**Certified Finance and Accounting Professional Stage Examination**

**The Institute of Chartered Accountants of Pakistan**

7 December 2021
3 hours – 100 marks
Additional reading time – 15 minutes

# Business Finance Decisions

**<u>Instructions to examinees:</u>**
(i) Answer all **FIVE** questions.
(ii) Answer in **black** pen only.

Q.1 Alpha Foods Limited (Alpha) is a listed, food processing company based in Karachi which manufactures canned and boxed vegetable and crop based products.

Alpha is currently in the final stages of negotiation to purchase a listed frozen food production company, Fresh & Frozen Limited (FF), which supplies supermarkets throughout Pakistan with frozen fruits and vegetables and other frozen, processed foods. The directors of Alpha are confident that the proposed acquisition is a good strategic fit and are expecting to negotiate a price close to FF's current traded share price.

Should the acquisition of FF reach agreement and proceed, the two companies will be merged into a new listed entity, Alpha Fresh & Frozen Limited (AFFL), which is expected to commence trading with an uplift of 7.5% on the current combined equity values of Alpha and FF.

**Current market information:**

| | **Alpha Foods Limited** | **Fresh & Frozen Limited** |
|---|---|---|
| Number of shares | 100 million | 30 million |
| Long term bank loans at 5.5% annual interest | Rs. 11,500 million | Rs. 4,500 million |
| Quoted equity beta | 1.454 | 2.585 |
| Share price | Rs. 435.75 | Rs. 722.40 |

The current yield on Pakistan government bonds is 3.85%. The current market return on the Pakistan equity market portfolio is 6.65% and Pakistan's corporate tax rate is expected to be 29% for the foreseeable future.

**Information about the new corporate debenture**
Alpha is expected to raise a new six-year 6.5% coupon corporate debenture for Rs. 22,500 million on the day of acquisition to finance the purchase of FF. The new debenture is expected to be issued at 95.8% of its par value (where par equals 100) and will redeem in six years' time at a 5% premium above its par value.

**Investors' concerns**
Certain significant institutional investors have expressed concern that the proposed acquisition of FF will be funded by further debt finance which may exceed 30% gearing, measured as debt/(debt plus equity), which is considered to be the highest comfortable level of gearing by investors for companies operating in the food processing industry.

A major institutional shareholder is also concerned about the impact on the weighted average cost of capital (WACC) as a result of the acquisition.

**Required:**
(a) Calculate the current gearing of Alpha and the expected gearing level of the new combined entity, AFFL, immediately following the proposed acquisition and evaluate the result. **(04)**
(b) Forecast the expected after-tax WACC of AFFL immediately following acquisition. **(09)**

To manage the debt position, the directors of Alpha are considering divesting a currently profitable trading division which manufactures rice based processed food products. This sale is expected to raise a minimum of Rs. 8,500 million which will be solely used to reduce the value of the remaining bank loans. The directors are confident this strategy will be favourably received by institutional investors and expect AFFL's post-acquisition share price to remain unaltered, following the sale.

(c) Determine the expected impact on gearing and WACC immediately following the proposed sale of the division and recommend after critically evaluating the directors' view, if Alpha should proceed with the sale. **(07)**

Q.2 Cooler Limited (Cooler) is currently a manufacturer of industrial refrigeration units for the chemical, medical and hospitality industries and has gained a long-standing reputation for reliability and longevity. In the face of growing international competition, consumer demand and a strategic drive to utilise spare production capacity, Cooler's directors are considering entering the household refrigeration market.

The initial phase was to design a smaller version of its most popular industrial unit in response to demand from households in Pakistan, which is now ready for production. Cooler has spent Rs. 50 million to design the new product, ChillMax50 for the domestic market.

Cooler's directors would like to understand the potential value of launching the ChillMax50 over a five-year term.

Production of the ChillMax50 can commence on 1 January 2022 with the first year of sales in the year ending 31 December 2022. The marketing director has suggested a unit selling price of Rs. 550,000 and is optimistic that there will be high demand for the ChillMax50 in Pakistan households, although there is some uncertainty. Therefore, the marketing director has estimated the following sales volumes for the ChillMax50 over a five-year period as follows:

**First year of sales (2022)**
- In 2022, sales will be 2,000 units (60% probability) or 2,500 units (40% probability).

**Second year of sales (2023)**
- If 2022 sales are 2,000 units, then in 2023 sales are estimated to be 2,250 units (70% probability) or 2,500 units (30% probability).
- If 2022 sales are 2,500 units, then in 2023 sales are estimated to be 2,750 units (65% probability) or 3,000 units (35% probability).

**Subsequent year sales (2024-2026)**
- Unit sales will grow by 10% in 2024 based on expected 2023 sales, and by a further 5% in both 2025 and 2026, based on the previous year sales.

**Production of the ChillMax50**
Cooler has many production sites. Production Facility 4 currently manufactures the smallest of its industrial refrigeration units, the IND100, and is the most up-to-date manufacturing facility with computerised robotic machinery which can be quickly programmed to manufacture different products.

Cooler's operations manager estimates that Production Facility 4 currently has spare production capacity to manufacture an additional 1,000 IND100 units per annum beyond current IND100 production levels.

The directors have decided that in case of shortfall in capacity, production of ChillMax50 should be given priority over IND100.

The current selling price and costs required to manufacture one IND100 unit are as follows:

| | Rs. in '000 |
|---|---|
| Selling price | 900 |
| Materials | (375) |
| Skilled labour (eight hours per IND100 unit) | (160) |
| Variable costs (including machine time and product packing) | (120) |

The expected production costs required to manufacture one ChillMax50 unit are as follows:

| | Rs. in '000 |
|---|---|
| Materials | (180) |
| Skilled labour (five hours per ChillMax50 unit) | (100) |
| Variable costs (including machine time and product packing) | (100) |

In addition to above, production of the ChillMax50 will require some new specialised machinery to manufacture new refrigeration technology. Production of the ChillMax50 will require Cooler to invest Rs. 250 million in new machinery and equipment on 31 December 2021. Based on past experience, the directors are assuming that this machinery and equipment will have a disposal value of Rs. 24 million on 31 December 2026. This machinery and equipment will not increase overall capacity at Production Facility 4.

The directors of Cooler are assuming that new machinery and equipment will attract initial capital allowance of 25% in the first year and a further 10% per annum on a reducing balance basis, commencing in the year of acquisition. The company can be assumed to be in a position to claim all tax allowances in full as soon as they become available and to pay corporate tax at a rate of 29% per annum over the life of the project. The tax is payable at the end of the year to which it relates.

The production manager has forecasted that Rs. 25 million of additional fixed costs of maintenance and product quality control will be incurred in the first year of production of the ChillMax50 and will continue to be incurred for each year of production.

An additional production manager would need to be recruited to manage the manufacture of the new product. The new ChillMax50 production manager will be paid a salary of Rs. 2.5 million per annum in the first year of production, increasing by annual inflation each year thereafter.

Working capital to support production of the ChillMax50 will be required at a rate of 15% on net revenue of ChillMax50 (i.e. revenue from ChillMax50 less revenue forgone of IND100) for each year. Working capital is assumed to be in place at the beginning of each respective year. The directors have assumed all working capital will be released after five years of production and sales. Additionally, all cash flows are assumed to occur on the last day of each year, unless stated otherwise.

The company's current weighted average cost of capital is 8%, which the directors have determined should be used to evaluate the launch of the ChillMax50.

All revenues and costs are subject to annual inflation which is expected to remain stable at 3% per annum over the next five years. All revenues and costs are stated at current values, unless stated otherwise.

**Required:**

(a) Recommend if the directors should proceed to launch the ChillMax50 production based on the assumptions provided by the directors of Cooler Limited. You are advised to present your workings in rupees in million. **(18)**

(b) Calculate the sensitivity of your analysis in part (a) to expected sales volumes and sales price and comment on your results. **(07)**

Q.3 FitOut Limited (FitOut) is a small supplier of shop fittings in the wholesale and retail sector. Following are the extracts from FitOut's financial statements:

**Statement of profit or loss for the year ended 30 November 2021**

| | Rs. in '000 |
|---|---|
| Revenue | 266,000 |
| Cost of sales and other expenses (excluding depreciation) | (186,201) |
| Depreciation | (25,000) |
| **Operating profit** | **54,799** |
| Finance costs | (4,500) |
| **Profit before tax** | **50,299** |
| Tax | (12,575) |
| **Profit after tax** | **37,724** |
| Dividends | (20,000) |
| **Retained profit for the year** | **17,724** |

**Statement of financial position as at 30 November 2021**

| | Rs. in '000 |
|---|---|
| Non-current assets | 236,570 |
| **Current assets** | |
| Inventories | 64,324 |
| Trade receivables | 74,852 |
| Cash | 7,296 |
| | 146,472 |
| **Total assets** | **383,042** |
| | |
| **Equity** | |
| Share capital | 100,000 |
| Retained earnings | 108,162 |
| | 208,162 |
| **Non-current liabilities** | |
| Loan | 75,000 |
| | |
| **Current liabilities** | |
| Trade payables | 79,880 |
| Other payables (dividends) | 20,000 |
| | 99,880 |
| **Total equity and liabilities** | **383,042** |

The following assumptions have been provided for the purpose of forecasting for the next two years:

(i) Revenue is expected to increase by 9% for each of the financial years ending 30 November 2022 and 2023.

(ii) Costs of sales and other expenses (excluding depreciation) are expected to increase by 7% per annum.

(iii) Corporate tax is expected to continue at 25% for the foreseeable future and assumed tax is paid in the year in which the liability arises.

(iv) Dividends for 2021 have been declared at Rs. 20 million and the directors hope to increase these by 5% each year for the next two years.

(v) Trade receivables are expected to increase in line with revenue, whereas inventory and trade payables are expected to increase in line with cost of sales and other expenses.

(vi) The non-current assets are depreciated at 10% on a reducing balance basis. FitOut intends to purchase new machinery to the value of Rs. 70 million at the beginning of 2022. This machinery will be depreciated in line with other assets and will charge a full year's depreciation in the year of purchase. Accounting depreciation is equal to tax depreciation.

(vii) The current interest rate on FitOut's loan is 6% per annum and this is expected to increase by 1% next year and 0.5% the year after. Principal amount of the loan is repayable at the end of five years. For the purposes of the forecast, ignore interest on any forecast cash overdraft which may arise during 2022 and 2023.

FitOut's main financial objectives for the years 2022 and 2023 are to achieve a year-on-year increase in profit before tax of atleast 10% and earn a return on capital employed of atleast 20% (measured profit before tax/average capital employed).

**Required:**

(a) Provide the following for FitOut for the two years ending 30 November 2022 and 2023:

(i) Forecasted statement of profit or loss, dividends and retained profit
(ii) Forecasted statement of financial position
(iii) Forecasted statement of cash flows **(11)**

(b) Comment, with appropriate calculations, on whether FitOut is likely to meet its stated financial objectives at the end of 30 November 2022 and 30 November 2023. **(04)**

(c) Discuss the financing options available to FitOut to manage any forecast cash deficit identified in part (a). **(05)**

Q.4 Clean & Co (Clean) provides two types of the cleaning services i.e. laundry and dry-cleaning, for staff uniforms to hotels and similar businesses. Both of the services use the same resources, but in different quantities.

Details of the expected resource requirements, revenues and costs of each service are shown below:

| | | **Laundry** | **Dry cleaning** |
|---|---|---|---|
| | | **------ Rs. per service ------** | |
| Selling price | | 112 | 264 |
| Cleaning materials | ***(Rs. 200 per litre)*** | 40 | 60 |
| Direct labour costs | ***(Rs. 120 per hour)*** | 24 | 40 |
| Machine costs | ***(Rs. 60 per hour)*** | 10 | 30 |

Additionally, total monthly fixed costs are forecasted to be Rs. 250,000.

The maximum resources expected to be available in the month of December are:

| | |
|---|---|
| Cleaning materials | 5,000 litres |
| Direct labour hours | 6,000 labour hours |
| Machine hours | 5,000 machine hours |

Clean has one particular contract which it entered into six months ago with a local hotel to guarantee 1,200 laundry services and 2,000 dry cleaning services every month.

The maximum demand for laundry, including the hotel contract, is expected to be 14,000 laundry services and 9,975 dry cleaning services.

**Required:**

(a) Assuming that a graphical linear programming solution is to be used to maximise profit in the month of December:

(i) State the constraints and objective function. **(05)**
(ii) Determine the maximum profit that can be made in December. **(07)**

(b) Determine resource slack assuming Clean operates at maximum profit. **(03)**

(c) Explain the concept of shadow price and calculate the shadow price of a machine hour. **(04)**

Q.5 You are the finance manager of Multicorp Limited (MC), a large, multinational company based in Pakistan.

MC wishes to raise new debt finance to fund increased capital expenditure and working capital requirements resulting from planned production efficiency and other sales and marketing initiatives.

MC's finance director believes there are advantages in borrowing at variable rates of interest and is considering either entering into a variable rate loan with the bank or entering in a fixed rate loan and then entering into a separate interest rate swap arrangement with another company.

Conglomerate Holdings Limited (CH) is a Pakistan based company which operates in a different industry and is looking to expand by acquiring smaller competitor companies. CH has a lower credit rating than MC due to its smaller size. The board of directors of CH prefer to borrow at fixed rates to finance potential acquisitions.

Currently, MC is able to raise fixed-rate finance in the Pakistan corporate bond market at 8.5% and floating rate finance at KIBOR + 0.5%. CH can raise fixed-rate finance at 10.5% and floating rate finance at KIBOR + 1.1%.

An interest rate swap can be arranged through MC's bank, which will charge fee of 0.15% of the loan amount to each party entering into an interest rate swap agreement.

The bank is suggesting the following swap terms to open negotiations:

- CH will pay 9% fixed to MC
- MC will pay KIBOR + 0.0% to CH

**Required:**

(a) Explain the purpose and counterparty risk of entering into an interest rate swap agreement and also the benefits of an interest rate swap to the board of MC. **(05)**

(b) Evaluate the financial impact to both MC and CH that will result from the swap terms proposed by the bank. **(07)**

(c) Recommend revised interest rate swap terms which are more likely to be acceptable to the boards of directors of both MC and CH. **(04)**

**(THE END)**