



# Professional Bridging Examination

## Paper II PBE Management Accounting and Finance

### December 2012 Session (Questions)

Time Allowed	3 hours
Examination Assessment Allocation	
• Section A – All TWO questions are compulsory	40 Marks
• Section B – Answer 3 out of 4 questions	60 Marks

## PAPER II – PBE MANAGEMENT ACCOUNTING AND FINANCE

This examination is divided into TWO sections.

- Section A (40%). This consists of TWO compulsory questions. You should allocate approximately 1 hour 12 minutes in total for Section A.
- Section B (60%). This consists of four questions, of which you must answer THREE questions only. Each of these three questions is worth 20% of the total marks (making Section B worth 60% of the total marks). You should allocate approximately 36 minutes for each question (that is, 1 hour 48 minutes in total for Section B).

Suggested time allocation (by marks):

Marks	Approximate time in minutes
1	2
2	3
3	5
4	7
5	9
6	11
7	12
8	14
9	16
10	18
11	20
12	21
13	23
14	25
15	27
16	29
17	30
18	32
19	34
20	36

**SECTION A (COMPULSORY) (Total: 40 marks)**

Answer **ALL** questions in this section. Marks are indicated at the end of each question. Together they are worth 40% of the total marks for this examination.

**CASE**

AAT Café operates a restaurant in Kowloon. It maintains a good transaction processing system and has the following record regarding costs at different levels of monthly sales in number of guests served.

	Year 2011		
	April	May	June
Monthly Sales in number of Guests Served	5,000	8,000	10,000
	HK\$	HK\$	HK\$
Cost of Sales (Food Cost)	210,000	336,000	420,000
Salaries, Wages, and Benefits	150,000	156,000	160,000
Telephone	1,275	1,635	1,875
Rent on the Shop	96,000	96,000	96,000
Depreciation on Equipment	12,000	12,000	12,000
Utilities	25,000	32,500	37,500
Maintenance and Repairs	10,000	14,800	18,000
Administrative Costs	52,000	52,000	52,000

Though the café is small, the owner of AAT Café Sammy Yan has a good management accounting system. To better manage the costs, Sammy separates the costs into fixed costs and variable costs. After that, she makes use of a cost equation to predict the cost behaviour and formulate the prices of the products. In addition, she is aware of the importance of strategic management techniques.

One of the popular foods offered by AAT Café is roast goose. AAT prepares roast geese in its kitchen. A fresh goose costs HK\$250, after special treatment and the roasting process, it is sold in the café for HK\$400. Detailed studies give the following information for the costs of a goose:

Energy	HK\$25
Staff	HK\$10
Depreciation	HK\$25
Ingredients	HK\$15
Rent	HK\$15

Due to accelerating operating costs, Sammy is considering to outsource the preparation of the roast geese to an external vendor. If it is outsourced, energy and ingredient costs can be saved. Since the related equipment cannot be sold immediately, depreciation cannot be reduced. In addition, the rent for the storage of equipment and for raw and finished geese will remain the same. Staff will be deployed to perform other duties.

**Question 1** (29 marks – approximately 52 minutes)

- (a) Explain the meaning of fixed cost and variable cost. Based on the given information, state which are the fixed costs and variable costs, and their respective amounts for AAT Café in April 2011. (5 marks)
- (b) Explain the meaning of mixed costs. Based on the given information, state the mixed costs and their values for AAT Café in April 2011. (4 marks)
- (c) Using the results from parts (a) and (b), work out a linear cost equation based on the number of guests. Show your working clearly. (10 marks)
- (d) What is the total cost in a month if the number of guests is 15,000? Provide TWO assumptions in this calculation and show your working clearly. (5 marks)
- (e) State THREE techniques commonly used by management accountants in the strategic management accounting framework. (5 marks)

**Question 2** (11 marks – approximately 20 minutes)

Many caterers face accelerating food costs and labour costs. To cope with such inflation, outsourcing and centralised processing are two important trends in the catering business.

**Required:**

- (a) If a vendor offers to supply finished roasted geese at HK\$260 each, justify whether this is a good deal. Show your calculations. (7 marks)
- (b) State ONE qualitative reason to support outsourcing and TWO qualitative reasons to object outsourcing. (4 marks)

\* \* \* END OF SECTION A \* \* \*

**SECTION B (ANSWER THREE QUESTIONS ONLY)** (Total: 60 marks)

Answer any **THREE** questions in this section. Each question carries 20 marks. Together they are worth 60% of the total marks for this examination.

**Question 3** (20 marks – approximately 36 minutes)

Return On Investment (ROI), Residual Income (RI) and Economic Value Added (EVA) are three common financial measures for evaluating investment returns particularly among divisions in a decentralised company. Below shows the income statement and the partial statement of financial position of a division of PBE Co. Ltd.

	HK\$'million
Sales	550
Cost of goods sold	275
Other expenses	75
Profit before tax	200
Tax (35%)	70
Profit after tax	130

**Assets**

Property, plants and equipment	1,170
Less: accumulated depreciation	(360)
Net fixed assets	810
Other assets	110
Net working capital	80
Total assets less current liabilities	1,000

**Required:**

- (a) Define and calculate the return on investment of that division. (3 marks)
- (b) Suggest THREE ways to increase the return on investment. (6 marks)
- (c) Briefly explain one major weakness of Return On Investment (ROI). (3 marks)
- (d) Briefly explain what Economic Value Added (EVA) is and one of its major weaknesses. (3 marks)
- (e) If the cost of capital is 10%, calculate the Economic Value Added (EVA). (3 marks)
- (f) Suggest one advantage of decentralised corporate structure. (2 marks)

**Question 4 (20 marks – approximately 36 minutes)**

In investment, fund managers try to increase the returns and decrease the variations in returns. A portfolio consists of 40% investment in stock M and 60% investment in stock N.

**Required:**

- (a) What is the name of the measure used to describe variations in returns?  
(2 marks)
- (b) If a stock M has returns of 2%, -12%, 27%, 22% and 18% in the past 5 years. Calculate the arithmetic average return and the geometric average return.  
(4 marks)
- (c) Calculate the measure you suggest in part (a) for the stock mentioned in part (b). Briefly explain why fund managers would try to minimize this measure.  
(5 marks)
- (d) If another stock N has the measure used to describe its variation in returns as mentioned in part (a) equal to 5% and the correlation coefficient with stock M is 0.3, calculate the overall variation measure as described in part (a) for that portfolio.  
(6 marks)
- (e) Suggest one way that an investor can use to reduce the overall variation in returns for that portfolio which still consists of stock M and stock N.  
(3 marks)

**Question 5 (20 marks – approximately 36 minutes)**

Reputable listed companies regard dividend payments as a tool to attract investors. The board of a listed company M in Hong Kong announced in its annual financial result 2009 that “Going forward, subject to the financial conditions of the Company, the Board intends to follow a progressive dividend policy.” The annual dividend of this company increased from HK\$0.42 per share in 2006, to HK\$0.45 in 2007, HK\$0.48 in 2008, HK\$0.52 in 2009 and HK\$0.59 in 2010.

**Required:**

- (a) By using an appropriate formula, explain why the board of company M used a progressive dividend policy. (6 marks)
- (b) What are the two important ratios used to measure the performance of dividend payment? Briefly provide an explanation. (6 marks)
- (c) Find the growth of dividend in each respective year from 2006 to 2010. Hence find the arithmetic average dividend growth rate of company M. (5 marks)
- (d) Assuming 2011 dividend growth rate is equal to the average dividend growth rate from 2006 to 2010 in part (c), based on the dividend per share distributed in year 2010 and the average dividend growth rate, if the price of the share at the end of year 2010 was HK\$27, find the required return. (3 marks)

**Question 6 (20 marks – approximately 36 minutes)**

A company can finance its operation by issuing shares or debt. A company is going to finance its new facilities which costs HK\$50,000,000. The existing net profit before interest and tax is HK\$30,000,000 and it has 10,000,000 shares outstanding. Management is considering two plans:

Plan 1: Issue HK\$50,000,000 5% bond.

Plan 2: Issue 5,000,000 shares for HK\$50,000,000.

The new cash of HK\$50,000,000 can generate additional profit before interest and tax of HK\$20,000,000. The current tax rate is 16.5%.

**Required:**

- (a) Explain one possible disadvantage from the shareholders' point of view when a company (i) issues shares and (ii) issues bonds respectively. (4 marks)
- (b) Calculate the earnings per share (EPS) under Plan 1 by including both the existing and new profit. (5 marks)
- (c) Calculate the earnings per share (EPS) under Plan 2 by including both the existing and new profit. (5 marks)
- (d) Compare the results in parts (b) and (c), draw your conclusion. (3 marks)
- (e) Explain one risk to shareholders in using Plan 1. (3 marks)

\* \* \* END OF EXAMINATION PAPER \* \* \*



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# Answers

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Paper II  
PBE Management  
Accounting and Finance  
(December 2012 Session)

**SECTION A (COMPULSORY)** (Total: 40 marks)

**Answer 1(a)**

Fixed costs refer to costs which are unchanged despite a change in activity level within a relevant range. Rent, depreciation and administrative costs are fixed and their values in April 2011 were respectively HK\$96,000, HK\$12,000 and HK\$52,000.

Variable costs refer to costs which change with activity level. Cost of sales is variable and its value was HK\$42 per guest (or \$210,000) in April 2011.

**Answer 1(b)**

Mixed costs refer to costs which consist of both fixed and variable portions. Salaries and wages, telephone, utilities and maintenance are mixed costs. The values were HK\$150,000, HK\$1,275, HK\$25,000 and HK\$10,000 respectively in April 2011.

**Answer 1(c)**

	April	May	June	Unit	Total
Monthly Sales in Guests Served	5,000	8,000	10,000	Variable cost	Fixed cost
	HK\$	HK\$	HK\$	HK\$	HK\$
Cost of Sales (Food Cost )	210,000	336,000	420,000	42	0
Salaries, Wages, and Benefits	150,000	156,000	160,000	2	140,000
Telephone	1,275	1,635	1,875	0.12	675
Rent on the shop	96,000	96,000	96,000	0	96,000
Depreciation on Equipment	12,000	12,000	12,000	0	12,000
Utilities	25,000	32,500	37,500	2.5	12,500
Maintenance and Repairs	10,000	14,800	18,000	1.6	2,000
Administrative Costs	52,000	52,000	52,000	0	52,000
				48.22	315,175

Cost equation: total cost = HK\$48.22 x number of guests + HK\$315,175

**Answer 1(d)**

When guests = 15,000, total cost = HK\$48.22 x 15,000 + HK\$315,175 = HK\$1,038,475

Assumptions:

- the relationship still holds when guests = 15,000
- all variables are included in the equation
- it is a linear relationship

**Answer 1(e)**

Some techniques in strategic management accounting include Just-in-Time (JIT), Total Quality Management (TQM), Quality Costing, Product Life Cycle Costing, Target Costing etc.

**Answer 2(a)**

A comparison of the costs incurred is as follows:

	<b><u>Inhouse</u></b> (HK\$)	<b><u>Outsource</u></b> (HK\$)
Energy	25	0
Staff	10	10
Depreciation	25	25
Ingredients	15	0
Rent	15	15
Goose	250	260
Total	340	310

If the goose is produced in-house, the cost is HK\$340, if it is outsourced, the cost is HK\$260, together with other unavoidable costs, total cost is HK\$310. It is suggested to outsource the production.

**Answer 2(b)**

One advantage of having outsourcing is that AAT Café can concentrate on its core business or other areas. In addition, resources can be put into other product lines. Some disadvantages of outsourcing include difficult quality control and punctuality in delivery. Also, if customers know that the roast geese are not produced by AAT Café, it may affect the AAT Café's reputation.

\* \* \* END OF SECTION A \* \* \*

**SECTION B (ANSWER THREE QUESTIONS ONLY)** (Total: 60 marks)

**Answer 3(a)**

Return on investment is defined as profit after tax / total assets less total liabilities. In this case, the return on investment is HK\$130 million / HK\$1,000 million = 13%

**Answer 3(b)**

Based on the definition, the three ways to increase return on investment include increase in sales revenue (hence profit), reduce expense (hence increase profit) and to reduce assets and liabilities.

**Answer 3(c)**

Evaluation just based on Return On Investment (ROI) may focus on revenue increase and cost decrease, this may not be in line with the company's strategy.

**Answer 3(d)**

Economic Value Added (EVA) is residual income which measures net operating profit earned less the minimum required return on average operating assets. EVA may fail to measure long term benefit such as movie production.

In addition, EVA does not consider the time value of money and could easily be distorted by accounting treatment as it starts with profit after tax.

**Answer 3(e)**

EVA = Profit after tax - cost of capital x equity used = HK\$130 million - (10% x HK\$1,000 million) = HK\$30 million

**Answer 3(f)**

Decentralised corporate structure enables management to make prompt decisions which are more responsive to the market. Management may also gain experience in the decision making process.

#### Answer 4(a)

The measure used to describe variations in returns is called variance or standard deviation.

#### Answer 4(b)

$$\text{Arithmetic return} = (0.02 - 0.12 + 0.27 + 0.22 + 0.18) / 5 = 0.114 = 11.4\%$$

$$\begin{aligned} \text{Geometric return} &= (1+r_1) \times (1+r_2) \times (1+r_3) \times (1+r_4) \times (1+r_5)^{\frac{1}{5}} - 1 \\ &= (1+2\%) \times (1-12\%) \times (1+27\%) \times (1+22\%) \times (1+18\%)^{\frac{1}{5}} - 1 = 10.4\% \end{aligned}$$

#### Answer 4(c)

$$\begin{aligned} \text{Variance} &= 1/(n-1) \times \text{summation of (returns - arithmetic returns)}^2 \\ &= [1/(5-1)] [(0.02 - 0.114)^2 + (-0.12 - 0.114)^2 + (0.27 - 0.114)^2 + (0.22 - 0.114)^2 + \\ &\quad (0.18 - 0.114)^2] = 2.588\% \text{ (standard deviation} = 16.09\%) \end{aligned}$$

If the variance (or standard deviation) is minimized, the risk in having fluctuations in returns are reduced, it would be welcomed by investors as investors prefer returns but not when they have too much variation.

#### Answer 4(d)

$$\begin{aligned} \sigma_p^2 &= w_1^2 \sigma_1^2 + w_2^2 \sigma_2^2 + 2w_1w_2 \text{Cov}(r_1, r_2) \text{ where } \sigma \text{ is the respective SD and } W \text{ is the weight} \\ &\text{of respective stock} \\ &= (0.4 \times 0.4 \times 2.588 + 0.6 \times 0.6 \times 5 + 2 \times 2.588^{\frac{1}{2}} \times 5^{\frac{1}{2}} \times 0.3 \times 0.4 \times 0.6)^{\frac{1}{2}} = 1.65\% \text{ (variance} \\ &\text{case)} \end{aligned}$$

$$(0.4 \times 0.4 \times 2.588 + 0.6 \times 0.6 \times 5 + 2 \times 2.588 \times 5 \times 0.3 \times 0.4 \times 0.6)^{\frac{1}{2}} = 3.25\% \text{ (SD case)}$$

#### Answer 4(e)

One way to alter the overall variation is to change the weight of stock M and stock N in the portfolio. Alternatively, increase the number of shares in the portfolio.

(Any alternative answers may be acceptable)

**Answer 5(a)**

$P_0 = D_1/(r-g)$  where  $P_0$  is the current stock price,  $D_1$  is the dividend distributed in the coming year,  $r$  is the required return and  $g$  is the dividend growth rate. If progressive dividend policy is used,  $g$  increases, stock price increases and shareholders' wealth increases too.

**Answer 5(b)**

The two measures used to measure the performance of a dividend payment are dividend payout ratio and dividend yield. The former measures the percentage of profit distributed as dividend. The latter equals dividend per share divided by price per share.

**Answer 5(c)**

Year	Dividend	growth rate	avg. growth
2006	0.42		
2007	0.45	7.1%	
2008	0.48	6.7%	
2009	0.52	8.3%	
2010	0.59	13.5%	8.9%

**Answer 5(d)**

The required return is  $HK\$0.59 \times 1.089 / HK\$27 + 0.089 = 11.28\%$

**Answer 6(a)**

- (i) When a company issues shares, the existing shareholding is diluted.
- (ii) When a company issues bonds, it may lead to higher interest payments and higher possibility of bankruptcy risk.

**Answer 6(b) and 6(c)**

	<u>Plan 1</u>	<u>Plan 2</u>
	HK\$'000	HK\$'000
Net profit before issuance	30,000.0	30,000.0
Project net profit	20,000.0	20,000.0
Less interest	<u>2,500.0</u>	<u>0</u>
Net profit before tax	47,500.0	50,000.0
Profit tax (16.5%)	<u>7,837.5</u>	<u>8,250.0</u>
Profit after tax	<u>39,662.5</u>	<u>41,750.0</u>
Number of shares outstanding	10,000,000	15,000,000
Earnings per share	3.97	2.78

**Answer 6(d)**

The earnings per share is higher under plan 1. It is suggested to have the additional financing by borrowing rather than by issuing shares. In both cases, the earnings per share is improved though.

**Answer 6(e)**

Interest expense may affect the dividend paid to shareholders and financial distress. If interest expense is high, the dividend payment may be reduced. Using the MM model, a high debt level, hence high interest expense, may lead to financial distress and bankruptcy.

\* \* \* END OF EXAMINATION \* \* \*

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# Examination Panelist's Report

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Paper II  
PBE Management  
Accounting and Finance  
(December 2012 Session)



*(The main purpose of the following report is to summarise candidates' common weaknesses and make recommendations to help future candidates improve their performance in the examination.)*

## **General Comments**

Candidates performed satisfactorily in this paper. They were able to master the basic concepts of management accounting and finance, and applied them to solve application problems. However, it is suggested that candidates spend more time on revising the topic on investment return and portfolio management as overall performance was not up to standard in this part.

## **Specific Comments**

### **Section A – Compulsory Questions**

#### **Question 1 - 29 marks**

This question tested candidates' basic understanding of how to differentiate between different types of costs such as fixed cost, variable cost and mixed cost. It was a bit surprising that not many candidates were able to identify and explain these costs accurately. Thus, they failed to identify the linear cost equation for forecasting purposes. In part (e), not many candidates could provide the techniques used in strategic management accounting. It is suggested that candidates should not just memorize the terms but learn to relate them to real life situations.

#### **Question 2 - 11 marks**

This question tested candidates' ability to make decisions involving outsourcing and related qualitative considerations. The performance of candidates was better than expected.

### **Section B – Optional Questions**

#### **Question 3 - 20 marks**

This question assessed candidates' understanding of return on investment and economic value added (EVA). Many candidates chose this question and it was observed that they had mastered the basics of this topic well.

#### **Question 4 - 20 marks**

This question was answered unsatisfactorily and only a few candidates chose this question. The reason was probably that candidates were not familiar with the basics of investment. For example, despite its simple nature, only a few candidates could point out that standard deviation or variance is the measure used to describe variations in returns in part (a). Disappointingly, only very few candidates correctly calculated the answers to simple calculations such as the arithmetic average return and geometric average return. For the application sections (c) to (e), performance was very poor. It is suggested that candidates

should spend more time on these topics if they are going to continue their professional development.

Question 5 - 20 marks

This question tested candidates' understanding of dividend policy and its related calculation. Most candidates provided correct answers to this question.

Question 6 - 20 marks

This question tested candidates' ability to compare the merits of financing by debt and by equity. The performance was satisfactory. Most of candidates provided correct answers and explanations.

\* \* \* END OF EXAMINATION PANELIST'S REPORT \* \* \*