AFC 2018

MULTIPLE CHOICE TEST (individual assignment)

Call 4th Feb. 2019

1. You are trying to calculate the value of ROE of Wind Ltd for 2018, a company operating in the renewables industry, but you do not have access to the financial statements. You were able to gather just the following information:
- Total assets = 150 mln €
- Total liabilities = 70 mln €.
- Asset Turnover Ratio (ATR) = 2;
- Effective tax rate = 35%;
- Net profit margin (NPM) = 10%;
- Cash EVA = 10 mln €.
On the base of these data, it is TRUE that:

A. ROE (year 2018) = 18.75%
B. ROE (year 2018) = 12.5%
C. There is not enough information to calculate ROE (year 2018)
D. None of the previous answers is true

Solution:

Equity = 150 (total assets) – 70 (total liabilities) = 80 mln €

Revenues = 150 (total assets) * 2 (asset turnover ratio) = 300 mln €

Net profit = 300 (revenues) * 10% (net profit margin) = 30 mln €

ROE = (30 / 80)*100% = 37.5%

2. With regard to the financial statements consolidation, which of the following is a preliminary step, needed to harmonize financial statements of the different legal entities and prepare them for the consolidation?

A. Adjust for current year additional depreciation due to any fair value adjustments or current year impairment
B. Remove any intra-group interest relating to intra-group loans between the parent and subsidiary
C. Uniform the accounting periods of the parent and subsidiary financial statements, if needed
D. Eliminate any intra-group sales between the parent and subsidiary

3. Company B manufactures mechanical materials and general-purpose machinery for the Oil & Gas sector. Products go through a subassembly line and a mechanical workshop.
Company B also has the following departments: Finance, R&D, Administrative and Selling, Human Resource. You know the following 2018 data concerning Company B:

COMPANY B – 2018 Data	
# units sold	21,000
price / unit [€/u]	1,000
Raw Materials: chemicals used in the mechanical workshop [€]	2,000,000
Metals & components used in the production line [€]	2,000,000
Consumables for the new commercial campaign [€]	500,000
Software used by the R&D Department [€]	300,000
Subassemblies purchased for the mechanical workshop [€]	3,000,000
Consumables for administrative office [€]	200,000
Plant Consumables & Energy [€]	4,000,000
Raw materials for R&D laboratory research [€]	1,000,000
Depreciation of machines in the subassembly line [€[	200,000
Office buildings rental cost [€]	100,000
Depreciation of the mechanical workshop plant [€]	300,000
Depreciation of vehicles for the marketing campaign [€]	50,000
Energy used in the office buildings [€]	50,000
Wages of workers on the subassembly line [€]	300,000
Wages of HR department [€]	100,000
Wages of the marketing department [€]	100,000
Wages of supervisors of the subassembly line [€]	200,000
Wages of workers in the mechanical workshop [€]	120,000
Wages of supervisors in the mechanical workshop [€]	120,000
Wages of salesmen [€]	150,000
Wages of the administrative and finance department [€]	200,000
Other variable plant overhead	100,000
Finance income [€]	50,000
Finance expenses [€]	80,000
Taxes [€]	290,000

You also know that in 2019:

- Variable product costs are expected to increase as much as revenues;
- The total value of Final Inventory will increase of 10%.

You also know that:
- Company B adopts a FIFO logic
- the company adopts an incremental approach for preparing period cost budgets and the level of activity of the non-manufacturing units is expected to grow of 2%

On the base of this information, which one of the following sentences is TRUE?

A. Budgeted Period costs are 2,655,000 €
B. Budgeted Period costs are 3,131,400 €
C. Budgeted Period costs are 3,005,000 €
D. Budgeted Period costs are 2,805,000 €

The text states that budgeted period costs for 2019 are calculated with an INCREMENTAL APPROACH (alpha = 2%). After having identified period costs among all the costs listed in the table, they should be multiplied times (1+alpha) = 1,02 and then summed up. Period costs are in red in the following table

COMPANY B – 2018 Data		*PERIOD COSTS 2019*
# units sold	*21,000*	*na*
price / unit [€/u]	*1,000*	*na*
Raw Materials: Chemicals used in the mechanical workshop [€]	*2,000,000*	*na*
Metals & Components used in the production line [€]	*2,000,000*	*na*
Consumables for the new commercial campaign [€]	*500,000*	*510,000*
Softwares used by the R&D Department [€]	*300,000*	*300.000*
Subassemblies acquired for the mechanical workshop [€]	*3,000,000*	*na*
Consumables for administrative office [€]	*200,000*	*200,000*
Plant Consumables & Energy [€]	*4,000,000*	*na*
Raw materials for R&D laboratory research [€]	*1,000,000*	*1,020,000*
Depreciation of machines in the subassembly line [€[	*200,000*	*na*
Office buildings rental costs [€]	*100,000*	*102,000*
Depreciation of the mechanical workshop plant [€]	*300.000*	*na*
Depreciation of vehicles for the marketing campaign [€]	*50,000*	*51,000*
Energy used in the office buildings [€]	*50,000*	*51,000*
Wages of workers on the subassembly line [€]	*300,000*	*na*
Wages of HR department [€]	*100,000*	*102,000*
Wages of the marketing and creative department [€]	*100,000*	*102,000*

Wages of supervisors of the subassembly line [€]	*200,000*	*na*
Wages of workers in the mechanical workshop [€]	*120,000*	*na*
Wages of supervisors in the mechanical workshop [€]	*120,000*	*na*
Wages of Salesmen [€]	*150,000*	*153,000*
Wages of the administrative and finance department [€]	*200,000*	*204,000*
Other variable plant overhead	*100,000*	*na*
Finance income [€]	*50,000*	*na*
Finance expenses [€]	*80,000*	*na*
TOTAL BUDGETED PERIOD COSTS FOR 2019		*2,805,000*

4. Company A produces and sells wood tables. In the Table below, you can find data related to the year 2018.

COMPANY A (2018)	
Number of Units Sold [units]	5,000
Price [€/unit]	250
Trade Receivables (beginning of the year) [k€]	200
Trade Receivables (end of the year) [k€]	250
Trade Payables (beginning of the year) [k€]	500
Trade Payables (end of the year) [k€]	540
Goodwill (beginning of the year) [k€]	0
Goodwill (end of the year) [k€]	100
Unitary Manufacturing Cost of produced units [€/unit]	120
Inventories of Finished Goods at the beginning of the year [units]	2,000
Inventories of Finished Goods (beginning of the year) [€/unit]	100
Inventories of Finished Goods at the end of the year [units]	2,500
Raw Materials and Consumables used [k€]	150
Depreciation and Amortisation expense [k€]	250
Cost of Personnel [k€]	300
Financial Income [k€]	10
Financial Interests [k€]	90

Knowing this and that Company A uses FIFO (first in first out) logic, the EBIT is:

A. 750 k€
B. 650 k€
C. 660 k€
D. 570 k€

Solution (data in k€)

Revenues	1.250
+ Changes in inventories of finished goods	100
- Raw Materials and Consumables used	150
- Cost of Personnel	300
- Depreciation & Amortization	250
EBIT	650

5. You must assess the value of Alpha, a not listed company, that has some comparables (Table below).
In 2018, Alpha had €620m revenues and €84m EBIT, with an EBITDA margin of 15%. Fixed assets were €256m, Net Working Capital was €80.6m, loans €52m and cash was €101.4m. According to estimates, Alpha will have €580m revenues in 2019 and €610m in 2020. EBITDA margin is expected at 18% in the future (both 2019 and 2020). D&A will be €20m in 2019 and €22m in 2020. Capex are expected to be €23m in 2019 (constant over the following years). Finally, the ratio Net Working Capital / revenues is expected to be stable at 2018 levels.

	Beta Levered	*Debt (€m)*	*Equity (€m)*	*Tax rate*
Comparable 1	*0.8*	*300*	*950*	*25%*
Comparable 2	*1.4*	*650*	*1,200*	*33%*

Moreover, the company is expected to generate a growing amount of cash flow (growth rate 1%) for an infinite period.
Considering a constant leverage over years, a tax rate of 33%, 3% as interest rate, a return of the market of 5.5% and a risk-free rate of 0.5%, which of the following statements is wrong? Consider as reference date Jan 1, 2019.

A. Cost of equity (2019) = 5.1%
B. FCFF in 2020 affected in a negative way (i.e. reduced) by the Net Working Capital item

C. Discounted[1] Terminal Value = €1,471m
D. FCFF (2019) = €58.7m

Solution:
*beta unlev= media [0.8/(1+(1-25%)*300/950) ; 1.4/(1+(1-33%)*650/1200)]=0.84*
beta=0.84(1+(1-33%)*52/386)=0.92*
cost of equity (2019) = 0.5% (rf) + 0.92 (5.5%-0.5%)=5.1%*

NWC (2019)= 75.4
NWC (2020)=79.3
variazione=3.9 (diminuzione flussi di cassa - impatto negativo su FCFF) nel 2020

*FCFF (2020)= 109.8 (ebitda) - 33%*87.8 (tasse) -23 (capex) -3.9 (nwc)=53.9*
*TV=53.9 (FCFF 2020) * 1,01 (g) / 4.7% (WACC) - 1% (g)=1471.3*
TV scontato a oggi = 1471.3 (TV)/1,047^2 (WACC)=1342.2

*FCFF (2019) = 104.4 (ebitda) - 33%*84.4 (tasse) -23 (capex)+5.2 (nwc)=58.7*

6. Managers of Alpha are now considering whether they are going to face cash flow problems in 2019 and 2020.
Considering the following sentences, identify the correct one (assuming everything not stated to be constant).

A. Asking for a new line of credit in 2019 could be a way to decrease receivables.
B. Factoring could have increased the company FCFE in 2020
C. An increase of terms of payment towards suppliers in 2019 (just for this year), would have been beneficial for the company cash flow in 2020
D. Being CAPEX higher than D&A, the company is not able to invest any more in Fixed assets, which is one of the most relevant value drivers in the industry. Managers should have set off the leasing contracts they have in place and buy directly the assets

7. Which one of the following sentences about variance analysis for cost centres is <u>NOT</u> correct? Variance Analysis:

A. Highlights the effect of changes in the volume produced
B. Properly allocates responsibility for changes in efficiency
C. Properly allocates responsibility for changes in the quality of components
D. Highlights the effect of changes in the cost of labor

8. Which of the following statements about productivity indicators is TRUE?

A. They can be both revenues and cost drivers

[1] Discount it, considering the reference date (Jan, 1 2019).

B. In case of different levels of integration, the input should be evaluated using value added in place of sales
C. In case of highly diversified production, the output can be evaluated using weighted physical quantities
D. They do not always capture changes in the mix level

9. You want to estimate the value of Company C, which is a telecommunication company to be sold, performing a relative valuation.
You have the following data from Income Statement and Balance Sheet of Company C.

COMPANY C – DATA 31st December 2018			
INCOME STATEMENT	**Revenues**	50,000	mln €
	D&A	10,000	mln €
	Finance Income	500	mln €
	Finance Expenses	1,000	mln €
BALANCE SHEET	**Cash & Cash Equivalent**	9,000	mln €
	Short Term Debt	10,000	mln €
	Long Term Debt	10,000	mln €

You have also the following data concerning three comparable companies.

COMPARABLE COMPANIES	**Comparable 1**	**Comparable 2**	**Comparable 3**
EV [mln€]	63,000	50,000	45,000
Revenues [mln€]	41,000	28,000	30,000
EBIT [mln€]	6,000	8,000	10,000
EBITDA [mln€]	4,000	3,000	5,000
# users [mln]	269	90	120

Based on the available information, what is the Equity value of Company C:
(4 Points)

A. around 80,372 mln€
B. around 69,372 mln€
C. around 91,372 mln€

D. it cannot be calculated with available data

Solution

MULTIPLES	Comparable 1	Comparable 2	Comparable 3	Avg. Mult*	EV
EV/Revenues	EV1/Rev.1	EV2/Rev2	EV3/Rev3	(Ev/Rev)avg	Avg. Mult x RevenuesC
EV/EBIT	EV1/EBIT1	EV2/EBIT2	EV3/EBIT3	(Ev/EBIT)avg	Na**
EV/EBITDA	EV1/EBITDA1	EV2/EBITDA2	EV3/EBITDA3	(EV/EBITDA)avg	Na**
EV/#users	EV1/Users1	EV2/Users2	EV3/Users3	(EV/users)avg	Na**

MULTIPLES	Comparable 1	Comparable 2	Comparable 3	AVG. Mult*	EV
EV/Revenues	2	2	2	2	80,371.66 €
EV/EBIT	11	6	5	7	Na**
EV/EBITDA	16	17	9	14	Na**
EV/#users	234	556	375	388	Na**

**All companies are considered equally comparable: no weighted average required nor applicable in this case*

*** The multiples EV/EBIT, EV/EBITDA, EV/# subscribers are not applicable, since data on EBIT, EBITDA and # subscribers of Company C are not available*

Net Financial Position=Long Term Debt+Short Term Debt-Cash
Net Financial Position=(10,000+10,000-9,000)mln€=11,000 mln€
E=EV-NFP=(80,372-11,000)mln€=69,372 mln€

10. Which of the following statements about transfer prices among business units that are part of the same legal entity is TRUE?

A. Among the different options, DUAL transfer prices should be preferred
B. In the case of *FULL ACTUAL cost plus mark-up*, inefficiencies of the upstream unit (the seller) do not affect the downstream unit (the buyer), because they are absorbed as a corporate cost
C. Among the different options, *FULL STANDARD cost-based plus mark-up* transfer prices should be preferred even if they need to be redefined very frequently
D. In case of an internal transaction among business units, there is no impact on the taxes incurred by the corporation