

**Foundations of Accounting & Finance**

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**Week - 09**

**Lecture – 39**

**Introduction to Budgeting: Preparation of Budgets - Part III**

**Example**

The following data relate to the operations of Shilow Company, a wholesale distributor of consumer goods:

Current Assets as of March 31:	
Cash	\$ 8,000
Accounts receivable	\$ 20,000
Inventory	\$ 36,000
Building and equipment, net	\$ 1,20,000
Accounts payable	\$ 21,750
Common stock	\$ 1,50,000
Retained earning	\$ 12,250

a. The gross margin is 25% of sales.

b. Actual and budgeted sales data:

March (actual)	\$ 50,000
April	\$ 60,000
May	\$ 72,000
June	\$ 90,000
July	\$ 48,000

c. Sales are 60% for cash and 40% on credit. Credit sales are collected in the month following sale. The accounts receivable at March 31 are a result of March credit sales.

d. Each month's ending inventory should equal 80% of the following month's budgeted cost of goods sold.

e. One-half of a month's inventory purchases is paid for in the month of purchase; the other half is paid for in the following month. The accounts payable at March 31 are the result of March purchases of inventory.

f. Monthly expenses are as follows: commissions, 12% of sales; rent, \$2,500 per month; other expenses (excluding depreciation), 6% of sales. Assume that these expenses are paid monthly. Depreciation is \$900 per month (includes depreciation on new assets).

g. Equipment costing \$1,500 will be purchased for cash in April.

h. Management would like to maintain a minimum cash balance of at least \$4,000 at the end of each month. The company has an agreement with a local bank that allows the company to borrow in increments of \$1,000 at the beginning of each month, up to a total loan balance of \$20,000. The interest rate on these loans is 1% per month and for simplicity we will assume that interest is not compounded. The company would, as far as it is able, repay the loan plus accumulated interest at the end of the quarter.

**Required:**

Using the preceding data:

1. Complete the following schedule:

<b>Schedule of Expected Cash Collections</b>				
	April	May	June	Quarter
Cash sales	\$ 36,000			
Credit sales	\$ 20,000			
Total collections	\$ 56,000			

2. Complete the following:

<b>Merchandise Purchase Budget</b>				
	April	May	June	Quarter
Budgeted cost of goods sold	\$ 45,000*	\$ 54,000		
Add desired ending inventory	\$ 43,200**			
Total needs	\$ 88,200			
Less beginning inventory	\$ 36,000			
Required purchases	\$ 52,200			
*For April sales: \$60,000 sales x 75% cost ratio = \$45,000.				
**\$54,000 x 80% = \$43,200				

<b>Schedule of Expected Cash Disbursements-Merchandise Purchases</b>				
	April	May	June	Quarter
March purchases	\$ 21,750			\$ 21,750
April purchases	\$ 26,100	\$ 26,100		\$ 52,200
May purchases				
June purchases				
Total disbursements	\$ 47,850			

3. Complete the following cash budget:

<b>Cash Budget</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>Quarter</b>
Beginning cash balance	\$ 8,000			
Add: Cash collections	56,000			
Total cash available	64,000			
Less cash disbursements:	47,850			
For inventory	13,300			
For expenses	1,500			
For equipment	62,250			
Total cash disbursements	1,350			
Financing: Etc.				

4. Prepare an absorption costing income statement for the quarter ended June 30.

5. Prepare a balance sheet as of June 30.

### **Solutions:**

#### **1) Schedule of Expected Cash Collections**

Let us get to the schedule of expected cash collections. First, we need to refer back to the problem. It states that 60% of sales are for cash, while 40% are on credit. Credit sales are collected in the month following the sale, and the accounts receivable as of March 31st are the result of March credit sales.

Now, looking at April's cash sales of 60,000, with 60% collected in cash, we have 36,000 in cash. Additionally, the accounts receivable from March, totalling 20,000, are also collected in April, bringing the total collections for April to 56,000.

Moving on to May, with sales amounting to 72,000, 60% of which are collected in cash, we have 43,200 in cash. Further, 40% of April's sales are collected in May, according to the problem. Thus, the total collection for May is 67,200.

In June, with sales totalling 90,000, 60% of which are collected in cash, we have 54,000 in cash. Additionally, 40% of May's sales are collected in June. Hence, the total collection for June is this sum.

Finally, adding up the collections for each month yields the total collection for the quarter. It is a straightforward calculation which is depicted below:

<b>Schedule of Expected Cash Collections</b>				
	April	May	June	Quarter
Cash sales	\$36,000	43200	54000	
Credit sales	\$20,000	24000	28800	
Total collections	\$ 56,000	67200	82800	206000

## 2) Merchandise Purchase Budget

Let us get into the merchandise purchase budget. We need to understand the cost of goods sold first, which is determined by the gross margin, set at 25% of sales. This means that 75% of the sales value constitutes the cost of goods sold.

For April, with sales at 60,000, the cost of goods sold amounts to 45,000. Similarly, for May, with sales at 72,000, the cost of goods sold is 54,000. Now, for June, with sales projected at 90,000, the cost of goods sold is calculated at 67,500.

Next, let us determine the desired ending inventory. It is set at 80% of the following month's cost of goods sold, as indicated in the problem. For instance, for May, the desired ending inventory is 80% of 54,000, resulting in a specific figure.

Now, considering June, we can utilize July's sales figures to calculate the required purchases. Given July's sales and the percentage of cost of goods sold, we derive the cost of goods sold for June and determine the desired ending inventory. By adding the beginning inventory and subtracting it from the total required, we ascertain the necessary purchases for June.

This process repeats for each month, with the ending inventory of the preceding month serving as the beginning inventory for the subsequent month. By totalling the required purchases for each month, we determine the total purchases required for the quarter. The detailed calculation is provided in the following table:

<b>Merchandise Purchase Budget</b>				
	April	May	June	Quarter
Budgeted cost of goods sold	\$ 45,000*	\$54,000	67500	
Add desired ending inventory	\$ 43200**	54000	28800	
Total needs	\$88,200	\$1,08,000	96300	
Less beginning inventory	\$36,000	43200	54000	
Required purchases	\$52,200	\$64,800	42300	\$1,59,300
*For April sales: \$60,000 sales x 75% cost ratio = \$45,000.				
**\$54,000 x 80%= \$43,200				

### 3) Schedule of Expected Cash Disbursements-Merchandise Purchases

Let us focus on the disbursement aspect: Half of the month's inventory costs are settled in the purchasing month, with the remaining half covered in the subsequent month. The accounts payable listed as of March 31st reflects the inventory purchases made in March.

Starting with March's purchase, represented by the accounts payable figure, I settle half of this amount. For April's purchase of 53,200, half is paid in the purchasing month, as indicated. The other half is scheduled for disbursement in May.

In May, I pay half of April's purchase and half of May's purchase. The remaining 50% of May's purchase is deferred to June, following the pattern.

For June, half of the purchase made in that month will be disbursed accordingly. Calculating the total disbursements across these months gives us the quarter's disbursement total. The detailed breakup of all the calculations are provided below:

<b>Schedule of Expected Cash Disbursements-Merchandise Purchases</b>				
	April	May	June	Quarter
March purchases	\$21,750			\$21,750
April purchases	\$26,100	\$26,100		\$52,200
May purchases		32400	32400	
June purchases			21150	
Total disbursements	\$47,850	\$58,500	53550	\$1,59,900

It is essential to note that these calculations pertain solely to merchandise purchases. Other monthly expenditures will be addressed in the subsequent cash budgeting phase.

#### **4) Cash Budget**

Let us move to completing the cash budget. Starting with the opening cash balance of 8000, as indicated in the balance sheet, we proceed to calculate the collections for April, which amount to 56000, including both cash and credit sales.

Moving on to disbursements, we address various expenses. Commission, amounting to 12 percent of sales, rent of 2500, and other expenditures totalling 13300. Additionally, equipment costing 1500 is purchased in April.

Total disbursements are summed up, resulting in a net excess of cash after disbursements amounting to 1350.

However, management's directive is to maintain a minimum cash balance of 4000 at the end of each month. To meet this requirement, borrowing from the bank is necessary. With only 1350 in excess cash, a borrowing of 3000 is needed to ensure the minimum balance.

This borrowed amount is reflected in the end-of-month balance, which then becomes the opening balance for May. Cash collections for May amount to 67200, while disbursements, including purchases and expenses, result in a negative cash balance of 2410.

To maintain the minimum balance a of borrowing 7000 at the beginning of May ensures a positive balance. This borrowed sum is accounted for in subsequent calculations, leading to a cash balance of 4590 at the end of May.

For June, beginning with a cash balance of 4590, collections and disbursements are calculated similarly. However, with no need for additional borrowing, the cash balance at the end of June stands at 15000.

Subsequent steps involve repayment of the borrowed amounts. Firstly, a repayment of the loan totalling 10000 is made, followed by the payment of interest, calculated as 230. After these deductions, the remaining cash balance amounts to 4910.

This comprehensive cash budgeting process ensures the company's financial stability and adherence to predetermined cash management strategies.

<b>Cash Budget</b>	<b>April</b>	<b>May</b>	<b>June</b>
Beginning cash balance	\$8,000	4,350	4,590
Add: Cash collections	56,000	67200	82800
Total cash available	64,000	71,550	87,390
Less cash disbursements:			
For inventory	47,850	\$58,500	53550
For expenses	13,300	15460	18700
For equipment	1,500	0	0
Total cash disbursements	62,650	\$73,960	72250
excess of cash after disbursements	1,350	(\$2,410)	15,140
bank borrowing in the month of April	3000	7000	-10000
interest			-230
Balance at end of the month	4350	4590	4910

## 6) Income statement

Let us draw the income statement for the quarter. Starting with sales, the total sales for the quarter amount to 2,22,000.

Moving on to the cost of goods sold (COGS), we calculate the beginning inventory, purchases for the quarter, and ending inventory to determine the COGS utilized, which totals 1,66,500. Thus, the gross margin is derived by subtracting the COGS utilized from the total sales, resulting in a gross margin of 55,500.

Next, we consider selling and administrative expenses, which are calculated at 18 percent of sales, along with the depreciation expense of 900 per month for a total of 2,700 for the quarter. Additionally, rent expense is included in the total other expenditures.

The net operating income is then calculated by subtracting the total operating expenses, including selling and administrative expenses, depreciation, rent, and other expenditures, from the gross margin. This results in a net operating income of 5,340.

Finally, the interest expense of 230 is deducted from the net operating income to arrive at the net profit, which amounts to 5,110.

<b>Income statement for the quarter ending June 30</b>			
Sales		2,22,000	
COGS			
Beginning inventory	36,000		
Purchases for the quarter	1,59,300		
inventory available for the quarter	1,95,300		
Less ending inventory	28,800		
COGS utilised		1,66,500	
Gross margin		55,500	
Selling and admin expenses and Rent	47,460		
Depreciation	2,700	50,160	
net operating income		5,340	
Less financing cost interest		230	
net income		5,110	

## 7) Balance sheet

Let us prepare the balance sheet as of June 30. Starting with the assets:

- Cash: The cash balance at the end of the quarter is 4910.
- Accounts Receivable: 40 percent of June's sales are credit sales, collected in the following month ( $\$90,000 * 0.40$ )
- Inventory: The ending inventory is calculated as \$28,800 (from merchandise budget).
- Building and Equipment: The value of building and equipment, net of depreciation, is determined. Additionally, a new equipment purchase worth 1500 is added to the assets ( $\$120,000 - 2700 + 1500$ ).

The total assets amount to 1,88,510.

Moving on to liabilities and stockholders' equity:

- Accounts Payable: 50 percent of the inventory purchase made in June will be paid in June, and the rest in the following month ( $\$42,300 * 0.50$ ).
- Common Stock: The common stock value is given as 1,50,000.
- Retained Earnings: It comprises the previous retained earnings and the net income of the quarter ( $12250 + 5110 = 17,360$ )

Upon totalling the assets, liabilities along with stockholders' equity, the balance sheet is complete. Thank you, and now we proceed to the next phase, the flexible budget.



<b>Balance sheet as of June 30</b>	
<b>Assets</b>	
Cash	4,910
Accounts receivable	36,000
inventory	28,800
building and equipment	1,18,800
	<b>1,88,510</b>
<b>Liability and stockholders equity</b>	
Accounts payable	21,150
common stock	1,50,000
retained earnings	17,360
	<b>1,88,510</b>