

Foundations of Accounting & Finance

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Week - 09

Lecture – 37

Introduction to Budgeting: Preparation of Budgets - Part I

Introduction

The next topic to be addressed is budgets, flexible budgets, and variances, covering the entire scope of these concepts. Let us start by briefly explaining what a budget is and how it operates, followed by some numerical examples.

The Basic Framework of Budgeting

Budget serves as a detailed quantitative plan for acquiring and utilizing financial and other resources within a specified upcoming time period. Typically, budgets span a year, but some organizations adopt a perpetual budgeting approach, ensuring there is always a one-year budget in place.

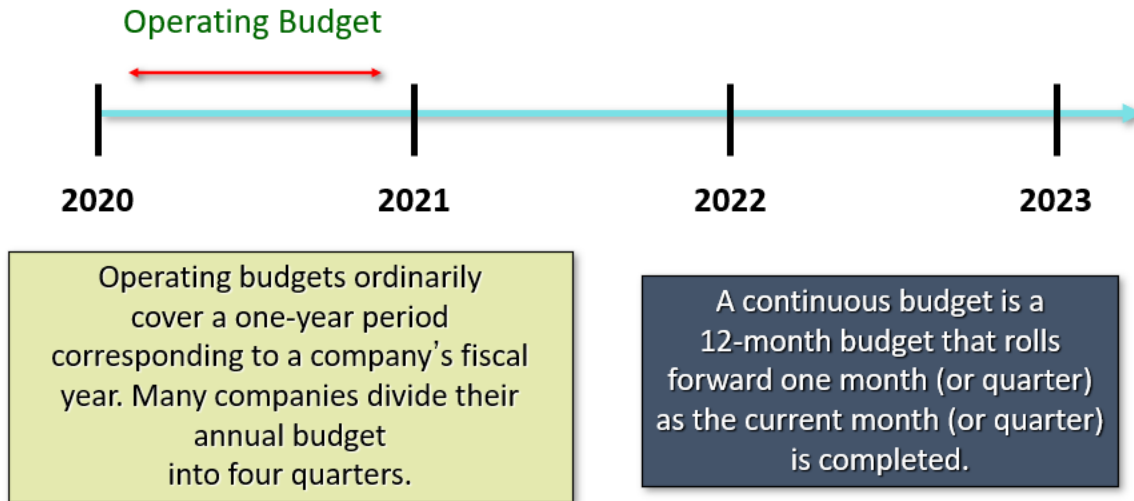
For instance, if we consider the end of December as a reference point, a perpetual budget starting from January 24 to December 24 would be established. As each month progresses, the budget extends by one month, ensuring that there is always a year-long projection. For example, as January concludes, February's budget would be added, covering February 24 to February 25, and so forth. This perpetual cycle involves continuously updating the budget by adding a month while removing the oldest month, adhering to the organization's policy, whether it's a one-year or a six-month budget cycle.

Typically, budgets align with the organization's fiscal year.

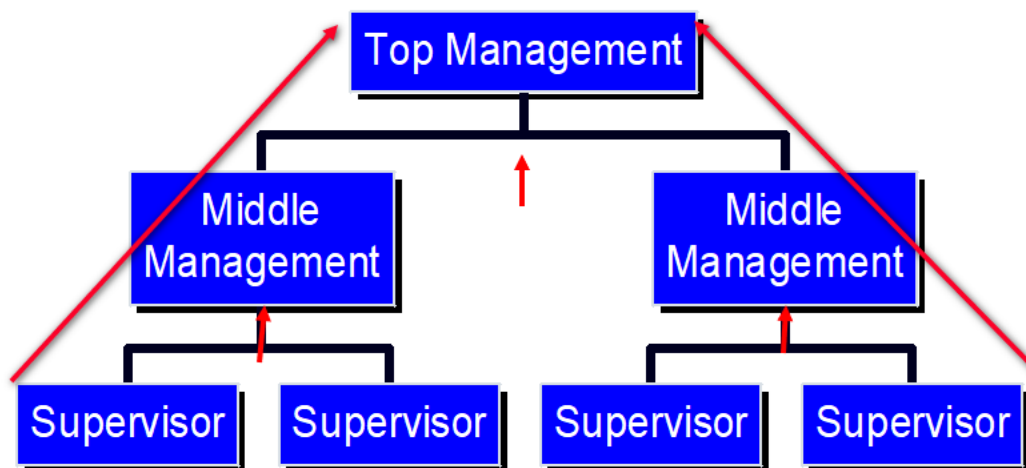
Choosing the Budget Period

When selecting a budget period, organizations often opt for a continuous budgeting approach, where a 12-month budget rolls forward by one month or one quarter as the current period concludes. This method ensures ongoing coverage and adaptability.

Operating budgets typically span one period and are commonly divided into multiple quarters or months, depending on the organization's policy. This segmentation allows for a more granular analysis and management of finances. The choice between quarters or months varies based on organizational needs and preferences.



Self-Imposed Budgets



When managers throughout the organization work collaboratively to prepare a budget they often strive to establish challenging targets that are also highly achievable. These goals are likely to build a lower-level manager's confidence and commitment to the budget

Are budgets driven from the top-down or bottom-up? The answer is both. Let us consider the estimation of production activity as an example.

From the top-down perspective, the overall vision and goals of the organization shape the budgeting process. However, bottom-up input is also crucial. Constraints and practicalities, such as material availability and production capacity, needs to be factored in.

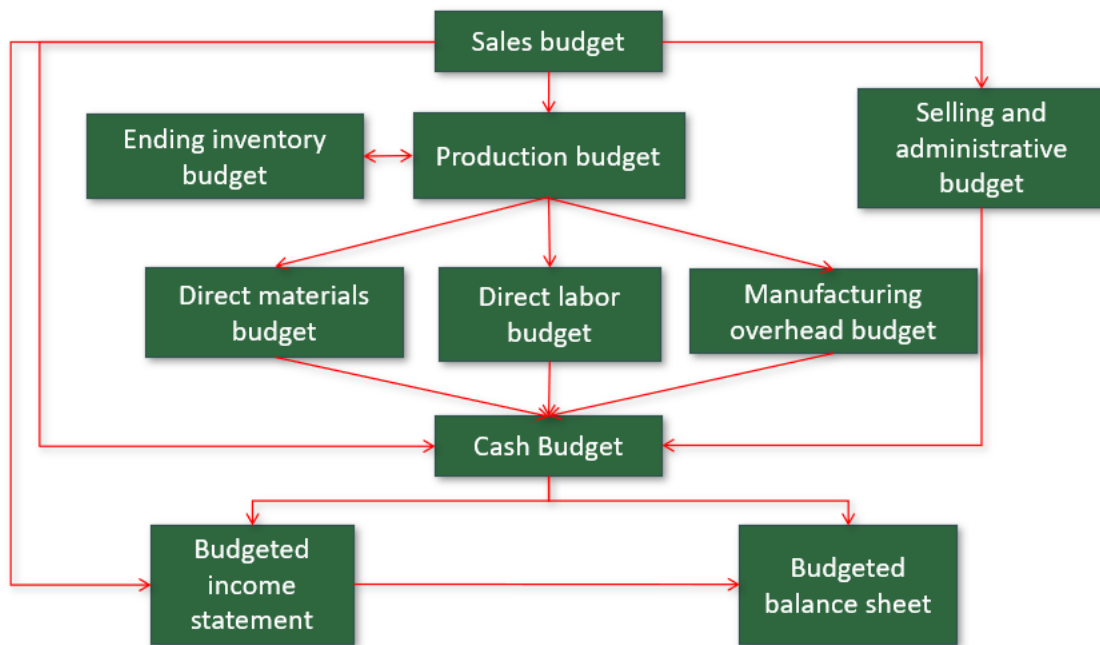
For instance, the procurement department determines the material availability based on market conditions and constraints. This information determines the production plan, considering factors

such as machine time and downtime. Subsequently, sales projections influence production decisions.

As information flows upward, from the supervisory level to the top management, adjustments may be made. Top management might decide to aggressively increase sales targets, prompting a re-evaluation of the budget.

Budgeting is an interactive process where information is collected, analysed, and reworked to establish targets. It involves assimilating data from various levels within the organization and adjusting plans accordingly.

The Master Budget – An Overview – Part 1



Sales budget serves as a foundation, setting the path for subsequent budgets. Once the projected number of units to be sold are determined, it influences the production budget. This, in turn, guides the materials budget, overhead budget, labour budget, and inventory budget. Maintaining an adequate buffer stock affects the calculation of ending inventory.

These interconnected budgets collectively influence the cash budget. Purchasing materials and paying for labour incur expenses, while sales generate revenue. Understanding the timing of these transactions, including credit terms for sales and purchases, are crucial. This information feeds into the cash budget, which in turn leads to the preparation of the income statement and balance sheet.

In essence, the master budget is a comprehensive framework where each component flows into the next, ultimately shaping the organization's financial statements.

Seeing the Big Picture

To provide a comprehensive understanding, it is essential to recognize that the 10 schedules within the master budget correspond to specific questions. These questions guide the preparation of each schedule:

1. How much sales revenue will we earn?
2. How much cash will we collect from customers?
3. How much raw material will we need to purchase?
4. How much manufacturing costs will we incur?
5. How much cash will we pay to our suppliers and our direct laborers, and how much cash will we pay for manufacturing overhead resources?
6. What is the total cost that will be transferred from finished goods inventory to cost of goods sold?
7. How much selling and administrative expense will we incur and how much cash will we pay related to those expenses?
8. How much money will we borrow from or repay to lenders – including interest?
9. How much operating income will we earn?
10. What will our balance sheet look like at the end of the budget period?

Understanding these questions helps to get a broader picture. We will embark on an exercise focusing initially on preparing sales budget for a quarter. From there, we will progress to the inventory, production, and other related budgets, observing how they interconnect and cascade. Through numerical examples, we will illustrate the linkage between these components.

The Master Budget – An Overview

When we amalgamate all the individual components such as sales, production, ending inventory, collections, labour, etc. and consolidate them into a unified framework, we form what is known as the master budget. This comprehensive budgeting approach culminates in the preparation of the profit and loss statement and balance sheet.

The master budget provides insights into various aspects, including budgeted sales, selling prices, and expenses. It serves as a dynamic tool, allowing for adjustments to factors such as selling prices, credit terms, and inventory levels. By fine-tuning these parameters, we can optimize cash flows, minimize borrowing, and ensure smooth operations.

In essence, the master budget serves as a roadmap, guiding decision-making processes by providing a clear understanding of where adjustments can be made to achieve desired financial outcomes.

Example

Beech Corporation is a merchandising company that is preparing a master budget for the third quarter of the calendar year. The company's balance sheet as of June 30th is shown below:

Beech Corporation Balance Sheet Jun-30	
Assets	
Cash	\$ 90,000
Accounts receivable	1,36,000
Inventory	62,000
Plant and equipment, net of depreciation	2,10,000
Total asset	\$ 4,98,000
Liabilities and Stockholders' Equity	
Accounts payable	\$ 71,100
Common stock	3,27,000
Retained earning	99,900
Total liabilities and stockholders' equity	\$ 4,98,000

Beech's managers have made the following additional assumptions and estimates:

1. Estimated sales for July, August, September, and October will be \$210,000, \$230,000, \$220,000, and \$240,000, respectively.
2. All sales are on credit and all credit sales are collected. Each month's credit sales are collected 35% in the month of sale and 65% in the month following the sale. All of the accounts receivable at June 30 will be collected in July.
3. Each month's ending inventory must equal 30% of the cost of next month's sales. The cost of goods sold is 60% of sales. The company pays for 40% of its merchandise purchases in the month of the purchase and the remaining 60% in the month following the purchase. All of the accounts payable at June 30 will be paid in July.
4. Monthly selling and administrative expenses are always \$60,000. Each month \$5,000 of this total amount is depreciation expense and the remaining \$55,000 relates to expenses that are paid in the month they are incurred.

5. The company does not plan to borrow money or pay or declare dividends during the quarter ended September 30. The company does not plan to issue any common stock or repurchase its own stock during the quarter ended September 30.

Required:

1. Prepare a schedule of expected cash collections for July, August, and September. Also compute total cash collections for the quarter ended September 30.
2. a. Prepare a merchandise purchases budget for July, August, and September. Also compute total merchandise purchases for the quarter ended September 30.

b. Prepare a schedule of expected cash disbursements for merchandise purchases for July, August, and September. Also compute total cash disbursements for merchandise purchases for the quarter ended September 30.
3. Prepare an income statement for the quarter ended September 30.
4. Prepare a balance sheet as of September 30.

Solution:

1) Schedule of expected cash collections and total cash collections

Let us break down the process of creating a schedule of cash collection for the quarter. First, we need to assess the expected sales for each month: July, August, and September. The budgeted sales for these months are 210,000, 230,000, and 220,000 respectively. This totals to 660,000 for the entire quarter.

Next, we consider the accounts receivable from June, which will be collected in July. With June's accounts receivable totalling 136,000, we anticipate this amount to be collected in July.

Moving forward, we factor in the credit sales collection process. As per our policy, 35% of each month's credit sales are collected in the same month, with the remaining 65% collected in the following month. For instance, with July's sales amounting to 210,000, 35% of this figure, or 73,500, will be collected in July, while the remaining 65%, or 136,500, will be collected in August.

This pattern repeats for August and September sales, with 35% collected in the respective months and 65% in the subsequent months. By the end of September, we calculate the total accounts receivable, which includes the outstanding amounts from September's sales, with 35% collected in September and 65% yet to be collected.

The total cash collection for the quarter is then calculated by summing up the collections from each month. In this case, the total cash collection for the quarter amounts to 653,000. The detailed calculation is depicted below:

Schedule of cash collection	July	August	September	Quarter	
Budgeted sales	2,10,000	2,30,000	2,20,000	6,60,000	
accounts receivable of month of June	1,36,000			1,36,000	
cash collection in the month of sale	73,500	80,500	77,000	2,31,000	
cash collection in the following month of sale		1,36,500	1,49,500	2,86,000	
accounts receivable at the end of the quarter					143000
total cash collection in the quarter				6,53,000	

Need for the total cash collection amount

Understanding the total cash collection allows for strategic adjustments in cash flow management. If there is a need for additional cash, tweaking the percentages of cash collected in the month of sale and the following month becomes essential. By altering these percentages, you can influence cash flow dynamics and ensure sufficient liquidity.

For instance, increasing the amount collected in the month of sale could provide immediate cash inflows, while reducing it might offer customers more flexible credit terms, potentially boosting sales. Conversely, if there is excess cash, offering extended credit terms could stimulate sales growth.

By experimenting with different scenarios and adjusting cash collection strategies, you can align cash inflows with operational needs. Ultimately, having a clear understanding of the total cash collection empowers strategic decision-making and effective cash management.

2a) Merchandise purchases budget and total merchandise purchases for the quarter

To prepare the merchandise purchases budget and compute the total merchandise purchases for the quarter, we need to consider the cost of goods sold (COGS) and the desired ending inventory for each month.

The budgeted COGS for each month is calculated as 60% of the month's sales value. For example:

- July COGS = 60% of July sales
- August COGS = 60% of August sales
- September COGS = 60% of September sales

The total COGS for the quarter is \$396,000, based on these calculations.

Further, the desired ending inventory for each month is set at 30% of the following month's COGS. This ensures adequate stock levels to meet demand. For example:

- Desired ending inventory for August = 30% of September COGS
- Desired ending inventory for September = 30% of October COGS (provided sales data for October is given)

By determining the desired ending inventory for each month, we can calculate the merchandise purchases needed to maintain these levels. This involves procuring enough merchandise to cover sales while also ensuring sufficient inventory to meet future demand.

Ultimately, by carefully managing merchandise purchases and inventory levels, we can optimize operational efficiency and meet customer demand effectively. The detailed information on the calculation is provided below:

Merchandise purchase budget	July	August	September	Quarter
Budgeted cost of goods sold	1,26,000	1,38,000	1,32,000	3,96,000
desired ending inventory	41,400	39,600	43,200	
total requirement for each month	1,67,400	1,77,600	1,75,200	5,20,200
Less beginning inventory	62,000	41,400	39,600	
to procure	1,05,400	1,36,200	1,35,600	3,77,200

Total merchandise purchases

To calculate the total merchandise purchases for each month, we need to consider the total material requirement, which includes the desired ending inventory and the budgeted cost of goods sold (COGS).

The total requirement for each month is the sum of the desired ending inventory and the budgeted COGS. This ensures that we have enough inventory on hand to meet sales demand.

However, it is important to note that we may already have some inventory on hand from the previous month's purchases. This existing inventory, known as beginning inventory, needs to be deducted from the total requirement to determine the actual amount of merchandise that needs to be procured.

For example, if the total requirement for August is \$177,600 but we already have beginning inventory worth \$41,400 from July, we need to procure only the difference, which is \$136,200.

Similarly, for September, the beginning inventory from August is deducted from the total requirement to determine the procurement amount.

By calculating the total procurement needed for each month and summing them up, we can determine the total merchandise purchases for the quarter. This ensures efficient inventory management and optimal procurement practices. The detailed calculation of merchandise budget is depicted below:

Merchandise purchase budget	July	August	September	Quarter
Budgeted cost of goods sold	1,26,000	1,38,000	1,32,000	3,96,000
desired ending inventory	41,400	39,600	43,200	
total requirement for each month	1,67,400	1,77,600	1,75,200	5,20,200
Less beginning inventory	62,000	41,400	39,600	
to procure	1,05,400	1,36,200	1,35,600	3,77,200

2b) schedule of expected cash disbursements for merchandise purchases and total cash disbursements for merchandise purchases

To prepare the schedule of expected cash disbursements for merchandise purchases for July, August, and September, and compute the total cash disbursements for merchandise purchases for the quarter, we need to consider the payment terms and accounts payable.

Firstly, all accounts payable as of June 30th are paid in July. Therefore, the accounts payable at the end of June, amounting to \$71,100, needs to be paid in July.

Next, we consider the payment terms for merchandise purchases. The company pays 40% of the purchases in the month of purchase and 60% in the following month of purchase.

For example:

- For purchases made in July, 40% of the payment is made in July, and 60% in August.
- For purchases made in August, 40% of the payment is made in August, and 60% in September.
- For purchases made in September, 40% of the payment is made in September.

To determine the total accounts payable at the end of the quarter, we sum up the remaining 60% of purchases made in September.

Finally, we compute the total cash disbursed at the end of the quarter by totalling the cash disbursed for each month. The detailed calculations are provided in the figure below:

schedule of cash disbursements for purchases	July	August	September	Quarter	
Accounts payable	71,100			71,100	
payment that is made in the month of purchase	42,160	54,480	54,240	1,50,880	
payment made in the following month of purchase		63,240	81,720	1,44,960	
accounts payable at the end of quarter					81360
cash disbursed in the quarter				3,66,940	

By understanding the expected cash disbursements and total cash disbursements for merchandise purchases, we can effectively manage cash flow and ensure timely payments to suppliers.

Income Statement

Sales: \$660,000 Cost of Goods Sold: \$396,000

Gross Margin is \$264,000 (Sales minus cost of goods sold)

Selling and Administrative Expenses:

- Monthly Selling and Administrative Expense: \$55,000
- Depreciation Expense (monthly): \$5,000

Total Selling and Administrative Expenses for 3 Months: \$55,000 x 3 = \$165,000 Total Depreciation Expense for 3 Months: \$5,000 x 3 = \$15,000. Therefore, the total expenses is \$180,000.

Net Operating Income: Gross Margin - Total Expenses (\$264,000 - \$180,000 = \$84,000)

Therefore, the net operating income for the quarter ending September 30 is \$84,000.

Income statement for the quarter ending September 30		
Sales		6,60,000
COGS		3,96,000
GROSS MARGIN		2,64,000
selling and admin expenses		1,80,000
net operating income		84,000

Balance Sheet

Now, let us work on the balance sheet as of September 30th. This balance sheet is crucial for evaluating the company's financial standing at that specific point in time. To construct this balance sheet accurately, we first need to ascertain the cash balance.

Cash balance

For determining Cash Balance, one has to calculate the cash balance at the end of the quarter. The cash balance is pivotal, as it reflects the liquidity position of the company. Firstly, we analyse the cash collections of \$653,000 (calculated from the schedule of cash collection). These collections represent the culmination of all cash inflows throughout the quarter.

Following cash collections, we need to consider cash disbursements for purchases. This entails calculating the total cash outflows associated with procuring merchandise during the quarter. This amounts to \$366,940 (calculated from the schedule of cash disbursements). Further, we must factor in selling and administrative expenditures. It is noteworthy that while the total selling and administrative expenses amount to \$60,000, \$5,000 of this constitutes depreciation, resulting in an actual cash outflow of \$55,000.

The resultant figure, which amounts to \$1211,060, signifies the net cash generated from the company's core business activities during the quarter. Additionally, we incorporate the opening cash balance at the beginning of the quarter, totalling \$90,000.

By summing up all these components, we arrive at the total available cash balance at the end of the quarter. This comprehensive figure provides a clear picture of the company's cash position as of September 30th, amounting to \$211,060. The detailed calculation of cash balance is depicted below:

Cash balance at the end of the quarter	
Cash collection	653000
Less: Cash disbursement for purchase	366940
Less: Selling & admin (55000*3)	165000
Cash from operation	121060
Add: opening cash balance	90000
cash at the end of quarter	211060

With this crucial information, we can now proceed to drawing the balance sheet.

Total assets

We will begin by examining assets. The cash balance we just calculated is \$211,060. As for accounts receivable, the figure we obtained for the end of the quarter is \$143,000.

Next, let us address inventory. We have determined the desired ending inventory for September, which is the inventory we expect to have on hand at the end of the quarter amounted to \$43,200.

Moving on to property, plant, and equipment (PPE), net of depreciation. The PPE value is \$210,000, and considering the monthly depreciation of \$5,000 over three months, the total depreciation is \$15,000. Thus, the net PPE value is \$195,000.

Summing up these asset components gives us the total assets figure amounting to \$592,260.

Total liabilities and equity

We start with accounts payable. The accounts payable at the end of the quarter was calculated to be \$81,360.

The common stock remains constant at \$327,000.

The retained earnings as per the balance sheet is \$99,900, and adding the current net income of \$84,000, the total retained earnings is \$183,900.

Combining the liabilities and equity components yields the total liabilities and stockholders' equity figure of \$592,260, which matches the total assets figure, as expected. This completes the balance sheet preparation. The detailed information on the balance sheet is depicted below:

Balance sheet as of septmeber 30	
<i>Assets</i>	
<i>Cash</i>	2,11,060
<i>Accounts receivable</i>	1,43,000
<i>inventory</i>	43,200
<i>PPE</i>	1,95,000
TOTAL ASSETS	5,92,260
<i>Liabilities and stockholders equity</i>	
<i>Accounts payable</i>	81,360
<i>common stock</i>	3,27,000
<i>retained earnings</i>	1,83,900
total liabilities and stockholders equity	5,92,260