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Teachers' seminar on BAFS :  
**Experience Sharing -  
Cost Accounting**

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for Business Education**  
**2nd April 2011**

# AL Syllabus – An introduction to Managerial Accounting

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## 1. Costing principles and systems

- (a) Introducing managerial accounting  
(Entries for interlocking cost accounting system are not required)
- (b) Costing for materials, labour and overheads
- (c) Preparation of manufacturing account
- (d) Costing systems: job costing, process costing, and activity-based costing  
(Costing of normal and abnormal losses is required but costing of by-products and waste products is excluded)
- (e) Marginal costing Vs absorption costing
- (f) Cost-volume-profit (CVP) analysis (marginal costing only)

# AL Syllabus – An introduction to Managerial Accounting

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## 2. Standard costing **Deleted**

- (a) Establishing cost standards
- (b) Preparation of trading and profit and loss account under standard costing system (including treatment of variances)
- (c) Variance analysis
  - i. Sales - sales price variance and sales volume variance
  - ii. Direct materials - material price variance and material usage variance
  - iii. Direct labour - wage rate variance and labour efficiency variance  
(Analysis of overhead variance and calculation of sales mix and material mix variances are excluded)

# AL Syllabus – An introduction to Managerial Accounting

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## **Included in Business Management Module**

### 3. Budgeting

- (a) Advantages and uses
- (b) Fixed Vs flexible budgets
- (c) Factors to consider in setting and revising budgets
- (d) Cash budgets
- (e) Budgeted profit and loss accounts and balance sheets

### 4. Investment appraisal

- (a) Financial factors affecting investment decisions
  - ascertainment of future cash flows, payback, and accounting rate of return
  - net present value and internal rate of return (Calculation of IRR is not required)
- (b) Non-financial factors affecting investment decisions

# Comparison between Syllabuses

BAFS – Accounting Module	Advanced Level Examination
<p data-bbox="197 624 663 676"><b>2(b) <i>Cost Accounting</i></b></p> <p data-bbox="322 746 925 842"><b>Cost Classification, Concepts and Terminology</b></p> <ul data-bbox="322 874 1075 1220" style="list-style-type: none"><li data-bbox="322 874 1075 1029">- Explain the general nature of cost accounting and appreciate its importance for financial decision-making.</li><li data-bbox="322 1069 1075 1220">- Distinguish between direct and indirect costs, fixed and variable costs, and factory and administrative overheads.</li></ul>	<p data-bbox="1128 619 2007 710"><b>IV. AN INTRODUCTION TO MANAGERIAL ACCOUNTING</b></p> <ol data-bbox="1128 746 1926 1157" style="list-style-type: none"><li data-bbox="1128 746 1926 1013">1. Costing principles and systems<ol data-bbox="1227 874 1926 1157" style="list-style-type: none"><li data-bbox="1227 874 1926 1013">(a) Introducing <b>managerial accounting</b> (Entries for interlocking cost accounting system are not required)</li><li data-bbox="1227 1069 1926 1157">(b) <b>Costing for materials, labour and overheads</b></li></ol></li></ol>

# Comparison between Syllabuses

BAFS – Accounting Module	Advanced Level Examination
<p data-bbox="192 710 658 770"><b>2(b) Cost Accounting</b></p> <p data-bbox="315 863 535 911"><b>Job Costing</b></p> <ul data-bbox="315 935 1070 1270" style="list-style-type: none"><li data-bbox="315 935 1070 1046">- Explain the job costing system for manufacturing operations.</li><li data-bbox="315 1098 1070 1270">- Illustrate the allocation and apportionment of costs to a single job or product.</li></ul>	<p data-bbox="1137 703 2029 807"><b>IV. AN INTRODUCTION TO MANAGERIAL ACCOUNTING</b></p> <ol data-bbox="1137 850 2029 1206" style="list-style-type: none"><li data-bbox="1137 850 2029 1206">1. Costing principles and systems<ol data-bbox="1234 935 2029 1206" style="list-style-type: none"><li data-bbox="1234 935 2029 1206">(d) Costing systems: <b>job costing</b>, <b>process costing</b>, and <b>activity-based costing</b> (Costing of normal and abnormal losses is required but costing of by products and waste products is excluded)</li></ol></li></ol>

# Comparison between Syllabuses

BAFS – Accounting Module	Advanced Level Examination
<p data-bbox="192 639 658 695"><b>2(b) Cost Accounting</b></p> <p data-bbox="315 775 936 823"><b>Marginal and Absorption Costing</b></p> <ul data-bbox="315 850 1061 1302" style="list-style-type: none"><li data-bbox="315 850 1061 1090">- Compare the use of marginal and absorption costing in preparing:<ul data-bbox="383 970 875 1090" style="list-style-type: none"><li data-bbox="383 970 875 1023">(i) manufacturing accounts</li><li data-bbox="383 1042 875 1090">(ii) income statements.</li></ul></li><li data-bbox="315 1145 1061 1302">- Compare the advantages and disadvantages of adopting marginal and absorption costing.</li></ul>	<p data-bbox="1137 632 2029 727"><b>IV. AN INTRODUCTION TO MANAGERIAL ACCOUNTING</b></p> <p data-bbox="1137 767 1794 815"><b>1. Costing principles and systems</b></p> <ul data-bbox="1234 850 1973 1007" style="list-style-type: none"><li data-bbox="1234 850 1973 898">(e) <b>Marginal costing Vs absorption costing</b></li><li data-bbox="1234 962 1973 1007">(c) <b>Preparation of manufacturing account</b></li></ul>

# Comparison between Syllabuses

BAFS – Accounting Module	Advanced Level Examination
<p data-bbox="219 560 674 608"><b>2(b) Cost Accounting</b></p> <p data-bbox="338 671 1010 711"><b>Cost Accounting for Decision-making</b></p> <ul data-bbox="338 735 1111 1477" style="list-style-type: none"><li data-bbox="338 735 1111 911">- Identify the nature of various cost items and their relevance to decision-making: <b>sunk costs, incremental costs</b> and <b>opportunity costs</b>.</li><li data-bbox="338 943 1111 1254">- Apply costing concepts and techniques in business decisions e.g. ‘<b>hire, make or buy</b>’, ‘<b>accept or reject an order at a special price</b>’, ‘<b>retain or replace equipment</b>’, ‘<b>sell or process further</b>’, and ‘<b>eliminate or retain an unprofitable segment</b>’.</li><li data-bbox="338 1294 1111 1477">- Conduct cost-volume-profit analysis to assess the effects of changes in costs, selling price and units sold on the breakeven point and target profit.</li></ul>	<p data-bbox="1144 552 2011 632"><b>IV. AN INTRODUCTION TO MANAGERIAL ACCOUNTING</b></p> <p data-bbox="1144 663 1783 703"><b>1. Costing principles and systems</b></p> <p data-bbox="1234 1302 1883 1382">(f) <b>Cost-volume-profit (CVP) analysis</b> (marginal costing only)</p>



# Financial Accounting Vs Management (Cost) Accounting

	<b>Financial Accounting</b>	<b>Management Accounting</b>
<b>Time Dimension</b>	Past	Past, present and future
<b>Principle Objectives</b>	Stewardship of business for benefit of shareholders	To improve economy, efficiency and effectiveness
<b>Report Recipients</b>	External - Shareholders / investors - Government authority	Internal - Directors - Company managers
<b>Outputs (Form, focus and frequency)</b>	Financial statements for the whole business: (semiannual and annual reports) - Income Statement - Statement of Financial Position - Statement of Cash Flow	Reports and statements on individual parts or segments: - Detailed daily, weekly, monthly or annual management accounts showing results by product and function - Ad hoc reports
<b>Regulating Framework</b>	Accounting standards plus statutory requirements of the Companies Ordinances	None prescribed

# Manufacturing Account

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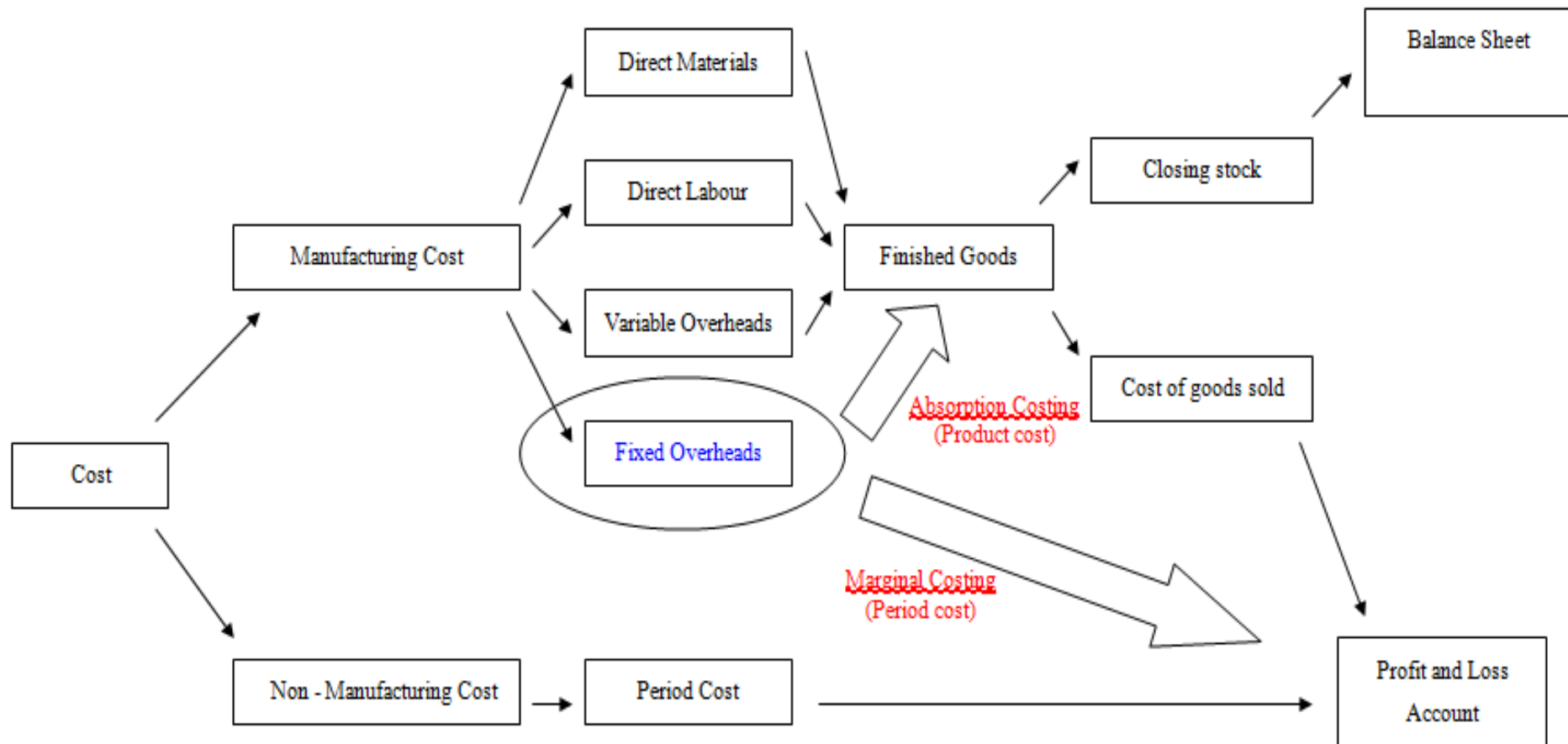
A. **Under Financial Accounting**

B. **Under Management/  
Cost Accounting**

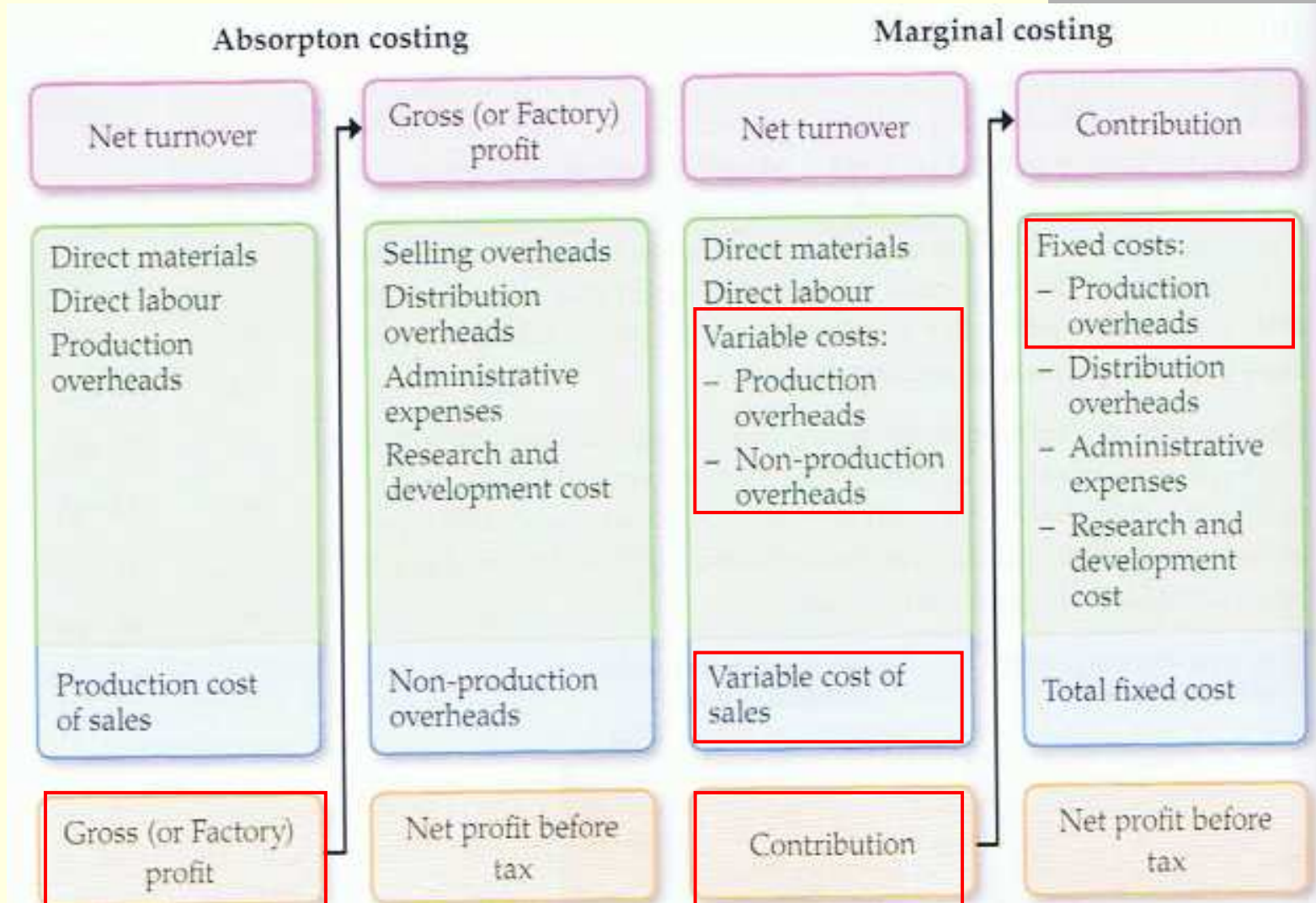
1. **Absorption Costing**

2. **Marginal Costing**

# Absorption Vs Marginal Costing



# Absorption Vs Marginal Costing



## Income statement prepared under absorption costing

		\$	\$
Baby Toys			
Income Statement for the year ended 31 March 2012			
		\$	\$
Sales (1,100 × \$100)			110,000
Less Cost of goods sold:			
Opening inventory		8,000	
Add Manufacturing cost of goods completed [(1,000 × (\$18 + \$8 + \$4)) + (1,000 × \$10)]		40,000	
Cost of goods available for sale		48,000	
Less Closing inventory ( $\$40,000 \times \frac{100}{1,000}$ ) <sup>Note</sup>		(4,000)	(44,000)
<b>Gross profit</b>			66,000
Less Marketing costs [(1,100 × \$5) + \$15,000]			(20,500)
Net profit			<u>45,500</u>

## Income statement prepared under marginal costing

		\$	\$
Baby Toys			
Income Statement for the year ended 31 March 2012			
		\$	\$
Sales			110,000
Less Variable cost of goods sold:			
Opening inventory		6,000	
Add Variable manufacturing cost of goods completed [1,000 × (\$18 + \$8 + \$4)]		30,000	
Variable cost of goods available for sale		36,000	
Less Closing inventory ( $\$30,000 \times \frac{100}{1,000}$ ) <sup>Note</sup>		(3,000)	(33,000)
Product contribution margin			77,000
Less Variable marketing costs (1,100 × \$5)			(5,500)
<b>Total contribution margin</b>			71,500
Less Fixed manufacturing costs		10,000	
Fixed marketing costs		15,000	(25,000)
Net profit			<u>46,500</u>

# Manufacturing Account and Income Statement

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A. **Under Financial Accounting**  
**Absorption Costing (HKAS2)**



B. **Under Management/  
Cost Accounting**

1. **Absorption Costing (HKAS2)**

2. **Marginal Costing  
(Contribution Approach)**

# Manufacturing Account and Income Statement

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- 1. Absorption Costing (HKAS2)**  
**Classification by function**
- 2. Marginal Costing**  
**(Contribution Approach)**  
**Classification by behaviour**

# Absorption Costing Vs Marginal Costing

**Difference in reported profit for Absorption Costing and Marginal Costing**

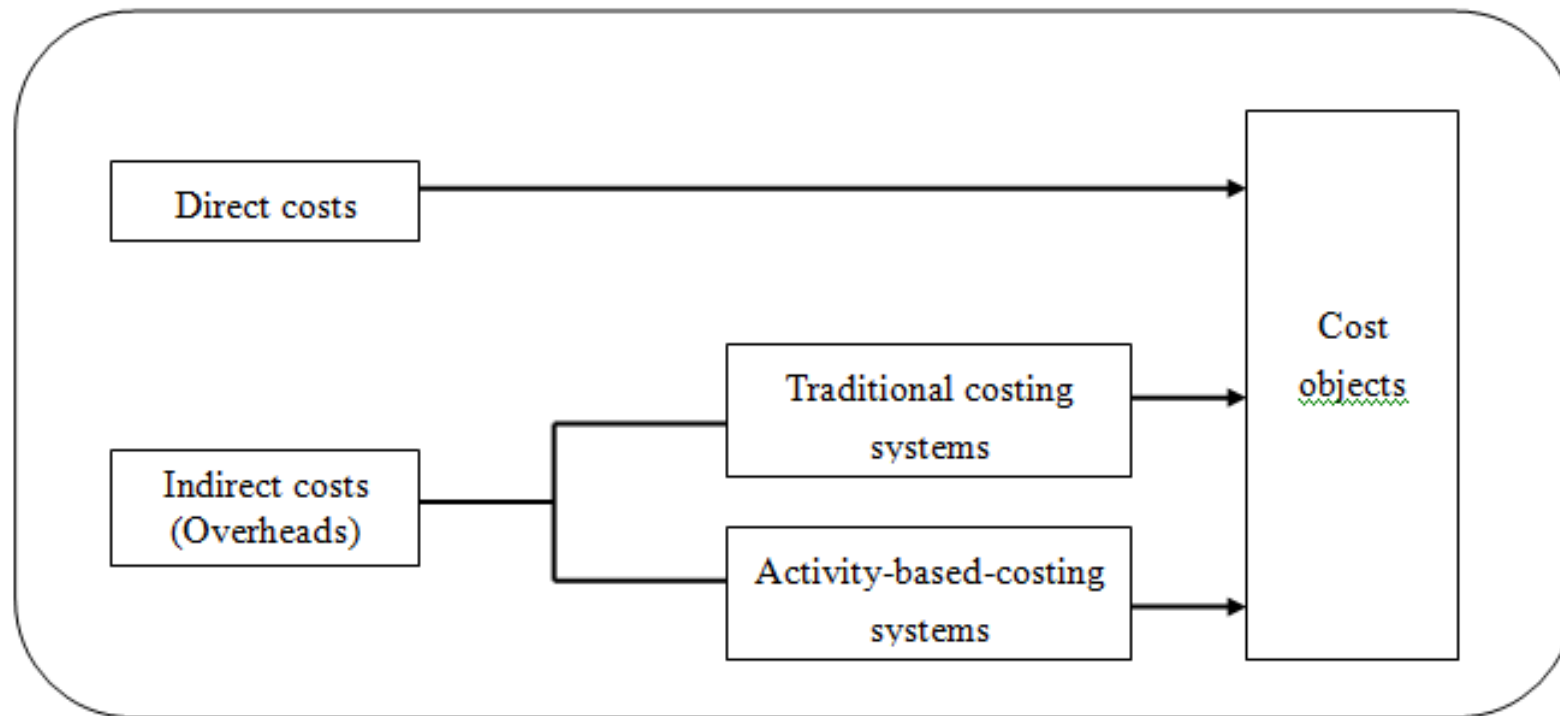
	Increase/(Decrease) in closing stock	Cost	Net Income
In Period <i>(Production = Sales)</i>	No change	AC = MC	AC = MC
In Period <i>(Production &gt; Sales)</i>	Increase	AC < MC	AC > MC
In Period <i>(Sales &gt; Production)</i>	(Decrease)	AC > MC	AC < MC

Relationship between inventory level and net profit figure.

Reconciliation of the difference in net profit may be required.



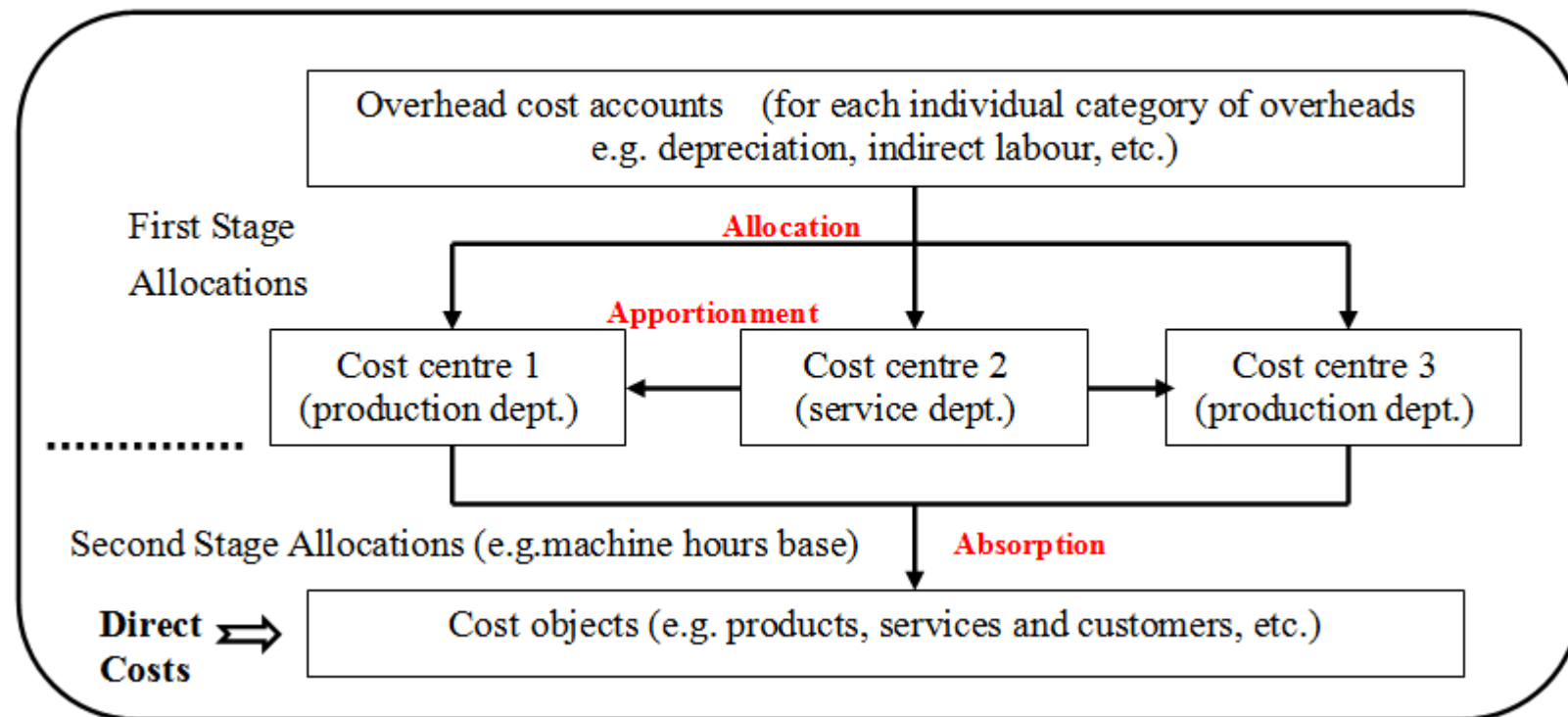
# Job Costing – Cost Assignment



Cost allocations and cost tracing

# Job Costing – Cost Assignment

The two-stage overhead allocation process for a traditional costing system



# Job Costing – Cost Assignment

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## 1. **Overhead Allocation**

**Basis of allocation e.g. area occupied, machine value, no. of workers.**

## 2. **Overhead Apportionment**

**Re-apportion OH of service dept. to production dept. (problem of inter-service : Direct method, Repeated distribution, Simultaneous equation)**

# Job Costing – Cost Assignment

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## **3. Overhead Absorption**

### ➤ **Single vs Multiple Overhead Absorption Rate**

(Blanket rate vs Departmental rates)

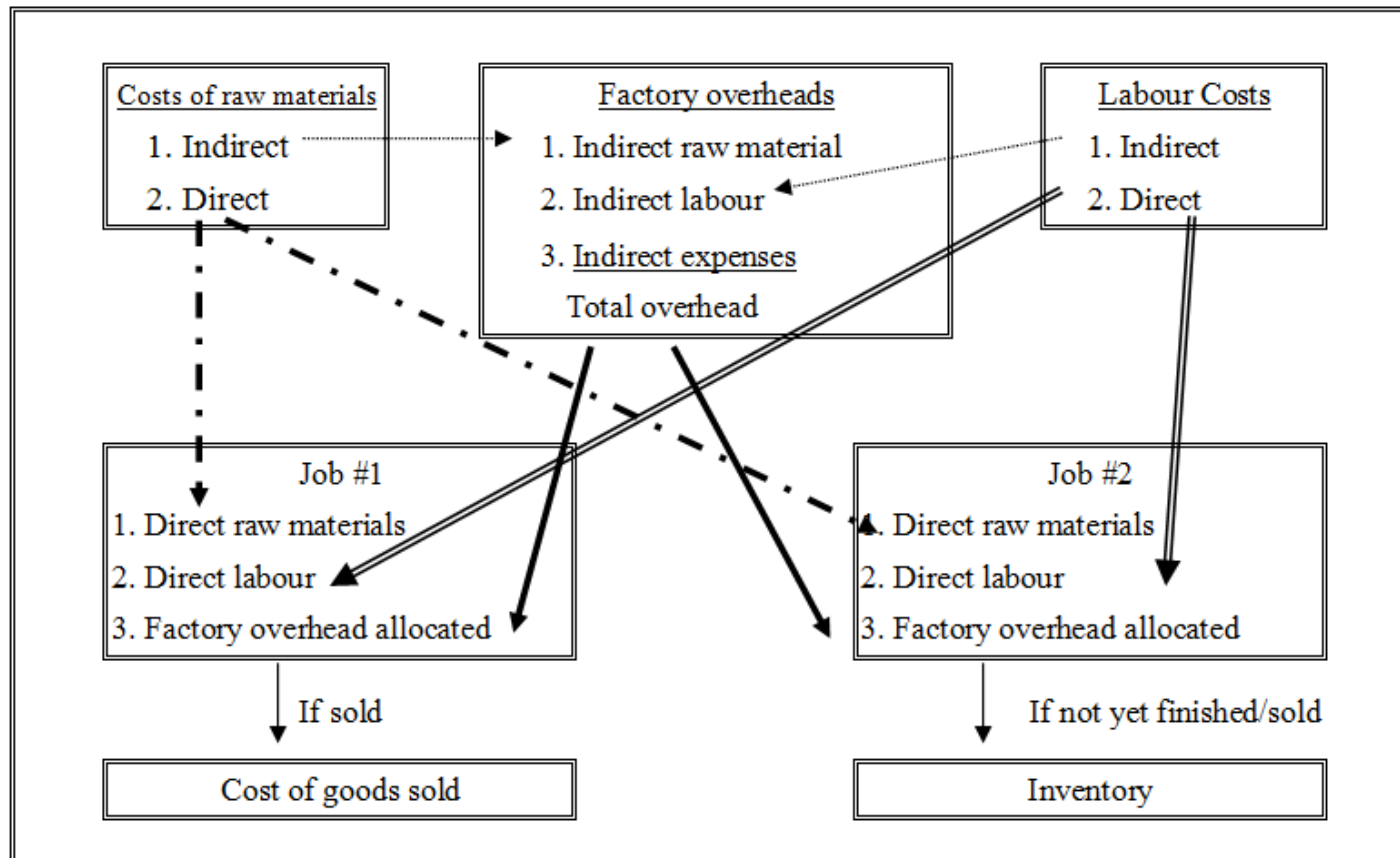
### ➤ **Actual vs Predetermined Overhead Absorption Rate**

(Actual Costing vs Normal Costing)

### ➤ **Over- or Under-absorbed Overhead**

# Job Costing – Final calculation

Cost Flow of Job Costing



**Note:** The above Flow Chart assumes that there is only *one single production department* in the factory. It further assumes that *no direct expenses* are incurred.

# Cost-Volume-Profit Analysis

## Contribution Margin Concept

Contribution margin is the excess of sales revenues over variable costs.

$$\text{Contribution margin} = \text{Sales} - \text{variable costs}$$

Contribution margin per unit is the dollars from each unit of sales available to cover fixed costs and provide income from operations.

$$\begin{array}{l} \text{Contribution margin per unit} \\ \text{(Unit contribution margin)} \end{array} = \frac{\text{Sales} - \text{Variable costs}}{\text{No of unit}}$$

Contribution margin ratio (profit-volume ratio) indicates the percentage of each sales dollar available to cover the fixed costs and to provide income from operation.

$$\boxed{\text{Contribution margin ratio/percentage}} = \frac{\text{Sales} - \text{Variable costs}}{\text{Sales}}$$

# Cost-Volume-Profit Analysis

## Break-even Analysis

The break-even point is the level of operations at which a business's revenues and expired costs are exactly equal.

$$\text{Break-even sales (units)} = \frac{\text{Fixed Costs}}{\text{Unit contribution margin}}$$

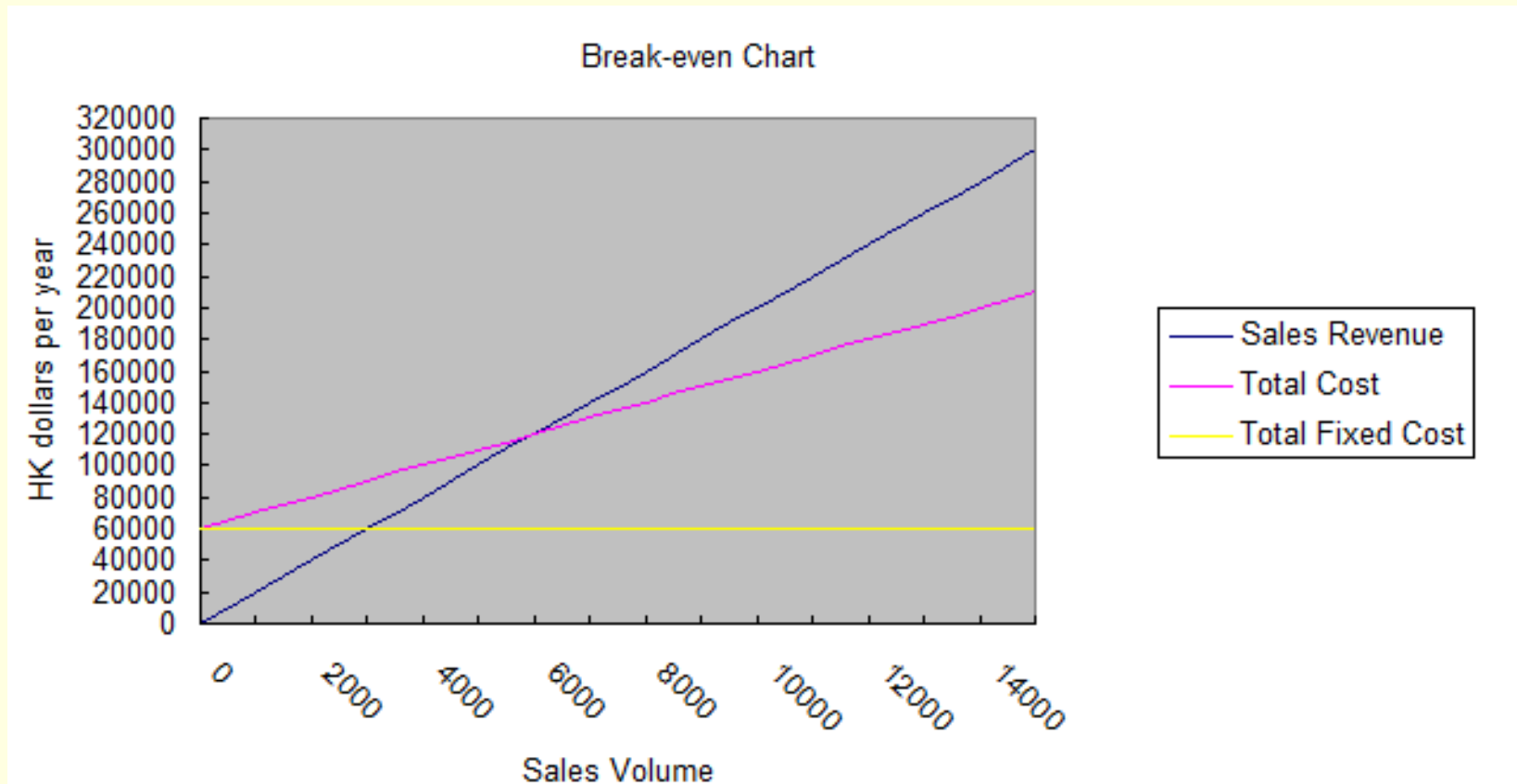
$$\text{Sales units for target profit} = \frac{\text{Fixed Cost} + \text{Target profit}}{\text{Unit contribution margin}}$$

## Alternative method to calculate break-even sales and sales for target profit

$$\text{Net profit} = (\text{Sales revenue} * \text{P/V ratio}) - \text{Fixed Costs}$$

- ➔  $\text{Net Profit} + \text{Fixed Costs} = \text{Sales revenue} * \text{P/V ratio}$
- ➔  $\text{Sales revenue} = (\text{Fixed Costs} + \text{Net Profit}) / \text{P/V ratio}$  (General Case)
- ➔  $\text{If Net Profit} = 0, \text{Breakeven sales} = \text{Fixed Costs} / \text{P/V ratio}$  (Specific Case)

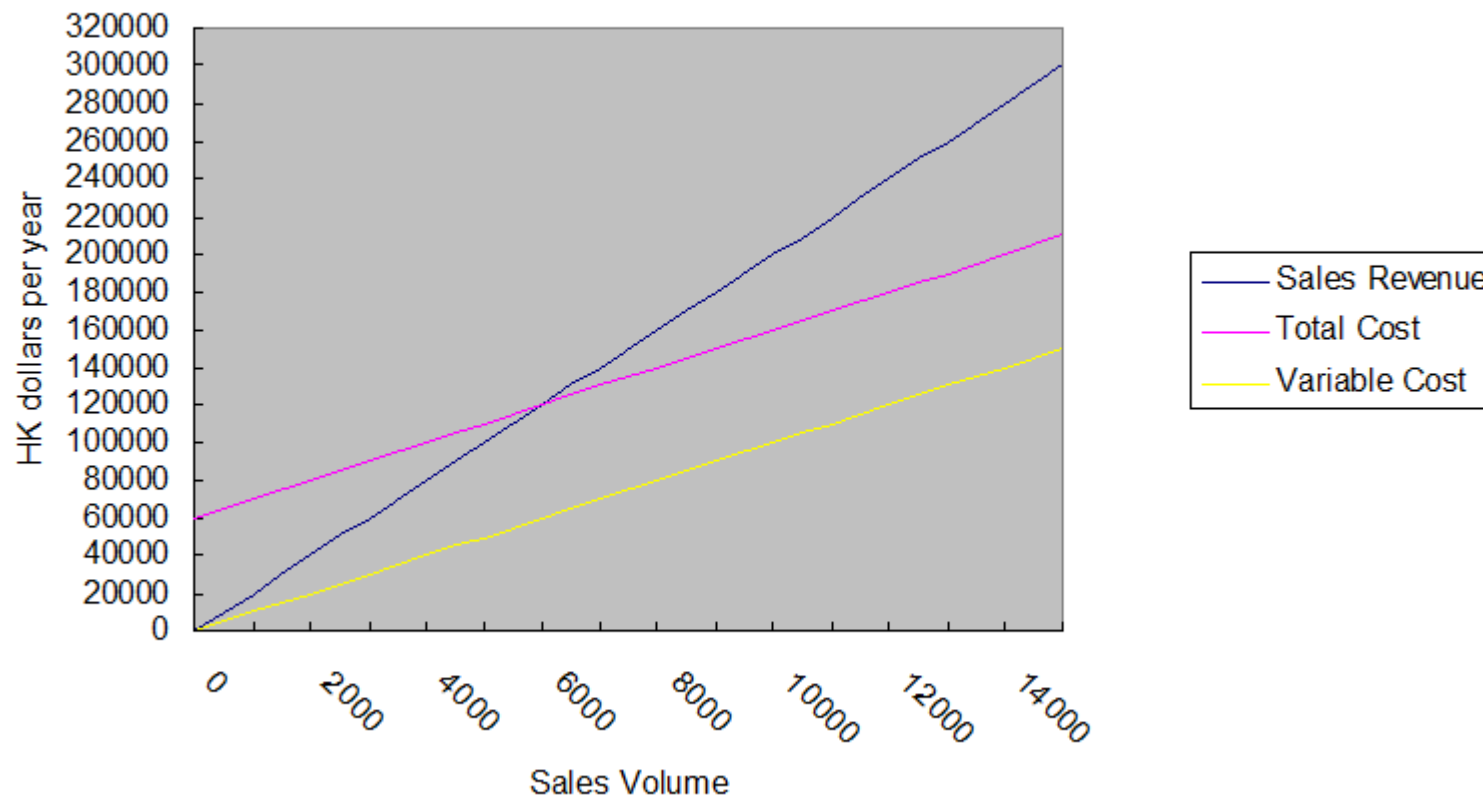
# Cost-Volume-Profit Analysis





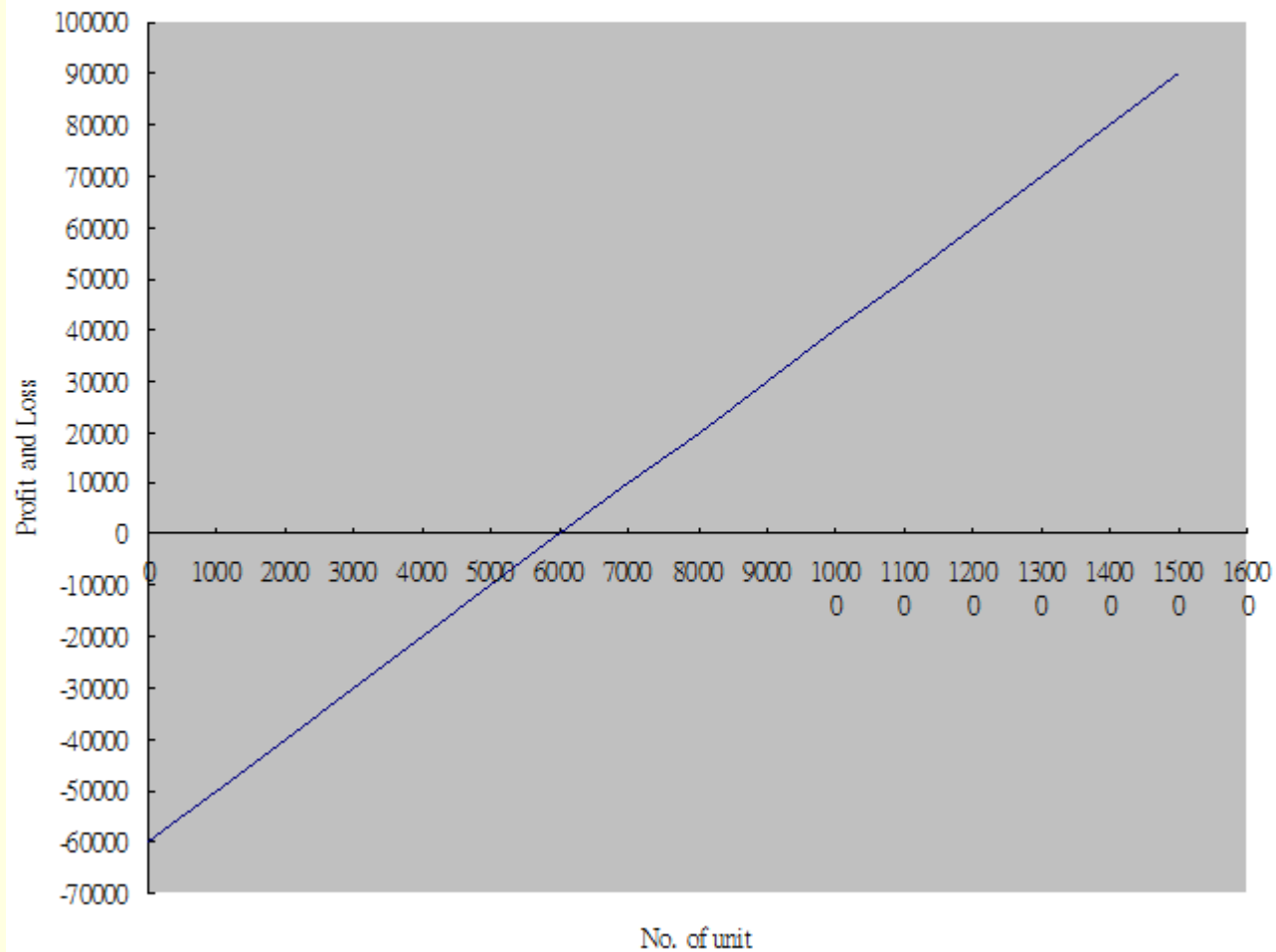
# Cost-Volume-Profit Analysis

Contribution Chart



# Cost-Volume-Profit Analysis

Profit-volume Graph



# Cost-Volume-Profit Analysis

## Margin of Safety

Margin of Safety = Current sales revenue – Sales at the break-even point

Margin of Safety in percentage =  $\frac{\text{Current sales revenue} - \text{Sales at the break-even point}}{\text{Current sales revenue}}$

Margin of Safety in units =  $\frac{\text{Margin of Safety (or Sales * \% Margin of Safety)}}{\text{Unit selling price}}$

Margin of safety indicates the possible decrease in sales that may occur before an operating loss results. To cite an example, if the margin of safety is low, even a small decline in sales revenue may result in an operating loss.

# Cost-Volume-Profit Analysis

- Multi-product cost-volume-profit analysis (with limiting factors)
- Separation of semi-variable costs

	Volume of production (Units)	Indirect costs (\$)
Lowest activity	5,000	22,000
Highest activity	10,000	32,000

If variable costs are constant per unit and the fixed costs remain unchanged the increase in costs will be due entirely to an increase in variable costs. The variable cost per unit is therefore calculated as follows:

$$\frac{\text{Difference in cost}}{\text{Difference in activity}} = \frac{\$10,000}{5,000 \text{ units}} = \$2 \text{ variable cost per unit of activity}$$

# Short-term Decision Making

- Sunk costs, Incremental costs and Opportunity costs

Relevant costs	Irrelevant costs
• Variable costs	• Fixed costs
• Avoidable costs	• Unavoidable costs
• Opportunity costs	• Sunk costs
• Incremental costs	• Historical costs
• Marginal costs	• Joint costs
	• Committed costs
	• Notional costs

**Replacement costs?? Net Realisable Value??**

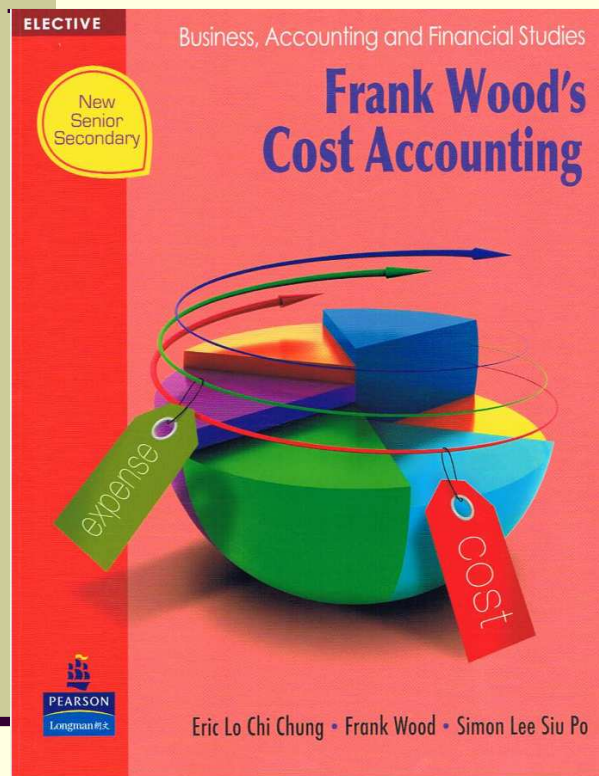
# Short-term Decision Making

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Apply costing concepts and techniques in business decision.

- ◆ hire, make or buy
- ◆ accept or reject an order at a special price
- ◆ retain or replace equipment
- ◆ sell or process further
- ◆ eliminate or retain an unprofitable segment

# Teaching Resources - Textbooks



## 20 Cost Classification, Concepts and Terminology

- 20.1 Introduction
- 20.2 Nature of cost accounting
- 20.3 Functions of cost accounting
- 20.4 Cost classifications
- 20.5 Conclusion

## 21 Job Costing

- 21.1 Introduction
- 21.2 Job orders
- 21.3 Job costing system
- 21.4 Absorption of manufacturing overheads: further considerations
- 21.5 More than one production department
- 21.6 Re-apportionment of overheads of service departments
- 21.7 Cost-plus pricing

## 22 Absorption and Marginal Costing

- 22.1 Introduction
- 22.2 Manufacturing accounts
- 22.3 Absorption costing
- 22.4 Marginal costing
- 22.5 Comparison of the two costing methods
- 22.6 Advantages and disadvantages of the two costing approaches
- 22.7 A more complicated example

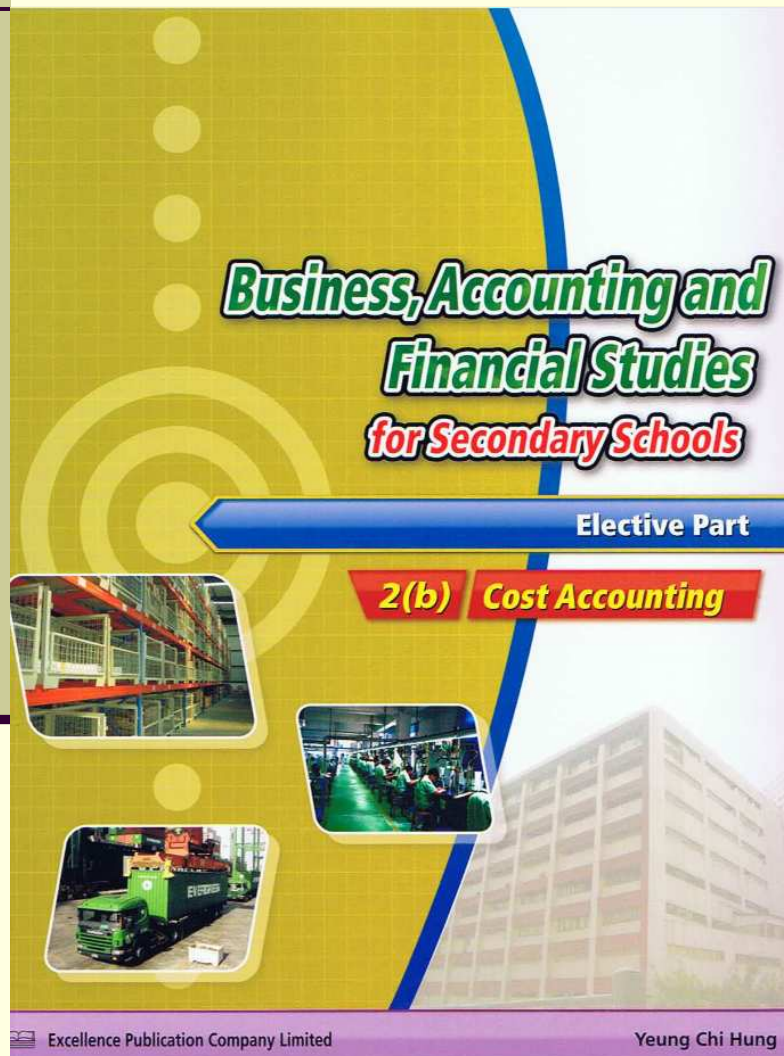
## 23 Cost-Volume-Profit Analysis

- 23.1 Introduction
- 23.2 Break-even point, contribution margin and cost-volume-profit analysis
- 23.3 Break-even point calculation methods
- 23.4 The application of CVP analysis
- 23.5 CVP analysis for multiple products
- 23.6 CVP analysis with limiting factors

## 24 Cost Accounting for Decision-making

- 24.1 Introduction
- 24.2 Sunk costs, opportunity costs and incremental costs
- 24.3 Accept or reject an order at a special price decisions
- 24.4 Hire, make or buy decisions
- 24.5 Sell or process further decisions
- 24.6 Retain or replace equipment decisions
- 24.7 Eliminate or retain an unprofitable segment decisions

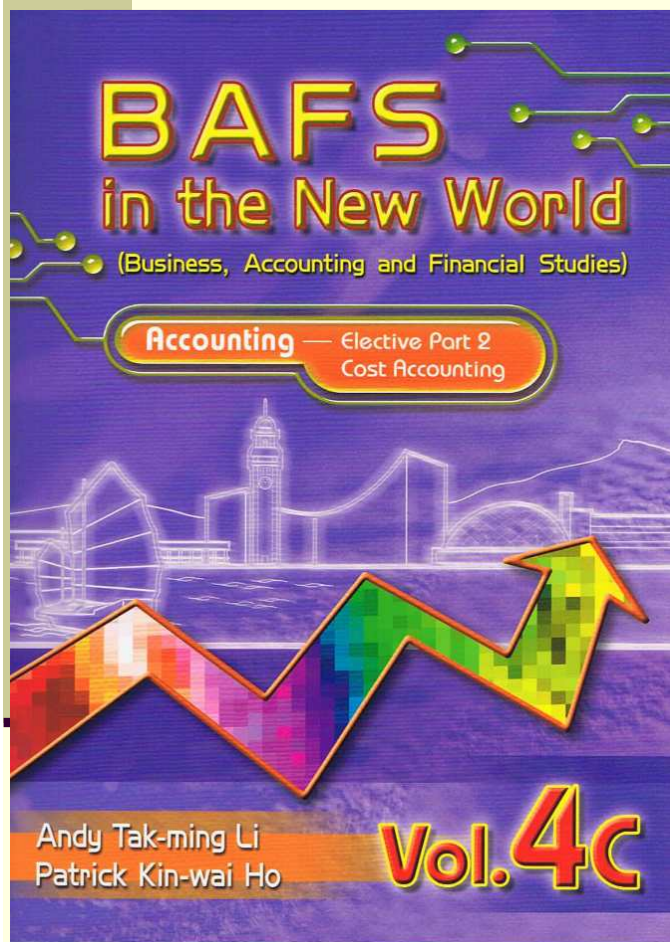
# Teaching Resources - Textbooks



<b>1</b>	<b>Cost Classification, Concepts and Terminology</b>
1.1	Managerial Accounting
1.2	Cost Accounting
1.3	Classifications of Costs
1.4	Financial Reports of a Manufacturing Entity
1.5	Work-in-progress
<b>2</b>	<b>Job Costing</b>
2.1	Job Costing System
2.2	Allocation and Apportionment of Costs to a Single Job
2.3	Over-absorption and Under-absorption of Overheads
2.4	Allocating Costs between Departments
2.5	Job Costing for Decision Making
<b>3</b>	<b>Absorption Costing</b>
3.1	Implications of Costs in Accounting
3.2	Absorption Costing
3.3	Arguments For and Against Absorption Costing
<b>4</b>	<b>Marginal Costing</b>
4.1	Use of Marginal Costing in Preparing Manufacturing Statements
4.2	Use of Marginal Costing in Preparing Income Statements
4.3	Manufacturing Statements and Income Statements not showing any Inventoriable Cost
4.4	Comparison between the use of Marginal Costing and Absorption Costing
4.5	Arguments For and Against Marginal Costing
<b>5</b>	<b>Cost Accounting for Decision Making</b>
5.1	Decision-making Process
5.2	Nature of Various Costs Relevant to Decision Making
5.3	Applying Costing Concepts and Techniques in Business Decisions
5.4	Defects of Relevant Analysis
<b>6</b>	<b>Cost-volume-profit Analysis</b>
6.1	Implication of CVP Analysis and its Applications
6.2	Assumptions in CVP Analysis
6.3	Breakeven Point and its Calculation
6.4	Contribution Margin Ratio
6.5	Effects of Changes of Units Sold on Cost-Volume-Profit Analysis
6.6	Target Profit and Margin of Safety
6.7	Breakeven Point under Sales Mix



# Teaching Resources - Textbooks



## Chapter 25 Cost Classification, Concepts and Terminology

- 25.1 General Nature of Financial Accounting, Cost Accounting and Management Accounting
  - 25.2 Importance of Cost Accounting for Financial Decision Making
  - 25.3 Cost Concepts and Terminology
  - 25.4 Cost Classification
  - 25.5 Elements of Cost
- Learning Review  
Revision Notes  
Learning Assessment

## Chapter 26 Cost Accumulation, Absorption Costing and Job Costing

- 26.1 Cost Accumulation
  - 26.2 Absorption Costing
  - 26.3 Over and Under Absorption of Overheads
  - 26.4 Job Costing
- Learning Review  
Revision Notes  
Learning Assessment

## Chapter 27 Manufacturing Accounts, Absorption and Marginal Costing

- 27.1 Manufacturing Accounts
  - 27.2 Perpetual and Periodic Inventory Systems, and Inventory Valuation Methods
  - 27.3 What are Absorption and Marginal Costing?
  - 27.4 Absorption and Marginal Costing Operation Statements
  - 27.5 Reconciliation of Profits Under Absorption and Marginal Costing Systems
  - 27.6 Arguments in Favour of Absorption and Marginal Costing Systems
- Learning Review  
Revision Notes  
Learning Assessment

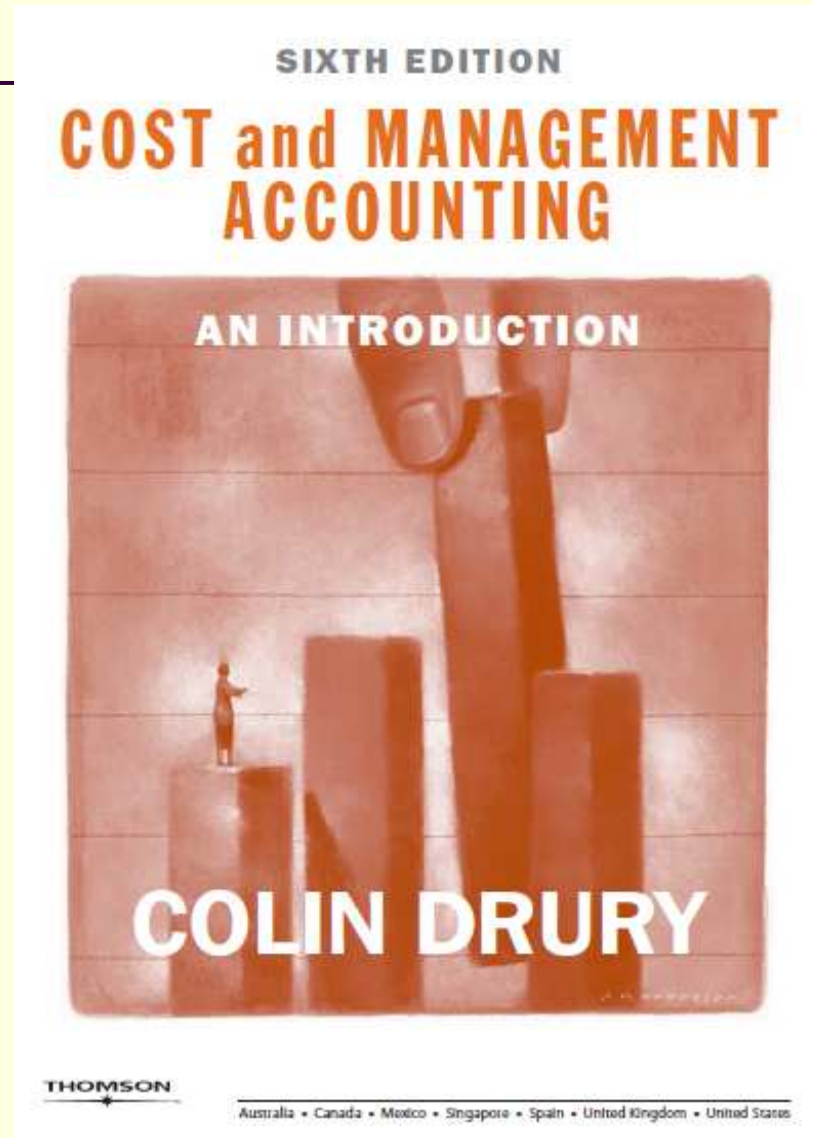
## Chapter 28 Cost-Volume-Profit Analysis

- 28.1 Introduction to Cost-Volume-Profit Analysis / Break-even Analysis
  - 28.2 Calculation of Break-even Point with CVP Analysis
  - 28.3 Break-even, Contribution and Profit-Volume Chart
  - 28.4 Limitations of CVP Analysis
  - 28.5 CVP Analysis for Entities Selling Multi-products
- Learning Review  
Revision Notes  
Learning Assessment

## Chapter 29 Short-Term Decision Making

- 29.1 Nature of Various Cost Items and their Relevance to Decision Making
  - 29.2 Marginal Costing Approach and Short-term Decision Making
  - 29.3 Short-term Business Decisions
- Learning Review  
Revision Notes  
Learning Assessment

# Teaching Resources – Reference Books



# Teaching Resources – AL Past Papers

## Questions from AL Exam which are relevant to HKDSE

### **TOPIC I: Cost classification, concepts and terminology**

- Explain the general nature of cost accounting and appreciate its importance for financial decision making.
- Distinguish between direct and indirect costs, fixed and variable costs, and factory and administrative overheads.

### **TOPIC II: Job costing**

- Explain the job costing system for manufacturing operations.110
- 
- Illustrate the allocation and apportionment of costs to a single job or product.

2005 II Q.1 (30%) – cost assignment (repeated distribution method) and job costing  
(with 8% decision making – Special order)

### **TOPIC III: Marginal and Absorption costing**

- Compare the use of marginal and absorption costing in preparing manufacturing accounts and income statements.
- Compare the advantages and disadvantages of adopting marginal and absorption costing.

2004 II Q.2 part d (i) – marginal cost (4%) + part d (ii) – CVP (2%)

2005 II Q.2 part a (7%) + part d (8%) decision making

# Teaching Resources – AL Past Papers

## **TOPIC IV: Cost accounting for decision making**

- Identify the nature of various cost items and their relevance to decision making: sunk costs, incremental costs and opportunity costs.
- Apply costing concepts and techniques in business decision, e.g. hire, make or buy, accept or reject an order at a special price, retain or replace equipment, sell or process further, and eliminate or retain an unprofitable segment.
- Conduct CVP analysis to assess the effects of changes in costs, selling price and units sold on the breakeven point and target profit.

2004 II Q.5 (20%) – make or buy decision

2005 II Q.5 (20%) – CVP

2006 II Q.1 (30%) – CVP + decision making (special order 13%)

2007 II Q.2 part c (4%) + part f (9%) CVP [also part a and b cost behavior 7%]

2007 II Q.5 part a and b (11%) – CVP

2008 II Q.2 part b and c and d (16%) – CVP

2009 II Q.2 part a, b, c, d and e (23%) – decision making

2009 II Q.5 part c, d, e and f (11%) - CVP

2010 II Q.3 (20%) – CVP

2010 II Q.4 part a and b (8%) – decision making (production ranking)