

# NINJA NOTES

Business Analysis & Reporting 2026



**Cost Accounting**

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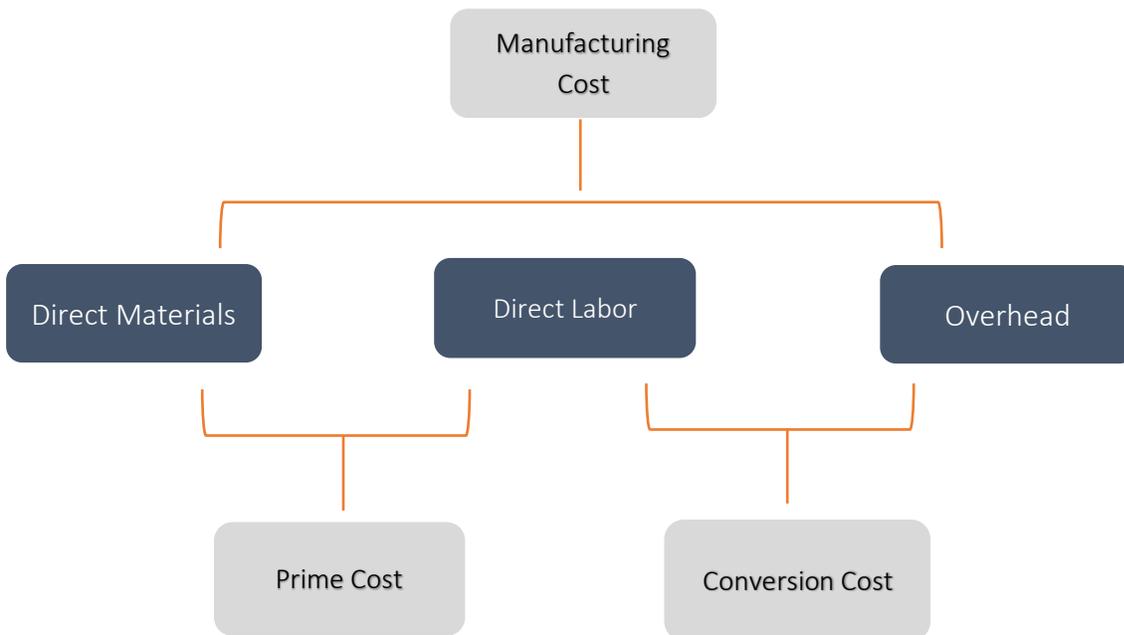
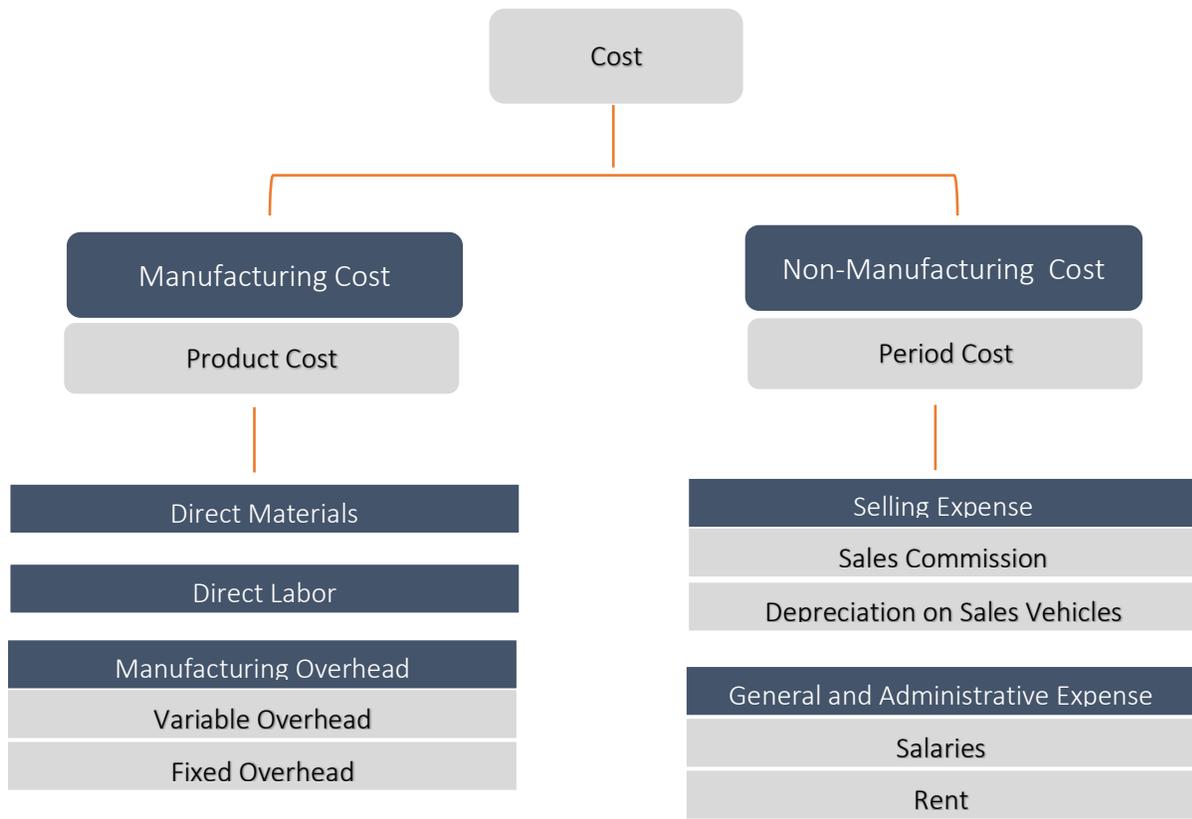
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# Cost Accounting

## Cost Behavior and Cost Objects

- Cost Behavior
  - Cost Behavior indicates the movement of a cost in relation to the production volume.
  - Fixed Costs
    - Total Fixed Costs remain constant within relevant range
    - Fixed Costs per unit change in relation to production volume
    - Fixed Costs are incurred even if there is no activity
  - Variable Costs
    - Variable Costs remain constant on a per unit basis
    - Total Variable Costs Vary in relation to production volume
    - Variable Costs are zero if there is no activity
  - Mixed Costs
    - Displays characteristics of both fixed & variable costs
    - Costs vary with level of activity but not proportionally

- Cost Object



# Overhead Application and Cost Driver

- Overheads
  - Indirect Costs that cannot be traced directly to a product/job and are therefore applied.
- Overhead Application
  - Overhead is applied at a pre-determined overhead rate.
    - Predetermined Overhead Application Rate =  $\frac{\text{Budgeted Overhead Costs}}{\text{Budgeted Direct Labor Hours}}$
  - Applied Overhead = Predetermined Overhead Rate x Actual Labor Hours
- Variances in Actual and Applied Overheads
  - Overapplied Overhead
    - Overapplied Overhead implies that Applied Overhead is more than Actual Overhead (Applied Overhead > Actual Overhead).
  - Underapplied Overhead
    - Underapplied Overhead implies that Applied Overhead is less than Actual Overhead (Applied Overhead < Actual Overhead).
- Reasons for Overapplied / Underapplied Overhead
  - Budgeted Overhead are Overestimated/Underestimated
  - Difference in Activity Level
    - Actual Activity > Budgeted Activity = Overhead Applied > Actual Overhead = Overapplied Overhead
    - Actual Activity < Budgeted Activity = Overhead Applied < Actual Overhead = Underapplied Overhead
- Journal Entry
  - Applied Overhead

WIP	XXX	
Overhead Applied		XXX

- Actual Overhead

Overhead Control	XXX	
Cash		XXX

- Adjustment for Overapplied / Underapplied Overhead

Overhead Applied	XXX	
Cost of Goods Sold (Underapplied)	XXX	
Overhead Control		XXX
Cost of Goods Sold (Overapplied)		XXX

- Underapplied or Overapplied is Immaterial
  - If Underapplied or Overapplied Overhead is Immaterial, it is adjusted only to the Cost of Goods Sold.
- Underapplied or Overapplied is Material
  - If Underapplied or Overapplied Overhead is Material it is adjusted for in the Work-in-Process Inventory, Finished Goods Inventory, and Cost of Goods Sold in proportion to their relative size.

## Types of Overhead Rates

- Normal Rate
  - Normal Overhead Rate =  $\frac{\text{Actual Overhead Costs}}{\text{Actual Direct Labor Hours}}$
- Pre-Determined Overhead Rate
  - Pre-determined Overhead Rate =  $\frac{\text{Budgeted Overhead Costs}}{\text{Budgeted Direct Labor Hours}}$
- Blanket Overhead Rate (Factory-Wide Overhead Rate)
  - Blanket Overhead Rate =  $\frac{\text{Total Overheads for the Factory}}{\text{Total Number of Hours for the Factory}}$
- Departmental Overhead Rate
  - Departmental Overhead Rate =  $\frac{\text{Total Overheads of the Department}}{\text{Total Number of Hours for the Department}}$

# Inventory Flow

- Trading Organizations

Opening Finished Goods Inventory
Add: Purchases
Less: Closing Finished Goods Inventory
<b>Cost of Goods Sold</b>

- Manufacturing Organizations

Opening Raw Materials
Add: Purchases
Less: Ending Raw Materials
<b>Direct Materials Consumed</b>
Opening Work-In-Process Inventory
Add: Direct Materials Consumed
Add: Freight-In
Add: Direct Labor
Add: Overheads Applied
Less: Ending Work-In-Process Inventory
<b>Cost of Goods Manufactured</b>
Opening Finished Goods Inventory
Add: Cost of Goods Manufactured
Less: Ending Finished Goods Inventory
<b>Cost of Goods Sold (Tentative)</b>
Cost of Goods Sold (Tentative)
Add: Underapplied Overhead
Less: Overapplied Overhead
<b>Cost of Goods Sold</b>

# Costing Systems

- Job Order Costing
  - Costs are allocated to specific jobs and orders
  - Suitability of Job Order Costing
    - Used for unique, expensive, and heterogeneous products
    - Production is carried out solely because of a customer's order, not as a part of the entity's planned inventory
    - Management wants to account for each job as a separate cost unit
  - Costing Calculation
    - Direct Material: Costs are traced & added to the job
    - Direct Labor: All costs incurred are traced to be added to the job
    - Overheads: Applied to products based on direct labor hours incurred on the job
    - Total Cost = Direct Materials + Direct Labor + Overheads
  - Spoilage
    - Refers to rejected units that cannot be rectified
    - Normal Spoilage
      - Losses or expenses inevitable in nature
      - Treated as Product Costs & charged to COGS
      - Per Unit Cost =  $\frac{\text{Total Costs}}{\text{Total Units} - \text{Normal Spoilage Units}}$
    - Abnormal Spoilage
      - Loss or Spoilage of inventory caused due to unforeseeable & abnormal conditions
      - Treated as period costs & charged to a separate expense account
      - Abnormal Spoilage =  $\frac{\text{Total Cost}}{(\text{Total Units} - \text{Normal Spoilage Units}) \times \text{Abnormal Spoilage Units}}$

- Benefits
  - Useful in analyzing the job-wise profitability.
  - Enhances decision making
  - Easier identification & treatment of spoilages arising during the production
- Limitations
  - Excessive and Expensive Process
- Process Costing
  - Process Costing is a costing method that aggregates production costs by departments or by production phases.
  - Unit Cost is determined by dividing the Total Costs charged to a cost center in a particular period by the Output of that cost center.
  - Suitability of Process Costing
    - Manufacturing activity is carried on continuously.
    - The finished goods produced are homogeneous, and every unit is not distinguishable from other units.
    - The factory is divided into several cost centers or departments and each department is a stage of production.
  - Definitions
    - Equivalent Unit
      - Expression of units produced in terms of complete units
    - Percentage Complete
      - Degree, point/phase in the manufacturing process at which a product currently stands

- Process Costing Methods

- FIFO Method

- Per Unit Cost =  $\frac{\text{Manufacturing Cost incurred in the Current Period}}{\text{Equivalent units manufactured in the Current Period}}$

- Weighted Average Method

- Per Unit Cost =  $\frac{\text{Manufacturing Cost of the Current Period} + \text{Beginning Inventory}}{\text{Equivalent units manufactured in the Current Period} + \text{Beginning Inventory}}$

- Process Costing Steps (Template)

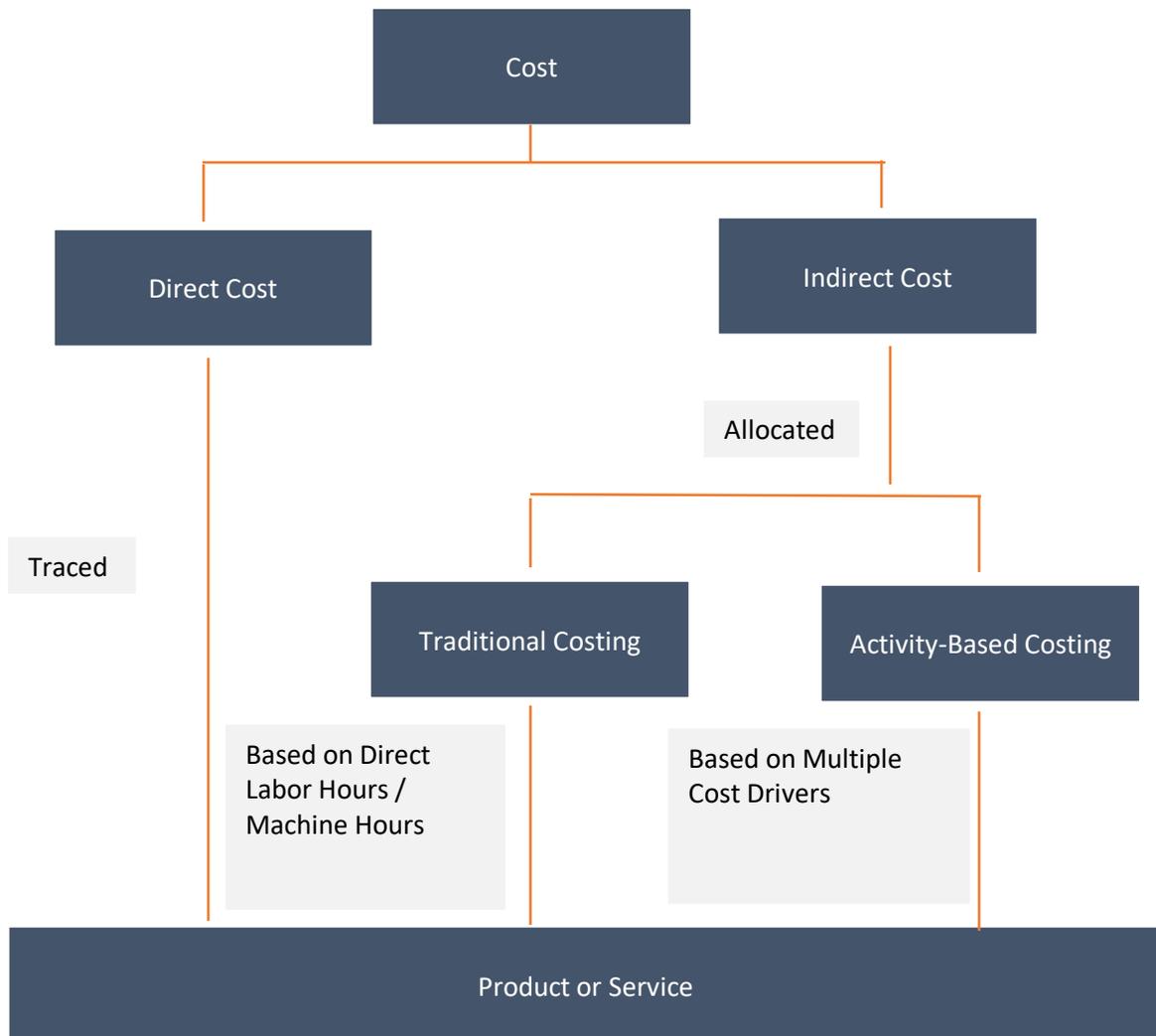
Step 1	<b>Inventory Balances</b>	
	Opening WIP Inventory	XXX
	<u>Units Started</u>	<u>XXX</u>
	<u>Units to Account for</u>	<u>XXX</u>
	Units Completed	XXX
	<u>Ending WIP</u>	<u>XXX</u>
	<u>Units Accounted for</u>	<u>XXX</u>
Step 2	<b>Calculate Equivalent Units</b>	
	<b>FIFO</b>	
	<u>Units Completed</u>	
	Equivalent Units Completed from Opening Inventory	Units x % Completed
	Equivalent Units Started and Completed	Units x 100%
	<u>Ending Inventory</u>	
	Units in Ending Inventory	Units x % Completed
	<b>Weighted Average</b>	
	<u>Units Completed</u>	
	Equivalent Units Completed from Opening Inventory	Units x 100%
	Equivalent Units Started and Completed	Units x 100%
	<u>Ending Inventory</u>	
	Units in Ending Inventory	Units x % Completed

<b>Step 3</b>	<b>Calculate Cost</b>								
	<b>FIFO</b>								
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Direct Material (Current Period)</td> <td style="text-align: right;">XXX</td> </tr> <tr> <td>Direct Labor (Current Period)</td> <td style="text-align: right;">XXX</td> </tr> <tr> <td>Overhead (Current Period)</td> <td style="text-align: right;">XXX</td> </tr> <tr> <td><u>Total Cost</u></td> <td style="text-align: right;"><u>XXX</u></td> </tr> </table>	Direct Material (Current Period)	XXX	Direct Labor (Current Period)	XXX	Overhead (Current Period)	XXX	<u>Total Cost</u>	<u>XXX</u>
Direct Material (Current Period)	XXX								
Direct Labor (Current Period)	XXX								
Overhead (Current Period)	XXX								
<u>Total Cost</u>	<u>XXX</u>								
	<b>Weighted Average</b>								
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Direct Material (Current Period + Beginning Inventory)</td> <td style="text-align: right;">XXX</td> </tr> <tr> <td>Direct Labor (Current Period + Beginning Inventory)</td> <td style="text-align: right;">XXX</td> </tr> <tr> <td>Overhead (Current Period + Beginning Inventory)</td> <td style="text-align: right;">XXX</td> </tr> <tr> <td><u>Total Cost</u></td> <td style="text-align: right;"><u>XXX</u></td> </tr> </table>	Direct Material (Current Period + Beginning Inventory)	XXX	Direct Labor (Current Period + Beginning Inventory)	XXX	Overhead (Current Period + Beginning Inventory)	XXX	<u>Total Cost</u>	<u>XXX</u>
Direct Material (Current Period + Beginning Inventory)	XXX								
Direct Labor (Current Period + Beginning Inventory)	XXX								
Overhead (Current Period + Beginning Inventory)	XXX								
<u>Total Cost</u>	<u>XXX</u>								
<b>Step 4</b>	<b>Calculate Cost per Unit</b>								
	$\text{Cost per Unit} = \text{Total Cost} / \text{Equivalent Units}$								
<b>Step 5</b>	<b>Calculate Ending Inventory Value</b>								
	$\text{Ending Inventory} = \text{Equivalent Units in Ending Inventory} \times \text{Cost per Unit}$								

- Spoilage
  - Refers to rejected units that cannot be rectified
  - Normal Spoilage
    - Losses or expenses inevitable in nature
    - Treated as Product Costs & charged to COGS
    - Normal Loss units are not included in computation of Equivalent Units
  - Abnormal Spoilage
    - Loss or Spoilage of inventory caused due to unforeseeable & abnormal conditions
    - Treated as period costs & charged to a separate expense account
    - Normal Loss units are included in computation of Equivalent Units

- Activity-Based Costing

- Under Traditional Costing Methods, Overhead Costs are allocated to products and services based on Volume-Based Drivers such as Direct Labor Hours or Machine Hours.
- Activity-Based Costing (ABC) is an improvement over traditional methods of allocating overhead expenses as it assigns costs based on activities consumed by products and services.

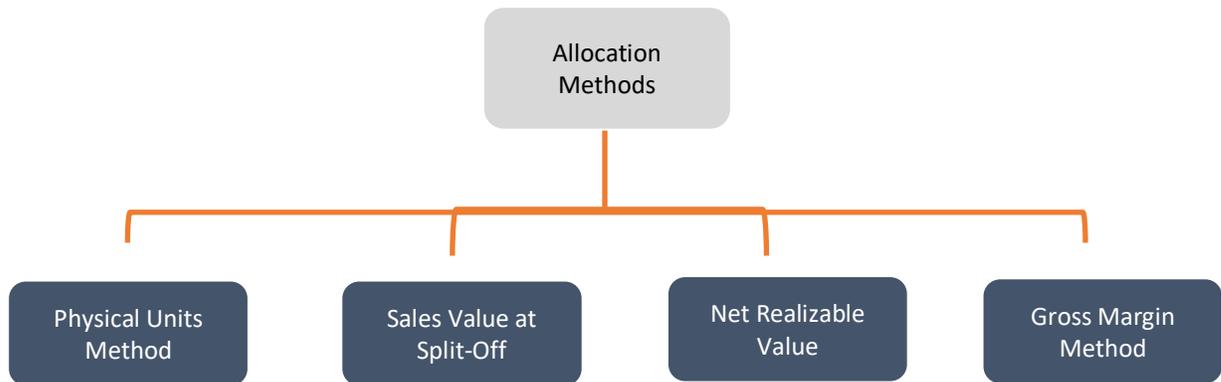


- Definitions
  - Activities: Work done that incurs costs
  - Cost Drivers: Reflect consumption of costs by activities & products
- Allocation
  - Costs are allocated to activities based on relative consumption of that drivers.

- Advantages
  - Identification of Cost Behavior
  - Accurate Cost Allocation
  - Streamlining of Activities
- Limitations
  - Expensive
  - Difficult Implementation
  - Not Useful for Small-Sized Firms
- Service Department Cost
  - In-house Support Departments
  - Mostly Cost Centers
  - Costs allocated to production department/other service departments
    - Direct Method
    - Step-Down Method
    - Reciprocal Method
  - Direct Method
    - Costs are directly allocated to production departments based on the ratio of production departments consumption of that service department's activity.
  - Step-Down Method
    - Costs are sequentially allocated to service as well as production departments.
    - Costs of departments providing the most services are allocated first to other service and production departments and then the cost of other service departments are allocated using the same logic.
  - Reciprocal Method
    - Recognizes interdependent nature of service departments
    - Cost Allocation is based on creation of simultaneous equations based on consumption

- Joint Products and By-Products Costing
  - Definition
    - Joint-Product
      - Two or more Products of equal importance produced simultaneously from the same Joint Manufacturing Process.
    - By-Product
      - By-Products are products that emerge as a result of the processing operation of another product.
      - Minor sales value as compared with the sales value of the main (Joint) Products.
    - Split-Off Point
      - Split-Off Point represents the point of production where the various Joint and By-Products become identifiable as separate individual products.
    - Joint Costs
      - Joint Costs represent the cost of the input factors incurred before the split-off and must be allocated to the joint products.
    - Net Realizable Value
      - Net Realizable Value represents sales value less estimated cost to complete and sell.
    - Separable Costs
      - Separable Costs are additional processing costs incurred after the split-off point.

○ Joint Product Costing



▪ Physical Units Method

➤ Allocated to products based on the units manufactured for each product

➤ Cost Allocation per product =  $\frac{\text{No. of Units Produced}}{\text{Total No. of Units Produced}} \times \text{Total Overhead Costs}$

▪ Sales Value at Split-Off Method

➤ Allocated to products based on their relative sales value at the split-off point

➤ Cost Allocation per product =  $\frac{\text{Sales Value at Split Off}}{\text{Total Sales Value at Split-Off}} \times \text{Total Overhead Costs}$

▪ Net Realizable Value Method

➤ Used when Joint Costs have no Sales Value at Split-Off Point

➤  $\text{NRV} = \text{Sales Value} - \text{Additional Processing Cost}$

➤ Cost Allocation per product =  $\frac{\text{NRV}}{\text{Total NRV}} \times \text{Total Overhead Costs}$

▪ Gross Margin Method

➤ Aims at maintaining the same gross margin percentage across all products

➤  $\text{Gross Margin} = \text{Gross Profit} / \text{Sales}$

➤ Cost Allocation per product =  $(\text{Gross Margin \%} \times \text{Sales Value}) - \text{Additional Processing Cost}$

- By-Product Costing
  - By-Products are not allocated joint costs rather NRV from by-products are subtracted from total joint costs.
  - Joint costs that are then allocated to the joint products using one of the methods discussed above.
- Absorption Costing & Variable Costing
  - Difference between Absorption Costing and Variable Costing

	Absorption Costing		Variable Costing	
Purpose	External Reporting Purposes		Internal Decision Making	
Product Cost	Direct Material, Direct Labor, Variable Manufacturing Overhead & Fixed Manufacturing Overhead		Direct Material, Direct Labor, Variable Manufacturing Overhead	
Period Cost	Variable & Fixed Selling, General and Administrative Overhead		Fixed Manufacturing Overhead, Variable & Fixed Selling, General and Administrative Overhead	
Format	Sales	XXX	Sales	XXX
	Variable Manufacturing Costs.	(XXX)	Variable Manufacturing Costs.	(XXX)
	Fixed Manufacturing Costs	(XXX)	Variable SG&A	(XXX)
	<b>Gross Margin</b>	<b>XXX</b>	<b>Contribution Margin</b>	<b>XXX</b>
	Variable SG&A	(XXX)	Fixed Manufacturing Costs	(XXX)
	Fixed SG&A	(XXX)	Fixed SG&A	(XXX)
	<b>Net Operating Income</b>	<b>XXX</b>	<b>Net Operating Income</b>	<b>XXX</b>

- Effect of Difference
  - Sales Exceed Production
    - If Sales > Production
    - Then, Opening Inventory > Closing Inventory
    - Fixed Manufacturing Overhead Expensed
      - ⇒ Absorption Costing
        - All of Fixed Manufacturing Overhead for the current period, plus Fixed Manufacturing Overhead of the Beginning Inventory Sold
      - ⇒ Variable Costing
        - All of Fixed Manufacturing Overhead for the Current Period
    - Therefore, Variable Costing Income > Absorption Costing Income
    - Difference Income = (Opening Inventory - Ending Inventory) x Per Unit Fixed Manufacturing Overhead
  - Production Exceeds Sales
    - If Sales < Production
    - Then, Opening Inventory < Closing Inventory
    - Fixed Manufacturing Overhead Expensed
      - ⇒ Absorption Costing
        - Some of Fixed Manufacturing Overhead for the Current Period
      - ⇒ Variable Costing
        - All of Fixed Manufacturing Overhead for the Current Period
    - Therefore, Variable Costing Income < Absorption Costing Income
    - Difference Income = (Ending Inventory - Opening Inventory) x Per Unit Fixed Manufacturing Overhead

- Production Equals Sales
  - If Sales = Production
  - Then, Opening Inventory = Closing Inventory
  - Fixed manufacturing overhead expensed:
    - ⇒ Absorption Costing
      - All of Fixed Manufacturing Overhead for the Current Period
    - ⇒ Variable Costing
      - All of Fixed Manufacturing Overhead for the Current Period
  - Therefore, Variable Costing Income = Absorption Costing Income

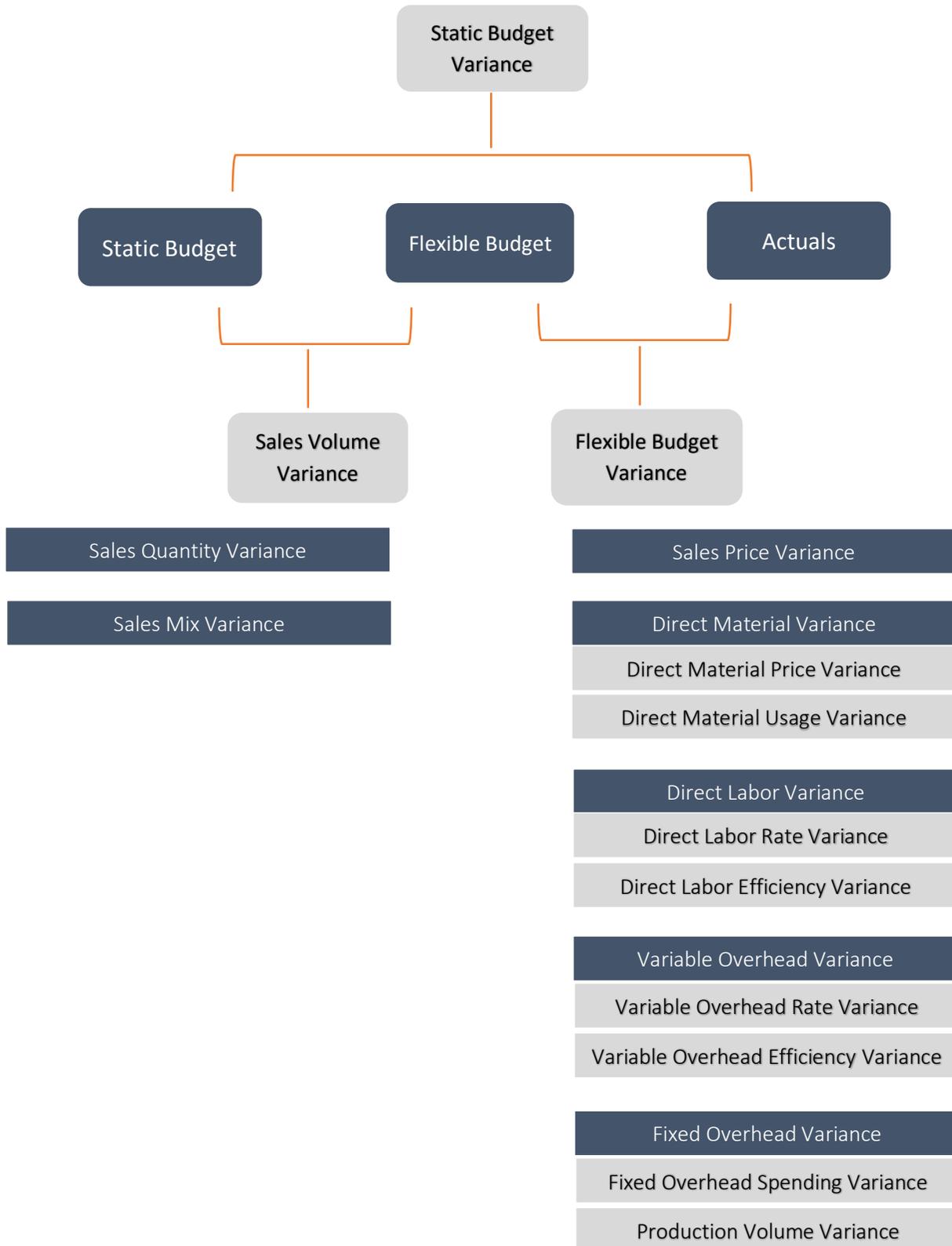
## Variance Analysis

- Definition and Types
  - The monitoring of budgets is done by comparing the Budgeted Figures with the Actual Figures.
  - Variances may be of two types:
    - Unfavorable Variance
      - An Unfavorable Variance is a variance that causes a lower revenue or higher expense than what was budgeted.
    - Favorable Variance
      - A Favorable Variance is a variance that causes a higher revenue or a lower expense than what was budgeted.
- Management by Exception
  - Management intervenes only in Exceptional & Significant Situations
  - Allows management to prioritize their time according to the intensity of situations
  - Situations Warranting Management's Attention
    - Quantitative Factors
    - Qualitative Factors

- Advantages
  - Better Use of Management's Time
  - Boosts Employee Morale
- Disadvantages
  - Possibility of Lapses in Reporting
  - Reactive, not Proactive
- Using Management by Exception for analyzing variances
  - Variance is an indication of deviation from the set standards of performance, management intervention might be required if variances are deemed exceptional.
  - Favorable Variance
    - Management must Evaluate the Reason Behind Increased Favorable Variance
      - ⇒ Efficient Performance
      - ⇒ Faulty Standards-Setting
  - Unfavorable Variance
    - Corrective measures should be promptly implemented to deal with unfavorable variance

- Use of Standard Costing System
  - Standard Costs
    - Predetermined target costs, attainable under efficient & optimum conditions
    - Allows employees to establish their target & work towards attaining it
  - Components
    - Direct Materials
      - Standard Price
      - Standard Quantity
    - Direct Labor
      - Standard Rate
      - Standard Hours
    - Variable Overhead
      - Standard Rate
      - Standard Hours
    - Fixed Overhead
      - Budgeted Overhead
      - Pre-determined overhead rate

- Analysis of Variance from Standard Cost Expectations

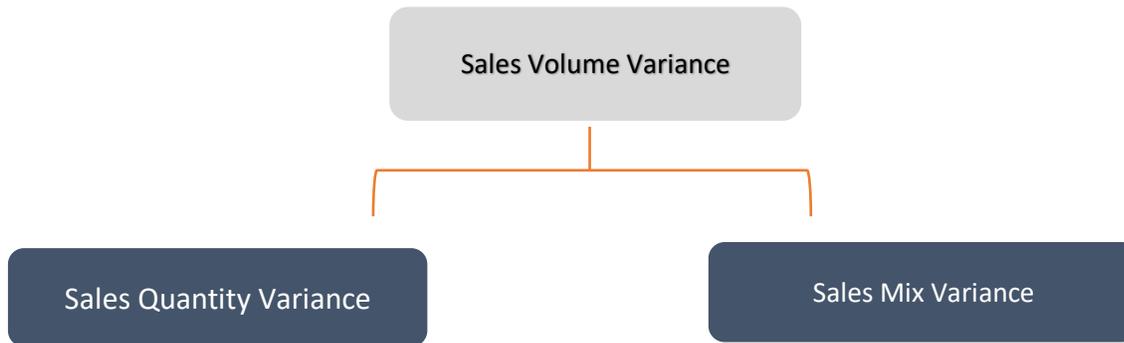


o Flexible Budget Variance

Variance	Formulae	Responsibility Center
<b>Sales Price Variance</b>	Actual Quantity x (Actual Price - Standard Price)	Sales Department
<b>Direct Material Variance</b>		
<b>Direct Material Price Variance</b>	Actual Quantity Purchased x (Standard Price - Actual Price)	Purchase Department
<b>Direct Material Usage Variance</b>	Standard Price x (Standard Quantity - Actual Quantity Used)	Production Department
<b>Direct Labor Variance</b>		
<b>Direct Labor Rate Variance</b>	Actual Hours x (Standard Rate - Actual Rate)	Human Resource Department
<b>Direct Labor Efficiency Variance</b>	Standard Rate x (Standard Hours - Actual Hours)	Production Department
<b>Variable Overhead Variance</b>		
<b>Variable Overhead Rate Variance</b>	Actual Hours x (Standard Rate - Actual Rate)	Production Department
<b>Variable Overhead Efficiency Variance</b>	Standard Rate x (Standard Hours - Actual Hours)	Production Department
<b>Fixed Overhead Variance</b>		
<b>Overhead Spending Variance</b>	Budgeted Fixed Overhead - Actual Fixed Overhead	Production Department
<b>Production Volume Variance</b>	Applied Fixed Overhead - Budgeted Fixed Overhead	Production Department

- Overhead Variance Approach
  - 4-Variance Approach
    - Variable Overhead Spending Variance
    - Variable Overhead Efficiency Variance
    - Fixed Overhead Spending (Budget) Variance
    - Production Volume Variance
  - 3-Variance Approach
    - Spending Variance: Variable Overhead Spending Variance + Fixed Overhead Spending (Budget) Variance
    - Efficiency Variance
    - Production Volume Variance
  - 2-Variance Approach
    - Controllable Variance: Variable Overhead Spending Variance + Fixed Overhead Spending (Budget) Variance + Efficiency Variance
    - Non-Controllable Variance: Production Volume Variance

- Sales Volume Variance



Variance	Formulae	Responsibility Center
<b>Sales Volume Variance</b>		
<b>Sales Quantity Variance</b>	Standard Contribution x Standard Mix x (Actual Quantity - Standard Quantity)	Sales Department
<b>Sales Mix Variance</b>	Standard Contribution x Actual Quantity x (Actual Mix - Standard Mix)	Sales Department