

**MAY 2016 PROFESSIONAL EXAMINATION
FINANCIAL MANAGEMENT (2.4)
EXAMINER'S REPORT, QUESTIONS AND MARKING SCHEME**

EXAMINER'S REPORT

STANDARD OF PAPER

The standard of the Financial Management paper appeared very high for that level, difficult in some instances and loaded with a lot of sub questions (a to d). This is reflected in the 16 page typewritten scheme. This combined with other factors on students' side highlighted below produced one of the lowest pass rates in recent times in Financial Management. The questions were well spread across the subject areas and also covered well both quantitative and non-quantitative aspects of the syllabus.

The questions were generally clear and precise in some instances and ambiguous in few instances that required more thinking especially the quantitative part of the questions. No typographical errors were noticed and no errors were found in the questions.

The few errors found were mainly in the marking schemes which were corrected at co-ordination stage before conference marking commenced. No substandard question was noticed in the paper and all questions were found to be of very high standard to meet the standards expected at that level and exceed in certain instances

Mark allocations were generally ok and in the few cases where it was observed not to be fairly allocated, they were slightly modified at the co-ordination level to ensure a balance in the allocation.

PERFORMANCE OF CANDIDATES

The performance of the students in the paper was generally poor and below average with 6% passing the paper after marking and moderation, the lowest in recent history. It was also noticed that performance were generally worst in centres outside Accra mainly in the 3 Northern Regions, Volta Region and the other centres out of the capital

Analysis of performance

	May 2015	%	November 2015	%	May 2016	%
Candidates passed	153	21.22	42	7.17	39	6.04
Candidates failed	568	78.78	544	92.83	607	93.96
Total Candidates	721	100	586	100	646	100

The possible reasons for the poor performance were as follows:

- Difficult paper for that level
- Poor preparations by students as answers provided clearly showed lack of or inadequate knowledge of the subject area
- Poor tuition services provided especially out of Accra centres
- Failure of students to thoroughly study and use ICA syllabus and content manuals
- Poor quality and background of students who wrote the paper vis-a-vis the very high standard of the questions and expected standard at that level
- Poor knowledge by students on exam preparation and questions answering techniques
- Limited access to study materials especially the out of Accra centres

The poor performance was across all centres and was more pronounced in centres outside Accra. There was no any evidence of copying in the exams. The level of preparations as reflected in the content of the answers showed poor or inadequate preparation by the students to adequately answer the questions that were very high standard in nature. Basic Finance terms and terminologies were responded to as if answers were provided by non-finance students with most students trying to write English or non-finance language generally to answer the finance questions that required the understanding and use of Finance language for the easy type questions. Answers provided in some cases were unrelated to the question.

NOTABLE STRENGTHS

The very few students who did well exhibited the following strengths:

- Reading and understanding of the questions
- Well planned responses to the questions in line with the requirements of questions
- Very legible handwriting making reading and marking easier and better
- Well prepared and showed strengths in both quantitative and written questions
- Avoidance of mixing different answers to different questions and scattering of answers across different pages mixed with answers of different questions

NOTABLE WEAKNESS

- Poor understanding of Finance principles
- Poor exam preparation
- Failure to comprehend the requirements of the questions
- Wrong numbering of answers to questions making it difficult for examiners
- Writing on areas not required by the questions

FINANCIAL MANAGEMENT QUESTIONS

QUESTION ONE

ABC Ltd is considering five projects for the coming financial year. Four of the projects have undergone financial appraisal (see the table below).

Project	Lifespan	Initial investment (GH¢)	NPV (GH¢)	IRR
PA201	Indefinite	(50,000)	85,200	11.5%
PA202	Indefinite	(75,000)	98,500	12.3%
PA203	Indefinite	(48,000)	65,950	10.2%
PA204	Indefinite	(85,000)	95,400	11.4%
PA205	Indefinite	(150,000)	Yet to be appraised	Yet to be appraised

Project PA205 entails an immediate capital investment of GH¢150,000 and will produce the following annual net cash flows in real terms:

Year	1	2	3	4	5	Every year after year 5
Cash flow (GH¢)	5,000	10,500	25,000	28,000	30,000	30,000

Expected general rate of inflation is 15% and the company's money required rate of return is 25%.

Required:

- Appraise Project PA205 using the NPV criteria. **(4 marks)**
- Assess the sensitivity of Project PA205 to the discount rate. **(4 marks)**
- Suppose in the coming financial year, only GH¢200,000 of finance will be available for investments but the capital constraint will ease afterwards. Advise the company on which project(s) to implement in the coming year if the projects are –
 - Independent and divisible
 - Independent and indivisible **(6 marks)**
- When management rejects projects with positive net present value because of capital constraints, they lose opportunities to enhance the value of shareholders. Suggest three practical ways of dealing with capital rationing so as not to discard projects with positive net present value. **(6 marks)**

(Total: 20 marks)

QUESTION TWO

XYZ Ltd is a leading producer of mineral water in Ghana. The company sells all of its output to wholesalers on credit terms net 40. The company's collection policy is somewhat relax, and so the receivables turnover days is currently 53 days. This fairly liberal credit policy has resulted in significant increases in sales revenue in recent years. However, the company has been facing cash flow problems as a significant number of customers take longer than the credit period to settle their accounts. The company typically falls on overdraft facilities from its bankers when it fails to generate adequate cash flows from operations to meet working capital requirements. The average cost of the overdraft facilities is 15% per annum.

Last week, the management team met and discussed the company's cash flow and liquidity problems with a view to finding solutions to the problems. In that meeting, two proposals were offered to help solve the problems:

Proposal 1: Introduce early settlement discount of 1.5% on accounts that are settled within 10 days in which invoice is sent while the current credit period is maintained. It is estimated that 60% of accounts will be paid within the discount period.

Proposal 2: Switch from financing working capital requirements using the bank overdraft facilities at 15% interest to financing working capital requirements using supplier's trade credit. Suppliers are willing to supply on credit terms 1/10, net 40. Proponents of the proposals believe that the implementation of their proposals will improve on the company's financial situation.

Set out below are the company's income statement and statement of financial position for the past three years.

Income statement for the year ended 31st December			
	2012	2013	2014
	GH¢'000	GH¢'000	GH¢'000
Revenue	40,000	60,000	122,000
Cost of sales	<u>(15,000)</u>	<u>(31,000)</u>	<u>(90,000)</u>
Gross profit	25,000	29,000	32,000
Selling and administrative expenses	<u>(11,000)</u>	<u>(13,000)</u>	<u>(17,500)</u>
Operating profit	14,000	16,000	14,500

Statement of financial position as at 31st December			
	2012	2013	2014
	GH¢'000	GH¢'000	GH¢'000
Noncurrent assets:			
Property, plant and equipment	13,400	19,000	22,500
Current assets:			
Inventory	8,000	15,500	25,500
Trade receivables	6,900	11,210	24,210
Cash	1,110	-	-
Total current assets	16,010	26,710	49,710
Total assets	29,410	45,710	72,210
Equity:			
Stated capital	100	100	100
Income surplus	18,510	28,110	36,810
Shareholders' equity	18,610	28,210	36,910
Non-current liabilities:			
Medium-term loan	3,000	2,500	2,000
Current liabilities:			
Trade payables	2,200	3,500	8,600
Dividend payable	5,600	6,400	7,500
Bank overdraft	-	5,100	17,200
Total current liabilities	7,800	15,000	33,300
Total liabilities	10,800	17,500	35,300
Total equity and liabilities	29,410	45,710	72,210

Required:

- Considering the background information and financial data provided above, would you conclude that XYZ Ltd is experiencing overtrading? Explain with relevant computations. **(9 marks)**
- Appraise the proposal for early settlement discount (i.e. Proposal 1) and advise on whether it should be accepted for implementation or not. Your appraisal should focus on how the discount policy will influence the company's profitability. Show all relevant computations. **(5 marks)**
- Appraise the proposal to switch from financing working capital needs using bank overdraft to using suppliers' trade credit, and advise management accordingly. Show all relevant computations. **(3 marks)**

- d) Assuming XYZ Ltd cannot raise additional funds from external sources such as borrowing and new share offer, suggest to management three steps they can take to ease the cash shortages the company is facing. **(3 marks)**

(Total: 20 marks)

QUESTION THREE

- a) Governments take certain measures with a view to influencing aggregate demand in their economy.

Required:

- i) Distinguish between *fiscal policy* and *monetary policy*. **(2 marks)**
- ii) Explain **TWO** adverse effects a contractionary fiscal policy could have on businesses. **(4 marks)**
- b) Papa's Skin Ltd is an Accra-based clothing company owned and managed by its two founders. The company has been selling to only domestic consumers in Ghana since inception. The founders think it is time to extend the operations of the company to foreign markets, particularly those in neighbouring West African countries. Moving into foreign markets requires additional financing and capabilities, which the company does not have. The owners have agreed on ceding 40% stake in their company to a strategic investor who would provide the additional financing and capabilities needed to compete successfully in the international business environment. However, they are not sure of what range of prices to accept for the shares they would give up. Below is a summary of financial data for Papa's Skin Ltd for the recent financial year:

Issued shares	2 million
	GH¢'000
After-tax profit	9,600
Total dividends	1,920
Property, plant and equipment	50,500
Current assets	25,300
Long-term borrowings	9,100
Current liabilities	11,100

The following information are relevant to the position and value of Papa's Skin Ltd:

- 1) The assets of Papa's Skin Ltd were valued just after the recent financial statements were published. Inventories and trade receivables, which are included in current assets, were written down by GH¢80,000 and GH¢95,000 respectively. Property, plant and equipment were valued at GH¢52,400,000.
- 2) Papa's Skin Ltd falls into the fabrics and clothing industry. The average P/E ratio for listed equity stocks in the industry is 10. The average required return on listed equity stocks in the industry is 16%.
- 3) Marketability of shares in Papa's Skin Ltd is limited as its equity stock is not listed on the stock exchange. Consequently, investors demand a marketability risk premium of 7% above the industry average required return on equity in order to invest in the equity stock of Papa's Skin Ltd.
- 4) Earnings and dividends of Papa's Skin Ltd are expected to grow by 5% every year to perpetuity.

Required:

- i) Estimate an appropriate required rate of return on the equity stock of the Papa's Skin Ltd. **(2 marks)**
- ii) Estimate a range of suitable considerations for 40% stake in Papa's Skin Ltd using the net assets method, P/E ratio method, and dividend valuation method. **(12 marks)**

(Total: 20 marks)

QUESTION FOUR

- a) The Directors of Moore Plastics Ltd have been deliberating on the company's capital structure with a view to identifying an optimal financing mix. Opening the deliberation, the Board Chair remarked "For the past 10 years, we have deployed a financing strategy of reinvesting as much profit as available. When profit is inadequate, we go for borrowing. New equity offers have been a last resort".

Required:

- i) Explain with **THREE** reasons why most managers tend to use financing strategies that follow the pecking order. **(6 marks)**
- ii) Identify and explain **TWO** factors the directors of Moore Plastics Ltd should consider in redesigning the company's capital structure. **(4 marks)**

- b) Pusher Mining Ltd, a large listed company, operates five mineral concessions in Ghana and Ivory Coast. The company's financial performance for the past five years has been impressive. The company's recently published financial results indicate that it earned after-tax profit of GH¢250 million and paid dividends of GH¢50 million out of that profit.

Reserves at two of the five mineral concessions will be exhausted in two years' time, and stakeholders fear this will adversely affect the company's profitability. Nevertheless, the directors are aiming at maintaining the company's dividend payment record. To achieve this, they want to pursue a new project in the oil industry to provide additional cash flows. Though the new project will be financed with existing equity and long-term debts, the directors are not sure what cost of capital to use in appraising the new project.

A summary of the company's financial position before the new oil project follows;

	GH¢m
Noncurrent assets	620
Current assets	<u>425</u>
Total assets	<u>1045</u>
Equity:	
Stated capital	180
Income surplus	685
Shareholders' fund	865
Liabilities:	
Current liabilities	20
Bank loans	40
Bonds	120
Total liabilities	<u>180</u>
Total equity and liabilities	<u>1045</u>

Notes:

1. **Stated capital:** Pusher has in issue 40 million ordinary shares of no par value, all of which are listed on the stock exchange. The current market value of the ordinary stock is GH¢5.5 per share. It is estimated that the market value of the ordinary stock will increase by 8% per annum. The equity beta is 1.25.
2. **Bank loans:** These are fixed rate loans from banks in Ghana. The after-tax cost of the loans is 14.5%.
3. **Bonds:** These are 16% coupon bonds with face value of GH¢100 each. The bonds are currently trading at GH¢98.1 each. In 10 years' time, the bonds may be either

converted into 10 ordinary shares or redeemed at face value at the choice of bondholders. Bondholders are assumed to be rational investors.

If the new oil project is implemented, Pusher Mining Ltd.'s main competitor in the oil industry would be Cargo Oil Ltd. The estimated equity beta of the competitor is 1.80 and the market value of its equity stock is GH¢150 million. The long-term debt stock of the competitor is valued at GH¢100 million. The systematic risk of debt stocks is assumed to be zero. The risk-free return is 14% and the market return is 20%. The corporate tax rate is 25%.

Required:

Estimate the appropriate cost of capital Pusher Mining Ltd should use in appraising the new project in the oil industry. Show all relevant computations.

(10 marks)

(Total: 20 marks)

QUESTION FIVE

- a) AD Ventures, imports tomato paste from Italy for sale in Ghana. AD Ventures typically buys the tomato paste on open account and pays the euro invoice value two months after receipt of goods. AD Ventures has suffered heavy exchange rate losses of late due to the continuous depreciation of the Ghanaian cedi against the euro. AD Ventures will receive a consignment of tomato paste on 15th May, 2016. The value of this consignment is EUR540,000, which must be settled in two months' time (settlement deadline being 15th July, 2016).

The current spot exchange rate for the euro is GH¢4.7110/EUR. Financial pundits forecast that the Ghanaian cedi will depreciate against the euro in the coming months. The owner-manager of AD Venture, Akua Donkor, is worried about probable foreign exchange loss her business may suffer when the invoice value is settled in two months' time.

Akua Donkor has heard of the possibility of hedging AD Ventures' currency exposure with a forward contract or futures contract but does not know what these contracts are. She has asked you to advise her on what to do to hedge against the underlying exposure relating to the EUR540,000 tomato paste consignment.

You would like to recommend a futures market hedge to Akua Donkor. You searched the derivatives market; and you found a futures contract on the euro that matures in August 2016. Other relevant details of the contract follow:

Contract size	EUR100,000
Futures contract price	GH¢4.8112/EUR

Required:

- i) Explain to Akua Donkor **FOUR** differences between a forward contract and a futures contract. **(4 marks)**
 - ii) Currency risk exposure may be transaction risk, economic risk, or translation risk. Which of the three kinds of currency risk exposure is AD Ventures facing in relation to the EUR540,000 tomato paste consignment. Explain why. **(4 marks)**
 - iii) Explain to Akua Donkor, **THREE** disadvantages of hedging the euro exposure with futures hedge. **(6 marks)**
- b) It has been observed that interest rate on debt securities or loans differ for different maturities. For the week ending 28th August 2015, the annual interest rate on the 1-year Government of Ghana note was 22.5% whereas the annual interest rate on the 2-year note was 23%.

Required:

With **THREE** reasons, explain why interest rates on debt securities and loans are different for different maturity periods. **(6 marks)**

(Total: 20 marks)

FINANCIAL MANAGEMENT SCHEME

QUESTION ONE

- (a) NPV can be computed by discounting the real cash flows with the company's real rate of return. Discounting the project real cash flows with the real rate of return produces an NPV of GHS152,666:

End of Year	NCF	Discount Factor @ 8.7%	PV
0	(150,000)	1	(150,000)
1	5,000	0.92	4,600
2	10,500	0.846	8,883
3	25,000	0.779	19,475
4	28,000	0.716	20,048
5	30,000	0.659	19,770
6 and every year thereafter	30,000	7.575	227,250
NPV =			150,026

Comment: Since the NPV of the project is positive, the value of the firm will increase when the project is implemented. The project should therefore be accepted for implementation.

Workings:

- Discount rate

The real rate of return is estimated using the Fisher's equation as under:

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

Nominal rate, $i = 25\%$

Inflation rate, $h = 15\%$

Therefore, the real rate of return is 8.7%

$$1 + 0.25 = (1 + r)(1 + 0.15)$$

$$r = \frac{1 + 0.25}{1 + 0.15} - 1 = 0.087$$

- Discount factor for equal cash flows occurring every year from year 6 to infinity

The equal annual cash flow of GHS30,000 from year 6 to infinity is first discounted as a perpetuity to obtain the terminal value at end of year 5:

$$\text{Terminal value of constant CF from 6 to infinity} = \text{GHS}30,000 \times \frac{1}{0.087}$$

The terminal value is then discounted as a single amount to obtain the PV at time zero:

$$\text{PV of constant CF from 6 to infinity} = \left(\text{GHS}30,000 \times \frac{1}{0.087} \right) \times \frac{1}{(1 + 0.087)^5}$$

The aggregate discount factor is therefore 7.575:

$$\text{Aggregate discount factor} = \frac{1}{0.087} \times \frac{1}{(1 + 0.087)^5} = 11.494 \times 0.659 = 7.575$$

NB: Some candidates may round the real rate of return to 9% so as to read discount factors from interest factor tables (if provided). In this case, the NPV would be GHS138,715. Full credit should be awarded to candidates who answer the question in this manner.

(b) The sensitivity of the project's NPV to the discount rate can be estimated as the percentage change in the discount rate needed to reduce NPV to zero.

$$\text{Sensitivity percentage} = \frac{\text{IRR} - \text{Discount rate}}{\text{Discount rate}} \times 100\%$$

$$\text{Sensitivity percentage} = \frac{15.8\% - 8.7\%}{8.7\%} \times 100\% = 72.4\%$$

That is the discount rate will have to increase by 72.4% for the NPV to reduce to zero. The high percentage increase required in the discount rate for the NPV to drop to zero implies Project PA205 is less sensitive to variation in the discount rate.

The IRR is calculated by trial and error as under:

$$\text{IRR} = i_L + \left[\left(\frac{\text{NPV}_L}{\text{NPV}_L - \text{NPV}_H} \right) \times (i_H - i_L) \right]$$

Setting $i_L = 15\%$ and $i_H = 17\%$, NPV_L and NPV_H are computed as under:

End of Year	NCF	DF (15%)	PV @15%	DF (17%)	PV @17%
0	(150,000)	1.000	(150,000)	1.000	(150,000)
1	5,000	0.870	4,350	0.855	4,275
2	10,500	0.756	7,938	0.731	7,676

3	25,000	0.658	16,450	0.624	15,600
4	28,000	0.572	16,016	0.534	14,952
5	30,000	0.497	14,910	0.456	13,680
6 and every year thereafter	30,000	6.667 x 0.497	99,405	5.882 x 0.456	80,466
		NPV @ 15% =	9,069	NPV @ 17% =	(13,351)

The IRR of the project is 15.8%:

$$\text{IRR} = 0.15 + \left[\left(\frac{\text{GHS}9,069}{\text{GHS}9,069 + \text{GHS}13,351} \right) \times (0.17 - 0.15) \right] = 0.158$$

(c) Project selection under single period capital rationing

i) If projects are independent and divisible

When a firm faces capital rationing for a single period and projects are independent and divisible, funds may be allocated to projects based on the profitability index rankings.

Project	Investment	NPV	PI = NPV/Investment	Rank
PA201	50,000	85,200	1.70	1
PA202	75,000	98,500	1.31	3
PA203	48,000	65,950	1.37	2
PA204	85,000	95,400	1.12	4
PA205	150,000	150,026	1.00	5

Fund allocation to projects based on PI rankings and respective NPV follow:

Project	Investment required	Fund allocation	NPV
PA201	50,000	50,000	85,200
PA203	48,000	48,000	65,950
PA202	75,000	75,000	98,500
PA204 (balance)	85,000	27,000	30,299*
PA205	150,000	-	-
		200,000	279,949

That is the company should invest fully in projects PA201, PA203, and PA202; 31.76% in PA204 (27,000/85,000); and nothing in PA205 which is at the bottom of the ranking. The optimum aggregate NPV is GHS279,949.

Workings:

* NPV from PA204 is its NPV multiplied by the proportion of the investment requirement the company will allocate funds to (i.e. GHS95,400 x 31.76%).

ii) If projects are independent and indivisible

Here we consider a combination of the projects and select the combination that will produce the highest combined NPV. Any unused funds may be invested externally (e.g. in securities).

Combination of Projects	Combined Investment Requirement	Unused funds	Combined NPV
PA201, PA202, and PA203	173,000	27,000	249,650
PA201, PA203, and PA204	183,000	17,000	246,550
PA201 and PA205	200,000	0	235,226
PA203 and PA205	198,000	2,000	215,976

The company should invest in projects PA201, PA202 and PA203 to earn the highest combined NPV of GHS249,650. The unused funds of GHS27,000 should be invested externally.

(d) Practical ways of dealing with capital constraints so as not to lose opportunities to further increase the value of the company further include the following:

- Seek joint venture partners with which to share projects investment requirement
- Use licensing or franchising arrangement with other entities to get the product produced and sold. The firm will earn royalties while avoiding financing of the investment requirements.
- Contract out parts of the project to subcontractors who would finance the project in advance.
- Seek alternative financing such as venture capital and asset securitization.
- Seek grants or aid from government or organizations if the project advances an object the government or such organizations promote or seek to achieve.

EXAMINER'S COMMENTS

This question was very involving from (a) to (d) with sub questions. Students were first expected to calculate the discount rate and then using that to discount the future cash flows including annuity cash flows. Most students could not compute the discount rate making it difficult for them to calculate the PVs and the NPV correctly and the decision. The addition of the annuity cash flows further compounded the complexity of the question to the students.

Additionally the sensitivity analysis aspect of the questions and rankings together with the capital rationing all in one question made the question loaded and posed a challenge to students from both understanding and answering the question and also from time management perspective. The (d) aspect of the question was straight forward Students fared poorly in answering this question

QUESTION TWO:

(a) Is XYZ overtrading or not?

To conclude whether the company is overtrading or not, candidates are expected to identify the symptoms of overtrading and diagnose the company's situation from the information given to establish whether those symptoms exist or not. Analysis of financial ratios such as growth in sales revenue, growth in current assets, receivables turnover days, inventory turnover days, debt ratios, and liquidity ratios is relevant to the diagnosis.

Overtrading occurs when a company tries to do too much too quickly with too little long-term capital. Typically, a company that is overtrading would exhibit the following symptoms:

- Rapid growth in sales revenue.
- Rapid growth in current assets, particularly inventory and receivables. Inventory turnover days and receivables turnover days might grow longer.
- There is only small growth in equity capital, which may be through reinvestment of profit and not new equity issue. Much of the growth in assets is financed by credit, particularly, trade payables and bank overdraft.
- Significant increases in debt ratios such as total debt ratio and debt-to-equity ratio.
- Significant decreases in liquidity ratios such as current ratio and quick ratio. There might be net current liabilities.

There has been significant growth in sales revenue (50% in 2013 and 103% in 2014). This is accompanied by significant growth in current assets, particularly receivables and inventory. However, receivables turnover days and inventory turnover days have both shortened from 55 to 53 days and from 138 to 83 days respectively. What is more, the payables turnover days has shortened significantly from 34 days to 25 days due to the increased use of bank overdraft in financing working capital needs. Bank overdraft increased by a whopping 237% in 2014.

The company's liquidity ratios kept dropping over the three years under review. The current ratio dropped from 2.05:1 in 2012 to just 1.54:1 in 2014 while the quick ratio dropped from 1.03:1 in 2012 to 0.75:1 in 2014. Besides, the ratio of long-term capital to total assets kept reducing over the same periods. Long-term capital that stood at 73% of total assets in 2012 had dropped to 54% of total assets. The decreases in liquidity ratio is due to the significant increase in current liabilities, mainly due to the high increment in bank overdraft financing. The growth in long-term capital is due to reinvestment of profits as stated capital stood the same and medium-term loan was being amortised over the period. These suggest that the company is financing most of the rapid growth in sales with short-term funds rather than long-term capital.

Sales revenue is increasing rapidly, liquidity ratios are falling, long-term capital ratio is falling, and there is significant increase in bank overdraft. On the face of it, one would concluded that the company is overtrading. However, the ratio of long-term capital is not yet too low to permit the conclusion that the company is trying to do too much too quickly with too little long-term capital. If the current trends in long-term capital ratio, sales growth, and liquidity ratios continue in the future, the company might experience overtrading in the near future.

Measure		2012	2013	2015
Growth in sales	$= \frac{S_t - S_{t-1}}{S_{t-1}} \times 100\%$		50%	103%
Growth in trade receivables	$= \frac{TR_t - TR_{t-1}}{TR_{t-1}} \times 100\%$		62.5%	116%
Growth in inventory	$= \frac{IN_t - IN_{t-1}}{IN_{t-1}} \times 100\%$		93.8%	164.5%
Growth in assets	$= \frac{TA_t - TA_{t-1}}{TA_{t-1}} \times 100\%$		155.4%	158%
Growth in overdraft	$= \frac{OD_t - OD_{t-1}}{OD_{t-1}} \times 100\%$			237%
Growth in equity capital	$= \frac{E_t - E_{t-1}}{E_{t-1}} \times 100\%$		51.6%	130.8%

Growth in medium-term loan	$= \frac{MTL_t - MTL_{t-1}}{MTL_{t-1}} \times 100\%$		- 16.7%	- 20%
Inventory turnover days	$= \frac{\text{Average IN}}{COS} \times 365 \text{ days}$		138 days	83 days
Receivables turnover days	$= \frac{\text{Average TR}}{Rev} \times 365 \text{ days}$		55 days	53 days
Payables turnover days	$= \frac{\text{Average TP}}{COS} \times 365 \text{ days}$		34 days	25 days
Total debt ratio	$= \frac{TL}{TA}$	36.7%	38.3%	48.9%
Long-term debt to equity ratio	$= \frac{LTD}{E}$	16.1%	8.9%	5.4%
Long-term capital to total assets	$= \frac{LTD + E}{TA}$	0.73	0.67	0.54
Current ratio	$= \frac{TCA}{TCL}$	2.05	1.78	1.54
Quick ratio	$= \frac{TCA - IN}{TCL}$	1.03	0.75	0.75

(b) Introduction of early settlement discount policy

Candidates are expected to match the cost of the early discount policy against the benefit of it. The policy change is worthwhile when the benefit, measured in terms of annual interest savings, exceeds the cost, measured in terms of the cash discount that would be given.

Under current policy:

Current credit sales	=	GHS122 million
Current credit period	=	40 days
Receivables turnover days	=	53 days
Trade receivables, 2014	=	GHS24.210 million
Trade receivables, 2013	=	GHS11.210 million

Under discount policy:

Credit sales	=	GHS122 million (assumed to be kept at recent sales level)
Credit period	=	40 days
Discount period	=	10 days
Discount rate	=	1.5%
Early payment probability	=	60%

Other relevant data:

Financing cost	=	15%
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Cash discount cost = Credit sales x Discount rate x Early payment probability

Cash discount cost = GHS122m x 1.5% x 60% = GHS1.098m

If credit policy remains unchanged, average trade receivables would be GHS17.715m:

$$\text{Current average trade receivables} = \frac{53}{365} \times \text{GHS122m} = \text{GHS17.715m}$$

Or

$$\text{Current average trade receivables} = \frac{\text{GHS24.210m} + \text{GHS11.210m}}{2} = \text{GHS17.71m}$$

If early settlement discount is introduced, average trade receivables would be GHS7.353m:

New average trade receivables

$$= \left(\frac{10}{365} \times 60\% \times \text{GHS122m} \right) + \left(\frac{40}{365} \times 40\% \times \text{GHS122m} \right)$$

$$\text{New average trade receivables} = \text{GHS2.005m} + \text{GHS5.348m} = \text{GHS7.353m}$$

Funds that would be released every year if the early settlement discount is introduced is GHS11.365m:

$$\text{Funds to be released} = \text{GHS17.715m} - \text{GHS7.353m} = \text{GHS10.362m}$$

Interest charges that would be saved every year due to the early settlement discount is GHS1.554:

$$\text{Interest saved} = \text{GHS10.362} \times 0.15 = \text{GHS1.554m}$$

Summary:

		GHS'm
Benefit of new discount policy: Interest saved every year	=	1.554
Cost of new discount policy: Cash discount allowed every year	=	1.098
Net benefit of new discount policy	=	0.456

Conclusion:

If the early settlement discount is introduced and 60% of accounts are settled early to take the discount, the company's profit will increase by GHS0.456m every year. Therefore, management should accept the early settlement discount proposal for implementation.

- (c) Switch from financing working capital needs with bank overdraft to financing with trade credit

If the company continues to finance working capital needs with bank overdraft, the annual financing cost would be 15%.

If the company finances working capital needs with suppliers trade credit the annual financing cost would be 12.3% (assuming simple interest):

$$\text{Cost of trade credit} = \frac{d}{100 - d} \times \frac{365}{t}$$

Discount, $d = 1$

Effective credit period, $t = 40 - 10 = 30$

$$\text{Cost of trade credit} = \frac{1}{100 - 1} \times \frac{365}{30} = 0.123$$

Conclusion:

Since the cost of financing with suppliers' trade credit is lower than the cost of financing with the overdraft facilities, the company should discard its current working capital financing method and finance with trade credit.

Note:

Full credit should be given to candidates who estimate the cost of trade credit based on compound interest:

$$\text{Cost of trade credit} = \left\{ \left[\left(\frac{100}{100 - d} \right)^{365/t} \right] - 1 \right\}$$

$$\text{Cost of trade credit} = \left\{ \left[\left(\frac{100}{100 - 1} \right)^{365/30} \right] - 1 \right\} = 0.13$$

(d) Easing cash shortages

Steps management can take to ease cash shortages when the company cannot obtain additional funds from external sources include the following:

- 1) Postpone capital investments.
- 2) Postpone dividend payments.
- 3) Accelerate collection from customers by offering incentives for early payment (e.g. early settlement discount, increase in credit limit). This will reduce funds tied up in working capital.
- 4) Reduce investment in inventory to minimise funds tied up in working capital.
- 5) Reverse past investment decisions by selling assets previously acquired but are surplus to the company's needs, or producing negative or lower returns. Even assets that are needed can be sold and leased back.
- 6) Negotiate with creditors for more favourable payment terms.

EXAMINER'S COMMENTS

This covered (a) to (d) as well and covering broad areas.

The over trading aspect of the question was fairly answered well except the detailed computation of the ratios to support that which students were expected to. Students calculated only few ratios to back that.

The (b) aspect of the introduction of early settlement discount policy was a challenge to students in calculating all the decision variables and coming out with the overall decision. This was averagely answered as students were able to compute only some of the variables. Most students could not calculate the cost of trade credit as required by the question. This required straight forward formula calculation as most students did not know the formula to use. The (d) aspect of the question appeared straight forward and was fairly answered. Overall the question appeared loaded.

QUESTION THREE:

a) Fiscal policy

- i) **Fiscal policy** involves the use of taxation and government spending mainly to manipulate aggregate demand with a view to influencing the economy in a particular way. **Monetary policy** involves the manipulation of monetary variables such as money supply and interest rate to achieve certain economic targets such as reduction in inflation.

The distinction between the two is in the variables that are used to achieve the economic target. In the case of fiscal policy, taxation and government spending are manipulated to achieve results whilst economic variables are manipulated to achieve the objectives of monetary policy.

- ii) **A contractionary fiscal policy involves** increasing tax revenue while either maintaining or cutting the level of government spending.

Adverse effects of contractionary fiscal policy on businesses include the following:

- ***Reduction in sales revenue and consequently, profit:*** Contractionary fiscal policy involving increases in income tax rate reduces disposable income and thus aggregate demand falls. With other factors of demand remaining the same, the reduction in disposable income will result in reduction in demand for goods and services.
- ***Reduction in profit that can be reinvested:*** Increase in income tax rates will take more cash from businesses and thus reduce the amount of cash from operations that would be available for reinvestment. Firms will have to raise funds from external sources with higher costs and risks.
- ***Restriction on flexibility in taking credit decisions:*** Higher sales or consumption taxes rate (e.g. VAT rate) reduces businesses' flexibility in granting credit. As VAT is payable when due regardless of whether payments have been received from customers or not, businesses that grant credit for periods longer than the grace period for payment of consumption taxes over the tax authority will have to pay the amount due from their own resources or with borrowed funds.
- ***Reduction in profit of firms facing price elastic demand:*** When rates of indirect taxes such as VAT and excise duty are increased, firms facing price elastic demand will have to either, absorb the additional cost and risk lower profits or pass on the additional cost to consumers in higher price to risk lower demand. In either case, the profit of such businesses will drop.

- **Reduction in loanable funds:** Contractionary fiscal policy reduces disposable income, and households will have little left to save in banks and/or invest in securities. This reduces the amount of surplus funds from households that can be channelled to businesses. However, if the reduction in aggregate demand results in reduction in inflation, interest rates might drop and cost of capital will be lower.

i) Valuation of Papa's Skin Ltd

i) Appropriate required rate of return on the equity stock of Papa's Skin Ltd

The average required rate of return on industry listed stocks is 16%. With a marketability risk premium of 7 percentage points, the required rate of return on the equity stock of Papa's Skin Ltd should be 23%:

Appropriate required return on equity = Industry return on equity + Marketability risk premium

Appropriate required return on equity = 16% + 7% = 23%

ii) Range of consideration for 40% stake in Papa's Skin Ltd

Net assets method:

	GHS'000
Property, plant and equipment	52,400
Current assets (25,300 - 80 - 95)	<u>25,125</u>
Total assets	77,525
Long-term borrowings	(9,100)
Current liabilities	<u>(11,100)</u>
Net assets	<u>57,325</u>

$$\text{Value per share} = \frac{\text{GHS}57,325}{2,000} = \text{GHS}28.66$$

The P/E ratio method:

Using the P/E ratio method, the value per share is estimated as under:

Value per share = Justified P/E ratio x EPS

The earnings per share (EPS) of Papa's Skin Ltd is GHS4.8:

$$\begin{aligned} \text{EPS} &= \frac{\text{Profit attributable to ordinary shareholders}}{\text{Number of shares}} = \frac{\text{GHS}9,600}{2,000} \\ &= \text{GHS}4.8 \end{aligned}$$

The P/E ratio for the purpose of valuing an unlisted company could be one-half or two-thirds of the industry average P/E ratio. If we take a figure equal to 50% of the industry P/E ratio for the purpose of valuing Papa's Skin:

$$\text{Justified P/E ratio} = 10 \times 0.5 = 5$$

$$\text{Value per share} = \text{GHS}4.8 \times 5 = \text{GHS}24$$

Constant growth dividend discount model:

When dividend will grow at a constant rate, the constant growth DDM can be used to estimate the value of equity as under:

$$\text{Value per share} = \frac{DPS_0(1 + g)}{k_e - g}$$

Recent dividend per share, DPS_0 is GHS0.96:

$$DPS_0 = \frac{\text{GHS}1,920}{2,000} = \text{GHS}0.96$$

Required return on equity, $K_e = 23\%$ (or the figure candidate obtained in (b) (i) above).

Growth in dividend, $g = 5\%$

$$\text{Value per share} = \frac{\text{GHS}0.96(1 + 0.05)}{0.23 - 0.05} = \text{GHS}5.6$$

Range of suitable considerations:

(a)	(b)	(c)	(d)
Method	Value per share	Total equity value (b) x 2 million	Consideration for 40% (c) x 40%
Net assets method	GHS28.66	GHS57,320,000	GHS22,928,000
P/E ratio method	GHS24	GHS48,000,000	GHS19,200,000
Dividend valuation method	GHS5.6	GHS11,200,000	GHS4,480,000

EXAMINER'S COMMENTS

The (a) aspect of the question appeared straight forward but students generally provided average answers showing their limited scope of studies.

The (b) aspect was poorly answered as it covered 3 areas of computation from different areas for the decision. The question was standard but coverage was wider for a sub question making it difficult for the students to score full marks for all the computations. Students were able to cover certain aspects of the question.

QUESTION FOUR

(a) Capital structure decision at Moore Plastics Ltd

i) Reasons why most managers use financing strategies that follow the pecking order include the following:

- **Easier access to funds:** Managers prefer sources of finance that are relatively easier to access to those that are relatively difficult to access. Retained earnings, the easiest to access and use, is first choice while new equity offers, the most difficult to access and use, is the last resort.
- **Issue costs:** Managers prefer sources with lower issue costs to those with higher issue costs. There are no issue costs when retained earnings is used, that is why it is the most preferred. Issue costs relating to debt offers are lower than those relating to equity offers. Therefore, debt offers are preferred to equity offers.
- **Investors' preference for safer securities:** As debt stocks offer more secured income streams to investors than equity stocks offer, it is easier for firms to raise funds through debt offers than equity offers.
- **Signalling effect:** Managers believe debt issue has a better signalling effect than equity offer. Investors may interpret debt issue to mean that managers are confident that the investments will produce profit. Equity offer, on the other hand, may be interpreted by investors as lack of management confidence in the investment producing profits. Thus, managers prefer debt offer to equity offer.

ii) Factors to consider when designing capital structure include the following:

- **Business risk:** Business risk refers to the risk inherent in business operations in the absence of debt financing. A higher business risk implies a small drop in sales revenue will cause operating profit to drop so low that the company cannot meet its interest obligation. If Moore Plastic Ltd faces high business risk, the new capital structure should have more equity than debt. If business risk is low, a structure of more debt than equity is reasonable.

- **Financial risk:** Financial risk refers to the additional risk shareholders face as the company uses debt capital. When financial risk is already high, the proportion of equity should be more than that of debt in the new structure.
- **Tax position:** The tax-benefit from the use of debt financing is high when the company falls into a higher tax bracket. If the company is in a higher tax bracket, a financing structure with more debt than equity would be reasonable.
- **Clientele effect:** An investor would prefer a particular capital structure to another. So when redesigning capital structure, directors should consider how present and prospective investors will react to the new capital structure.

(b) Appropriate cost of capital for Pusher Mining Ltd.'s new oil project

The appropriate cost of capital for the new oil project is the project's specific cost of capital. As the company will finance with both equity and debt, this cost of capital should be the project specific WACC.

$$WACC = \frac{E}{V}k_e + \frac{L}{V}k_{lt} + \frac{B}{V}k_{bt}$$

Where

E = market value of equity

L = market value of bank loans

B = market value of bonds

V = market value of total capital

K_{lt} = after-tax cost of bank loans

K_{bt} = after-tax cost of bonds

K_e = cost of equity

After-tax cost of bank loans:

Given as 14.5%

After-tax cost of bonds, K_{bt} :

Redemption value = GHS100

Conversion value = Number of shares x Value of share on conversion date

Conversion value = 10 shares x GHS5.5 $(1+0.08)^{10}$ = 10 shares x GHS11.87 = GHS118.7

Since the conversion value is higher than the redemption value, bondholders will opt for conversion of their bonds.

Therefore, the cost of the bonds is the IRR of the market value, after-tax periodic interests, and the conversion value.

Year	Bond cash flow GHS	PV @ 10%		PV @ 15%	
		Disc Factor	PV	Disc Factor	PV
0	-98.1	1	-98.1	1	-98.1
1-10	12	6.145	73.74	5.019	60.228
10	100	0.386	38.6	0.247	24.7
		NPV =	14.24	NPV =	-13.172

$$k_{bt} = IRR = 0.1 + (0.15 - 0.1) \left(\frac{14.24}{14.24 + 13.172} \right) = 0.1 + 0.026 = 0.126$$

Cost of equity, k_e :

Equity beta of Cargo Oil Ltd, $\beta_e = 1.8$

Ungearred (asset) beta of Cargo Oil Ltd is 1.2:

$$\beta_a = \frac{V_e}{V_e + V_d(1 - t)} \times \beta_e = \frac{GHS150m}{GHS150m + GHS100m(1 - 0.25)} \times 1.8 = 1.2$$

Regear the beta to reflect the capital structure of Pusher Mining Ltd as under.

$$\beta_e = \frac{V_e + V_d(1 - t)}{V_e} \times \beta_a$$

Market value of Pusher's equity, $V_e = 40\text{m shares} \times \text{GHS}5.5 = \text{GHS}220\text{m}$

Market value of Pusher's debt, $V_d = \text{Value of bank loans} + \text{Value of bonds}$

Market value of Pusher's debt, $V_d = \text{GHS}40\text{m} + \text{GHS}117.72\text{m} = \text{GHS}157.72\text{m}$

Value of bonds = Current market price \times Units of bond in issue = $\text{GHS}98.1 \times 1.2\text{m} = \text{GHS}117.72$

Units of bond in issue = $\text{GHS}120\text{m} / \text{GHS}100 = 1.2\text{m}$

Therefore the appropriate equity beta that reflects the risk of the new business and capital structure of Pusher Mining Ltd is 1.845:

$$\beta_e = \frac{\text{GHS}220\text{m} + \text{GHS}157.72\text{m}(1 - 0.25)}{\text{GHS}220\text{m}} \times 1.2 = 1.845$$

The appropriate cost of equity for the new business can be estimated using the CAPM as under.

$$k_e = 0.14 + 1.845(0.2 - 0.14) = 0.14 + 0.1107 = 0.2507$$

The WACC is 20.1%:

$$\begin{aligned} \text{WACC} &= \frac{\text{GHS}220\text{m}}{\text{GHS}377.72\text{m}} \times 0.2507 + \frac{\text{GHS}40\text{m}}{\text{GHS}377.72} \times 0.145 + \frac{\text{GHS}117.72\text{m}}{\text{GHS}377.72} \times 0.126 \\ &= 0.201 \end{aligned}$$

Conclusion:

The appropriate cost of capital Pusher Mining Ltd should use to appraise the new oil project is 20.1%. This reflects the business risk associated with the new operation in the oil industry and the financial risk associated with Pusher's financing structure.

EXAMINER'S COMMENTS

The (a) aspect of the question was one area students fairly answered well. A straight forward question requiring application of the knowledge in the subject area. Some students however still struggled and wrote wide and general but not addressing the requirement of the question.

The (b) aspect of the question was one of the worst answered areas in the paper. Student deviated and some found it very difficult to comprehend the question. The

question appeared ambiguous to students requiring a lot of detailed calculations as a sub question. The calculation of ungeared beta posed a big challenge to a lot of the students. There was no balance between the difficult nature of the question and extent of loading in the question. The question was difficult and loaded at the same time for the students.

QUESTION FIVE:

(a) AD Ventures' currency risk exposure

i) Differences between forward and futures

The differences between forward and futures are summarised in the table below:

Point of distinction	Futures	Forward
Trading platform	Exchange traded instruments (i.e. open market)	Over-the-counter transactions
Contract sizes	Standardised contract sizes	Tailored contract sizes
Contract maturity dates	Standardised maturity dates	Tailored maturity dates
Settlement/close out dates	Flexible close out dates	Fixed date of settlement
Trading of the underlying asset	Position may be closed out without trading the underlying asset	Underlying asset is typically traded
Collateral	Performance bond (or collateral) is required in the form margin deposits	Typically, no collateral is required
Dealer/mediators margin	The exchange profits from fees paid by contracting parties	The dealer benefits from the bid-ask spread
Contract price adjustments	Futures price is marked to market	Forward rate is set on contract date, and remains fixed irrespective of changes in market conditions

ii) Type of currency risk AD Ventures is facing

Explanation of the three types of currency risk exposures:

A firm that engages in international business transactions faces **transaction risk** when it has contractual cash flows that are fixed in the foreign currency and the exchange rate might change over the contract period. For instance, transaction risk exists when value of imports and exports are fixed in the foreign currency and there is movement in the exchange rate between the invoice date and settlement date.

Translation risk is when an organisation will suffer exchange losses when the results of its foreign branches and subsidiaries are translated into the home currency.

Economic risk refers to the effect of exchange rate movement on the international competitiveness of an organisation. It refers to the present value of longer-term cash flows. It exists when an organisation faces competition from domestic producers/traders in the foreign country or local importers in the home country.

Analysis of AD Ventures case:

By engaging in the import transaction that will be settled in the future, AD Ventures faces contractual cash flow (here the obligation to pay EUR540,000). Moreover, the contractual cash flow is fixed in the foreign currency, the euro.

Conclusion on risk type:

With respect to the tomato import from Italy, AD Ventures is facing transaction exposure to currency risk.

iii) Disadvantages of hedging with futures hedge

- Contract size cannot be tailored to the exact requirements the investor. This means that the investor's underlying exposure may not be covered effectively, resulting in hedge inefficiency.
- Contract maturity date cannot be tailored to synchronise with maturity date of underlying exposure. For instance, AD Ventures' euro obligation falls due in January 2016 but the available contract matures in February 2016. This results in hedge inefficiency.
- Basis risk is inherent in futures hedge. There is the risk that the futures price may move by a different amount from the price of the underlying asset.
- Unlike options, the investor has an obligation to either trade the underlying asset or take an opposite position to close out. This means that the investor does not have the flexibility to take advantage of favourable price movements in the spot market.
- Unlike forwards, futures requires opening and maintenance of a margin account which involves deposit of cash or cash equivalent.

(b) Term structure of interest rate

Reasons why interest rates on debt securities or loans are different for different maturity periods include the following:

- **Liquidity preference theory:** Explains that the yield curve is likely to be upward sloping (i.e. lower yield for shorter maturities and higher yield for longer maturities) as investors prefer having cash sooner to having cash later. Therefore, investors want a higher compensation to invest in longer-term security/loans, which has much of their cash flows occurring later; and lower compensation to invest in short-term security/loans, which has much of their cash flows occurring sooner. In conclusion, the longer term interest rates tend to be higher than shorter term interest rates, and the yield curve slopes upwards.
- **Expectations theory:** Explains that interest rates reflect expectations of future changes in interest rates. When interest rates are expected to rise in the future, longer-term interest rates will be higher than shorter-term interest rates, and the yield curve will slope upward. When interest rates are expected to fall, shorter-term interest rates may be higher than longer-term interest rates, and the yield curve becomes downward sloping.
- **Market segmentation theory:** Explains that the slope of the yield curve will reflect conditions in the different segments of the market. Suppose the debt market is segmented into short-term debt market and long-term debt market. If during a period, there are few lenders who are willing to offer long-term loans but more borrowers who demand long-term loans, there will be shortage of funds in the market for long-term funds and excess fund in the market for short-term funds. Consequently, interest rates on long-term loans will be higher than rates on short-term loans, and the yield curve will be upward sloping.
- **Government policy:** Government may influence level of interest rate in the economy through its monetary policy. A policy with the effect of keeping interest rates relatively high may force short-term interest rates higher than long-term rates. For instance, as the Government of Ghana borrows more through the 182-day Treasury bill than the 1-year note, the annualised interest rate on the 182-day bill is higher than the annual rate on 1-year note as of August 28, 2015.

EXAMINER'S COMMENTS

This question was straight forward for students to understand and answer.

This question was well answered by most students and the most attempted question by most students.

CONCLUSION

The paper was generally a very difficult paper although some questions were generally Standard and the amount of work required by the students was commensurate with the

allotted time but some appeared loaded as already highlighted in the question by question analysis. Below are some of the recommendations to improve the poor performance in financial management;

- More questions and answer bank and guide lines should be provided by the Institute and other accredited tuition centres
- ICA tuition and revision centres should incorporate exam comprehension and answering techniques as part of their revision lectures and kits to better guide students preparing to write the exams
- Explore the possibility of implementing web based or electronic based tuition and revision centres for students leaving outside the Accra area
- Implementation of mock like exams by the accredited tuition centres to help prepare the students to have the feel of the exams before the main exams and feedback given at individual level on what went well and what didn't go well in the mock or pre exam test even if it is at an affordable fee for students
- Re evaluation of the quality of the students and admission requirements for the Institute.