

Cash Budget

Cash Budget Knowledge of cash flows is critical to managing a business. Often a business is successful in producing and selling a product but fails because of timing problems associated with cash inflows and outflows. By knowing when cash deficiencies and surpluses are likely to occur, a manager can plan to borrow cash when needed and to repay the loans during periods of excess cash. Bank loan officers use a company's **cash budget** to document the need for cash, as well as the ability to repay. Because cash flow is the lifeblood of an organization, the cash budget is one of the most important budgets in the master budget. The cash budget is illustrated in Exhibit 8–2.

Beginning cash balance	XXX
Add: Cash receipts	<u>XXX</u>
Cash available	XXX
Less: Cash disbursements	XXX
Less: Minimum cash balance	<u>XXX</u>
Cash surplus (deficiency)	XXX
Add: Cash from loans	XXX
Less: Loan repayments	XXX
Add: Minimum cash balance	<u>XXX</u>
Ending cash balance	<u>XXX</u>

Exhibit 8-2 The Cash Budget

Cash available consists of the beginning cash balance and the expected cash receipts. Expected cash receipts include all sources of cash for the period being considered. The principal source of cash is from sales. Because a significant proportion of sales is usually on account, a major task of an organization is to determine the pattern of collection for its accounts receivable. If a company has been in business for a while, it can use its experience in creating an accounts receivable aging schedule. In other words, the company can determine, on average, what percentages of its accounts receivable are paid in the months following sales. For example, assume a company, Patton Hardware, has the following accounts receivable payment experience:

Percent paid in the month of sale 30%

Percent paid in the month after the sale 60

Percent paid in the second month after the sale 10

If Patton sells \$100,000 worth of goods on account in the month of May, then it would expect to receive \$30,000 cash from May credit sales in the month of May, \$60,000 cash from May credit sales in June, and \$10,000 from May credit sales in July. (Notice that Patton expects to receive all of its accounts receivable. This is not typical. If a company experiences, let's say, 3 percent uncollectible accounts, then this 3 percent of sales is ignored for the purpose of cash budgeting—because no cash is received from customers who default.)

The cash disbursements section lists all planned cash outlays for the period. All expenses not resulting in a cash outlay are excluded from the list (depreciation, for example, is never included in the disbursements section). A disbursement that is typically not included in this section is interest on short-term borrowing. This interest expenditure is reserved for the section on loan repayments.

The cash excess or deficiency line compares the cash available with the cash needed. Cash needed is the total cash disbursements plus the minimum cash balance required by company policy. The minimum cash balance is simply the lowest amount of cash on hand that the firm finds acceptable. Consider your own checking account. You probably try to keep at least some cash in the account, perhaps because by having a minimum balance you avoid service charges, or because a minimum balance allows you to make an unplanned purchase. Similarly, companies also require minimum cash balances. The amount varies from firm to firm and is determined by each company's particular needs and policies. If the total cash available is less than the cash needed, a deficiency exists. In such a case, a short-term loan will be needed. On the other hand, with a cash excess (cash available is greater than the firm's cash needs), the firm has the ability to repay loans and perhaps make some temporary investments.

The final section of the cash budget consists of borrowings and repayments. If there is a deficiency, this section shows the necessary amount to be borrowed. When excess cash is available, this section shows planned repayments, including interest expense.

The last line of the cash budget is the planned ending cash balance. Remember that the minimum cash balance was subtracted to find the cash excess or deficiency.

However, the minimum cash balance is not a disbursement, so it must be added back to yield the planned ending balance.

To illustrate the cash budget, assume the following for Texas Rex:

- a. A \$1,000 minimum cash balance is required for the end of each quarter. Money can be borrowed and repaid in multiples of \$1,000. Interest is 12 percent per year. Interest payments are made only for the amount of the principal being repaid. All borrowing takes place at the beginning of a quarter, and all repayment takes place at the end of a quarter.
- b. One-quarter of all sales are for cash, 90 percent of credit sales are collected in the quarter of sale, and the remaining 10 percent are collected in the following quarter. The sales for the fourth quarter of 2005 were \$18,000.
- c. Purchases of direct materials are made on account; 80 percent of purchases are paid for in the quarter of purchase. The remaining 20 percent are paid for in the following quarter. The purchases for the fourth quarter of 2005 were \$5,000.
- d. Budgeted depreciation is \$540 per quarter for overhead and \$150 per quarter for selling and administrative expenses (see Schedules 5 and 8).
- e. The capital budget for 2008 revealed plans to purchase additional screen printing equipment. The cash outlay for the equipment, \$6,500, will take place in the first quarter. The company plans to finance the acquisition of the equipment with operating cash, supplementing it with short-term loans as necessary.
- f. Corporate income taxes are approximately \$2,550 and will be paid at the end of the fourth quarter (Schedule 9).
- g. Beginning cash balance equals \$5,200.
- h. All amounts in the budget are rounded to the nearest dollar.

Given this information, the cash budget for Texas Rex is shown in Schedule 10 (all figures are rounded to the nearest dollar). Much of the information needed to prepare the cash budget comes from the operating budgets. In fact, Schedules 1, 3, 4, 5, and 8 contain important input. However, these schedules by themselves do not supply all of the needed information. The collection pattern for revenues and the payment pattern for direct materials must be known before the cash flow for sales and purchases on credit can be found.

Cash Budget
For the Year Ended December 31, 2008

	Quarter				Year	Source ^a
	1	2	3	4		
Beginning cash balance	\$ 5,200	\$ 1,023	\$ 1,611	\$ 3,762	\$ 5,200	g
Collections:						
Cash sales	2,500	3,000	3,750	5,000	14,250	b, 1
Credit sales:						
Current quarter	6,750	8,100	10,125	13,500	38,475	b, 1
Prior quarter	1,350	750	900	1,125	4,125	b, 1
Total cash available	<u>\$ 15,800</u>	<u>\$ 12,873</u>	<u>\$ 16,386</u>	<u>\$ 23,387</u>	<u>\$ 62,050</u>	
Less disbursements:						
Direct materials:						
Current quarter	\$ (3,594)	\$ (4,141)	\$ (5,184)	\$ (5,523)	\$(18,442)	c, 3
Prior quarter	(1,000)	(898)	(1,035)	(1,296)	(4,229)	c, 3
Direct labor	(1,272)	(1,512)	(1,920)	(2,160)	(6,864)	4
Overhead	(1,741)	(1,861)	(2,065)	(2,185)	(7,852)	d, 5
Selling and administrative	(1,670)	(1,790)	(2,420)	(2,170)	(8,050)	d, 8
Income taxes	—	—	—	(2,550)	(2,550)	f, 9
Equipment	(6,500)	—	—	—	(6,500)	e
Total disbursements	<u>\$(15,777)</u>	<u>\$(10,202)</u>	<u>\$(12,624)</u>	<u>\$(15,884)</u>	<u>\$(54,487)</u>	
Minimum cash balance	<u>(1,000)</u>	<u>(1,000)</u>	<u>(1,000)</u>	<u>(1,000)</u>	<u>(1,000)</u>	a
Total cash needs	<u>\$(16,777)</u>	<u>\$(11,202)</u>	<u>\$(13,624)</u>	<u>\$(16,884)</u>	<u>\$(55,487)</u>	
Excess (deficiency) of cash available over needs	\$ (977)	\$ 1,671	\$ 2,762	\$ 6,503	\$ 6,563	
Financing:						
Borrowings	1,000	—	—	—	1,000	a
Repayments	—	(1,000)	—	—	(1,000)	a
Interest ^b	—	(60)	—	—	(60)	a
Total financing	<u>\$ 1,000</u>	<u>\$ (1,060)</u>	<u>—</u>	<u>—</u>	<u>\$ (1,060)</u>	
Ending cash balance ^c	<u>\$ 1,023</u>	<u>\$ 1,611</u>	<u>\$ 3,762</u>	<u>\$ 6,503</u>	<u>\$ 6,503</u>	

^aLetters refer to the information on page 327. Numbers refer to schedules already developed.

^bInterest payment is $6/12 \times 0.12 \times \$1,000$. Since borrowings occur at the beginning of the quarter and repayments at the end of the quarter, the principal repayment takes place after six months.

Exhibit 8–3 displays the pattern of cash inflows from both cash and credit sales. Let's look at the cash receipts for the first quarter of 2008. Cash sales during the quarter are budgeted for \$2,500 ($0.25 \times \$10,000$; Schedule 1). Collections on account for the first quarter relate to credit sales made during the last quarter of the previous year and the first quarter of 2008. Quarter 4, 2007, credit sales equaled \$13,500 ($0.75 \times \$18,000$) and \$1,350 of those sales ($0.10 \times \$13,500$) remain to be collected in Quarter 1, 2008. Quarter 1, 2008, credit sales are budgeted at \$7,500, and 90 percent will be collected in that quarter. Therefore, \$6,750 will be collected on account for credit sales made in that quarter. Similar computations are made for the remaining quarters.

Similar computations are done for purchases. In both cases, patterns of collection and payment are needed in addition to the information supplied by the schedules.

Additionally, all noncash expenses, such as depreciation, need to be removed from the total amounts reported in the expense budgets. Thus, the budgeted expenses in Schedules 5 and 8 were reduced by the budgeted depreciation for each quarter. Overhead expenses in Schedule 5 were reduced by depreciation of \$540 per quarter.

Source	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Cash sales	\$ 2,500	\$ 3,000	\$ 3,750	\$ 5,000
Received on account from:				
Quarter 4, 2007	1,350			
Quarter 1, 2008	6,750	750		
Quarter 2, 2008		8,100	900	
Quarter 3, 2008			10,125	1,125
Quarter 4, 2008				13,500
Total cash receipts	<u>\$10,600</u>	<u>\$11,850</u>	<u>\$14,775</u>	<u>\$19,625</u>

Exhibit 8-3 Texas Rex's Cash Receipts Pattern for 2008

Balance Sheet December 31, 2007		
Assets		
Current assets:		
Cash	\$ 5,200	
Accounts receivable	1,350	
Materials inventory	252	
Finished goods inventory	<u>1,251</u>	
Total current assets		\$ 8,053
Property, plant, and equipment:		
Land	\$ 1,100	
Building and equipment	30,000	
Accumulated depreciation	<u>(5,000)</u>	
Total property, plant, and equipment		<u>26,100</u>
Total assets		<u>\$34,153</u>
Liabilities and Owners' Equity		
Current liabilities:		
Accounts payable		\$ 1,000
Owners' equity:		
Retained earnings	<u>\$33,153</u>	
Total owners' equity		<u>33,153</u>
Total liabilities and owners' equity		<u>\$34,153</u>

Exhibit 8-4 Texas Rex, Inc., Balance Sheet—December 31, 2007

Selling and administrative expenses were reduced by \$150 per quarter. The net amounts are what appear in the cash budget. The cash budget shown in Schedule

10 underscores the importance of breaking down the annual budget into smaller time periods.

The cash budget for the year gives the impression that sufficient operating cash will be available to finance the acquisition of the new equipment. Quarterly information, however, shows the need for short-term borrowing (\$1,000) because of both the acquisition of the new equipment and the timing of the firm's cash flows. Most firms prepare monthly cash budgets, and some even prepare weekly and daily budgets.

Another significant piece of information emerges from Texas Rex's cash budget. By the end of the third quarter, the firm has more cash (\$3,762) than necessary to meet operating needs. The management of Texas Rex should consider investing the excess cash in an interest-bearing account. Once plans are finalized for use of the excess cash, the cash budget should be revised to reflect those plans. Budgeting is a dynamic process. As the budget is developed, new information becomes available, and better plans can be formulated.