

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 Financial Cash Flow

2.6 The Accounting Statement of Cash
Flows

2.7 Cash Flow Management

Vocabulary

1. Sales and revenue mean the same thing
2. Profits, earnings and income mean the same thing
3. Revenue and income do not mean the same thing
4. Profits are different from cash
5. Solvency is different from profitability

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:

$\text{Assets} \equiv \text{Liabilities} + \text{Stockholder's Equity}$

- Assets are what the firm owns (or has)
- Liabilities and equity are what the firm owes to various stakeholders, or the claims of various stakeholders on the assets of the firm (or owes and worth)
- ***Has Today = Owes Today + Worth Today***

U.S. Composite Corporation Balance Sheet

	2012	2011
Current assets:		
Cash and equivalents	\$140	\$107
Accounts receivable	294	270
Inventories	269	280
Other	<u>58</u>	<u>50</u>
Total current assets	<u>\$761</u>	<u>\$707</u>
Fixed assets:		
Property, plant, and equipment	\$1,423	\$1,274
Less accumulated depreciation	<u>(550)</u>	<u>(460)</u>
Net property, plant, and equipment	873	814
Intangible assets and other	<u>245</u>	<u>221</u>
Total fixed assets	<u>\$1,118</u>	<u>\$1,035</u>
Total assets	<u><u>\$1,879</u></u>	<u><u>\$1,742</u></u>

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.

Balance Sheet Analysis

- When analyzing a balance sheet, the Finance Manager should be aware of three concerns:
 1. Liquidity
 2. Debt versus equity
 3. Value versus cost

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

- Creditors generally receive the first claim on the firm's cash flow.
- Shareholder's equity is the residual difference between assets and liabilities.
- Liabilities and equity are generally listed in the descending order of seniority in the claims on cash flows and assets.

Value versus Cost

- Under Generally Accepted Accounting Principles (GAAP), audited financial statements of firms in the U.S. carry assets at (historical) cost, i.e., book value.
- 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
 - What's **sold** in the period *minus*
 - What it **costs** to make *minus*
 - General **expenses** for the period *equals*
 - **Income** for the period
- The accounting definition of income is:
Revenue – Expenses \equiv Income

U.S.C.C. Income Statement

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	1,655
Selling, general, and administrative expenses	327
Depreciation	<u>90</u>
Operating income	\$190
Other income	<u>29</u>
Earnings before interest and taxes	\$219
Interest expense	<u>49</u>
Pretax income	\$170
Taxes	84
Current: \$71	
Deferred: \$13	
Net income	<u>\$86</u>
Addition to retained earnings	<u>\$43</u>
Dividends:	\$43

U.S.C.C. Income Statement

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

Total operating revenues	\$2,262
Cost of goods sold	1,655
Selling, general, and administrative expenses	327
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Operating income	<u>\$190</u>
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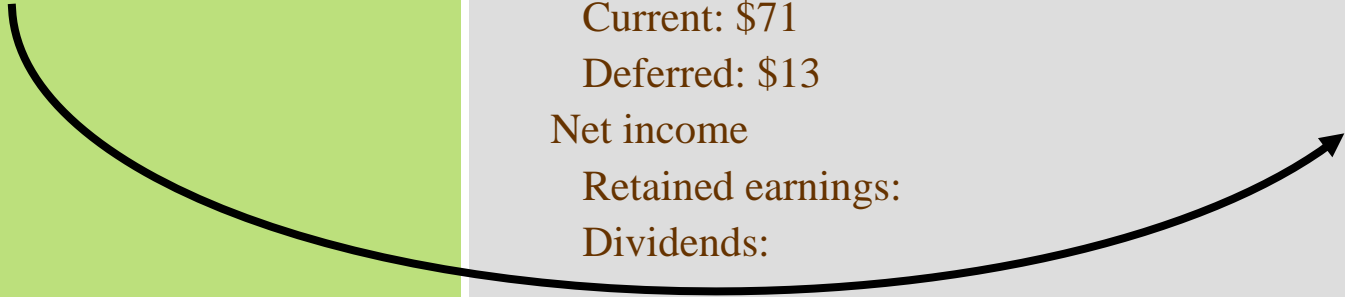
U.S.C.C. Income Statement

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

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U.S.C.C. Income Statement

Net income is the
“bottom line.”



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Net income	<u><u>\$86</u></u>
Retained earnings:	\$43
Dividends:	\$43

Income Statement Analysis

- There are three things to keep in mind when analyzing an income statement:
 1. Generally Accepted Accounting Principles (GAAP)
 2. Non-Cash Items
 3. Time and Costs

GAAP

- ❑ The realization and matching principles of GAAP dictate that revenues be recognized and matched with expenses at the sale of goods (on credit).
- ❑ Thus, income is reported when it is earned (or accrued), even though no cash flow may have occurred.

Non-Cash Items

- ❑ Depreciation is the most apparent. No firm ever writes a check for “depreciation.”
- ❑ Another non-cash 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
- 1. Marginal vs. average tax rates (Table 2.4)
 - Marginal – the percentage paid on the next dollar earned
 - Average – the tax bill / taxable income
- 2. Depreciation Methods
 - Straight Line
 - Accelerated Cost Recovery System (ACRS)
- 3. Tax Operating Loss
 - Carrybacks: TWO years.
 - Carryforwards: TWENTY years.



Marginal versus Average Rates

- Suppose your firm earns \$4 million in taxable income.
 - What is the firm's tax liability?
 - What is the average tax rate?
 - What is the marginal tax rate?
- If you are considering a project that will increase the firm's taxable income by \$1 million, what tax rate should you use in your analysis?

Federal Income Taxation – Financial Decisions

1. Financing Decision

- Interest expenses are tax-deductible; paid with before-tax cash.
- Dividends, distribution of profit, are non-tax-deductible; paid with after-tax cash.
- ➔ Biased for debt financing and against equity financing

2. Investing Decision

- Dividend Income: only 30% is taxable.
- Interest Income: 100% is taxable.
- ➔ Biased for investing in equity securities and against investing in debt securities.

2.4 Net Working Capital

- Net Working Capital \equiv
Current Assets – Current Liabilities
- NWC usually grows with the firm

2.4 Net Working Capital

- The company's **net working capital** is the amount of money left over after you subtract current liabilities from current assets
 - **Working capital** is the amount of money the enterprise has to “work with” in the *short-term*.
 - **Working capital** feeds the operations of the enterprise with dollar bills
- Sources and Uses of Net Working Capital
- **<Uses and Sources of CASH during the fiscal period>**
 - Increases: current liabilities decrease or current assets increase
 - Decreases: current assets decrease or current liabilities increase
 - With lots of working capital it will be easy to pay your “current” financial obligations.

U.S.C.C. Balance Sheet

$$\$252\text{m} = \$707 - \$455$$

Current assets:

Cash and equivalents	
Accounts receivable	
Inventories	
Other	
Total current assets	

2012	2011
\$140	\$107
294	270
269	280
58	50
<u>\$761</u>	<u>\$707</u>

Current Liabilities:

Accounts payable	\$213	\$197
Notes payable	50	53
Accrued expenses	223	205
Total current liabilities	<u>\$486</u>	<u>\$455</u>

$$\$275\text{m} = \$761\text{m} - \$486\text{m}$$

Here we see NWC grow to \$275 million in 2012 from \$252 million in 2011.

\$23 million

This increase of \$23 million is an investment of the firm.

2.5 Financial Cash Flows Identity

- 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.

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

U.S.C.C. Financial Cash Flow

Cash Flow of the Firm

Operating cash flow

(Earnings before interest and taxes
plus depreciation minus taxes)

Capital spending

(Acquisitions of fixed assets
minus sales of fixed assets)

Additions to net working capital

Total

Cash Flow of Investors in the Firm

Debt

(Interest plus retirement of debt
minus long-term debt financing)

Equity

(Dividends plus repurchase of
equity minus new equity financing)

Total

\$238

-173

-23

\$42

\$36

6

\$42

Operating Cash Flow:

EBIT \$219

Depreciation \$90

Current Taxes -\$71

OCF \$238

U.S.C.C. Financial Cash Flow

Cash Flow of the Firm

Operating cash flow

(Earnings before interest and taxes
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Capital spending

(Acquisitions of fixed assets
minus sales of fixed assets)

Additions to net working capital

Total

\$238

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-23

\$42

Cash Flow of Investors in the Firm

Debt

(Interest plus retirement of debt
minus long-term debt financing)

Equity

(Dividends plus repurchase of
equity minus new equity financing)

Total

\$36

6

\$42

Capital Spending

Purchase of fixed assets

\$198

Sales of fixed assets

-\$25

Capital Spending

\$173

An alternative definition

Capital Spending = Change in net
fixed assets + depreciation
expenses

e.g., $\$(1,118 - 1,035) + \$90 = \underline{\$173}$

U.S.C.C. Financial Cash Flow

Cash Flow of the Firm

Operating cash flow	\$238
(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	-23
Total	<u>\$42</u>

Cash Flow of 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 \$275 million in 2012 from \$252 million in 2011.

This increase of \$23 million is the addition to NWC.

U.S.C.C. Financial Cash Flow

Cash Flow of the Firm

Operating cash flow	\$238
(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	-23
Total	<u>\$42</u>

Cash Flow of Investors in the Firm

Debt	\$36
(Interest plus retirement of debt minus long-term debt financing)	
Equity	6
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U.S.C.C. Financial Cash Flow

Cash Flow of the Firm

Operating cash flow	\$238
(Earnings before interest and taxes plus depreciation minus taxes)	
Capital spending	-173
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Additions to net working capital	-23
Total	<u>\$42</u>

Cash Flow of Investors in the Firm

Debt	<u>\$36</u>
(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>

Cash Flow to Creditors, CF(B)

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

An alternative definition –

CF to Creditors, CF(B) = Interest –
Change in long-term debt

e.g., \$49 - \$(471-458) = \$36

U.S.C.C. Financial Cash Flow

Cash Flow of the Firm

Operating cash flow	\$238
(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	-23
Total	<u>\$42</u>

Cash Flow of 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>

Cash Flow to Stockholders, CF(S)

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

U.S.C.C. Financial Cash Flow

Cash Flow of the Firm

Operating cash flow

(Earnings before interest and taxes
plus depreciation minus taxes)

Capital spending

(Acquisitions of fixed assets
minus sales of fixed assets)

Additions to net working capital

Total

Cash Flow of Investors in the Firm

Debt

(Interest plus retirement of debt
minus long-term debt financing)

Equity

(Dividends plus repurchase of
equity minus new equity financing)

Total

\$238 The cash flow received
from the firm's assets
-173 must equal the cash flows
to the firm's creditors and
stockholders:

-23
\$42

$CF(A) \equiv$

\$36

$CF(B) + CF(S)$

6

\$42

2.5 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 \$33 million in 2012.
- 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.C.C. Cash Flow from Operations

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

Operations	
Net Income	\$86
Depreciation	90
Deferred Taxes	13
Changes in Assets and Liabilities	
Accounts Receivable	-24
Inventories	11
Accounts Payable	16
Accrued Expenses	18
Other	-8
Total Cash Flow from Operations	<u><u>\$202</u></u>

U.S.C.C. Cash Flow from Investing

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>
Total Cash Flow from Investing Activities	<u><u>-\$173</u></u>

U.S.C.C. Cash Flow from Financing

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

Retirement of debt (includes notes)	-\$73
Proceeds from long-term debt sales	86
Change in notes payable	-3
Dividends	-43
Repurchase of stock	-6
Proceeds from new stock issue	43
Total Cash Flow from Financing	<u><u>\$4</u></u>

U.S.C.C. Statement of Cash Flows

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

Operations	
Net Income	\$86
Depreciation	90
Deferred Taxes	13
Changes in Assets and Liabilities	
Accounts Receivable	-24
Inventories	11
Accounts Payable	16
Accrued Expenses	18
Other	-8
Total Cash Flow from Operations	<u><u>\$202</u></u>
Investing Activities	
Acquisition of fixed assets	-\$198
Sales of fixed assets	25
Total Cash Flow from Investing Activities	<u><u>-\$173</u></u>
Financing Activities	
Retirement of debt (includes notes)	-\$73
Proceeds from long-term debt sales	86
Notes Payable	-3
Dividends	-43
Repurchase of stock	-6
Proceeds from new stock issue	43
Total Cash Flow from Financing	<u><u>\$4</u></u>
Change in Cash (on the balance sheet)	<u><u>\$33</u></u>

Accounting Statement of Cash Flows versus **Financial Cash Flows Identity**

- Since interest paid is deducted as an expense when net income is calculated (and not deducted under financing activities) there is a difference between cash flow from operations and total cash flow to the firm—the difference is interest expense.

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?