Chapter 8

Lecture Notes

Chapter theme: This chapter describes how organizations define their financial goals by preparing numerous budgets that collectively form an integrated business plan known as a **master budget**. The master budget communicates management’s plans throughout the organization, allocates resources, and coordinates activities.

1

1. **The basic framework of budgeting**

*Learning Objective 1: Understand why organizations budget and the processes they use to create budgets.*

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* 1. **Basic definitions**
     1. A **budget** is a detailed quantitative plan for acquiring and using financial and other resources over a specified forthcoming time period.

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* + - 1. The act of preparing a budget is called **budgeting**.
      2. The use of budgets to control an organization’s activities is known as **budgetary control**.

#### Difference between planning and control

* + 1. **Planning** involves developing objectives and preparing various budgets to achieve those objectives.

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* + 1. **Control** involves the steps taken by management to increase the likelihood that the objectives set down at the planning stage are attained and that all parts of the organization are working together toward that goal.

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* + 1. To be effective, a good budgeting system must provide for **both** planning and control. Good planning without effective control is time wasted.

#### Advantages of budgeting

* + 1. Budgets **communicate** management’s plans throughout the organization.
    2. Budgets force managers to **think about** and plan for **the future**.
    3. The budgeting process provides a means of **allocating resources** to those parts of the organization where they can be used most effectively.

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* + 1. The budgeting process can uncover potential **bottlenecks** before they occur.
    2. Budgets **coordinate** the activities of the entire organization by integrating the plans of its various parts.
    3. Budgets define **goals and objectives** that can serve as **benchmarks** for evaluating subsequent performance.

*Helpful Hint: Mention to students that budgets are prepared for reasons other than projecting income statement and balance sheet account balances. Ask students to think about some other information that might be provided by budgets, such as determining the* *need for short-term borrowing or estimating raw material needs.*

#### Other terminology/concepts related to budgeting

* + 1. **Responsibility accounting**
       1. The premise of responsibility accounting is that managers should be held responsible only for those items that they can **control** to a significant extent.
          1. Responsibility accounting systems enable organizations to **react quickly** to deviations from their plans and to **learn** from feedback obtained by comparing budgeted goals to actual results. The point is not to **penalize** individuals for missing targets.

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* + 1. **Choosing a budget period**
       1. **Operating budgets** ordinarily cover a one- year period corresponding to a company’s fiscal year. Many companies divide their annual budget into four quarters.

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* + - * 1. In this chapter we focus on one-year operating budgets.
      1. A **continuous or perpetual budget** is a 12-month budget that rolls forward one month (or quarter) as the current month (or quarter) is completed.
         1. This approach keeps managers focused on the future at least one year ahead.

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* + 1. **The self-imposed budget**
       1. A **self-imposed budget** or **participative budget** is a budget that is prepared with the full cooperation and participation of managers at all levels. It is a particularly useful approach if the budget will be used to evaluate managerial performance.

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* + - 1. The **advantages** of self-imposed budgets include:
         1. Individuals at all levels of the organization are viewed as **members of the team** whose judgments are valued by top management.
         2. Budget estimates prepared by front-line managers (who have intimate knowledge of day-to-day operations) are often **more accurate** than estimates prepared by top managers.

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* + - * 1. **Motivation is generally higher** when individuals participate in setting their own goals than when the goals are imposed from above.
        2. A manager who is not able to meet a budget imposed from above can claim that it was **unrealistic**. Self-imposed budgets eliminate this excuse.
      1. Self-imposed budgets should be reviewed by higher levels of management. Without such a review, self-imposed budgets may have too much “**budgetary slack**,” or may not be aligned with overall strategic objectives.

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* + - 1. Most companies do not rely exclusively upon self-imposed budgets in the sense that **top managers usually initiate the budget process** by issuing broad guidelines in terms of overall target profits or sales. Lower level managers are directed to prepare budgets that meet those targets.

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*Helpful Hint: Ask students if they ever worked in an organization with a management-imposed budget or a participative budget. Solicit the reactions of students to these kinds of budgets and the effects they had on motivation and performance.*

* + 1. **Human factors in budgeting**
       1. The success of a budget program depends on **three important factors**:
          1. Top management must be **enthusiastic and committed** to the budgeting process; otherwise nobody will take it seriously.
          2. Top management must not use the budget to **pressure** employees or **blame** them when something goes wrong. This breeds hostility and mistrust rather than cooperative and coordinated efforts.

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* + - * 1. **Highly achievable budget targets** are usually preferred (rather than “stretch budget” targets) when managers are rewarded based on meeting budget targets.

#### The master budget: an overview

* + 1. The master budget consists of a number of separate but **interdependent** budgets.
       1. The **sales budget** shows the expected sales for the budget period expressed in dollars and units. It is usually based on a company’s **sales forecast**.
          1. All other parts of the master budget are dependent on the sales budget.
       2. The **production** **budget** is prepared after the sales budget. It lists the number of units that must be produced during each budget period to meet sales needs and to provide for the desired ending inventory. The production budget in turn directly influences the **direct materials**, **direct labor**, and **manufacturing overhead budgets,** which in turn enable the preparation of the **ending finished goods inventory budget**.

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* + - * 1. These budgets are then combined with data from the sales budget and the **selling and administrative expense budget** to determine the cash budget.
      1. The **cash budget** is a detailed plan showing how cash resources will be acquired and used over a specified time period.
         1. All of the operating budgets have an impact on the cash budget.
      2. The last step of the process is to prepare a **budgeted income statement** and a **budgeted balance sheet**.

ii. To help you see the “big picture” keep in mind that the 10 schedules in a master budget are designed to answer the 10 questions as shown on the next two slides.

13-14

iii. It also bears emphasizing that a master budget is based on various estimates and assumptions. For example, the sales budget requires three estimates/assumptions as follows:

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1. What are the budgeted unit sales?

2. What is the budgeted selling price per unit?

3. What percentage of accounts receivable will be collected in the current and subsequent periods?

iv. When Microsoft Excel is used to create a master budget, these types of assumptions can be depicted in a Budgeting Assumptions tab, thereby enabling the Excel-based budget to answer “what-if” questions.

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*Helpful Hint: Budgets—particularly in large organizations—can be very complex. To keep the complexity within bounds, we have simplified the budgets. Even so, these simplified budgets are intricate, and the level of detail may be overwhelming to some students. Emphasize that each step in the process is fairly simple, but the budgets must fit together for the plan to be successful. Return to Exhibit 9-2 from time to time to review the master budget interrelationships.*

1. **Preparing the master budget**

*Learning Objective 2: Prepare a sales budget, including a schedule of expected cash collections.*

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#### The sales budget

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* + 1. Assume the facts as shown for the Royal Company.
       1. The sales budget multiplies the budgeted sales in units for each month by the selling price per unit.
          1. The total sales budget for the quarter (**$1,000,000**) is calculated by multiplying the budgeted sales in units for the quarter (**100,000**) by the selling price per unit (**$10**).

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* + 1. Assume the information as shown regarding Royal’s expected cash collections.

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* + - 1. The **first step** in calculating Royal’s cash collections is to insert the **beginning accounts receivable balance** (**$30,000**) into the April column of the cash collections schedule.

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* + - * 1. This balance will be collected in full in April.
      1. The **second step** is to calculate the April credit sales that will be collected during each month of the quarter.

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* + - * 1. **$140,000** ($200,000 × 70%) will be collected in April and **$50,000** ($200,000 × 25%) will be collected in May. **$10,000** ($200,000 × 5%) will be uncollectible.
      1. The **third step** is to calculate the May credit sales that will be collected during each month of the quarter.

22

* + - * 1. **$350,000** ($500,000 × 70%) will be collected in May and **$125,000** ($500,000 × 25%) will be collected in June. **$25,000** ($500,000 × 5%) will be uncollectible.

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*Quick Check – calculating cash collections*

24-25

* + - 1. The **fourth step** is to calculate the June credit sales that will be collected during the month of June.
         1. **$210,000** ($300,000 × 70%) will be collected in June.

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* + - 1. The **fifth step** is to calculate the total for each column in the schedule and the total for the quarter (**$905,000**).

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*Learning Objective 3: Prepare a production budget.*

#### The production budget (must be adequate to meet budgeted sales and to provide for the desired ending inventory)

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* + 1. Assume the information as shown to enable the preparation of Royal’s production budget (If Royal was a merchandising company it would prepare a **merchandise purchases budget** instead of a production budget).

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* + - 1. The **first step** in preparing the production budget is to insert the budgeted sales in units from the sales budget.

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* + - 1. The **second step** is to calculate the required production in units for April (**26,000 units**).
         1. Notice, the desired ending inventory in units for April (**10,000 units**) and the beginning inventory in units for April (**4,000 units**).

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32-33

*Quick Check – Calculating required production*

* + - 1. The **third step** is to calculate the required production for May (**46,000 units**).

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* + - * 1. Notice, April’s desired ending inventory (**10,000 units**) becomes May’s beginning inventory.
      1. The **fourth step** is to calculate the required production for June (**29,000 units**).
         1. Notice, we are **assuming** a desired ending inventory of **5,000 units** (which implies that projected sales in July are 25,000 units).

35

* + - 1. The **fifth step** is to complete the “Quarter” column.
         1. Notice, April’s beginning inventory and June’s ending inventory are carried over to this column.

*Helpful Hint: Many students have a tendency to add up the inventory amounts instead of using the ending or the beginning figure. Pointing this out early might reduce confusion on the part of students.*

*Learning Objective 4: Prepare a direct materials budget, including a schedule of expected cash disbursements for purchases of materials.*

36

#### The direct materials budget

* + 1. Assume the information as shown to enable the preparation of Royal’s **direct materials budget** which quantifies the raw materials that must be purchased to fulfill the production budget and to provide for adequate inventories.

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* + - 1. The **first step** in preparing the direct materials budget is to insert the required production in units from the production budget.

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* + - 1. The **second step** is to calculate the monthly and quarterly production needs, which in this case are stated in terms of **pounds** of direct material.

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* + - 1. The **third step** is to calculate the materials to be purchased for April (**140,000 pounds**). Notice:
         1. The desired ending inventory of **23,000 pounds** is 10% of the following month’s production.

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* + - * 1. The beginning inventory of **13,000 pounds** is the same as the March 31st ending inventory.

*Quick Check – direct material purchases*

41-42

* + - 1. The **fourth step** is to calculate the materials to be purchased for May (**221,500 pounds**). Notice:

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* + - * 1. April’s desired ending inventory becomes May’s beginning inventory.
      1. The **fifth step** is to calculate the materials to be purchased for June (**142,000 pounds**) and to calculate the quarterly totals. Notice:
         1. We are **assuming** a desired ending inventory for June of **11,500 pounds**.

44

* + - * 1. April’s beginning inventory and June’s ending inventory carry over to the “Quarter” column.

*Helpful Hint: Tell the students that the inventory purchases budget or the raw materials purchase budget are really just the elements of a cost of goods sold schedule in a different order.*

* + 1. Assume the information as shown regarding Royal’s expected cash disbursements for materials.

45

* + - 1. The **first step** in calculating Royal’s cash disbursements is to insert the **beginning accounts payable balance** (**$12,000**) into the April column of the cash disbursements schedule.

46

* + - * 1. This balance will be paid in full in April.
      1. The **second step** is to calculate the April credit purchases that will be paid during each month of the quarter.

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* + - * 1. **$28,000** ($56,000 × 50%) will be paid in April and **$28,000** ($56,000 × 50%) will be paid in May.

1. The **$56,000** is derived by multiplying **140,000** pounds by the **$0.40** per pound purchase price.

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*Quick Check – cash disbursements calculations*

48-49

* + - 1. The remaining steps include:
         1. Calculating the May and June credit purchases that are paid during each month of the quarter.

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* + - * 1. Calculating the totals for all columns in the schedule and the total for the quarter (**$185,000**).

*Learning Objective 5: Prepare a direct labor budget.*

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#### The direct labor budget

* + 1. Assume the information as shown to enable the preparation of Royal’s **direct labor budget** which enables the company to match its direct labor hours provided with its production needs.

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* + - 1. The **first step** in preparing the direct labor budget is to insert the production in units from the production budget.

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* + - 1. The **second step** is to compute the direct labor hours required to meet the production needs. Notice:

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* + - * 1. **0.05** direct labor hours are needed per unit.
      1. The **third step**, in this particular example, is to compute the direct labor hours paid. Notice:

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* + - * 1. In this example, there are **guaranteed labor hours** that will be paid for regardless of production needs.

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* + - 1. The **fourth step** is to compute the total direct labor cost. Notice:
         1. With direct labor, we computed all three months at the same time. This is because there is no beginning and ending inventory to consider.

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*Quick Check – direct labor cost calculations*

57-58

*Learning Objective 6: Prepare a manufacturing overhead budget.*

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#### The manufacturing overhead budget

* + 1. Assume the information as shown to enable the preparation of Royal’s **manufacturing overhead budget**.This budget provides a schedule of all costs of production other than direct materials and direct labor.

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* + - 1. The **first step** in preparing the manufacturing overhead budget is to calculate the **variable manufacturing overhead costs** for each month and in total. Notice:

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* + - * 1. The direct labor hours required is taken directly from the **direct labor budget**.
      1. The **second step** is to add the fixed manufacturing overhead costs (**$50,000 per month**) to the variable overhead costs to arrive at total manufacturing overhead costs for each month and in total. Notice:
         1. We can determine the predetermined overhead rate for the quarter (**$49.70**).

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* + - * 1. Once the level of fixed costs has been determined in the budget, the costs really are fixed; hence, the time to adjust fixed costs is **during the budgeting process**.
      1. The **third step** is to calculate the cash disbursements for manufacturing overhead by subtracting **noncash expenses** from the total manufacturing overhead costs computed in step two.

63

* + - * 1. In this example, **$20,000 of depreciation** is deducted from each month’s total overhead costs to arrive at the cash disbursements for manufacturing overhead costs.

*Helpful Hint: Have the students trace the amounts from the raw materials purchase, direct labor, and manufacturing overhead budgets to the cash budget. Information from some of the budgets is needed by more than one individual—in this case the manufacturing department—and the controller would require the information from these budgets.*

#### The ending finished goods inventory budget

* + 1. Now Royal can complete the ending finished goods inventory budget.
       1. The **first step** in preparing this budget is to compute the direct materials cost per unit (**$2.00**).

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* + - * 1. The information needed can be derived by referring back to the direct materials budget.
      1. The **second step** is to compute the direct labor cost per unit (**$0.50**).

65

* + - * 1. The information needed can be derived by referring back to the direct labor budget.
      1. The **third step** is to compute the manufacturing overhead cost per unit (**$2.49**) and the total inventoriable cost per unit (**$4.99**). Notice:
         1. Royal is using an **absorption costing** approach to valuing its inventory.
         2. The quantities shown for direct labor and manufacturing overhead are the same (**0.05 hours**) because direct labor hours is the overhead allocation base.

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* + - * 1. The predetermined overhead rate was calculated when we prepared the manufacturing overhead budget.
      1. The **fourth step** is to calculate the value of the ending finished goods inventory (**$24,950**). Notice:

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* + - * 1. The ending inventory in units (**5,000**) is derived from the production budget.

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*Learning Objective 7: Prepare a selling and administrative expense budget.*

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#### The selling and administrative expense budget

* + 1. Assume the information as shown to enable the preparation of Royal’s **selling and administrative expense budget**.This budget lists the budgeted expenses for areas other than manufacturing and it is typically a compilation of many smaller, individual budgets.

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* + - 1. The **first step** in preparing this budget is to multiply the variable S, G & A rate by the number of units sold.
      2. The **second step** is to add in the fixed S, G & A expenses to arrive at total S, G & A expenses.

70

* + - 1. The **third step** is to deduct noncash S, G & A expenses to arrive at cash disbursements for S, G & A expenses.

*Quick Check – S, G & A expense calculations*

71-72

* + - 1. The same steps are followed for the months of May and June to arrive at total cash disbursements for S, G & A expenses for the quarter of **$230,000**.

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#### *Learning Objective 8: Prepare a cash budget.*

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#### The cash budget

1. The **format** of the cash budget
   * + 1. This budget should be broken down into time periods that are as **short as feasible**. It consists of **four major sections**:
          1. The **receipts** **section** lists all cash inflows excluding cash received from financing.
          2. The **disbursements section** consists of all cash payments excluding repayments of principal and interest.

75

* + - * 1. The **cash excess or deficiency section** determines if the company will need to borrow money or if it will be able to repay funds previously borrowed.
        2. The **financing section** details the borrowings and repayments projected to take place during the budget period.

*Helpful Hint: The idea that the cash budget should cover time periods as a short as possible should be understood by students with checking accounts. Fluctuations in cash flows can lead to a negative balance during the month even though the balance is positive at both the beginning and end of the month.*

* + 1. Assume the information as shown to enable the preparation of Royal’s **cash budget**.

76

* + - 1. The **first step** in preparing this budget is to calculate the total cash available (**$210,000**). Notice:

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* + - * 1. The cash collections for April (**$170,000**) come from the schedule of expected cash collections.
      1. The **second step** is to calculate the total cash disbursements (**$230,000**). Notice:
         1. Each cash disbursement, except dividends, comes from a schedule or budget that had already been prepared.

78

* + - 1. The **third step** is to calculate the excess (deficiency) of cash available over disbursements **($20,000)**.

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* + - 1. The **fourth step** is to determine the financing requirements and the ending cash balance. Notice:
         1. Because Royal maintains a $30,000 cash balance, **it must borrow $50,000** on its line-of-credit.

80

* + - * 1. The ending cash balance (**$30,000**) coincides with Royal’s minimum requirement.
        2. The ending cash balance for April will **carry forward** to become the beginning balance for May.
      1. These four steps are repeated for the month of May. The result is a **$30,000** **excess** of cash available over disbursements for May.

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* + - * 1. Since Royal must maintain a minimum cash balance of $30,000, it will not repay any of its loan in May.

*Quick Check – cash budgeting calculations*

82-83

* + - 1. The same four steps are repeated for June. The result is an excess of cash available of **$95,000**.
         1. This excess enables Royal to repay the **$50,000** in principal that was borrowed plus interest on the loan of **$2,000** ($50,000 × 16% × 3/12).

84

* + - * 1. The ending cash balance for the quarter is **$43,000**.
      1. Once the cash budget has been completed, the budgeted income statement can be prepared. The cash budget must be prepared first so that the interest expense can be determined for the budgeted income statement.

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*Learning Objective 9: Prepare a budgeted income statement.*

86

#### The budgeted income statement

* + 1. The numbers for the budgeted income statement come from other budgets that have already been prepared. More specifically:

#### The sale revenue comes from the sales budget.

* + - 1. The cost of goods sold, on a per unit basis, comes from the **ending finished goods inventory budget**.

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* + - 1. The selling and administrative expenses come from the **selling and administrative expenses budget**.
      2. The interest expense comes from the **cash budget**.

*Helpful Hint: Indicate that, for simplicity, income taxes were not included in these budgets, but taxes must be considered in a company’s budgeting process.*

*Learning Objective 10: Prepare a budgeted balance sheet.*

88

#### The budgeted balance sheet

1. Assume the information as shown to enable the preparation of the budgeted balance sheet.

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* + - 1. The budgeted balance sheet is prepared as follows:
         1. Cash (**$43,000**) is taken from the ending cash balance of the cash budget.
         2. Accounts Receivable (**$75,000**) is **25%** of June’s sales (**$300,000**).
         3. Raw materials inventory (**$4,600**) is calculated by multiplying the ending inventory of raw material in pounds (**11,500**) by the cost per pound (**$0.40**).

90

* + - * 1. The finished goods inventory (**$24,950**) is taken from the ending finished goods inventory budget.
        2. Land, equipment, and common stock are all **given**.
        3. Accounts payable (**$28,400**) is **50%** of June’s purchases (**$56,800**).
        4. The ending retained earnings (**$336,150**) is calculated by adding net income (**$239,000**) to the beginning retained earnings (**$146,150**), and then subtracting dividends (**$49,000**).

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