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## chapter 16

### Financial Analysis and the Statement of Cash Flows

Your goals for this “analysis and cash flows” chapter are to learn about:

- Tools for financial statement analysis.
- Evaluating cash flow and the cash flow statement.
- Categories of business activity: operating, investing, and financing.
- Noncash investing/financing activities.
- The direct approach to preparing a statement of cash flows.
- The indirect approach to presenting operating activities.
- Using a worksheet to prepare a statement of cash flows.

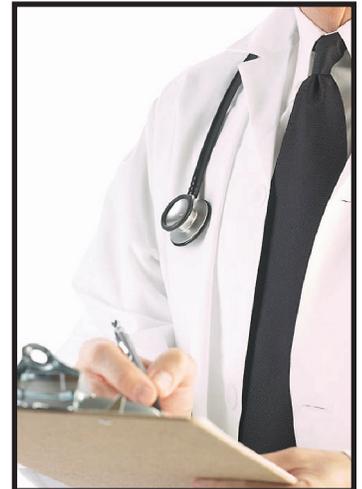
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#### FINANCIAL STATEMENT ANALYSIS

As you know, this website provides a substantial amount of material about accounting principles, and anyone wishing to study it with due diligence can learn valuable insights about accounting. Does the mere fact that this web site exists mean that everyone with internet access now knows about accounting principles? Obviously not. Does it mean that everyone who happens to “click by” will learn about accounting? Again, no. By analogy, the same can be said about financial information. Companies, especially public companies, spend substantial amounts preparing and presenting financial statements that are readily available (the reports for U.S. public companies are freely available at [www.sec.gov](http://www.sec.gov)). Does this mean that everyone with internet access now has an in-depth knowledge about these companies. For that matter, if you print the annual report of a company that you find interesting, does this really help you? My point is to suggest that some degree of study is required to benefit from information.

It is important for you to know that CPAs and the SEC provide safeguards to protect the integrity of reported information, but this is entirely different than suggesting that reporting companies are necessarily good investments. For example, a company could report that its revenue stream is in decline, expenses are on the rise, and significant debt is coming due without a viable plan for making the payments. The financial statements may fully report this predicament with perfect integrity, painting a rather gloomy picture. But, if financial statement users choose to ignore that report, only they are to blame.

The moral of the preceding point is to suggest that you must be very thorough in examining the financial statements of companies in which you are considering making an investment. It is not sufficient to merely determine that reports exist and look nice; you must study them, drill down in the detail, and think carefully about what you are observing. Sometimes, the evaluation of complex situations can be assisted by utilization of key metrics or ratios. For example, a doctor will consider your health in conjunction with measurements of your blood pressure, heart rate, cholesterol level, etc. Likewise, you should measure a company’s health by considering certain of its important ratios.



The following ratios have been presented throughout this book, and are summarized below. The online version of this text includes links to the full discussion of the ratio and its application/interpretation:

LIQUIDITY AND DEBT SERVICE RATIOS		
Current Ratio (chapter 4)	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	A measure of liquidity; the ability to meet near-term obligations
Quick Ratio (chapter 4)	$\frac{(\text{Cash} + \text{Short-term Investments} + \text{Accts. Receivable})}{\text{Current Liabilities}}$	A narrow measure of liquidity; the ability to meet near-term obligations
Debt to Total Assets Ratio (chapter 13)	$\frac{\text{Total Debt}}{\text{Total Assets}}$	Percentage of assets financed by long-term and short-term debt
Debt to Total Equity Ratio (chapter 13)	$\frac{\text{Total Debt}}{\text{Total Equity}}$	Proportion of financing that is debt-related
Times Interest Earned Ratio (chapter 13)	$\frac{\text{Income Before Income Taxes and Interest}}{\text{Interest Charges}}$	Ability to meet interest obligation
TURNOVER RATIOS		
Accounts Receivable Turnover Ratio (chapter 7)	$\frac{\text{Net Credit Sales}}{\text{Average Net Accounts Receivable}}$	Frequency of collection cycle; to monitor credit policies
Inventory Turnover Ratio (chapter 8)	$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$	Frequency of inventory rotation; to monitor inventory management
PROFITABILITY RATIOS		
Net Profit on Sales Ratio (chapter 5)	$\frac{\text{Net Income}}{\text{Net Sales}}$	Profitability on sales; for comparison and trend analysis
Gross Profit Margin Ratio (chapter 5)	$\frac{\text{Gross Profit}}{\text{Net Sales}}$	Gross profit rate; for comparison and trend analysis
Return on Assets Ratio (chapter 15)	$\frac{(\text{Net Income} + \text{Interest Expense})}{\text{Average Assets}}$	Asset utilization in producing returns
Return on Equity Ratio (chapter 15)	$\frac{(\text{Net Income} - \text{Preferred Dividends})}{\text{Average Common Equity}}$	Effectiveness of equity investment in producing returns
OTHER INDICATORS		
EPS (chapter 15)	$\frac{\text{Income Available to Common}}{\text{Weighted-Average Number of Common Shares}}$	Amount of earnings attributable to each share of common stock
P/E (chapter 15)	$\frac{\text{Market Price Per Share}}{\text{Earnings Per Share}}$	The price of the stock in relation to earnings per share
Dividend Rate/Yield (chapter 15)	$\frac{\text{Annual Cash Dividend}}{\text{Market Price Per Share}}$	Direct yield to investors through dividend payments
Dividend Payout Ratio (chapter 15)	$\frac{\text{Annual Cash Dividend}}{\text{Earnings Per Share}}$	Proportion of earnings distributed as dividends
Book Value (chapter 15)	$\frac{\text{"Common" Equity}}{\text{Common Shares Outstanding}}$	The amount of stockholders' equity per common share outstanding

## COMPREHENSIVE ILLUSTRATION

At this point, it may be helpful to consider these ratios as they relate to a comprehensive illustration. Following are financial statements for Emerson Corporation. Study them carefully. Then, examine the ratio calculations for Emerson Corporation that can be found immediately following the financial statements.

EMERSON CORPORATION Comparative Balance Sheet December 31, 20X5 and 20X4		
ASSETS	20X5	20X4
<b>Current assets</b>		
Cash	\$ 700,000	\$ 170,000
Accounts receivable	850,000	600,000
Inventory	<u>180,000</u>	<u>220,000</u>
Total current assets	<u>\$ 1,730,000</u>	<u>\$ 990,000</u>
<b>Property, plant &amp; equipment</b>		
Land	\$ 800,000	\$ 1,400,000
Building	1,000,000	700,000
Equipment	<u>1,050,000</u>	<u>900,000</u>
	\$ 2,850,000	\$ 3,000,000
Less: Accumulated Depreciation	<u>(480,000)</u>	<u>(360,000)</u>
Total property, plant & equipment	<u>\$ 2,370,000</u>	<u>\$ 2,640,000</u>
<b>Total assets</b>	<u><b>\$ 4,100,000</b></u>	<u><b>\$ 3,630,000</b></u>
<b>LIABILITIES</b>		
<b>Current liabilities</b>		
Accounts payable	\$ 270,000	\$ 200,000
Wages payable	<u>20,000</u>	<u>50,000</u>
Total current liabilities	\$ 290,000	\$ 250,000
<b>Long-term liabilities</b>		
Long-term loan payable	<u>900,000</u>	<u>1,800,000</u>
<b>Total liabilities</b>	<u><b>\$ 1,190,000</b></u>	<u><b>\$ 2,050,000</b></u>
<b>STOCKHOLDERS' EQUITY</b>		
Preferred stock	\$ 300,000	\$ -
Common stock (\$1 par)	910,000	900,000
Paid-in capital in excess of par	370,000	300,000
Retained earnings	<u>1,330,000</u>	<u>380,000</u>
<b>Total stockholders' equity</b>	<u><b>\$ 2,910,000</b></u>	<u><b>\$ 1,580,000</b></u>
<b>Total liabilities and equity</b>	<u><b>\$ 4,100,000</b></u>	<u><b>\$ 3,630,000</b></u>

EMERSON CORPORATION Income Statement For the Year Ending December 31, 20X5		
Revenues		\$ 3,250,000
Cost of goods sold		<u>1,160,000</u>
Gross profit		\$ 2,090,000
Operating expenses		
Wages	\$ 450,000	
Interest	120,000	
Depreciation	100,000	
Other operating expenses	<u>270,000</u>	(940,000)
Gain on sale of land		<u>150,000</u>
Income before income taxes		\$ 1,300,000
Income taxes		<u>300,000</u>
Net income		<u><b>\$ 1,000,000</b></u>

EMERSON CORPORATION Statement of Retained Earnings For the Year Ending December 31, 20X5		
Beginning retained earnings, Jan. 1		\$ 380,000
Net income		<u>1,000,000</u>
		\$ 1,380,000
Less: Dividends on common		<u>50,000</u>
Ending retained earnings, Dec. 31		<u><b>\$ 1,330,000</b></u>

**RATIOS FOR  
EMERSON  
CORPORATION  
AS OF  
DECEMBER 31,  
20X5**

Additional facts: No dividends were due or paid on the \$300,000 of preferred which was issued in exchange for a building in late 20X5. Average common equity is assumed to be \$2,095,000  $(\$2,910,000 - \$300,000) + \$1,580,000/2$ . Assume most other balance sheet items change uniformly throughout the year (e.g., average receivables =  $(\$600,000 + \$850,000)/2 = \$725,000$ , etc.). The year end market value of the common was \$10 per share, and the cash dividend was paid on shares outstanding at the end of the year  $(\$50,000/910,000 \text{ shares} = \$0.055 \text{ per share})$ .

Current Ratio	Current Assets/ Current Liabilities	$\$1,730,000/\$290,000 = 5.97$
Quick Ratio	(Cash + Short-term Investments + Accts. Receivable)/ Current Liabilities	$\$1,550,000/\$290,000 = 5.34$
Debt to Total Assets Ratio	Total Debt/ Total Assets	$\$1,190,000/\$4,100,000 = 0.29$
Debt to Total Equity Ratio	Total Debt/ Total Equity	$\$1,190,000/\$2,910,000 = 0.41$
Times Interest Earned Ratio	Income Before Income Taxes and Interest/ Interest Charges	$\$1,400,000/\$100,000 = 14$
Accounts Receivable Turnover Ratio	Net Credit Sales/ Average Net Accounts Receivable	$\$3,250,000/\$725,000 = 4.48$
Inventory Turnover Ratio	Cost of Goods Sold/ Average Inventory	$\$1,160,000/\$200,000 = 5.8$
Net Profit on Sales Ratio	Net Income/ Net Sales	$\$1,000,000/\$3,250,000 = 31\%$
Gross Profit Margin Ratio	Gross Profit/ Net Sales	$\$2,090,000/\$3,250,000 = 64\%$
Return on Assets Ratio	(Net Income + Interest Expense)/ Average Assets	$\$1,100,000/\$3,865,000 = 28\%$
Return on Equity Ratio	(Net Income - Preferred Dividends)/ Average Common Equity	$\$1,000,000/\$2,095,000 = 48\%$
EPS	Income Available to Common/ Weighted-Average Number of Common Shares	$\$1,000,000/905,000 = \$1.11$
P/E	Market Price Per Share/ Earnings Per Share	$\$10/\$1.11 = 9$
Dividend Rate/Yield	Annual Cash Dividend/ Market Price Per Share	$\$0.055/\$10 = 0.55\%$
Dividend Payout Ratio	Annual Cash Dividend/ Earnings Per Share	$\$0.055/\$1.11 = 5.0\%$
Book Value	"Common" Equity/ Common Shares Outstanding	$\$2,610,000/910,000 = \$2.87$

In examining the ratios of Emerson, it would appear that the company is doing fairly well. Its liquidity suggests no problem in meeting obligations, the debt is at a manageable level, receivables and inventory appear to be turning reasonably well, and profits are good.

**TREND ANALYSIS**

Financial statement data are often reproduced in percentage terms. For example, Emerson's cash is 17% of total assets  $(\$710,000/\$4,100,000)$ . Such percentage data can be monitored closely, year after year. This provides sharp investors and managers with a keen sense of subtle shifts that can foretell changes in the underlying business environment.

## CASH FLOWS AND THE CASH FLOW STATEMENT

You know that accounting is based upon accrual concepts that report revenues as earned and expenses as incurred, rather than when received and paid. Accrual information is perhaps the best indicator of business success or failure. However, one cannot ignore the importance of cash flows either. For example, a rapidly growing successful business can be profitable and still experience cash flow difficulties in trying to keep up with the need for expanded facilities and inventory. On the other hand, a business may appear profitable on an accrual basis, but may be experiencing delays in collecting receivables and this can impose severe liquidity constraints. Or, a business may be paying generous dividends, but only because cash is being produced from the disposal of core assets. Sophisticated analysis of the balance sheet and income statement will often reveal such issues.



## THE STATEMENT OF CASH FLOWS

Rather than depending upon sophisticated financial statement users to do their own detailed cash flow analysis, the accounting profession has seen fit to require another financial statement that clearly highlights the cash flows of a business entity. This required financial statement is appropriately named the **Statement of Cash Flows**. The Statement of Cash Flows can be seen as an outgrowth of the FASB's conceptual framework. In the previous chapter, it was pointed out that the FASB cited one objective of financial reporting as follows: Information should be helpful in assessing the amounts, timing, and uncertainty of an organization's cash inflows and outflows. The applicable rules require that the statement of cash flows provide three broad categories that reveal information about operating activities, investing activities, and financing activities. In addition, businesses are required to reveal significant noncash investing/financing transactions.

## CASH AND CASH EQUIVALENTS

In preparing the statement of cash flows, companies broadly define "cash" to consist of cash and items that are equivalent to cash. As a general rule, cash equivalents are short-term, highly liquid investments that mature in 90 days or less.

## OPERATING, INVESTING, AND FINANCING ACTIVITIES



Cash inflows from **operating activities** consist of receipts from customers for providing goods and services, and cash received from interest and dividend income. Cash outflows consist of payments for inventory, employee salaries and wages, taxes, interest, and other normal business expenses. To generalize, cash from operating activities is fairly well linked to those transactions and events that enter into the determination of income. However, another way to view "operating" cash flows is to include anything that is not an "investing" or "financing" cash flow as described below.

## INVESTING ACTIVITIES

Cash inflows from **investing activities** result from items such as the sale of stock and bond investments, disposal of long-term productive assets, and receipt of principal repayments on loans made to others. Cash outflows from investing activities include payments made to acquire long-term assets or long-term investments in other firms, loans made by the entity to others, and similar items.

## FINANCING ACTIVITIES

Cash inflows from **financing activities** relate to the proceeds received from stock and bond issues, borrowings under mortgage notes and loans, and so forth. Cash outflows for financing activities include repayments of loans, acquisitions of treasury stock, and dividend distributions to shareholders.

## NONCASH INVESTING AND FINANCING ACTIVITIES

A select set of important investing and financing activities occur without generating or consuming any cash. For example, a company may exchange common stock for land, or acquire a building in exchange for a note payable. While these transactions do not entail a direct inflow or outflow of cash, they do pertain to significant investing and/or financing events. When the FASB designed the statement of cash flows, they decided to require a separate section reporting these noncash items. Thus, the statement of cash flows is actually enhanced beyond its “title,” revealing the totality of investing and financing activities, whether cash is actually involved or not.

## DIRECT APPROACH TO THE STATEMENT OF CASH FLOWS

Earlier in this chapter you studied the income statement, statement of retained earnings, and balance sheet for Emerson Corporation. You should probably spend just a few moments reviewing those financial statements before proceeding. Then, examine the following statement of cash flows for Emerson Corporation. Everything within this cash flow statement is derived from the data and additional comments presented earlier for Emerson. Some of the cash flow statement will at first seem a bit mysterious, but a “line by line” explanation will follow. The tan bar at the left is not part of the statement; it is to facilitate the “line by line” discussion” (e.g. line F4 will refer to the 4th line in the financing activities section).



EMERSON CORPORATION Statement of Cash Flows (Direct Approach) For the Year Ending December 31, 20X5		
O1	<b>Cash flows from operating activities:</b>	
O2	Cash received from customers	\$ 3,000,000
O3	Less cash paid for:	
O4	Merchandise inventory	\$ 1,050,000
O5	Wages	480,000
O6	Interest	100,000
O7	Other operating expenses	270,000
O8	Income taxes	<u>300,000</u>
O9	Net cash provided by operating activities	<u>(2,200,000)</u> \$ 800,000
I1	<b>Cash flows from investing activities:</b>	
I2	Sale of land	\$ 750,000
I3	Purchase of equipment	<u>(150,000)</u>
I4	Net cash provided by investing activities	600,000
F1	<b>Cash flows from financing activities:</b>	
F2	Proceeds from issuing stock	\$ 80,000
F3	Dividends on common	(50,000)
F4	Repayment of long-term loans	<u>(900,000)</u>
F5	Net cash used in financing activities	<u>(870,000)</u>
C1	<b>Net increase in cash</b>	\$ 530,000
C2	<b>Cash balance at January 1, 20X5</b>	<u>170,000</u>
C3	<b>Cash balance at December 31, 20X5</b>	<u>\$ 700,000</u>
N1 <b>Noncash investing/financing activities:</b>		
N2	Issued preferred stock for building	<u>\$ 300,000</u>

## METHODS TO PREPARE A STATEMENT OF CASH FLOWS

There are several ways to go about preparing a statement of cash flows. You may hear about a “T” account approach or a “worksheet” approach for organizing data to present the statement. But, trying to learn the statement of cash flows by focusing on the specific method for its preparation can actually obscure your understanding of the statement. Let’s first focus on our “line by line” understanding of how the content for Emerson’s statement is derived. As you proceed, try to focus on understanding

not memorization. The statement of cash flows draws on your complete understanding of accounting, and it is quite common for students to initially struggle with the statement; do not despair and do not give up!

## OPERATING ACTIVITIES

LINE 01 -- CASH FLOWS FROM OPERATING ACTIVITIES: This line merely identifies the section:

01	Cash flows from operating activities:
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LINE 02 -- CASH RECEIVED FROM CUSTOMERS: Emerson's customers paid \$3,000,000 in cash:

02	Cash received from customers	\$ 3,000,000
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How do we know this? Emerson's information system could be sufficiently robust that a "data base query" could produce this number for us. On the other hand, we can also infer this by reference to sales and receivables data found within the income statement and balance sheet:

$$\begin{aligned} &\text{Cash Received From Customers} \\ &= \\ &\text{Total Sales Minus the Increase in Net Receivables} \\ &\text{(or, plus a decrease in net receivables)} \end{aligned}$$

$$\begin{aligned} &\text{Cash Received From Customers} \\ &= \\ &\$3,250,000 - (\$850,000 - \$600,000) \end{aligned}$$

$$\text{Cash Received From Customers} = \$3,000,000$$

Thinking about this calculation, we note that accounts receivable increased by \$250,000 during the year (\$850,000 - \$600,000). This means that of the total sales of \$3,250,000, a net \$250,000 went uncollected during the year. Thus, cash received from customers only came to \$3,000,000. If net receivables had decreased instead, cash collected would have actually exceeded sales.

LINE 03 -- CASH PAID FOR: This line identifies the items relating to operating cash outflows:

03	Less cash paid for:
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LINE 04 -- CASH PAID FOR INVENTORY: Emerson's paid \$1,050,000 of cash for inventory:

04	Merchandise inventory	\$ 1,050,000
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Determining the cash paid for inventory is perhaps one of the trickier calculations. Bear in mind that cost of goods sold is the dollar amount of inventory sold during the year. But, the amount of inventory actually purchased will be less than this amount if inventory on the balance sheet decreased during the year. This would mean that some of the cost of goods sold came from existing stock on hand

rather than having all been purchased during the year. On the other hand, purchases would be greater than cost of goods sold if inventory increased:

$$\begin{aligned} & \text{Inventory Purchased} \\ & = \\ & \text{Cost of Goods Sold Minus the Decrease in Inventory} \\ & \text{(or, plus an increase in inventory)} \end{aligned}$$

$$\begin{aligned} & \text{Inventory Purchased} \\ & = \\ & \$1,160,000 - (\$220,000 - \$180,000) \end{aligned}$$

$$\text{Inventory Purchased} = \$1,120,000$$

Now, the inventory purchased is only the starting point for determining cash paid for inventory. The Inventory Purchased must be adjusted for the portion that was purchased on credit. Notice that Emerson's accounts payable increased by \$70,000 (\$270,000 - \$200,000). This means that cash paid for inventory purchases was \$70,000 less than total inventory purchased:

$$\begin{aligned} & \text{Cash Paid for Inventory} \\ & = \\ & \text{Inventory Purchases Minus the Increase in Accounts Payable (or, plus a} \\ & \text{decrease in accounts payable)} \end{aligned}$$

$$\text{Cash Paid for Inventory} = \$1,120,000 - (\$270,000 - \$200,000)$$

$$\text{Cash Paid for Inventory} = \$1,050,000$$

LINE 05 -- CASH PAID FOR WAGES: Emerson's paid \$480,000 of cash for wages during the year:

05	Wages	480,000
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Emerson's payroll records would indicate the amount of cash paid for wages, but this number can also be determined by reference to wages expense in the income statement and wages payable on the balance sheet:

$$\begin{aligned} & \text{Cash Paid for Wages} \\ & = \\ & \text{Wages Expense Plus the Decrease in Wages Payable} \\ & \text{(or, minus an increase in wages payable)} \end{aligned}$$

$$\begin{aligned} & \text{Cash Paid for Wages} \\ & = \\ & \$450,000 + (\$50,000 - \$20,000) \end{aligned}$$

$$\text{Cash Paid for Wages} = \$480,000$$

Emerson not only paid out enough cash to cover wages expense, but an additional \$30,000 as reflected by the overall decrease in wages payable. If wages payable had increased, the cash paid would have been less than wages expense.

LINE 06, 07, 08 -- CASH PAID FOR INTEREST, OTHER OPERATING EXPENSES AND INCOME TAXES:

06	Interest	100,000
07	Other operating expenses	270,000
08	Income taxes	<u>300,000</u>

Emerson's cash payments for these items equaled the amount of expense in the income statement. Had there been related balance sheet accounts (e.g., interest payable, taxes payable, etc.), then the expense amounts would need to be adjusted in a manner similar to that illustrated for wages.

LINE 09 -- NET CASH PROVIDED BY OPERATING ACTIVITIES: This line merely provides a recap of the net effect of all operating activities. Overall, operations generated net positive cash flows of \$800,000:

09	Net cash provided by operating activities	\$ 800,000
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You may have noticed that two items within the income statement were not listed in the operating activities section of the cash flow statement. Specifically:

- Depreciation expense is in the income statement, but it is not an operating cash flow item. The reason is very simple; it is a noncash expense. Remember that depreciation is recorded via a debit to Depreciation Expense and a credit to Accumulated Depreciation. No cash is impacted by this expense entry (the "investing" cash outflow occurred when the asset was purchased), and
- The gain on sale of land in the income statement does not appear in the operating cash flows section. While the land sale may have produced cash, the entire proceeds will be listed in the investing activities section; it is a "nonoperating" item, and its full cash effect is listed elsewhere.

## INVESTING ACTIVITIES

LINE 11 -- CASH FLOWS FROM INVESTING ACTIVITIES: This line merely identifies the section:

11	Cash flows from investing activities:
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LINE 12 -- CASH FLOWS FROM SALE OF LAND: Emerson sold land for \$750,000 during the year:

12	Sale of land	\$ 750,000
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In actuality, it would be pretty easy to look up this transaction in the journal. The entry would like this:

XX-XX-X5	Cash	750,000	
	Gain		150,000
	Land		600,000
	<i>Sold land costing \$600,000 for \$750,000</i>		

But, it is not entirely necessary to refer to the journal. You will notice that land on the balance sheet decreased by \$600,000 (\$1,400,000 - \$800,000), and you will notice that the income statement included a \$150,000 gain. Applying a little “forensic” accounting allows you to deduce that \$600,000 in land was sold for \$750,000, to produce the \$150,000 gain.

LINE I3 -- CASH FLOWS FROM PURCHASE OF EQUIPMENT: Emerson purchased equipment for \$150,000 during the year:

I3	Purchase of equipment	(150,000)
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Notice that equipment on the balance sheet increased by \$150,000 (\$1,050,000 - \$900,000). We could confirm that this was a cash purchase by reference to the journal; such is assumed in this case.

LINE I4 -- NET CASH PROVIDED BY INVESTING ACTIVITIES: Emerson’s overall investing activities generated \$600,000 in cash during the year. This resulted from the net effects of disposing of land and purchasing equipment.

I4	Net cash provided by investing activities	600,000
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## FINANCING ACTIVITIES

LINE F1 -- CASH FLOWS FROM FINANCING ACTIVITIES: This line merely identifies the section:

F1	Cash flows from financing activities:	
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LINE F2 -- CASH PROCEEDS FROM ISSUING COMMON STOCK: This line reveals that \$80,000 that was received from issuing common stock.

F2	Proceeds from issuing stock	\$ 80,000
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This cash inflow is suggested by the \$10,000 increase in common stock (\$910,000 - \$900,000) and \$70,000 increase in additional paid-in capital (\$370,000 - \$300,000).

LINE F3 -- CASH OUTFLOW FOR DIVIDENDS: The statement of retained earnings reveals that Emerson declared \$50,000 in dividends. Since there is no dividend payable on the balance sheet, one can assume that all of the dividends were paid during the year:

F3	Dividends on common	(50,000)
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LINE F4 -- CASH OUTFLOW FOR REPAYMENT OF LONG-TERM LOAN: The balance sheet reveals a \$900,000 decrease in long-term debt (\$1,800,000 - \$900,000). This represented a significant use of cash during the year:

F4	Repayment of long-term loans	(900,000)
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This line item reveals that Emerson has used much of the cash flow generated from operations and asset disposals to reduce the outstanding debt of the company.

LINE F5 -- NET CASH USED IN FINANCING ACTIVITIES: Emerson's overall financing activities used \$870,000 in cash during the year. The bulk of this outflow was attributable to debt repayment.

F5	Net cash used in financing activities	(870,000)
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## CASH FLOW RECAP

LINE C1, C2, C3 -- THE CHANGE IN CASH: Emerson's cash flow statement reveals a \$530,000 increase in cash during the year (\$800,000 from positive operating cash flow, \$600,000 from positive investing cash flow, and \$870,000 from negative financing cash flow). This change in cash is confirmed by reference to the beginning and ending cash balances on the balance sheet:

C1	Net increase in cash	\$ 530,000
C2	Cash balance at January 1, 20X5	<u>170,000</u>
C3	Cash balance at December 31, 20X5	<u>\$ 700,000</u>

## NONCASH INVESTING/ FINANCING ACTIVITIES

LINE N1, N2 -- NONCASH INVESTING AND FINANCING ACTIVITIES: Emerson issued \$300,000 of preferred stock for a building. This falls into the special section for revealing the noncash investing and financing events:

N1	Noncash investing/financing activities:	
N2	Issued preferred stock for building	\$ <u>300,000</u>

## RECONCILIATION OF INCOME TO OPERATING CASH FLOWS

The statement of cash flows just presented is specifically known as the "direct approach." The direct approach is the preferred approach. It is so named because the cash items entering into the determination of operating cash flow are specifically identified. In many respects, this presentation of operating cash flows resembles a cash basis income statement. An alternative "indirect" approach will be presented shortly.

But first, you should be aware that companies who choose to use the direct approach must supplement the cash flow statement with a reconciliation of income to cash from operations:

Net income		\$ 1,000,000
Add (deduct) noncash effects on operating income		
Depreciation expense	\$ 120,000	
Gain on sale of land	(150,000)	
Increase in accounts receivable	(250,000)	
Decrease in inventory	40,000	
Increase in accounts payable	70,000	
Decrease in wages payable	<u>(30,000)</u>	<u>(200,000)</u>
Net cash provided by operating activities		\$ 800,000

Notice that this reconciliation starts with the net income, and adjusts to the \$800,000 net cash from operations. Some explanation may prove helpful:

- Depreciation is added back to net income because it reduced income but did not consume any cash
- Gain on sale of land is subtracted because it increased income, but is not related to operations (remember, it is an investing item and the “gain” is not the sales price)
- Increase in accounts receivable is added because it represents uncollected sales included in income
- Decrease in inventory is subtracted because it represents cost of sales from existing inventory (not a new cash purchase)
- Increase in accounts payable is added because it represents expenses not paid
- Decrease in wages payable is subtracted because it represents a cash payment for something expensed in an earlier period

Now, this can get rather confusing. Let’s try to simplify it a bit. First, you can probably see why depreciation is added back.

But, the gain is likely fuzzy. It must be subtracted because you are trying to remove it from the operating number; it increased net income but it is viewed as something other than operating and that is why it is backed out. Conversely, a loss on such a transaction would be added.

The increase in accounts receivable represents sales that increased income but not cash. That is why it is subtracted. If you can relate to the receivables, a pattern will develop for the other items:

**Increases in current assets related to operations will be subtracted, but decreases will be added**

**and, vice versa:**

**Increases in current liabilities related to operations will be added, but decreases will be subtracted**

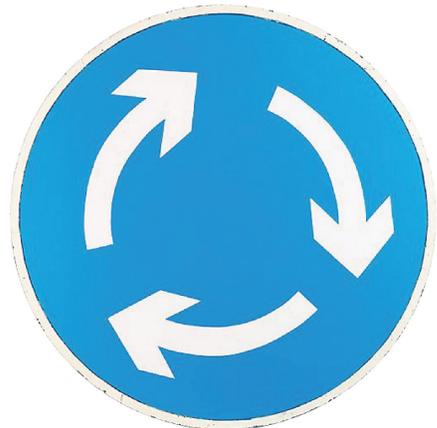
You should examine this pattern, to satisfy yourself that it works for the inventory, accounts payable, and wages payable. Now, you can logically extend the pattern to most any other operating adjustment that pertains to a current asset or current liability.

As a reminder, this reconciliation of income to operating cash is intended to supplement the direct approach to the statement of cash flows. You will likely find the reconciliation in notes to the financial statements.

## **INDIRECT APPROACH TO PRESENTING OPERATING ACTIVITIES**

As an alternative to the direct approach, companies may present an indirect statement of cash flows. The indirect approach is mostly a repackaging of the information found in the direct approach. It is so named because the “reconciliation” replaces the direct presentation of the operating cash flows. The indirect approach is presented on the following page. Except for the shaded areas, this statement is identical to the direct approach:

The first shaded area merely reflects the substitution of the operating cash flow calculations. The second shaded area reflects a rule that the indirect approach must be supplemented with information about cash paid for interest and taxes (these amounts are found in the operating activities section of the direct approach).



EMERSON CORPORATION Statement of Cash Flows (Indirect Approach) For the Year Ending December 31, 20X5		
<b>Cash flows from operating activities:</b>		
Net income		\$ 1,000,000
Add (deduct) noncash effects on operating income		
Depreciation expense	\$ 120,000	
Gain on sale of land	(150,000)	
Increase in accounts receivable	(250,000)	
Decrease in inventory	40,000	
Increase in accounts payable	70,000	
Decrease in wages payable	<u>(30,000)</u>	<u>(200,000)</u>
Net cash provided by operating activities		\$ 800,000
<b>Cash flows from investing activities:</b>		
Sale of land	\$ 750,000	
Purchase of equipment	<u>(150,000)</u>	
Net cash provided by investing activities		600,000
<b>Cash flows from financing activities:</b>		
Proceeds from issuing stock	\$ 80,000	
Dividends on common	(50,000)	
Repayment of long-term loans	<u>(900,000)</u>	
Net cash used in financing activities		<u>(870,000)</u>
<b>Net increase in cash</b>		<b>\$ 530,000</b>
<b>Cash balance at January 1, 20X5</b>		<u>170,000</u>
<b>Cash balance at December 31, 20X5</b>		<b><u>\$ 700,000</u></b>
<b>Noncash investing/financing activities:</b>		
Issued preferred stock for building		<u>\$ 300,000</u>
<b>Supplemental information:</b>		
Cash paid for interest		\$ 100,000
Cash paid for income taxes		300,000

## USING A WORKSHEET TO PREPARE A STATEMENT OF CASH FLOWS

Given enough time and careful thought, one can generally prepare a statement of cash flows by putting together a rough shell that approximates the statements illustrated throughout this chapter, and then filling in all of the bits and pieces that can be found. Ultimately, the correct solution is reached when the change in cash is fully explained. This is sort of like working a puzzle without reference to a supporting picture. But, complex tasks are simplified by taking a more organized approach. To that end, you should consider the value of a worksheet for preparing the statement of cash flows.

The worksheet examines the change in each balance sheet account, and relates it to any cash flow statement impacts. Once each line in the balance sheet is contemplated, the ingredients of the cash flow statement will be found! A sample worksheet for Emerson is presented on the following page.

In this worksheet, the upper portion is the balance sheet information and the lower portion is the cash flow statement information. The change in each balance sheet row is evaluated and keyed to a change(s) in the cash flow statement. When you have explained the change in each balance sheet line, you should have accumulated (in the lower portion) the information necessary to prepare a statement of cash flows.

Emerson Corporation/Cash Flow Statement Worksheet/For the Year Ending Dec. 31, 20X5				
	20X4	Debit	Credit	20X5
<b>Debits</b>				
Cash	\$ 170,000	(a) \$ 530,000		\$ 700,000
Accounts receivable	600,000	(b) 250,000		850,000
Inventory	220,000		(c) \$ 40,000	180,000
Land	1,400,000		(d) 600,000	800,000
Building	700,000	(e) 300,000		1,000,000
Equipment	<u>900,000</u>	(f) 150,000		<u>1,050,000</u>
	<u>\$ 3,990,000</u>			<u>\$ 4,580,000</u>
<b>Credits</b>				
Accumulated depreciation	\$ 360,000		(g) 120,000	\$ 480,000
Accounts payable	200,000		(h) 70,000	270,000
Wages payable	50,000	(i) 30,000		20,000
Long-term loan payable	1,800,000	(j) 900,000		900,000
Preferred stock	-		(e) 300,000	300,000
Common stock (\$1 par)	900,000		(k) 10,000	910,000
Paid-in capital in excess of par	300,000		(k) 70,000	370,000
Retained earnings	<u>380,000</u>	(l) 50,000	(m) 1,000,000	<u>1,330,000</u>
	<u>\$ 3,990,000</u>			<u>\$ 4,580,000</u>
<b>Cash flows from operating activities:</b>				
Net income		(m) 1,000,000		
Depreciation expense		(g) 120,000		
Gain on sale of land			(d) 150,000	
Increase in accounts receivable			(b) 250,000	
Decrease in inventory		(c) 40,000		
Increase in accounts payable		(h) 70,000		
Decrease in wages payable			(i) 30,000	
<b>Cash flows from investing activities:</b>				
Sale of land		(d) 750,000		
Purchase of equipment			(f) 150,000	
<b>Cash flows from financing activities:</b>				
Proceeds from issuing stock		(k) 80,000		
Dividends on common			(l) 50,000	
Repayment of long-term loan			(j) 900,000	
<b>Noncash investing/financing activities:</b>				
Issue preferred stock for building		(e) 300,000	(e) 300,000	
Increase in cash			(a) <u>530,000</u>	
		<u>\$ 4,570,000</u>	<u>\$ 4,570,000</u>	

Specific explanations for each keyed item are found in the table that follows the worksheet. The cash flow statement explanations are color coded such that **blue** is the final balancing step, **red** is cash outflow, black is cash inflow, and **green** is special.

	<b>Upper/Balance Sheet</b>	<b>Lower/Cash Flow Statement</b>
(a)	<b>debit (increase) cash</b>	<b>credit to balance - the remaining effect as net positive cash flow</b>
(b)	<b>debit (increase) accounts receivable</b>	<b>credit reflecting negative cash effect via receivables increase</b>
(c)	<b>credit (decrease) inventory</b>	<b>debit reflecting positive cash effect via inventory reduction</b>
(d)	<b>credit (decrease) land</b>	<b>credit gain and debit sale of land reflecting source of cash</b>
(e)	<b>debit building (increase)/credit preferred (increase)</b>	<b>debit and credit reflecting noncash investing/financing</b>
(f)	<b>debit (increase) equipment</b>	<b>credit reflecting use of cash to purchase equipment</b>
(g)	<b>credit (increase) accumulated depreciation</b>	<b>debit reflecting noncash adjustment of income</b>
(h)	<b>credit (increase) accounts payable</b>	<b>debit reflecting positive cash effect via increased payables</b>
(i)	<b>debit (decrease) wages payable</b>	<b>credit reflecting negative cash effect via payables reduction</b>
(j)	<b>debit (decrease) loan payable</b>	<b>credit reflecting use of cash via loan repayment</b>
(k)	<b>credit (increase) stock and paid-in capital</b>	<b>debit reflecting source of cash via stock issue</b>
(l)	<b>debit (decrease) retained earnings</b>	<b>credit reflecting use of cash for dividends</b>
(m)	<b>credit (increase) retained earnings</b>	<b>debit reflecting source of cash via income</b>

