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Corporate Finance

Thirteenth Edition

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Chapter 2

Financial Statements and Cash Flow

Key Concepts and Skills

- Understand the information provided by financial statements.
- Differentiate between book and market values.
- Know the difference between average and marginal tax rates.
- Know the difference between accounting income and cash flow.
- Calculate a firm's cash flow.

Chapter Outline

2.1 The Balance Sheet.

2.2 The Income Statement.

2.3 Taxes.

2.4 Net Working Capital.

2.5 Cash Flow of the Firm.

2.6 The Accounting Statement of Cash Flows.

2.7 Cash Flow Management.

Sources of Information

Annual reports.

Wall Street Journal.

Internet.

- NYSE (www.nyse.com)
- Nasdaq (www.nasdaq.com)
- Textbook (www.mhhe.com)

SEC.

- EDGAR.
- 10K & 10Q reports.

2.1 The Balance Sheet

An accountant's snapshot of the firm's accounting value at a specific point in time

The Balance Sheet Identity is:

$$\text{Assets} \equiv \text{Liabilities} + \text{Stockholders' equity}$$

The Balance Sheet of the U.S. Composite Corporation ¹

The assets are listed in order by the length of time it would normally take a firm with ongoing operations to convert them into cash.

Clearly, cash is much more liquid than property, plant, and equipment.

	2021	2022		2021	2022
Current assets:			Current liabilities:		
Cash and equivalents	\$157	\$198	Accounts payable	\$455	\$490
Accounts receivable	270	294			
Inventories	280	269			
			Total current liabilities	<u>\$455</u>	<u>\$490</u>
Total current assets	<u>\$707</u>	<u>\$761</u>			
Fixed assets:			Long-term liabilities:		
Property, plant, and equipment	\$1,274	\$1,423	Deferred taxes	\$104	\$113
Less accumulated depreciation	460	550	Long-term debt	458	471
Net property, plant, and equipment	\$814	\$873	Total long-term liabilities	<u>\$562</u>	<u>\$584</u>
Intangible assets and others	221	245			
Total fixed assets	<u>\$1,035</u>	<u>\$1,118</u>	Stockholders' equity:		
			Preferred stock	\$39	\$39
			Common stock (\$1 par value)	32	55
			Capital surplus	327	347
			Accumulated retained earnings	347	390
			Less treasury stock	20	26
			Total equity	<u>\$725</u>	<u>\$805</u>
Total assets	<u>\$1,742</u>	<u>\$1,879</u>	Total liabilities and stockholders' equity	<u>\$1,742</u>	<u>\$1,879</u>

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Balance Sheet Analysis

When analyzing a balance sheet, the financial manager should be aware of three concerns:

1. Liquidity.
2. Debt versus equity.
3. Value versus cost.

Liquidity

Liquidity refers to the ease and quickness with which assets can be converted to cash—without a significant loss in value.

Current assets are the most liquid.

Some fixed assets are intangible.

The more liquid a firm's assets, the less likely the firm is to experience problems meeting short-term obligations.

Liquid assets frequently have lower rates of return than fixed assets.

Debt versus Equity

Bondholders generally receive the first claim on the firm's cash flow.

Stockholders' equity is the residual difference between assets and liabilities.

Value versus Cost

Under generally accepted accounting principles (GAAP), audited financial statements of firms in the U.S. carry assets at cost.

Market value is the price at which the assets, liabilities, and equity could actually be bought or sold, which is a completely different concept from historical cost.

2.2 The Income Statement

Measures financial performance over a specific period of time

The accounting definition of income is:

$$\text{Revenue} - \text{Expenses} \equiv \text{Income}$$

The Income Statement of the U.S. Composite Corporation - I

The operations section of the income statement reports the firm's revenues and expenses from principal operations.

Total operating revenues	\$2,262
Cost of goods sold	1,715
Selling, general, and administrative expenses	327
Depreciation	90
Operating income	<u>\$130</u>
Other income	29
Earnings before interest and taxes (EBIT)	<u>\$159</u>
Interest expense	49
Pretax income	<u>\$110</u>
Taxes	24
Current: \$15	
Deferred: 9	
Net income	<u><u>\$86</u></u>
Addition to retained earnings:	<u>\$43</u>
Dividends:	43

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The Income Statement of the U.S. Composite Corporation - II

The nonoperating section of the income statement includes all financing costs, such as interest expense.

Total operating revenues	\$2,262
Cost of goods sold	1,715
Selling, general, and administrative expenses	327
Depreciation	90
Operating income	<u>\$130</u>
Other income	29
Earnings before interest and taxes (EBIT)	<u>\$159</u>
Interest expense	49
Pretax income	<u>\$110</u>
Taxes	24
Current: \$15	
Deferred: 9	
Net income	<u><u>\$86</u></u>
Addition to retained earnings:	<u>\$43</u>
Dividends:	43

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The Income Statement of the U.S. Composite Corporation - III

Usually a separate section reports the amount of taxes levied on income.

Total operating revenues	\$2,262
Cost of goods sold	1,715
Selling, general, and administrative expenses	327
Depreciation	90
Operating income	<u>\$130</u>
Other income	29
Earnings before interest and taxes (EBIT)	<u>\$159</u>
Interest expense	49
Pretax income	<u>\$110</u>
Taxes	24
Current: \$15	
Deferred: 9	
Net income	<u><u>\$86</u></u>
Addition to retained earnings:	\$43
Dividends:	43

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The Income Statement of the U.S. Composite Corporation - IV

Net income is the “bottom line.”

Total operating revenues	\$2,262
Cost of goods sold	1,715
Selling, general, and administrative expenses	327
Depreciation	90
Operating income	<u>\$130</u>
Other income	29
Earnings before interest and taxes (EBIT)	<u>\$159</u>
Interest expense	49
Pretax income	<u>\$110</u>
Taxes	24
Current: \$15	
Deferred: 9	
Net income	<u><u>\$86</u></u>
Addition to retained earnings:	<u>\$43</u>
Dividends:	43

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Income Statement Analysis

There are three things to keep in mind when analyzing an income statement:

1. Generally Accepted Accounting Principles (GAAP)
2. Noncash Items.
3. Time and Costs.

GAAP

The matching principle of GAAP dictates that revenues be matched with expenses.

Thus, income is reported when it is earned, even though no cash flow may have occurred.

Noncash Items

Depreciation is the most apparent. No firm ever writes a check for “depreciation.”

Another noncash item is deferred taxes, which does not represent a cash flow.

Thus, net income is not cash.

Time and Costs

In the short run, certain equipment, resources, and commitments of the firm are fixed, but the firm can vary such inputs as labor and raw materials.

In the long run, all inputs of production (and hence costs) are variable.

Financial accountants do not distinguish between variable costs and fixed costs. Instead, accounting costs usually fit into a classification that distinguishes product costs from period costs.

2.3 Taxes

The one thing we can rely on with taxes is that they are always changing.

- Tax Cuts and Jobs Act of 2017.
- See the **IRS website** for current information.

Average versus marginal tax rates.

$$\text{Average} = \frac{\text{the tax bill}}{\text{taxable income}}$$

- Marginal: Percentage paid on the next dollar earned.

Other taxes

Average versus Marginal Rates

Suppose your firm earns \$100k million in taxable income.

- What is the firm's tax liability?
- What is the average tax rate?
- What is the marginal tax rate?

Taxable Income	Tax Rate
\$ 0-9,950	10%
9,950-40,525	12
40,525-86,375	22
86,375-164,925	24
164,925-209,425	32
209,425-523,600	35
523,600+	37

Average versus Marginal Rates

The difference between average and marginal tax rates can best be illustrated with a simple example. Suppose your personal taxable income is \$100,000. What is your tax bill? Using [Table 2.3](#), we can figure your tax bill like this:

.10 (\$9,950)	=	\$ 995.00
.12 (\$40,525 – 9,950)	=	3,669.00
.22 (\$86,375 – 40,525)	=	10,087.00
.24 (\$100,000 – 86,375)	=	3,270.00
		<u>\$18,021.00</u>

Your total tax is \$18,021.

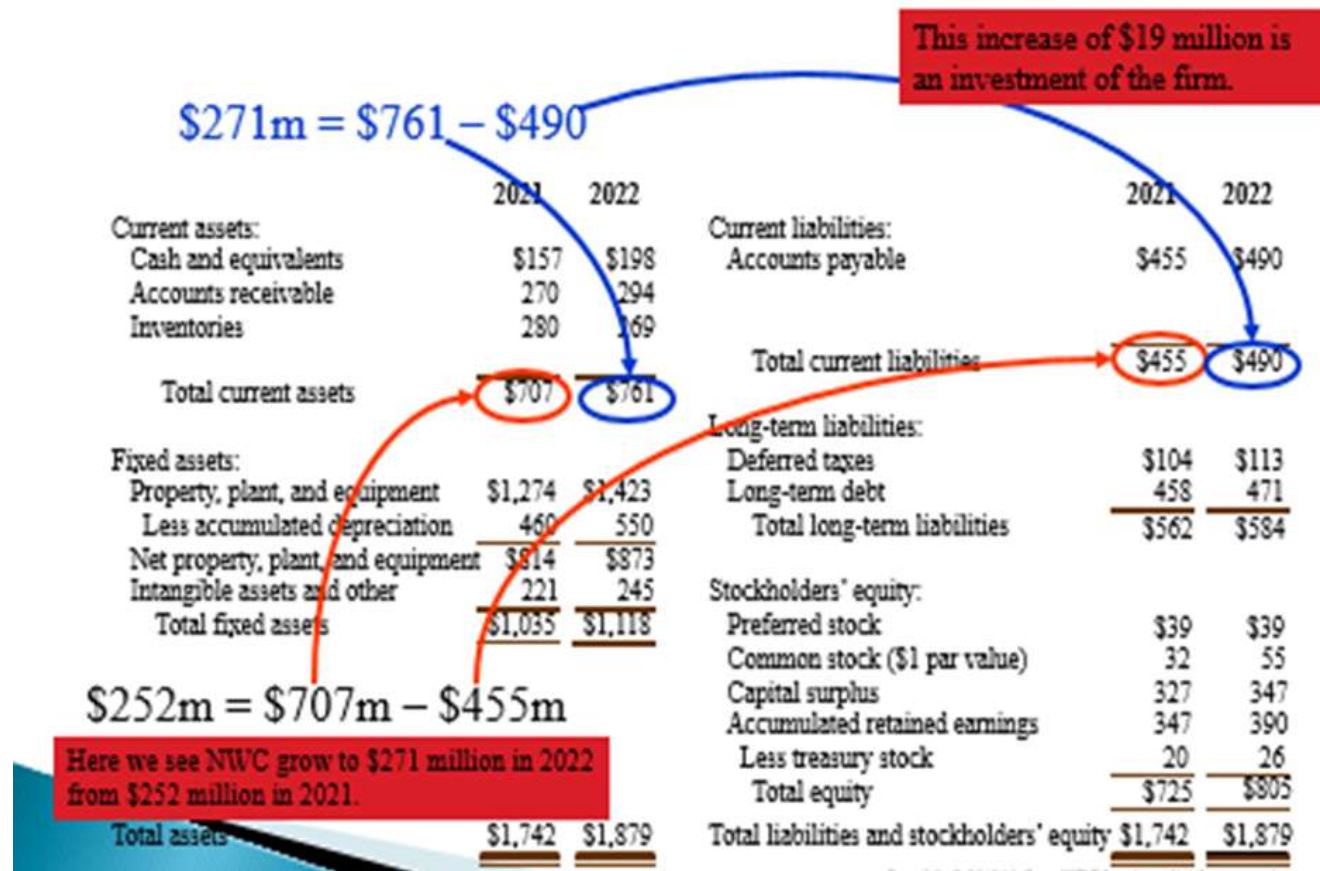
In our example, what is your average tax rate? You had a taxable income of \$100,000 and a tax bill of \$18,021, so your average tax rate is $\$18,021/\$100,000 = .1802$, or 18.02%. What is your marginal tax rate? If you made one more dollar, the tax on that dollar would be 24 cents, so your marginal rate is 24 percent.

2.4 Net Working Capital

Net Working Capital \equiv Current Assets – Current Liabilities

NWC usually grows with the firm.

The Balance Sheet of the U.S. Composite Corporation ²



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2.5 Cash Flow of the Firm

In finance, the most important item that can be extracted from financial statements is the actual cash flow of the firm.

Since there is no magic in finance, it must be the case that the cash flow received from the firm's assets must equal the cash flows to the firm's creditors and stockholders.

$$CF(A) \equiv CF(B) + CF(S)$$

Financial Cash Flow of the U.S. Composite Corporation - I

Cash flow of the firm

Operating cash flow (Earnings before interest and taxes plus depreciation minus taxes)	\$234
Capital spending (Acquisitions of fixed assets minus sales of fixed assets)	-173
Additions to net working capital	-19
Total	<u>\$42</u>

Cash flow to investors in the firm

Debt (Interest plus retirement of debt minus long-term debt financing)	\$36
Equity (Dividends plus repurchase of equity minus new equity financing)	6
Total	<u><u>\$42</u></u>

Operating Cash Flow:

EBIT	\$159
Depreciation	\$90
Current Taxes	<u>-\$15</u>
OCF	<u>\$234</u>

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Financial Cash Flow of the U.S. Composite Corporation - II

Cash flow of the firm

Operating cash flow (Earnings before interest and taxes plus depreciation minus taxes)	\$234
Capital spending (Acquisitions of fixed assets minus sales of fixed assets)	-173
Additions to net working capital	-19
Total	<u>\$42</u>

Cash flow to investors in the firm

Debt (Interest plus retirement of debt minus long-term debt financing)	\$36
Equity (Dividends plus repurchase of equity minus new equity financing)	6
Total	<u>\$42</u>

Capital Spending

Purchase of fixed assets	\$198
Sales of fixed assets	<u>-25</u>
Capital spending	<u>\$173</u>

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Financial Cash Flow of the U.S. Composite Corporation - III

Cash flow of the firm	
Operating cash flow	\$234
(Earnings before interest and taxes plus depreciation minus taxes)	
Capital spending	-173
(Acquisitions of fixed assets minus sales of fixed assets)	
Additions to net working capital	-19
Total	<u>\$42</u>
Cash flow to investors in the firm	
Debt	\$36
(Interest plus retirement of debt minus long-term debt financing)	
Equity	6
(Dividends plus repurchase of equity minus new equity financing)	
Total	<u><u>\$42</u></u>

NWC grew from \$252 million in 2018 to \$271 million in 2019.

This increase of \$19 million is the addition to NWC.

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Financial Cash Flow of the U.S. Composite Corporation - IV

Cash flow of the firm

Operating cash flow	\$234
(Earnings before interest and taxes plus depreciation minus taxes)	
Capital spending	-173
(Acquisitions of fixed assets minus sales of fixed assets)	
Additions to net working capital	-19
Total	<u>\$42</u>

Cash flow to investors in the firm

Debt	\$36
(Interest plus retirement of debt minus long-term debt financing)	
Equity	6
(Dividends plus repurchase of equity minus new equity financing)	
Total	<u>\$42</u>

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Financial Cash Flow of the U.S. Composite Corporation - V

Cash flow of the firm

Operating cash flow (Earnings before interest and taxes plus depreciation minus taxes)	\$234
Capital spending (Acquisitions of fixed assets minus sales of fixed assets)	-173
Additions to net working capital	-19
Total	<u>\$42</u>

Cash flow of investors in the firm

Debt (Interest plus retirement of debt minus long-term debt financing)	\$36
Equity (Dividends plus repurchase of equity minus new equity financing)	6
Total	<u>\$42</u>

Cash Flow to Creditors

Interest	\$49
Retirement of debt	<u>73</u>
Debt service	\$122
Proceeds from long-term debt sales	<u>-86</u>
Total	<u>\$36</u>

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Financial Cash Flow of the U.S. Composite Corporation - VI

Cash flow of the firm

Operating cash flow (Earnings before interest and taxes plus depreciation minus taxes)	\$234
Capital spending (Acquisitions of fixed assets minus sales of fixed assets)	-173
Additions to net working capital	-19
Total	<u>\$42</u>

Cash flow to investors in the firm

Debt (Interest plus retirement of debt minus long-term debt financing)	\$36
Equity (Dividends plus repurchase of equity minus new equity financing)	6
Total	<u>\$42</u>

Cash Flow to Stockholders

Dividends	\$43
Repurchase of stock	<u>6</u>
Cash to stockholders	49
Proceeds from new stock issue	<u>-43</u>
Total	<u>\$6</u>

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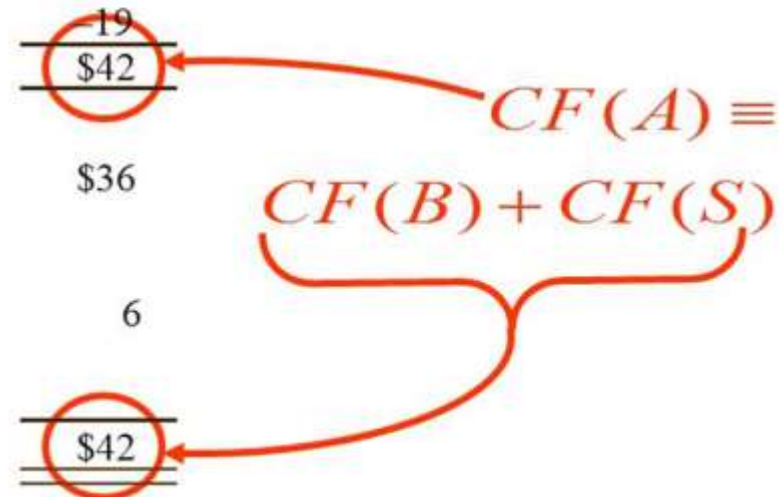
Financial Cash Flow of the U.S. Composite Corporation - VII

Cash flow of the firm

Operating cash flow (Earnings before interest and taxes plus depreciation minus taxes)	\$234
Capital spending (Acquisitions of fixed assets minus sales of fixed assets)	-173
Additions to net working capital	-19
Total	<u>\$42</u>

Cash flow to investors in the firm

Debt (Interest plus retirement of debt minus long-term debt financing)	\$36
Equity (Dividends plus repurchase of equity minus new equity financing)	6
Total	<u>\$42</u>



The cash flow received from the firm's assets must equal the cash flows to the firm's creditors and stockholders:

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		Change in Account Balance During Year	
		Increase	Decrease
Current Assets	Subtract from net income.	Add to net income.	
Current Liabilities	Add to net income.	Subtract from net income.	

2.6 The Accounting Statement of Cash Flows

There is an official accounting statement called the statement of cash flows.

This helps explain the change in accounting cash, which for U.S. Composite is \$41 million in 2022.

The three components of the statement of cash flows are:

- Cash flow from operating activities.
- Cash flow from investing activities.
- Cash flow from financing activities.

U.S. Composite Corporation Cash Flow from Operating Activities

To calculate cash flow from operating activities, start with net income, add back noncash items like depreciation and adjust for changes in current assets and liabilities (other than cash).

Operations	
Net income	\$ 86
Depreciation	90
Deferred taxes	9
Change in assets and liabilities	
Accounts receivable	-24
Inventories	11
Accounts payable	<u>35</u>
Cash flow from operating activities	<u>\$207</u>

U.S. Composite Corporation Cash Flow from Investing Activities

Cash flow from investing activities involves changes in capital assets: acquisition of fixed assets and sales of fixed assets (i.e., net capital expenditures).

Acquisition of fixed assets	- \$198
Sales of fixed assets	<u>25</u>
Cash flow from operating activities	<u>- \$173</u>

U.S. Composite Corporation Cash Flow from Financing Activities

Cash flows to and from creditors and owners include changes in equity and debt.

Retirement of long-term debt	-\$73
Proceeds from long-term debt sales	86
Dividends	-43
Repurchase of stock	-6
Proceeds from new stock issue	<u>43</u>
Cash flow from financing activities	<u>\$ 7</u>

U.S. Composite Corporation Statement of Cash Flows

The statement of cash flows is the addition of cash flows from operations, investing activities, and financing activities.

Operations	
Net income	\$86
Depreciation	90
Deferred taxes	9
Changes in assets and liabilities	
Accounts receivable	-24
Inventories	11
Accounts payable	35
Total cash flow from operations	<u>\$207</u>
Investing activities	
Acquisition of fixed assets	-\$198
Sales of fixed assets	25
Total cash flow from investing activities	<u>-\$173</u>
Financing activities	
Retirement of long-term debt	-\$73
Proceeds from long-term debt sales	86
Dividends	-43
Repurchase of stock	-6
Proceeds from new stock issue	43
Total cash flow from financing activities	<u>\$7</u>
Change in cash (on the balance sheet)	<u>\$41</u>

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2.7 Cash Flow Management

Earnings can be manipulated using subjective decisions required under GAAP.

Total cash flow is more objective, but the underlying components may also be “managed”

- Moving cash flow from the investing section to the operating section may make the firm’s business appear more stable.

Quick Quiz

What is the difference between book value and market value? Which should we use for decision-making purposes?

What is the difference between accounting income and cash flow? Which do we need to use when making decisions?

What is the difference between average and marginal tax rates? Which should we use when making financial decisions?

How do we determine a firm's cash flows? What are the equations, and where do we find the information?



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