



Cash Flow Statement and Cash Budgeting

INTRODUCTION

Cash flow information is increasingly of interest to businesses and their stakeholders. Management Accounting Practices 3120, Cash Flow Management, identifies four trends responsible for this heightened interest: (1) increased recognition of the fundamental role played by cash flow information in asset valuation; (2) the strong relationship between financial information, especially cash flow information, and stock prices and, in turn, valuation of firms; (3) increased disenchantment with the potential to manipulate GAAP income; (4) increased understanding of the importance of managing cash flows to avoid unnecessary borrowing or having idle cash on hand.

There are two broad types of cash flow information: retroactive and prospective. Retroactive cash flow information is reported in the cash flow statement, and will be dealt with first. Prospective cash flow information is depicted in the cash budget and pro forma cash flow statement, which are prepared as part of the budgeting process. Budgeting, or financial forecasting, will be covered in the second half of this document.

A separate document entitled, "Pro Forma financial Statements" and located in the Reference Material section of the candidate home page, takes the budgeting and financial forecasting even further. This document will help prepare candidates to do statements for a complete strategic planning process.

CASH FLOW STATEMENT

Purposes of the Cash Flow Statement

The main purpose of the cash flow statement is to provide information about an entity's cash receipts and cash payments during a period. In providing this information, the cash flow statement also helps financial statement users to:

1. Predict the amount, timing, and uncertainty of future cash flows, based on the assumption that the past is a good predictor of the future.
2. Evaluate management decisions by reporting how managers obtained cash and used it to operate the entity.
3. Determine the entity's ability to generate the cash necessary to provide a

satisfactory return to investors in the form of dividends, to pay interest on debt and make principal repayments, and to maintain or increase the entity's productive capacity.

4. Explain the difference between net income, an accrual measure of performance, and cash flow from operations, the amount of cash generated from that income.

Definition of Cash

CICA Handbook Section 1540 requires that cash flows be defined as “inflows and outflows of cash and cash equivalents.” Cash includes cash on hand and demand deposits. Cash equivalents include short-term, highly-liquid investments that are readily convertible to known amounts of cash and subject to an insignificant risk of change in value. The suggested guideline for “short term” is a maturity of three months or less. Examples of cash equivalents include money market investments, commercial paper, and treasury bills.

In the remainder of this document, the term “cash” will refer to “cash and cash equivalents.”

Classification of Cash Flows

Cash flows are classified as operating, investing, and financing.

Operating activities are the main revenue-producing activities of the entity. They involve the cash effects of revenues and expenses from the income statement, such as payments to suppliers, collections from customers, and payment of wages. Operating cash flows affect mainly the current asset and current liability accounts on the balance sheet.

Investing activities are the acquisition and disposal of long-term assets, such as capital assets, investments not included in cash equivalents, and notes receivable.

Financing activities involve changes to shareholders' equity accounts and liabilities such as notes payable and bonds payable.

The classification of a few items is more complicated. Dividends and interest revenue from long-term investments are included as operating cash flows. The treatment of returns paid to the entity's investors depends on whether the investments are deemed, in economic substance, to be debt or equity. Returns to equity holders are treated as financing outflows, while returns to debt holders are treated as operating outflows. Dividends and interest received on long-term investments are included as operating cash flows. Income tax payments are classified as operating cash flows unless they can be specifically identified with financing and investing activities.

Some activities affect both the operating section and the investing or financing section

of the cash flow statement. Cash received from the sale of a capital asset is classified as an investing activity, but the gain or loss on the sale also needs to be subtracted from or added to operating cash flows to avoid double-counting a portion of the sale proceeds already shown as an investing inflow. Similarly, cash used to pay off a liability is shown as a financing activity, but any gain or loss or redemption of debt also needs to be adjusted for in the operating section.

Section 1540.46 of the *CICA Handbook* requires that significant investing and financing transactions that do not affect cash be disclosed elsewhere in the financial statements. This can be done by note disclosure or a separate schedule following the cash flow statement. Examples of such significant non-cash transactions include issuing shares in exchange for assets, leasing assets under a capital lease, converting debt or preferred shares to common shares, and issuing shares to retire debt.

Direct and Indirect Methods of Calculating Cash from Operations

Two methods can be used to calculate cash provided by (used in) operating activities. The **direct method** reports all cash receipts and cash payments on a line-by-line basis. The **indirect method** reconciles the accrual-based net income amount to a cash basis by making adjustments for revenues not actually received in cash or expenses not paid in cash.

Since 1997, the *CICA Handbook* has encouraged the use of the direct method. However, its use is not mandatory and the vast majority of Canadian companies continue to use the indirect method.

The main advantage of the direct method is that it shows operating cash receipts and payments, which is consistent with the main objective of the cash flow statement—to provide information about an entity's receipts and payments of cash. As well, because the direct method shows the specific sources of operating cash receipts and the purposes for which cash payments were made, it is more useful in estimating future operating cash flows. On the other hand, the information required to use this method is not routinely collected in most accounting systems. The direct method can also lead to more emphasis on cash from operations as a measure of performance. While some financial statement users consider cash from operating activities to be a more accurate measure than net income, others see any movement away from accrual-based accounting as potentially misleading.

The main advantage of the indirect method is that it focuses on the differences between net income and net cash flow from operating activities. Thus, it provides a clear link between the cash flow statement and the income statement and balance sheet. It is also the format with which preparers and users are more familiar.

Preparing the Cash Flow Statement

Preparing the cash flow statement involves four steps:

1. **Determine the change in cash** by comparing the beginning and ending cash balances. This is the “check figure” for the cash flow statement.
2. **Record information from the income statement on the cash flow statement.** This is the starting point for the calculation of cash from operating activities.
3. **Analyze the change in each balance sheet account, identify the relevant cash flows associated with each change, and record the effect on the statement of cash flows.**
4. **Complete the statement of cash flows** by calculating subtotals and reconciling the total change in cash to the number in step one.

Indirect Approach to Determining Net Cash Flow from Operating Activities

Start with net income and:

1. Make adjustments for items that affect net income but do not affect cash. The most common adjustments are to:
 - a) Add back amortization expense on capital assets and intangibles.
 - b) Add back amortization of bond discount. (Amortization of a premium is treated as a financing outflow.)
 - c) Add back losses from equity investments.
 - d) Subtract income from equity investments.
 - e) Add back losses on sales of fixed assets or investments.
 - f) Subtract gains on sales of fixed assets or investments.
2. Make adjustments for changes in working capital accounts, as follows:
 - a) Add decreases in current assets, such as accounts receivables, inventories, and prepaid expenses.
 - b) Deduct increases in current assets.
 - c) Add increases in current liabilities, such as accounts payable, wages payable, and accrued liabilities.
 - d) Deduct decreases in current liabilities.
 - e) Add increases in future income tax.
 - f) Deduct decreases in future income tax.

Direct Approach to Determining Net Cash Flow from Operating Activities

Start with the individual components (revenues, expenses, gains, and losses) that make up net income and make adjustments to the reported line item numbers for items that affect net income but do not affect cash and for changes in working capital accounts.

The adjustments are similar to those required for the indirect method, but they are made to individual line items rather than total net income.

The most common cash receipts are collections from customers, interest, and dividends. To calculate collections from customers, start with sales revenue and increase or decrease this amount based on whether accounts receivable has decreased or increased. To calculate receipts of interest or dividends, start with interest revenue and dividend revenue, and adjust these up or down depending on whether interest receivable and dividends receivable have gone down or up.

Cash payments can be grouped into four main types: payments to suppliers, payments to employees, payments for interest, and payments for taxes.

To calculate payments to suppliers for inventory, it is necessary to make two adjustments to cost of goods sold. First, add/subtract any increases/decreases in inventory. Second, add/subtract any decreases/increases in accounts payable.

To calculate payments to suppliers for other operating expenses, two adjustments are made to other operating expenses. First, add/subtract any increases/decreases in prepaid expenses. Second, add/subtract any decreases/increases in accrued liabilities.

To calculate payments to employees, start with salaries and wages expense, and adjust this number up or down depending on whether salaries and wages payable have decreased or increased.

To calculate payments for interest, increase or decrease interest expense based on the decrease or increase in interest payable.

To calculate payments for income tax, adjust income tax expense upward or downward for the decrease or increase in income tax payable.

Cash Flows from Investing Activities

Investing inflows arise from sales of long-term assets, such as investments or fixed assets, and collections of long-term receivables. Investing outflows arise from purchases of long-term assets or long-term loans issued to others.

The amount of fixed assets purchased is usually “pieced together” based on information available about amortization expense, sale proceeds of assets sold, and net book value of assets sold.

Cash Flows from Financing Activities

Financing inflows arise from the issue of shares, notes payable, and bonds payable. Financing outflows include the repurchase of shares, payment of notes or bonds, and payment of dividends.

BUDGETING AND FINANCIAL FORECASTING

Budgeting is the process of projecting the financial consequences of the organization's proposed plan of action. Management Accounting Practices 3200, Budget and Pro Forma Financial Statements, outlines five critical roles served by budgets in the planning and control process:

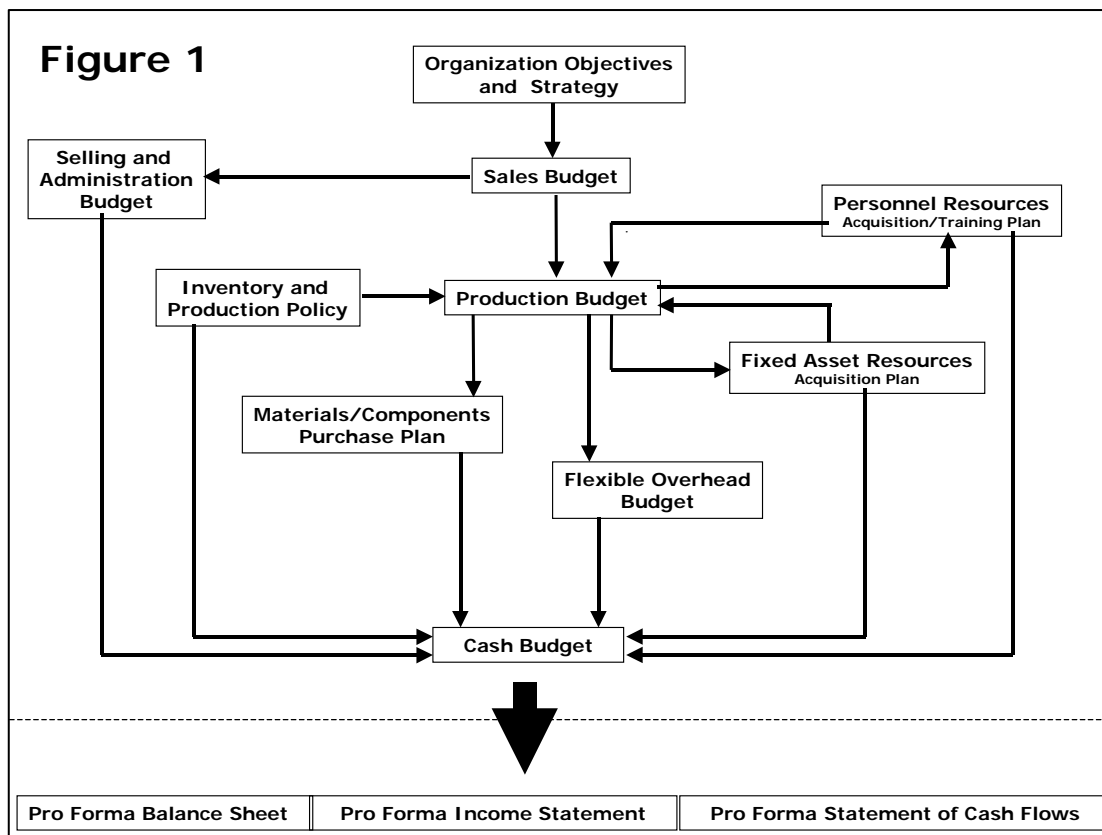
1. By projecting the most likely financial consequences of the proposed operating plan, budgets allow decision makers to evaluate whether the plan is acceptable.
2. Budgets help managers to anticipate opportunities and problems rather than reacting to them as they occur.
3. Budgets provide a means of allocating constrained organization resources to the most profitable uses.
4. Budgets promote communication and provide a basis for coordinating activities in the organization.
5. Budgets provide a standard against which actual results can be compared. Unlike using past results as a performance benchmark, effective budgets filter out errors and inefficiencies of the past, and consider new opportunities and threats.

The Master Budget

The **master budget** is a comprehensive organization-wide set of budgets. The major components of the master budget are illustrated in Figure 1 from MAP 3200, reproduced below.

The master budget is composed of two broad types of budgets: operating and financial. The operating budgets project and summarize the details of operations, and include all of the elements above the dotted line in Figure 1. The financial budgets summarize the financial consequences of the operating budgets.

The master budget begins with the specification of the organization's objectives and strategy, which leads to the development of a sales budget. Sales are usually estimated on a monthly basis, and these estimates are made by the marketing department. The sales budget is compared with the inventory and production policy to create a production budget, which schedules production by product by month. When a feasible production budget is obtained (machine-wise and people-wise), the materials/ components purchase plan (direct material budget), personnel resources acquisition/ training plan (labour budget), and flexible overhead budget (manufacturing overhead budget) are prepared. These budgets are then combined with the selling and administration budget and fixed asset resources acquisition plan (capital budget) to develop the cash budget.



The cash budget is a schedule of expected cash receipts and cash disbursements. Ordinarily, the cash budget has the following sections:

1. Beginning cash balance.
2. Cash receipts from cash sales, collection of accounts receivable, rent revenue, etc.
3. Cash disbursements for direct materials purchases, wages and salaries, other costs, and capital investments in plant and equipment.
4. Cash excess or deficiency based on the above.
5. Financing: borrowing requirements, repayments, and interest payments or receipts.
6. Ending cash balance.

The operating budgets and the cash budget are then used to construct the pro forma financial statements.

Example: Preparation of a Cash Budget and Pro Forma Statements

Based on the following information for XYZ Company, prepare a monthly cash budget for the first quarter of 20x2, a pro forma income statement and retained earnings statement for the quarter ended March 31, 20x2, a pro forma balance sheet as at March 31, 20x2, and a pro forma cash flow statement for the quarter ended March 31, 20x2.

1. Monthly Sales

November 20x1 (Actual)	\$100,000
December 20x1 (Actual)	150,000
January 20x2 (Forecasted)	175,000
February 20x2 (Forecasted)	160,000
March 20x2 (Forecasted)	120,000
April 20x2 (Forecasted)	100,000

2. Cash collection schedule:
 - 30% in the month of sale
 - 50% in the next month
 - 18% in the month following
 - 2% uncollected

3. Cost of goods sold = 60% of sales
 Desired ending inventory = 12% of next month's sales

4. Payment schedule:
 - 40% of purchases paid in the month of purchase
 - 60% paid next month

5. Other:

Cash in Bank, Jan 20x2	\$10,000
Expected purchase of equipment in January 20x2	50,000
Dividends – March 20x2	30,000
Selling and administrative expense – per month, paid in month	40,000
Line of credit – 1% per month payable at the beginning of the month	
Equipment balance as at Dec 31, 20x1	200,000
Accumulated amortization (Straight line – 10 years)	50,000
Common stock	100,000

XYZ Company
Balance Sheet
as at December 31, 20x1

Cash	\$ 10,000
Accounts receivable	120,000
Inventories	21,000
Plant and equipment	200,000
Accumulated amortization	<u>(50,000)</u>
	<u><u>\$301,000</u></u>
Accounts payable	\$ 55,800
Common stock	100,000
Retained earnings	<u>145,200</u>
	<u><u>\$301,000</u></u>

	Jan	Feb	Mar
Cash Collections Schedule			
Nov: \$100,000 x 18%	\$ 18,000	\$ —	\$ —
Dec: 150,000 x 50% 18%	75,000	27,000	—
Jan: 175,000 x 30% 50% 18%	52,500	87,500	31,500
Feb: 160,000 x 30% 50%	—	48,000	80,000
March: 120,000 x 30%	—	—	36,000
	<u>\$145,500</u>	<u>\$162,500</u>	<u>\$147,500</u>
Purchases Schedule			
COGS: \$175,000 \$160,000 \$120,000 x 60%	\$105,000	\$96,000	\$72,000
Desired ending inventory: \$160,000 \$120,000 \$100,000 x 12%	19,200	14,400	12,000
Less opening inventory	(21,000)	(19,200)	(14,400)
Purchases	<u>\$103,200</u>	<u>\$91,200</u>	<u>\$69,600</u>
Payments Schedule			
Dec:	\$55,800	\$ —	\$ —
Jan: 103,200 x 40% 60%	41,280	61,920	—
Feb: 91,200 x 40% 60%	—	36,480	54,720
Mar: 69,600 x 40%	—	—	27,840
	<u>\$97,080</u>	<u>\$98,400</u>	<u>\$82,560</u>
Cash Budget			
Cash balance, beginning	\$ 10,000	\$ —	\$ —
Cash receipts	<u>145,500</u>	<u>162,500</u>	<u>147,500</u>
	<u>155,500</u>	<u>162,500</u>	<u>147,500</u>
Cash Disbursements			
On purchases	97,080	98,400	82,560
Selling and administrative	40,000	40,000	40,000
Equipment purchases	50,000	—	—
Dividends	—	—	30,000
	<u>187,080</u>	<u>138,400</u>	<u>152,560</u>
Cash balance before financing	(31,580)	24,100	(5,060)
Interest*	—	—	(316)
Line of credit financing	31,580	(24,100)	5,376
Cash balance after financing	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>

* Assume that the line of credit requirements and repayments are made at the end of the month.

XYZ Company
Pro Forma Income Statement and Statement of Retained Earnings
For the quarter ended March 31, 20x2

Sales ($175,000 + 160,000 + 120,000$)	\$455,000
Cost of goods sold	
Opening inventory	21,000
Purchases ($103,200 + 91,200 + 69,600$)	264,000
Ending inventory ($100,000 \times 12\%$)	<u>(12,000)</u>
	<u>273,000</u>
Gross margin	<u>182,000</u>
Operating expenses	
Selling and administrative ($40,000 \times 3$)	120,000
Amortization ($250,000 \div 10 \times 3/12$)	6,250
Bad debts ($455,000 \times 2\%$)	9,100
Interest ($31,580 \times 1\%$)	<u>316</u>
	<u>135,666</u>
Net income	46,334
Retained earnings, beginning	145,200
Dividends	<u>(30,000)</u>
	<u><u>\$161,534</u></u>

XYZ Company
Pro Forma Balance Sheet
as at March 31, 20x2

Cash	\$ 0
Accounts receivable (note 1)	110,400
Inventories	12,000
Equipment ($200,000 + 50,000$)	250,000
Accumulated amortization ($50,000 + 6,250$)	<u>(56,250)</u>
	<u>\$316,150</u>
Accounts payable ($69,600 \times 60\%$)	41,760
Line of credit ($31,580 - 24,100 + 5,060 + 316$)	12,856
Common stock	100,000
Retained earnings	<u>161,534</u>
	<u><u>\$316,150</u></u>
 Note 1 – Accounts receivable	
February sales: $160,000 \times 18\%$	28,800
March sales: $120,000 \times 68\%$	<u>81,600</u>
	<u><u>\$110,400</u></u>

XYZ Company
Pro Forma Cash Flow Statement
For the quarter ended March 31, 20x2

Cash provided by operations:	
Net income	\$46,334
Add back amortization	6,250
Add decrease in accounts receivable (110,400 – 120,000)	9,600
Add decrease in inventory (12,000 – 21,000)	9,000
Subtract decrease in accounts payable (41,760 – 55,800)	<u>(14,040)</u>
	\$57,144
Cash used by investing activities:	
Purchase of equipment	(50,000)
Cash used by financing activities:	
Increase in line of credit (12,856 – 0)	12,856
Payment of dividends	<u>(30,000)</u>
	(17,144)
Decrease in cash	(10,000)
Cash balance, beginning of quarter	<u>10,000</u>
Cash balance, end of quarter	<u><u>\$ 0</u></u>

Alternate calculation of cash provided by operations using direct method:

Cash provided by operations:	
Received from customers (145,500 + 162,500 + 147,500)	\$455,500
Payments to suppliers of inventory (97,080 + 98,400 + 82,560)	(278,040)
Payments for selling and administrative expenses (40,000 + 40,000 + 40,000)	(120,000)
Interest payments	<u>(316)</u>
	<u><u>\$ 57,144</u></u>

Management Issues in Budgeting

The use of the master budget for both planning and control purposes creates a fundamental moral problem. The same people who are asked to provide estimates used to prepare the master budget will subsequently have their performance evaluated against that budget, creating the potential for biased or tainted information. However, participative budgeting enhances buy-in to performance standards. Therefore, an effective budgeting process usually involves a combination of top-down and bottom-up approaches. Top management may provide broad guidelines but leave it to lower levels to set the detailed budget. Usually there is a review, or series of reviews, of the budget by upper level managers, followed by revisions at the lower level.

A related problem is that a budget based on the most likely scenario, which is most helpful for planning purposes, is not as useful in motivating people as a budget based on stretch targets that are achievable yet difficult. MAP 3200 recommends eliciting the most likely estimates when the budget will be used to evaluate subsequent performance. It also suggests that accountants not succumb to pressures from managers involved in the budgeting process to change either parameters or the forecasting model itself. “Both types of changes challenge the model builder’s best judgement about what is appropriate in the budget (Page 3200-5).” Use of sensitivity analysis allows the accountant to deal with concerns about whether budget parameters are too optimistic or pessimistic. To allay concerns about the model itself, it should be tested for both **completeness** (inclusion of all elements of the planning and control process, such as articulation of the sales forecast with available productive capacity) and **representational faithfulness** (fit with how decision makers think about the budget problem and inclusion of variables critical to achievement of the chosen objectives and strategy). The **accuracy** of the budget, i.e. the integrity of the formulas entered into the budget software, should be tested by comparing known results against the budget’s computed results and by performing tests of reasonableness based on prior experience and intuition. Parameter estimates, including prices, sales, costs, supplier lead times, times to put new capacity (people or equipment) in place, resource use rates, and resource availability, should also be tested for **reasonableness** against historical, industry-wide, or benchmark standards.

Other Approaches to Budgeting

The master budget model described above is the traditional approach to budgeting. Three important alternatives to traditional budgeting have proven to be useful in many organizations.

Zero-based budgeting is a budgeting process that requires managers to prepare budgets from “ground zero.” Traditional budgeting is often an incremental process that starts with the current operating budget or the previous period’s actual results, and assumes that most or all of the current activities and functions will continue and that prices and costs will increase by a specified percentage. In contrast, zero-based budgeting allows no activities or functions to be included in the budget unless managers can justify their need. Since zero-based budgeting is time consuming, organizations may use zero-based budgeting every five years, for example, or adapt a rotating approach to zero-based budgeting.

Activity-based budgeting (ABB) is a budgeting process that builds on activity-based costing, and focuses on activities and the cost drivers of those activities. Traditional budgeting uses historical data to predict the future consumption of resources for functional areas or value-chain spending categories. For example, factory overhead costs are usually predicted as a function of volume using rates based on broad averages of past costs. In contrast, activity-based budgeting uses detailed knowledge about the relationship between production volumes and overhead activities such as set-

up costs, moving costs, and inspection costs to develop cost and resource use forecasts. Activity-based budgeting is also a future-oriented approach since it attempts to distinguish between wasteful and value-added activities and also highlights opportunities for cost reduction.

Kaizen budgeting (or **continuous improvement budgeting**) is a budgeting process that explicitly requires continuous improvement (by the organization itself as well as its suppliers) and incorporates all expected improvements in the resulting budget. Whereas traditional budgeting often assumes that current practices will continue in the future, Kaizen budgeting is based on desired future practices and processes.

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