**ACCOUNTING, FINANCE AND CONTROL**

**MULTIPLE CHOICE TEST**

**Call February 8th, 2023**

## QUESTION 1A - (3 POINTS)

Koalas is a multinational company that operates in the pet food industry. The company has recently approved its 2022 annual report, with the data reported here below:

- Gross Profit: 102 M€
- Other Incomes (deriving from the rent of an owned building): 11 M€
- Administrative expenses: 6.4 M€
- General expenses: 15 M€
- Depreciation & Amortization of the manufacturing equipment: 9 M€
- Sales & marketing expenses: 13 M€
- Net financial expenses: 4.3 M€
- Inventories of finished goods on December 31st, 2022: 16 M€
- Inventories of finished goods on December 31st, 2021: 24 M€
- Inventories of raw materials and components on December 31st, 2022: 10 M€
- Inventories of raw materials and components on December 31st, 2021: 6 M€
- ROCE (calculated as EBIT / (Equity + Non-current financial liabilities) ): 12.26%
- Current financial liabilities: 267.5 M€.
- Current tax payables: 54.8 M€
- Asset Turnover Ratio: 3

Considering the above data, which is the value of ROI (i.e. EBIT / Invested Capital) for Koalas in 2022? Please round up to the second decimal place for numbers and fourth decimal place for percentages (for ex: 12.26% → 0.1226).

A. Around 8.25%
B. Around 8.65%
C. Around 8.33%
D. None of the other answers

SOLUTION:

ROI is computed as EBIT/(Total assets – Non financial Liabilities) or, alternatively, as

EBIT/ (Equity+ Total Financial Liabilities).

As from the data given by the text, both Numerator and Denominator are missing.

*To compute the numerator (EBIT):*

It can be computed from the data taken from Income Statement. Data suggest the adoption of an IS By FUNCTION (or DESTINATION).

With the data from the text:

EBIT = Gross Profit + Other Incomes – Administrative expenses – General expenses – Sales & marketing expenses = 102 M€ + 11 M€ - 13 M€ - 15M€ - 6.4 M€= 78.6 M€

*To compute the denominator (Total Assets – Non-financial Liabilities):*

The two values are missing. Total assets cannot be computed from the application of ATR formula, since the data on Revenues is missing. Similarly, with the available data, non-financial liabilities cannot be computed.

The denominator of ROI can also be alternatively expressed as: EBIT/ (Equity+ Total Financial Liabilities), with financial liabilities given by the sum of short term and long-term liabilities.

As from the data of the text, the denominator can be computed starting from ROCE:

ROCE = EBIT / (Equity + Non-current financial liabilities)

(Equity + Non-current financial liabilities) = EBIT/ROCE = 78.6/ 12.26% = 641.11 M€

Denominator of ROI = Equity + Non-current financial liabilities + Current financial liabilities (as from the text) = 641.11 + 267.5 = 908.61 M€

ROI = EBIT/ (Equity + Total Financial Liabilities) = 78.6/ 908.61= 0.0865 → 8.65%

Wrong answers

A. It does not consider Other Incomes in the computation of EBIT

C. It is wrong, it considers the D&A of manufacturing equipment as part of the period costs, whilst it is part of the cost of sales

D. It is wrong, because answer B is correct.

**QUESTION 1B - (3 POINTS)**

With reference to the company Koalas, and considering all the available data, you were able to collect a few additional pieces of information concerning 2022 financial statements:

- Consumption of raw materials and components: 62 M€
- Cost of purchased services: 90 M€
- Current provisions for future liabilities: 125.6 M€
- Total current liabilities: 513 M€
- Non-current provisions for employees' benefits: 12.5 M€
- Trade payables are not known, but are NOT negligible

There are no liabilities other than those mentioned in the text.

Using the data from the previous question and this few additional information, which is the value of DPO?

A. DPO is around 152.32 days
B. DPO is around 123.07 days
C. DPO is around 160.55 days
D. None of the other answers

SOLUTION

*To compute the numerator of the DPO:*

Current liabilities = Current financial liabilities + Current Tax Payables + Trade Payables + Current provisions for future liabilities

Trade Payables = Current liabilities – Current financial liabilities – Tax Payables – Current provisions for future liabilities = 513 M€ - 267.5 M€ - 54.8 M€ - 125.6 M€ = 65.1 M€

*To compute the denominator of the DPO:*

The purchases of raw materials, components and services are equal to:

- Purchases of services: 90 M€
- Purchases of raw materials and components: Consumption of raw material and components + Variation of inventories of raw materials and components (f-i) = 62+4 = 66 M€

Total Purchases = 156 M€.

DPO = (Trade Payables/Purchases) * 365 days.

DPO= (65.1/156)*365 days= 152.3173 days → around 152.32 days

Wrong answers

B. It also considers provisions as part of current liabilities

C. It considers a wrong sign in the consumption of raw materials and inventories

D. A is correct

**QUESTION 2A - (2 POINTS)**

Gamma is a non-listed Italian company producing pasta and biscuits that are sold mainly in Europe.

You are evaluating the Equity Value of the company at the end of 2023 and you are now up to estimating the Terminal Value of Gamma.

You have reliable forecasts on free cash flows until December 2026 and you assume that after 2026 a constant growth of 2% is expected.

The following data are available:

- FCFE (2023): 800 k€
- FCFF (2023): 500 k€

- FCFE (2026): 900 k€
- FCFF (2026): 700 k€
- Equity on January 1st, 2023: 8,000 k€
- Debt on January 1st, 2023: 5,000 k€
- Tax rate: 35%
- ke constantly equal to 7%
- kd constantly equal to 4%

Knowing that the D/E ratio remains constant over time, the value of the Terminal Value (in 2026, i.e. not discounted back to 2023) that should be considered in the calculation of the Equity Value of Gamma is:

A. Around 23,800 k€
B. Around 18,360 k€
C. Around 6,207 k€
D. None of the other answers

SOLUTION:
To calculate the TV for Equity Value it is necessary to proceed with PERPETUITY with GROWTH
Thus, the formula to be applied is:
TV (Equity Value) = $\frac{FCFE\ 2026\ (1+g)}{ke-g} = 18{,}360\ k€$
Where:
FCFE 2026: 900 k€
Ke = 7%
g= 2%

Wrong answers
A. It is wrong, because TV is calculated using FCFF 2026 e WACC
C. It is wrong, because TV is calculated using FCFE 2023
D. Answer B is correct

**QUESTION 2B - (4 POINTS)**

The ke of Gamma, which is equal to 7% in 2023, has been estimated using the CAPM approach and considering:

- The proper $r_f$ rate among the following 10-year Government Bond Yields:
  - Germany: 2.28%
  - Italy: 4.16%
  - United States: 0.78%

- The proper $r_m$ among the following market indexes:
  - FTSE MIB: 2.7%
  - EUROSTOXX 50: 8.0%
  - S&P: 6.5%

- Two comparable companies (A and B) to calculate Beta levered (i.e., equity Beta). You know that Beta unlevered of Company A = 0.65

Considering the available data in questions 2a and 2b, which of the following statements about Beta unlevered (i.e., assets Beta) of company B is CORRECT?
Please consider two digits in the calculations.

A. None of the other answers
B. It is around 0.53
C. It is around 0.40
D. It is around 0.58

SOLUTION:
We know that ke = 7% as result of the CAPM approach, whose formula is
ke = rf + Bl * (rm - rf)
where:

- rf = 2.28% (Gamma operates in the Euro zone and the least yield is the German one)
- rm = 8% (Gamma operates in Europe and rm is EUROSTOXX 50)
- Bl = ?

Bl can be calculated using the reverse formula of ke, being the only unknown variable
Bl = (ke- rf) / (rm – rf) = 0.83.
Bl Gamma has been calculated using 2 comparable companies (A and B) and thus it was calculated as: Bl Gamma = Buavg*(1+(1-tcGamma)*(DGamma/EGamma).

Thus, Buavg = BlGamma /1.41 = 0.59 → We know that Buavg is the average of the beta unlevered of the two comparable companies (A and B).
Buavg = (BuA + BuB) / 2 → the only unknown element here is BuB (that we need to calculate to answer the question)
BuB = 2*BuAvg – BuA = 2*0.59-0.65 = 0.53

Wrong answers
A. B is correct
B. Correct
C. Calculated considering the wrong rf (Italian Government Yield)
D. Calculated considering the lowest rf (US), which is actually wrong as not representative of the currency area

**QUESTION 3A - (3 POINTS)**

XY is a non-listed established company whose competitive advantage is based on its tangible assets. The table below collects relevant information about XY as well as those of some listed competitors that offer similar products and that can be considered potential comparable companies. Net Financial Position is calculated as cash minus current and non-current financial debts. Numbers are in thousands of euros (k€).

| Company | Strategy | Market Capitalization | Equity | Revenues | Net Income | Net Financial Position | EBIT | Growth rate | D/E |
|---|---|---|---|---|---|---|---|---|---|
| XY | Cost Leadership | - | 80 | 145 | -5 | -30 | 50 | 10% | 1.8 |
| AA | Cost Leadership | 300 | 80 | 150 | 30 | -30 | 60 | 12% | 2.0 |
| BB | Cost Leadership | 280 | 90 | 130 | 25 | -35 | 70 | 14% | 2.5 |
| CC | Differentiation | 125 | 50 | 100 | 25 | -25 | 50 | 11% | 5 |
| DD | Cost Leadership | 150 | 75 | 75 | 10 | -45 | 30 | 2% | 4 |

Based on the information available, what is the most accurate estimation of the Equity Value of XY?

A. About 220 k€
B. About 245 k€
C. About 250 k€
D. None of the other answers

SOLUTION:
In order to compute the Equity value of XY it is necessary to estimate the Enterprise Value first, and then adjust it with the Net Financial Position. In fact, equity side multiples cannot be used because the net income of XY is negative. Furthermore, the competitive advantage of XY is its assets. This implies that value is mainly generated from the assets of the company and the most suitable multiple is EV/EBIT.

Acceptable comparable companies are AA and BB, both in terms of competitive strategy and financial characteristics (growth and risk). The other companies have either a different competitive strategy or diverse characteristics in terms of growth or risk profile.

As NFP is here defined as cash minus current and non-current financial debts:

EV = E – NFP = market capitalization – NFP

EV (AA) = 300 – (-30) = 330 → EV/EBIT (AA) = 5.5
EV (BB) = 280 – (-35) = 315 → EV/EBIT (BB) = 4.5
It is worth to note that the two multiples have similar values, thus reinforcing the assumption that both companies are comparable ones.

average multiple = (5.5 + 4.5) = 5

EV (XY) = 5 * 50 = 250 k€
E (XY) = EV + NFP = 250 + (-30) = 220 k€

**QUESTION 3B - (2 POINTS)**

Consider all the previous information about XY and its potential comparable companies. You get additional information from a press note released by XY. Financial liabilities are composed only by bank debts and XY is closing a contract with a large-size bank to get the cash required to buy a new manufacturing plant. As a result of this contract, XY is going to double its financial liabilities.

Based on the above information, and assuming there are not relevant changes in the data concerning the possible comparable companies, which of the following answers about this second scenario is CORRECT?

A. In this second scenario, in selecting the comparable companies for the estimation of EV of XY, the only company that is truly comparable is DD
B. In this second scenario, in selecting the comparable companies for the estimation of EV of XY, AA, BB, and DD are all comparable companies
C. In this second scenario, in selecting the comparable companies for the estimation of EV of XY, Equity Value cannot be calculated anymore because the leverage of XY would be beyond the typical threshold used for relative valuation
D. None of the other answers

SOLUTION:

A. is wrong because company DD has a similar risk profile and a similar strategy, but a different growth rate
B. is wrong because the AA and BB are not anymore comparable companies having a significant lower D/E
C. is wrong because there is not a threshold for relative valuation
D. is correct

**QUESTION 4 - (2 POINTS)**

Alpha has two divisions: A and B. Division A makes a component for air conditioning units which it can only sell to Division B (i.e. Division A cannot sell its product to the external market).

You have the following information available about Division A:

- Variable cost per unit: 100 €/u
- Total production and internal transfer of the component per year: 2,000 u
- Fixed costs of Division A per year: 100,000 €

Furthermore, you know that the transfer price currently applied is 156€/u and it is calculated based on the full standard cost of Division A plus mark up.

Division B has discovered an external manufacturer that can provide a component similar to the one produced by Division A. This external manufacturer offered to sell the component to Division B for 120 €/u.

Knowing that:

- the CEO of Alpha has decided that Division B must reject the offer by the external manufacturer, because she wants to maintain the production wholly internal;
- the CEO of Alpha has decided that Division A must have a positive EBIT, because of motivational implications;
- external (as well as internal) transaction costs are negligible.

Which of the following statements is CORRECT?

A. To make this internal transaction convenient for both the BUs, the transfer price should be based on standard variable cost + the mark up currently applied
B. Negotiated transfer prices will allow both the BUs to achieve a satisfactory result, allowing Division A to have a positive EBIT and making convenient for Division B to purchase the component internally
C. To make this internal transaction convenient for both the BUs, dual transfer prices should be applied
D. None of the answers

SOLUTION:
A is wrong, given that Division A must generate a positive EBIT, the transfer price must cover both variable and fixed costs.

The current mark-up can be calculated based on

TP = (VC + FC/Q) (1+a)

(1+a) = 156 – (100+100,000/2,000) → a = 4%

A TP based on standard variable cost + the mark-up currently applied would be equal to 104 which does not allows Division A to have a positive EBIT since, EBIT (A) = (104€/u*2000u) – (100€/u*2000) – 10.000€ = -2000€

B is wrong, given the constraints and the cost structure of Division A, no negotiation can allow Division A to have a positive EBIT and, at the same time, make convenient the internal transaction for Division Bas the minimum unitary cost for Division A is 150 €/u (100+100,000/2,000) and the offer of the supplier is 120 €/u

C is correct

D is wrong because C is correct

**QUESTION 5 - (2 POINTS)**

Which of the following statements about value drivers is CORRECT?

A. While delivery time is a value driver because it measures the current performances of a company, time to market is not a value driver because it measures a process that takes place before the commercialization of a product / service
B. When performing relative valuation, value drivers could be used to outline the business model and select comparable companies

C. While value drivers can provide early signals about the ability of a company to increase EBIT, they do not provide any early signal about its capability to generate cash flows
D. None of the others

SOLUTION:

A. is wrong because both delivery time and time to market are value drivers, because they provide early signal about the capability of the company of generating value over time
B. is correct
C. is wrong because value drivers measure the ability of a company of creating value – i.e. cash flows over time – EBIT is a proxy of this capability, because revenues are translated in cash inflows and cost are translated in cash outflows
D. is wrong because B is right

**QUESTION 6 - (3 POINTS)**

Skymac Ltd is composed by two Business Units (BUs): Alpha and Beta. IT services are centralized and offered to the two BUs by an external provider that is paid per hour delivered. Because of that, IT costs are variable in nature. Skymac considers IT costs as corporate costs.

The company uses a "proportional" approach for their allocation to the BUs, attributing budgeted costs according to the budgeted usage, and actual costs according to the actual usage. Which of the following statements concerning the allocation of these costs to Alpha and Beta is CORRECT?

A. Assuming no change in the variable cost per hour (i.e., budgeted cost per hour is equal to actual cost per hour), if at the end of the year the actual usage by Beta will turn out to be lower than the budgeted one, Alpha will be allocated a lower amount of costs (vs. budget), since the overall amount of corporate costs will be lower
B. If at the end of the year the actual usage by Beta will turn out to be lower than the budgeted one, it will be allocated a lower amount of costs (vs. budget) whatever the value of the actual unitary variable cost
C. Assuming no change in the variable cost per hour (i.e., the budgeted cost per hour is equal to the actual cost per hour), if at the end of the year the actual usage by Beta will turn out to be higher than the budgeted amount, Alpha will be allocated a lower amount of costs (vs. budget), because Beta will "absorb" a higher proportion of IT corporate costs
D. None of the other answers

SOLUTION:

A is WRONG, because the costs allocated to Alpha depend on the usage made by Alpha. If Alpha does not modify its usage, under these assumptions, the cost allocated will not change

B is WRONG, because the amount of actual costs allocated to Beta depends on the total amount of actual costs (vs. budget) → if the value of the cost per hour is much higher than the budgeted one, the total costs allocated to Beta may be higher (although the usage was lower than expected)

C is WRONG because in this case the corporate costs are fully variable, hence the cost to be allocated will be lower – the answer would be corrected for fixed costs)

D is CORRECT

**QUESTION 7 - (2 POINTS)**

Consider a company that has a single legal entity and operates in different business units. Which of the following statements about management reporting at the business unit level is CORRECT:

A. It includes the complete version of the three main financial statements (Income Statement down to the Net Profit, Balance Sheet, Cash Flow Statement)
B. It has as the main reference the Cash Flow Statement (and in particular the cash flow from operating activities)
C. It has as the main reference the first section of the IS, which leads to the EBIT
D. None of the other answers

SOLUTION:

A. is WRONG because it is not possible to draft a complete Balance Sheet, Income Statement and Cash Flow Statement at the BU level
B. is WRONG because reporting at the BU level should include at least Income statement items
C. is CORRECT
D. is WRONG because C is correct

**QUESTION 8 - (2 POINTS)**

Consider a company starting a ten-year leasing contract in 2023. Which of the following statements about the effects of the leasing contract on the Balance Sheet of year 2023 is CORRECT?

A. Other things being equal, the value of Total Assets will increase and the value of Total liabilities will increase in 2023 compared to the previous year
B. Other things being equal, the value of Total Assets will increase and the value of Equity will increase in 2023 compared to the previous year
C. Other things being equal, the value of net operating working capital will increase and the value of Total liabilities will increase in 2023 compared to the previous year
D. All the other answers are correct

SOLUTION:

A. is CORRECT
B. is wrong because the financial liabilities will increase and not the Equity
C. is wrong because the value of net operating working capital will not be affected
D. is wrong because only A is correct

**QUESTION 9 - (2 POINTS)**

Which of the following statements about Master Budget is CORRECT?

A. The Master Budget is constituted by top-down plans that define the strategic goals of the enterprise and the high-level activities required to achieve them
B. The Revenues Budget is the starting point of the budgeting process and consists of a hybrid budget that mixes actual values about volumes and budgeted values about prices
C. The Capital Expenditures Budget discloses the flows associated to the investments approved and under evaluation for the budgeting year following an accrual logic
D. None of the other answers

SOLUTION:

A is wrong because the Master budget is a yearly plan that allows to define where the organization is expected to be (in terms of accruals and cash flows) and assigns to the different organisational units targets and resources needed to achieve their targets. The document that is constituted by top-down plans that define the strategic goals of the enterprise and the high level activities required to achieve them is the strategic and medium range plan

B is wrong because the revenues budget is determined by budgeted volumes and budgeted prices

C is wrong because the capital expenditures budget outlines the financial flows that are associated to an investment

D is CORRECT