Budgetary Control & Variance Analysis

- Variance Analysis Overview
- Volume Variance & Flexible Budget Variance
- Input Quantity Variance & Input Price Variance

Variance Analysis

- **Compare budgeted and actual results to isolate the impact of individual input and output factors**
  - Compares actual resource input quantities & costs with the budgeted quantities & costs
    - Sales volume and selling prices
    - Resource input quantities & input unit costs

- **Utilized to…**
  - Revise plan assumptions
  - Evaluate employee performance

Example

Unit Cost Standards

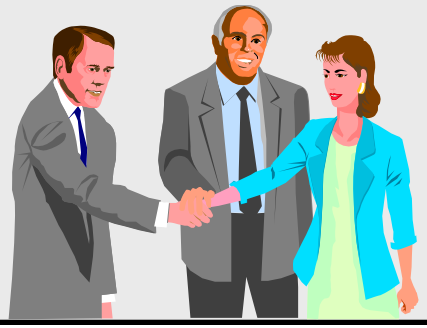
Exhibit 8.1 *Cindy's Recipe for a Specialty Cake*

Item	Quantity	Price	Cost per Cake
Butter	1.5 cups (3/4 pound)	$2.40/pound	$1.80
Granulated sugar	3 cups (1 pound)	$0.80/pound	0.80
Eggs	5 large	$0.12/egg	0.60
All-purpose flour	3 cups (3/4 pound)	$0.40/pound	0.30
Extracts & other items	Various	Various	0.25
		Total	$3.75

Setting Direct Materials Standards

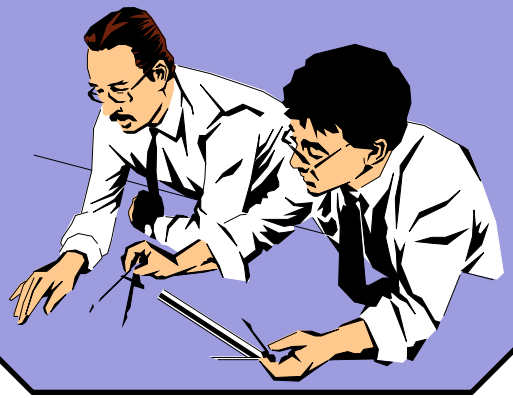
Standard Price per Unit

Final, delivered cost of materials, net of discounts.



Standard Quantity per Unit

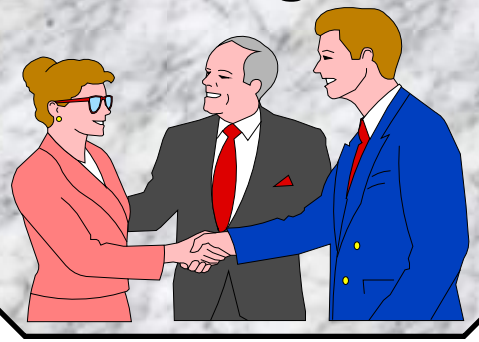
Summarized in a Bill of Materials.



Setting Direct Labor Standards

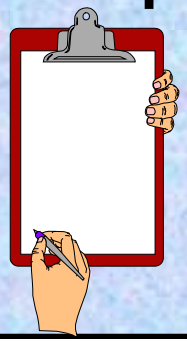
Standard Rate per Hour

Often a single rate is used that reflects the mix of wages earned.



Standard Hours per Unit

Use time and motion studies for each labor operation.



Setting Standard Costs

Should we use ideal standards that require employees to work at 100 percent peak efficiency?

I recommend using practical standards that are currently attainable with reasonable and efficient effort.

Engineer

Managerial Accountant

Cindy's Master Budget

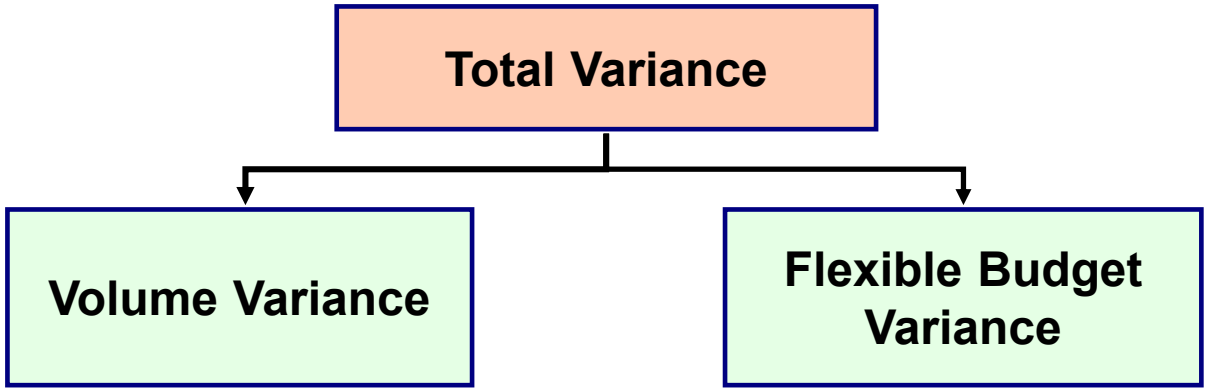
Exhibit 8.2 *Cindy's Cakes: Master Budget*

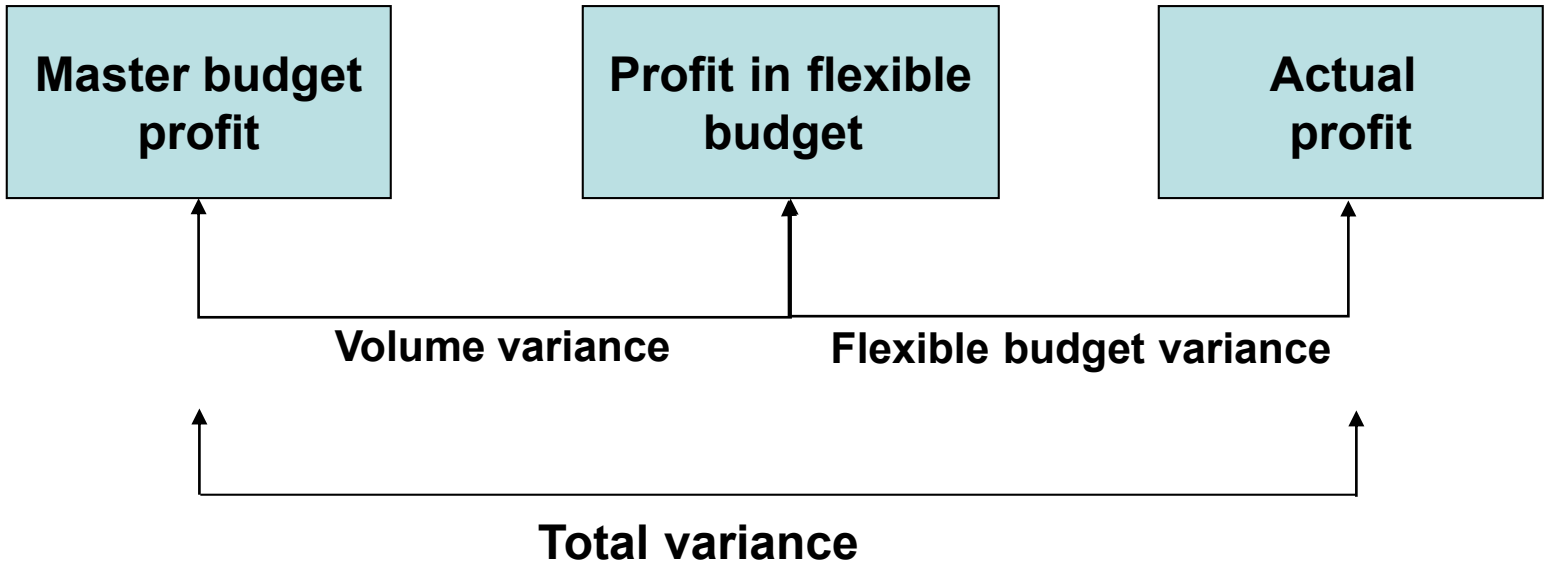
			Amount
Revenue	3,500 cakes × $20.95 per cake		$73,325
Variable costs			
Raw materials	3,500 cakes × $3.75 per cake	$13,125	
Direct labor	3,500 cakes × 0.50 hours/cake × $20/hour	35,000	
Variable overhead	3,500 cakes × 0.50 hours/cake × $1.10/hour	1,925	
Total variable costs			$50,050
Contribution margin			$23,275
Fixed costs			
Rent		$2,500	
Equipment costs		10,000	
Transportation		1,500	
Total fixed costs			$14,000
Profit before taxes			$9,275

Actual Results Differ

	Master Budget	Actual Results	Variance	Fav/ Unf
Number of cakes sold	3,500	3,800	300	F
Revenue	$73,325	$75,810	$2,485	F
Variable Costs				
Raw materials	$13,125	$14,567	($1,442)	U
Direct labor	35,000	39,000	(4,000)	U
Variable overhead	1,925	2,262	(337)	U
Contribution Margin	$23,275	$19,981	($3,294)	U
Fixed Costs				
Rent	$2,500	$2,500	$0	
Equipment costs	10,000	10,500	(500)	U
Transportation	1,500	1,500	0	
Profit before Taxes	**$9,275**	**$5,481**	**($3,794)**	U

Volume vs Flexible Budget Variances





Volume vs Flexible Budget Variances

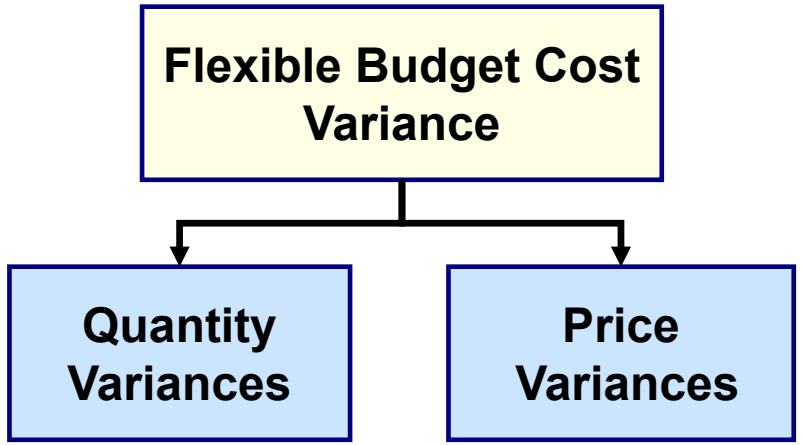
- **"Flexible" budgets use hindsight to determine what the budget "should" have been at actual sales volume**
  - Using principles of Variable and Fixed cost behavior, recast the budget at actual sales volume
  - **Volume Variance**: Variances between the original Planning Budget and Flexible Budget are solely due to differences in sales volume
    - **Note**: Volume variances only effect Sales Revenue & Variable Costs… Fixed Costs do not change if volume changes
  - **Flexible Budget Variance**: Variances between the Flexible Budget and Actual results are due to operating issues relating to selling prices, input quantities, and/or input prices, not due to volume issues

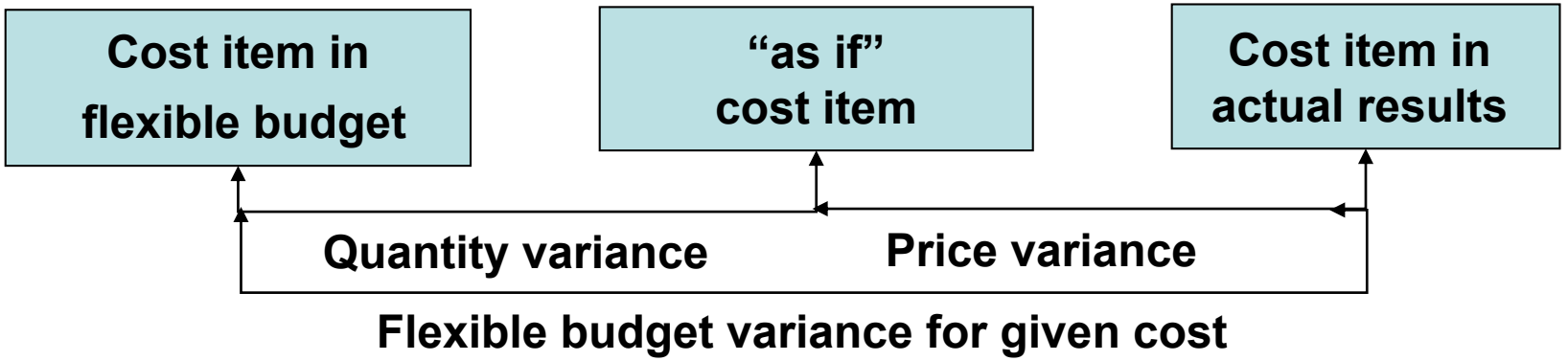
Volume & Flexible Budget Variances

Exhibit 8.7 *Cindy's Cakes: Sales Volume and Flexible Budget Variances*

	Master Budget	*Sales Volume Variance*	Flexible Budget	*Flexible Budget Variance*	Actual Results
Number of cakes	3,500		3,800		3,800
Revenue	$73,325	$6,285 **F**	$79,610	($3,800) **U**	$75,810
Variable costs					
Raw materials	$13,125	($1,125) **U**	$14,250	($317) **U**	$14,567
Direct labor	35,000	(3,000) **U**	38,000	(1,000) **U**	39,000
Variable overhead	1,925	(165) **U**	2,090	(172) **U**	2,262
Contribution margin	$23,275	$1,995 **F**	$25,270	($5,289) **U**	$19,981
Fixed costs					
Rent	$2,500	$0	$2,500	$0	$2,500
Equipment costs	10,000	0	10,000	(500)	10,500
Transportation	1,500	0	1,500	0	1,500
Profit before taxes	$9,275	$1,995 **F**	$11,270	($5,789) **U**	$5,481

Input Quantity & Input Price Variances





Tabular Format

	Flexible Budget (Flexible budget input quantity × budgeted price)	*Input* Quantity Variance		**"As if" budget** (Actual input quantity × budgeted price)	*Input Price* Variance		**Actual Results** (Actual input quantity × Actual price)
Raw materials	$14,250	$192	**F**	$14,058	($509)	**U**	$14,567
Direct labor	$38,000	($1,000)	**U**	$39,000	$0		$39,000
Variable overhead	$2,090	($55)	**U**	$2,145	($117)	**U**	$2,262
Total Variable	**$54,340**	**($863)**	**U**	**$55,203**	**($616)**	**U**	**$55,829**

Interpreting Variances

- **Investigate all significant variances**
  - Large variance shows poor plan / execution
- **Examine trends**
  - Consistent variances may suggest you revisit plan assumptions
- **There may be a common theme between variances**
  - Poor quality material at low input price
  - Highly skilled labor at high wages

Non-financial Controls

- **Non financial measures better on**
  - Timeliness
  - Specificity

- **Non-financial measures used for**
  - Process control
    - Provide localized feedback for immediate action
  - Agency control (Chapter 12 & 13)