Accounting Finance and Control

Written test – 15th February 2021

Q1_Exercise_Financial accounting recap_4 POINTS

The company *LC Ltd* is a brake discs manufacturer that produces and sells brakes using a make to stock production strategy. The company adopts the FIFO approach for accounting its inventories of raw materials and finished goods. The inventories of finished goods are accounted through a full product cost method, which can be assumed constant within the year.
You have the following data as of December 31st, 2020:

- Revenues: 2,000 mln€
- Brakes sold: 5,600,000 units
- Raw materials purchased: 1,054 mln€
- Raw materials inventories for an overall value of 30 mln€
- Finished goods inventories: 1,200,000 units for an overall value of 355.2 mln€
- Selling, marketing, general & administrative expenses: 200 mln€
- Financial expenses: 300 mln€
- Corporate tax rate: 40%

You know also that in December 2020, *LC* has received from MC Ltd the advanced payment of the 2021 rental fee of a prestigious building (fee: 8 mln€). MC Ltd is renting this building for the first time.
Finally, the inventories as of December 31st, 2019 were:

- Raw materials inventories for an overall value of 40 mln€
- Finished goods inventories: 1,000,000 units for an overall value of 300 mln€

Based on the available data, it is CORRECT that EBIT (2020) of LC Ltd is around:

a) 146.4 mln€
b) 138.4 mln€
c) 148.4 mln€
d) 142.4 mln€

Solution:
Revenues = 2,000 mln €
Cost of goods sold = 1,000,000 u*300€/u + 4,600,000u*296€/u = 1,661.6 mln€
SGA = 200 mln €
EBIT = 138.4 mln€

a) Wrong: it considers the rent as other income which is not in line with the accrual principle
b) Correct
c) Wrong: it considers the Variation of inventories of raw materials as an additional cost in the cost of goods sold
d) Wrong: cost of good sold is estimated based on the unitary cost sustained in the year, without considering the inventories dynamics

Q2_Exercise_Financial analysis (DSO) 4 POINTS

The following are data extracted from the 2020 Income Statement and the Balance Sheet as of December 31st, 2020:

- Inventories = 3 mln€
- Cost Of Goods Sold = 80 mln€
- Other operating incomes = 0€
- Depreciation & Amortization = 28 mln€
- Period costs = 8 mln€
- Interests = 8 mln€
- Taxes = 20 mln€
- VAT = 0%
- EBIT = 98 mln€
- Current liabilities = 18 mln€
- Cash and cash equivalents = 6 mln€
- Current ratio = 2.1
- Current financial assets = 1 mln€

Based on the above data, the value of DSO (2020) equals approximatively to:

a) 60.4 days
b) 54.5 days
c) 57.0 days
d) 47.4 days

Solution:

DSO=(receivables/sales)*365 → you have to retrieve receivables (from BS data) and sales (from EBIT)
sales = EBIT+ period costs+ cost of goods sold = 98+8+80= 186mln€
current assets = current ratio * current liabilities = 2,1*18 = 37,8mln€
receivables = current assets – inventories – cash and cash equivalents – current financial assets = 37,8-3-6-1= 27,8mln€
DSO = (27,8/186)* 365= 54,5 days

a) Wrong, inventories are not considered in the current assets
b) Correct
c) Wrong, period costs are not considered in the calculation of sales
d) Wrong, interest and taxes are re-added to EBIT or D&A are added back to EBIT

Q3_Exercise_Relative valuation 4 POINTS

Company A produces and sells luxury bags, and its main competitive advantage is high-quality. Company A is not listed yet. A financial analyst argued an Equity Value of 234 mln€ by applying relative valuation. You have some data of Company A about the last fiscal year (2020): revenues are 190 mln €, EBITDA is 138 mln €, the net financial position (long-term + short-term financial debts - available cash) is 42 mln €, and leverage is 2.1. Company A is not listed, and you are interested to estimate its Equity Value through relative valuation. You know the list of potential comparable companies that the financial analyst might have used for her estimation as well as some data for the fiscal year 2020.

- Company B produces and sells luxury shoes on a global scale, and its main competitive advantage is high-quality. Revenues are 200 mln € and they will grow +5.4% in the next years, EBITDA is 141 mln €, the net financial position is 45 mln €, leverage is 2.2, and market capitalization is 250 mln €.

- Company C produces and sells luxury bags on a global scale and they will grow +6.2% in the next years, and its main competitive advantage is high-quality. Revenues are 180 mln €, EBITDA is 145 mln €, the net financial position is 37 mln €, leverage is 1.9.
- Company D produces and sells luxury bags for a niche market and they will grow +1.8% in the next years, and its main competitive advantage is high-quality. Revenues are 68 mln €, EBITDA is 48.7 mln €, the net financial position is 26 mln €, leverage is 1.3, and market capitalization is 20 mln €.
- Company E produces and sells easy-going bags on a global scale and they will grow +2.4% in the next years, and its main competitive advantage is low production costs. Revenues are 62 mln €, EBITDA is 37 mln €, the net financial position is 24 mln €, leverage is 1.2, and market capitalization is 25 mln €.

Considering the available information and that all the potential comparable companies own relevant tangible assets like Company A, what is the market capitalization of Company C?

a) It is around 240 mln €
b) It is around 253 mln €
c) It is around 376 mln €
d) It is around 474 mln €

Solution

Company A own relevant tangible assets. This means that market capitalization (i.e., Equity Value) must be estimated through an Assets-side perspective. Two assets-side multiples might be used with the available information: EV/revenues vs EV/EBITDA. Between the two options, EV/EBITDA must be preferred for a company that own significant tangible assets. The multiple can be calculated against comparable companies. Among the 4 potential comparable companies, only B and C are actual comparable ones. While comparable companies might belong to different sectors (and produce different products), they might have similar business models and competitive advantages, similar growth potential, similar cash generation capability (in this case, it can be estimated through EBIT) and similar risk profile (in this case, it can be estimated through D/E). D is not comparable in terms of business model (niche vs global scale), growth potential, and risk profile. Company E is not comparable in terms of competitive advantage (low production costs vs high-quality), growth potential, and risk profile.

EV can be calculated as EV = E + NFP, where E = market capitalization.
EV (company A) = 234 + 42 = 276 mln € → EV / EBITDA (company A) = 2.00
This value is equal to the average of the values of the same multiple for the comparable companies (i.e., B and C)
EV (company B) = 250 + 45 = 295 mln € → EV / EBITDA (company B) = 2.09
(EV / EBITDA (company B) + EV / EBITDA (company C) / 2 = 2.00
➔ EV / EBITDA (company C) = 2.00 * 2 – 2.09 = 1.91
EV (company C) = 1.91 * 145 = 276.95
E (company C) = 276.95 – 37 = 239.95 mln€ (about 240 mln€)

a) Correct
b) Wrong, this figure is obtained if only C is considered as comparable company
c) Wrong, this figure is obtained if C and D are considered as comparable companies
d) Wrong, this figure is obtained if C, D and E are considered as comparable companies

Q4_Exercise_Enterprise Value 4 POINTS

You want to estimate the Enterprise Value of *GOod TO TAste*, an Italian company operating in the food industry, according to the DCF methodology. You have financial forecasts available until 2025. Some forecasted data concerning 2025 are listed as follows:

- EBITDA = 20,000 k€
- Net Profit = 12,000 k€
- Financial Revenues = 800 k€
- Financial Expenses = 1,200 k€
- Financial Debts repayment = 8,000 k€
- Net Capital Expenditures = 6,000 k€
- New Financial Debts = 5,000 k€
- FCFE = 4,700 k€
- Dividends distributed = 3,000 k€
- WACC = 8%
- Ke = 10%
- Corporate tax rate = 25%

You also know that:

- No new capital will be issued in 2025
- FCFFs are expected to grow from 2026 onwards (growth rate = 5% per year, infinite time horizon)

On the base of available data, what is the Terminal Value (in year 2025)?

a) TV = 385,000 k€
b) TV = 388,500 k€
c) TV = 392,500 k€
d) TV = 490,000 k€

Solution:
Using the FCFF/FCFE framework, we can compute FCFF starting from FCFE:

FCFF	**11,000**
FIN REV	600
FIN INT	-900
DEBT REP	-8,000
NEW DEBT	5,000
DIVIDENDS	-3,000
FCFE	**+4,700**

Financial revenues and interests must be net of the tax shield effect.
Then we can use the formula in case of infinite time horizon with growh rate:
TV = FCFF * (1 + g)/(WACC – g)
TV = 11,000 * (1 + 0.05) / (0.08 – 0.05) = 385,000 k€
a) Correct
b) Wrong, tax shield effect has not been taken into account for financial revenues and expenses
c) Wrong
d) Wrong, FCFF is computed as EBITDA-Net capital expenditures

Q5 Exercise - Transfer pricing - 4 POINTS

Company X has 2 Divisions: *A* and *B*. Division A makes a component for furniture that is highly customized and can be sold only to Division B. The transfer price is determined based on the marginal cost plus a mark-up of +75% computed on the marginal cost.
You know the following information about the cost structure of the two Divisions:
The production costs of Division A, at a standard volume of 50,000 units per year, are:

- Direct material costs, including the cost of wood used for manufacturing the components = 100 €/u
- Direct labour costs, including the cost of all the manual operations by workers, and that can be traced directly to the product. Workers are permanently hired and cannot be employed in other tasks = 80 €/u
- Fixed manufacturing overheads, including the depreciation of the production machines and the cost of the plant supervisor = 60 €/u

The production costs of Division B, at a standard volume of 50,000 units per year, are:

- Additional direct material costs, including the cost of materials used for assembling the furniture and refining the final product = 40 €/u
- Direct labour costs, including the cost of all the manual operations by workers, and that can be traced directly to the product. Workers are permanently hired and cannot be employed in other tasks = 120 €/u
- Fixed manufacturing overheads, including the warehouse rent and assembling line supervisor costs = 50 €/u

You also know that the final furniture selling price is 600 €/u and the two Divisions have no constraints of production capacity. Based on the available information, which of the following statements is CORRECT?

a) For *Company X*, the incremental profit for one additional unit sold is 260 €/u
b) For *Division B*, the incremental profit for one additional unit sold is 140 €/u
c) If *Company W* offers *Division B* the same component, with the same level of customization, for 150 €/u, *Company X* will save 25 €/u
d) If *Company W* offers *Division B* the same component, with the same level of customization, for 150 €/u, *Division B* could have an incremental profit of 410 €/u

Solution

Direct materials costs are avoidable. Based on the description provided, direct labour costs and overheads are fixed.
TP = 100 * (1+0,75)=175
m Company X = 600 – 100 -40 = 460 €/u
m Division B = 600 – 175 – 40 = 385 €/u
m Division B if it buys from company W = 410 €/u

a) Wrong, the incremental profit is computed considering both direct material and direct labour costs as variable costs
b) Wrong, the TP is computed considering the full cost + mark up
c) Wrong, the price offered by company W is compared with the TP
d) Correct

Q6_Theory_Financial planning_2 POINTS (1st version)

Consider bank loans of a duration of five years, which of these sentences is CORRECT:

a) If the bank loan has fixed rate and amortised repayment scheme, the financial costs included in the profit and loss account over the five years are always the same
b) If the bank loan has a floating rate and bullet repayment scheme, the financial costs included in the profit and loss account over the five years depend on an underlying index.
c) If the bank loan has a floating rate, the financial costs are always higher at the first year compared to the fifth year, regardless the repayment scheme chosen.
d) f the bank loan has a bullet repayment scheme and an amortized repayment scheme and a fixed rate, the cash inflow at year 1 is always equal to the cash outflow at year 5.

Solution

a) Wrong, the financial costs recognized over the five years can be different due to the existence of commission costs
b) Correct
c) Wrong, with a floating rate the financial costs depend on the dynamics of the underlying indicator
d) Wrong, the cash flows can be impacted also by commission costs and interest dynamics

Q6_Theory_Financial planning_2 POINTS (2nd version)

Which of the following statements concerning the repayment of a bank loan is CORRECT:

a) The repayment of a bank loan is always done in full at maturity (according to the "bullet" scheme)
b) The repayment of a bank loan is always amortized
c) The repayment of a bank loan is can be either "bullet" or "amortized", according to the interests repayment scheme
d) None of the other answers

Solution

a) Wrong, the repayment scheme of a loan can be either "bullet" or "amortized" (depending typically on the type of loan),
b) Wrong, the repayment scheme of a loan can be either "bullet" or "amortized" (depending typically on the type of loan)
c) Wrong, the debt repayment scheme does not depend on the interest repayment scheme
d) Correct, The repayment scheme of a loan can be either "bullet" or "amortized" (depending typically on the type of loan), but is not linked to the interests repayment scheme (i.e. the frequency with which interests are paid

Q7_Theory_Cost of capital_LETTIERI 2 POINTS

Company A is going to increase its leverage significantly by opening new bank loans. No variation on Equity is planned. What do you expect will happen reasonably to the cost of equity (i.e. the cost of shareholders' capital) of company A?

a) It will not vary because the increase of financial costs as a result of the increased bank loans will be compensated by the increase of EBIT, with the result that the Interest Coverage Ratio (ICR) will remain reasonably constant.
b) It will increase because the banks will perceive Company A as riskier and, in the light of this, they will increase the Credit Default Spread applied to Company A.
c) It will decrease because the bank loans will allow the company to invest in new assets that will allow Company A to increase the EBIT in the medium-long term and, based on this, to increase the Enterprise Value.
d) It will increase because of the increase of the levered Beta.

Solution

$$\beta_{L,target} = \beta_{U,avg} * \left(1 + (1 - t_{c,target}) * \left(\frac{D_{target}}{E_{target}}\right)\right)$$

a) Wrong, the greater the financial leverage is, the greater the amount of financial costs, the greater the volatility of the company's results.
b) Wrong, there is no direct relationship between the credit default spread and the beta.
c) Wrong, ke represents the interest that the firm pays to its shareholders to remunerate them for the risk they take by providing equity capital to the firm and it is not directly related to the EBIT of the company.
d) Correct, if Company A leverages more, Levered Beta will increase. As result, cost of equity will increase.

Q8_Theory_Value Driver_2 POINTS (1st version)

Which of the following statements about VALUE DRIVERS is WRONG:

a) Value drivers are characterized by a higher level of completeness compared to accounting-based indicators thanks to their possibility to quantify different dimensions of performance.
b) Value drivers can be subject to a saturation effect, which refers to the existence of non-linear relationships between additional improvements in a single performance and the related impact on revenues or cost.
c) Improvements in internal oriented value drivers is potentially translated in an increase of enterprise value.
d) None of the other answers.

Solution

a) Correct, the statement is wrong as value drivers are not complete since they measure a specific dimension of performance. The completeness of a set of value drivers depends on the selection.
b) Wrong, this statement is correct because value drivers can be subject to a saturation effect.
c) Wrong, this statement is correct because an improvement in internal oriented value drivers is potentially translated in an increase of enterprise value by reducing cash outflows for manufacturing and supporting activities.
d) Wrong, statement A is actually wrong.

Q8_Theory_Value Driver_2 POINTS (2nd version)

Which of the following is a disadvantage/drawback of VALUE DRIVERS:

a) Value drivers facilitate the quantification of different dimensions of performance
b) Value drivers catch early signals from the internal organizational context and the external environment
c) Value drivers are measurability when they are associated to a specific metric for calculation.
d) None of the other answer

Solution

a) Wrong, the possibility to quantify different dimensions of performance is an advantage of value driver
b) Wrong, the ability of value drivers to catch early signals from the environment is an advantage
c) Wrong, measurability is an advantage of value drivers
d) Non of the other answer

Q9_Theory_Reporting_2 POINTS (1st version)

Which of the following sets of indicators is MORE APPROPRIATE if you want to measure the performance of an intra-company manufacturing Business Unit?

a) EVA, Total shareholder return, n. of claims, time to market
b) EBIT margin, FCFF, n. of claims, time to market
c) FCFE, time to market, n. of claims, scrap rate
d) Time to market, delivery time, n. of claims, scrap rate

Solution

The question is expressed in relative terms and it requires to identity the most appropriate set of indicators among the four that have been proposed

a) Wrong, EVA and TSR are not appropriate for measuring the performance of a BU because a BU does not control all the levers that allow to improve these indicators
b) Correct, this set of indicators includes measures that are more coherent with the levers that can be mastered by a BU compared to the other sets of indicators proposed
c) Wrong. On the one hand, FCFE is less appropriate than FCFF for measuring the performance of a BU because a BU generally does not control all the levers that influence this indicator. Furthermore, this set of indicators does not allow to monitor the profitability of the BU.
d) Wrong. This set of indicator does not allow to monitor the profitability of the BU.

Q9_Theory_Reporting_2 POINTS (2nd version)

Which of the following sets of indicators is MORE APPROPRIATE if you want to measure the performance of an intra-company manufacturing Business Unit?

e) EVA, ROE, n. of claims, time to market
f) EBIT margin, n. of claims, time to market
g) FCFE, time to market, n. of claims, scrap rate
h) Time to market, delivery time, n. of claims, scrap rate

Solution

The question is expressed in relative terms and it requires to identity the most appropriate set of indicators among the four that have been proposed

e) Wrong, EVA and ROE are not appropriate for measuring the performance of a BU because a BU does not control all the levers that allow to improve these indicators
f) Correct, this set of indicators includes measures that are more coherent with the levers that can be mastered by a BU compared to the other sets of indicators proposed
g) Wrong. On the one hand, FCFE is less appropriate than FCFF for measuring the performance of a BU because a BU generally does not control all the levers that influence this indicator. Furthermore, this set of indicators does not allow to monitor the profitability of the BU.
h) Wrong. This set of indicator does not allow to monitor the profitability of the BU.

Q10_Theory_Budgeting_2 POINTS (1st version)

Which of the following statements about the drafting of the budgeted Balance Sheet for 2021 is WRONG:

a) The ending amount of account receivables for the budgeted year (2021) is estimated based on the operating budgets, articulated monthly, the budgeted DSO and the Balance Sheet as of December 2020.
b) The ending amount of the shareholder capital for the budgeted year (2021) is estimated based on the budgeted cash flow statement and the Balance Sheet as of December 2020.
c) The ending amount of property, plant and equipment for the budgeted year (2021) cannot be estimated exclusively based on the investment budget.
d) None of the other answers.

Solution

a) Wrong, the statement is correct as the ending amount of account receivables for the budgeted year can be estimated based on the operating budgets, articulated on a monthly basis, the budgeted DSO and the Balance Sheet as of December 2020
b) Wrong, the statement is correct as the ending amount of capital for the budgeted year is estimated based on the budgeted cash flow statement and the Balance Sheet as of December 2020
c) Wrong, the statement is correct as the ending amount of property, plant and equipment for the budgeted year (2021) cannot be estimated exclusively based on the investment budget.
d) Correct, all the other statements are correct

Q10_Theory_Budgeting_2 POINTS (2nd version)

After the first preparation of the budget for the year 2021, Company A assesses that the budgeted Return on Assets (resulted to be in the forecast equal to 10%) is below the target that the company wants to achieve, which is 15%. In particular Company A is considering to cut one investment in the new machine X, that will allow to reach the target Return on Assets of 15%. Which of the following statement considers ALL the implications on the other budgeting documents?

a) The Return on Assets can be increased by reducing the budget of investments forecasted for 2021, specifically cutting the purchase of a new machine X; the cut of the investment budget could affect the revenue budget and the overhead cost budget.

b) The Return on Assets can be increased by reducing the budget of investments forecasted for 2021, specifically cutting the purchase of a new machine X, the cut of the investment budget could affect the budgeted cash flow statement and the detailed cash budget.

c) The Return on Assets can be increased by reducing the budget of investments forecasted for 2021, specifically cutting the purchase of a new machine X, the cut of the investment budget could affect the depreciation forecast an the related change in the operating cost budget.

d) None of the other answers.

Solution

a) Wrong, there are impacts on other budgeted documents
b) Wrong, there are impacts on other budgeted documents

c) Wrong, there are impacts on other budgeted documents
d) Correct

Q10_Theory_Budgeting_2 POINTS (3rd version)

Company A produces and sells three products A1, A2, A3. The Company has prepared the first version of the budget of for the year 2021 relying on historical data for drafting the revenue budget. In particular, starting from the data of the year 2020, an increase of 5% of revenues has been assumed.

After the first draft of the budget, the CFO is not satisfied by the gross margin but she does not want to change the assumption about the 5% of increase in the total revenue budget. This figure is calculated as quantity multiplied by the price for each product and then summing them.

The Head of the commercial unit agrees to maintain the product price unchanged but he suggests to change the sales quantity mix of the three products (A1, A2, A3). Against this background, which of the following statements is CORRECT?

a) The gross margin optimization by changing the mentioned mix can be reached by calculating the margin of each product considering analytically price, variable and fixed costs.
b) The gross margin optimization by changing the mentioned mix can be reached by calculating the margin of each product considering analytically price, manufacturing variable costs and manufacturing fixed costs.
c) The gross margin optimization by changing the mentioned mix can be reached by calculating the margin of each product considering analytically price and direct costs.
d) The gross margin optimization can be reached by calculating the margin of each product considering analytically price, manufacturing variable, manufacturing fixed costs and period costs.

Solution

a) Wrong, variable and fixed costs in general include costs that are not related to the gross margin calculation
b) Correct
c) Wrong, to calculate the gross margin manufacturing indirect costs need to be included
d) Wrong, period costs are not included in the gross margin