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| Chapter 21 Outline**I.** **Fixed and Flexible Budgets** 1. Managers use budgets to control operations and see that planned objectives are met.
2. Budget reports - compare budgeted results to actual results.
3. Common periods for budget reports are for a month, a quarter and for a year.
	* 1. Master budget is based on a predicted level of activity, such as sales volume, for the budget period.
		2. Two alternative approaches: fixed budgeting or flexible budgeting.
4. Fixed budgeting: a fixed budget (also called a static budget) is based on one predicted amount of sales or other activity measure.
5. Flexible budgeting: a flexible budget (also called a variable budget) is based on more than one amount of sales or activity levels.
6. A flexible budget is more useful when actual results are different from predicted.
7. Fixed Budget Performance Report
	* 1. Compares actual results with planned activities (that predicted a certain sales volume or other activity level). (Exhibit 21.2)
		2. Shows budgeted amounts, actual amounts and variances.
8. Favorable variance (F)⎯actual income is higher than budgeted income, when actual revenue is higher than budgeted revenue, or when actual cost is lower than budgeted cost.
9. Unfavorable variance (U)⎯Actual income is lower than budgeted income, when actual revenue is lower than budgeted revenue, or when actual cost is greater than budgeted cost.
10. Budget Reports for Evaluation - managers use budget reports to monitor and control operations.
11. Fixed budget report is limited because it is not an apples-to-apples comparison based on similar levels of activity.

**II. Flexible Budget Reports** –Superior alternative to fixed budget reports.1. Purpose of Flexible Budgets

Flexible budget prepared before the period begins, is often based on several levels of activity. Provide different “what-if” scenarios. Includes both best-case and worst-case activity levels.1. Flexible budget prepared after the period ends helps managers evaluate performance.
2. Especially useful because it reflects budgeted activity levels equal to actual activity level.
3. Comparisons of actual results with budgeted performance are more likely to reveal the causes of any variances.
4. Helps managers focus attention on problems resulting in unfavorable variances and opportunities resulting in favorable variances.
5. Preparation of Flexible Budgets
6. To prepare a flexible budget, follow these steps:
	1. Identify activity levels, such as units produced or sold.
	2. Identify costs and classify them as fixed or variable
	3. Compute budgeted sales: Sales price per unit x units of activity.
		1. Compute budgeted variable costs: Variable cost per unit x Units of activity. Fixed costs are constant at each activity level.
		2. Compute budgeted income as Sales minus Variable and Fixed costs.
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| 1. Flexible Budget Equation for Total Budgeted Costs
2. Flexible budgets can be prepared at any level of activity.
3. Total Budgeted costs = Total fixed costs + (Total variable cost per unit x Units of activity).
4. Flexible Budget Performance Report
5. Compares actual performance and budgeted performance based on actual sales activity level.
6. Directs management’s attention to actual amounts that differ greatly from budgeted amounts.
7. Analyzing Variances.
8. Management uses flexible budget performance report to investigate variances and evaluate performance.
9. Management focuses on large variances.
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| 1. **Standard Costing**⎯Standard costs are preset costs for delivering a product or service under normal conditions.
2. Manufacturing companies use standard costing for direct materials, direct labor and overhead costs.
3. When actual costs vary from standard costs, management identifies the reason and takes corrective action.
4. Management by exception: managers focus attention on most significant differences between actual costs and standard costs.
5. Often used in preparing budgets because they are the anticipated costs incurred under normal conditions.
6. Service companies also use standard costs.
7. Especially effective in controlling overhead costs.
8. **Setting Standard Costs**
9. Identifying Standard Costs
10. Standards for direct labor costs set by time and motion studies that show the direct labor hours required under normal operations.
11. Standards for direct materials set by studying quantity, grade, and cost of each material used.
12. Overhead standards set by studying resources needed to support production activities.
13. Standards should be challenging, but attainable and should include material waste and idle time.
14. **Cost Variance Analysis**⎯Cost variance (or simply variance) is difference between actual and standard cost; can be favorable (if actual cost is less than standard cost) or unfavorable (if actual cost is more than standard cost).
15. Flow of events in variance analysis
16. Prepare a standard cost performance report.
17. Compute and analyze variances.
18. Identify questions and their answers.
19. Take corrective and strategic actions.
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| 1. Cost Variance Computation⎯Cost variance (CV) equals actual cost (AC) minus standard cost (SC).
2. Actual quantity (AQ ) Standard quantity (SQ)x Actual price (AP) x Standard price (SP) Actual Cost (AC) Standard Cost (SC)
3. Actual quantity is actual amount of material or labor used in manufacturing the actual quantity of output, and Standard Quantity is the input expected for the quantity of output.
4. Actual Price is amount paid for acquiring the input (material or labor), and Standard Price is the expected price.
5. Direct Materials and Direct Labor Variances. Two factors explain direct materials and direct labor variances:
	* + 1. Price (or rate) variance – difference between actual price per unit of input and standard price per unit of input.
			2. Quantity (or efficiency) variance – difference between actual quantity of input used and standard quantity of input that should have been used.
6. Price variance and quantity variance formulas:

**Actual Cost**   **Standard Cost** AQ x AP AQ x SP SQ x SP  Price variance Quantity variance (AQ x AP) – (AQ x SP) (AQ x AP) – (AQ x SP) Cost variance1. Alternative price variance and quantity variance formulas:
2. Price variance = (Actual price – Standard price) x Actual quantity.

PV = (AP – SP) x AQ.1. Quantity variance = (Actual quantity - Standard quantity) x Standard price.

QV = (AQ – SQ) x SP.1. Evaluating Direct Materials Variances
	* + 1. Purchasing department is responsible for the price paid for materials. Purchasing department might have negotiated poor prices or purchased higher-quality materials.
			2. Production department is responsible for the quantity of direct material uses. Production department might have used more than the standard amount of material because low quality material caused excessive waste. Or, waste could be due to inefficiencies, not poor-quality material.
2. Computing Direct Labor Variances

Higher-skilled workers might finish the same number of units in fewer hours, but have a higher wage rate. Lower-quality materials, poor employee training, little supervision, equipment breakdowns, and idle works can lead to unfavorable direct labor efficiency variances. |
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| 1. **Overhead Standards and Variances**⎯managers apply overhead costs to products and services using a standard overhead rate resulting in overhead amounts expected to occur at a specific activity level.
2. Flexible Overhead Budgets – show budgeted variable costs per unit and fixed costs for the period.
3. Standard Overhead Rate – follow three step process:

Step 1: determine an allocation base: a measure of input related to overhead costs, such as direct labor hours or machine hours.Step 2: predict an activity level – not set at 100% Typically work at less than full capacity.Step 3: compute the standard overhead rate = flexible overhead budget at predicted activity level divided by standard allocation base at predicted activity level.C. Computing Overhead Cost Variances1. Standard overhead is applied is based on actual production times standard amount of allocation base times standard overhead rate.

 Overhead Variance =Actual total OH minus Standard OH applied 1. Volume Variance and Controllable Variance

1. Volume Variance – difference between budgeted fixed overhead and standard fixed overhead applied for the actual units produced. 2. Occurs when the company operates at a different capacity level than was predicted.3. Usually considered outside the control of the production manager, because it depends on customer demand.4. Computed as: budgeted fixed overhead minus standard fixed overhead applied.E. Controllable Variance – difference between actual overhead and the flexible budget of total overhead for actual units produced. 1. Computed as actual total overhead minus flexible budget of total overhead for actual units produced.1. An unfavorable volume means the company did not reach its expected operating level – a favorable variance means the company operated at a greater than expected operating level
2. Often the reasons the failing to meet expected operating levels are due to factors beyond the production manager’s control.
3. Overhead Variance Report – helps management isolate the reasons for the controllable variance. Shows overhead costs and how they differ from budgeted amounts.
4. **Decision Analysis⎯Sales Variances**⎯Similar to computation and analysis of cost variances.
5. Sales price variance and sales volume variance can be computed. Managers use sales variances for planning and control purposes.
6. Sales price variance measures the impact of the actual sales price differing from the expected price.
7. Sales volume variance measures the impact of operating at a different capacity level than predicted by the fixed budget.
8. Sales growth rate can be computed to estimate future sales. Computed as (Analysis period sales minus Base period sales) divided by Base period sales then multiplied by 100.
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| 1. **Expanded Overhead Variances and Standard Cost Accounting System**
2. Computing Overhead Cost Variances -- Exhibit 21A.1 shows that the variable overhead spending and efficiency variances and the fixed overhead spending variance are combined to get the controllable variance.
3. A *spending variance* occurs when management pays an amount different from the standard price to acquire an overhead item.
4. An *efficiency variance* occurs when standard direct labor hours (the allocation base) expected for actual production differs from actual direct labor hours used.
5. Computing Variable and Fixed Overhead Variances
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| Variable Variance Formulas:**Actual Variable Overhead** **Applied Variable Overhead**AH x AVR AH x SVR SH x SVR Spending variance Efficiency variance (AH x AVR) – (AH x SVR) (AH x SVR) – (SH x SVR) Variable overhead varianceAH = actual hours, AVR = actual variable overhead rate, SH = standard hours, and SVR = standard variable overhead rate.2. Fixed Overhead Variance Formulas: **Actual Fixed Overhead Budgeted Fixed Overhead Applied Fixed Overhead** (given) (flexible budget)SH x SFR Spending variance Volume variance (actual – budgeted) (budgeted – applied) Fixed overhead varianceSH = standard hours, and SFR = standard fixed overhead rate |
| 1. **Standard Cost Accounting Systems**

Standard cost systems also record standard costs and variances in most accounts.1. Direct materials:

Work in Process Inventory (standard cost) xxxDirect Materials Price Variance xxx Direct Materials Quantity Variance xxx Raw Materials Inventory (actual cost) xxx *(the variances are debited if unfavorable or credited if favorable*)1. Direct labor:

Work in Process Inventory (standard cost) xxxDirect Labor Rate Variance xxx Direct Labor Efficiency Variance xxx Factory Wages Payable (actual cost) xxx*(the variances are debited if unfavorable or credited if favorable)*1. Overhead:

Work in Process Inventory (standard cost) xxxVolume Variance xxx Controllable Variance xxx Factory Overhead xxx*(the variances are debited if unfavorable or credited if favorable)*1. Accumulate balances in the different variance accounts until end of accounting period; to close, add to or subtract from the manufacturing costs recorded in the period.
2. If variance is immaterial, add to, or subtract from, balance of Cost of Goods Sold.
3. Recorded costs will equal actual costs in the period.
4. Can use a standard costing income statement to summarize a company’s performance. The Income Statement reports sales and cost of goods sold at standard amounts and then lists the individual sales and cost variances (favorable are subtracted and unfavorable are added) to compute gross profit at standard cost.
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