



Professional Bridging Examination

Paper II PBE Management Accounting and Finance

June 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

Millennium Air-conditioning Company Ltd. (Millennium) produces commercial and industrial air-conditioners. Its markets include mainland China, Latin America and North Africa. The company was formed in 1982 by Thomas Yung and was listed on the Stock Exchange in 1998. Thomas Yung is currently the Chairman of the company and the day to day operation is managed by the Chief Executive Officer (CEO) CK Yung. CK Yung is the elder son of Thomas Yung. The company has several directors. The Finance Director is Susan Yung, aged 28, the elder daughter of CK Yung. She obtained her Bachelor of Commerce degree from a local university and has just completed the HKICPA QP Examination and gained sufficient experience to become a Certified Public Accountant. The Operations Director is CM Yung. CM is the younger brother of CK.

In 2010, the annual turnover of Millennium was HK\$1.7 billion and the profit was HK\$50 million. The annual report reveals the following information about the remuneration of the senior management:

Name	Position	Annual remuneration (HK\$'million)
Thomas Yung	Chairman	5
CK Yung	CEO	20
Susan Yung	Finance Director	15
CM Yung	Operations Director	15

Besides these executive directors, the board has 10 other non-executive directors, with annual directors' fees of HK\$500,000 each. The directors' fees are comparable to blue-chip companies like listed airlines and energy companies in the Hang Seng Index. Thomas Yung explained that this level of directors' fees is needed in order to retain talented people.

Millennium has a very successful product, the Millennium King air-conditioner, with annual sales of over 100,000 units. The Millennium King currently contributes 60% of total sales. CK Yung worries about the sustainability of Millennium King and would like to spend more time developing new product. The company has just set up a research laboratory in Hefei and is developing an environmentally friendly product, Millennium Queen. The production of Millennium Queen adopts life cycle costing.

Life cycle costing enables management to track and accumulate individual costs of a product in the value chain from the R&D to final customers' services during its life cycle. For example, if the life cycle of a product lasts for 5 years, then individual costs are tracked for 5 years.

The set-up costs of a new production line for Millennium Queen is HK\$11.2 million. Every 6 months there will be a new production line in place. The development cost of the product is HK\$4 million and the project is expected to last for 10 years. The direct cost of each Millennium Queen is HK\$1,440 and each air-conditioner system requires 12 labour hours and 2 machine hours to produce. Indirect manufacturing costs are about HK\$320 million per year. It also incurs customer service cost of HK\$1,000 per system. It is expected that the Millennium Queen can generate sales of 20,000 units in the first year, at a sale price of HK\$22,400. Unit sales and price are projected to be constant over the following 9 years.

The research laboratory in Hefei has a canteen for staff and its operating hours are from 8 am to 8 pm. Management is considering extending operating hours to 9 pm. The additional labour cost during the extended hour is RMB5,000, variable food cost is 35% of revenue and other variable costs are 25% of revenue.

Question 1 (24 marks – approximately 43 minutes)

A business consultant is invited to study the corporate structure of Millennium and he has found that it has significant corporate governance issues. In addition, it doesn't have clear strategies for its future development. At the same time, management is exploring the possibility of extending the operating hours of the staff canteen at its Hefei research laboratory.

Required:

- (a) Identify TWO corporate governance issues of Millennium and suggest ways to address them. (6 marks)
- (b) Outline TWO possible strategies for Millennium to maintain its competitiveness. (4 marks)
- (c) Suggest TWO ways to enhance the internal control system during the production of the Millennium air-conditioners. (2 marks)
- (d) What is the minimum sales revenue that needs to be generated during the extended operating hour of the staff canteen to cover the variable food cost, other variable costs and the additional staff costs (in RMB)? Show your results by constructing a simple Income Statement for the extended operation (in RMB). (8 marks)
- (e) What other factors do you need to consider when you decide to extend the operating hours of the staff canteen? (4 marks)

Question 2 (16 marks – approximately 29 minutes)

- (a) Calculate the life-cycle revenue for the Millennium Queen air-conditioner. (2 marks)
- (b) What is the estimated life-cycle profit for the Millennium Queen air-conditioner for the first year? (6 marks)
- (c) Suggest a reason why the Millennium Queen can be sold at a higher price than the Millennium King. (2 marks)
- (d) Suppose you are the Financial Controller, prepare a memo to brief the board members on various pricing strategies. (6 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)

Companies often fail to survive because they have a shortage of cash at critical moments, especially during a financial crisis.

Retail companies A and B have the following financial information:

Company A

	Beginning (HK\$'million)	Ending (HK\$'million)	For the Year (HK\$'million)
Inventory	294	404	
Trade Receivables	411	597	
Trade Payables	419	548	
Net Sales			4,731
Cost of Goods Sold			2,000

Company B

	Beginning (HK\$'million)	Ending (HK\$'million)	For the year (HK\$'million)
Inventory	2,977	3,500	
Trade Receivables	3,828	2,043	
Trade Payables	3,849	4,500	
Net Sales			33,734
Cost of Goods Sold			15,298

Required:

- (a) Suggest a way to obtain additional finance during periods of financial difficulty. (2 marks)
- (b) Calculate the inventory turnover period, trade receivables turnover period and operating cycle in days for company A and company B respectively.
Comment on the results. (6 marks)
- (c) Calculate the trade payables period and cash cycle for company A and company B respectively.
Comment on the results. (6 marks)
- (d) What is the implication of having a long operating cycle? (2 marks)
- (e) Explain from Du Pont Identity why having a shorter operating cycle can improve the return on equity (ROE)? (4 marks)

Question 4 (20 marks – approximately 36 minutes)

Jackie Consulting is considering whether to buy or lease its office accommodation. The annual rent payable is HK\$2.2 billion while the purchase price is HK\$37 billion. Assume a 30 year time horizon and that there is no change in the annual rent payable and the price of the office accommodation at the end of 30 years. Discount rate is 3% p.a.

Required:

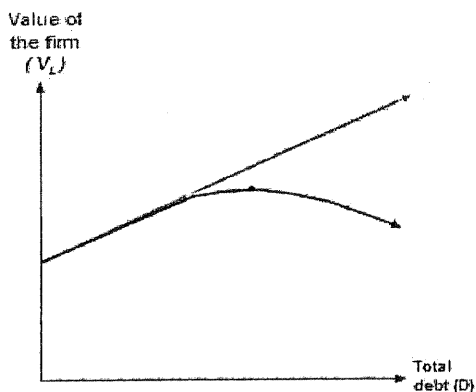
- (a) What is the payback period for the purchase? (2 marks)
- (b) What is the net present value (NPV) of the purchase? (6 marks)
- (c) Discuss some of the limitations of the calculation in (b). (6 marks)
- (d) Explain why some retail companies prefer to buy their shops rather than lease even where the NPV of the purchase is negative. (3 marks)
- (e) If you are a market leader or leading company, suggest TWO ways, other than purchase, to hedge against an increase in rental expense when a company is leasing its shop from a property developer. (3 marks)

Question 5 (20 marks – approximately 36 minutes)

Due to new capital requirements, many leading banks, including mainland banks, have either reduced their level of dividend payment or announced a rights issue.

Required:

- (a) By using an accounting equation, explain why the banks either reduced their dividend or announced a rights issue under the new requirements. (4 marks)
- (b) Sketch a graph with earnings per share (EPS) as the y-axis and earnings before interest and tax (EBIT) level as the x-axis; draw two lines, with one indicating “no debt” and the other indicating “with debt”. Explain their meanings briefly. (4 marks)
- (c) Modigliani and Miller (MM) put forward various propositions. What is the difference between MM proposition I and MM proposition II? (2 marks)
- (d) Why is tax advantageous to borrowing? What is the implication if there is no bankruptcy cost? (4 marks)
- (e) You are given the following graph. Explain, from the graph, MM proposition I and the optimal debt level. (6 marks)



(6 marks)

Question 6 (20 marks – approximately 36 minutes)

The efficiency market hypothesis states that there are three forms of market efficiency.

Required:

- (a) What are the THREE forms of market efficiency? (3 marks)
- (b) Many people keep a close watch on stock charts and stock prices in the media. What form of market efficiency do people assume? Discuss briefly the validity of this assumption. (4 marks)
- (c) Some professional investors read financial statements and annual reports of listed companies, as well as notices issued by the stock exchange. What form of market efficiency do professional investors assume? Discuss briefly the validity of this assumption. (4 marks)
- (d) A security guard of the carpark at a retail branch of a listed supermarket records the daily number of vehicles using the carpark. After consolidating the data, he concludes that the business is improving and he purchases the shares of that listed supermarket. What form of market efficiency does the security guard believe? Discuss briefly the validity of this belief. (4 marks)
- (e) "Market efficiency means no profit can be generated". Discuss this statement. (5 marks)

* * * END OF EXAMINATION PAPER * * *

Formula Sheet

Effective Annual Rate:

$$EAR = \left(1 + \frac{r}{m}\right)^M - 1 \quad EAR = e^r - 1$$

Present Values:

Ordinary annuity: $PV = C \left(\frac{1 - (1+r)^{-T}}{r} \right)$

Growing annuity: $PV = \left(\frac{C_1}{r-g} \right) \left[1 - \left(\frac{1+g}{1+r} \right)^T \right]$

Constant perpetuity: $PV = \frac{C}{r}$

Growing perpetuity: $PV = \frac{C_1}{r-g}$

IRR:

$$NPV = 0 = -C_0 + \frac{C_1}{(1+IRR)} + \frac{C_2}{(1+IRR)^2} + \frac{C_3}{(1+IRR)^3} + \dots + \frac{C_T}{(1+IRR)^T}$$

Expected Return, Variance, Covariance, and Correlation Coefficient:

$$\bar{R} = \sum_{i=1}^S p_i R_i \quad \sigma^2 = \sum_{i=1}^S p_i (R_i - \bar{R})^2 \quad \sigma_{AB} = \sum_{i=1}^S p_i (R_{Ai} - \bar{R}_A)(R_{Bi} - \bar{R}_B) \quad \rho_{AB} = \frac{\sigma_{AB}}{\sigma_A \sigma_B}$$

$$\bar{R}_p = X_A \bar{R}_A + X_B \bar{R}_B \quad \sigma_p^2 = X_A^2 \sigma_A^2 + X_B^2 \sigma_B^2 + 2X_A X_B \sigma_{AB}$$

Beta (or β):

$$\beta_i = \frac{\text{Cov}(R_i, R_M)}{\sigma_{R_M}^2}$$

Capital Structure - MM II (with corporate taxes):

$$r_s = r_0 + \frac{B}{S} (r_0 - r_B) (1 - T_c)$$

Miller-Orr Model

$$Z = [(3 \times TC \times V) / (4 \times R)]^{1/3} + L$$

$$H = 3Z - 2L$$

Answers

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

SECTION A (COMPULSORY) (Total: 40 marks)

Answer 1(a)

Taking into account the revenue (HK\$1.7 billion) and profit level (HK\$50 million) when compared with blue-chip companies, the director fees are too high.

There are too many people with closed relationships at the senior management level, which contradicts the spirits of good corporate governance.

To solve the problems, it is suggested to incorporate certain mechanisms to form a base to determine the directors' fees. Regarding the closed relationships at senior management level, it is suggested to invite external talented people to join the company and to set up a Selection Committee to recruit senior management.

Answer 1(b)

Millennium may compete with others on cost by leading others through low cost. This may be accomplished through proper outsourcing. It may differentiate its product from others by having distinct features. Involving good international designers can serve this purpose.

Answer 1(c)

Millennium may enhance the internal control system by using a quality control system like Total Quality Management (TQM) and six sigma in the production process. These would reduce the occurrence of errors in the process and enhance quality.

Answer 1(d)

The minimum sales revenue is $\text{RMB}5,000 / (1 - 35\% - 25\%) = \text{RMB}12,500$

	Income Statement
	RMB
Additional revenue	12,500
Additional food cost	(4,375)
Additional variable cost	<u>(3,125)</u>
Contribution margin	<u>5,000</u>

The contribution margin is equal to the additional staff cost.

Answer 1(e)

Other factors to consider when extending the operating hours of the canteen include the morale of the staff. Staff may feel unhappy if the operating hours are too long. Safety and maintenance issues are other factors. The longer the operating hours, the higher the safety risks. Equipment may suffer more frequent occurrence of failure if the operating hours are too long.

Answer 2(a)

Life Cycle Revenue = 20,000 x 22,400 x 2 x 10 = HK\$8,960,000,000

Answer 2(b)

		HK\$
Annual revenue (20,000 x 22,400 x 2)		896,000,000
Set-up costs	22,400,000	
Development costs	4,000,000	
Direct manufacturing costs	57,600,000	
Indirect manufacturing costs	320,000,000	
Customer service costs	40,000,000	444,000,000
		<u>452,000,000</u>

Answer 2(c)

The Millennium Queen is a new product which incorporates new features and functions such as energy saving, and thus it can be sold at a higher price.

Answer 2(d)

To: Board Members, Millennium Air-Conditioning Company Ltd.
From: Financial Controller
Re: Pricing strategies
Date: XX Dec 2011

I would like to brief board members on various pricing strategies. Some of the common ones are market-based pricing, cost plus pricing and target pricing.

The first strategy is market-based pricing. Prices are determined in an attempt to capture market share.

The second strategy is cost plus pricing. The price of a product is determined by the cost plus a certain profit margin and the profit margin is not a fixed number, it is determined by the market or base on return on investment.

The third strategy is target pricing. It determines the price of a product or service that potential customers will be willing to pay base on their preference and also on the response from the competitive environment.

There are still others like premium pricing and loss leader. I may discuss these strategies with you when it is appropriate.

XXX

* * * END OF SECTION A * * *

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

Answer 3(a)

Companies may get short-term financing by maintaining and using lines of credit from banks. Listed companies may get additional finance through a rights issue.

Answer 3(b)

	<u>A</u>	<u>B</u>
Inventory turnover	5.73	4.72
Inventory turnover period (days)	63.69	77.27
Trade receivables turnover	9.39	11.49
Trade receivables turnover period (days)	38.88	31.76
<i>Operating cycle (days)*</i>	<i>102.57</i>	<i>109.03</i>

**Operating cycle = Inventory turnover period + Trade receivables turnover period*

Company B has a relatively longer operating cycle than Company A. Its inventory turnover period is longer but its trade receivables turnover period is shorter as compared to Company A.

(Note: average figures in calculating inventory turnover and trade receivables turnover are acceptable)

Answer 3(c)

	<u>A</u>	<u>B</u>
Trade payables turnover	4.14	3.66
Trade payables turnover period (days)	88.24	99.6
<i>Cash cycle (days)*</i>	<i>14.33</i>	<i>9.43</i>

**Cash cycle = Operating cycle – Trade payables turnover period*

Company B has a shorter cash cycle than A. It takes on average 9.43 days between the time it pays for inventory and the time it collects cash on the sales. It succeeded in having a longer trade payables turnover period.

(Note: average figures in calculating trade payables turnover is acceptable)

Answer 3(d)

Having a long operating cycle indicates that it takes a long time from buying inventory to actual collection of cash. That is, a long time in converting inventory to trade receivables and finally cash.

Answer 3(e)

From Du Pont Identity, Return On Equity (ROE) = net profit margin x asset turnover x equity multiplier

The shorter the operating cycle, the shorter the cash cycle, and the lower the investment in inventories and receivables. Total assets are lower, the asset turnover is higher and ROE is higher.

Answer 4(a)

$$\begin{aligned} &= 37/2.2 \\ &= \underline{16.8 \text{ years}} \end{aligned}$$

Answer 4(b)

$$\begin{aligned} &= \text{HK\$}2.2 \left(\frac{1 - 1/(1+3\%)^{30}}{3\%} \right) - 37 + 37/1.03^{30} \\ &= 43.12 - 37 + 37/1.03^{30} \\ &= \underline{\text{HK\$}21.36 \text{ billion}} \end{aligned}$$

Answer 4(c)

In the above calculation, it was assumed that the annual rental payable is fixed, which in fact may not be the case as rental would change in line with the performance in the property market. In addition, the discount rate was arguable. People would argue on why certain rate was used as different discount rate would give different result. Finally, the terminal value of the accommodation may be changed instead of having a fixed figure. It is unbelievable that property price remained constant after 30 years as stated in the question.

Answer 4(d)

Some retail companies prefer to buy their shops rather than lease, even when the NPV of the purchase is negative, in order to maintain the stability and continuity of the operation. If the landlord suddenly increases the rent substantially, the business can no longer survive.

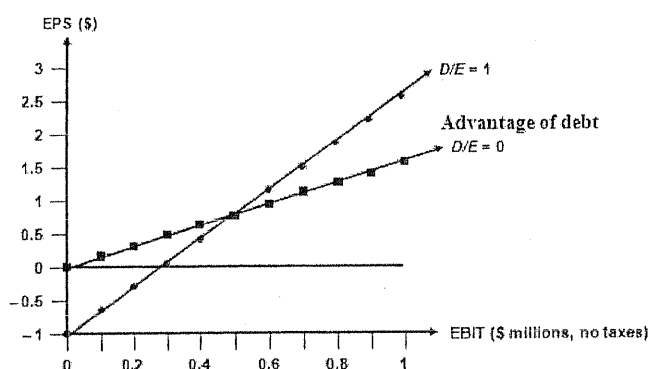
Answer 4(e)

The company concerned may buy the shares of the property developer to share in its profit through the dividend distributed and capital gain (as well as loss). It may reduce the impact of fluctuating rental expense by exercising influence in the industry. For example, if it is a leader in the market, it may get a better deal than others in the shopping mall by leasing more space or leasing a series of shops in different shopping malls owned by the same developer.

Answer 5(a)

New capital requirements imply higher than normal capital levels. In order to maintain a higher capital level, banks need to reduce dividends (which reduce capital) or issue new shares to existing shareholders (rights issue) to increase capital. Both ways can increase the amount of capital on the right hand side of the accounting equation.

Answer 5(b)



From the graph, when the earning (represented by EBIT) is high, the EPS of a company which has debt is higher than a company which hasn't got any debt. However, when the earning is low, the EPS of a company which has debt is lower than a company which hasn't got any debt. To conclude, when a company has debt, its variation in EPS is greater than that of a company hasn't got any debt.

Answer 5(c)

MM Proposition I discusses the relationship between debt level and firm value. MM Proposition II addresses the relationship between debt level and weighted average cost of capital (WACC).

Answer 5(d)

The higher the level of borrowing, the higher the tax deduction to interest expense. This brings present value to the firm. If there is no bankruptcy cost, a firm will continue its level of borrowing.

Answer 5(e)

From the graph, the straight line indicates that the higher the debt level, the higher the firm value. This is due to the tax shield from interest expense.

When there is bankruptcy cost, financial distress would reduce firm value from the maximum point. The higher the debt level, the higher the financial distress. The maximum firm value indicates the optimal level of debt.

Answer 6(a)

The three forms of market efficiency include weak form, semi-strong form and strong form efficiency.

Answer 6(b)

This is weak form efficiency. People are conducting technical analysis and they have no consistent advantages.

Answer 6(c)

This is semi-strong form efficiency. People are performing fundamental analyses of companies and they do not have consistent advantages in gaining a profit.

Answer 6(d)

This is strong form efficiency and it is related to private information. The security guard believed that with the private information he could beat the market and earn more profits.

Answer 6(e)

This statement is wrong. Market efficiency does not mean no profit can be generated. It means an investor cannot consistently generate profit through some trading rules and practices; otherwise, the market would violate certain forms of market efficiency.

* * * END OF EXAMINATION * * *

Examination Panelist's Report

Paper II
PBE Management
Accounting and Finance
(June 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 concept of management accounting and finance, and apply it to solve application problems. Quite a number of candidates misunderstood the information in Question 2, otherwise, the overall performance could have been even better.

Specific Comments

Section A – Compulsory Questions

Question 1 – 24 marks

This question tested candidates' basic understanding of corporate governance and internal control, and to apply management accounting concepts to solve the problem regarding the extension of operating hours of a staff canteen. Most students were able to spot the corporate governance issues of the company and to address the proposal to extend the operating hours of the staff canteen.

Question 2 – 16 marks

This question tested candidates' understanding of life cycle costing. This topic has seldom been asked before. Most students misunderstood the question and forgot to calculate the correct life cycle revenue and profit. With regard to the latter, students could give sound reasons for why the new product could be sold at a higher price and explained in the memo various pricing strategies.

Section B – Optional Questions

Question 3 – 20 marks

This question assessed candidates' understanding of the concepts of operating cycle, cash cycle, trade receivables cycle and trade payables cycle. As the question did not state whether an average should be used in the calculation, merits were given in each case. Most candidates correctly answered the implication of having a long operating cycle but only a few could interpret why a short operating cycle could improve the return on equity.

Question 4 – 20 marks

This question was answered satisfactorily. It asked a typical question faced by companies in Hong Kong: whether to purchase or lease office accommodation. Most candidates provided the correct answers to parts (d) and (e).

Question 5 – 20 marks

This question was not well answered by candidates. Candidates failed to provide the correct answers to most parts of the question. Part (a), asked candidates about the assumption of new capital requirement. It was quite surprising that, despite the hint “by using accounting equation” was given in the question, most of the candidates produced incorrect answers.

In part (b), only a few candidates could provide the correct diagram showing that the higher the debt level, the more variation there is between EPS and EBIT than under a no debt situation. In part (c), again, only a few candidates knew the difference between MM I and MM II. It is suggested that in future students should revise the basic rationale behind this important corporate finance theory.

Question 6 – 20 marks

This question tested candidates’ ability to distinguish between different forms of market efficiency. Most candidates handled this question very well and only a few were confused with regard to the hypothesis.

* * * END OF EXAMINATION PANELIST’S REPORT * * *

