

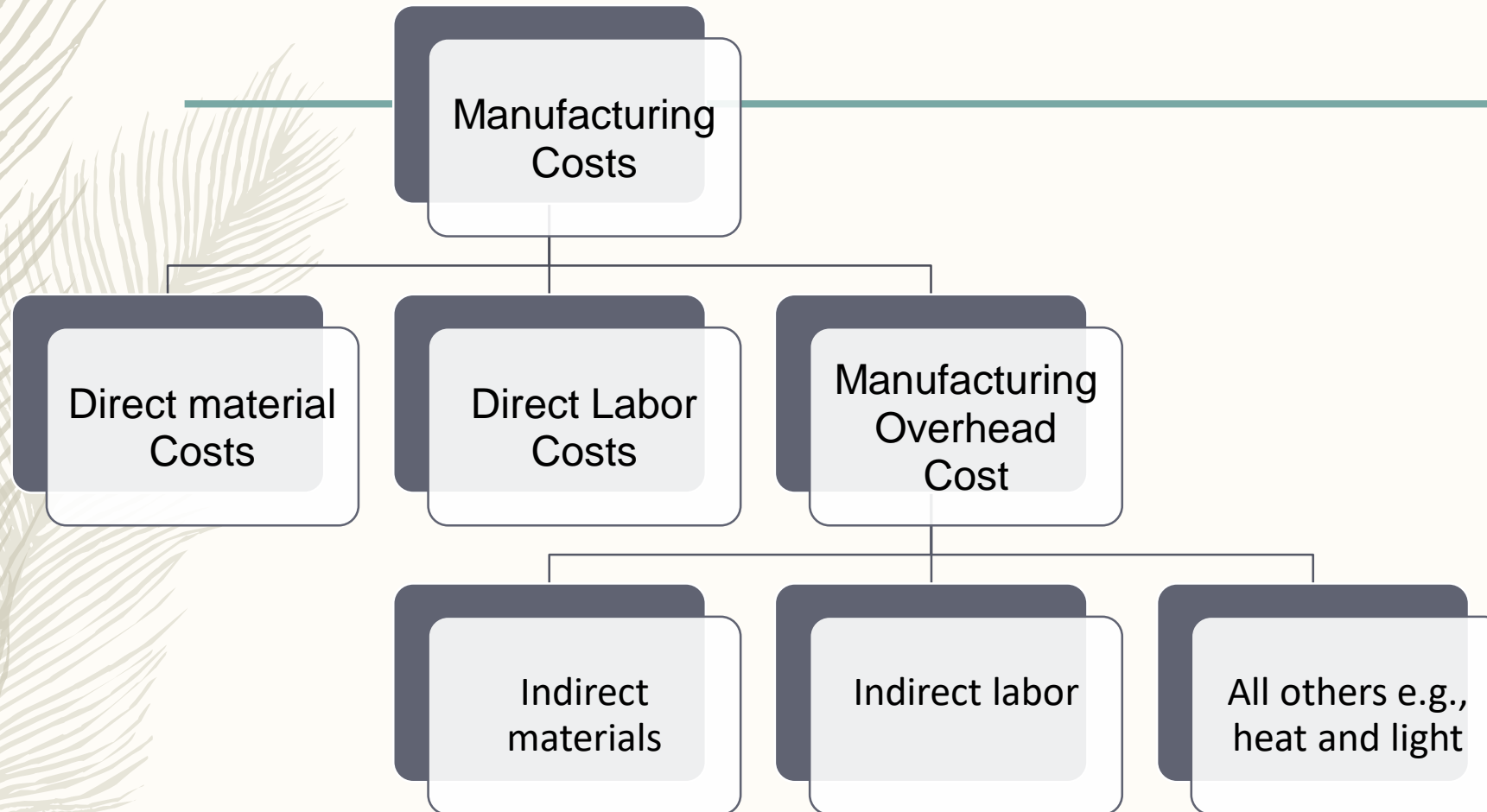


Refresher Module

Managerial Accounting

Cost Classifications for Manufacturing Cos

2





Cost Classifications for Manufacturing Cos

- Direct Materials
 - Integral part of the finished product whose costs can be easily (physically and conveniently) traced to the finished product
- Direct labor
 - Labor costs that can be easily traced to individual units
 - Example - wages for machine operators
- Manufacturing overhead costs
 - Production related costs that cannot be practically or conveniently traced directly to an end product.
 - All manufacturing costs except DM and DL
 - Associated with operating the factory



Cost Classifications for Manufacturing Cost

- Manufacturing overhead costs or factory overhead
 - Can be
 - *Indirect material*
 - costs of material that cannot be *conveniently or economically* traced to a unit
 - Usually *insignificant* such as glue to assemble a chair
 - *Indirect labor*
 - cost of production-related labor cost that *cannot be conveniently* traced to a unit (only with great cost) such as supervisors, janitors
 - *Other manufacturing – costs of maintaining factory*
 - E.g., depreciation, property taxes

5

LO 2 -3: Concepts Review

Product or Manufacturing Cost

Appears in every product

Direct Materials (DM), Direct Labor (DL), Manufacturing Overhead (MOH)

Appears on the Balance Sheet in Inventory, and the Income Statement in COGS



Period or Non-manufacturing Costs

Operating or S&A Expenses

Appears on the Income Statement below GM



General- Process and Job-Order Costing

- What is a Product Costing System
 - Process of assigning costs to the product and services provided by a company
 - Provides timely and accurate unit cost information for pricing, cost planning and control, inventory valuation and financial statement preparation

7 Costing Systems

Job Order (Absorption) Costing

Unique products

Cost are
accumulated in
one WIP

Examples –
company
letterhead,

Process Costing

produces many
units of a single
product for long
periods

Multiple WIPs
used

Examples –
liquids such as
water

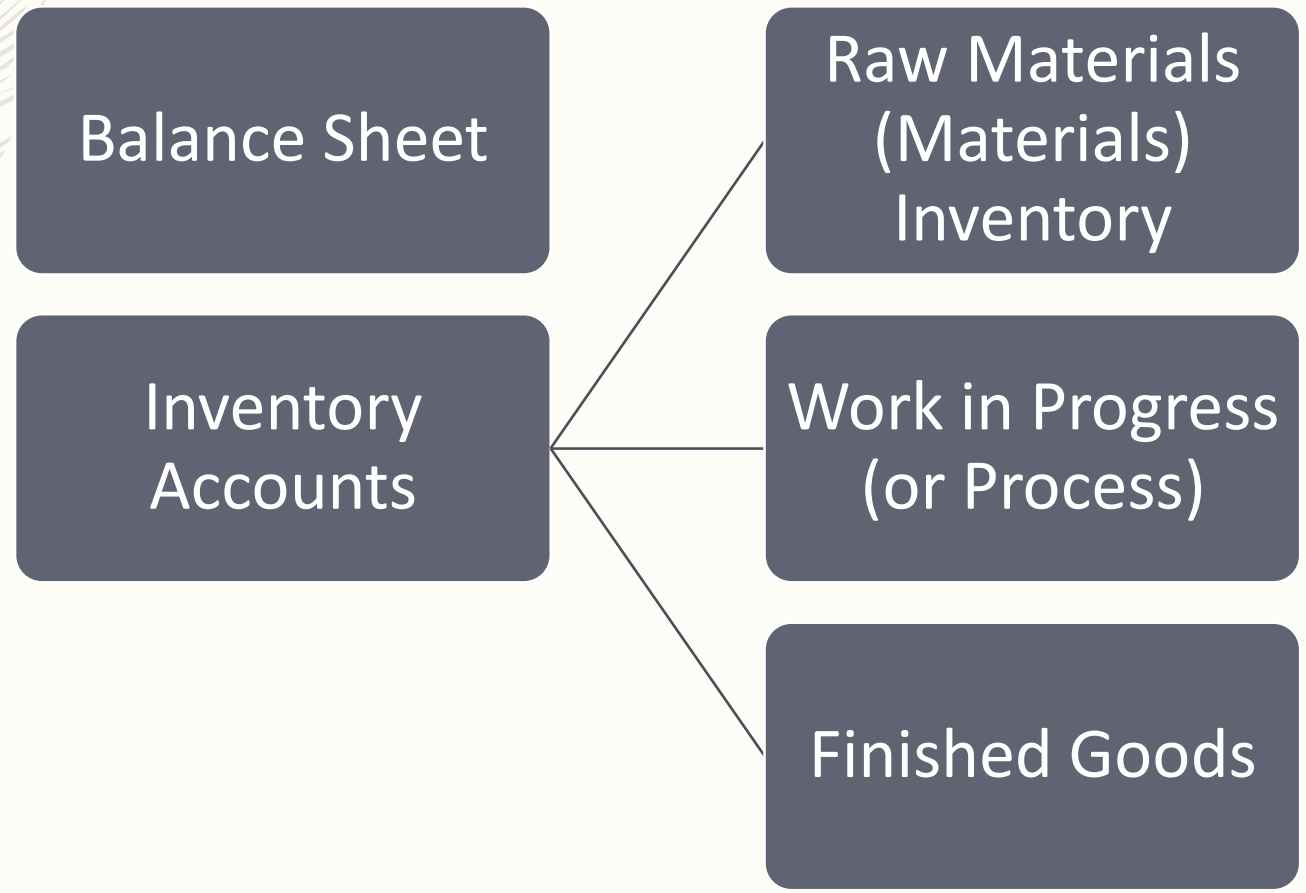
General- Job Order Costing

8

- Job Order Costing System
 - Collects costs and assigns them to a specific job order
 - Measures the cost of each completed unit
 - Uses one WIP to summarize the cost of all job orders
- *job order – customer order for a specific number of specially designed, made-to-order products*

9

Job Order Costing – Cost Flow



10

Job Order Costing - Account Analysis

Raw Materials Inventory

Beg Inventory

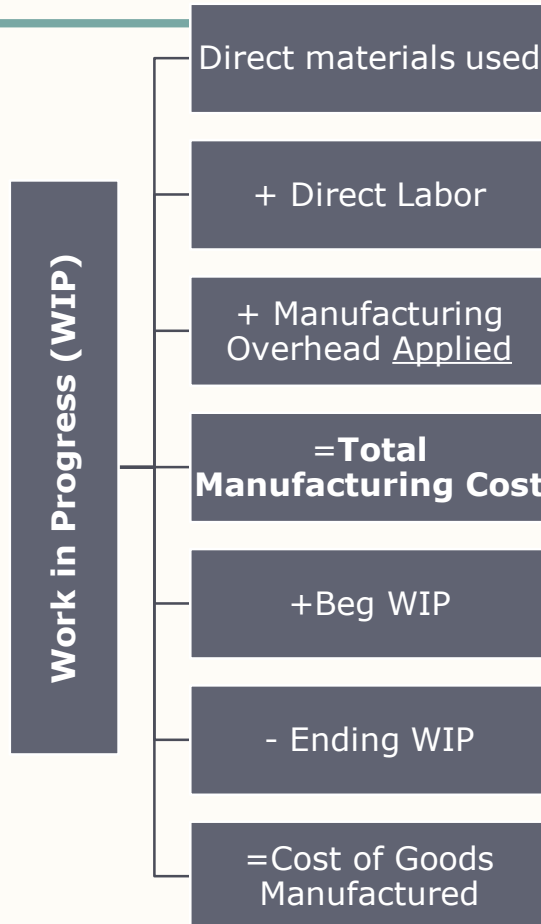
+ Materials Purchased

- Materials requested for production

= Ending Inventory

11

LO 1 - Job Order Costing – Account Analysis



12

Job Order Costing – Manufacturing Overhead Account

Actual

Applied

Difference =
Over (under)
applied OH

Actual factory
related costs

Predetermined
overhead rate x
Actual Allocation
Base

13

Job Order Costing – Account Analysis

Finished Goods Inventory

Beg. Finished Goods Inventory

+ Cost of Goods Manufactured (from WIP)

- Ending Finished Goods Inventory

= Cost of Goods Sold (goes to Income Statement)

14

Job Order Costing – Account Analysis

Cost of Goods Sold (COGS)

COGS (from FGI), unadjusted

+ Underapplied MOH or –
Overapplied MOH

COGS, adjusted



Activity-Based Costing (ABC)

- ABC attempts to more accurately trace costs to products using multiple allocation bases representing major activities
- Activity: an event that causes the consumption of overhead resources (ex: machine setups, ordering materials, billing customers, inspecting products)
- Activity cost pool: accumulation of overhead costs for each activity
- Activity rate: overhead rate for each activity used to assign overhead for each activity
- Choosing the appropriate activities and how to measure them is key



Activity-Based Costing (ABC)

- Benefits: Improves accuracy of product costs by
 - Increasing number of cost/activity pools
 - Utilizing activity pools that are more homogenous compared to departmental cost pools
 - Using a variety of activity measures and not all are volume related
- Limitations:
 - Cost of implementing and maintaining ABC system may outweigh benefits
 - Overhead costs may be less than proportional to activity

17

Breakeven Analysis

- The point at which total revenues or sales equal total costs, or
- The point at which an organization's profit is zero
- *The Equation Method:*
 - $P = [S - VC] - FC$

18

CVP Analysis (Key Formulas)

CVP Analysis

$$S = VC + FC + P$$

$$CM = S - VC$$

Breakeven in Units (X) and Dollars (\$)

$$X = FC / CM$$

$$\begin{aligned} \$ &= FC / CM \text{ Ratio or } X \times SP \\ &(\text{SP is selling price}) \end{aligned}$$

Target Sales in Units (X) and Dollars(\$)

$$X = (FC + P) / CM$$

$$\begin{aligned} \$ &= (FC + P) / CM \text{ Ratio or } X \times SP \end{aligned}$$

Breakeven Analysis – Multiple Products

Steps:

1. Calculate the **weighted-average breakeven point*** =
$$\frac{\text{Total fixed costs}}{\text{overall CM ratio}}$$
2. Calculate breakeven point per product
 - *weighted-average breakeven point x sales mix %*

*this is the key question asked in most problems

Breakeven Analysis – Multiple Products

- *Sales Mix*

- Proportion of each product's unit sales in relation to total unit sales
- Breakeven points for such products is computed as shown on next slide
- (assumption is that sales mix will not change)

The Budgeting Framework

- **Budget**

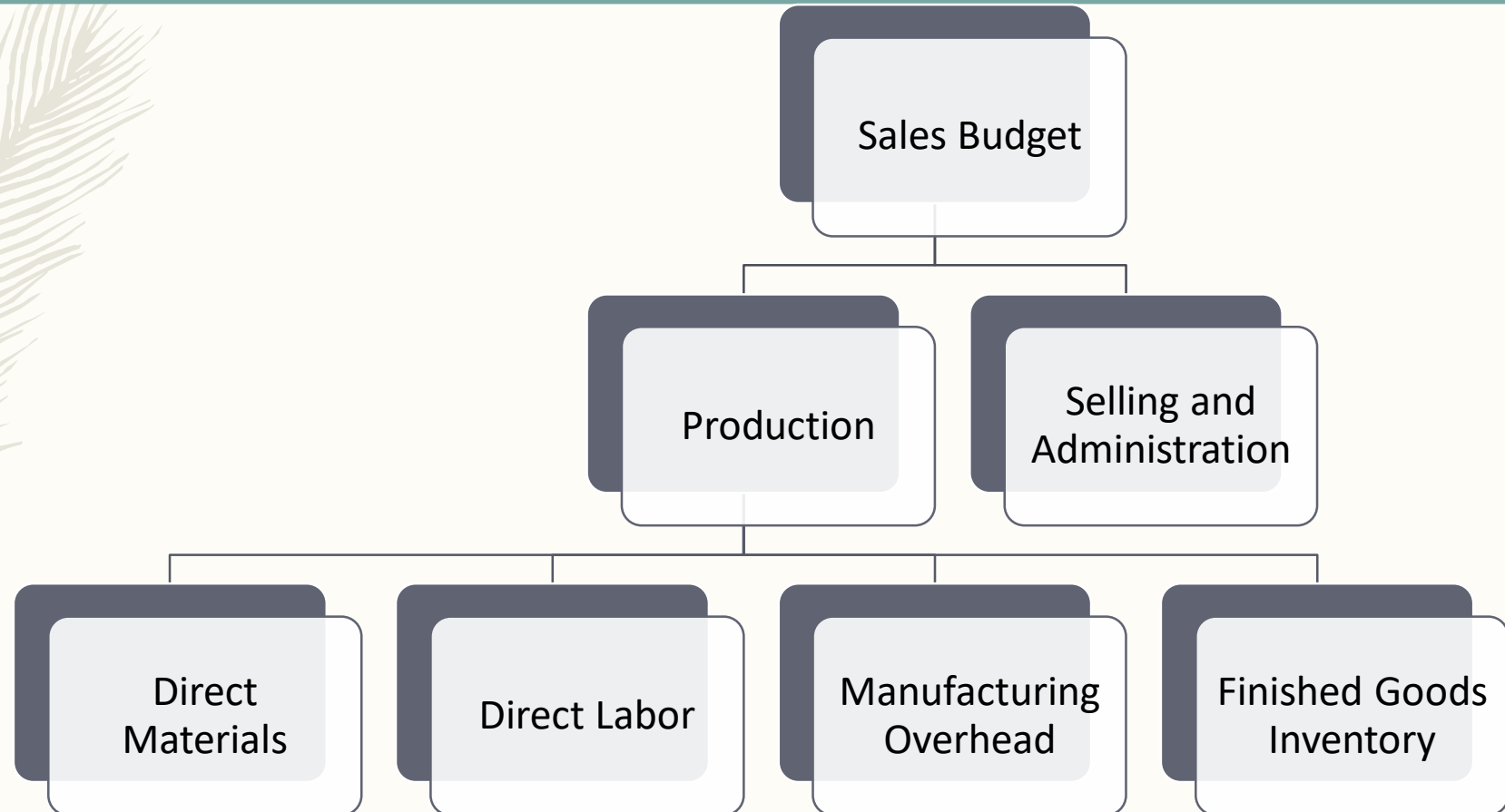
- Quantitative plan of acquiring and using resources over a specific time period
- Way to manage an organization
- Used in all types of organizations for:
 - *Planning – develop goals*
 - *Control – achievement of goals*
- Based on assumptions

The Budgeting Framework

- Difference between continuous/perpetual and participative budgeting
 - Continuous – a 12 month budget that rolls forward one month (or quarter)
 - Participative budgeting or **self imposed** - Process in which personnel at all levels of an organization meaningfully and actively take part in the creation of budgets
- Budget committee – responsible for overall policy relating to the budget for coordinating the preparation of the budget

23

Master Budget



The Sales Budget

- Detail plan, expressed in units and dollars, of a product's expected sales in an accounting period
- Information is used to determine estimated cash receipts for the cash budget shown on the **Schedule of Expected Cash Collections**
- Total budgeted sales = est. selling price per unit x Est. sales in units

The Production Budget

- Produced after the sales budget
- Detail plan that identifies the products or services that must be produced or provided to meet budgeted sales and inventory needs.
- Used by managers to plan for materials and human resources needed for production related activities

The Direct Materials Budget

26

- Detail plan that raw materials to be purchased to fulfill the production budget and provide for adequate inventories
- Used by mgmt to plan purchases of DM and to estimate cash payments to suppliers. So a **schedule of expected cash disbursements** is also prepared

The Direct Labor Budget

- Direct labor hours required to satisfy the production budget
- Used by management to schedule the # of employees and the hours that each will work, for hiring new employees etc.

Standard Costing

- Standard
 - A benchmark or norm for measuring performance
 - Quantity and cost are used in manufacturing and are set for each major input such as raw material
- Quantity Standard
 - How much of an input should be used to make a product or provide a service
- Cost/Price standard
 - How much should be paid for each unit of the input

Standard Costing– Setting DM standards

- Standard price per unit
 - The final, delivered cost of the material, net of any discount
- Standard Qty per unit
 - The amount of material required for each finished product, as well as an allowance for waste, spoilage etc.
- Standard cost of material per unit =
 - standard price per unit x standard qty per unit

Standard Costing - Setting DL standards

- Standard rate per hour
 - includes wages, employment taxes and fringe benefits
- Standard direct labor time or standard hours per unit
 - the expected time required for each dept etc. to complete the production of one unit or batch of output
- Standard Direct Labor cost per unit
 - standard rate per hour x standard DL time

Standard Costing – MOH standards

31

- Two other standards:
 - Standard Variable Overhead Rate
 - Variable overhead rate standard x capacity standard (e.g., labor hours)
 - *Standard Fixed Overhead Rate*
 - Fixed overhead rate standard x capacity standard (e.g., labor hours)

Standard Costing Variance *Formulas*

Direct Materials (DM)

$$\text{DMPV} = (SP - AP)AQ$$

$$\text{DMQV} = (SQ - AQ)SP$$



Direct Labor (DL)

$$\text{DLRV} = (SR - AR)AH$$

$$\text{DLEV} = (SH - AH)SR$$