owed to       | 36·45                 | 32·12              | 26·60               | 29·37               |               |
| Net           | 16·09                 | (14·32)            | (2·63)              | 0·86                |               |

Under the terms of the arrangement, Bosha, the company with the largest debt, will pay Diling, the company with the smallest amount owed to it, CHF0·86 million. Bosha will pay Adverane CHF13·46 million and Cogate will pay Adverane CHF2·63 million.

- (ii) The advantage of using a central treasury for multilateral netting is that the central treasury can coordinate the information about inter-group balances. There will be a smaller number of foreign exchange transactions, which will mean lower commission and transmission costs. There will be less loss of interest through money being in transit. The foreign exchange rates available may be more advantageous as a result of large transaction sizes resulting from consolidation. The netting arrangements should make cash flow forecasting easier in the group.
- (c) Setting the transfer price at market price should enable a fair assessment of the performance of both the buying and selling divisions. Both internal and external sales will be accounted for at the same price. However, this may distort performance in that the costs of internal sales may be lower than external sales. For example, administration costs should be lower and there should be no costs of bad debts. These cost savings should be shared between the two divisions to give a fair picture. If the selling division has spare capacity, selling at incremental cost rather than market price may provide greater certainty that the buying division will use the selling division.

In theory, using market price should mean that the central treasury function has to intervene less. Simple market price provides an objective measure over which the divisions should agree. However, in reality, there may be complications that require central intervention. The market price may be difficult to determine or may fluctuate wildly, and central treasury may have to decide which price to use. If it is decided that an allowance should be made for costs of internal transfer being lower, central treasury may have to determine what this should be as it may vary significantly between products and divisions.

Specifying the transaction takes place at market price is designed to ensure that the buying division buys from the selling division, rather than an external supplier if the buying and selling division have failed to agree a price. The implicit assumption is that the buying division will use the selling division because of better service from, and greater dependability of, dealing within the group. This may not necessarily be the case. If the buying division previously purchased internally as a result of a low transfer price, forcing it to pay market price may mean it chooses an external supplier for non-price reasons.

|          |  | <i>Marks</i>        |
|----------|--|---------------------|
| <b>1</b> | <b>(a)</b> Compare and contrast the two directors' opinions                  | 4–5                 |
|          | Discussion of types of synergy benefits                                      | 4–5                 |
|          | <b>Max</b>   | <u>9</u>            |
|          | <b>(b)</b> 1–2 marks per point   | <b>Max</b> <u>5</u> |
|          | <b>(c) (i) (Appendix 1)</b>  |                     |
|          | Estimate of future growth rate   | 1                   |
|          | Exclude interest from free cash flows  | 1                   |
|          | Estimate of free cash flows  | 2                   |
|          | Estimate of Foshoro Co's value   | 1                   |
|          | Estimate of equity value of Foshoro Co                                       | 1                   |
|          |  | <u>6</u>            |
|          | <b>(ii) (Appendix 2)</b>   |                     |
|          | Combined company asset beta  | 1                   |
|          | Combined company equity beta   | 1                   |
|          | Combined company cost of equity  | 1                   |
|          | Combined company cost of capital   | 1                   |
|          | Combined company sales revenue (or operating profits) (years 1 to 4)         | 1                   |
|          | Combined company taxation amounts (years 1 to 4)                             | 1                   |
|          | Combined company additional asset investment (years 1 to 4)                  | 1                   |
|          | Combined company total value (years 1 to 4)                                  | 1                   |
|          | Combined company value after first four years                                | 1                   |
|          | Combined company total market value  | 1                   |
|          | Combined company market value of equity                                      | 1                   |
|          |  | <u>11</u>           |
|          | <b>(iii) (Discussion in report and appendix 3)</b>                           |                     |
|          | Evaluation of benefit to Chikepe Co shareholders                             | 3–4                 |
|          | Discussion of the limitations of the valuation method used                   | 4                   |
|          | <b>Max</b>   | <u>7</u>            |
|          | <b>Professional marks for part (c)</b>                                       |                     |
|          | Report format  | 1                   |
|          | Structure and presentation of the report                                     | 3                   |
|          |  | <u>4</u>            |
|          | <b>(d)</b> Discussion of mandatory-bid rule and principle of equal treatment | 3–4                 |
|          | Discussion of effectiveness of poison pills and disposal of crown jewels     | 4–5                 |
|          | <b>Max</b>   | <u>8</u>            |
|          | <b>Total</b>   | <u>50</u>           |

|          |   | <i>Marks</i>                  |
|----------|---|-------------------------------|
| <b>2</b> | <b>(a)</b> Operating cash flow excluding marketing costs        | 1                             |
|          | Tax allowable depreciation                                      | 1                             |
|          | Taxation  | 2                             |
|          | Working capital   | 2                             |
|          | Discount factor   | 2                             |
|          | Base case NPV   | 1                             |
|          | Issue costs   | 1                             |
|          | Tax shield on loan  | 2                             |
|          | Subsidy   | 1                             |
|          | Tax shield on subsidy   | 1                             |
|          | Adjusted present value  | 1                             |
|          | Comments and conclusion   | 2                             |
|          |   | <hr/> <b>17</b>               |
|          | <b>(b)</b> 1–2 marks per point                                  | <b>Max</b> <u>8</u>           |
|          |   | <b>Total</b> <u><b>25</b></u> |
| <b>3</b> | <b>(a) (i)</b> Operating profit                                 | 1                             |
|          | Interest payable  | 1                             |
|          | Tax payable for normal activities                               | 1                             |
|          | Depreciation  | 1                             |
|          | Profit on disposal of non-current assets                        | 1                             |
|          | Cash from disposal of non-current assets                        | 1                             |
|          | Investment in new non-current assets                            | 2                             |
|          | Investment in working capital                                   | 1                             |
|          | Dividend remittance from Bowerscots Co                          | 1                             |
|          | Additional tax payable on Bowerscots Co profits                 | 1                             |
|          |   | <hr/> <b>11</b>               |
|          | <b>(ii)</b> Dividend capacity required                          | 1                             |
|          | Increase in dividend remittance                                 | 1                             |
|          | Revised level of dividend required (% level or absolute amount) | 1                             |
|          |   | <hr/> <b>3</b>                |
|          | <b>(b)</b> Benefits of new policy                               | 2–3                           |
|          | Problems of new policy  | 2–3                           |
|          |   | <hr/> <b>Max</b> <u>5</u>     |
|          | <b>(c)</b> Agency problems                                      | 3–4                           |
|          | Solutions to problems   | 3–4                           |
|          |   | <hr/> <b>Max</b> <u>6</u>     |
|          |   | <b>Total</b> <u><b>25</b></u> |

|          |   | <i>Marks</i>        |
|----------|---|---------------------|
| <b>4</b> | <b>(a)</b> Calculation of net US\$ receipt      | 1                   |
|          | Money market hedge                              | 2                   |
|          | <b>Futures</b>                                  |                     |
|          | Buy futures                                     | 1                   |
|          | Predicted futures rate based on basis reduction | 2                   |
|          | Expected receipt                                | 1                   |
|          | Number of contracts                             | 1                   |
|          | Conclusion                                      | 1–2                 |
|          | <b>Max</b>                                      | <u>9</u>            |
|          | <b>(b) (i)</b> CHF amounts owed and owing       | 2                   |
|          | Totals owed and owing                           | 2                   |
|          | Net amounts owed                                | 1                   |
|          | Payments and receipts                           | 2                   |
|          |   | <u>7</u>            |
|          | <b>(ii)</b> Advantages – 1 mark each            | <b>Max</b> <u>3</u> |
|          | <b>(c)</b> Performance assessment               | 2–3                 |
|          | Work of central treasury                        | 2–3                 |
|          | Buying internally                               | 2–3                 |
|          | <b>Max</b>                                      | <u>6</u>            |
|          | <b>Total</b>                                    | <u>25</u>           |