LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

Equity Research (EQR)

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Individual Assignment 1

Masters in Finance

2020/2021, 1st Semester

NAME: _____ NUMBER: _____

Multiple-Choice Questions:

Each correct multiple-choice answer is worth +1.25 points.

Each incorrect multiple-choice answer penalizes -0.10 points.

No answer in a multiple-choice question is worth zero.

Anyone who engages in any misconduct during the assignment may be dismissed from the assignment (voiding assignment results) and subject to other penalties.

This individual assignment uses the same structure as CFA Level I exam for questions 1 to 10 and CFA Level II exam for questions 11 to 16 (vignette).

Answers sheet:

For each answer, fill in marks like this ● , not like this ⊗ ✓ ⊘

1.	A	B	C	**9.**	A	B	C
2.	A	B	C	**10.**	A	B	C
3.	A	B	C	**11.**	A	B	C
4.	A	B	C	**12.**	A	B	C
5.	A	B	C	**13.**	A	B	C
6.	A	B	C	**14.**	A	B	C
7.	A	B	C	**15.**	A	B	C
8.	A	B	C	**16.**	A	B	C

1) Which of the following valuation methods *most likely* works best for projects, business units, and companies that manage their capital structure to a target level:

A. Adjusted Present Value (APV)

B. WACC method or Enterprise Discounted Cash Flow (FCFF)

C. Flow to Equity or Equity cash flow (FCFE)

Solution: B.

2) A market structure with some pricing power of firms of a homogeneous or standardized product is *best described* as:

A. monopolistic competition.

B. oligopoly.

C. perfect competition.

Solution: B is correct.

3) The Inventory-to-Sales Ratio example of an:

A. lagging economic indicator.

B. coincident economic indicator.

C. leading economic indicator.

Solution: A is correct. Firms do not react immediately to changes in sales. Following changes in sales, companies must adjust production output to stabilize inventory turnover.

4) Company iEQR20 has a regular dividend policy, although it aims to propose a share repurchase plan to be implemented in the next year. Analysts expect a dividend yield of 4.2% The company will repurchase a ratio of 1:15. The expected real total earnings growth rate is 1.0%, and the inflation rate is expected at 1.5%. The current P/E of 13.5 should adjust to 12.8. Considering the Grinold Kroner Model, the cost of capital of iEQR20 is *closest* to:

A. 8.2%

B. 13.4%

C. 6.7%

Solution: A.

$$r_i = \underbrace{\frac{Div_1}{P_0}}_{\text{income return}} - \Delta S + \underbrace{i + g}_{\text{nominal earnings growth return}} + \underbrace{\Delta\left(\frac{P}{E}\right)}_{\text{repricing return}}$$

5) Joachim Weigel recently computed the beta for BMW AG considering a regression between the return of the stock and the return of the German market (DAX 30):

	Coef	*Std. Err.*	*t*
DAX 30	1.2980	0.0975	13.2

The risk-free rate is 1.2%, and the expected market return 7.8%. The cost of capital using the Blume-adjusted beta is:

A. 9.1%

B. 8.8%

C. Cannot compute because the beta from the regression is not statistically significant at conventional levels

Solution: A.

6) An analyst is computing XronY's equity value using the H-Model approach to the dividend discount model with a convergence of 6 years after the forecasted period from the growth rate of 8% in the short-run to a perpetual rate of 1.2%. Considering the estimations bellow and a cost of capital of 10%, the equity value per share is closest to:

Forecasted Period (Year)	*1*	*2*	*3*	*4*
Dividend Per Share	2.35	2.70	3.02	3.33

A. 31.4

B. 35.1

C. 40.3

Solution: C. The convergence period of 6 years starts after year 4, which yields an H = (6/2). D_0 in equation bellow is 3.33.

H-Model (declinig dividend in Stage 1)

$$V_0 = \frac{D_0(1+g_L) + D_0 H(g_S - g_L)}{r - g_L}, H = (high\ growth\ period/2)$$

7) Asusset Life, a consultancy company, has headquarters in France and both reporting and functional currency are the Euro. One of its subsidiaries is located in Switzerland, and the functional currency is the Swiss franc. To translate foreign currency financial statements to consolidate in France, the CFO of Asusset Life is most likely to:

A. translate all assets and liabilities at the current exchange rate.

B. translate using historical rates because the currency has been depreciating massively in the last decade.

C. use the temporal method.

Solution: A is correct. Because the functional currency of Asusset Life subsidiary in Switzerland is the local currency, the current rate method should be used, and transaction adjustments classified in a separate component of equity within the Parent's balance sheet.

8) A company implemented a defined benefit (DB) pension plan for employees and is currently fully funded (funded status is zero). Following the Covid-19 pandemic and decreases in yields, the expected decrease in the actuarial rate to discount pension obligations will *most likely* result in a funded status that should be treated for valuation purposes as:

A. Debt equivalent

B. Non-operating assets

C. Decrease in pension obligations

Solution: A. The expected decrease in the actuarial rate to discount pension obligations will increase the present value of obligations. The plan will be underfunded, considering that expected return on assets is not changed. In fact, there is no causality between the actuarial rate for pension obligations and the expected return on pension assets.

9) Considering the paper "*How Do Investors Compute the Discount Rate? They Use the CAPM"*, which of the following is *most likely* a finding with implication for practitioners:

A. When the factors outperform the CAPM, investors respond with additional capital, implying that they interpret this outperformance as evidence of alpha, not as compensation for additional risk

B. The factor models do worse than the CAPM, which suggests that investors do not see the additional factors as risk factors

C. All of the others

Solution: C.

10) Considering the paper "*Stick to the Fundamentals and Discover Your Peers*", which of the following is *most likely* an advantage of the sum of absolute rank differences (SARD) approach:

A. The SARD approach is less sensitive to sample size than the industry approach

B. The SARD approach does not allow for customization of the selected variables to fit the needs of any desired multiple, resulting in more standardized valuation estimates

C. The SARD approach is flexible, but cannot be used in combination with other approaches, including the industry classification approach

Solution: A.

Case 1 – Electronics Retail Chain (the following questions are related to the same case)

John Stewart Leclerc, CFA, was recently appointed as Chief Investment Officer (CIO) at Affaport Capital, an investment bank headquartered in Paris, France. One of his first tasks is to value the retail chain of electronic products Cloud-19 AG, which has operations in Europe, Middle East, Africa (EMEA) and North America. Leclerc gathered the following assumptions to estimate Cloud-19 AG equity value considering 2020YE as the base year:

- Cloud-19 AG operates in a competitive environment in EMEA with moderately low barriers, although the industry has a growing perspective. In North America customers switching costs are lower, and entry barriers are more relevant due to the existence of major players;
- Sales are expected to bounce back in 2021, increasing +25.0% from 2020 figures;
- Gross margin is expected to recover 100 bps;
- Selling expenses should remain stable as a percentage of sales;
- General and administrative expenses are mainly fixed and should remain constant;
- The cost of debt and the marginal tax rate are expected to remain at 2020 levels;
- CAPEX and depreciations and amortizations (D&A) are expected in 2021 at €330m and €228m, respectively;
- The net working capital should remain at NWC/Sales level of 2020;
- Profits, D&A and CAPEX should grow at 2.0% from 2021 onwards;
- After the need to fund Cloud-19's liquidity needs in 2020, debt should reduce by €100m.
- The long-run growth rate for the company is 2.0%.

Income Statement (€ millions)	**2019**	**2020**
Sales	2,458.0	2,020.0
COGS	-1,007.8	-878.7
Selling expenses	-191.7	-161.6
General and administrative expenses	-372.0	-380.0
Depreciations and amortizations	-225.0	-232.0
Operating profit	**661.5**	**367.7**
Interest expense	-62.0	-60.8
EBT	**599.5**	**307.0**
Taxes	-179.9	-92.1
Net profit	**419.7**	**214.9**
EPS	1.87	0.95
DPS	1.22	1.28
Amount of profits distributed	274.5	288.2
Balance Sheet & Others (€ millions)	**2019**	**2020**
Equity (book value)	2,679.2	2,605.9
Debt	1,350.0	1,455.0
Non current assets	2,933.9	3,113.3
NWC	860.3	767.6
Cash and equivalents	235.0	180.0
CAPEX	320.0	335.0
# shares outstanding	225.0	225.0

John Stewart Leclerc, CFA discussed the company's cost of capital with Juliette Chantepy, CFA, Affaport's Chief Risk Officer (CRO). After normalizing figures following the Covid-19 pandemic, Chantepy suggested a risk-free rate of 1.7% for the long-run and a market premium of 6.8%. Affaport's levered beta is 0.85, and the CRO expects stability in the capital structure at 0.5 D/E.

Later, Leclerc is invited to a supplier's week in London and books a meeting with Angela Leyen, head of investments of Affaport Capital for the EMEA region, to discuss the recent developments on Cloud-19 AG investments in Europe and the Middle East.

Main conclusions highlighted by Leyen's outlook on Cloud-19 AG are as follows:

Comment 1. The new projects will be financed to maintain the current Debt/Equity ratio of 0.5.

Comment 2. The estimated long-term dividend payout ratio is 75%, and its return on equity, in the long run, should be +25 bps above the industry average of 8.5%.

Comment 3. In the last years, enhancements in the FCFF have mostly come from decreases in inventories following a policy of increasing inventory efficiency. Yet, the forecasting should not consider reductions in inventories to be a long-term source of FCFF growth.

11) The return on invested capital (after taxes) of Cloud-19 AG in 2020 is *closest* to:

A. 8.2%

B. 9.1%

C. 6.3%

Solution: C.

12) Based on Leclerc's forecasts, the 2021 free cash flow to the firm (FCFF) is *closest* to:

A. €257.4m

B. €155.4m

C. €347.3m

Solution: B.

13) Considering the expectations for the long-run, the 2022 free cash flow to equity (FCFE) is closest to:

A. €211.8m

B. €329.4m

C. €9.6m

Solution: B. Net Borrowing should consider the long-run perspective on the capital structure.

Net Borrowing = $D_{\%}$(CAPEX – D&A – ΔNWC)

14) Considering the information in the table above, the trailing 2019 Price/Book ratio of Cloud-19 AG is *closest* to:

A. 2.3

B. 2.1

C. 1.9

Solution: C.

This question requires to decompose the Price/Book formula:

$$\frac{P_0}{B_0} = \frac{D_0(1+g)}{r-g} \times \frac{1}{B_0} = \frac{ROE \times Payout \times (1+g)}{r-g}$$

$$\frac{P_0}{B_0} = \frac{0.157 \times 0.654 \times (1+0.020)}{0.075 - 0.020} = 1.91$$

Payout is 65.4%

ROE is 15.7%

15) Which of the following long-term rates is *most likely* consistent with Leyen's comment 2:

A. 2.2%

B. 1.8%

C. 2.0%

Solution: A.

g = (1 – payout) × ROE

16) Leyen's comment 3 regarding not considering decreases in inventories to be a source of long-term growth in free cash flow is:

A. consistent with a forecasting perspective because inventory reduction has limits

B. inconsistent because growing companies are likely to decrease inventories consistently

C. mistaken because decreases in inventories are a source of cash which directly enhances gross profit margins

Solution: A. Decreasing inventories consistently would ultimately leave the company without inventories.