

**Post-graduate Studies  
in Accounting & Finance**

**FINANCIAL MANAGEMENT**

**Pilot Paper Demonstration Exam**

**Time allowed:** 3 hours 15 minutes

This question paper is divided into three sections:

Section A – ALL 15 questions are compulsory and **MUST** be attempted

Section B – ALL 15 questions are compulsory and **MUST** be attempted

Section C – BOTH questions are compulsory and **MUST** be attempted

**Do NOT open this question paper until instructed by the supervisor.**

**Do NOT record any of your answers on the question paper.**

**This question paper must not be removed from the examination hall.**

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a  
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9**



## Section A – ALL 15 questions are compulsory and MUST be attempted

Please use the grid provided on page two of the Candidate Answer Booklet to record your answers to each multiple choice question (MCQ). Do not write out the answers to the MCQ on the lined pages of the answer booklet.

1. The home currency of XYZ Sp. zo.o. is the zolty (zl) and it trades with a company in the Euro-zone whose home currency is the Euro (€). The following information is available:

	Poland	Euro-zone
Spot Rate: 4.1 zl/€		
Interest rate	6%	2%
Inflation Rate	4%	1%

**What is the six-month forward exchange rate?**

- A. 4.18 Zl/€  
B. 4.09 Zl/€  
C. 3.02 Zl/€  
D. 4.15 Zl/€
2. The following financial information relates to an investment project:

	PLN '000
Present value of sales revenue	65,067
Present value of variable costs	31,768
Present value of contribution	33,299
Present value of fixed costs	17,875
Present value of operating income	15,434
<b>Initial investment</b>	10,656
<b>Net present value</b>	4,768

**What is the sensitivity of the net present value of the investment to a change in sales volume?**

- A. 5.9%  
B. 8.2%  
C. 12.7%  
D. 14.3%

3. Bargiel plots the historic movements of share prices and uses this analysis to make his investment decisions.

**To what extent does Bargiel believe capital markets to be efficient?**

- A. Strong form efficient
- B. Semi-strong form efficient
- C. Weak form efficient
- D. Inefficient

4. **Which of the following statements concerning capital structure theory is correct?**

- A. Business risk is assumed to be constant as the capital structure changes
- B. Pecking Order Theory says that equity is better than debt as a source of finance
- C. Modigliani & Miller say that capital structure doesn't affect the cost of equity
- D. In the traditional view there is a linear relationship between the cost of equity and risk

5. **Which of the following will be the MOST likely to increase shareholder wealth?**

- A. The supervisory board recruits a ACCA to head up the audit committee
- B. Management focuses on investing in projects with high NPVs
- C. A management board bonus programme is created to boost earnings per share (EPS)
- D. Surplus cash is used in a share buy-back programme reducing float by 15%

6. **Which of the following statements are features of money market instruments?**

- (1) By selling in the market, they can be readily converted to cash at any time
- (2) In the case of commercial paper, there will be a credit rating assigned
- (3) They yield varying returns depending on the perceived default risk

- A. 1 only
- B. 1 and 3
- C. None
- D. All

7. The following are extracts from the income statement of RST SA:

Sales income	72,000
Cost of sales (75% variable)	60,000
Operating profit	12,000
Interest expense	3,000
Profit before taxes	9,000
Incomes taxes	3,000
Net profit after tax	<b>6,000</b>

**What is the operational leverage of RST SA?**

- A. 2.3 times
  - B. 3.8 times
  - C. 4.5 times
  - D. 5.0 times
8. Polmark SA has annual credit sales of PLN 60 million with days sales outstanding (DSO) of 60 days. Accounts receivable are financed by a combination of bank debt (67% at 9%) and the firm's own working capital (WACC at 12%).

**What would be the annual interest saving if DSO could be reduced by 15 days?**

- A. 189,876
  - B. 413,980
  - C. 328,767
  - D. 125,978
9. **Which of the following statements about shareholder wealth maximization are correct?**
- (1) Managers should maximize earnings per share
  - (2) Reducing the WACC to its minimum will tend to maximize the firm's value
  - (3) In efficient markets, cumulative NPVs will be reflected in share prices
- A. 1 and 3
  - B. 1 only
  - C. 2 and 3
  - D. None

10. Motoparts SA has paid the following dividends in recent years:

Year	2018	2017	2016	2015
Dividend (PLN/share)	34	28	23	19
2018's dividend was just paid & the cost of equity is 14%				

**Using the geometric average historical dividend growth rate and the dividend growth model (DGM) valuation what is the market price of Motopart's shares on an ex dividend basis?**

- A. PLN 120
  - B. PLN 167
  - C. PLN 109
  - D. PLN 217
11. A Boeing aircraft executive said: "The strengthening USD is having an adverse impact on the company's competitiveness in the commercial jet liner market."

**What risk is the executive referring to?**

- A. Interest rate risk
  - B. Transaction risk
  - C. Economic risk
  - D. Translation risk
12. The following information has been calculated for Polflex Sp.zo.o.:

Cash balances – PLN million	13
A/R: Days sales outstanding	65
Inventory: Days COGS outstanding	30
Current portion LTD – PLN million	7.5
A/P: Days purchases outstanding	25

**What is the length of the cash cycle of net trading investment?**

- A. 64 days
- B. 70 days
- C. 53 days
- D. 100 days

**13. Commercial banks are exposed to which of the following risks:**

- (1) Credit risk
- (2) Liquidity Risks
- (3) Operating risk
- (4) Regulatory risk

- A. 1 & 2
- B. All
- C. 1 & 3
- D. 1 only

**14. Which of the following statements about working capital management (WCM) is incorrect?**

- (1) WCM involves a risk reward trade-off between profitability and liquidity
- (2) During periods of rapid sales growth, WCM is secondary compared to market share
- (3) Poor WCM can result in cash shortages and the threat of insolvency

- A. 2 only
- B. All
- C. 1 & 3
- D. 1 & 2

**15. Quantitative easing by central banks has become a popular monetary policy in order to:**

- (1) Inject liquidity into the financial system after a credit crisis panic
- (2) Help governments to stimulate economies by deficit spending
- (3) Kick-start low growth economies with lower borrowing costs
- (4) Used in lieu of austerity constrained fiscal policies of excessively indebted governments

- A. 1 only
- B. 1, 3 & 4
- C. 3
- D. 2

**(30 marks)**

## Section B – ALL 15 questions are compulsory and MUST be attempted

Please use the grid provided on page two of the Candidate Answer Booklet to record your answers to each multiple choice question (MCQ). Do not write out the answers to the MCQ on the lined pages of the answer booklet.

Each question is worth 2 marks.

The following scenario relates to questions 16-20.

Slavmax SA currently has the following long-term capital structure:

	PLN millions	PLN millions
<i>Long Term Debt:</i>		
Mortgage Bonds – 20 yrs	24	
Senior unsecured debt	15	
Subordinated debt	10	
Deferred Tax Liability	7	
<i>Equity:</i>		56
Preferred shares – 5%	10	
Capital reserves	7	
Ordinary shares	25	
Retained earnings	27	
		69
Total equity and liabilities		<u>125</u>

The subordinated debt earns interest at 9% per year and matures in 5 years time. It has a convertibility feature allowing creditors the right to receive 10 common shares at maturity for every 1,000 PLN nominal value of debt. Slavmax's cost of subordinated debt is 11%.

The ordinary shares of Slavmax have a nominal value of 25 PLN per share. The current ex-dividend share price on the Warsaw Stock Exchange is PLN 95/share which the company expects to grow at 5% per year for the foreseeable future. Polish treasury bills currently pay 3%. Total shareholder returns (dividends and price appreciation) on the WSE WIG-30 index have averaged 14% over the last 5 years. The equity beta of Slavmax is .95.

**16. What is the conversion value of the subordinated debt after 5 years?**

- A. 1,342 PLN
- B. 1,212.50 PLN
- C. 121.25 PLN
- D. 987.56 PLN

- 17. The market consensus is that Slavmax's earnings will grow at 4%/yr. Based on this, what is the market value of the subordinated debt of Slavmax?**
- A. 897.56 PLN
  - B. 1,000.00 PLN
  - C. 1,213.77 PLN
  - D. 1,018.04 PLN
- 18. What is Slavmax's cost of equity capital as implied by the Capital Asset Pricing Model?**
- A. 13.5%
  - B. 15.1%
  - C. 9.0%
  - D. 17.3%
- 19. Which of the following statements are advantages of using the price/earnings ratio to value a company?**
- (1) It is a commonly accepted methodology in the stock market
  - (2) It is based on reliable audited financial reporting numbers
  - (3) It capitalizes on stock market efficiency
  - (4) It allows comparisons to comparable investments
- A. 1
  - B. 1 & 2
  - C. 1, 2 & 3
  - D. 1, 2,3 & 4
- 20. Which of the following statements about the Capital Asset Pricing Model (CAPM) is wrong?**
- A. CAPM assumes stock market efficiency
  - B. Betas for publically listed firms are difficult to identify
  - C. CAPM reflects both a firm's systematic and unsystematic risk
  - D. While CAPM is popular it is not universally accepted



**The following scenario relates to questions 21-25**

Tecmate Sp.zo.o. has the following financial profile:

PLN '000					
Balance Sheet			Income Statement		
Cash	11	70	ST Bank debt	Sales	530
Receivables	108	105	Trade debt	COGS	245
Inventory	120	20	CPLTD	Gross Profit	285
Prepays	21	120	LT Debt	Overheads	145
P & E	250	31	Capital Reserve	Interest	68
Real Estate	50	100	Share Capital	Net Profit	72
Intangibles	14	128	Retained Earnings	Income Taxes	18
TOTAL	574	574	TOTAL	Net Profit AT	54

*Other selected information:*

Purchases in COGS = 200

Dividend Payout Ratio = 50%

Prior 3 year's sales growth = 18%/yr

Peer sector ratios (average): current ratio of 1.57 & debt-to-equity ratio of 1.2:1

Annual depreciation expense: 25

Estimated mandatory capex: 21

**21. What is the length of the firm's cash cycle for its net trading investment?**

- A. 34 days
- B. 60 days
- C. 95 days
- D. 41 days

**22. Suppliers have offered an early payment discount terms of 3% 15/net 60. What would be equivalent annual interest rate if Tecmate paid at 60 days instead of 15 days?**

- A. 14%
- B. 32%
- C. 9%
- D. 28%

**23. What is the sustainable growth rate for the firm?**

- A. 11%
- B. 14%
- C. 8%
- D. 23%

**24. Based on the sustainable growth rate compared to previous growth rates and financial condition, is the firm over-trading?**

- A. Not over-trading at all
- B. On the threshold of over-trading
- C. Aggressively over-trading
- D. Under-trading

**25. The free cash flow available for debt service is:**

- A. 51
- B. 58
- C. (5)
- D. 31

**The following scenario relates to questions 26-30**

Drew-max operates in an industry about to be protected by tariff barriers as part of an initiative to promote local, in-country enterprise.

It is replacing obsolete equipment and must choose between two machines. Machine A has an initial cost of PLN 1,500,000 and will have a scrap value of PLN 75,000 after 4 years. Machine B has an initial cost of PLN 1,750,000 and will have a scrap value of PLN 125,000 after 3 years. The estimated annual maintenance costs of the two machines are as follows:

Year:	1	2	3	4
Machine A (PLN/year)	120,000	125,000	130,000	140,000
Machine B (PLN/year)	80,000	90,000	75,000	

All the information above reflects expected future inflation and is before tax and tax allowable depreciation. For analysis's sake, all tax effects can be ignored.

Drew-max has a nominal before tax cost of capital of 9% and a nominal after-tax WACC of 5%

**26. Which of the following statements about Drew-max are true?**

- (1) Reduced competition from imports will allow higher pricing and increased profits
- (2) Consumers will suffer from lower quality and higher prices
- (3) Higher returns on capital will boost capital expenditures
- (4) Foreign direct investment into Drew-max's sector could increase

- A. 1 & 2
- B. 1, 2, 3 & 4
- C. 2 only
- D. 1 & 3

**27. What is the equivalent annual cost of Machine A?**

- A. PLN 231,786
- B. PLN 188,678
- C. PLN 143,115
- D. PLN 589,876

**28. Which of the following statements about Drew-max using the equivalent annual cost method are true?**

- (1) The machine with the lowest present value should be selected.
- (2) Comparing the PV over 2 x 12 year (3 & 4 cycles) would provide an answer
- (3) There is no way to compare machine A to machine B because of different life-spans

- A. 1 only
- B. 2 & 3
- C. 2 only
- D. None

**29. There is a concern about the accuracy of the maintenance costs for Machine B in year 3. After further investigation, the following probability of cash flows was assigned:**

Cash Flow (PLN)	Probability
50,000	.15
75,000	.65
100,000	.20

**What is the expected present value for maintenance costs in year 3?**

- A. PLN 58,865
- B. PLN 72,438
- C. PLN 68,111
- D. PLN 83,543

**30. On a different, larger and more complex project, Drew-max is concerned about risk and project uncertainty.**

**Which of the following statements about risk, uncertainty and the project is accurate?**

- A. Project specific risks can be ignored if the project is the same as the others in the firm
- B. A risk adjusted discount rate should be used to reflect distinctive risk
- C. Sensitivity analysis can be used to gauge probabilities
- D. Uncertainty can be quantified by a Monte Carlo simulation

**Section C – BOTH questions are compulsory and MUST be attempted**

**Please write your answers to all parts of these questions on the lined pages within the Candidate Answer Booklet.**

**31.** Polchem SA is a large publicly traded firm on the Warsaw Stock Exchange. Based on a PLN 100,000 market feasibility study it is considering the manufacture and sale of a new line of products developed by its R&D research group at a cost of PLN 250,000. The finance department has gathered the following information on the investment proposal:

Initial investment (straight line depreciation)	PLN 9 million
Scrap value (year 4; tax paid yr. 5)	PLN 600,000
Selling price (current price)	PLN 80/unit
Expected selling price inflation	4%/yr
Variable operating costs (current price)	PLN 35/unit
Fixed operating costs	PLN 450,000
Expected operating cost inflation	3%/yr

Market research estimates that demand for the product will be as follows:

Year:	1	2	3	4
Demand (Units):	50,000	85,000	100,000	75,000

The company has a real return hurdle rate of 12%. Expected inflation over the project's life-span is 2.5%. Polchem pays income tax at 30% payable 1 year in arrears. The project would qualify for the tax offices "accelerated" capital cost allowance of 33.3% per year on a straight line basis.

**Required:**

- (a) Calculate the flowing values for the investment proposal:**
- i. Net present value** (10 marks)
  - ii. Internal rate of return** (5 marks)
- (b) Briefly discuss your findings and advise whether the proposal is financially attractive.** (3 marks)
- (c) Assuming that the stock market is semi-strong efficient, what will be the implication for the firm's stock price if Polchem goes ahead with the project?** (2 marks)
- (20 marks)**

**32.** Capit SA is a large firm listed on the Warsaw Stock Exchange. It has the following capital structure:

Long Term Capital	PLN million
Convertible Debt – 5 yrs; 8%	25
Preferred Shares – 5% coupon + nominal value of 100	15
Common Equity (nominal value PLN 10/share)	10
Retained Earnings	23

The current dividend for the company is PLN 50/share and is expected to grow at 3% per year in the foreseeable future. The equity shares trade at PLN 450/share. The preferred shares trade at PLN 104/share. The convertible debt has a conversion privilege of 2 shares per 1,000 PLN face value at maturity. The debt currently trades at PLN 950.

The firm's income tax rate is 30%

**Required:**

- (a) Calculate the firm's weighted average cost of capital (WACC): (10 marks)
  - (b) Discuss the firm's dividend payout policy and whether it has an impact on share price? (5 marks)
  - (c) Explain why the different sources of capital have different levels of risk and return. (5 marks)
- (20 marks)**

### Formulae Sheet

#### Economic order quantity

$$= \sqrt{\frac{2C_0D}{C_h}}$$

#### Miller–Orr Model

Return point = Lower limit +  $\left(\frac{1}{3} \times \text{spread}\right)$

$$\text{Spread} = 3 \left[ \frac{\frac{3}{4} \times \text{transaction cost} \times \text{variance of cash flows}}{\text{interest rate}} \right]^{\frac{1}{3}}$$

#### The Capital Asset Pricing Model

$$E(r_i) = R_f + \beta_i(E(r_m) - R_f)$$

#### The asset beta formula

$$\beta_a = \left[ \frac{V_e}{(V_e + V_d(1-T))} \beta_e \right] + \left[ \frac{V_d(1-T)}{(V_e + V_d(1-T))} \beta_d \right]$$

#### The Growth Model

$$P_0 = \frac{D_0(1+g)}{(r_e - g)}$$

#### Gordon's growth approximation

$$g = br_e$$

#### The weighted average cost of capital

$$\text{WACC} = \left[ \frac{V_e}{V_e + V_d} \right] k_e + \left[ \frac{V_d}{V_e + V_d} \right] k_d(1-T)$$

#### The Fisher formula

$$(1+i) = (1+r)(1+h)$$

#### Purchasing power parity and interest rate parity

$$S_1 = S_0 \times \frac{(1+h_c)}{(1+h_b)} \quad F_0 = S_0 \times \frac{(1+i_c)}{(1+i_b)}$$

### Present Value Table

Present value of 1 i.e.  $(1 + r)^{-n}$

Where  $r$  = discount rate  
 $n$  = number of periods until payment

Periods (n)	Discount rate (r)										
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	1
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	2
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	3
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683	4
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	5
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564	6
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	7
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	8
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	9
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	10
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	11
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	12
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	13
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	14
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	15
(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	1
2	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694	2
3	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579	3
4	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482	4
5	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402	5
6	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335	6
7	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279	7
8	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233	8
9	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194	9
10	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162	10
11	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135	11
12	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112	12
13	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093	13
14	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078	14
15	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065	15



### Annuity Table

Present value of an annuity of 1 i.e.  $\frac{1-(1+r)^{-n}}{r}$

Where  $r$  = discount rate  
 $n$  = number of periods

Periods (n)	Discount rate (r)										
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	1
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736	2
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487	3
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170	4
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791	5
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355	6
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868	7
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335	8
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759	9
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145	10
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495	11
12	11.255	10.575	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814	12
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103	13
14	13.004	12.106	11.296	10.563	9.899	9.295	8.745	8.244	7.786	7.367	14
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.559	8.061	7.606	15
(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	1
2	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528	2
3	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106	3
4	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589	4
5	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991	5
6	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326	6
7	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605	7
8	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837	8
9	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031	9
10	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192	10
11	6.207	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327	11
12	6.492	6.194	5.918	5.660	5.421	5.197	4.988	4.793	4.611	4.439	12
13	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533	13
14	6.982	6.628	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611	14
15	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675	15

End of Question Paper

## FINANCIAL MANAGEMENT

2017/8 Exam

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# Answers

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<b>Section A</b>	
<b>1.</b>	<b>A</b> $4.1 \times (1.03/1.01) = 4.18$
<b>2.</b>	<b>D</b> $4,768/33,299 \times 100\% = 14.3\%$
<b>3.</b>	<b>D</b> Inefficient since latest information is not in share price; not random
<b>4.</b>	<b>A</b> Business risk from operations is separate from financial risk of leverage
<b>5.</b>	<b>B</b> Focusing on investing in projects with high NPV
<b>6.</b>	<b>D</b> All are true about money market instruments
<b>7.</b>	<b>A</b> $72 - [75\% \times 60] = 27/12 = 2.3$ times
<b>8.</b>	<b>C</b> $60 \text{ million}/365 \times 15 \text{ days} \times [.67 \times 9\% = .33 \times 12\% = 10\%] = 328,767$
<b>9.</b>	<b>C</b> EPS is not a future oriented cash flow metric
<b>10.</b>	<b>B</b>
<b>11.</b>	<b>C</b> Economic risk impacts competitiveness in the long term
<b>12.</b>	<b>B</b> $65 = 30 - 25 = 70$ days
<b>13.</b>	<b>B</b> Commercial banks are exposed to all these risks (& more)
<b>14.</b>	<b>A</b> High sales growth can lead to dangerous over-trading & insolvency
<b>15.</b>	<b>B</b> Fiscal stimulus (2) by governments is independent of monetary policy

## Section B

16.	B. $PLN 95 \times [(1.05)^5 = 1.276] = 121.22 \times 10 = PLN 1,212.50$
17.	D. $PLN 95 \times [(1.04)^5 = 1.217] = 115.58 \times 10 = 1,155.80 \times .593 [DF_{11\%/5yr}] = 685.40$ $+ 9\% \times 1,000 = 90 \times 3.696 [AF_{11\%/5yrs}] = 332.64; \Sigma = PLN 1,018$
18.	A. $3\% + .95(14\% - 3\%) = 13.5\%$
19.	D. All are generally true of the P/E ratio
20.	B. In actively traded firms betas can be observed over time
21.	B. $A/R = 530/365 = 1.45$ . 74 days; $Inv. 245/365 > 179$ days; $A/P = 200/365 = .547$ $> 193$ days; $74 + 179 - 193 = 60$ days
22.	D. $3/97 = .0309$ ; $(1.0309)^{360/45} = 1.276 - 1.0 = 28\%$
23.	A. $54/228 = 24\%$ RoE $\times (1 - 50\%) = 12\%$
24.	C. Aggressively over-trading re: SGR vs. growth, current ratio & D/E vs peers
25.	B. $NPAT + Deprec - Mcapex = 54 + 25 - 21 = 58$
26.	B. All would result from greater protection against foreign competition
27.	C. $120/(1.09)^1 = 110$ ; $125/(1.09)^2 = 105$ ; $130/(1.09)^3 = 100$ ; $140/(1.09)^4 = 99$ $\Sigma PV = 414/3.34 [AF_{9\%/4yrs}] = PLN 124,039$
28.	C. Comparing PV over common cycles will work but is troublesome
29.	A. $[50 \times .15] + [75 \times .65] + [100 \times .20] = 76,250 \times .772 (DF_{9\%/3yrs})$
30.	B. RAD should be used whenever project risk is distinctive vs. the firm overall

## Section C

31.

(a) – i): Net Present Value

	0	1	2	3	4	5
Units: Q		50,000	85,000	100,000	75,000	0
Price		80	80	80	80	
Inflation @ 4%		$(1.04)^1$	$(1.04)^2$	$(1.04)^3$	$(1.04)^4$	
Factor		1.04	1.08	1.13	1.17	
Price - nominal		83.20	86.40	90.40	93.60	
Revenue: Q x P		4,160	7,344	9,040	7,020	
VC @ 35/unit		1,750	2,975	3,500	2,625	
Fixed costs		450	450	450	450	
Total Costs		2,200	3,425	3,950	3,075	
Inflation @ 3%		$(1.03)^1$	$(1.03)^2$	$(1.03)^3$	$(1.03)^4$	
Factor		1.03	1.06	1.09	1.13	
TC - nominal		2,266	3,631	4,306	3,461	
Net CF		1,894	3,713	4,734	4,395	
Taxes @ 30% + 1			-568	-1,114	-1,420	-1,319
WDA			900	900	900	-600
Outlay	-9,000					
Net CF	-9,000	2,894	4,045	4,520	3,875	-1,919
DF @ 15%	1.0	.87	.756	.658	.572	.497
PV	-9,000	2,518	3,058	2,974	2,217	-954
NPV	<b>813,000</b>					
Workings:	Writing Down Allowances					
	NBV	9				
	WDA	-3	X 30%	= +900	T2	
	NBV	6				
	WDA	-3	X 30%	= +900	T3	
	NBV	3				
	WDA	-3	X 30%	= +900	T4	
	NBV	0				
	Salvage	2	X 30%	= -600	T5	
	Discount Rate					
	(1.12)	x	(1.025)	=	1.148	
				Say:	15%	

(a) – ii – Internal Rate of Return

Net CF	-9,000	2,894	4,045	4,520	3,875	-1,919
DF @ 20%	1.0	.833	.694	.579	.482	.402
PV	-9,000	2,410	2,807	2,617	1,868	-771
NPV	<b>-69,000</b>					

The NPV @ 20% is not materially different than 0; the IRR is 20%

- (b) Because the NPV is positive, value has been created for shareholders and the project would appear to be financially attractive.
- (c) Efficient stock markets will tend to reflect the value creation from projects with positive NPV in higher share prices. Publically announced news of the project will be noted by the market and depending on how credible management is, share prices will be boosted as the project “proves itself out” over time as reported profit comes on stream.

32.

(a) WACC

Workings:

$$K_E = \text{Div} (1+g)/\text{MV} + g = (50 \times 1.03)/450 + 3\% = 14.4\%$$

$$K_{PS} = \text{PS Div}/\text{MV} \times 100\% = (5\% \times 1,000)/104 = 5/104 \times 100\% = 4.8\%$$

$K_D$  = IRR of after tax interest and higher of face value redemption at maturity or “in the money” conversion. 1,000 vs.  $450 \times (1.03)^5 \times 2 = 1,043$  = “in the money”

IRR

$$\text{Interest flows: } 8\% \times 1,000 \times (1 - T\%) = 80 \times 70\% = 56$$

	7%	DF	9%	DF
MV	-900	1.0	-900	1.0
PV: Interest	+230	4.1 = AF <sub>7%/5yrs</sub>	+217	3.89 = AF <sub>9%/5yrs</sub>
PV: Maturity	+744	.713 = DF <sub>7%/5yrs</sub>	+678	.65 = DF <sub>9%/5yrs</sub>
NPV	+124		-5	

$$\begin{aligned} \text{IRR} &= \%_L + \frac{\text{NPV}_L}{\text{NPV}_L - \text{NPV}_H} \times (\%_H - \%_L) \\ &= 7\% + [124/124 - (-5)] \times (9\% - 7\%) \\ &= 7\% + [.96 \times 2\%] \\ &= 8.9\% \end{aligned}$$

Market Weights:

		PLN millions	Share
Debt	25 x 900/1,000	23.5	28%
Preferred Shares	15,000,000/100 x 104	15.6	18%
Equity	10,000,000/100 x 450	45.0	54%
TOTAL		84.1	100%

WACC	=	$K_D \times \%_D$	+	$K_{PS} \times \%_{PS}$	+	$K_E \times \%_E$
	=	8.9% x .28	+	4.8% x .18	+	14.4% x .54
	=	2.49%	+	.86%	+	7.78
	=	<b>11.13%</b>				

**(b) Dividend Payout policies**

- A policy of a fixed % of profits may lead to dividend reductions in certain years if profits are volatile. In general, markets like steadily growing dividends for their predictability;
- Management should consider the “signaling” impact of declaring an increase in dividends. Markets tend to read an increase as a sign of management’s confidence in the future;
- Other considerations for dividends: liquidity availability, growth prospects (Pecking Order Theory looks to retained earnings as a source of growth) and the existence of special needs by shareholders ie. Capital gains vs. income.

**(c) Risk-reward characteristics**

- Bankruptcy laws assign different priorities of claim upon liquidation. Therefore debt is safer than preferred shares which are safer than equity.
- Also priorities of both claim and cash flow can be established by contractual provisions with financial instruments. Thus, senior creditors have a higher claim than junior or subordinated creditors. Likewise preferred shareholders have a first claim on profits ahead of common shareholders but this is capped by a fixed dividend amount.
- To compensate capital providers for greater relative risk-taking, the financial instrument must offer a correspondingly higher yield or else markets could not be induced to supply capital without appropriate reward.