



MAC3702

October/November 2015

APPLICATION OF FINANCIAL MANAGEMENT TECHNIQUES

Duration : 3 Hours

100 Marks

EXAMINATION PANEL AS APPOINTED BY THE DEPARTMENT.

Use of a non-programmable pocket calculator is permissible.

Closed book examination.

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This paper consists of 10 pages.

PLEASE NOTE:

1. This paper consists of FOUR (4) questions.
2. All questions must be answered.
3. Basic workings, where applicable, must be shown.
4. Ensure that you are handed the correct examination script (blue) by the invigilator.
5. EACH QUESTION MUST COMMENCE ON A SEPARATE PAGE.
6. A combined final mark of 50% is required to pass this module. The final mark is calculated as follows: (20% of the average mark obtained for the first three assignments) + (80% of mark obtained in this examination). The year-mark will only be taken into account if a subminimum of 40% is obtained for this examination.

PROPOSED TIMETABLE

| Question | Topic | Marks | Minutes |
|----------|---|-------|---------|
| 1 | Weighted Average Cost of Capital (WACC) | 25 | 45 |
| 2 | Organic Growth (Capital Budgeting) | 22 | 40 |
| 3 | Advance Analysis of Information | 25 | 45 |
| 4 | Mergers and Acquisitions, The treasury function | 28 | 50 |
| | | 100 | 180 |

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QUESTION 1 (25 marks; 45 minutes)

MusclePharm Ltd (MusclePharm) was founded in 2005 to develop the most scientifically advanced, clinically aligned and safest range of dietary supplementation possible. MusclePharm is currently financed by a debt to equity ratio of 20 : 80.

Management of MusclePharm is considering investing in a new product line, namely BizzyDiet, that specialises in the development of beverages and health bars. The company is considering five possible capital structures for the new investment. The financial manager, Mr Ezempilo, has done some research and analysed the capital structures of comparable companies with equivalent business risks as follows:

1. The company has a tax rate of 28%.
2. MusclePharm will generate steady earnings before interest and tax (EBIT) of R13 125 million per annum for the foreseeable future.
3. The pre-tax cost of debt will remain constant, irrespective of the capital structure, at a cost of 11,67%. However, the cost of equity will fluctuate at the different gearing ratios.

The table below sets out these fluctuating costs:

| Gearing ratio (Debt capital/Total capital) | Cost of equity |
|---|-----------------------|
| % | % |
| 0,0 | 18,00 |
| 20,0 | 19,50 |
| 30,0 | 21,00 |
| 40,0 | 22,50 |
| 50,0 | 26,00 |

4. The cost of the investment in BizzyDiet amounts to R25 million and it will be financed through equity and debt using the optimal capital structure. The current share price of MusclePharm was determined at R44 per share. There are one million shares in issue.

The chief operating officer, Mr Botha, has heard of something called the Miller and Modigliani theory during a training session and he would like to understand this theory better. According to his understanding of the theory, there is no optimal capital structure because the advantage of debt would be exactly counteracted by an increase in cost of equity, such that the weighted average cost of capital (WACC) will always be equal to business risk. This theory is based on a number of assumptions. He asked Mr Ezempilo to explain these assumptions to him.

QUESTION 1 (continued)**REQUIRED**

- (a) **Calculate** the effective after-tax weighted average cost of capital (WACC) and the total market value of capital employed for each of the five possible capital structures. **Recommend** to management of MusclePharm what the optimal capital structure is based on the results of your calculation. (13)
 - (b) **Calculate** the new investment and **advise** management on how it should be financed. (7)
 - (c) **Indicate**, based on the assumptions that there are no taxes, cost of financial distress, or agency cost, **why** the market value of the company is not affected by the capital structure of the company. (2)
 - (d) **Discuss** three of the Miller and Modigliani theory assumptions not mentioned in (a) above. (3)
- [25]**

QUESTION 2 (22 marks; 40 minutes)

After the successful hosting of the 2010 FIFA World Cup® and successful launching of the e-toll system in Gauteng, the Western Cape provincial government (WCPG) is following suit. The City of Cape Town has won a bid to host Olympics 2024 and the WCPG has started reviewing its infrastructure with a view of making necessary upgrades.

The South African National Roads Agency (SANRAL) Ltd is responsible for the road infrastructure throughout the country and it has been given a mandate to improve the roads in the Western Cape in preparation for the Olympic Games in 2024. The Department of Transport and Public Works has made it clear that it would not allocate any funds to the upgrade.

SANRAL is considering two alternatives for recovering the capital outlay on the road infrastructure over the next five years. It can use either the e-toll system or the fuel levy system.

Alternative1: e-toll system

How it works: Gantries are constructed at different points on major roads around the Western Cape. As a motor vehicle passes through a gantry, the gantry reads the car registration details electronically and passes the information directly to a control centre in Paarl, where the amount owed (toll fee) for passing through that gantry is established. This is immediately sent to the motor vehicle owner's bank, instructing the bank to debit the owner's account with the toll fee. All Western Cape car owners are required to register with SANRAL. Visitors to the Western Cape Province also need to register at any of the leading retailers in the province. SANRAL will establish a customer centre to attend to general road user queries, unpaid toll fees and unregistered motor vehicles.

Alternative 2: Fuel levy system

How it works: No e-toll infrastructure will be put in place but a special levy will be charged to the fuel price, meaning that the retail price of fuel (across all grades) will be increased at all fuel stations across the country. This levy is then transferred electronically to SANRAL's account when fuel is purchased. Only the levy collected in the Western Cape will be used for the Western Cape infrastructure development.

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QUESTION 2 (continued)

SANRAL has estimated its capital expenditure (CAPEX) at the start of the project, where applicable, to be as follows:

| CAPEX | R |
|------------------------|------------|
| Roads | 17 884 002 |
| Gantries (civil works) | 393 867 |
| e-toll IT systems | 1 837 480 |
| Control centre – Paarl | 229 756 |
| Customer centre | 217 217 |
| IT systems – fuel levy | 5 545 682 |

Running of the e-toll system

SANRAL expects 2 300 000 cars to drive through the gantries per annum, at an average toll fee of R3,60 (which will not change) per car. About 30% of the cars passing through the gantries will not register for e-toll, making it impossible to recover the amount owed by unregistered users. The toll revenue is expected to grow in line with the increase in the number of cars annually.

The Electronic Tolling Collection Company (ETCC) has provisionally been awarded R6 500 000 on tender to manage the collection of toll fees. This fee will be paid annually in arrears in equal instalments over the next five years. Working capital of R1 677 123 is required at the start of the project.

Running of fuel levy system

SANRAL will charge a fixed fuel levy of 55c per litre for the next five years. South African road users are expected to use 35 000 000 litres of fuel in the first year of implementing the fuel levy system, of which the Western Cape will consume 30% (this ratio will apply for the duration of the project). Annual consumption of fuel will increase in line with the increase in the number of road users.

SANRAL has estimated the initial working capital at R234 187. Operating costs are budgeted at R650 000 per annum.

Additional information

The National Association of Automobile Manufacturers of South Africa (NAAMSA) expects the Western Cape road users to increase at a steady annual rate of 6% for the duration of the project. SANRAL is exempt from paying income tax in terms of section 10(1)(t)(iii) of the Income Tax Act. The WACC is calculated using the RSA government bond rate of 7% before tax.

REQUIRED

Using the net present value (NPV) calculation, **determine** in which system SANRAL should **invest** (if any), to be able to recover the costs of the infrastructure (round your workings to the nearest rand).

[22]

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QUESTION 3 (25 marks; 45 minutes)

Invest4You (I4Y) Ltd is one of the most successful third-party fund management companies. The company provides opportunities for both the individual and institutional investors for investments in markets across a number of geographical locations.

The headquarters of the company is located in Johannesburg. The company also has offices in Botswana, England and Australia.

At the end of December 2014, the assets under management was valued at a total of R450 million.

Mr Bongani is the fund manager responsible for the Invest4You (I4Y) Balanced Fund with a value of R45 million at the end of December 2014. The Fund invested funds in AB Bank that was recently placed under curatorship because the lenders of unsecured loans failed to repay their loans on time. The I4Y Balanced Fund has lost two thirds of the value of the investment in AB Bank, amounting to R2 million on 31 December 2014. Since the Fund had experienced the loss, new measures were put in place to ensure that money was invested in less riskier companies.

New investments can only be considered if they comply with all of the following minimum criteria:

- Price/earnings ratio of more than 4 times
- Market to book ratio that is greater than 1
- Dividend pay-out ratio greater than the annual inflation rate plus 15%
- A Z-score outcome indicating that the company has a low risk of failure

The I4Y Balanced Fund invested \$500 000 in debentures issued in the USA. On 1 January 2015, only 90 days are left before the debentures mature. Mr Bongani has the following information available to determine the 90-day forward rate:

| | ZAR/USD1 |
|--|-----------------|
| Spot rate (bank's selling rate in South Africa) | 10,9459 |
| South African (borrowing) interest rate | 9,5% per annum |
| United States of America (borrowing) interest rate | 3,3% per annum |
| South African inflation rate | 5,9% per annum |
| United States of America inflation rate | 1,7% per annum |

Mr Bongani and his team are considering investing the money available from debentures after maturity in CapT Bank that also provides loans to clients with a riskier credit profile than the clients of the "big four" banks in South Africa. However, the unsecured loan book is limited and most of the loans are secured. The following financial statement information is available on 31 December 2014 for CapT Bank:

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QUESTION 3 (continued)**Statement of profit or loss and other comprehensive income for the year ended
31 December 2014**

| | | 2014 |
|---|--------------|--------------|
| | Notes | R mil |
| Income from operations | | 6 773 |
| Interest income | 1 | 4 716 |
| Loan fee income | | 652 |
| Transaction fee income | | 1 393 |
| Other banking income | | 12 |
| Less: Operating cost | | 5 347 |
| Finance cost | 1 | 1 066 |
| Loan fee expense | | 253 |
| Transaction fee expense | | 430 |
| Impairment charge on loans and advances to clients | | 1 968 |
| Banking operating expenses | | 1 630 |
| Operating profit before other income, interest and tax | | 1 426 |
| Other income | | 8 |
| Earnings before interest and tax | | 1 434 |
| Less: Finance cost | 2 | 2 |
| Earnings after interest before tax | | 1 432 |
| Less: Income tax expense | | 398 |
| Profit for the year | | 1 034 |
| Market price per share | | R52,50 |
| Dividend declared | | 220 cents |

Notes

- 1 The finance cost (interest expense) relates to day-to-day operations.
- 2 The interest expense relates to the interest on the long-term loan funding the purchase of the head office building.

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QUESTION 3 (continued)**Statement of financial position on 31 December 2014**

| | 2014 R mil |
|--|-----------------------------|
| Assets | |
| Non-current assets | 22 994 |
| Property, plant and equipment | 445 |
| Investments in money market funds | 4 810 |
| Investments designated at fair value | 2 355 |
| Loans and advances to clients | 15 050 |
| Derivative assets | 214 |
| Intangible assets | 120 |
| Current assets | 185 |
| Inventory | 15 |
| Trade and other receivables | 125 |
| Cash and bank balances | 45 |
| Total assets | 23 179 |
| Equity and liabilities | |
| Total equity | 5 911 |
| Ordinary share capital and premium (115 million ordinary shares) | 3 250 |
| Non-distributable reserve | 42 |
| Retained income | 2 619 |
| Non-current liabilities | 17 254 |
| Deposits and bonds at amortised costs | 17 225 |
| Long-term loans | 24 |
| Deferred tax | 5 |
| Current liabilities | 14 |
| Trade and other payables | 14 |
| Total equity and liabilities | 23 179 |

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QUESTION 3 (continued)**Additional information****Formula for Z-score**

$$Z = 0,012a + 0,014b + 0,033c + 0,006d + 0,999e$$

Where:

- a** = working capital/total assets
b = retained earnings/total assets
c = earnings before interest and taxes (EBIT)/total assets
d = market value of equity/total liabilities
e = sales/total assets.

Assume there are 365 days in a year.

REQUIRED

- (a) **Determine** the future value of the USA debentures on 31 March 2015. (4)
- (b) **Prepare** a memorandum to Mr Bongani and **advise** him if I4Y Balanced Fund should invest in shares in CapT, based on the minimum criteria for new investments. (21)

[25]

QUESTION 4 (28 marks; 50 minutes)

Financial Times, Johannesburg. April 26, 2015. – An agreement was reached today to create South Africa's third largest company for fast casual chicken restaurants. Bardos Ltd and Narcelos Ltd announced this definitive agreement today, under which the two companies will create a new local powerhouse in the quick-service restaurant sector. With approximately R2,4 billion in sales, over 1 000 restaurants and two strong, thriving, independent brands, the new company will have an extensive local footprint and significant growth potential. The new local company will be based in Johannesburg, the largest market of the combined company, Barlos Flame Chicken (BFC) Ltd.

Bardos and Narcelos each have strong franchisee networks and iconic brands that are loved by their guests. Following the closing of the transaction, each brand will be managed independently, while benefiting from local scale and reach as well as sharing of best practices that will come with common ownership by the new company. The treasury function will be a centralised cost centre in BFC.

Under the terms of the transaction, which have been unanimously approved by the boards of directors of both companies, BFC will take over the property, plant and equipment assets at market value for similarly aged assets for R40 000 million and R12 750 million for Bardos and Narcelos, respectively. Goodwill payable by BFC for the two companies was calculated based on the following information:

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QUESTION 4 (continued)

| | Bardos Ltd | Narcelos Ltd |
|---|-------------------|---------------------|
| Anticipated future net income per annum | R7 585 million | R1 780 million |
| Fair rate of return on operating assets | 15% | 10% |
| Anticipated duration of super profits | 5 years | 5 years |

The purchase price will be settled by issuing ordinary shares of R2,00 each in BFC. BFC will not take over the inter-company shareholding.

In a combined press release, Alex Peri, Executive Chairman of Bardos and Chuck Flame of Narcelos, said, "By bringing together our two iconic companies under common ownership, we are creating a fast-food powerhouse. Our combined size, local footprint and industry-leading growth trajectory will deliver superb value and opportunity for both Bardos and Narcelos shareholders, our dedicated employees, strong franchisees, and partners. We have great respect for each other and are looking forward to working together to realise the full potential of these two extraordinary businesses."

Abridged statement of financial position as at 30 March 2015

| | Bardos Ltd R mil | Narcelos Ltd R mil |
|--------------------------------|----------------------------|------------------------------|
| ASSETS | | |
| Non-current assets | | |
| Property, plant and equipment | 39 760 | 12 595 |
| Investments | 110 | 125 |
| 110 million shares in Narcelos | 110 | - |
| 125 million shares in Bardos | - | 125 |
| Total assets | <u>39 870</u> | <u>12 720</u> |
| EQUITY AND LIABILITIES | | |
| Total equity | | |
| Issued capital | 1 250 | 550 |
| (ordinary shares of R1 each) | | |
| Retained earnings | 38 620 | 12 170 |
| | <u>39 870</u> | <u>12 720</u> |

Notes to the abridged statement of financial position as at 30 March 2015

| | Bardos Ltd R mil | Narcelos Ltd R mil |
|--------------------------------------|----------------------------|------------------------------|
| PROPERTY, PLANT AND EQUIPMENT | | |
| Land | 5 849 | 1 755 |
| Buildings and improvements | | |
| Owned | 14 715 | 4 900 |
| Leased | 13 825 | 4 150 |
| Equipment, signs and seating | 5 371 | 1 790 |
| | <u>39 760</u> | <u>12 595</u> |

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QUESTION 4 (continued)**REQUIRED**

- (a) **Draft** a report to the board of directors of BFC, addressing the following issues: **Advise** BFC on how many shares it must issue to the shareholders of Bandos (excluding Narcelos) and Narcelos (excluding Bandos).

Calculations and advice (16)

Communication skills – layout and structure, logical argument (2)

- (b) **State** the three levels of decision making in the organisation that the treasury function influences and list an example for each level. (6)
- (c) Briefly **discuss** the role of the treasury function within an organisation. (4)

[28]